

Section 3.1 SPECIAL DECsystem-10 PACKAGES

The DECsystem-10 Library Tapes listed below contain the individual DECsystem-10 programs offered within this catalog. Revisions of programs received after the publication of this catalog are not included on the Library Tapes, but will be available separately.

Most individual DECsystem-10 programs have documentation on the magnetic media. In cases where only hard copy documentation is available, the documentation is listed with the Library Tapes.

The Library tapes do not include programs listed in this Special DECsystem-10 Packages section of the catalog and must be ordered separately. (i.e., 10-SP-1 is not contained on the Library Tapes.)

The DECsystem-10 Library Tape 1, Version: 10-LIB-1 1983/1984

Abstract: The DECsystem-10 Library Tape 1 contains programs 10-3 through 10-138, with the exception of 10-101.

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AE), 2400' Magtape (PC) 1600 BPI only

The DECsystem-10 Library Tape 2, Version: 10-LIB-2 1983/1984

Abstract: The DECsystem-10 Library Tape 2 contains programs 10-101, plus 10-139 through 10-197, with the exceptions of 10-176 and 10-184.

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AE), 2400' Magtape (PC) 1600 BPI only

The DECsystem-10 Library Tape 3, Version: 10-LIB-3 1983/1984

Abstract: The DECsystem-10 Library Tape 3 contains programs 10-176, 10-184, plus 10-198 through 10-209.

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AA), 2400' Magtape (PC) 1600 BPI only

The DECsystem-10 Library Tape 4, Version: 10-LIB-4 1983/1984

Abstract: The DECsystem-10 Library Tape 4 contains programs 10-210 through 10-241, with the exception of 10-223.

Restrictions: SPICE2 (10-224) is included on this tape. The U.S. Government export regulations prohibit distribution of this program outside the United States without appropriate export licenses.

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AF), 2400' Magtape (PC) 1600 BPI only

The DECsystem-10 Library Tape 5, Version: 10-LIB-5 1983/1984

Abstract: The DECsystem-10 Library Tape 5 contains the program 10-223.

Documentation on magnetic media.

Media (Service Charge Code): 2400' Magtape (PC) 1600 BPI only

The DECsystem-10 Library Tape 6, Version: 10-LIB-6 1983/1984

Abstract: The DECsystem-10 Library Tape 6 contains programs 10-242 through 10-290, with the exception of 10-283. (Documentation for 10-270 is on microfiche.)

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AE), Microfiche (CA), 2400' Magtape (PC) 1600 BPI only

The DECsystem-10 Library Tape 7, Version: 10-LIB-7 1983/1984

Abstract: The DECsystem-10 Library Tape 7 contains programs 10-283, plus 10-291 through 10-309, with the exception of 10-307.

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AB), 2400' Magtape (PC) 1600 BPI only

The DECsystem-10 Library Tape 8, Version: 10-LIB-8 1983/1984

Abstract: The DECsystem-10 Library Tape 8 contains programs 10-307, plus 10-311 through 10-333, with the exception of 10-310.

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AC), 2400' Magtape (PC) 1600 BPI only

The DECsystem-10 Library Tape 9, Version: 10-LIB-9 1983/1984

Abstract: The DECsystem-10 Library Tape 9 contains the program 10-310.

Note: The Manual listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Manual (ED), Microfiche (CA), 2400' Magtape (PC) 1600 BPI only

The DECsystem-10 Library Tape 10, Version: 10-LIB-10 1983/1984

Abstract: The DECsystem-10 Library Tape 10 contains programs 10-334 through 10-340.

Documentation on magnetic media.

Media (Service Charge Code): 2400' Magtape (PC) 1600 BPI only

The DECsystem-10 Library Tape 11, Version: 10-LIB-11 1983/1984

Abstract: The DECsystem-10 Library Tape 11 contains programs 10-341 through 10-349.

Documentation on magnetic media.

Media (Service Charge Code): 2400' Magtape (PC) 1600 BPI only

The DECsystem-10 Library Update Tape, Version: 10-LIB-A 1983/1984

Abstract: The DECsystem-10 Library Update Tape for 1983/1984 will update the DECsystem-10 Library for users who purchased the ten library tapes (10-LIB-1 through 10-LIB-10) from the 1982/1983 Software Catalog.

This update tape contains programs 10-341 through 10-349, plus revisions for 10-153, 10-224, 10-257 and 10-325.

Restrictions: SPICE2 (10-224) is included on this tape. The U.S. Government prohibits distribution of this program outside the United States without appropriate export licenses.

Documentation on magnetic media.

Media (Service Charge Code): 2400' Magtape (PC) 1600 BPI only

Symposium Tape from the DECsystem-10 SIG, 10-SP-1
Spring 1981, Miami, Version: Spring 1981,
Miami

Submitted by: Rochelle Lauer, Schlumberger, Ridgefield, CT

Operating System: TOPS-10 V7.01 **Source Language:** FORTRAN IV, MACRO-10, PASCAL **Keywords:** Symposium; DECsystem-10; Spring; 1981; Miami

Abstract: This tape contains a small sampling of programs available through TOPS-10 sites. The symposium tape can be a valuable tool if more sites become willing to submit programs. The following is a very brief description of the programs to be found on the tape:

From: Charles Hendrick, Rutgers University

A new version of PASCAL. This is the version for VM systems. The version for non-VM systems (KA-KI) is available through DECUS as DECUS No. 10-283. Note: SCN7S.rel and SCN7BX.rel were removed from the tape. TOPS-10 sites should have these programs available from monitor releases.

From: Harold Lockhart, Applied Logic Corporation
 Three programs including a Disk to Disk Copy.

From: John Edgecombe, Canada Center for Remote Sensing
 Some modifications to TOPS-10 to simplify handling of CRT's.

From: Jack Maegner, Western Michigan University

A statistical package. Note: The FORTRAN Parameter file was originally on this tape. It has been removed as it is a copyright of DEC. It appears that to use the WMU enhanced FORTRAN routines, you must add the switch FTWMU = -1 to your version of FORPRM. Please contact Jack Meagher for further details.

No guarantees are made as to the completeness, usability, or quality of the programs on the tape. The material has not been checked or reviewed and documentation may or may not be included.

Partial documentation on magnetic media.

Media (Service Charge Code): 2400' Magtape (PS)

Symposium Tape from the DECsystem-10 SIG, 10-SP-2
Fall 1981, Los Angeles, Version: Fall 1981

Author: Various

Submitted by: Harold E. Stout, University of Texas, Health Science Center, Dallas, TX

Operating System: TOPS-10 **Source Language:** MACRO-10 **Keywords:** Symposium; DECsystem-10; Fall 1981; Los Angeles

Abstract: The Fall 1981 DECsystem-10 Symposium tape contains two principle save sets:

One was submitted by Steven R. Elm, Coordinated Management Systems, and contains the source and help files for DUMP20 - a save tape and restore utility for the RP20.

The second save set was submitted by Paul D. Clayton, DECUS Data Management SIG Newsletter editor. This contains DMS SIG Newsletter articles.

A third and final save set contains a more detailed abstract, which describes this collection of submittals to the 1981 DECUS Symposium TOPS-10 tape copy.

No guarantees are made as to the completeness, useability, or quality of the programs on the tape. The material has not been checked or reviewed.

Documentation may or may not be included on the magnetic media.

Media (Service Charge Code): 2400' Magtape (PS)

Section 3.2

DECsystem-10 ABSTRACTS

The following are the individual DECUS programs currently available for the DECsystem-10.

DTLOTS: Lots of Copies of a DECtape, 10-3 Version: 1, May 1969

Author: Robert Clements, Digital Equipment Corp., Maynard, MA
Source Language: MACRO-10 **Memory Required:** 3K or more **Special Hardware Required:** 2 or more DECtapes **Other Software Required:** 10/50 Monitor (DEC-10-MTC0) **Keywords:** DECtape

Abstract: This program will rapidly copy and verify a DECtape onto a number of new DECtapes by wasting a lot of disk space as a scratch file.
DEC-20 Review Note: DECtape utility, not useful. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA), or order 10-LIB-1

DECtape DDT, Version: 3, September 1969 10-8

Author: Ian Pugsley, Digital Equipment Corp., Australia
Source Language: MACRO-10 **Other Software Required:** DDT (DEC-10-CDDA), JOBDAT (DEC-10-SSB1-UA) **Keywords:** DECtape

Abstract: DECtape DDT will read or write unformatted DECtapes (or magtapes or disk files) with minimal processing so that the user can examine, copy, and modify or write any word, words or blocks.
DEC-20 Review Note: DECtape utility, not useful. Not part of the "20" Library.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

Music System for the PDP-10, Version: 1, 10-9 November 1969

Author: P. R. Samson and R. Clements, M.I.T. and Digital Equipment Corp., Maynard, MA
Source Language: MACRO-10 **Special Hardware Required:** MK10 or transistor radio **Other Software Required:** Time-Sharing Monitor (DEC-10-MTC0) **Keywords:** Music

Abstract: This program is a complete music-compiling and playing system for the PDP-10. MUSIC is compiled under the timesharing system and played in the executive mode. An initial library, mostly Bach and Beatles, is supplied to which users are encouraged to submit additions.

DEC-20 Review Note: Designed to be an executive-mode program, which cannot be run on the "20." Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

EIGHT and EDIT8, Version: 1, November 1969 10-10

Author: Teunis Korteweg
Submitted by: Roger Pyle, Digital Equipment Corp., Maynard, MA
Source Language: MACRO-10, PAL-10 **Special Hardware Required:** PDP-10 with 2 DECtapes, PDP-8 with 2 DECtapes **Keywords:** PDP-8-DECtape

Abstract: EIGHT converts PDP-8 DECtapes to a transfer tape which can then be read on the PDP-10. EDIT8 transfers ASCII files from a transfer tape made with EIGHT to any PDP-10 device.

DEC-20 Review Note: DECtape utility, not useful. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

PAL-10, Version: 1, October 1969 10-12

Author: R. Bowering
Submitted by: Nicholas Pappas, Digital Equipment Corp., Maynard, MA
Source Language: MACRO-10 **Keywords:** PAL-10; PDP-8; Cross Assembly

Abstract: PAL-10 is an assembler that runs on the PDP-10 and provides object code for the PDP-8. The command strings are, in general, similar to those of MACRO-10.

DEC-20 Review Note: See 20-5.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

JACOBI, Version: 1, May 1972 10-22

Author: Todd Wagner
Submitted by: William Merserve, Digital Equipment Corp., Los Angeles, CA

Source Language: MACRO-10 **Keywords:** EIGEN Systems; Diagonalization

Abstract: JACOBI will diagonalize a real symmetric matrix of up to 60 × 60.

DEC-20 Review Note: See 20-6.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

PDP-10/8 Loader, Version: 1, November 1969 10-23

Author: Allan B. Wilson, Max Planck Inst., Germany
Source Language: PAL-10, MACRO-10 **Special Hardware Required:** PDP-10 with line scanner, PDP-8 with special interface to PDP-10 line scanner **Keywords:** PDP-8; PDP-8-Loader

Abstract: This interactive set of programs when used in conjunction with a special interface between the PDP-8 and PDP-10 allows the following:

1. The PDP-8 console teletype to be used as a regular PDP-10 time-sharing station.

2. By means of commands to the PDP-10 time-sharing monitor, PDP-8 binary programs are stored on a PDP-10 device and sent to the PDP-8 and loaded. This eliminates the need for paper tape or other program storage means on the PDP-8.

DEC-20 Review Note: See 20-7.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

ONCE Only Code-User Mode, Version: 1, 10-25 December 1969

Author: David M. Nixon, Digital Equipment Corp., Maynard, MA
Source Language: MACRO-10 **Other Software Required:** Time-sharing Monitor (DEC-10-MTC0) **Keywords:** ONCE Loader

Abstract: "ONCE" enters into a dialogue with the user and asks if he wants to keep UDDT. It then scans the symbol table giving the user the option to keep the symbols for individual subroutines. It then moves remaining symbols on top of itself; as with LOADER 1B.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

GASP II, Version: 1, December 1969 10-27

Author: A. Alan, B. Pritsker and Philip J. Kiviat
Submitted by: Donald R. Mick, Sanders Assoc., Nashua, NH
Source Language: FORTRAN **Other Software Required:** Users' Random Number Generator **Keywords:** Simulation; GASP

Abstract: GASP II consists of a set of FORTRAN subprograms organized to assist in performing discrete simulation studies.

DEC-20 Review Note: See 20-8.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

SIM-11, Version: 1, February 1970 10-28

Author: Peter Goldstern, Digital Equipment Corp., Maynard, MA
Source Language: FORTRAN IV, MACRO-10 **Memory Required:** 16K Core Including I/O Buffer **Keywords:** PDP-11-Simulator

Abstract: SIM-11 is a PDP-11 simulator for the PDP-10 which includes the following features: (1) Simulation of all functions of an 8K (word) PDP-11/20; (2) Simulation of an ASR teletype (KL11) and the high-speed reader/punch (PC11); (3) Debugging with a multiple breakpoint.

DEC-20 Review Note: Converted the .SAV file to .EXE and program appears to run. But attempt to reload from source file did not work—appears to enter loop during program execution. Needs work to correct source files. Not part of the "20" Library.

Media (Service Charge Code): Manual (EB), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

PDP-8/PDP-10 Real Time Data Acquisition System, Version: 1, February 1970 **10-29**

Author: Peter M. Hurley, Digital Equipment Corp., Maynard, MA
Source Language: MACRO-10, PAL **Special Hardware Required:** PDP-10, with 16K Core; PDP-8, with 4K Core; DA 25A, DA 25C
Keywords: PDP-8; Data-Acquisition

Abstract: This real time data acquisition system connects up to 16 PDP-8s to a PDP-10 using a DA 25. The PDP-8 programs can communicate to PDP-10 programs through a software interrupt and priority scheduling network. The PDP-10 programs can read and write PDP-8 core and interrupt the PDP-8 user programs.

DEC-20 Review Note: TOPS-10 specific. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

NVERTX, Version: 1, February 1970 **10-30**

Author: Dr. A. E. Brenner, Harvard Univ., Cambridge, MA

Submitted by: Peter M. Hurley

Source Language: FORTRAN, MACRO-10 **Keywords:** High Energy; Physics; Monte-Carlo

Abstract: NVERTX is a self-contained, easily expanded Monte Carlo program for the study of interactions in high energy physics. The program is capable of generating events and plotting results for a very wide class of reactions, including those governed by Lorentz invariant phase space, also, those exhibiting resonances or other non-trivial matrix elements.

DEC-20 Review Note: See 20-9.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

PALX-11, Version: 1, March 1970 **10-31**

Author: L. McGowan, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Memory Required:** 4K Core **Keywords:** PDP-11; Cross-Assembler; PAL-11

Abstract: This program assembles PAL-11 programs for the PDP-11. PALX-11 includes Macros and Repeats which may be removed by PALX-11, thus creating a new source tape which may be assembled by PAL-11A.

DEC-20 Review Note: See 20-10.

Media (Service Charge Code): Manual (EB), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

W: Complex Error Function for Complex Argument, Version: 1, April 1970 **10-33**

Author: Ian Pugsley, Digital Equipment Corp., Australia

Source Language: FORTRAN **Memory Required:** Approx. 300 word storage **Keywords:** Error-Function; Probability-Integral

Abstract: This program computes the probability integral (error functions) which arises in problems of diffusion, heat flow, and distributed electrical networks. Special cases include Dawson's integral, Fresnel integrals, confluent hypergeometric function, parabolic cylinder functions and spherical Bessel functions.

DEC-20 Review Note: See 20-11.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

ARP, Version: 1, March 1970 **10-36**

Submitted by: Ed Nemeth, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Keywords:** Byte-Manipulation

Abstract: ARP is a collection of utility programs that provides character manipulation, byte manipulation, logic operations on full PDP-10 words, conversion from numeric to alphanumeric format and the reverse and a printer output report generator.

DEC-20 Review Note: JSA/JRA subroutine calls, incomplete source files, numerous compilation errors. Appears to be beyond recovery. Not part of the "20" Library.

Media (Service Charge Code): Manual (EB), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

Trace Program, Version: 1, March 1970 **10-37**

Submitted by: Ed Nemeth, Digital Equipment Corp., Maynard, MA

Source Language: FORTRAN **Keywords:** DDT; Debug-Aid

Abstract: This is a batch-oriented object time debugging package for the PDP-10. It is designed to serve the same function in the batch mode that DDT serves in the timesharing mode. It is primarily intended to be run with FORTRAN programs and uses the ARP utility package (DECUS No. 10-36).

DEC-20 Review Note: Requires ARP. (The two subroutines in TRACE compile cleanly, however.) Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

Flow Charter, Version: 4, October 1973 **10-38**

Revised by: David Dyer, Information International, Los Angeles, CA

Source Language: FORTRAN IV **Memory Required:** 11K core **Keywords:** Flowcharting

Abstract: This program will produce flow charts of FORTRAN programs directly from the source code. All FORTRAN IV statements will be properly handled. Tabs will be correctly interpreted anywhere in a statement. Output consists of a listing file of each source deck from beginning to end statement and each associated flow chart followed by a list of all statement numbers used by the program.

Restrictions: 19 continuous lines on input, 132 characters per line on output.

DEC-20 Review Note: See 20-12.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

Random Number Package, Version: 1, May 1970 **10-43**

Submitted by: Bolt, Beranek and Newman, Inc., Cambridge, MA

Source Language: FORTRAN **Keywords:** Random Numbers

Abstract: This package includes routines for random number generation, tangent and cotangent functions, and real results of units of time.

DEC-20 Review Note: See 20-13.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

SIMPLE, Version: 1, June 1970 **10-57**

Author: B. P. Molinari, Univ. of Western Australia, Australia

Submitted by: Ian Pugsley

Source Language: FORTRAN, MACRO **Keywords:** Simulator; Analog-Computer

Abstract: SIMPLE is a problem-oriented simulator of an analog computer. The user enters a system description via the teletype in the form of equations relating the elements of the system.

Restrictions: Must be compiled with F40, V2 or V20.

DEC-20 Review Note: See 20-14.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

LISP 1.6, Version: 2, September 1969 **10-59**

Author: Lynn H. Quan and Whitfield Diffie

Revised by: Lynn H. Quan, Stanford Univ., Stanford, CA

Source Language: MACRO-10 **Memory Required:** 32K core **Other Software Required:** Timesharing Monitor, MACRO-10, PDP-10 Loader **Keywords:** LISP; List-Processing

Abstract: The interactive LISP 1.6 system has been developed for the PDP-10 at the Stanford University Artificial Intelligence project. It is assumed that the user is familiar with either some other LISP system or the LISP 1.5 Primer by Clark Weissman. This LISP 1.6 system has as a subset of most of the features and functions of other LISP 1.5 systems. In addition, there are several new features such as an arbitrary precision integer package, an S-expression editor, up to 14 active input/output channels, the ability to control the size of memory spaces, a standard relocating loader assembly language or compiled programs, etc. This system uses an interpreter; however, there is also a compiler which produces machine code. Compiled functions are approximately ten times as fast and also take less memory space. The manual is organized in a functional manner. First the basic data structures are described, then the functions for operating on them. The appendices present more detailed information on the system, its internal structure, the compiler, and several

auxiliary packages.

DEC-20 Review Note: See 20-15.

Media (Service Charge Code): Manual (EC), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

MLISP, Version: 1, January 1969 10-61

Author: David Canfield Smith, Stanford Univ., Stanford, CA

Source Language: LISP 1.6 (DECUS No. 10-59) **Memory Required:** 25K Core **Other Software Required:** SCAN. (See Below) **Keywords:** LISP

Abstract: MLISP is a high-level LISP preprocessor, designed to facilitate the writing and understanding of LISP programs, and to extend the power of LISP.

Note: 1. SCAN can be obtained from: Lynn H Quam, Artificial Intelligence Lab., Computer Science Dept., Stanford Univ., Stanford, Calif.

2. Translates 3000-5000 lines per minute.

DEC-20 Review Note: See 20-16.

Media (Service Charge Code): Manual (EB), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

LEARNS: For Learning MACRO-10 Instruction Set, Version: 1, April 1970 10-65

Author: Stephen F. Cloucher, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Memory Required:** 2K Core **Keywords:** Instruction; Assembly-Language

Abstract: LEARNS is an interpretive type assembly language that will execute one instruction. The opcode and AC + E contents are supplied by the user. The AC + E are typed back so he can see exactly how that instruction manipulated the bits. He learns by doing.

DEC-20 Review Note: See 20-17.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

PAL-12, Version: 1, June 1970 10-68

Author: L. Elekman

Submitted by: G. Thissell, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Memory Required:** 4K Core **Keywords:** PDP-12; Cross-Assembler; PAL-12; DIAL

Abstract: PAL-12 is a program written for the PDP-10 which allows the user to assemble programs written in LAP6-DIAL code, thereby greatly increasing the ease and speed for preparing programs for the PDP-12.

DEC-20 Review Note: See 20-18.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

FAKE, Version: 1, May 1970 10-70

Author: Philip J. Hogan, Nuclear Physics, England

Source Language: MACRO **Keywords:** FORTRAN-Arrays; Arrays; Utility-FORTRAN; Core-Allocation

Abstract: FAKE is a FORTRAN IV routine which allows a FORTRAN IV user to dimension arrays dynamically, but with some restrictions.

DEC-20 Review Note: See 20-19.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

Dartmouth BASIC Library, Version: 1, September 1970 10-72

Author: Dartmouth BASIC Library, Dartmouth College, Hanover, NH

Submitted by: Bernhard Eiben

Source Language: BASIC **Keywords:** Dartmouth; BASIC

Abstract: This package includes a variety of routines. Among them are banking programs, games, demos, business applications, engineering applications, programs for determining probability and statistics, logic and linear algebra routines, and a utility package geared primarily for academic record keeping.

DEC-20 Review Note: See 20-20.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-1

SAIL/FAIL, Version: 18, August 1976 10-86

Author: Dan Swinehart, Robert Sproul, et al.

Revised by: Les Earnest, Stanford University, Stanford, CA

Source Language: FAIL **Memory Required:** 50K of user core **Special Hardware Required:** 4-Series or later monitor **Keywords:** ALGOL; SAIL; FAIL; Programming-Language

Abstract: SAIL is a high-level programming language for the PDP-10 computer. It includes an extended ALGOL 60 compiler and a companion set of execution-time routines. In addition to ALGOL, the language features: 1) flexible linking to hand-coded machine language algorithms, 2) complete access to the PDP-10 I/O facilities, 3) a complete system of compile-time arithmetic and logic as well as a flexible macro system, 4) a high-level debugger, 5) records and references, 6) sets and lists, 7) an associative data structure, 8) independent process, 9) procedure variables, 10) modular error handling, 11) backtracking, and 12) interrupt facilities.

FAIL is a fast, one-pass assembler for the PDP-10 machine language. Although FAIL uses substantially more main memory than MACRO-10, it assembles typical programs in less than one-fifth the cpu time used by MACRO-10. FAIL permits an ALGOL-style block structure which provides a means of localizing the use of some symbols to certain parts of the program, such that the same symbol name can be used without conflict to mean things in different blocks.

Note: A. No commitment is made to support this or any other version of SAIL with bug fixes or subsequent releases. Users interested in a maintained version should contact Tymchare, Inc.

B. When putting up the SAIL system the author suggests first reading the file TELLEM.

C. This version is for TOPS-10 only. TOPS-20 and Tenex sites should use 20-2.

D. Documentation for FAIL is on the tape.

DEC-20 Review Note: See 20-2.

Media (Service Charge Code): Microfiche (CA), Manual (EC), 2400' Magtape (PA) or order 10-LIB-1

MATRIX, Version: 1, May 1969 10-87

Author: Computer Center Corp.

Submitted by: Ed Nemeth, Digital Equipment Corp., Maynard, MA

Source Language: FORTRAN **Keywords:** Matrices; Linear-Algebra

Abstract: MATRIX is an interactive timesharing version of SMIS (Symbolic Matrix Interpretive System), originally developed at the University of California at Berkeley and substantially expanded by Professor Billy J. Hartz and his graduate staff at the University of Washington, Department of Civil Engineering. It is a system of commands designed to perform all types of matrix mathematics. Since the system was originally designed to structural mechanics applications, some of the operations are peculiar to the discipline. However, MATRIX is by no means restricted in scope: the flexibility of the commands allow from simple matrix operations to easily obtained solutions to Eigenvalue problems and differential equations in many other disciplines. The current version of MATRIX is designed to handle real matrices only.

DEC-20 Review Note: Source files are missing and supplied .REL file for FREEST is from F40 (not usable). Not part of the "20" Library.

Media (Service Charge Code): Manual (EB), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

SALESMAN, Version: 1, May 1970 10-88

Author: Stephen W. Albert, Newton Computer Club, Newtonville, MA

Source Language: BASIC **Keywords:** Sales; Business

Abstract: The program SALESMAN is designed to keep track of ten salesmen for a period of four weeks. It may be modified for more salesmen. Company data is also recorded.

DEC-20 Review Note: See 20-21.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA) or order 10-LIB-1

JOTTO, Version: 1, June 1970 10-89

Author: James Whynot, Newton Computer Club, Newtonville, MA

Source Language: FORTRAN IV **Keywords:** Games; JOTTO

Abstract: The program of JOTTO plays a word game with the user. The object of the game is to guess a three letter word that the computer has picked randomly from a list of 100 words. You guess the word by using 'probe words.' These words are of three letters and are to help you reveal the computer's word. The program has fuller instructions in order for the user to play the game.

DEC-20 Review Note: See 20-22.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

BARTEE, Version: 1, June 1970 10-90

Author: R. Perry and A. Cantoni, Univ. of Western Australia, Australia
Submitted by: Ian Pugsley

Source Language: MACRO **Memory Required:** 1K Core **Keywords:** Logic; Networks

Abstract: BARTEE is a PDP-10 program to perform a minimization of a multiple input/output logic network, according to the method of Bartee, McCluskey and Quine. The program will optionally print the table of prime implicants or a coverage table or a possible core selection from the covering table (or any or all the tables).

DEC-20 Review Note: See 20-23.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA)

BCDPIP, Version: 1, March 1970 10-93

Author: Donald R. Todd, Brookings Inst., Washington, DC

Source Language: MACRO-10 **Memory Required:** 1K Core High Segment, 2K Core Low Segment **Keywords:** IBM-7094; Character-Conversion; BCD

Abstract: BCDPIP transfers data files from magtapes to any standard I/O device, and translates IBM 7040 type 1, 2 or 3 labelled or unlabelled BCD files to ASCII line mode for the PDP-10.

DEC-20 Review Note: Program will not take 1600 bpi tapes, there are few IBM 7040 tapes to convert any longer, and other alternatives (e.g., CHANGE) exist. Not part of the "20" Library.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

17 Teaching Programs for BASIC, Version: 1, 10-97 October 1970

Submitted by: Bernhard Eiben, Digital Equipment Corp., Maynard, MA
Source Language: BASIC **Keywords:** Teaching; BASIC-CAI; CAI-BASIC

Abstract: This tape contains seventeen lessons for learning BASIC and writing BASIC programs for the PDP-10.

DEC-20 Review Note: See 20-24.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

PUNCH, Version: 1, October 1970 10-98

Author: Richard Maliska, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Memory Required:** 1K Core Low Segment, 1K Core High Segment **Keywords:** Paper Tape

Abstract: This is a paper tape punch label program for the PDP-10. It takes TTY input and converts it to hand-readable format on the paper tape punch.

Restrictions: Punch must only be PTP.

DEC-20 Review Note: No papertape punch on the 20. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

On-Line Systems BASIC and FORTRAN Demos, Version: 2, March 1971 10-100

Author: On-line Systems

Submitted by: Bernhard Eiben and Patricia Osten, Digital Equipment Corp., Maynard, MA

Source Language: BASIC, FORTRAN **Keywords:** Mathematics; Statistics; Business

Abstract: This package is a collection of mathematical, statistical, engineering and business applications subroutines designed to be used independently or in conjunction with main programs. The BASIC programs have self-contained input and output and instructions for their use are to be found on the DECtapes. Titles and description information can be found in the write-up.

DEC-20 Review Note: See 20-25.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HE), 600' Magtape (MA) or order 10-LIB-1

SSP, Version: 3, July 1973 10-101

Author: Sandia Laboratories (I.B.M.)

Revised by: H. David Todd, Wesleyan Univ., Middletown, CT

Source Language: FORTRAN IV **Keywords:** Scientific; IBM-SSP; SSP

Abstract: The Scientific Subroutine Package (SSP) is a collection of over 250 FORTRAN subroutines divided, for the sake of presentation, into two groups: statistics and mathematics. Also, over 200 subroutines are presented in both single and double precision mode. SSP is a collection of input/output-free computational building blocks that can be combined with a user's input, output or computational routines to meet his needs.

Associated Documentation: See IBM document GH20-0205-4.

DEC-20 Review Note: See 20-26.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HE), 2400' Magtape (PA) or order 10-LIB-2

PDP-8 Simulator on the PDP-10, Version: 2, 10-102 June 1969

Author: D. McClure, Digital Equipment Corp., Waltham, MA

Revised by: D. McClure

Source Language: MACRO **Keywords:** PDP-8 Simulator

Abstract: This program is available on DECtape in PDP-10 format. Documentation is available on DECtape as OPR file as well as write-up.

DEC-20 Review Note: See 20-27.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

RESDEC.MAC, Version: 1, October 1970 10-103

Author: C. B. Eckhardt

Submitted by: L. M. Mitchell, Aeronautical Res. Lab., Australia

Source Language: MACRO **Keywords:** DECtape—PDP-10; Utility—DECtape

Abstract: This program recreates the directory of a DECtape if it is zeroed or otherwise lost. It may also be of use if some blocks get over-written, since certain partial files are recoverable.

DEC-20 Review Note: Requires DECtape drives. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

SNOBOL4, Version: 3.4, November 1970 10-104

Author: Larry Wade, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Memory Required:** 35K User Core **Keywords:** SNOBOL

Abstract: The PDP-10 version of SNOBOL4 is wholly compatible with the Bell Telephone Laboratories version running on other systems. Minor changes were required because of slightly different character sets and operating systems. It is reentrant (16K pure segment) and contains a number of unique PDP-10 features including file primitive functions and dynamic core expansion.

DEC-20 Review Note: See 20-28.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EB), DECtape (HD), 600' Magtape (MA) or order 10-LIB-1

DOCTOR and ELIZA, Version: 1, December 1970 10-105

Author: Anthony Lauk, et al.

Submitted by: Anthony Lauk, Digital Equipment Corp., Maynard, MA

Source Language: LISP1.6 (DECUS No. 10-59) **Memory Required:** 16K User Core **Keywords:** Doctor; Eliza; Games; Psychology

Abstract: DOCTOR and ELIZA are programs which simulate a psychiatrist. Users can carry on an interactive dialogue with the "DOCTOR". This version came from an old core image, was converted to Stanford

Artificial Intelligence LISP 1.6 and then was compiled to run up to six times faster than previous versions.

DEC-20 Review Note: See 20-29.

No source available. Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

CFILE, Version: 1, December 1970 10-107

Author: Walter Metcalf

Submitted by: Kay Latven, Brookings Inst., Washington, DC

Source Language: MACRO-10 **Memory Required:** 1K Core **Keywords:** Command-Control

Abstract: CFILF is a shareable and reentrant program which allows an arbitrary sequence of monitor commands to be executed from a file on a retrievable device (disk, DECtape, etc.). This permits commands to be built by either a user or a program and then executed with no intervention by the user.

DEC-20 Review Note: Program doesn't function correctly and duplicates functions of the executive TAKE command of the "20." Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

CHESS, Version: 1, June 1970 10-110

Author: Richard Greenblatt

Submitted by: Ed Nemeth, Digital Equipment Corp., Maynard, MA

Source Language: FORTRAN **Keywords:** Games; Chess

Abstract: This program runs under the control of the DEC Time-Sharing Monitor for the PDP-6/10. CHESS.HOW provides an explanation for playing. It plays a full game of chess.

DEC-20 Review Note: See 20-30.

No source available. Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

GOOF.MAC, Version: 1, January 1971 10-112

Author: Buren Hoffman

Submitted by: Ed Mason, E.G.&G., Las Vegas, NV

Source Language: MACRO-10 **Memory Required:** 4K Core, not Reentrant **Keywords:** DECtape—PDP-10; Utility—DECtape

Abstract: This program can be used to recover a destroyed DECtape. It automatically constructs files from DECtape based only on linkage information. Directory information is ignored. It also produces a cross-reference listing showing origin and member blocks of each file. Incomplete files are also handled. An optional mode of operation allows for manual construction of files, block by block, based on the cross-reference listing.

DEC-20 Review Note: Requires DECtape drives. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

MULPAC: A Multiple Precision Package for the PDP-10, Version: 1, February 1971 10-113

Author: J. M. Bennett, Univ. of Western Ontario, Canada

Submitted by: Ed Nemeth

Source Language: FORTRAN or MACRO **Keywords:** Arithmetic; Multiple-Precision; Functions

Abstract: This is a preliminary report describing a multiple-precision floating-point arithmetic package available for use from either FORTRAN or MACRO-10 on the DEC PDP-10. The exponent range of the number is $2^{**}(2^{**}34 - 1)$ and presently the mantissa can contain up to 1380 significant decimal digits, although this can be simply extended. The package provides the four basic operations of arithmetic and the following mathematical functions: square root, sine, cosine, logarithm, and exponential. A convenient package is provided for easy conversion to and from the standard PDP-10 arithmetic types. No general input-output facilities have yet been provided. Also missing, but planned, are the power functions, arctangent, and integer divide routines.

DEC-20 Review Note: These programs require extensive modification for the "20" because of the standard use of JSA/JRA calling sequence and the strong interrelation between different MACRO modules of the code. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

MATTAC: Matrix TIC-TAC-TOE, Version: 1, January 1971 10-114

Author: Merton E. Kenniston, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Memory Required:** 1K Core **Keywords:** Games; TIC-TAC-TOE

Abstract: Matrix Tic-Tac-Toe is played on a ten by ten matrix in a manner similar to ordinary Tic-Tac-Toe. The player and the computer will alternately place a move at one of the matrix coordinates. Each will try to place five moves in a row to effect a win. The player will always be given the first move. This forces the computer to play defensively and gives the player a reasonable probability of winning. There are 192 possible win combinations using the ten by ten matrix as a playing board. Optional player moves will allow the player to terminate the game, restart the game, or have the current board status typed on his terminal. The player can also, at his option, have a list of the accepted moves and/or instructions typed on his terminal at run time.

Restrictions: Output is device dependent; uses TTCALL UUO's for all I/O.

DEC-20 Review Note: See 20-31.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

TAPBLK.MAC, Version: 1, January 1971 10-115

Author: A. J. Copanas, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Memory Required:** 2K Core **Keywords:** Magtape; Utility—Magtape; Blocking—Magtape

Abstract: The purpose of this program is to read files from magtape that contain non-standard record sizes, and block them into standard size blocks on disk or DECtape. Default filename T00001 is given to first output file; names increase octally (T00002, T00003, etc.). The program will expand itself as needed to read oversize records on the tape.

DEC-20 Review Note: See 20-32.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

QED, Version: 1, March 1969 10-116

Author: University of Utah, Salt Lake City, UT

Submitted by: Ed Nemeth

Source Language: TECO **Keywords:** Editor—Line

Abstract: This version of QED, written in TECO, is a line editor modeled after similarly named editors. The main differences lie in input/output commands, in control character functions, and in buffer usage. It was developed and maintained by a student at the University of Utah. No support will be maintained by the University.

DEC-20 Review Note: See 20-33.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

IFTYP, Version: 1, January 1970 10-117

Author: Stephen Kidd, Brookings Inst., Washington, DC

Submitted by: Kay Latven

Source Language: MACRO-10 **Keywords:** Utility—FORTRAN

Abstract: IFTYP is used in FORTRAN programs to detect, read, and test lines typed at a console while a program is running. When placed in the outer loop of a long program, IFTYP permits a program to be queried regarding its status, or to dynamically set run-time parameters.

Restrictions: Has been tried unsuccessful with F10.

DEC-20 Review Note: Uses F40 LUUO's. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

DYNAM, Version: 1, December 1970 10-120

Author: Stephen Kidd, Brookings Inst., Washington, DC

Submitted by: Kay Latven

Source Language: MACRO-10 **Keywords:** Utility—FORTRAN; Core-Allocation: FORTRAN-Arrays; Arrays

Abstract: DYNAM is a FORTRAN-callable subroutine for extending a user's core allocation. DYNAM may be used to allocate and release an arbitrary number of blocks of any size beyond the program's initial upper limit. Caution is advised when using with CHAIN.

DEC-20 Review Note: Virtual memory capability of TOPS-20 makes this of little use. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

CUSPER, Version: 1, December 1971 10-121

Author: Jon K. Peck, Brookings Inst., Washington, DC

Submitted by: Kay Latven

Source Language: MACRO-10 **Memory Required:** 2K Core **Keywords:** Utility—FORTRAN

Abstract: CUSPER is a routine which causes the calling program to be terminated and a specified CUSP or CCL command to be started, thereby passing control directly from a FORTRAN program to a CUSP.

DEC-20 Review Note: Uses F40 conventions for argument counting which are difficult to convert. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

TAPTST.MAC, Version: 1, January 1971 10-126

Author: Andy Copanas, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Memory Required:** 6K Core Low Segment **Keywords:** Magtape; Diagnostics—Magtape

Abstract: This program, designed to test the reliability of a magtape, will write an entire tape with - 1's in 3 foot long records at 556 bpi. Then it will rewind and verify each word written. All errors on verification will be printed out, along with their location. The number of tries needed to write record is also typed out. It then repeats the entire process at 800 bpi. The program is for testing tapes only. It cannot save original data.

Note: For use on KA10.

DEC-20 Review Note: Designed to work with DEC-10 magnetic tapes (556 bpi). Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

PCPY.MAC and PCPY1.MAC, Version: 1, March 1971 10-127

Author: Maria Plaza, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Memory Required:** 48K Core **Special Hardware Required:** 2 RP02 **Other Software Required:** 5502 Monitor + Supporting CUSP's **Keywords:** Utility—Disk

Abstract: PCPY.MAC will copy blocks from one RP02 disk pack to another. Running stand-alone and using SUPERSET I/O the program will copy blocks 1 to 39,999 of a pack, half a cylinder at a time, in less than four minutes elapsed time. This is fast, but has no verification. PCPY1.MAC will verify 20 blocks at a time in about seven minutes elapsed time.

Restrictions:

1. Assign input pack—IN and output pack—OUT before each run.
2. It is advisable to copy to a newly formed pack and to run stand-alone as [1,2].

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

RENBR: The FORTRAN Renumbering Program, Version: 4, May 1979 10-130

Author: Donald E. Barth, Harvard Business School, Boston, MA

Operating System: TOPS-10 **Source Language:** FORTRAN IV **Memory Required:** 35K **Keywords:** Utility; FORTRAN; Renumbering

Abstract: RENBR modifies the statement numbers in FORTRAN programs so that these statement numbers become sequential and/or forms cross-referenced listings of FORTRAN programs. The RENBR program is itself written entirely in FORTRAN. The portion of the RENBR program which does the renumbering and/or forms the listing is system independent. Only the routines which open and close files and which process the instructions which are typed by the user would need to be modified for use of this program on other computers. A version of these

routines is supplied for use on the DECsystem-10 computer under the TOPS-10 monitor.

The present version of RENBR incorporates several new features, among which are the following.

1. Support of multiple statements per line as indicated by separating semicolons.
2. Support of comments in the statement fields as indicated by leading exclamation points.
3. Support of statements written either in upper case or in lower case or in a mixture of these.
4. Optional indentation of statements within the range of IF (expression) THEN and ELSE statements.
5. Optional renumbering only of statement numbers which were originally within a specified range.
6. Support of user typed instructions having the general form

OUTPUT FILES = LIST OF INPUT FILES in which switches identify the purposes of the output files.

Restrictions: VAX-11 user interface is included, but has been only partially tested.

Note: An untested version of these routines is also supplied for use of the VAX-11 Computer.

DEC-20 Review Note: See 20-34.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EB), 600' Magtape (MA) or order 10-LIB-1

ALGOLW, Version: 2, December 1973 10-133

Author: Michael Green

Submitted by: W. D. Wagers, Digital Equipment Corp., Maynard, MA

Revised by: W. D. Wagers

Source Language: META 2 **Keywords:** ALGOL

Abstract: This is the W subset of ALGOL. ALGOLW is a block structured language suitable for scientific applications. Its specifications are written by computer scientists. ALGOLW is easy to use and the runtime package is efficient.

DEC-20 Review Note: See 20-35.

No Documentation Available.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

FISHER, Version: 1, April 1971 10-134

Author: J. D. Perry, Univ. of Vermont, Burlington, VT

Source Language: BASIC **Keywords:** Probability

Abstract: FISHER calculates the probability of a set of scores being obtained by chance according to the Fisher method of randomization. It prints the probability, as well as all combinations as extreme as the data, and a frequency distribution of their sums. By inputting data in descending order, it will provide all possible combinations of any n numbers taken R at a time in a systematic order, with sums and frequency distribution of those sums. This latter characteristic makes it a useful teaching tool in nonparametric statistics courses.

Insert data in line 50FF as follows: first, the total number of subjects, then the number of treatment groups (usually two), then the subjects' scores, starting with the lowest scoring group for the sake of the programs efficiency. The program requires equal N groups. The program cannot handle negative scores (add a constant to all scores to eliminate them), nor zeros (same solution), nor ties in score (fudge).

Associated Documentation: Reference—Bradley, "Distribution-free statistical tests," 1968, Chapter 4.

DEC-20 Review Note: See 20-36.

No Documentation Available.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

ALOCSP, Version: 1, May 1971 10-135

Author: John Connor, Digital Equipment Corp., Mountain View, CA

Source Language: MACRO-10 **Keywords:** Utility—Disk

Abstract: ALOCSP is a generalized program for allocation of disk space. It is more flexible than the ALCFIL CUSP in that the user may specify that his allocation need not be contiguous space.

Other functions available are: delete file, check current allocation and dump the RIB. It is to be used with TOP-10 monitor 5502 or later, and to be used only for disks.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

PDP-10 Demonstration Package, Version: 1, May 1971 10-136

Author: Roger L. Fisher, Grosvenor House, Seattle, WA

Source Language: BASIC, MACRO-10, FORTRAN IV **Keywords:** Demonstration; Games; PDP-10

Abstract: This package of seven programs and related data files demonstrates the PDP-10 system with games, plots and visual displays. The programs were written by Seattle area high school and college students.

Note: Warning-EDIT10 must be on the system.

DEC-20 Review Note: Depends upon EDIT-10. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

COB300, Version: 1, August 1971 10-137

Author: Alan Blackington, Digital Equipment Corp., Maynard, MA
Submitted by: D. A. Mormile

Source Language: COBOL, MACRO-10 **Special Hardware Required:** Card Reader **Other Software Required:** ASCODE.MAC Subroutine for COB300.CBL **Keywords:** Filter—COBOL; COBOL—Filter

Abstract: This program filters Burroughs 300 COBOL programs to produce PDP-10 COBOL programs. It reads in B300 source decks from the card reader and creates a PDP-10 source file on disk.

DEC-20 Review Note: See 20-37.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-1

FORTRAN File Maintenance System, Version: 1, June 1971 10-138

Author: Myron N. Curtis, Bowdoin College, Brunswick, ME

Source Language: FORTRAN IV, MACRO **Memory Required:** 32K Core **Keywords:** Utility—FORTRAN; File-Handling

Abstract: This system consists of FORTRAN subroutines that make file handling and word manipulation for data processing applications easy for the non-COBOL user. It is efficient for small systems.

DEC-20 Review Note: Source files are missing, and the .REL library is F40-compatible. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-1

TALK8F: An Encoding Program for PAL10 Binary Output, Version: 1, March 1971 10-139

Author: Peter Lemkin and Alan Chauvenet, N.I.H., Bethesda, MD

Source Language: FORTRAN IV, MACRO-10 **Memory Required:** 5K Core **Special Hardware Required:** Dataphones **Other Software Required:** PAL 10 or, PAL 12 on PDP-10; TALK10 on PDP-8 **Keywords:** PAL-10

Abstract: The assembly of large programs for small machines such as the PDP-8 is apt to be laborious, time consuming and almost impossible if done on the small machine itself. In addition, the ability for many users to assemble PDP-8 programs on a PDP-10 computer using PAL-10 or PAL-12 lightens the load of software development on the smaller machine. TALK8F is a PDP-10 utility program which transforms the output of assemblers such as PAL-10 or PAL-12 into a form amenable to dataphone communication.

Restrictions: File names must be 5 characters or less.

Note: TALK10 (DECUS No. 8-449C) is on same DECtape as TALK8F.

DEC-20 Review Note: See 20-38.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

DSKDTA, Version: 3, January 1972 10-140

Author: Anne Lane, Essex Univ., England

Revised by: Bernhard Eiben

Source Language: MACRO-10 **Special Hardware Required:** 2 DECtape Drives **Keywords:** Utility—DECtape; Utility—Disk

Abstract: DSKDTA transfers files from a user's disk area to a number of DECtapes. Switching from one DECtape to the next is automatic. No file names need to be typed in, and the appropriate DECtape directories are typed.

DEC-20 Review Note: DECtapes are not supported on a "20." Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

EXCON, Version: 1, October 1971 10-141

Author: John J. Sigona, U.S. Dept. of Transportation, Cambridge, MA

Source Language: MACRO-10 **Memory Required:** 717 Octal Locations **Keywords:** Utility—DECtape

Abstract: EXCON compacts all of the files on a DECtape (including files already compacted) into one big file so that the 22 file capacity restriction for DECtape is virtually eliminated. Specification of a switch allows expansion of the compacted files back to the original files.

The first operation should be to assign physical device names to the logical device names of INPUT and OUTPUT, that is, the following assignments must be made:

.ASSIGN Dev INPUT

.ASSIGN Dev OUTPUT

where Dev is either DECtape or disk. *If files are to be compacted then the first assignment must be .ASSIGN DTAn INPUT.* All files on the DECtape are compacted into one file. Also, the same DTAn cannot be used for both input and output.

After the devices have been assigned, type the monitor command R EXCON. The cusp will respond with: "Type E or C followed by CR," where E signifies expansion desired and C signifies compaction. Next, the user supplies the compacted file's name in the format File.Ext.

This cusp does not alter in any way the contents of any file. In fact, when a compacted file is expanded the file names, extensions, and creation dates will be identical to those of the files before compaction was performed.

Files in compacted form are generally unusable since they contain various codes and marker information between adjacent files.

DEC-20 Review Note: DECtapes not supported on a "20." Not part of the "20" Library.

No Documentation Available.

Media (Service Charge Code): DECtape (HA) or order 10-LIB-2

MATHLAB, Version: 1, December 1971 10-142

Author: Carl Engelman, The Mitre Corp., Bedford, MA

Source Language: LISP **Memory Required:** 59K User Core **Keywords:** MATHLAB; Symbolic-Processing

Abstract: MATHLAB is an on-line system providing machine aid for the mechanical symbolic processes encountered in analysis. It is capable of performing, automatically and symbolically, such common procedures as simplification, substitution, differentiation, polynomial factorization, indefinite integration, direct and inverse Laplace transforms, the solution of linear differential equations with constant coefficients, the solution of simultaneous linear equations, and the inversion of matrices. It also supplies fairly elaborate bookkeeping facilities appropriate to its on-line operation.

Restrictions: Must be a 5 series monitor, or later.

DEC-20 Review Note: See 20-39.

Media (Service Charge Code): Manual (EC), DECtape (HC), 600' Magtape (MA) or order 10-LIB-2

COBSTD, Version: 1, November 1971 10-143

Author: Anne Pearson

Submitted by: Ewart Davies, Digital Equipment Corp., England

Source Language: MACRO-10 **Memory Required:** 1K Core **Keywords:** Utility—COBOL; COBOL—Formatting

Abstract: This is a program to convert a DECsystem-10 COBOL source program from 'standard' format to 'conventional' format. This enables a program, developed on the 10, to be transferred to another machine through the medium of punched cards or magtape.

DEC-20 Review Note: See 20-40.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

RUNH: An Additional FORTRAN Library 10-145 **Routine, Version: 1, October 1971**

Author: Robert Hsu, First National City Bank, NY, NY

Submitted by: Howard Huang

Source Language: MACRO **Keywords:** Utility—FORTRAN

Abstract: This FORTRAN subroutine has been implemented so that programs can transfer control to one another. Programs to be called must be in SAVE format. The subroutine can be called in as:

CALL RUNH (DEV, FILE NAME, PROJ.#, PROG.#)

where

DEV=Logical device name in ASCII (e.g., "DSK", "DTA2", "SYS")

FILE NAME=ASCII file name less than or equal to six (6) characters (e.g., "SYSTAT", "UCOST", "LOGOUT", etc.)

PROJ.#=user's project number in octal (e.g., "4001")

PROG.#=user's programmer number in octal (e.g., "4002").

PROJ.# and PROG.# are paired to designate the disk area where the program to be transferred resides. They are optional—if omitted, user's own disk area is assumed. When performing the subroutine, users should be reminded that all AC's in the old program are destroyed, and all I/O channels are closed and released. Therefore, no arguments or devices in the old program can be passed to the new program. If it fails to transfer, an error message: "?CANNOT RUN FILE?" will be typed out on user's console, and the program will exit to monitor mode.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

No Documentation Available.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

PDP-11/10 Loader, Version: 1, April 1972 10-148

Author: H. L. Farnsworth and R. B. Fleisher, Eastman Kodak Co., Rochester, NY

Source Language: TECO **Special Hardware Required:** PDP-10; 2K Core, PDP-11/20; 4K Core, DC11AB-Full Duplex **Keywords:** PDP-11; Cross-Loader

Abstract: A program called (LOD11) written for the PDP-11 computer, and a program called (LOD11X) written for the PDP-10 computer allows full duplex conversation between the PDP-10 monitor and the PDP-11 teletype. Furthermore, PDP-11 programs assembled on the PDP-10 may be loaded directly into PDP-11 core.

Note: This program also available as DECUS No. 11-53.

DEC-20 Review Note: Requires TOPS-10 monitor patch (not applicable for TOPS-20). Not part of the "20" Library.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

EDITOR, Version: 1, January 1972 10-149

Author: unknown

Submitted by: G. B. Harrington, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Memory Required:** 1K Core **Special Hardware Required:** DECtape **Keywords:** Editor—Line; Utility—DECtape

Abstract: EDITOR creates, adds to, or deletes from sequentially numbered source files recorded in lines of ASCII characters on a DECtape. EDITOR edits the source file (the input and output files are the same). Fresh source files have editing space in each physical DECtape block. If the user has more edits for a block than will fit in it, an extra block in the DECtape is used and appropriately linked to the preceding and following logical blocks of the file. Editor provides a simple method of creating or modifying MACRO or FORTRAN IV source programs.

DEC-20 Review Note: DECtapes not supported on a "20." Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

KWIC, Version: 2, October 1978 10-151

Revised by: H. D. Todd, Wesleyan University, CT

Source Language: MACRO-10 **Memory Required:** 3K + **Other Software Required:** V5.07B + **Keywords:** KWIC; Index; Keyword

Abstract: This program reads two files, a user defined stop list, and a master data file consisting of titles of items to be 'Key-Word-In-Context' indexed. The routine outputs a neat KWIC index and a word frequency list. The improvements made to version 1 are the following: Default file name and extension selection; Default PPN selection for stop file.

(Automates processing)

Restrictions: Upper/Lower case still not handled; Lower-case file names still fail.

Note: Runs under 4NN72 or later monitor. Another version of this program is being distributed with the Western Michigan University Applications Library (DECUS No. 10-310.)

DEC-20 Review Note: See 20-41.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

RIPOFF, Version: October 1980 10-152

Author: Steve Bush

Revised by: Joellen Windsor, University of Arizona, Tucson, AZ

Operating System: TOPS-10 V6.03A **Source Language:** MACRO-10 **Memory Required:** 9K **Keywords:** Utility Disk

Abstract: RIPOFF is intended to be a centralized repository for disk-related maintenance utilities, and as an alternative to the DEC supplied CUSPs such as DSKRAT, DSKLST, REDALL, DELFIL, etc. As an added bonus, it appears to be 5 to 10 times faster than the equivalent DEC utilities for most non-trivial functions. RIPOFF was originally written by Steve Bush at the University of Texas Health Sciences Center at Dallas. Since then, a massive rewrite has been undertaken at the University of Arizona Computing Center. The original goal was to simply add SFD support to the existing code. However, it soon became apparent that numerous bugs needed to be fixed also (see the revision history, on the tape, for details). We have been running the current version of RIPOFF for several months with no reported problems and feel that it is fairly stable. However, we urge every site to be initially very cautious in the use of RIPOFF, since we cannot possibly test it under every possible monitor and disk configuration. We suggest that each function be verified on a scratch pack, preferably using a DEC standard CUSP, before using that function in production. For example, use DSKRAT to verify the /V and /S functions, DSKLST to verify the /P function, etc.

Restrictions: Scanner cannot set high order bit of 36-bit octal value (work around, use half word format). Scanner squeezes blanks out of literals.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-2

CHANGE, Version: V4, July 1982 10-153

Author: David Kiarsis, Digital Equipment Corporation

Submitted by: Ardoth A. Hassler, The Catholic University of America, Washington, DC

Operating System: TOPS-10 V7.01 **Source Language:** MACRO-10 **Memory Required:** 5 + 12K Core **Special Hardware Required:** 701 or later monitor **Keywords:** Character; Conversion

Abstract: CHANGE is a program to aid in the conversion of character sets foreign to the DECsystem-10. It is capable of using any I/O device on the DECsystem-10, but it is mainly designed for the user with magnetic tapes and disks. CHANGE will perform blocking duplication, character set conversion, unblocking and reading and writing of tape labels.

Documentation on Magnetic Media.

Media (Service Charge Code): Write-Up (AA), 600' Magtape (MA) or order 10-LIB-2

COBOL Subroutines: COBQUE, COBSLP, COBWAK, Version: 1, February 1972 10-154

Author: David Kiarsis, Digital Equipment Corp., Maynard, MA

Source Language: MACRO **Other Software Required:** COBOL + MPB Programs **Keywords:** COBOL; Queuers

Abstract: The three COBOL subroutines COBQUE, COBSLP and COBWAK are designed to allow COBOL programs to manipulate the system queuers, hibernate, and to wake jobs up. Supplied with each MACRO subroutine is a COBOL program, of the same name, to demonstrate its use.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

USET, Version: 1, February 1972 10-155

Author: C. Mitchell, The Hatfield Polytechnic, England

Source Language: MACRO-10 **Memory Required:** 2K Core **Special Hardware Required:** CTY **Keywords:** Debugging-Disk; Diagnostic—Disk; Utility—Disk

Abstract: A low level disk manipulator for examining, patching and physical copying of disk packs under a timesharing monitor.

Restrictions: 503 monitor, [1,2] PPN, USET1 and USET0 UUU's.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

Asynchronous Communications Package for PDP-10's to PDP-8's, Version: 1, March 1972 **10-156**

Author: Peter Hurley, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10, PAL-10 **Special Hardware Required:** DC-10 or 680 for PDP-10, PT08 or Equivalent for PDP-8 **Other Software Required:** 5.05 Monitor or Later **Keywords:** PDP-8; Communications

Abstract: This package allows a PDP-8 to be connected to a PDP-10 over an asynchronous line (up to 2400 baud). The TTY on the PDP-8 can then be used as a terminal on the PDP-10. This is also a generalized communications package allowing computer-to-computer communications.

Note: Also see DECUS No. 10-187.

DEC-20 Review Note: See 20-43.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

STREAM, Version: 1, April 1972 **10-157**

Author: Martin A. Schultz, Syosset High Sch., Plainview, NY

Source Language: MACRO-10 V44 / Later **Memory Required:** 600 word storage **Other Software Required:** IOPS-10 Series 5, FORTRAN V24 or Later, Loader V52A or Later **Keywords:** Utility—FORTRAN; Byte-Manipulation

Abstract: STREAM provides the FORTRAN programmer with the capacity to read data from any device unformatted, in any mode, and in varying amounts. Both single bytes or numeric/character data can be input from or output to any device.

Restrictions: No magtape.

DEC-20 Review Note: See 20-44.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

PAGER, Version: 4(6), November 1972 **10-159**

Author: Martin A. Schultz, Syosset High Sch., Plainview, NY

Revised by: Martin A. Schultz

Source Language: MACRO-10 **Memory Required:** 1K Core **Keywords:** Utility

Abstract: PAGER is a program to aid the user in the listing of programs or other textual material. It will take the source file and produce a nice, neat, formatted paged copy on an output device.

DEC-20 Review Note: See 20-45.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

TERBIN, Version: 1, August 1972 **10-160**

Author: Stuart Skalka, Syosset High Sch., Plainview, NY

Source Language: MACRO-10 **Memory Required:** 1K Core **Special Hardware Required:** PDP-10 with Image Mode for TTY's, Punch/Reader **Keywords:** Paper-Tape; Utility

Abstract: TERBIN writes and reads paper tapes of binary files on the teletype. A .SAV, .REL, .SHR., etc. file may be stored on the tape and punched by the TTY, and may be reloaded using the TTY reader.

DEC-20 Review Note: Papertape not supported on "20." Not part of the "20" Library.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

ABACUS, Version: 1, May 1972 **10-161**

Author: Martin A. Schultz, Syosset High Sch., Plainview, NY

Source Language: MACRO-10 **Memory Required:** 2K core impure, 1K core pure **Special Hardware Required:** Monitor 5.03 / Later **Other Software Required:** LIB40 Routines, ABHELP.SAV optional **Keywords:**

Calculator

Abstract: ABACUS is a conversational compiler used to aid in solving complex, numerical and logical problems. The instructions are simple and easy to master. Results are output to the teletype. Loops, functions, formatting are included in ABACUS.

DEC-20 Review Note: See 20-46.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

POOMAS: Poor Man's SIMULA, Version: 1, June 1972 **10-162**

Author: Amund Lunde, Carnegie-Mellon Univ., Pittsburgh, PA

Source Language: BLISS **Memory Required:** BLISS:40-50K Core, POOMAS:25K Core **Other Software Required:** BLISS Compiler **Keywords:** Simulation; SIMULA

Abstract: POOMAS is a collection of subroutines, macros, etc. which allow a programmer to write SIMULA-like simulation programs in BLISS. The POOMAS routines will handle queues, sequencing, random number generation, etc. Primitive facilities for run-time debugging are included.

DEC-20 Review Note: Use SIMULA instead. Compilation problems with manner in which JOBXXX symbols were defined. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): Listing (BA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

CROSS: Correlation of Responses with options for the Social Sciences, Version: 1, September 1972 **10-164**

Author: Norman W. Johnson, Wheaton College, Norton, MA

Source Language: FORTRAN IV, MACRO-10 **Memory Required:** 17K user core **Other Software Required:** FORTRAN IV SUBR.: Date, Time, IFILE, OFILE, IFIL, OFIL **Keywords:** Statistics; Correlation

Abstract: The CROSS package is intended for the analysis of data collected wholly or partly by the user, as for example, a survey conducted by a social science class. The package includes programs to create data files from card decks or existing files, to reorganize the data in certain ways, and to analyze the data by correlating responses and producing tables of marginal frequencies, cross-tabulations or other statistics. (See write-up for Abstracts of individual programs.)

Note: Magnetic tapes include procedure for implementation.

DEC-20 Review Note: See 20-47.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

RDMT11, Version: 1, September 1972 **10-165**

Author: William J. Meserve, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Memory Required:** 3K Core **Special Hardware Required:** Monitor 5 Series **Keywords:** PDP-11-Magtape; Utility—Magtape

Abstract: RDMT11 is a PDP-10 utility program designed to read labelled, PDP-11 formatted magtapes containing text files and to create corresponding PDP-10 disk files. The original motivation for this program came from the need to transfer PDP-11 listing files to the PDP-10. The command string is:

ODEV:IDEV:FILE1.EX1, ... FILEN.EXN (CR)

If ODEV is not specified DSK is assumed. Up to 16 file names may be specified and "wild card" characters are interpreted under the usual PDP-10 conventions. After the completion of the transfer, the program prints a summary of the number of files transferred and names any files which were specified but not found on the table.

Note: Starting address—140 ABS.

DEC-20 Review Note: See 20-48.

No Documentation Available.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

BLOCK, Version: 2, January 1973**10-166****Author:** W. H. Kropp, Brook Haven National Lab., Upton, NY**Revised by:** W. H. Kropp**Source Language:** MACRO-10 **Memory Required:** 2K Core Plus Expansion for Buffers **Keywords:** Character-Conversion; Magtape-Copying**Abstract:** BLOCK satisfies two requirements:

1. Flexible translation program to convert ASCII to BCD(026,029) and EBCDIC.

2. Distribution program where on a single pass of the program one ASCII file can be converted to a maximum of 14 separate output files (provided there are 14 magnetic tapes available) with any mix of BCD(026,029) and/or EBCDIC; any blocking factor and optional group and record markers.

Additional features are: complete error status report on both input and output units, indicating physical record where the error occurred and the option to continue or exit; multi-tape input and output files; tape verification after conversion process completed (rereads output file to detect parity errors); generates tape label on teletype to describe contents of tape.

DEC-20 Review Note: Redefining JOBDAT symbols and successfully reloading source code generated a file which would not run successfully. Functionality duplicated by CHANGE available from DEC and DECUS. Not part of the "20" Library.**Media (Service Charge Code):** Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2**GENPLT-II: A General Plotting Package, Version: 1, September 1972****10-167****Author:** Donald E. Barth, Harvard Univ., Cambridge, MA**Source Language:** FORTRAN **Keywords:** Plotting**Abstract:** GENPLT-II is a package of FORTRAN non-interactive graphic subroutines which provide a wide variety of automatic functions such as the plotting of scales and grids. Data can be represented by plotted points or symbols, by solid or dashed lines, or as shaded figures. Draftsman's Gothic and Greek lettering are provided.**DEC-20 Review Note:** See 20-49.*Documentation on magnetic media.***Media (Service Charge Code):** Write-Up (AA), DECtape (HB), 600' Magtape (MA) or order 10-LIB-2**TBLTRN: A Symbolic Table Assembler Written in FORTRAN, Version: 2, February 1973****10-168****Author:** Donald E. Barth, Harvard Univ., Cambridge, MA**Revised by:** Donald E. Barth**Source Language:** FORTRAN **Memory Required:** 23K Core **Keywords:** Tables; Symbols**Abstract:** TBLTRN is an assembler for symbolic tables which are to control other programs. The language in which these tables are written is established by the user through association of either single or multiple precision values with the words of a vocabulary. These values can be assembled with byte and/or location offset defined by templates specified by the user.**Note:** Documentation file has been updated to describe the 7 bugs corrected by this version.**DEC-20 Review Note:** See 20-50.*Documentation on magnetic media.***Media (Service Charge Code):** Manual (EC), DECtape (HB), 600' Magtape (MA) or order 10-LIB-2**CTFFT, Version: 1, October 1972****10-169****Author:** Norman Brenner**Revised by:** A. Grayson, Digital Equipment Corp., Marlboro, MA**Source Language:** FORTRAN **Special Hardware Required:** 5 Series Monitor, Level D **Keywords:** Cooley-Tukey; FFT; Fourier-Transforms**Abstract:** This package contains two Cooley-Tukey FFT subroutines written in USASI basic FORTRAN. The first (FOURG) is a one-dimensional transform. The second (FOUR2) is a multi-dimensional transform. Both are by Norman Brenner of M.I.T. Lincoln Labs. See IEEE Audio Transactions (June 1967) special issue on the FFT. Test programs are provided along with sample output from the DECsystem-10. In addition, some observations of the relative accuracy to be expected on 32, 36 and 60 bit computers is included.**DEC-20 Review Note:** See 20-51.*Documentation on magnetic media.***Media (Service Charge Code):** DECtape (HA), 600' Magtape (MA) or order 10-LIB-2**UFLIP: User File Library Implementation Program, Version: 1, September 1972****10-170****Author:** Dr. James B. Moorhead, Knolls Atomic Power Lab., Schenectady, NY**Source Language:** MACRO **Special Hardware Required:** KA10 **Other Software Required:** MACRO-52 or Later **Keywords:** Utility—Disk; Utility—DECtape**Abstract:** This program combines disk files of arbitrary form and size into larger files (libraries) and can be used to subsequently extract individual files at a later date. It is useful to cut disk overhead, to allow more than 22 files to be stored on a DECtape, and to combine files corresponding to similar subjects.**DEC-20 Review Note:** See 20-52.*Documentation on magnetic media.***Media (Service Charge Code):** Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2**Cardiac Machine Language Simulator for PDP-10 BASIC, Version: 1, September 1972****10-171****Author:** Stuart Hollander, State Univ. of New York**Source Language:** BASIC (Version 17) **Keywords:** Cardiac**Abstract:** An interactive simulation of the CARDIAC machine language which was developed and distributed by Bell Laboratories in 1968. It allows the user to write, debug, and execute programs written in CARDIAC machine language.**DEC-20 Review Note:** See 20-53.**Media (Service Charge Code):** Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2**FLMON: Process Flowsheet Monitor, Version: 1, October 1972****10-173****Author:** John B. Vinturella, Louisiana State Univ., New Orleans, LA**Source Language:** FORTRAN **Memory Required:** 48K Core **Special Hardware Required:** Digital Plotter **Other Software Required:** Plotter Routines **Keywords:** Flowsheets**Abstract:** Allows a non-programmer to draw process flowsheets using a digital plotter. Working from a semi-accurate preliminary drawing, the user describes the components of the diagram and their locations with several flowsheet-oriented commands.**DEC-20 Review Note:** See 20-54.**Media (Service Charge Code):** Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2**CHAINR: Diagnostic Chainer, Version: 1, October 1972****10-175****Author:** Duane W. Moore, Digital Equipment Corp., Portland, OR**Source Language:** MACRO-10 **Memory Required:** 8K user core, 393 DSK blocks **Special Hardware Required:** Random Access DIR. **Keywords:** Diagnostics**Abstract:** The diagnostic chainer is a program consisting of 15 separate subprograms that are chained together to provide a background confidence test. All user mode processor diagnostics are run in a manner similar to the executive mode diagnostic monitor. Operation is simple and proof of operation is positive.**Restrictions:** User mode operation only.**Note:** For use on the KA10.**DEC-20 Review Note:** Specific to TOPS-10. Not part of the "20" Library.**Media (Service Charge Code):** Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2**ACCTG: Resource Accounting System, Version: 1, November 1972****10-176****Author:** Sanders Associates, Inc., Nashua, NH**Submitted by:** A. Ryder**Source Language:** MACRO-10, FORTRAN **Memory Required:** 20K Core **Keywords:** Accounting; Resource-Accounting**Abstract:** The DECsystem-10 resource accounting system is based on the

one used in-house by Sanders Associates. It accounts for CPU, core and peripherals in a very complete way, and produces comprehensive detailed reports and summaries. Enough information to enable an installation to write operator instructions is included.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), 2400' Magtape (PA) or order 10-LIB-3

Sign Maker, Version: 1, November 1972 10-177

Author: Irwin L. Goverman, Brandels Univ., Waltham, MA

Source Language: FORTRAN **Memory Required:** 10K Core **Special Hardware Required:** Random Access Storage Device **Other Software Required:** FORTRAN Operating System **Keywords:** Sign-Maker

Abstract: This program processes user input strings of up to 12 characters per string and produces an automatically centered line made up of .7' x 1.3' symbols. In addition, the user may define his own characters. Each sign may contain up to 10 lines (2 pages).

DEC-20 Review Note: See 20-55.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

MTIO: Industry Compatible Magnetic Tape I/O, Version: 1, December 1972 10-178

Author: Steven J. Fortune and Thomas W. Burnett, Pennsylvania State Univ., University Park, PA

Source Language: MACRO **Memory Required:** 220 Word Storage **Other Software Required:** 4 or 5 Series Monitor **Keywords:** Utility—Magtape; Utility—FORTRAN

Abstract: MTIO will read or write industry compatible files performing the necessary conversions for logical, integer, or real variables. All features are written as FORTRAN-callable subroutines. The package can be used equally well using the DEC standard magnetic tape format.

Note: Package capability—Call MTINIT(IFILE, IREC); Call MTSKIP(IFILE, IREC); Call SETDEC; Call SETIBM; Call SETPAR(IPAR); Call SETDEN(IDEN); Call MTREAD (ARRAY, ISIZE, IERR); Call MTWRITE (ARRAY, ISIZE, IERR); Call MTEOF; Call MTCLOS.

DEC-20 Review Note: See 20-56.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

FASBOL II: A SNOBOL4 Compiler, Version: 10-179A2s10-179 September 1976

Author: Paul J. Santos, Jr., Sanders Assoc., Nashua, NH

Revised by: Don Peters

Source Language: FASBOL, MACRO 50 **Keywords:** SNOBOL; FASBOL

Abstract: The FASBOL II compiler system represents a new approach to the processing and execution of programs written in the SNOBOL4 language. In contrast to the existing interpretive and semi-interpretive systems, the FASBOL compiler produces independent, assembly-language programs. These programs, when assembled, and using a small run-time library, execute much faster than under other SNOBOL4 systems. While being almost totally compatible with SNOBOL4, Version 3, FASBOL offers the same advantages as other compiler systems, such as:

1. Up to two orders of magnitude decrease in execution times over interpretive processing for most problems.
2. Much smaller storage requirements at execution time than in-core systems, permitting either small partitions or larger programs.
3. Capability of interfacing with FORTRAN and MACRO programs, providing any division of labor required by the nature of a problem.
4. Capability of independent compilation of different program segments, simplifying program structure and debugging.
5. Measurement and runtime parameter facilities to aid in optimizing execution time and/or storage utilization.

Note: Research supported in part by the National Science Foundation, Grant GJ-821. See also DECUS No. 10-179B.

DEC-20 Review Note: See 20-57.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-2

FASBOL: Conversion For Virtual Memory Systems, Version: August 1978 10-179B

Submitted by: Dr. Nigel Derrett, University Aarhus, Denmark

Other Software Required: VM monitor 6.01 and later (works best under 6.01) **Keywords:** SNOBOL; FASBOL; Virtual Memory

Abstract: Converts FASBOL (DECUS No. 10-179A) to run under a virtual memory monitor. The tape only includes the changed modules.

Note: This program is also distributed with DECUS No. 10-179A.

Media (Service Charge Code): Write-Up (AA), 600' Magtape (MA) or order 10-LIB-2

EDITS, Version: 1, January 1973 10-181

Author: W. Weiher, J. Sauter, R. Gorin, Sanders Assoc., Nashua, NH

Submitted by: A. Ryder

Source Language: MACRO **Keywords:** Editor—Line; EDITS

Abstract: An easy-to-use but powerful line-oriented editor, EDITS is very, very similar to SOS, but beware SOS users.

DEC-20 Review Note: See 20-58.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EB), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

TXTPAD: A Textual Illustration Sketchpad, Version: 1, February 1973 10-182

Author: Donald E. Barth, Harvard Univ., Cambridge, MA

Source Language: FORTRAN **Memory Required:** 15K Core **Special Hardware Required:** ARDS Storage Scope and Stylus **Keywords:** Illustration

Abstract: TXTPAD allows the user to construct illustrations formed of printing characters for use in documentation. A stylus is used to position and duplicate and/or remove characters or groups of characters on a 60 character by 60 line grid. The resulting illustration is monitored on a storage scope, and can be stored in and retrieved from an output file. Also included on the same tape is the program TXTTAB which reads textual data one item per line and outputs this textual data as a table formed of parallel columns.

DEC-20 Review Note: See 20-59.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

GRAPH.F4: Graphing/Plotting on a Line Printer, Version: 1, January 1973 10-183

Author: William D. Gustafson, Stevens Inst. of Technology, Hoboken, NJ

Source Language: FORTRAN **Other Software Required:** 5504A Monitor

Keywords: Plotting; Graphing; Utility—LPT

Abstract: A series of graphing and plotting routines for FORTRAN with line printer output.

Restrictions: Program uses PRINT statements.

DEC-20 Review Note: See 20-60.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

SPELL, Version: 7A(7), January 1979 10-184

Author: Ralph Gorin

Revised by: Marshall D. Abrams, National Bureau of Standards, Washington, DC

Source Language: MACRO-10 **Keywords:** Spelling Corrector

Abstract: SPELL is a program designed to read test files and check them for correctness of spelling. In addition to the spelling check, the program provides a means for correcting words that it thinks are misspelled. This program was written by Ralph E. Gorin of Stanford University Artificial Intelligence Laboratory. It has been augmented by William Plummer and Jerry Wolf of BBN and Marshall Abrams of NBS.

In its normal mode of usage, SPELL reads through an input text file, asks the user about each word it does not recognize, and creates an output file in which corrections have been made.

Note: • Numerous improvements including default dictionary, .BAK file production, improved handling of prefixes and suffixes, case handling. .. Contains assembly switches for TOPS-10, TOPS-20 and TENEX.

- The July 1974 version of SPELL is being distributed with DECUS No. 10-310.

DEC-20 Review Note: See 20-148.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), 600' Magtape (MA) or order 10-LIB-3

SYNTAX, Version: 2, December 1973 10-185

Author: Michael Green

Submitted by: W. D. Wagers, Digital Equipment Corp., Maynard, MA

Revised by: Michael Green

Source Language: ALGOLW (DECUS No. 10-133) **Keywords:** Syntax; Utility—Programming; Grammar

Abstract: SYNTAX is useful in defining programming languages. It analyzes the grammar of a language and determines if it is a simple precedence grammar. It lists the productions and symbols of the grammar and any identical right parts and any symbol pairs with multiple relations. It then lists the precedence matrix and produces a binary copy.

DEC-20 Review Note: See 20-61.

No Documentation Available.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

META2, Version: 2, December 1973 10-186

Author: Michael Green, Digital Equipment Corp., Maynard, MA

Submitted by: W. D. Wagers

Revised by: Michael Green

Source Language: META2 **Keywords:** META2; Compiler-Writer

Abstract: META2 is a compiler writer. It was used to write ALGOLW (DECUS No. 10-133) but is sufficiently general purpose to write other languages for the DECsystem-10. The compiler is defined by a series of specifications input to META2. META2 is written in itself, and is easily modified.

DEC-20 Review Note: See 20-62.

No Documentation Available.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

Asynchronous Communications Subroutines with Error Detection and Correction, Version: 1, April 1973 10-187

Author: Peter M. Hurley, Digital Equipment Corp., Maynard, MA

Source Language: MACRO, FORTRAN **Special Hardware Required:** DC-10, or DC-68 **Keywords:** Communications; Utility—COBOL; Utility—FORTRAN; Dial-Out-Transmission

Abstract: The asynchronous communications package contains five subroutines callable either from COBOL programs or from FORTRAN programs. These subroutines allow the user to initialize a TTY line for communications with another computer, place a call out on that line to the other computer (if dial out hardware exists for that line), initiate the counterpart communications job in the other computer, then send and receive data to and from the other computer with complete error detection and error correction, and finally disconnect the communications line at the termination of the data transfer.

DEC-20 Review Note: See 20-63.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

Z: The Job Status Cusp, Version: 1, October 1973 10-188

Author: Will Wagers, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Memory Required:** 2K Core **Keywords:** Utility; Job-Status

Abstract: Z, the job status CUSP, is used to obtain a job's privileges, disk priority, and priority queue as defined in the running monitor.

Restrictions: No command options exist at this time.

Note: Loading Instructions:

.LOAD Z.MAC

.SSSAVE

Operating Instructions:

.RUN Z

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

No Documentation Available.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

MAFIA: Magnetic Filer Advanced, Version: 1, March 1973 10-189

Author: M. Richter, Technical Univ. of Munich, Germany

Submitted by: Stephen F. Clouthier

Source Language: MACRO **Special Hardware Required:** 5 Series Monitor **Keywords:** Utility—Magtape

Abstract: MAFIA is a program that transfers data files in much the same manner as PIP. The advantage over PIP is that MAFIA treats the magnetic tapes as directory devices which have the capability to handle up to 500 files per directory. This feature makes the transfer to or from magnetic tapes a very simple procedure.

Restrictions: DOC file is written in German.

DEC-20 Review Note: See 20-64.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

BATTLESHIP, Version: 2, January 1974 10-190

Author: David Dyer, Immaculate Heart College, Los Angeles, CA, E.G.&G., Las Vegas, NV

Revised by: Ed Mason

Source Language: Standard BASIC **Keywords:** Games; Battleship

Abstract: Plays the game of battleship on a 10 × 10 matrix. As programmed the game is similar but not identical to commercially marketed versions.

DEC-20 Review Note: See 20-65.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

DECtape Accounting and Handling, Version: 1, March 1973 10-191

Author: L. K. Salmonson, Sally Browning, Univ. of Oregon, Eugene, OR

Source Language: MACRO-10 **Memory Required:** 2K Core Low Segment **Keywords:** Utility—DECtape; DECtape-Accounting

Abstract: Program written to facilitate the rental or purchase of DECtapes. It provides protection codes for DECtapes identical to disk file protection scheme and makes accounting file entries for rental charges.

DEC-20 Review Note: DECtapes not supported on a "20." Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-4

***1 (Star One), Version: 1, March 1973 10-193**

Author: Richard A. Stone, Western Electric, Princeton, NJ

Source Language: SNOBOL 4 **Memory Required:** 15 + 10K Core **Special Hardware Required:** PDP-10 or PDP-11, or 5/360/370 **Other Software Required:** SITBOL **Keywords:** Star-One; List-Processing

Abstract: *n is a highly efficient list processing language which will run on a variety of small and large computers. It can be interfaced with standard programming languages to add smaller, faster list processing subroutines to a program. *n is a version of *1 (descendant of L6).

Restrictions: Partially restricted subset of *1.

DEC-20 Review Note: See 20-66.

Media (Service Charge Code): Manual (EC), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

GRAFITI: Interactive Program for Plot Generation, Version: 1, May 1973 10-195

Author: Marjorie Odle, Brookings Inst., Washington, DC

Source Language: MACRO **Memory Required:** 21K Core **Special Hardware Required:** CALCOMP 565 Plotter **Keywords:** Plotting; Graphing

Abstract: GRAFITI is an interactive program to generate time series plots, multiple line plots, and scatter diagrams on the CalComp plotter. It accepts input from three sources: a PLANETS data bank, a binary data file with data by observation, and the user's teletype. GRAFITI prompts the user for all needed information.

Restrictions: Includes an option to read a PLANETS data bank, data which is generated using a proprietary Brookings program; Brookings plotter does 100 increments per inch (hardware and software controlled.)

DEC-20 Review Note: FORTRAN calling conventions are wrong; on source file (XFILE) is missing and the corresponding .REL file was compiled with F40. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

MTFILE, Version: 1, December 1974 10-196

Author: Richard N. Freedman, First Data Corp., Waltham, MA

Source Language: MACRO **Keywords:** Utility—Magtape

Abstract: MTFILE is a utility program to utilize magnetic tapes like DECtapes for backup storage, designed to give most of the conveniences of a directory device to magtapes. It is used like PIP, except that additional bookkeeping is performed for magtapes.

DEC-20 Review Note: Specific to TOPS-10 (in internal symbols used by program). Considerable conversion effort required. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

FILTER, Version: 1, July 1973 10-197

Author: Fred Smith, Digital Equipment Corp., Maynard, MA

Source Language: COBOL, MACRO-10 **Memory Required:** 10K Core **Other Software Required:** LIBOL **Keywords:** COBOL—Filter; Filter—COBOL

Abstract: FILTER is a generalized COBOL filter program designed to convert COBOL programs to DECsystem-10 format. It assumes the original source program is on disk in ASCII mode with sequence numbers. The program creates a new source program with no sequence numbers unless requested. All files will have standard labels and be assigned to logical devices. Other incompatibilities will be changed and/or flagged.

DEC-20 Review Note: See 20-67.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-2

IMP72 Compiler, Version: 1.5, October 1973 10-198

Author: Walter Bilofsky, Bolt Beranek and Newman, Inc., Cambridge, MA

Submitted by: Sonya Shapiro

Revised by: Walter Bilofsky

Source Language: IMP72 **Memory Required:** 37K User Core **Special Hardware Required:** V5.06 Monitor, TENEX **Keywords:** IMP; System-Programming

Abstract: IMP, a simple higher-level language intended primarily for system programming, is meant to provide language facilities roughly at the level of FORTRAN II yet allow the programmer the flexibility of machine language programming including use of all the machine's registers and instructions and arbitrary control of the program and data areas while the program is running. IMP72 provides the following facilities:

1. Extensibility—user may specify extensions to syntax and semantics in forms ranging from simple 'macros' to productions which generate calls to compiler code-generating routines. More efficient object code may easily be specified for special cases.

2. Floating point capabilities—a real data type and floating point arithmetic are provided.

3. Byte manipulation capability.

4. No reserved words in the syntax.

5. Syntactic error correction, admissibility of ambiguous syntax, and improved diagnostics.

DEC-20 Review Note: See 20-68.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EB), DECtape (HA), 600' Magtape (MA) or order 10-LIB-3

COFUP: Core File Utility Program, Version: 1, October 1973 10-199

Author: William D. Wagers, Rapidata, Fairfield, NJ

Source Language: MACRO-10 **Memory Required:** 3 plus 1 P Storage **Other Software Required:** HELPER.REL **Keywords:** Utility

Abstract: This program is designed to allow the knowledgeable user or

system programmer to examine and modify temporary incore files via the TMPCOR UCO.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-3

VTED and RTRANS: Display Editor and Runoff Translator, Version: 1, August 1973 10-200

Author: Peter M. Hurley, Digital Equipment Corp., Maynard, MA

Source Language: MACRO-10 **Memory Required:** 2K Core **Keywords:** Editor-Display

Abstract: VTED is a very basic editor for use on any keyboard display terminal. It has only seven special function keys which are used for editing: cursor-up, cursor-down, cursor-right, cursor-left, rubout, EOL, and EOS. The philosophy of this editor is simple: what you see is what you get! In other words, whatever appears on the display screen is what is in your file. For instance, there are never any extraneous characters on the screen such as backslashes or the echoes of rubbed out characters. When a rubout is hit, the cursor backs up over the last character typed and deletes it. If the cursor is at the beginning of a line and a rubout is typed, then the <CR> is deleted from the file and the cursor is placed at the end of the previous line. RTRANS is a program that was developed to accept a text file and add the necessary RUNOFF commands to it such that if the resultant file is passed through RUNOFF it will be justified.

DEC-20 Review Note: See 20-69.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-3

LOST, Version: 1, November 1973 10-201

Author: Mrs. Anne Lane, Univ. of Essex, United Kingdom

Source Language: MACRO-10 **Memory Required:** 48K Core **Special Hardware Required:** RD10 Spooled Line Printer **Keywords:** Utility—Disk

Abstract: This program locates and reports on all lost, free and multiply defined clusters on a structure, and, if required, rewrites the SAT blocks to give a 'clean' structure.

Restrictions: Structure must not be in too bad a state before starting.

Note: Storage requirement—3K of code plus data dependent on level of SFD nesting and size and number of SAT tables. Tested on 506 or later.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-3

MANTIS, Version: 5, June 1975 10-202

Author: Loren Salmonson, Univ. of Oregon, Eugene, OR

Submitted by: Gordon P. Ashby

Revised by: Loren Salmonson

Source Language: MACRO-10 **Memory Required:** 2 + 3K Over, Same as FOROTS **Other Software Required:** Loader, F40 Compiler, FOROTS Runtime Sys., COMPIL Concise, Command Processor **Keywords:** MANTIS; Debugging—FORTRAN

Abstract: MANTIS is an interactive FORTRAN debugger with a comprehensive language at the FORTRAN source level. Breaks may be set in programs, the values of variables and arguments displayed or changed, execution may be interrupted and resumed, subscript checking for particular arrays or statements or for whole programs may be initiated, breaks may be set on attempts to assign new values to a variable or array, and each exception to sequential execution can be noted. Many debugging commands may be in effect at the same time. No extra knowledge of PDP-10 organization is required of the user and he does not need to supply the debugger program with any information about his program or variables. He need not include any extra statements in his program. Programs, variables and statements are referenced using the names and labels used in the original program. MANTIS is invoked by the DEBUG concise command. It oversees the same object code as executes normally. It does not interpretively execute the object code. Object, source, user manual, and HELP files, flowcharts and a program logic manual are all on 3 DECtapes. No source changes have been made to the FOROTS system or library.

Note: A character in the source file (MANTS.MAC) is in error. The instruction after label SQZIN reads:

CAIN V,"" ; IS CHAR A DOT?

but should read:

CAIN V,"%" ; IS CHAR A DOT (signified by %)

On page 7 of file MANTS5.RND the phrase should read as follows:
Alternatively, the variable

'ERRMX%' may be given in a display...

DEC-20 Review Note: Specific to TOPS-10 (F40 compiler). Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HC), 600' Magtape (MA) or order 10-LIB-3

GUNNER, Version: 1, January 1974 10-203

Author: Kenneth A. Ascher, Eastern Michigan Univ., Ypsilanti, MI
Source Language: BASIC **Keywords:** Games; GUNNER

Abstract: The program GUNNER generates a game of target practice, where the user tries to destroy a stationary target. The target will then shoot back, trying to destroy the user. This program will help the user learn the relationships of varying an angle with respect to the base line. In addition, GUNNER is an excellent introduction to the BASIC language since it requires much participation with the user making it highly interactive.

DEC-20 Review Note: See 20-70.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-3

OPR, Version: 2, June 1978 10-204

Revised by: Doug Rayner, Tufts Univ., Medford, MA
Source Language: MACRO **Memory Required:** 3 + 11P **Keywords:** Utility—Operator; OPR; DAEMON; SYSTAT

Abstract: OPR provides the DECsystem-10 Operator or System Manager with the facility to attach a job to any terminal; stop, continue, logout, or put a time limit on a job; purge all detached jobs from the system; free user assigned devices; change a job's privileges; using a detached DAEMON-like job, collect system statistics, watch file structure free space, perform certain time dependent tasks defined in a script file. Any user can use OPR to locate a device; get system and job class statistics; get SYSTAT-like information on a selection of jobs based on such things as program name, terminal number, node number, user name, etc.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-3

OPEN.MAC, Version: 1, January 1974 10-205

Author: Irwin L. Goverman, Brandeis Univ., Waltham, MA
Source Language: MACRO-10 **Memory Required:** 231 (Base 8) Word Storage **Other Software Required:** F40 Compiler, FOROTS OTS **Keywords:** Utility—FORTRAN

Abstract: OPEN.MAC is a FORTRAN-callable subroutine which enables users of the F40 compiler to use the facilities of the F10 OPEN statement. In place of the OPEN statement, the user includes a call to OPEN. The OPEN subroutine takes any number of arguments in the form of argument name, argument value. The subroutine takes these argument pairs and converts them into a form recognizable by FOROTS. A call to the high segment is then made and the open is performed. OPEN must be loaded with the user program. Complete explanations of usage, argument names and several examples are included in the source listing.

DEC-20 Review Note: Specific to TOPS-10 (F40 compiler) and functionality is readily available in FORTRAN-20. Not part of the "20" Library.

No Documentation Available.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-3

BAKWDS, Version: 1, February 1973 10-206

Author: Digital Equipment Corp.
Submitted by: H. P. Weiss
Source Language: MACRO-10 **Keywords:** Utility—Conversion; Utility—FORTRAN

Abstract: BAKWDS is a fall-back conversion aid which converts binary data files output by FOROTS to a form which is readable by FORSE. This program was formerly distributed by DEC. It has been submitted to DECUS for users who need it or will continue to use it.

To use BAKWDS, type: R BAKWDS OUT, FIL-IN, FIL/K
DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

No Documentation Available.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-3

EYES: A Program to Convert an ASCII File to Braille, Version: 1, January 1974 10-207

Author: Edward Dirling, Univ. of Pittsburgh, Pittsburgh, PA
Submitted by: Edward Jankowski
Source Language: MACRO-10 **Memory Required:** 1K Core **Special Hardware Required:** 56A.13 Operating Sys. **Keywords:** EYES; Braille

Abstract: EYES is a nonsharable program which runs in 1K of core, designed to run on the DECsystem-10. The program can input ASCII files and convert them to braille. This is done by creating an LPT file consisting of blanks and periods in the appropriate positions to construct the braille cells for each character in each line. This file can then be queued to a specially prepared printer. The program can convert any type of ASCII file including source and data files, LST files, HLP files and LOG files, and can be run in either timesharing or batch mode.

DEC-20 Review Note: See 20-71.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-3

SCAT2: Standard Complex Algebra, Version: 1, March 1974 10-208

Author: C. J. Andrews, Univ. of Queensland, Australia
Source Language: MACRO-10 **Memory Required:** 2 + 2K Core **Keywords:** Algebra; Complex-Arithmetic

Abstract: SCAT2 is designed particularly for those who make many repetitive calculations using complex numbers, for instance: in electrical circuit theory, and in antenna, transmission line, and waveguide theory. Such calculations are tedious to perform, and subject to error. SCAT2 enables the user to operate the computer as a sophisticated desk calculator with predefined functions.

Restrictions: The unary minus operator is not permitted.

DEC-20 Review Note: See 20-72.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-3

RANDU, Version: 1, March 1974 10-209

Author: Art Retti, Digital Equipment Corp., Switzerland
Source Language: FORTRAN **Keywords:** Probability; Random Numbers

Abstract: RANDU computes uniformly distributed random real numbers between 0 and 1.0 and random integers between zero and 2**35. Each entry uses as input an integer random number and produces a new integer and real random number. This is a modified version of the RANDU file on the obsolete FORTRAN Scientific Subroutine Package (DECUS No. 10-35). The previous version was specific to the IBM 360. This version is specific to the DECsystem-10.

DEC-20 Review Note: See 20-73.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-3

UCI—LISP, Version: 1, March 1975 10-210

Author: Univ. of California, Irvine
Source Language: MACRO-10 **Keywords:** LISP; UCI-LISP; List-Processing

Abstract: This is U.C.I.'s version of LISP. The DECUS write-up is composed of random notes concerning the system. The UCI LISP manual is in the "DOC" file on the tape, in upper case. It is also available in much more readable upper and lower case directly from the Department of Information and Computer Science at the University of California, Irvine.

DEC-20 Review Note: LISP program fails in execution. While looking for LISP.HGH—appears to be a readily correctable error, but with other versions of LISP available, this version would likely not be of great value. Not part of "20" Library.

Media (Service Charge Code): Write-Up (AA), 2400' Magtape (PA) or order 10-LIB-4

GNOSIS: A System for Computer Aided Instruction, Version: 2, June 1978 10-211

Author: Jacob Palme and Dr. Walter Maner, Research Inst. of National Defense, Sweden, and Old Dominion University, Virginia.

Source Language: ALGOL **Memory Required:** 32 + 22P Storage **Other Software Required:** ALGOL, 6.03 (KL + VM) **Keywords:** GNOSIS; CAI; instruction; Teaching; Education; Computer; Learning; School; Pedagogy; Pedagogics; ALGOL; SIMULA

Abstract: Though compatibility has been preserved with the first release of GNOSIS, Release 2 represents not merely a software update, but a complete *re-authoring* of GNOSIS from beginning to end.

GNOSIS provides a CAI authoring language which makes it relatively easy for any teacher with a basic understanding of "programmed" textbooks to develop computerized tutorials for his students. Although material already written in such a format can be transformed virtually as-is by GNOSIS into a form suitable for computer delivery, the teacher would normally be writing his own "script". This script, because it simulates the dialogue one might overhear if that teacher were tutoring a student in private, can be made to "come to life" on a computer terminal by the addition of a few simple GNOSIS command words. The computer-driven tutorial is, in reality, a compiled version of the ALGOL program GNOSIS writes in response to the script prepared by the teacher. In fact, GNOSIS can be designed in such a way that *any* of the facilities of ALGOL can be exploited anywhere in the lesson.

The fact that GNOSIS has been designed to function as a *teaching* rather than as a *testing* system is reflected in program logic at all levels. In accord with this design philosophy, GNOSIS tempers negative and positive feedback according to psychological context, simulates a correct response (and the comment which would have accompanied it) when all else fails, encourages student control through skipping and backstepping facilities, and generates teacher reports which are geared to lesson improvement.

Note: The documentation that is on magnetic media is not as up-to-date as what is available in hardcopy. However, the machine readable version will suffice.

DEC-20 Review Note: See 20-74.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EC), 600' Magtape (MA) or order 10-LIB-4

SPPLT and SPTEK: Hybrid Orbital Contour Plotting Program, Version: 1, June 1973 10-212

Author: James S. Evans and Stephen L. Holmgren, Lawrence Univ., Appleton, WI

Source Language: BASIC **Special Hardware Required:** TSP-212 Plotting Sys., TSP-12 Plotter Ctrl., and X-Y Recorder, Tektronix 4010, Graphics Terminal **Keywords:** Chemistry—Quantum; CAI; Plotting

Abstract: These interactive BASIC programs can familiarize the user with the true shapes of hybrid orbitals of the sp family, the programs allow him to create and plot hybrid orbitals ranging from a pure 2p orbital to one having almost pure 2s character; he can also vary the effective nuclear charge and the specific contour values to study their effect on orbital shapes and bond properties in molecules. Other options enable him to perform several geometric operations—rotation, translation, scaling—without having to generate new data. Each program comprises approximately 500 lines of BASIC code and occupies 27 blocks on DECtape or the PDP-10 disk. SPPLT and SPTEK are operationally identical except that SPPLT operates in conjunction with a TSP-12 plotter controller, while SPTEK operates with a Tektronix 4010 graphics terminal.

A. Plotting resolution is only 1:256 because certain characters cannot be obtained with CHR\$ function in PDP-10 BASIC, Version 17.

B. Viewing screen becomes cluttered with overlapping user dialog.

DEC-20 Review Note: See 20-75.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-4

BLISS-11, Version: 1, February 1975 10-213

Author: Dr. Wulf, Bruce W. Leverett, et al, Carnegie-Mellon, Pittsburgh, PA

Submitted by: Stephen Lieman

Source Language: BLISS-10 **Special Hardware Required:** See note. **Other Software Required:** Suitable for TENEX Operating Sys., PA1050 **Keywords:** BLISS-11

Abstract: BLISS-11 is a language specifically designed for writing software systems such as interface handlers, compilers, and operating systems for the PDP-11. It is very similar to BLISS-10 in design—programs can be written so as to be compatible with both languages with only slight

changes, and so testable on both the PDP-10 and the PDP-11. This compiler produces as output a text file suitable for input to MACRO-11.

2. 35-55K "normal" usage requires 45-55K, large input files may require more than 55K.

Note: 1. TOPS-10; a version suitable for TENEX operating systems with PA1050 emulators can be generated.

DEC-20 Review Note: Converted .EXE files did not run. Recompilation of sources gave numerous errors. Not part of the "20" Library.

Media (Service Charge Code): Manual (EC), DECtape (HE), 600' Magtape (MA) or order 10-LIB-4

ABACUS: Advanced Bowdoin Arithmetic Calculator Utility System, Version: 1, April 1974 10-214

Author: William E. Severance, Jr., Bowdoin College, Brunswick, ME

Source Language: MACRO-10 **Memory Required:** 1K User, 4K SHAR Seg. **Other Software Required:** 504B Monitor **Keywords:** Calculator

Abstract: ABACUS (for Advanced Bowdoin Arithmetic Calculator Utility System) provides the user with a quick and easily learned calculation service. In addition to responding to commands and mathematical expressions entered on the teletype as a simple desk calculator, ABACUS provides all the commonly used functions (sin, cos, etc.) and further allows the definition and retention for later use of frequently used functions and variables. Each statement is carefully checked by ABACUS' interpreter to provide the user with an informative error message should mistakes in typing or syntax be found.

DEC-20 Review Note: See 20-76.

Media (Service Charge Code): Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-4

DFCODE: DECtape File Protection Program, Version: 1, June 1974 10-217

Author: Robert J. Frohreich, Stevens Inst. of Technology, Hoboken, NJ

Source Language: MACRO-10 **Memory Required:** 1K Core, High, 1K Low or 2K Low **Other Software Required:** Monitor Series-5, Version 506B(7) **Keywords:** Utility—DECtape; Security—DECtape

Abstract: DFCODE is a PDP-10 program to code or decode DECtape files, in such a way as to make them unrecognizable to anyone but the owner. Since normal monitor protection can be bypassed, and is installation dependent, a better protection scheme is frequently advantageous. The program writes coded copies of files from any device, to a "storage" DECtape, and writes decoded copies of coded files from a DECtape to any other device. Although the peripheral device on which the uncoded file resides, or is to reside, may be any device, it is usually disk.

DEC-20 Review Note: DECtapes not supported on a "20." Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-4

PALDIS: PDP-10 Disassembler for PDP-8 Binary Files, Version: 1, June 1974 10-218

Author: Mark R. Crispin, Stevens Inst. of Technology, Hoboken, NJ

Source Language: MACRO-10 **Memory Required:** 1K Core for KA10, 1P for K110 **Special Hardware Required:** High Speed PTR **Keywords:** PDP-8

Abstract: PALDIS is intended primarily to make patching of PDP-8 programs simple and fast (generally program does not get swapped out). One loads the PDP-8 binary tape to PALDIS through the high speed PTR, runs PALDIS, and gets an octal listing. One can then TECO the patch in, reassemble, and punch the program.

DEC-20 Review Note: Papertape not supported on a "20." Not part of the "20" Library.

Media (Service Charge Code): Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-4

Checking Account Balancer, Version: 1, June 1974 10-219

Author: Michael Mitchell, Digital Equipment Corp., Maynard, MA **Source Language:** FOCAL **Memory Required:** 8K Core **Keywords:** Checking-Account

Abstract: This program allows a user to balance a checking account. Three summaries are possible:

1. Quick summary is essentially a bank statement of the account. It includes a breakdown of number and amount of each entry.
 2. Normal summary includes quick summary and a listing of what checkbook should look like.

3. Extended summary incorporates both of the above. It also allows the user to categorize his expenses for that month.

DEC-20 Review Note: Program not tested due to lack of working FOCAL at time of evaluation. Not part of the "20" Library.

Media (Service Charge Code): Write-Up (AA), DECTape (HA), 600' Magtape (MA) or order 10-LIB-4

TOPSTEACH: A Computer-Assisted Course on the Use of the DECsystem-10, Version: 2, July 1978 10-220

Revised by: Jacob Palme, Bo Tarras Wahlber, Martin Nilsson, Swedish National Defense Research Institute, Sweden.

Source Language: GNOSIS **Keywords:** TOPSTEACH; CAI; DECsystem-10—Intro.

Abstract: This course is intended for students with little or no knowledge about the DEC 10 operating system TOPS 10. The course will give you enough knowledge to be able to use the DEC 10, except that programming in a programming language is not included in the course.

You take the course sitting at a terminal to a DEC 10 computer. The course is a set of lesson programs which communicate with you. You are given facts and then asked questions. The computer will check your answers and explain things which you may have misunderstood.

Note: The complete GNOSIS program (DECUS No. 10-211) is not included with this program, only the files necessary to modify the lessons and to compile.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), Manual (EB), 600' Magtape (MA) or order 10-LIB-4

NMRSIM and TTYOPS: NMR Simulation and Plotting Program, Version: 1, August 1974 10-221

Author: James S. Evans, Lawrence Univ., Appleton, WI

Source Language: FORTRAN, MACRO-10 **Memory Required:** 12K Word Storage **Special Hardware Required:** TSP-12 Plotter Controller with X-Y Recorder **Other Software Required:** PDP-10 FORTRAN, Library **Keywords:** Chemistry—NMR; NMR-Simulation; NMR-Plotting

Abstract: The program NMRSIM can assist an experimenter in his analysis and interpretation of an NMR spectrum by computing simulated spectra using hypothesized values of the phenomenological parameters, i.e. coupling constants, chemical shifts, RF power, and relaxation times. Since the program can compute the separate but related resonance spectra for nuclei having different spins in the same molecule, it should be helpful in studies with partially deuterated compounds. Because of the interactive nature of the program, graduate students or advanced undergraduates may find it valuable for autotutorial instruction in the analysis of NMR spectra of model spin systems in conjunction with a faculty adviser and a good text. This program is designed specifically for a timesharing computer system.

Note: Listing is part of manual.

DEC-20 Review Note: See 20-77.

Media (Service Charge Code): Manual (EB), DECTape (HA), 600' Magtape (MA) or order 10-LIB-4

FFT.MAC: RADIX Two Fast Fourier Transform Subroutine, Version: 1, September 1977 10-222

Author: A. R. Baldock, Univ. of Western Australia, Australia

Source Language: MACRO-10 **Keywords:** Cooley-Tukey; FFT; Fourier-Transforms

Abstract: This subroutine performs a discrete Fourier transform on a data vector. The transform may be either forward or inverse and both the input and output are assumed to be complex numbers. The output is laid over the input as the transform is done "in place"; the original data is destroyed. The algorithm is a radix 2 "Cooley-Tukey Fast Fourier Transform."

DEC-20 Review Note: Source file was garbled and unusable. Not part of the "20" Library.

Media (Service Charge Code): Write-Up and Listing (DA), DECTape (HA), 600' Magtape (MA) or order 10-LIB-4

SIMULA for DECsystem-10 KA/KI/KL and DECsystem-20, Version: 4A (310), August 1978 10-223

Author: Swedish National Defense Research Institute, Sweden

Submitted by: H. David Todd, Wesleyan University, Middletown, CT

Revised by: Lars Enderin, Swedish National Defense Research Inst., and Wayne M. Brehaut, Acadia University, Wolfville, N.S. Canada BOP 1X0

Operating System: TOPS-10 V5.00 upwards; TOPS-20 V1B upwards **Memory Required:** (for KI/KL, DEC-20) 25K, (for KA) 32K to use, 64K to build **Keywords:** SIMULA; ALGOL; Programming-Language; Utility; SAFEIO; SIMDBM

Abstract: SIMULA is a general-purpose high-level programming language comparable in power to PL/I or ALGOL 68. SIMULA is based on ALGOL 60 with the addition of record-oriented dynamic memory allocation, reference (pointer) structures, sets and queues, test-and-character handling, sequential and direct access input-output, quasi-parallel sequencing (coroutines) and process (event) oriented simulation capabilities. Well adapted to structured programming methodology, SIMULA will often considerably reduce programming time compared to conventional languages like FORTRAN, COBOL or PL/I. SIMULA on the DECsystem-10 contains two major additions to the SIMULA language: a system for separately compiled program modules in SIMULA, FORTRAN or MACRO-10 and a powerful on-line debugging system, SIMDDT. SIMULA compiles at half the speed of the DECsystem-10 ALGOL compiler. The CPU time when running SIMULA programs is about the same as for ALGOL, faster for input-output and text string handling, slower for stack-oriented memory allocation.

This package also contains SAFEIO (V. August 1978) which is a package to enable safe question-and-answer dialogue with a conversation terminal.

Also contained is SIMDBM (V.1, January 1978) which is a data base handling system based on the ideas in the CODASYL DBTG proposal, but written entirely in SIMULA for the use by SIMULA programs. No built-in facilities exist for privacy constraints or for solving multiterminal access conflicts.

- Documentation for SAFEIO and SIMDBM are on magnetic media.

- KA-10 users, the manuals listed also apply to the KA version of SIMULA. The only difference is that on the KA-10 the precision of long arithmetic is 54 bits, compared to 62 bits on the KI-10; consequently, page 89 of part II of the revised handbook, lines 6-8, should read: "The fractional part has a range in magnitude of $1/2$ to $(1-2^{-52})$ with a precision of approximately 16 decimal digits."

Order 10-223B for Part I of the Language Handbook: Manual (ED), also on tape.

Order 10-223C for Part II of the Language Handbook: Manual (ED), also on tape.

Order 10-223D for Part III of the Language Handbook: Manual (EC), also on tape.

Order 10-223E for the Implementation Guide: Manual (EA), also on tape.

Order 10-223Z for the SIMDBM and SAFEIO write-up: Write-Up (AA), also on tape.

Restrictions: A TOPS-20 version is contained but is insufficiently tested, users are warned it may not work at all. Only those prepared to attempt correction of any errors on their own should use the tape.

Note: One copy of 10-223E will be shipped automatically with all magtape requests.

DEC-20 Review Note: See 20-78.

Ordering Information: Order 10-223 for 2400' Magtape (PA)

Documentation on magnetic media.

Media (Service Charge Code): See Ordering Information listed above, or order 10-LIB-5

SPICE V2G.5, Version: V2G.5, September 1981 10-224

Author: Richard Newton, University of California at Berkeley, Berkeley, CA

Submitted by: Dee Ramee, Digital Equipment Corporation, Marlboro, MA

Operating System: TOPS-10, TOPS-20 **Source Language:** FORTRAN IV, MACRO-10 **Memory Required:** 256K **Keywords:** Simulation; Non-linear; Linear

Abstract: Spice is a general-purpose circuit simulation program for nonlinear dc, nonlinear transient, and linear ac analysis. Circuits may contain resistors, capacitors, inductors, mutual inductors, independent voltage and current sources, four types of dependent sources, transmission lines, and the four most common semiconductor devices: diodes, BJTs, JFETs and MOSFETs.

Restrictions: Requires FORTRAN V6 on TOPS-20. U.S. Government export regulations prohibit distribution of this program outside the United States without appropriate export licenses.

Note: TOPS-20 sites should order 20-79.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EB), 600' Magtape (MA) or order 10-LIB-4

POET, Version: 1, December 1974 10-225

Author: Richard N. Freedman, First Data Corp., Waltham, MA
Source Language: MACRO **Special Hardware Required:** 506A **Other Software Required:** C, SCNMAC, SCAN, WILD **Keywords:** UTILITY—Disk

Abstract: POET is a program for setting a version number in the extended lookup block of a file. Version numbers can be specified as a number or as the name of a file to be read to obtain a version number. A short HLP text is included.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

No Documentation Available.

Media (Service Charge Code): DECTape (HA), 600' Magtape (MA) or order 10-LIB-4

AVAIL, Version: 1, December 1974 10-226

Author: Pete Schilling, Aluminum Co. of America, Alcoa Center, PA
Source Language: FORTRAN **Memory Required:** 5K Core **Special Hardware Required:** FOROTS **Other Software Required:** FORTRAN-10 **Keywords:** Help

Abstract: A question which is frequently asked by computer users is, "Do you have a program which . . ." A good answer to this question is, "Ask the computer. Type .HELP AVAIL." File AVAIL.HLP tells the user how to obtain a complete list of programs and descriptions, and how to use program AVAIL to obtain information on programs to perform functions which the user specifies. A list and index of most of the DECUS library, including the IBM Scientific Subroutine Package, are contained in files PROGMS.ALL and PROGMS.IDX.

DEC-20 Review Note: See 20-80.

Media (Service Charge Code): Write-Up (AA), DECTape (HA), 600' Magtape (MA) or order 10-LIB-4

Utility: Utility Programs for Commercial Users, Version: 1, January 1975 10-227

Author: Fred Smith, Digital Equipment Corp., Marlboro, MA
Source Language: MACRO, BASIC, COBOL **Keywords:** Utility—COBOL: Commercial

Abstract: A utility package for commercial users of the DECsystem-10. It contains routines for data conversion and program conversion. Also included are miscellaneous routines such as an MPB stream generator, a catalog routine, routines for communication to and from terminals, etc.

DEC-20 Review Note: See 20-81.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), 600' Magtape (MA) or order 10-LIB-4

CALCOMP Plotter Package, Version: 2, July 1975 10-228

Author: Harold V. McIntosh, National Inst. of Nuclear Energy, Mexico
Revised by: Harold V. McIntosh

Source Language: FORTRAN **Memory Required:** 22K Core **Special Hardware Required:** CALCOMP Model 565, Drum Plotter (11"), 100 × 100 Data Arrays **Other Software Required:** LIB40 Plotter Subroutine **Keywords:** Plotting; Graphing

Abstract: PLOT is a collection of PDP-10 FORTRAN subroutines for the CALCOMP Model 565 eleven inch incremental drum plotter. Other models may be used by modifying scale factors. The programs use the LIB40 plotter control subroutines PLOT, PLOTS, NUMBER and SYMBOL. The collection contains subroutines for two dimensional graphs, contour plots, and perspective views of three dimensional surfaces with hidden line suppressed in several coordinate systems—Cartesian, plane polar, plane elliptical, triangular and spherical polar coordinates. Demonstration programs are available, described in a booklet, a partial help file, and a demonstration file DEM13.

Restrictions: Minor flaws; user should study program before use.

DEC-20 Review Note: See 20-82.

Documentation on magnetic media.

Media (Service Charge Code): DECTape (HA), 600' Magtape (MA) or order 10-LIB-4

ASTRO.F4: Multi-Purpose Astrology Program, Version: November 1975 10-229

Author: Houston P. Lowry, Pitzer College, Claremont, CA
Revised by: Houston P. Lowry
Source Language: FORTRAN IV **Special Hardware Required:** 21 + FOROTS **Other Software Required:** FORTRAN IV Compiler **Keywords:** Astrology

Abstract: The program ASTRO is designed to cast astrology charts, make progressions and to make ephemerises, without technical knowledge by the layman. It can use any one of 8 house systems, computing all angles between planets. The output can be made either over the TTY or the LPT (lineprinter). It is easy to use, being extremely flexible in regard to date measuring systems. Although it does not make predictions and interpretations, it is an interesting demonstration program.

DEC-20 Review Note: See 20-83.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), DECTape (HA), 600' Magtape (MA) or order 10-LIB-4

Interprocessor Communications over an Asynchronous Line, Version: 1, August 1974 10-230

Author: Richard Palm and Thomas Richburg, Digital Equipment Corp., Syracuse, NY
Source Language: MACRO-10 **Special Hardware Required:** Asynchronous Communications HDW. **Keywords:** Communications; PDP-11-Communications

Abstract: This package is a modification of the asynchronous communications subroutines with error detection and correction (DECUS No. 10-187). The subroutines allow the initialization of a TTY line for interprocessor communications, the sending and receiving of data messages, and the disconnection of the line at the completion of the data transfer. This version of these routines uses the latest FORTRAN and COBOL calling conventions, keeps statistics on their own operation, and generally makes the subroutines more suitable for production usage. All of the modifications are described in the documentation. In addition, a sample of a compatible routine for a PDP-11 is included.

DEC-20 Review Note: See 20-84.

Media (Service Charge Code): Manual (EC), DECTape (HA), 600' Magtape (MA) or order 10-LIB-4

TULIP: The UUO/LEXINT I/O Package, Version: 1, March 1975 10-231

Author: Edward Taft, Xerox Palo Alto Research Ctr.
Submitted by: Eric Werme

Source Language: MACRO-10 **Memory Required:** 1K Core **Other Software Required:** C.MAC **Keywords:** Utility—MACRO; MACRO-10-IO

Abstract: This package is a must for anyone tired of doing IO from MACRO-10 programs. By using the LUUO'S (OPCODES 1-37) TULIP achieves a conciseness impossible with any other mechanism. Instructions range from write character immediate (e.g. WCHI"***") to numeric output and formatted IO that includes some features not found in FORTRAN. IO error trap to the user's program if desired, and LUUOS are available to print from a comprehensive error message list. Despite all this, TULIP places no restrictions on what the user is allowed to do on his own. Also included is a small lexical interpreter that makes for simple parsing of file names, command strings, and is currently being used to parse assembler source files. Documentation on DECTape is extensive and is in 3 sections: a large primer, four sample programs described by the primer and a reference manual.

DEC-20 Review Note: Numerous compilation errors. Functionality available in TOPS-20 JSYS's. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECTape (HB), 600' Magtape (MA) or order 10-LIB-4

ZAP: Zoftig Alteration Program, Version: 1, April 1975 10-233**Author:** Daniel Kohanski, Rutgers Univ., New Brunswick, NJ**Submitted by:** Eric Werme**Source Language:** MACRO-10 **Memory Required:** 5K Core **Keywords:** Disk

Abstract: ZAP (zoftig is Yiddish for strong) is a disk file patcher that interactively changes ASCII or binary files. Currently available data modes are octal, SIXBIT, ASCII (both character and seven bit octal), and instruction format. Examine commands range from requests to look at specific locations up to value searches through the entire file, zapping is accomplished on command or as an option to searches and uses an interactive editor meant for video terminals but may be used on hard copy. ZAP is not designed to replace or augment text editors and FILDDT. It is a specialized utility most useful when debugging programs that produce binary files and for patching clobbered files.

DEC-20 Review Note: See 20-85.*Documentation on magnetic media.***Media (Service Charge Code):** Write-Up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-4**LAN: Linear Active Network Analysis Program, Version: 1, March 1975 10-235****Author:** Duane W. Moore, Digital Equipment Corp., Portland, OR**Source Language:** BASIC **Memory Required:** 300 Disk Blocks, 27K Core **Keywords:** Linear

Abstract: LAN is an interactive problem-solving system which performs small-signal analysis of linear two-part electronic networks. Bode plots, Nyquist diagrams, and tabular reports of the solutions can be generated on the user's terminal or in a disk file for LPT output. The student or designer interacts with LAN to describe the network and its terminations, specify the frequency sweep, and select the format of the report of the solutions. Typical steady state problems include analysis of the input-output relationships of amplifier circuits using op amps, transistor, FETS, or tubes—as well as passive and active filters.

DEC-20 Review Note: See 20-87.**Media (Service Charge Code):** Manual (EC), DECtape (HB), 600' Magtape (MA) or order 10-LIB-4**FOLD, Version: 1, May 1975 10-236****Author:** Robert Wilson, Syosset High Sch., Syosset, NY**Source Language:** MACRO-10 **Memory Required:** 1 to 2K Core **Special Hardware Required:** TTY with Paper Tape Punch **Keywords:** Paper-Tape

Abstract: FOLD is a program used to output source files on paper tapes. FOLD punches places on the tape at which the tape can be folded at regular intervals. The tapes can be read back in with a text editor such as TECO. Tapes of BASIC files can be read back directly in BASIC. FOLD supplies leaders at both the beginning and at the end of the tape. The source file is unaffected.

DEC-20 Review Note: Papertapes not supported on a "20." Not part of the "20" Library.**Media (Service Charge Code):** Write-Up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-4**PILOT, Version: November 1975 10-237****Author:** Bruce Tanner, Cerritos College, Norwalk, CA**Revised by:** Bruce Tanner**Source Language:** MACRO-10 **Other Software Required:** MACRO-10V50, HELPER, MACTEN, JOBDAT **Keywords:** Instruction

Abstract: This program compiles a superset of the PILOT-73 language, used in computer aided instruction. A user's guide is included on the tape.

DEC-20 Review Note: See 20-88.*Documentation on magnetic media.***Media (Service Charge Code):** DECtape (HA), 600' Magtape (MA) or order 10-LIB-4**EXETER, Version: 1, June 1975 10-238****Author:** Kay Fisher, Digital Equipment Corp., Maynard, MA**Source Language:** COBOL **Other Software Required:** MACTEN, JOBDAT **Keywords:** Simulation; Games

Abstract: This is a simulation program designed to measure your ability to (1) utilize available resources, (2) navigate a starship, (3) engage in theoretical combat, and (4) correctly and efficiently respond to the

unknown.

Restrictions: Terminal format source program (not cards).**DEC-20 Review Note:** See 20-89.*Documentation on magnetic media.***Media (Service Charge Code):** DECtape (HA), 600' Magtape (MA) or order 10-LIB-4**RWATCH, Version: 1, April 1975 10-239****Author:** Robert Wilson, Syosset High Sch., Syosset, NY**Source Language:** MACRO-10 **Memory Required:** 5K Core **Other Software Required:** 5.06 **Keywords:** Utility—Operator

Abstract: RWATCH is a program used to watch the system. Any or all jobs logged in can be watched. These jobs can be referenced in many ways. In addition to watching jobs, RWATCH can give various system information such as LOGNUM, LOGMAX, batch info, runtimes, disk read/writes and more. RWATCH is similar to SYSTAT but will continue to watch a job or jobs, outputting any changes until told to stop. RWATCH also returns information not available from SYSTAT.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.*Documentation on magnetic media.***Media (Service Charge Code):** DECtape (HA), 600' Magtape (MA) or order 10-LIB-4**KISMET, Version: 1, May 1975 10-240****Author:** Robert Wilson, Syosset High Sch., Syosset, NY**Source Language:** MACRO-10 **Other Software Required:** 5.06, MACTEN, JOBDAT **Keywords:** Games

Abstract: KISMET is a game using dice. This game is a combination of dice and poker. The computer rolls the dice, checks for the legality of moves, keeps score, and keeps track of categories.

DEC-20 Review Note: See 20-90.*Documentation on magnetic media.***Media (Service Charge Code):** DECtape (HA), 600' Magtape (MA) or order 10-LIB-4**FORTH Programming System, Version: November 1978 10-241****Author:** H. Martin S. Ewing, California Institute of Technology, Pasadena, CA**Source Language:** MACRO-10 **Memory Required:** 4K **Keywords:** System-Programming; Data-acquisition

Abstract: FORTH is a self-contained programming system that has become popular in scientific applications requiring interactive control and data acquisition. The system supports a high-level structured language using reverse polish notation; it contains an incremental compiler, an assembler, and a text editor. Application packages include an extended text editor, floating point mathematics, and a fast Fourier transform.

A comprehensive (136 page) manual is separately available from the Caltech Bookstore. A companion PDP-11 version is available as (DECUS No. 11-232).

Restrictions: See FORTH.DOC file.

Associated Documentation: Users must obtain "Caltech Forth Manual", Second Edition, June 1978, by M. S. Ewing from Caltech Bookstore, California Institute of Technology, Pasadena, CA 91125.

Note: Major revision increasing speed and compactness.**DEC-20 Review Note:** See 20-91.*Documentation on magnetic media.***Media (Service Charge Code):** DECtape (HA), 600' Magtape (MA) or order 10-LIB-4**IOLIB, Version: 5, August 1975 10-242****Author:** Rob Cook, Latrobe Univ., Australia

Source Language: MACRO-10 **Memory Required:** 500 Words + Storage **Special Hardware Required:** 5.07/6.01 or Later **Other Software Required:** C.MAC V:7, MACRO-10 V:50+ **Keywords:** IO; MACRO; Programming-System

Abstract: IOLIB is a toolkit for writing MACRO-10 programs. It consists of a large number of subroutines that perform common tasks needed in most programs, and supporting macro and parameter definitions. IOLIB has been written to be:

- simple to use
- general and versatile
- well-structured and modular

- self-consistent
- as powerful as straight macro code
- correct and thoroughly tested
- follow DEC standards

IOLIB has been used to write both complicated systems software and quick on-off programs, and as a vehicle for teaching students to program in assembly language. IOLIB can easily be used as an I/O system by BLISS-10 programs. As suggested by its name, most of the routines in IOLIB are concerned with I/O. I/O can be performed with any file by setting up a descriptor block with the filename, and calling a routine to "transput" the data in the required format. IOLIB requires the use of its universal parameter file, IO.UNV, and of the DEC parameter file, C.UNV, for assembly of user programs. Use of their symbols and macros makes programming simpler and easier to read, and forms a useful standard for writing MACRO-10 programs.

Note: File IOLIB5.LNC, (i.e., licensing agreement).

DEC-20 Review Note: Specific to TOPS-10 and functionality reproduced in TOPS-20 JSYS's. Not part of the "20" Library.

Media (Service Charge Code): Write-up (AA), 600' Magtape (MA) or order 10-LIB-6

PIRETS, Version: 1, October 1975 10-243

Author: Daniel R. Strick, Univ. of Pittsburgh, Pittsburgh, PA
Source Language: MACRO-10 **Memory Required:** 2 + 5K Core (Sharable), 8K Core **Keywords:** Games; Star Trek

Abstract: This game is based on the television series STAR TREK. It teaches coordinating system and geometry.

DEC-20 Review Note: Uses features of the TOPS-10 monitor not available on TOPS-20. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

WGMM11: Shomer's Wargame, Testing Risk 10-244 **Taking, Version: May 1976**

Author: Houston P. Lowry, Pitzer College, Claremont, CA

Revised by: Houston P. Lowry

Source Language: FORTRAN IV **Memory Required:** 8K + FOROTS
Other Software Required: FOROTS, Version 27, FORTRAN IV
Keywords: Games; DEMO

Abstract: This program was designed according to Dr. Robert Shomer's specifications. It permits the measuring of risk taking through various parameters in a wargame situation. It will run between any two terminals, although only one need be logged in. The fast initialization routine will permit a very quick uniform start up. This can be done one of three ways, as described in the help text in the program. Otherwise an extended start up can be given allowing the user various options in the specification of initial parameters. A documentation text is included on the tape, giving the function of various variables. This will permit the user to make changes per his or her interests. The data file generated, which can be analysed with SPSS, is labeled in the program. It is written on channels four and eight, is one copy per channel. The experimenter's log is very useful, and will give no problems to anyone that has used the program more than once. When confusion exists, entries are made in the order of the questions asked each team, by team number (one first and two second).

Note: Will compile under F10 with warnings. Only the source is being distributed.

DEC-20 Review Note: See 20-92.

No Documentation Available.

Media (Service Charge Code): DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

MESS, Version: 1, November 1975 10-245

Author: Robert L. Stout and others, Univ. of Montana, Missoula, MT
Source Language: FORTRAN-10 **Memory Required:** 35K Core
Keywords: Simulation

Abstract: MESS was constructed to allow the user to design and run simulated experiments on the computer. No knowledge of computer programming and only a minimal knowledge of the mechanics of computer operation is needed for use of the program. The manual offered with MESS presents basic instructions as well as information about specifying repeated measure design, obtaining special statistics, obtaining special kinds of output, and other topics. Several simulation experiments are included. MESS will accept input from punched cards or from any terminal.

DEC-20 Review Note: See 20-93.

Media (Service Charge Code): Manual (ED), 2400' Magtape (PA) or order 10-LIB-6

RECSM, Version: 1, August 1975 10-246

Author: Carlos Garcia Jurado, Inst. National De Energia Nuclear, Mexico
Source Language: MACRO-10 **Memory Required:** 4 Low + 2 High
Special Hardware Required: Operating System 506 **Keywords:** Programming-Language

Abstract: RECSM is a short, concise symbol manipulation language similar in style to APL or TECO. It is based on four control symbols (parentheses define an expression, colon specifies iteration and semicolon termination) and about 40 operators and predicates. In symbol manipulation-REC (RECSM) the operators perform searching and comparison functions, input and output movements and therefore are amenable to text editing, program generation and similar applications. The principal improvement over TECO is its explicit design as a programming language rather than as a battery of individual operations, and that it is quite compact. TECO will be preferred for editing on the basis of individual letters, but RECSM will be preferable for complex substitutions or rearrangements. RECSM can be called either as a FORTRAN subroutine, or used as a stand-alone program.

DEC-20 Review Note: Source file garbled; when corrected, program still gives illegal memory access. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

HEXPawn, Version: 1, December 1975 10-247

Author: Ralph Klestadt, Birmingham High Sch., Encino, CA
Source Language: XBASIC **Memory Required:** 1 + 2/64 Core Storage
Other Software Required: BASIC, or ICS (Integrated Command System)
Keywords: Games; Chess

Abstract: HEXPAWN simulates a game of mini-chess, on a three by three board, with the user playing against the computer. The computer becomes 'smarter' as the games continue so that eventually it becomes impossible for the user to win. This is a good example of a beginning project in artificial intelligence. The program is easy to understand and can serve as a base for other artificial intelligence projects in BASIC and other languages.

Restrictions: Some XBASIC functions (substring, etc.) will have to have their format changed as to be compatible with standard DEC BASIC.

DEC-20 Review Note: Written for XBASIC, not known to be available for the DEC-20. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

TR.MAC, Version: 1, December 1975 10-248

Author: Obed Shmueli and Kwabana Akufo, Brandeis Univ., Waltham, MA

Source Language: MACRO-10 **Memory Required:** 7K Core **Special Hardware Required:** 507, 5-Series, Monitor and Later **Other Software Required:** MACRO Assembler **Keywords:** PDP-8; Simulator

Abstract: The PDP-8 simulator has two main parts, the first accepts input in PAL III language and assembles it, and the second executes the input program. At each stage of operation, input, assembly or execution the simulated PDP-8 memory can be examined, in octal digits. The simulator assembles and executes many of the PAL III instructions, but only a portion of the input-output instructions, and none of the microprogramming facilities are available. Communication and interaction with the simulator are done through the teletype, which is also the only peripheral device handled by the simulator. Programs can be stored and recalled using the disk operations facilities.

DEC-20 Review Note: See 20-94.

Documentation on magnetic media.

Media (Service Charge Code): DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

GAUSS, Version: 1, December 1975 10-249

Author: W. G. Madison, Harvard Business Sch., Boston, MA
Source Language: FORTRAN **Other Software Required:** SFTRAN (DECUS No. 10-23) **Keywords:** Probability; Statistics

Abstract: A set of four single-precision and four double-precision

functions related to the unit normal cumulative distribution function are given. Specifically, these are the error function and complementary error function, and the right and left tail CDFs. The algorithms used do a reasonable job of keeping execution time down while maintaining accuracy.

Restrictions: Function ERF (x) does not work due to reference to DX instead of x within the program.

DEC-20 Review Note: See 20-95.

Media (Service Charge Code): Write-up (AA), DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

Student's-T and Behrens-Fisher Probabilities 10-251

List and Density Sketch, Version: 1, January 1976

Author: James Fennessey and Susan Radius, The Johns Hopkins Univ., Baltimore, MD

Source Language: BASIC **Memory Required:** 9485 Chars or Approx. 7K Words **Keywords:** Probability; Statistics

Abstract: This program evaluates the probability density values and the cumulative probabilities of either a student's-T-distribution or a Behrens distribution, for a list of input values specified by the user. The program also provides a plotted graph of the density curve.

DEC-20 Review Note: See 20-96.

Media (Service Charge Code): Write-up (AA), DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

SOS, Version: 23(220), February 1976 10-252

Author: William Franklin, Brookings Inst., Washington, DC

Source Language: MACRO **Keywords:** Editor; SOS

Abstract: SOS version 23(220) is the DEC-distributed version 21(122) with all known bugs fixed and many useful improvements. This version incorporates fixes to most problems reported in outstanding SPRs, all fixes made in the current DEC in-house version of SOS, and other fixes as developed by several DECsystem-10 installations. Improvements were made to provide additional features as requested by various SOS users, to make SOS easier to use and more efficient to run, and to incorporate useful functions from other versions of SOS. All improvements were carefully designed to be consistent with the SOS's design philosophy and to provide the maximum benefit from the minimum amount of core. This version has been tested on KA and KI DECsystem-10's, running 5.07B and 6.02 VM monitors. It fully supports ersatz devices and SFDs.

Restrictions: See SOS.DOC on tape.

DEC-20 Review Note: Functionality duplicated by TOPS-20 EDIT, and SOS doesn't use full TOPS-20 file specifications. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-6

READ, Version: February 1976 10-253

Author: Eliezer Naddor and Mark Sapsford, The Johns Hopkins Univ., Baltimore, MD

Source Language: BASIC **Keywords:** Instruction

Abstract: Program READ provides a framework for generating short programs suitable for reading exercises in any computer language. The exercises are divided into groups and sections. It is relatively easy to add, delete, or change any exercise. The student controls the selection of exercises when using the program. Random numbers are used in each exercise for naming variables, for assigning values to data, and for some minor programming options. The variety of exercises produced is thus quite large. Program READ is written in BASIC and uses extensively its string manipulation capabilities. Three versions are currently available: DEC-10 BASIC, PDP-11 BASIC-PLUS, and HP BASIC (as implemented by LEASCO). Most exercises are for reading BASIC programs. However, there are some exercises for reading FORTRAN and ALGOL programs. This report describes the general framework of READ and shows how exercises are designed and coded. It illustrates most of the currently available exercises in BASIC, ALGOL, and FORTRAN. Suggestions for further extensions are also included.

DEC-20 Review Note: See 20-97.

Media (Service Charge Code): Manual (EB), DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

MAGGIE, Version: 1A(1), February 1976 10-254

Author: J. L. Moss, Brandeis Univ., Waltham, MA

Source Language: MACRO-10 **Other Software Required:** 5.07 or Earlier Monitor **Keywords:** Utility—DECTape

Abstract: MAGGIE is designed to give users with medium sized data base systems the flexibility of DECTapes on a larger scale. Users who do not use private file structures may find it helpful to keep files on magnetic tape. MAGGIE allows a user to reference files by name on magnetic tape. Safeguards have been implemented in MAGGIE to allow recovery of lost or mistakenly deleted files.

Restrictions: Should work as early as 4.01 monitor and in 6-series monitors.

DEC-20 Review Note: See 20-98.

Documentation on magnetic media.

Media (Service Charge Code): DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

INVSIM, Version: February 1976 10-255

Author: Eliezer Naddor, The Johns Hopkins Univ., Baltimore, MD

Source Language: BASIC **Memory Required:** 14 Blocks **Storage Keywords:** Business; Inventory-Simulation; Simulation

Abstract: INVSIM simulates inventory systems in a time-sharing environment. Its options include heuristic rules for guiding the selection of decision variables, simulation of TZ, SQ, and SZ inventory policies, and the ability to find the sensitivity of costs and availability to unit costs, lead-time, demands, randomness, and various decisions.

DEC-20 Review Note: See 20-99.

Media (Service Charge Code): Write-up (AA), DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

D2D, Version: 1(5), March 1976 10-256

Author: S. Fortune, P. Dewolf, T. Burnnett, Univ. of Illinois, Urbana, IL

Source Language: BLISS **Memory Required:** 6 Pages Core **Keywords:** Utility—Disk

Abstract: With D2D it is possible to transfer files from one disk structure to another. One advantage of D2D over other programs is that the destination structure need not have UFD's defined. It is possible to copy an entire structure without actually naming the PPN's to be transferred. All SFD's are properly copied. When D2D is used in conjunction with DCRPE and TWICE, all of the functions of formatting, refreshing, and copying disks can be done in a timesharing mode.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

Linwood Linear Least-Squares Curve-Fitting Program, Version: April 1981 10-257

Author: Fred S. Wood, Standard Oil Company, Chicago, IL

Submitted by: Eric R. Ziegel, Standard Oil Company, Naperville, IL

Operating System: TOPS-10, TOPS-20 **Source Language:** FORTRAN II, MACRO-10 **Memory Required:** 65K CORE or 39K + FOROTS **Keywords:** Linear Least Squares; Curve Fitting; Regression

Abstract: This program is the DEC-10/20 implementation of the Linear Least-Squares Curve-Fitting Program described in the book "Fitting Equations to Data" by C. Daniel and F.S. Wood, Wiley 1980 (for User's Manual see, glossary of terms, and interpretation of results). The program is designed for the analysis of both global and interior characteristics of data - determining the influence of each observation on the fit, assessing the plausibility of assumptions, searching for influential subsets of variables, estimating measurement error to judge the fit of candidate equations, providing statistics on the range and relative influence of variables to recognize the strengths and limitations of the fit, and for checking the validity of fitted equations as additional observations become available.

Associated Documentation: For User's Manual, glossary of terms, and interpretation refer to fitting equations to data by Daniel and Wood, Second edition, Wiley, 1980.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AB), 600' Magtape (MA) or order 10-LIB-6

NONLINWOOD: Nonlinear Least-Squares Curve Fitting Program, Version: 3, January 1980 **10-258**

Author: Fred S. Wood, Standard Oil Company, Chicago, IL
Submitted by: Eric R. Ziegel, Standard Oil Company, Naperville, IL
Source Language: FORTRAN IV, MACRO-10 **Memory Required:** 29K + FOROTS **Keywords:** Nonlinear Least Squares; Curve Fitting

Abstract: This program is the DEC 10/20 implementation of the Nonlinear Least-Squares Curve-Fitting program described in the book *Fitting Equations to Data* by C. Daniel and F. S. Wood, Wiley 1980 (for User's Manual see, glossary of terms and interpretation of results). The program estimates are obtained by Marquardt's Maximum Neighborhood Method which combines the Gauss (Taylor Series) Method and the Method of Steepest Descent. Output is in terms similar to that of its companion LINWOOD program. Plots of the residuals are made to indicate (1) whether they are (roughly) normally distributed, (2) how they are distributed over the fitted values of the dependent variable, and (3) how they are distributed over each of the independent variables.

Associated Documentation: For user's manual, glossary of terms and interpretation, refer to *Fitting Equations to Data* by Daniel & Wood, Second Edition, Wiley, 1980.

Note: The following improvements have been made—Summarizes input, allows redimensioning of maximum number of variables or maximum number of coefficients as well as maximum number of observations, allows selected observations to be deleted. A PDP-11 version is available as DECUS No. 11-420.

DEC-20 Review Note: See 20-101.

Documentation on magnetic media.

Media (Service Charge Code): Write-up (AA), 600' Magtape (MA) or order 10-LIB-6

PDO, Version: March 1976 **10-259**

Author: Eugene L. Ziegler, Colgate Univ., Hamilton, NY
Source Language: FORTRAN, F40 **Memory Required:** 5K + FOROTS **Special Hardware Required:** DECTape Drive **Other Software Required:** OPR.SYS.506B, FORTRAN Dynamic, Dimensioning **Keywords:** Utility—DECTape

Abstract: PDO was written for the owner of several to many DECTapes who is losing or has lost control of his or her file inventory. The program reads DECTape directories and compiles a master list of file holdings complete with descriptive annotations. The master list is stored on disk and is updated whenever altered directories are presented. Searching features are available and selective alphabetized lists by tape or by extension can be obtained.

Restrictions: Uses two MACRO subroutines; one for dynamic dimensioning and the other for getting the directory of a mounted DECTape. They are included.

DEC-20 Review Note: DECTapes are not supported on a "20." Not part of the "20" Library.

Media (Service Charge Code): Write-up (AA), DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

Information Storage and Retrieval, Version: March 1976 **10-260**

Author: Mark Sapsford and Eliezer Naddor, The Johns Hopkins Univ., Baltimore, MD
Source Language: BASIC **Memory Required:** 20 + 35 + 10 Blocks of Core **Keywords:** Business

Abstract: Sample inputs and outputs and the detailed coding of three conversational programs written in BASIC are given. The user stores and retrieves information with such commands as BRING, ADD, FIND, CANCEL, etc. Six types of fields are available: (1) NAME (vowels may be removed), (2) DATE (year/month/day), (3) SSN (social security number of the form ##-##-####), (4) NUMBER (e.g., if 3.2 is specified then numbers are of the form ##.##), (5) TOTAL (as NUMBER, but totals are computed when information is retrieved), (6) TEXT (any characters). Up to nine different fields may be selected for any information storage and retrieval system. The number of systems that the programs can handle simultaneously is unlimited. Information is stored in random access files in partially coded form. All numbers are stored in base 100, thus reducing by half the space needed to store them.

DEC-20 Review Note: See 20-102.

Media (Service Charge Code): Write-up (AA), DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

SORTER: Illustrating and Comparing Sorting Methods, Version: March 1976 **10-261**

Author: Eliezer Naddor, The Johns Hopkins Univ., Baltimore, MD
Source Language: BASIC **Memory Required:** 8 Blocks Core **Keywords:** Sorting

Abstract: Program SORTER provides a framework for illustrating and comparing different sorting methods. The present version contains the methods: SELECTION, INSERTION, EXCHANGE, QUICKSORT, and SHELLSORT. Other methods can be added to the program with ease. The options of the program include generation of raw data, display of the raw or sorted data, binary search, and details of the sorting procedures. The time required for sorting is given in centiseconds. Typical times for sorting 100 random numbers with the five methods mentioned above are 60, 65, 160, 15, and 20 centiseconds, respectively.

DEC-20 Review Note: See 20-103.

No Documentation Available.

Media (Service Charge Code): DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

COMPUT and TWOPER, Version: January 1976 **10-262**

Author: Eliezer Naddor, The Johns Hopkins Univ., Baltimore, MD
Source Language: BASIC, FORTRAN, ALGOL, COBOL, APL **Keywords:** Instruction

Abstract: The full detailed coding and sample inputs and outputs of two short programs in five languages are presented. COMPUT illustrates elementary computations, formatting, rounding offs, under—and overflows, and error messages. TWOPER shows how data is read from different sequential data files, and how strings are compared and printed. Both programs are conversational. Each program is first presented in BASIC. It is then translated line by line into FORTRAN, ALGOL, COBOL, and APL. No attempt is made to utilize special features of any language nor to compare the languages.

DEC-20 Review Note: See 20-104.

Media (Service Charge Code): Write-up (AA), DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

DSKCPY, Version: V2A(53)-1, January 1976 **10-263**

Author: Phil Harding, Digital Equipment Corp., England
Revised by: Dick Baker-Munton

Source Language: MACRO-10 **Memory Required:** 1K Expanding, + 2K Shareable **Other Software Required:** HELPER **Keywords:** Utility

Abstract: DSKCPY performs a logical copy of all/part of one filestructure ("source fs") to another ("object fs"). It is used for:

- a) filestructure archival (cf. FAILSA),
- b) reducing fragmentation,
- c) clearing up old files/directories ("purging") files not accessed recently).

Handles RP02, RP03, RP04, RP06 and mixes thereof.

Restrictions: Original path may be changed.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECTape (HA), 600' Magtape (MA) or order 10-LIB-6

XTEC, Version: %0(427), January 1976 **10-264**

Author: Jack W. Krupansky and Mark R. Crispin, Stevens Inst. of Technology, Hoboken, NJ

Source Language: MACRO-10, MACTEN (using JOBDAT), UUOSYM **Keywords:** Editor; System-Programming

Abstract: XTEC (acronym for eXperimental TECo), a powerful general purpose text editor, is intended to be a replacement for TECO. XTEC is a superset of TECO. XTEC is not merely a "modified TECO", but a total rewrite. XTEC is a compiler, rather than an interpreter. This means that macros execute much faster. One benchmark took 30 seconds under TECO, 2 seconds under XTEC. An equivalent program written in SNOBOL took 10 seconds. XTEC has infinitely extendable push-down lists. This means that a ?PDL error will never occur. Many, many macros that lose under TECO because of this condition will win under XTEC. XTEC has many command extensions listed in the documentation. Most of these are based on the Stevens extensions to DEC TECO, however, many additional features are added. The user of TECO should be able to adapt to XTEC without too much difficulty. XTEC has been tested under 506B and 602 on the Stevens DECsystem-10. In addition, a single-segment variant of XTEC has been run on the ITS monitor at MIT on KA and

KL-10's. The program has not yet been tested on TENEX or on a KI/KL-10 running TOPS-10, however, it is believed that XTEC will function properly on these systems.

Restrictions: Must be loaded with LINK-10; Loader loses.

DEC-20 Review Note: See 20-105.

Documentation on magnetic media.

Media (Service Charge Code): Write-up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

BASIC, Version: 17E(143), January 1976 10-265

Author: Univ. of Pennsylvania, Philadelphia, PA

Revised by: Univ. of Pennsylvania

Source Language: BASIC **Keywords:** BASIC; Programming-System

Abstract: The University of Pennsylvania Medical School BASIC is a segmented version of DECsystem-10 BASIC, version 17E. There are currently five segments: *BASIC*, *COMMAND/EDIT* (3K); *BASCOM*, *COMPILE/LOAD* (5K); *BASXCT*, *EXECUTE* (7K); *BASDDT*, *BASIC DEBUGGER* (11K); *BASERR*, *ERROR* (1K)

The reason for this release is an attempt to reach compatibility with the BASIC-PLUS Language on the PDP-11, to add more computing power to BASIC, and to fix all known bugs in version 17E.

DEC-20 Review Note: See 20-106.

No source available. Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

Simulation Model of TOPS-10, Version: 5.06, 10-266 *August 1976*

Author: Rollins Turner, Digital Equipment Corp., Maynard, MA

Source Language: SIMULA **Other Software Required:** SIMULA Compiler, Loader or Linker **Keywords:** TOPS-10; Simulation

Abstract: This program is a simulation model of version 5.06 of the TOPS-10 operating system. User inputs are specified by a trace file with one record per interaction. The trace file specifies the think time, CPU time, amount of core memory, amount of disk IO, and assignment, swapping, CPU scheduling, and disk IO. Dual processor operation and virtual memory are not covered by the model. A writeup documents the major concepts of the model and gives the results of a thorough study of its validity. While the model does reasonably well at predicting CPU utilization and response times, it does have serious deficiencies in other areas. Because of these deficiencies the model must be considered of academic interest only. It should not be used for predicting performance as a basis for practical real life decisions.

Restrictions: Does not include dual processor, virtual memory, or any feature added since 5.06. Deficiencies documented in manual.

DEC-20 Review Note: See 20-107.

Media (Service Charge Code): Manual (EB), DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

COBEDT: A COBOL File Editor, Version: 10-267 *4(1), October 1976*

Author: David Gorka, Digital Equipment Corp., Columbus, OH

Source Language: MACRO-10 **Memory Required:** 5K Core **Special Hardware Required:** KI-10 CPU **Other Software Required:** Opr. Sys. 601B **Keywords:** COBOL; Editor; Manipulation; Utility—Programming

Abstract: COBEDT is a program designed to aid application programmers in interpreting and patching COBOL files whose ascii or sixbit records have imbedded computational data items. The program can be run from either batch or timesharing and consists of 2 distinct phases.

1. The description of the record format for the title to be edited.
2. The manipulation language that permits the printing and patching of the file.

The file descriptor phase (phase 1) prompts the user with a "FD-" in the left margin. The user may then enter the various commands that describe the format of the file. The manipulation language phase prompts the user with a "ML-" in the left margin. The user may then enter the SOS type commands to update, edit, or patch a particular data file.

Note: Modifications—COBEDT has been written to accommodate modifications. It is a very simple matter to determine a new data format and add the necessary commands to the COBEDT command list.

DEC-20 Review Note: See 20-108.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

IPCF10: FORTRAN-10 IPCF Routines, Version: 1, March 1976 10-268

Author: Mike Barnes, University of Texas, Carrollton, TX

Source Language: FORTRAN-10, MACRO **Other Software Required:** Monitor 5.07 or later **Keywords:** Communications; FORTRAN; MACRO

Abstract: The IPCF10 package of subroutines allows the FORTRAN-10 (or MACRO, possibly COBOL) user easy access to the monitor's Inter-Process Communications Facility (IPCF). Routines are provided to access all IPCF UO's (IPCFR., IPCFS., IPCFQ.) plus easy use of many [SYSTEM] INFO and [SYSTEM] IPCC functions.

DEC-20 Review Note: Specific to TOPS-10. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

ADRES: For Handling Address Files and Printing Adhesive Labels, Version: 1.0, March 1977 10-269

Author: Jacob Palme, Swedish National Defense Research Inst., Sweden

Revised by: Jacob Palme

Source Language: SIMULA (DECUS No. 10-223) **Memory Required:** 28K Core **Keywords:** Labels; Sorting; Utility

Abstract: The ADRES program is suitable for handling small address registers with between 10 and 2000 addresses. The program runs on a DECsystem-10 computer.

The program contains facilities for reformatting the addresses to fit any kind of adhesive labels, with any number of labels across the width of the form. Labels can be printed on a line printer or on a typewriter terminal.

There are also facilities for selecting certain labels from an address file using Boolean search conditions like "SWEDEN + DENMARK & COPENHAGEN". There is a field in each address for storing information which is not to be printed on the labels, e.g. an interest profile to be used in the selection.

Addresses can be sorted on any line in the address.

The program can easily, without reprogramming, be made to fit a new task, e.g. a new way of selecting addresses for distributions.

DEC-20 Review Note: See 20-109.

Documentation on magnetic media.

Media (Service Charge Code): Write-up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

PROC10, Version: January 1976 10-270

Author: P. Lemkin, B. Shapiro, R. Gordon, L. Lipkin, National Institutes of Health, Bethesda, MD

Source Language: SAIL (DECUS No. 10-86) **Memory Required:** 200 pages min. core, 512 pages max. core **Other Software Required:** Ommigraph **Keywords:** Image Processing System; Manipulation

Abstract: PROC10, an interactive image processing system, runs on a PDP-10 computer. It can manipulate picture, mask, boundary, boundary transform and computing window data structures. PROC10 provides many operations on and between these data structures. Images and boundaries may be displayed on several different types of terminals including the DEC GT40, Tektronix 4012 and 4023 terminals, and ASR33.

DEC-20 Review Note: See 20-110.

Documentation on magnetic media.

Media (Service Charge Code): Microfiche (CA), DECtape (HD), 600' Magtape (MA) or order 10-LIB-6

PASCAL, Version: December 1976 10-271

Author: H.-H. Nagel, University Hamburg, Germany

Submitted by: Bill Koteff/H.-H. Nagel

Source Language: PASCAL, MACRO **Memory Required:** 47K Words **Other Software Required:** FORTRAN Library **Keywords:** Compiler; PASCAL

Abstract: The PASCAL—compiler for the DECsystem-10 which has been developed at the University of Hamburg, complies with standard PASCAL as defined in K. Jensen/N. with PASCAL—users manual and report, lecture notes in Computer Science, vol. 18. Springer Verlag Berlin, Heidelberg, New York, 1974. The compiler supports:

- Concise command language.
- A source language level interactive debugging system.
- Commands to dump the entire contents at stack and heap in source level format on to the LPT.
- In source language level post mortem dump.

Note: An addendum (hard copy only) with bugs and fixes for "PASCAL", DECUS No. 10-271, has been added to the existing manual. (No changes have been made to the magnetic media at this time.) The Media Service Charge Codes remain the same. Please note that the "Documentation on magnetic media" is only the original manual, not the addendum.

DEC-20 Review Note: See 20-3.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EB), 600' Magtape (MA) or order 10-LIB-6

BESLIB, Version: November 1976 10-272

Author: Fredrick W. Cotton and Harold Salwen, Stevens Inst. of Technology, Hoboken, NJ

Source Language: FORTRAN IV **Memory Required:** 10 + 7 Core
Other Software Required: F40, INDEX (DECUS No. 10-273) **Keywords:** Mathematics

Abstract: BESLIB is a double-precision, FORTRAN IV package containing the standard Bessel functions $J_n(x)$, $N_n(x)$ and modified Bessel functions $I_n(x)$, $K_n(x)$ of integer order ($-32 - n - 32$), together with their derivatives. For low values of x , the error is generally in the 15th to 16th significant figure, except near the zeros of the oscillatory functions. For $x \gg n$, the error is like the error in calculating $\cos(x)$ or $\exp(x)$.

The auxiliary package INDEX is required. Exponents too large or too small for the normal range of the PDP-10 are returned to the main program through the integer variable IEXP in COMMON/CIEXP/IEXP, FEXPC.

DEC-20 Review Note: See 20-111.

Media (Service Charge Code): Write-up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

INDEX, Version: November 1976 10-273

Author: Fredrick W. Cotton & Harold Salwen, Stevens Inst. of Technology, Hoboken, NJ

Source Language: FORTRAN IV **Memory Required:** 4 + 7 Core
Other Software Required: F40 **Keywords:** Mathematics

Abstract: INDEX is a double-precision, FORTRAN IV package with the primary purpose of handling numbers whose exponents are too large or too small for the normal range of the PDP-10 ($1.4 \cdot 10^{-29}$ to $1.7 \cdot 10^{29}$). Exponents are returned to the main program through the integer variable IEXP in COMMON/CIEXP/IEXP, FEXPC. Included are the arithmetic operations, square root, cube root, $\exp(x)$, and arctangent routines corresponding to $\text{DATAN}(x)$ and $\text{DATAN } 2(Y.X)$.

Note: INDEX is required for the use of BESLIB (DECUS No. 10-272.)

DEC-20 Review Note: See 20-112.

Media (Service Charge Code): Write-up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

CADA Monitor, Version: August 1976 10-274

Author: Isaacs, DeKeyrel, Novick, The Univ. of Iowa, Iowa City, IA

Source Language: BASIC **Other Software Required:** BASIC Plus or, DEC-10 BASIC **Keywords:** Instruction; Statistics

Abstract: The Iowa Testing Programs of The University of Iowa has been awarded a grant in the amount of \$91,355.00 by the National Science Foundation for development of a system of Computer-Assisted Data Analysis (CADA). Principal investigator for the project is Dr. Melvin R. Novick. The system, now being used in developmental form at numerous universities throughout the world, is designed for instructional and operational use and consists of a collection of conversational language programs written in the BASIC programming language. These programs are designed to lead an investigator step-by-step through elementary and complex methods of Bayesian statistical inference. Included in the system will be conversational programs that will permit substantive workers to monitor advancement decision-making in modularized instructional programs, to evaluate the effects of educational intervention programs such as compensatory education, to provide guidance information to students from academic prediction systems and to provide educational administrators with easily used yet sophisticated methods of combining probabilities with utilities or values in order to produce coherent and effective decisions.

Note: This program can also be ordered as DECUS No. RSTS11-103.

DEC-20 Review Note: See 20-113.

Media (Service Charge Code): Manual (EB), 600' Magtape (MA) or order 10-LIB-6

DTSORT, Version: 1, April 1977 10-275

Author: Tom Hornyak, Chase Brass & Copper Co., Montpelier, OH

Source Language: MACRO-10 **Special Hardware Required:** DECtape

Keywords: Utility—DECtape

Abstract: DTSORT will read and remap a DECtape directory alphabetically. To use this program: 1) assign DTAN: SAM; 2) R(un) DTSORT; 3) DIR SAM::; 4) Unload SAM::; 5) DEA SAM:: This program has only been run under TOPS-10 507B and on a KA10 CPU, but it should work on any system.

DEC-20 Review Note: DECtapes not supported on a "20." Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

FPRINT, Version: 1, October 1976 10-276

Author: Barry Ferris

Submitted by: Bill Fernald, Digital Equipment Corp., Maynard, MA.

Source Language: MACRO-10 **Other Software Required:** COBOL/LIBOL **Keywords:** IBM-COBOL

Abstract: FPRINT was designed to aid in the conversion of IBM COBOL programs to the DECsystem-10 COBOL environment. FPRINT is useful in 3 basic situations:

a) when line printer files are written using FORTRAN-type carriage control characters;

b) when the COBOL program already uses an IBM ASSEMBLER program for producing line printer files;

c) when special carriage control tapes are being used. FPRINT allows for the software simulation of the tapes.

FPRINT has two entry points -FPSET to initialize the line printer file and FPRINT to do the actual writing of a line printer record.

Note: Must be used within a COBOL program.

DEC-20 Review Note: See 20-114.

Media (Service Charge Code): Write-up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

TWOSID, Version: 1(2), March 1977 10-277

Author: John Edgecombe, Atomic Energy of Canada, Ltd., Ontario, Canada

Source Language: BLISS-10 **Keywords:** Editor; Two-Sided Paper

Abstract: TWOSID will convert a file to a form suitable for printing/typing using both sides of the paper; ie the requested RUNOFF switch values /ORANGE:ODD and /ORANGE:EVEN.

DEC-20 Review Note: See 20-115.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

CLUSTR: A Comprehensive Suite for Numerical Classification, Version: August 1977 10-280

Author: C. J. Andrews, University of Queensland, Australia

Revised by: C. J. Andrews

Source Language: FORTRAN, MACRO **Memory Required:** 6K Core
Special Hardware Required: PLT, CDR **Other Software Required:** Batch System, CALCMP, SSP **Keywords:** Scientific; Engineering

Abstract: Suite of programs which are capable of dealing effectively with sets of data which are to be numerically classified. The data represent several entities which are described by relevant attributes.

DEC-20 Review Note: Source files missing and use non-standard plotting routines, also not supplied. Not part of the "20" Library.

Media (Service Charge Code): Manual (EB), DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

System Programmers PASCAL for KI/KL (VM version) and for KA/KI (Non VM version), 10-283
Version: 10(130), June 1979

Obsolete. This program has been replaced by DECUS No. 10-344 and DECUS No. 10-345.

PICTURE BOOK, Version: March 1977 10-284

Author: Bob Friedenthal

Submitted by: Hank Maurer, Digital Equipment Corp., Marlboro, MA

Source Language: MACRO-11, FORTRAN, MACRO-10 **Special Hardware Required:** GT40 connected to PDP-10 via serial line **Keywords:** Loader; File-Handling; Graphing; PDP-11-Communications

Abstract: PICTURE BOOK is a set of programs which run interactively between a DECsystem-10 and a GT40 or GT42. The package consists of three programs: a down-line loader; a communications and display file handler; and a set of FORTRAN graphics subroutines.

The loader runs on the DECsystem-10 and loads PDP-11 binary files into the GT40/42 over the communication line.

The communications and display file handler is a compact routine residing in less than 1.5K core on the GT40/42.

The FORTRAN graphics subroutines run on the DECsystem-10 and are called by a user's application program. Each subroutine generates a string of ASCII characters to the GT40/42 which the GT40/42 handler will interpret.

DEC-20 Review Note: See 20-118.

Media (Service Charge Code): Manual (EB), DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

SQUASH, Version: April 1977 10-285

Author: Michael D. Fry, University of Illinois, Urbana, IL

Source Language: MACRO **Memory Required:** 3K (or 2K + 2K)

Other Software Required: DSKCHR UO **Keywords:** Manipulation; Sorting; Utility—Disk

Abstract: SQUASH is a noninteractive form of 'UFLIP'. If 'MASTER.LIB' is not found, all disk files with the following exceptions are copied into it and deleted. The exceptions are: *.REL, *.BAK, *.TMP, *.SBD.

If 'MASTER.LIB' is found, it is decomposed back into the original files with the original access dates, creation time-dates, etc.

The purpose of SQUASH is to decrease disk usage at logout.

DEC-20 Review Note: See 20-119.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

CUSH2: Designing Package Cushioning by Computer, Version: May 1977 10-286

Author: Ben Wacholder, Digital Equipment Corp., Maynard, MA

Source Language: FORTRAN **Memory Required:** 18K Core **Keywords:** Utility

Abstract: The main object is to inform the prospective users of the availability of this packaging design tool. The program enables the user to "model" cushioning on a computer terminal and thus minimize the cost of building and testing physical models.

Note: Three material types have so far been listed in the data tape #1, #10 & #14 of Airforce Library.

DEC-20 Review Note: See 20-120.

Media (Service Charge Code): Write-up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

BOSS: System Statistic Reporting, Version: 1, May 1977 10-287

Author: Mike Barnes, University of Texas, Carrollton, TX

Source Language: FORTRAN-10, MACRO **Other Software Required:** IPCF Optional, Opr. Sys. 5.07 or later **Keywords:** Statistics

Abstract: The BOSS system consists of a series of programs designed to record system statistics on a daily basis. A program called BOSS runs continuously on the system gathering statistics every half hour. Then, once a day, other programs evaluate the data that BOSS has written, generating reports and (optionally) plots for a Calcomp drum plotter. Statistics include Response time, % Idle time, % Lost time, % Overhead time, % User time, Average Job Size, a full slate of disk statistics, and much more.

Although originally designed for a KL-10, BOSS can run on either a KA or KI.

Restrictions: See documentation for restrictions.

DEC-20 Review Note: Uses IPCF10 Decus Library program, and accounting structure for TOPS-20 is different anyway. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-6

REV, Version: 2(4), June 1977 10-289

Author: David Rolfe, APH Technological Consulting, Pasadena, CA

Source Language: MACRO-10 **Memory Required:** 1K + 2K or, 1K + 3K Core **Keywords:** File-Handling

Abstract: REV is the product of an attempt to produce the ultimate file manipulation program. Functions are provided to let the user copy, rename, list, type, and delete files by using simple commands. In particular, REV offers "review mode", where specified files are listed and individually reviewed. This is somewhat like the "Individual" switch to KJOB, only much more powerful. In summary, REV tries to bring together the most useful features of DIRECT, PIP, KJOB, and SETSRC in a single small (3K total), fast program. Although SCAN and WILD are not used (to increase efficiency and decrease storage), the major SCAN/WILD features are available.

LOADING: Make sure the four necessary modules have been compiled: REV, SCNNER, WILDER, and LIB. Then merely type, "LOAD REV". The REV module will automatically request the other three by using the .TEXT pseudo-op. If the local version of MACRO or LINK does not support the .TEXT pseudo-op, then loading must be done "by hand". Edit out the .TEXT instruction in the first few lines of the REV source, recompile, and then run LINK and give it the command, "REV,SCNNER,WILDER,LIB/SEARCH/GO".

Note: For more information, see the first page of the file REV.MAC.

DEC-20 Review Note: Program compiles, loads, and begins execution. It is unreliable, though, and would need extensive rewriting to be functional. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-6

VENN: A Generative Program for Computer-Assisted Instruction, Version: 1, July 1977 10-290

Author: Dr. Walter Maner, Old Dominion University, Norfolk, VA

Source Language: SIMULA (DECUS No. 10-223) **Memory Required:** 47 + 12P Max. Core **Special Hardware Required:** KL602A + VM **Keywords:** CAI; Heuristic; Instruction; Logic; VENN

Abstract: VENN is an instructional program which, through generative routines, is able to provide virtually inexhaustible resources for computer-assisted practice in traditional syllogistic reasoning. The program creates interesting and original syllogisms for the student to analyze, and thereafter checks his analysis for accuracy, providing help messages and default responses to simplify his task. An arbitrary degree of learner control can be exercised, overriding program defaults, permitting the use of VENN to check homework. A choice of interpretations (Aristotelian or Boolean) is offered. VENN diagrams are drawn and checked, and semantic heuristics provide counterexamples to about two-thirds of all invalid syllogisms.

DEC-20 Review Note: See 20-121.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-6

XPL: A Compiler Generator System, Version: July 1977 10-291

Author: R. L. Bisbey, R. W. Hay, McKeeman, Horning, Wortman, University of Louisville, Louisville, KY

Submitted by: B. Dawson

Source Language: XPL, MACRO **Memory Required:** 60 pages optional **Keywords:** Programming-Language; XPL

Abstract: The XPL Compiler Generator System is described in "A Compiler Generator", by McKeeman, Horning, and Wortman (Prentice-Hall series in Automatic Computation, 1970). XCOM is an implementation of the XPL Language described in the book. A slightly improved version (ULXCOM), along with ANALYZER and SKELATON are also provided. XCOM was a complete re-write. ANALYZER and

SKELATON had to have several modifications to make them work. Overall—they are compatible with the versions distributed by SHARE.
DEC-20 Review Note: See 20-122.

Documentation on magnetic media.

Media (Service Charge Code): 2400' Magtape (PA) or order 10-LIB-7

Revised Plotter Subroutines for DEC-10, Version: April 1977 **10-292**

Author: L. Kuokkanen, O. Nevalainen, University of Turku, Finland
Source Language: FORTRAN-10 **Memory Required:** 2600 wds. (OPLOT), 64 wds. (OLINE), 138 wds. (OPOINT) **Special Hardware Required:** KA-10 CPU, Drum Plotter **Other Software Required:** FORTRAN-10 Plotter Subroutine-Plot (DECUS No. 10-228) **Keywords:** Plotting

Abstract: The subroutines OPLOT, OLINE may be used in the place of the original plotter subroutines PLOT and LINE. They shorten the time used for the plotting by sequencing the pen movements. No modifications in the logic of the plotter applications are necessary.

DEC-20 Review Note: See 20-123.

Media (Service Charge Code): Write-up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-7

FLECS: FORTRAN Language with Extended Control Structures, Version: April 1977 **10-293**

Author: T. Beyer, University of Oregon, Eugene, OR

Submitted by: L. D. Yarbrough

Source Language: FORTRAN IV, MACRO-10 **Other Software Required:** FORTRAN Compiler **Keywords:** Translator; FORTRAN

Abstract: FLECS is an extension of the FORTRAN language which provides the control structures necessary to support recent concepts of structured programming. Currently implemented as a translator which converts FLECS programs to FORTRAN, the system is written in FLECS and is easily adapted to new machines and systems. The entire system including source code and documentation has been placed in the public domain by the author. The purpose of making the system available is to convince as many members of the FORTRAN community as possible that structured programming when properly supported by a language is quite natural and requires substantially less effort than programming in standard FORTRAN.

Restrictions: See documentation.

DEC-20 Review Note: See 20-124.

Media (Service Charge Code): Write-up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-7

GIDUS/DISLIB: GT40 Interactive Display Utility System, Version: 1, August 1977 **10-294**

Author: Bill Wilder, Acadia University, Canada

Source Language: F40, MACRO-10, MACRO-11 **Memory Required:** 3K in GT40, 2—7K on KA-10 **Special Hardware Required:** 1 GT40 (PDP-11/05) Interfaced to DEC-10 as a TTY **Other Software Required:** MACDLX-SHR (DEC) **Keywords:** Utility

Abstract: GIDUS/DISLIB is a DECsystem-10 software package. The GT40 should be connected to the DECsystem-10 with a standard tty interface (2400 baud is the recommended speed). GIDUS which stands for "GT40 Interactive Display Utility System" is a GT40 resident program which provides scrolling capability and accepts display files from the DECsystem-10. DISLIB which stands for "Display Library" is a package of FORTRAN callable subroutines which are used to create and manipulate display files. Included with the package are two down-line loaders and one stand alone scrolling program.

Note: System has not been debugged in order to run with F10 compiler. F40 version works properly.

DEC-20 Review Note: See 20-125.

Documentation on magnetic media.

Media (Service Charge Code): 2400' Magtape (PA) or order 10-LIB-7

BLISS-11/RXS-11M Interface Macros, Version: May 1977 **10-296**

Author: Keith E. Gorlen, National Institutes of Health, Bethesda, MD

Source Language: BLISS-11 V76050 (not DECUS) **Special Hardware Required:** PDP-11 **Keywords:** Programming-System; RXS-11M

Abstract: The BLISS-11/RXS-11M Macro Libraries furnish a convenient interface to the RXS-11M operating system for programs written in BLISS-11(1) in much the same way that the RXS-11M macro libraries (SY: 1,1 RSXMAC.SML and EXEMC.MLB) provide an interface for MACRO-11 assembly language programs. Since a major design goal was

to retain as much similarity in both form and function between the BLISS-11 macros and their MACRO-11 counterparts, the standard documentation found in the reference manuals remains the primary source of information. This documentation serves mainly to outline those areas of significant difference and assumes familiarity with RXS-11M.

DEC-20 Review Note: BLISS-11 not functioning. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-7

ATOPLT, Version: 2A (47), July 1977 **10-297**

Author: Rob Cook, La Trobe University, Australia

Source Language: FORTRAN **Memory Required:** 6P to 13P Core **Special Hardware Required:** A device capable of drawing lines **Other Software Required:** FOROTS; Basic software to drive the plotting device **Keywords:** Graphics; Plotting; FORTRAN

Abstract: ATOPLT is a toolkit of FORTRAN sub-routines that draw graphs using a plotter. Features are:

1. Only one sub-routine call is needed to plot an entire graph including titling and annotation. The graph can contain up to 14 different sets of data.
2. The graph drawing method is quite flexible and most physical parameters can be altered simply to give the most pleasing result.
3. The data may be log scaled along either or both axes.
4. The labels drawn at ticks along the axes may be plotted as REAL numbers, as INTEGERS or as character strings, e.g. "Jan", "Feb".
5. A linear least squares line can be fitted to any line on a graph.
6. The sub-routines use Calcomp style basic sub-routine calls for plotting, but have been specifically written so that they can be altered to suit other basic plot software.
7. The subroutines draw on a Gould 4800 printer/plotter or a Tektronix 4012 terminal, but are specifically written to be adapted for other plotters easily.

Note: *The write-up is an addendum to documentation file on media.

DEC-20 Review Note: See 20-126.

Media (Service Charge Code): *Write-up (AA), 600' Magtape (MA) or order 10-LIB-7

Normalizing Raw Test Scores, Version: 1, December 1977 **10-298**

Author: Joseph K. Williams, Digital Equipment Corporation

Source Language: FORTRAN **Keywords:** Teaching; Statistics; Testing; Scoring

Abstract: This program will accept n raw test scores and based upon the arithmetic mean and the standard deviation which the program is given, print on the terminal in descending order the corresponding normalized test scores, where n is less than 300. Also displayed on the terminal is the mean and the standard deviation of the set of scores given.

DEC-20 Review Note: See 20-127.

Media (Service Charge Code): Write-up and Listing (DA), DECtape (HA) or order 10-LIB-7

COPYMT, Version: 7(40), March 1977 **10-299**

Author: Benn Schreiber, Digital Equipment Corporation, Maynard, MA

Source Language: MACRO **Memory Required:** 3+5 Core **Other Software Required:** SCAN; UUOSYM; MACTEN **Keywords:** Utility; Magtape-Copying; Disk

Abstract: COPYMT is a utility used to copy one magnetic tape to another (quickly). COPYMT makes use of the "inhibit buffer clear" option in the 6.02 monitor for a substantial reduction in real time required to copy a tape. There is also a tape testing facility (it will test a 2400 foot tape in 3 minutes on TU70 tape drives at 1600 bpi with only about 20 seconds CPU time). The optional MTAPE monitor command allows multiple positioning switches in the same command. COPYMT will listen for terminal input while running (if specified by the switch) and options allow statistics typeout, pausing, aborting, and cancelling further terminal watching. In addition, if one of the file specifications is a disk file, COPYMT will transfer the file (disk to tape or tape to disk) using a mode which preserves physical magtape records (essential for variable length records).

DEC-20 Review Note: See 20-128.

Documentation on magnetic media.

Media (Service Charge Code): 2400' Magtape (PA) or order 10-LIB-7

BAKGMN.BAS, Version: 5, December 1977 10-300**Revised by:** David A. Fisher, Santa Clara, CA**Source Language:** BASIC **Memory Required:** 4K Core **Keywords:** Games

Abstract: This program was originally written for a D.D.C. machine. It has been modified to work on the DECsystem-10/20; a few extras have been incorporated. There is one minor problem; the positioning of the "X" when black makes two moves with one piece.

7815 IF A(F5)=0 GO TO 7860

7875 IF A(T4)=0 GO TO 7920

Note: This program also runs on the DECSYSTEM-20. Patch to update from version 4 to version 5:

DEC-20 Review Note: See 20-129.*No Documentation Available.***Media (Service Charge Code):** 600' Magtape (MA) or order 10-LIB-7**STRMAC: Structured MACRO Programming, 10-301**
*Version: March 1977***Author:** John K. Lufkin, Rick Barth**Submitted by:** Benn Schreiber, Digital Equipment Corporation, Maynard, MA**Source Language:** MACRO **Memory Required:** 3+9 Core **Keywords:** Programming-Language; MACRO

Abstract: STRMAC is a collection of macros which facilitate structured programming in MACRO with such constructs as LOOP, LOOPEXIT, UNTIL, WHILE, IF, ELSE, ENDIF, CASE, and several others. There are also macros to define subroutine entrances and exits, argument passing, and register save routines. Also included is MACRO %50A(441) which includes two new pseudo-opcodes to speed up assembly.

DEC-20 Review Note: See 20-130.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 10-LIB-7**LIBMAN, Version: 3(21), March 1977 10-302****Author:** Benn Schreiber, Digital Equipment Corporation, Maynard, MA**Source Language:** MACRO-10 **Memory Required:** 2+8 Core **Keywords:** Utility—Disk;; Utility—DEctape

Abstract: LIBMAN is basically an extension of the DECUS program UFLIP (DECUS No. 10-170). However, LIBMAN is much easier to use, it will operate on other than the user's directory, and accepts full file specification wildcarding on most of the file specifications. Commands include ADD, DELETE, COPY, DIRECTORY, REPLACE, TYPE, SUPERSFD, FILDIR (runs DIRECT and then re-runs itself) and DVERSION (allows you to change the protection and version of any disk file with wildcarding allowed). Included is the program LIBCVT which will convert UFLIP-CREATED libraries into LIBMAN libraries (this consists only of deleting the UFLIP index blocks). Also please note that this is a total rewrite, not just a lot of modifications. We have been using UFLIP at our installation for several months and everyone is very satisfied with it.

DEC-20 Review Note: See 20-131.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 10-LIB-7**DUMPR, Version: 5(26), March 1977 10-303****Author:** Benn Schreiber, Digital Equipment Corporation, Maynard, MA**Source Language:** MACRO **Memory Required:** 2+4 or 3+6 Core (depends on assy) **Keywords:** Utility; File-Handling

Abstract: DUMPR is a utility which produces readable listings of the contents of any arbitrary file. DUMPR can dump from magtape (physical or FORTRAN binary) disk (blocks or FORTRAN binary), DEctape or paper tape. The output file dump can be in decimal, octal, hexadecimal, ASCII, eight-bit ASCII, EBCDIC, PDP-10 symbolic dump, bytes of any size 1-36 bits, floating point, or any radix between 2-16. DUMPR also will read industry mode tapes, and will dump IBM floating point numbers. DUMPR may also be used to verify the readability of any file very quickly.

DEC-20 Review Note: See 20-132.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 10-LIB-7**XGLOB, Version: 2(4), March 1977 10-304****Author:** Benn Scheiber, Digital Equipment Corporation, Maynard, MA**Source Language:** MACRO **Keywords:** Reverse Global Cross Reference Listings

Abstract: XGLOB is used to generate reverse global cross reference listings to aid in overlaying a program. The listing shows the module size, who references this module, which modules this module references, and the size and names of common blocks referenced. Input to XGLOB are the .REL files from any supported language translator (F40, FORTRAN-10 and MACRO have been tested). XGLOB will also accept input files to be specified as a library file.

DEC-20 Review Note: Program compiled and loaded but failed during execution apparently because of the way it dynamically used memory and tried to reread the program over data. Would need work to run on TOPS-20. Not part of the "20" Library.

*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 10-LIB-7**BIORTH, Version: 2(6), March 1977 10-305****Author:** Benn Scheiber, Digital Equipment Corporation, Maynard, MA**Source Language:** MACRO **Memory Required:** 7K Core **Keywords:** Games; Biorhythms; DATE

Abstract: BIORTH is a program to chart biorhythms and compute biorhythmic compatibility percentages (see any book on biorhythms for an explanation of that). BIORTH will accept any date in the 20th century. All dates are in a form acceptable to SCAN. BIORTH can generate the chart backwards or forwards in time, and to any device desired.

DEC-20 Review Note: See 20-133.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 10-LIB-7**FOCAL-10, Version: October 1976 10-306****Author:** Ian Pugsley, Digital Equipment Corporation, Australia**Source Language:** MACRO-10 **Memory Required:** 3K user core **Keywords:** Language; FOCAL-10

Abstract: DECsystem-10 FOCAL is a language similar to BASIC in which command names may be abbreviated to a single character.

DEC-20 Review Note: See 20-134.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 10-LIB-7**VIDED: A Display Oriented Text Editor, 10-307**
*Version: 4A, April 1979***Author:** Jacob Palme, Swedish National Defense Research Institute, Sweden**Source Language:** SIMULA V4 **Memory Required:** 10K (low segment) + 35K (high segment) **Special Hardware Required:** Display terminal with cursor movement codes **Keywords:** Text Editor; Display; Data Handling

Abstract: The main principle of VIDED is that the screen on the display will always show the modified text immediately after each edit operation. The full screen is used to show a segment of the edited text. The user will thus get an immediate feedback of the result of her/his operation and can correct the text again if necessary.

VIDED replaces both an ordinary text editor and a paragraph and page formatter like RUNOFF in one editor. You need not postprocess your text with RUNOFF.

Restrictions: See chapter 2.13 in the file VIDED.MAN.**DEC-20 Review Note:** See 20-135.*Documentation on magnetic media.***Media (Service Charge Code):** Write-up (AA), 2400' Magtape (PA) or order 10-LIB-8**PLOTY, Version: 1, February 1978 10-308****Author:** Mr. Matti Jakobsson, University of Turku, Finland**Source Language:** FORTRAN, MACRO-10 **Memory Required:** 7K **Special Hardware Required:** Calcomp 565 Plotter **Keywords:** IO; Plotting

Abstract: The program PLOTY converts spooled plotter output on the users terminal using the plotter spool file as input. No changes are required in the users program when using this output method. The user can create the picture with standard plotter subroutines. PLOTY can serve as aid when testing plotter programs using a terminal. If the plotter is a bottle neck of the system or is not situated in the same building as the user,

PLOTY may save time and trouble.

Note: Although PLOTY is written for the CALCOMP 565 plotter it can easily be modified to serve other plotters.

DEC-20 Review Note: Files are garbled and useless. Programs will be added at later date if correct files can be located. Not part of the "20" Library.

Media (Service Charge Code): Write-up and Listing (DA), DECTape (HA) or order 10-LIB-7

MACY-11/LNKX-11, Version: 27(655), December 1974 10-309

Author: Digital Equipment Corporation

Source Language: MACRO-11 **Memory Required:** 5K HISEG; 11K Low Seg **Other Software Required:** PIP; FILEX **Keywords:** Cross-Assembler; MACRO-11; PDP-11

Abstract: MACY11 is a cross-assembler which operates on the DEC system-10 and assembles MACRO-11 source code for the PDP-11 family of computers. The resulting binary files are transferable to the PDP-11 for execution or may be used as input to the LNKX11 linker on the DEC system-10 and then transferred to the PDP-11 operating environment. MACY11 will produce either absolute binary or a relocatable object module, depending upon the assembly mode and appends a symbol table or cross-reference table to the listing of symbolic source statements, their octal equivalents, assigned addresses, and error codes.

FUNCTIONS:

- Dynamic user specification of output binary format.
- Performs error reporting.
- MACY11 generates usage statistics.
- Repertoire of sixty-three (63) directives/commands for manipulation of operating environment.
- Source level "over-ride" command switches.
- Core is dynamically allocated for large symbol table and macro storage.
- LNKX11 provides restart capability.

Note: User Programs must be written in MACRO-11.

DEC-20 Review Note: See 20-136.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EA), DECTape (HA), 600' Magtape (MA) or order 10-LIB-7

Western Michigan University Applications Library, Version: See abstract 10-310

Submitted by: Bill Koteff, Digital Equipment Corporation, Marlboro, MA

Source Language: BASIC, FORTRAN IV, MACRO-10 **Keywords:** BCD; CPM; CSMP; ECAP; KOLM; KWIC; LCAP; MATRIX

Abstract: The Western Michigan University Applications Library consists of programs dealing with statistical analysis, data manipulation, circuit analysis, text processing, etc. The following list shows the packages included, indicates their purpose, and version (in parentheses).

ADVAOV: Advanced One-Way Analysis of Variance (JUL 76)
 ASSIGN: Assignment Problem with Rectangular Matrices (2)
 BANK: Data Management Package (Fall 74)
 BANOVA: Analysis of Variance (balanced) (2)
 BCD: Converting Tapes from other Computers to DEC system-10 Format (3)
 BSTAT: Basic Statistics Program (2)
 CHECK: Data Verification (JAN 73)
 CLUSTER: Single Link Cluster Analysis Program (FEB 76)
 CMINV: Complex Matrix Inversion and Solution of Linear Algebraic Equations (SEP 76)
 COLCHI: CHI-Square, Collapsing CHI-Square, Gamma, and THETA Statistics (3)
 CORL: Pearson R Correlation, Mean, and Standard Deviation Program (JUL 76)
 CPM: Critical Path Analysis (APR 72)
 CROSS: PDP-10 NUCROS (3)
 CSMP: Continuous System Modeling Program (2)
 DIFEQ: Numerical Solution of Ordinary Differential Equations (JAN 72)
 ECAP: Electronic Circuit Analysis Program (3)
 EVEV: Eigenvalues and Eigenvectors (2)
 FACTO: Factor Analysis (3)
 FINANC: Integrated Financial Package (OCT 76)
 FREQ: F, I, and A-Type Frequency Count Program (MAR 75)
 ILANO: Illinois Analysis of Variance (Balanova) (APR 73)

INFOF: File Generation, Editing, and Collation (2)
 INTERP: Interpolation and Curve Fitting (JUN 77)
 INTGR: Intergration Program (JAN 73)
 ITEM: Item Analysis Program (NOV 73)
 KENTAU: Kendall's TAU and Partial Rank Correlations (JAN 72)
 KOLM: Kolmogorov-Smirnov Test Program (DEC 72)
 KWIC: Key-Word-In-Context Program (DEC 73)
 LCAP: Logic Circuit Analysis Program (JUN 75)
 LIN: Linear Multiple Regression and Partial Correlation (2)
 LINPRO: Linear Programming Manipulation Program (JUN 75)
 LPR: Linear Programming (4)
 MANOVA: Multivariate Analysis of Variance (Monova) (JUN 73)
 MATRIX: Matrix Operations (2)
 MTHMRG: Match Merge Program (OCT 72)
 NLINEQ: Solution fo Systems of Non-Linear Algebraic Equations (FEB 73)
 NONLPR: Non Linear Programming (JUN 73)
 NONPAR: Integrated Non-Parametric Statistics (2)
 ONEAOV: One-Way Analysis of Variance (unbalanced) (1)
 PATHAN: Path Analysis (AUG 75)
 PFRAC: Partial Fraction Expansion Program (APR 73)
 PTPLOT: Intergrated Point Plotting Package (OCT 76)
 RECCNV: Record Conversion Program (FEB 73)
 RECO: Matrices of Standardized Regressions, Coefficients, Partial Correlations, Simple Regressions, Sd Multiple R's (2)
 RMAOV: Analysis of Variance with Repeated Measures (JAN 73)
 RVSLPR: Linear Programming (Revised Simplex Method) (JUN 77)
 SPELL: Spelling Checker and Correction Program (JUL 74)
 SRHO: Spearman's RHO (2)
 SRT: Data File Breakdown Program (JUN 75)
 STEPR: Stepwise Regression (4)
 STP: STATPACK Statistical Package (SEP 74)
 TAB: Generalized Cross-Tabulation Program (JUN 76)
 TRANSP: Large Scale Transportation Problem (2)
 TRIAOV: Bancroft's Three-Way Analysis of Variance (unbalanced case) (2)
 TSCD: Time Series Change Detection Program (JUN 74)
 TWOAOV: Two-Way Analysis of Variance (unbalanced case) (AUG 72)
 UPDATE: Record Insertion, Modification, Deletion and Retrieval (2)
 WBCD: Converting DECsystem-10 file to tapes for other Computers (4B)
 ZERONE: 0-1 Integer Programming (2)
 - WMU Modified FORTRAN Libraries (none)
 - UCLA Biomedical Package (2)
 - Roots of Polynomials (SEP 70)

DEC-20 Review Note: See 20-137.

Media (Service Charge Code): Microfiche (CA), Manual (ED), 2400' Magtape (PA) or order 10-LIB-9

BRDEAL, Version: 1, May 1978 10-311

Author: Leo E. Neimo, The Finnish Pulp and Paper Research Institute, Finland

Source Language: FORTRAN-10 **Memory Required:** Minimum 5 + 7K **Keywords:** Games Demonstration; Bridge

Abstract: This program deals with random bridge hands (maximum of 64 hands for a single RUN command). The output for each deal is as follows: Deal #, dealer and vulnerability of the contesting pairs in accordance with the convention specified by the World Bridge Federation, and the four hands of the bridge deal in cardinal points (viz. North, East, South and West) exactly as the players are seated at a bridge table. Finally, a summary is printed of the distribution of the cards in all the hands dealt.

DEC-20 Review Note: Files are garbled and useless. Not part of the "20" Library.

Media (Service Charge Code): Write-up (AA), 600' Magtape (MA) or order 10-LIB-8

Magtape Utility Package, Version: See abstract 10-312

Author: Paul Alciere, U.S. Dept. of Transportation, Cambridge, MA
Source Language: MACRO-10 **Keywords:** Utility; Utility-magtape; Media Conversion; EBCDIC; Translation; Unblocking; ASCII; PDP-11; FIELDATA; Magtape

Abstract: This package consists of several magtape utility programs for reading, writing, copying, and translating industry compatible magtapes in a variety of modes and formats.

Modules supplied include: DMPTAP (V.2B(6), July 1979) produces a binary dump of a magtape, for use on tapes whose origin is undocumented. TAPIN (V.1F(24)-7, January 1980) reads foreign magtapes, translates EBCDIC, BCD, 8-bit ASCII, SIXBIT, FIELDATA, PDP-11 ASCII or binary data to 7-bit ASCII, deblocks blocked records, and optionally removes trailing spaces and sequence numbers. TAPOUT (V.1A(5), July 1979) writes magtapes for foreign computers, producing blocked or unblocked EBCDIC, BCD or 8-bit ASCII tapes. TAPCOP (V.1(3), July 1979) copies magtapes bit for bit, using dump mode I/O, using industry mode if both tapes are 9-track.

Note: Low segment expands if necessary. Supports RSX-11M/IAS FILES-11 tape format for PDP-11. This version contains some bug fixes.

DEC-20 Review Note: See 20-138.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-8

**DIRSRT: Sort a Directory Listing, Version: 10-313
1(3)-3, June 1978**

Author: F. Paul Alciere, U.S. Dept. of Transportation, Cambridge, MA
Source Language: MACRO **Memory Required:** 3+1P (LOWSEG can expand) **Keywords:** Sorting; Directory Listing

Abstract: DIRSRT sorts directories produced on disk by DIRECT, without disturbing header and trailer information. Protection failure error messages are re-formatted so the file name sets are sorted. File names are sorted as a linked list in an expanding low segment. Produces a file with the same name as the input file, but with extension .LST. Fast, cheap and easy to use.

DEC-20 Review Note: TOPS-20 directions are already sorted. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): DECtape (HA), 600' Magtape (MA) or order 10-LIB-8

**SCAN-WILD Documentation, Version: 10-314
7(11,541), June 1979**

Author: Reed B. Powell, Digital Equipment Corporation, Santa Clara, CA
Operating System: TOPS-10 V5.07B or later, TOPS-20
Keywords: SCAN; WILD; Command; Scanner

Abstract: This submission consists primarily of documentation to the Digital-supplied programs "SCAN" and "WILD". The "WILD" portions are meant to supplement the existing documentation in the DEC-10 software notebooks. The "SCAN" portion does not rely on other materials.

The topics covered in this document are: Routine Call Definitions, Command Scanners-Overview, "SWITCHS" Macro, "DM" and "KEYS" Macros, "STORAGE" Field Definition, Default Value Handling, File-Spec Scanning, ISCAN-Scanner Initialization, TSCAN-Traditional Scanner, OSCAN-Options Scanner, VSCAN-Verb Form Scanner, PSCAN-Partial Scanner, Accessing SCAN, Example of Using SCAN, and Miscellaneous Routines.

This documentation refers to a modified version of SCAN-7 (11,541), which is included in this submission. Attempts have been made to indicate in the document when non-standard features of SCAN are being referred to.

Documentation is in RUNOFF format.

Associated Documentation: "WILD" section of DEC-10 software notebook.

DEC-20 Review Note: Functionality already exists in TOPS-20 COMND JSYS. Not part of the "20" Library.

Documentation on magnetic media. No source available.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-8

**DTCERT: On-Line DECtape Certification, 10-315
Version: 1(0), September 1978**

Author: Henry Schneiker

Submitted by: Chris Janton, University of Arizona, Tucson, AZ

Operating System: TOPS-10 Series 5, 6, or 7 monitors **Source Language:**

MACRO-10 Memory Required: 4 pages **Special Hardware Required:** TD10-DECtape controller and drives, KA, KI or KL processor with real time trapping enabled, one real time device, and a free PI channel.
Keywords: DECtape Certification

Abstract: DTCERT will generate and write the timing marks on a DECtape. Data is then written on the tape and verified, all blocks are zeroed, and the directory block is initialized. All this is done without disrupting normal timesharing.

When certifying DECtape, DTCERT must have all the DECtape drives on the controller. DTCERT requires RATRP and LOCK privileges to run.

Restrictions: Must have TD10 and drives dedicated while tapes are being certified.

DEC-20 Review Note: DECtapes not supported on a "20." SCAN is specific to TOPS-10. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): Write-up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-8

TECO-10, Version: 3, October 1979 10-316

Author: Andrew Nourse, Digital Equipment Corporation, Maynard, MA
Operating System: TOPS-10 V6.01 or later; TOPS-20 (only tested on V3A) **Memory Required:** 30 pages (50 pages for VT) **Keywords:** TECO-10; VT; VTEDIT; Video Editor

Abstract: TECO-10 is a considerably extended version of TECO. It is based on XTEC (DECUS No. 10-264), rather than DECsystem-10 TECO, so it is a compiler not an interpreter. It includes essentially all of the features of XTEC (although some have been renamed for compatibility with TECO-11 and TECO-8). It includes window support (written in TECO-10 so it can be customized easily!). Terminals supported are VT52, VT61, VT100 (in VT52 mode), and VT05. Any Q-register can be made to function as the text buffer, and files can be read or written to/from any Q-register, so several files can be edited at once.

Two screen-editing subsystems are available written in TECO-10. These are VT and VTEDIT. Both are included with TECO-10.

TECO-10 is mostly compatible with TECO-11, TECO-8 and TECO-VAX.

Restrictions: Cannot "0" out of iteration or parenthesized expression. (This is also true of XTEC.)

Note: To obtain the hard-copy standard TECO manual order DECUS No. 11-450, Media (Service Charge Code): Manual (EC)). See also DECUS No. 10-264.

DEC-20 Review Note: See 20-139.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-8

CROSS, Version: 6(31), February 1978 10-317

Author: Ted Hess, Digital Equipment Corporation, Marlboro, MA
Source Language: MACRO-10 **Keywords:** Micro Processor; Assembler

Abstract: CROSS is an assembler which operates on the DECsystem-10/20 and assembles code for many currently available micro-processors. With the exception of the variations listed in the manual, CROSS implements the features of the PDP-11 Macro assembler for RSX-11D. No attempt was made to provide source compatibility between CROSS and other micro-processors assemblers. Rather, CROSS has been designed to provide consistent, powerful features for all of the mnemonics associated with each micro-processor.

DEC-20 Review Note: See 20-140.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-8

FASP: FORTRAN Alphameric Subroutine Package, Version: June 1978 10-318

Author: Donald E. Barth, Harvard University, Boston, MA

Source Language: FORTRAN **Keywords:** Utility; FORTRAN; FORTRAN-Arrays Alphameric IO

Abstract: FASP, a FORTRAN Alphameric Subroutine Package, is a package of FORTRAN subroutines which provide alphameric input/output features not provided directly by FORTRAN. Most of the subroutines in this package either write characters with a multiple of an AI format, or else generate, manipulate or interpret characters which the calling program has read in with or will write out with a multiple of an AI format. The following types of routines are included in this package.

A. Routines which evaluate the words, numbers or combinations of these which the user has typed.

B. Routines which generate the representations of numbers.

C. Routines which allow the user to specify by name and subscripts, to examine and to manipulate the values of multiply subscripted FORTRAN arrays which are equivalenced with or otherwise loaded into singly subscripted buffers.

D. Routines which perform tab character to space conversions, lower case letter to upper case conversions, and other manipulations of text.

E. Routines which generate bar charts, point, and line plots, vertical time axis plots and pin maps.

F. Routines which generate large multiple-line lettering.

DEC-20 Review Note: See 20-141.

Documentation on magnetic media.

Media (Service Charge Code): 2400' Magtape (PA) or order 10-LIB-8

WKDAY.FOR, Version: July 1978 10-319

Author: Joseph K. Williams, Maynard, Massachusetts

Source Language: FORTRAN-10 **Keywords:** Games; Date

Abstract: This program will accept any date in the twentieth century (1900 thru 1999) typed on the terminal, and will display on the terminal the day of the week on which it occurs, if the user misspells the name of the month, a correct answer will be displayed if the first three letters are correct. A unique algorithm is used such that the machine memory requirement is nil. Program prompts for all input data and tests it for logical occurrence. Should a faulty date such as: June 36, 1987, be given, the user is notified of the error and is again prompted for input. There is absolutely no restriction on the number of inquiries that can be made. With minor modifications, this program will run on any FORTRAN machine.

DEC-20 Review Note: See 20-142.

Documentation on magnetic media.

Media (Service Charge Code): Write-up and Listing (DA), DECTape (HA) or order 10-LIB-8

MACRO-10 Structured Programming Macros, 10-320 Version: 1(0)-2, November 1978

Author: Robert P. Nix, Amax Coal Co., Indianapolis, IN

Source Language: MACRO-10 V53 **Keywords:** Structured Programming; Macros

Abstract: This is a set of macros in a MACRO-10 Universal file, implementing the structures IF/ELSE/ENDIF, WHILE/ENDWHILE, REPEAT/UNTIL, CASE/WHEN/ENDCASE, and LOOP/EXITIF/ENDLOOP to be used for structured programming in MACRO-10. The macros allow nesting up to a depth of 510 levels, and accept conditionals using AND, OR, and NOT, which may be nested to any depth.

DEC-20 Review Note: See 20-143.

Documentation on magnetic media.

Media (Service Charge Code): Write-up (AA), 600' Magtape (MA) or order 10-LIB-8

FORUM, Version: 1, June 1979 10-321

Author: Ernest Petrides, Wesleyan University, Middletown, CT

Submitted by: H. David Todd, Wesleyan University, Middletown, CT

Operating System: TOPS-10 V5.07B **Source Language:** MACRO-10 **Memory Required:** 1 + 4 KW **Keywords:** Interactive Communication

Abstract: The FORUM submission consists of four support packages (QPACK, FRECOR, LNKST, and OUTLIB) and the FORUM program. FORUM is a program for inter-terminal (inter-job) communication. It utilizes a shared write-enabled high segment to communicate data between separate user jobs. Although FORUM started as a simple message transfer mechanism (written to test its support packages), it now includes dozens of special commands and many intricate features. For example, FORUM can support private conversations, can record log files, can replay messages, and can provide useful information about other users running FORUM. The most common incentive for using FORUM has probably been the elimination of having to type "SEN TTYnn" before every message.

DEC-20 Review Note: Specific to TOPS-10, and functionality is already existent (almost) in TOPS-20 TALK command. Not part of the "20" Library.

Documentation on magnetic media.

Media (Service Charge Code): Write-up (AA), 600' Magtape (MA) or order 10-LIB-8

Perpetual Calender, Version: February 1979 10-322

Author: Russ Nahigian, U.S. Department Trans., Cambridge, MA

Source Language: Not Applicable (Data files only) **Special Hardware Required:** Card lister or line printer **Keywords:** Calendar; Demonstrations

Abstract: This package contains 14 different calendars which together make up a perpetual calendar.

The index file contains the proper calendar number to use with an individual year from 1800-2050.

Pictures and year titles can be added in front of the calendar selected. Other years can be extrapolated beyond the index years.

Data cards can be punched and used offline with a card lister, or the files can be set up using a text editor.

Note: Operating System Independent

DEC-20 Review Note: See 20-144.

Documentation on magnetic media.

Media (Service Charge Code): DECTape (HA), 600' Magtape (MA) or order 10-LIB-8

TRAD8: PDP-8 Binary Tapes Translator, Version: 1.1, July 1979 10-323

Author: Hector Saldaña A., Instituto Nacional De Energia Nuclear, Mexico

Source Language: FORTRAN and MACRO-10 **Memory Required:** 3K **Special Hardware Required:** Paper Tape Reader **Other Software Required:** READT.MAC **Keywords:** Disassembly; Derelativizing

Abstract: TRAD8 is like PALDIS (DECUS 10-218) but it has an additional feature, a symbolic listing from the PDP-8 binary tapes, in addition to the octal code generated by PALDIS. Paper tapes are read by TRAD8 directly from high speed reader.

TRAD8 is written in FORTRAN and calls a MACRO subroutine named READT which reads tapes in special form.

The user has the option to modify the symbol table as he chooses since it is a self created file, which contains mnemonics definition. This file normally is FOR02.DAT, which is read by TRAD8 to define its symbol table. TRAD8 writes a file, normally FOR03.DAT if DSK is assigned as LTP, where the corresponding translation is placed.

DEC-20 Review Note: Papertape reader not supported on "20." Not part of the "20" Library.

Media (Service Charge Code): Write-up (AA), DECTape (HA), 600' Magtape (MA) or order 10-LIB-8

MULREG: Multiple Linear Regression Analysis 10-324 Program, Version: 5H(246), February 1980

Author: Marten van Gelderen, Institute for Nuclear Physics Research, The Netherlands

Operating System: TOPS-10 V603 **Source Language:** SIMULA **Memory Required:** 25K minimum **Other Software Required:** SIMULA runtime system **Keywords:** Multiple Linear Regression Analysis or order 10-LIB-8

Abstract: The Multiple Linear Regression Analysis program (MULREG) is especially designed to have flexible and comprehensible model and input specifications. It accepts a "Model" formula which resembles the notation of regression models in common statistical literature quite closely. An accompanying "Input" formula provides the program with information about the arrangement of the observations in the input "Data", which consists of a series of numbers in freefield format. A "Run" command activates the program, while an "Exit" command causes the program to stop. Extensive runtime "Help" information is available. The following piece of program may serve as an example of some of these ideas:

```
"Model" y = alfa0 + alfa1 * x + alfa2 * X ↑ 2;
"Input" 5 * ([X]), n, n * ([Y]);
"Options" Transformed data matrix, Process submodels(1);
"Data" 1 4 1.1 0.7 1.8 0.4
3 5 3.0 1.4 4.9 4.4 4.5
5 3 7.3 8.2 6.2
10 4 12.0 13.1 12.6 13.2
15 4 18.7 19.7 17.4 17.1
"Run"
"Exit"
```

DEC-20 Review Note: (See 20-149.)

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-8

ANTE: A Nother Text Editor, Version: November 1981 10-325**Author:** W. R. Bush, Harvard University, Cambridge, MA**Operating System:** TOPS-10, TOPS-20, TENEX **Source Language:** MACRO 10 **Memory Required:** 2K+4K, 12 pages **Keywords:** Text Editor; Editor

Abstract: ANTE is a flexible, general-purpose text editor. It is based on both TOPS-10 and TENEX TECO, combining features from both versions (and running identically on TOPS-10, TENEX, and TOPS-20). It has been deliberately kept simple, offering a powerful, symmetric set of commands rather than a cluttered set of special purpose ones.

Besides supporting TECO-style editing, ANTE provides new features: multiple editing environments (q-registers have been extended with the slight additional machinery necessary to make each a separate, complete environment); automatic typeout at the end of command streams (displaying the changes made by the commands); two word-oriented commands, which are analogous to the character commands C and D (and are particularly useful when editing documents); command stream syntax validation before execution (if any errors are detected no commands are executed); and a block-structured goto-less control structure for Macros (with which a video editor has been implemented).

Note: The following changes and improvements have been made: four bugs fixed, six commands added (that aid primarily the writing of Macros—the commands EV, FE, FH, FR, FU, FY), improvement of start-up/initialization code.

Documentation on magnetic media.

Media (Service Charge Code): Write-up and Listing (DA), 600' Magtape (MA) or order 10-LIB-8

KEYWRD: Word and Phrase Recognition Logic Generator, Version: September 1980 10-326**Author:** Donald E. Barth, Harvard Business School, Boston, MA**Operating System:** Independent **Source Language:** FORTRAN IV **Keywords:** Keyword

Abstract: The KEYWRD program produces a sequence of tests which can identify the leading word or the leading phrase formed of a fixed sequence of words in a line of text without ever having to test a character which has already been identified. Such a leading word or phrase does not need to include any characters to the right of the first of the characters which uniquely identify the word or phrase. The word or each of the words in a phrase can be abbreviated by truncation, leaving at least the left character in each word of a phrase if additional words or their abbreviations appear to the right. Spaces are allowed between the words in a phrase, but are not required. A single sequence of tests is used to recognize the initial portions of words and phrases which start with a common series of characters, then the unique portion of each word or phrase is identified by a separate sequence of tests. After the unique portion of each word or phrase has been identified by the separate sequence of tests, then a single sequence of tests is similarly used to recognize the final portions of words and phrases which end with a common series of characters.

Note: The following improvements have been made in this version—The program now reports needed array sizes when glossary is too large to be processed. The program now flags in listing all words and phrases which are subsets of other words and phrases.

DEC-20 Review Note: See 20-146.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EB), DECtape (HA), 600' Magtape (MA) or order 10-LIB-8

PENNZYME: PENNSylvania enZYME program, Version: April 1981 10-327**Author:** L. E. Menten**Submitted by:** Dr. David Garfinkel, University of Pennsylvania, Philadelphia, PA**Operating System:** TOPS-10 **Source Language:** FORTRAN **Special Hardware Required:** One serial I/O device. **Keywords:** Scientific

Abstract: This program finds the set of parameter values in a user supplied (FORTRAN) enzymatic rate law which gives the best fit to the initial velocity data. A partial library is supplied on the tape. The program operates in batch or interactive modes and provides two algorithms for locating a least-squares fit to the experimental data. Reports are produced pertaining to the input data and the least-squares calculation.

Note: A test program has been included on the tape.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-8

FORMAT: A FORTRAN FORMAT Statement Generator, Version: September 1980 10-328**Author:** Donald E. Barth, Harvard Business School, Boston, MA**Operating System:** Independent **Source Language:** FORTRAN IV **Keywords:** FORTRAN; RUNOFF

Abstract: The FORMAT program reads a sample form or a rough version of messages, and generates FORTRAN FORMAT statements which can be used by a FORTRAN program to reproduce the form complete with embedded variables, or to generate the messages with lines of uniform length. The case conventions, the structure of the commands, and the meanings of many of the commands which are recognized by the FORMAT program are identical to those accepted by the DECsystem-10 text processing program RUNOFF. When text containing only those commands which are recognized by both the FORMAT and RUNOFF programs is processed by the FORMAT program, then the use of the resulting FORMAT statements generates the text which would have been produced directly by RUNOFF. Although the FORMAT program provides many of the same capabilities as RUNOFF, the FORMAT program is itself written in a system independent subset of FORTRAN and is not an extended version of RUNOFF. If a RUNOFF capability is not described in this documentation, then this capability is not provided by the FORMAT program. In particular, the FORMAT program does not provide any paging, footnoting, indexing or underlining capabilities.

Note: This program fixes errors which caused empty lines copied in NOFILL mode to be lost when multiple spacing.

DEC-20 Review Note: See 20-147.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EC), 600' Magtape (MA) or order 10-LIB-8

Permuted DECsystem-10 Index, Version: June 1980 10-329**Author:** Marshall D. Abrams, National Bureau of Standards, Gaithersburg, MD**Operating System:** TOPS-10 all versions **Source Language:** TECO **Other Software Required:** SORT, RUNOFF **Keywords:** Index; Permuted or order 10-LIB-8

Abstract: This permuted index directs the user to information concerning programs and utilities available on the DECsystem-10. The user does not have to know the name of the utility/program in order to find information. The index consists of one-line descriptions and pointers to HLP and DOC files, the Operating System Commands Manual, and to individual subject manuals.

Restrictions: Pointers to site-specific software should be edited.

DEC-20 Review Note: (None at this time.)

Documentation on magnetic media.

Media (Service Charge Code): Listing (BA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-8

File Transfer System ANF-10 (FTS-ANF-10), Version: 1F, September 1980 10-330**Author:** Andy Nourse, Digital Equipment Corporation, Maynard, MA **Submitted by:** Jill Eastlake, Digital Equipment Corporation, Maynard, MA**Operating System:** TOPS-10 7.01 or greater (ANF-10 support required) **Source Language:** BLISS **Memory Required:** 80-100 pages **Other Software Required:** Modified version of GALAXY V2. **Keywords:** ANF-10; File-Transfer; Communications or order 10-LIB-8

Abstract: File Transfer Services evolved out of the need for a mechanism to perform computer-to-computer communication through file exchange. FTS/ANF-10 is an implementation of File Transfer Services running on a TOPS-10 operation system that supports GALAXY 2 and runs ANF-10.

FTS/ANF-10 allows users to transfer files in an interactive and batch production mode between TOPS-10 systems which run ANF-10. Logged-in users may issue file transfer requests to either send a file to a remote system or receive a file from a remote system.

DEC-20 Review Note: (None at this time.)

Documentation on magnetic media.

Media (Service Charge Code): Manual (EC), 600' Magtape (MA) or order 10-LIB-8

Random Access Files from ALGOL, Version: 10-331
*January 1980***Author:** Ifor G. Jones, U.C.N.W., Bangor, Gwynedd**Operating System:** TOPS-10 V6.03A **Source Language:** ALGOL, MACRO-10 **Memory Required:** 358 for whole package **Keywords:** Random Access; ALGOL**Abstract:** Using Random Access files from ALGOL, a random access type file may be read, written, extended or modified from an ALGOL program. The data being manipulated as arrays of real, integer, boolean, or long real types (string arrays requiring to be converted to integer array), and written to disc in dump record mode.**DEC-20 Review Note:** (None at this time.)*Documentation on magnetic media.***Media (Service Charge Code):** Write-up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-8**Monitor Calls as Callable Functions, Version: 10-332**
*2.0, January 1964***Author:** Markku Suni, Computing Centre, University of Turku, FINLAND**Operating System:** TOPS-10 V6.02 or beyond **Source Language:** MACRO-10 **Other Software Required:** MACRO **Keywords:** Utility; System Programming**Abstract:** This set of callable functions and subroutines has been designed to be used by programs written in higher-level languages to get some useful information from the DECsystem-10 monitor. These programs can be used as functions or subroutines and they can be called from programs which conform to the standard TOPS-10 calling conventions. The names of the functions have been chosen to be:

1. mnemonically meaningful,
2. close to the name of the corresponding monitor call,
3. such that they conform to the FORTRAN name type rules.

In cases where these goals are conflicting, a compromise is made. Generally they are INTEGER FUNCTIONS, but some of them (those that return more than one value) can or must be called as SUBROUTINES.

Note: The write-up is the result of running the source through RUNOFF. All the documentation is contained within the source file.**DEC-20 Review Note:** (none at this time.)*Documentation on magnetic media.***Media (Service Charge Code):** Write-up (AA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-8**VT105 FORTRAN Subroutine Package, Version: 10-333**
*January 1981***Author:** Art Beane, Digital Equipment Corporation, Marlboro, MA**Operating System:** TOPS-10, TOPS-20 **Source Language:** FORTRAN IV **Special Hardware Required:** VT105 required to run programs linked with this library **Keywords:** Display; Graphics**Abstract:** The VT105 Graphics Package consists of 44 FORTRAN subroutines, 3 MACRO subroutines and 13 demonstration programs. The graphics subroutines perform the necessary functions that enable you to use the VT105 as a graphics terminal; the demonstration programs include examples of some of the graphics subroutines. The package also includes three spline fitting routines that enable you to draw smooth nonlinear curves for data where relationships cannot be easily defined mathematically.**DEC-20 Review Note:** See 20-152.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 10-LIB-8**EXTENDED BASIC-10, Version: V17H, January 1980**
*10-334***Author:** University of Pennsylvania**Submitted by:** Anker Berg-Sonne, Digital Equipment Corporation, Marlboro, MA**Operating System:** TOPS-10 V6.03A or later **Source Language:** MACRO-10 **Keywords:** Programming Language**Abstract:** EXTENDED BASIC-10 is a conversational programming language that uses simple, English language-like statements and familiar

mathematical notations to describe a procedure. The BASIC language has been employed as a tool for teaching programming with much success. EXTENDED BASIC-10 offers a variety of program manipulation commands including commands for saving, editing, running and retrieving BASIC programs. EXTENDED BASIC-10 supports single precision, real, integer, and string data types. EXTENDED BASIC-10 has string capability, string and MATrix functions.

*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 10-LIB-10**RPG-II Educational Compiler, Version: V3, 10-335**
*May 1981***Author:** Cerritos Community College and Robert Currier**Submitted by:** Anker Berg-Sonne, Digital Equipment Corporation, Marlboro, MA**Operating System:** TOPS-10 V6.03A or later, TOPS-20 V3A or later **Source Language:** MACRO-10 **Keywords:** Compilers; Education**Abstract:** DECsystem-10 RPG-II is a one-pass, multi-phase, compiler and run time system. Along with the other programs on the DECsystem-10, RPG-II resides on the system device, a disk. RPG-II operations have three phases; compilation, linking, and execution. Input to the compilation phase is a set of specifications for the application program, and sometimes additional data arranged in tables or arrays. Such data is usually information that is unlikely to change for the life of the program. Output from the compilation phase includes (1) a relocatable binary (REL) module (input to the linking loader) and (2) a listing of the specifications plus any error messages.**Note:** RPG-II editor and test system included.**DEC-20 Review Note:** See 20-153.*Documentation on magnetic media.***Media (Service Charge Code):** Manual (ED), 2400' Magtape (PA) or order 10-LIB-10**STATPACK, Version: February 1981 10-336****Author:** Richard Houchard, Russel Barr, Western Michigan University, Kalamazoo, MI**Submitted by:** Jack R. Meagher, Western Michigan University, Kalamazoo, MI**Operating System:** TOPS-10 **Source Language:** FORTRAN IV **Keywords:** Statistics**Abstract:** STATPACK is a integrated, interactive statistical package written for terminal use. It allows the user to issue simple commands for data analysis and will prompt the user for necessary information. When questions of a procedural nature arise, the user may ask for an additional explanation by typing "HELP". The default output device is the terminal. A command is available to channel output to the line printer, providing the user with the ability to obtain multiple copies.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 10-LIB-10**BANK, Version: February 1981 10-337****Author:** Richard Houchard, Russel Barr, Western Michigan University, Kalamazoo, MI**Submitted by:** Jack R. Meagher, Western Michigan University, Kalamazoo, MI**Operating System:** TOPS-10 **Source Language:** FORTRAN/RATFOR **Keywords:** Data Handling**Abstract:** BANK is a data management system designed for interactive terminal use. Directions to the program are entered on one or more lines, with the only prompting being a question mark indicating the program's readiness to accept instructions. Options, specifications, and detailed explanations are available by simply typing "HELP". The program handles fixed (integer), floating (decimal), and alphanumeric data, and has the ability to easily change data from one of these modes to another. Data is in a table form, with the columns corresponding to variables and rows to observations. Variables may be identified by either variable numbers, or user specified variable names. To eliminate formatting problems and decrease data recovery time, banks are written as random access binary files.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 10-LIB-10

BIBLIO: Bibliographic References Program, 10-338
Version: June 1980

Author: Mike Rubin. Computing Center, Wesleyan University, Middletown, CT

Submitted by: Janet Morgan, Wesleyan Computing Center, Wesleyan University, Middletown, CT

Operating System: TOPS-10, TOPS-20 **Source Language:** MACRO-10
Keywords: Data Handling

Abstract: BIBLIO is a program which creates and/or searches through bibliographical references in an on-line data file. Its capabilities include:

- Creating a data file
- Appending bibliographical references to an old data file
- Finding the next match of a search string in a data file
- Finding all matches of a search string in a data file
- Editing the data file

Note: TOPS-20 sites should order 20-157.

Documentation on magnetic media.

Media (Service Charge Code): Write-up and Listing (DB), 600' Magtape (MA) or order 10-LIB-10

HTRY: Random Sampling Without Replacement, 10-339
Version: June 1981

Author: J. Teuhola, O. Nevalainen, University of Turku, Finland

Operating System: TOPS-10 **Source Language:** FORTRAN-10 **Other Software Required:** RAN(Z), A pseudorandom number generator of FORTRAN-10 **Keywords:** Statistics

Abstract: The subroutine selects M different random numbers out of N possible and stores them in an array.

Documentation on magnetic media.

Media (Service Charge Code): Write-up and Listing (DA), DECtape (HA), 600' Magtape (MA) or order 10-LIB-10

D2D: Disk to Disk Pack Copy, 10-340
Version: July 1981

Author: Richard Denney, The University of Texas at Austin, Austin, TX
Operating System: TOPS-10 **Source Language:** MACRO-10 **Memory Required:** 100 to 300 pages **Keywords:** Disk; Utility Disk

Abstract: D2D (disk to disk) copies an entire disk pack to another disk pack. Using Super-USETI and Super-USETO (SUSET) instead of LOOKUP and ENTER, as well as performing its own file space allocation and Storage Allocation Table (SAT) management, results in a fast copy. At the University of Texas at Austin, copies of RP06s using FUR which run four hours are performed in forty minutes with D2D. Unlike "image" copy programs which also use SUSET, but simply copy block to block and result in a useless BADBLK.SYS, D2D creates a refreshed pack with a valid BADBLK.SYS.

Note: Note:

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-10

PTYCCL: Monitor Commands from a COBOL Program, 10-341
Version: September 1981

Author: Bill Geraci and Al MacInnes, Digital Equipment Corporation
Operating System: TOPS-10 **Source Language:** MACRO-10 **Memory Required:** 512W **Keywords:** COBOL; PTY; PTYCCL: Command; Subroutine

Abstract: PTYCCL is a COBOL-callable subroutine, written in MACRO-10, that allows a program to issue any TOPS-10 monitor command. To accomplish this, a PTY is opened and logged in under the current PPN. The monitor command is then issued on this PTY and the most significant error or informational message is returned to the caller. For example, a program could construct and issue and "PRINT" command taking advantage of SCAN and WILD's command parsing with various switch options, or issue a "DAYTIM" command to set a current date/time string. PTYCCL.REL should be included when the COBOL program is linked. It may be used with either the COBOL-68 or -74 compilers.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-11

Sam76 Language System, Version: May 1982 10-342

Author: Ancelme Roichel, Sam 76 Inc., Pennington, NJ

Operating System: TOPS-10 **Source Language:** MACRO-10 **Keywords:** Sam76; Language

Abstract: The Sam76 language was designed by people for people - not by programmers for programmers. It follows a well defined syntax which is easy to learn and to read. The notation avoids the use of pseudo "English" words which are a frequent source of confusion and ambiguity in many of the other computer languages.

The Sam76 language can be used in as large a variety of tasks as one is able to imagine - this on personal computers without requiring computer specialists or programmers to intercede.

There are more than 150 functions - or instructions - available making the Sam76 language the most powerful available today, and it fits in approximately eight thousand bytes of memory; this can be ram or rom as the user desires.

The Sam76 language can be viewed as a real language which follows the user's stream of consciousness in much the same manner as spoken language. This permits the language in its written form as used by the computer and the user to serve as documentation.

It provides the user with the capability of requiring the computer to perform complex operations in many areas, is interactive and reactive, provides a uniquely flexible means to control facilities or to derive data from sources other than the user's keyboard, is a "string processor", is interpretive, facilitates the use of pre-defined procedures, and makes no distinction except in the user's own use of information between data and procedures.

The Sam76 language is most powerful in providing man-machine interaction permitting the user to modify his work and to intervene when desired. The language provides facilities to define and save scripts for subsequent use; this in effect can behave or operate as if they themselves were inherent functions of the language.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-11

MAILER: A Message Program for DECsystem-10's, 10-343
Version: 2A(22), March 1982

Author: David L. Edwards, Jr., National Radio Astronomy Observatory, Socorro, NM

Operating System: TOPS-10 V7.01 **Source Language:** BLISS, MACRO-10 **Keywords:** Mail; Utility

Abstract: MAILER is a complete mail utility for the DECsystem-10. The mailer includes both system and user mail support. The mailer includes group processing, user notification, mail security and administrative controls. The mailer is easily installed and fully documented. It is similar to the mailers found on TOPS-20. MAILER is mainly written in BLISS-10 with a couple of routines in MACRO.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-11

System Programmers PASCAL for KI/KL (VM version), 10-344
Version: 11(217), May 1982

Author: H. H. Nagel, Charles Hedrick, Rutgers University, Piscataway, NJ

Operating System: TOPS-10 **Source Language:** PASCAL, MACRO-10 **Memory Required:** (VM version) To self-compile: 41P low and 61P high **Keywords:** PASCAL; Compilers; System programming

Abstract: This is a modified version of Hamburg PASCAL, intended for system programming. It allows full access to the facilities of the TOPS-10 operating system. It is also somewhat easier to use than the Hamburg version. Debugger and cross-reference listing facilities (using DEC's CREF) are included.

Note: TOPS-20 sites should use 20-3; Tenex sites should contact the submitter. Users should read the file PASCALOPR for instructions. KA users should read the file KA.OPR.

This program replaces DECUS No. 10-283

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-11

System Programmers PASCAL for KA/KI (Non VM version), Version: 11(217), May 1982 10-345

Author: H. H. Nagel, Charles Hedrick, Rutgers University, Piscataway, NJ

Operating System: TOPS-10 **Source Language:** PASCAL, MACRO-10

Memory Required: (Non VM version) To self-compile: 21K low and 31K high **Keywords:** PASCAL; Compilers; System programming

Abstract: This is a modified version of Hamburg PASCAL, intended for system programming. It allows full access to the facilities of the TOPS-10 operating system. It is also somewhat easier to use than the Hamburg version. Debugger and cross-reference listing facilities (using DEC's CREF) are included.

Note: TOPS-20 sites should use 20-3; Tenex sites should contact the submitter. Users should read the file PASCALOPR for instructions. KA users should read the file KAOPR.

This program replaces DECUS No. 10-283.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-11

RIDIT Analysis, Version: July 1982 10-346

Author: Ardoth A. Hassler & Peter J. Plourd, The Catholic University of America, Washington, D.C.

Submitted by: Ardoth A. Hassler

Operating System: TOPS-10 V7.01 **Source Language:** FORTRAN IV **Keywords:** Statistics

Abstract: RIDIT analysis is a non-parametric statistical test used to compare a sample group with an already identified distribution. RIDIT analysis differs from other non-parametric statistical tests, such as Chi-Square, in that it assumes an underlying natural order to the data.

Note: Could be easily adapted to other systems.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), 600' Magtape (MA) or order 10-LIB-11

Generic Survey System, Version: V1.0, June 1982 10-347

Submitted by: Pom S. Kim, Digital Equipment Corporation

Operating System: TOPS-10 KL701/103J **Source Language:** 1022 **Memory Required:** 60,928 Words **Other Software Required:** 1022 (Data Base Management System), SOS Editor, MIC utility for TOPS-10, CTL utility for TOPS-20. **Keywords:** Survey System

Abstract: The ultimate goal of the Survey System is to improve communications between 2 or more groups.

This automated Survey System will provide users with a tool that will help them analyze the survey questionnaires they get from their survey respondents.

The Survey System generates analyzed reports by totalling, averaging, prioritizing the answers on the survey questionnaires.

The types of questions that Survey System deals with are:

1. Satisfaction degree type questions
2. Yes-No type questions
3. Percent type questions
4. Priority type questions

Restrictions: The Survey System will not generate reports for questions that can not be calculated numerically. The maximum number of questions on one questionnaire is 100.

Note: User of Survey System needs basic knowledge on any one file editor (e.g. SOS, TECO, EDIT).

TOPS-20 sites should order 20-167.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EB), 2400' Magtape (PA) or order 10-LIB-11

CSSDBM: User Friendly Application Generator, Version: V5, July 1982 10-348

Submitted by: Robert W. Conlon, Digital Equipment Corporation

Operating System: TOPS-10, TOPS-20 **Source Language:** COBOL **Memory Required:** 25KW **Keywords:** Application Generator

Abstract: CSSDBM is a highly user oriented application generator. It provides the tools necessary to define appropriate data elements and produce COBOL programs for file maintenance as well as report generation. This package also includes modules which result in dynamic

record changes to accommodate evolving application requirements over time. Optional file update features include a transaction audit trail and character validation. Users of this software have experienced significant cost savings as a result of the expeditious generation of business application code, thus totally eliminating the need, in many instances, for staff programmers. Further development savings are realized by the fact that appropriate software is generated in minutes rather than days or weeks if hand coded.

Note: TOPS-20 sites should order DECUS No. 20-168.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-11

PHI: Program for Hierarchical Information, Version: 1/5, November 1982 10-349

Author: Ray Horne, Middlesex Polytechnic, London, England

Operating System: TOPS-10 V7.01 **Source Language:** MACRO-10 **Memory Required:** (min)6KW + 4KW **Keywords:** Hierarchical; Information; Help; Tree

Abstract: PHI is a program for setting up files of information which have a hierarchical "tree" structure, and for examining them on-line. It has three principle uses:

(1) As a comprehensive "HELP" system. All the information can be stored as a tree structure extending over any number of files. Users can browse through the tree in order to find what information is available, or may go directly to the particular subject of interest.

(2) Storing large manuals for easy online access (they can also be linked into the "HELP" system described above). Existing documentation can readily be converted to PHI form by editing it with SOS or TECO. PHI can be used to print such manuals on the lineprinter, and provides automatic paging, spacing, title underlining and generation of section numbers.

(3) Setting up personal files of notes which can be added to or modified.

Information required can be found either by descending through the tree, selecting at each level from a list of titles, or by searching for user-specified strings.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-11

System Programmers PASCAL for KA/KI (Non VM version), Version: II(217), May 1982 10-345

Author: H. H. Nagel, Charles Hedrick, Rutgers University, Piscataway, NJ

Operating System: TOPS-10 **Source Language:** PASCAL, MACRO-10

Memory Required: (Non VM version) To self-compile: 21K low and 31K high **Keywords:** PASCAL; Compilers; System programming

Abstract: This is a modified version of Hamburg PASCAL, intended for system programming. It allows full access to the facilities of the TOPS-10 operating system. It is also somewhat easier to use than the Hamburg version. Debugger and cross-reference listing facilities (using DEC's CREF) are included.

Note: TOPS-20 sites should use 20-3; Tenex sites should contact the submitter. Users should read the file PASCALOPR for instructions. KA users should read the file KA.OPR.

This program replaces DECUS No. 10-283.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-11

RIDIT Analysis, Version: July 1982 10-346

Author: Ardoth A. Hassler & Peter J. Plourd, The Catholic University of America, Washington, D.C.

Submitted by: Ardoth A. Hassler

Operating System: TOPS-10 V7.01 **Source Language:** FORTRAN IV **Keywords:** Statistics

Abstract: RIDIT analysis is a non-parametric statistical test used to compare a sample group with an already identified distribution. RIDIT analysis differs from other non-parametric statistical tests, such as Chi-Square, in that it assumes an underlying natural order to the data.

Note: Could be easily adapted to other systems.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), 600' Magtape (MA) or order 10-LIB-11

Generic Survey System, Version: V1.0, June 1982 10-347

Submitted by: Pom S. Kim, Digital Equipment Corporation

Operating System: TOPS-10 KL701/103J **Source Language:** 1022 **Memory Required:** 60,928 Words **Other Software Required:** 1022 (Data Base Management System), SOS Editor, MIC utility for TOPS-10, CTL utility for TOPS-20. **Keywords:** Survey System

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This automated Survey System will provide users with a tool that will help them analyze the survey questionnaires they get from their survey respondents.

The Survey System generates analyzed reports by totalling, averaging, prioritizing the answers on the survey questionnaires.

The types of questions that Survey System deals with are:

1. Satisfaction degree type questions
2. Yes-No type questions
3. Percent type questions
4. Priority type questions

Restrictions: The Survey System will not generate reports for questions that can not be calculated numerically. The maximum number of questions on one questionnaire is 100.

Note: User of Survey System needs basic knowledge on any one file editor (e.g. SOS, TECO, EDIT).

TOPS-20 sites should order 20-167.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EB), 2400' Magtape (PA) or order 10-LIB-11

CSSDBM: User Friendly Application Generator, Version: V5, July 1982 10-348

Submitted by: Robert W. Conlon, Digital Equipment Corporation

Operating System: TOPS-10, TOPS-20 **Source Language:** COBOL **Memory Required:** 25KW **Keywords:** Application Generator

Abstract: CSSDBM is a highly user oriented application generator. It provides the tools necessary to define appropriate data elements and produce COBOL programs for file maintenance as well as report generation. This package also includes modules which result in dynamic

record changes to accommodate evolving application requirements over time. Optional file update features include a transaction audit trail and character validation. Users of this software have experienced significant cost savings as a result of the expeditious generation of business application code, thus totally eliminating the need, in many instances, for staff programmers. Further development savings are realized by the fact that appropriate software is generated in minutes rather than days or weeks if hand coded.

Note: TOPS-20 sites should order DECUS No. 20-168.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-11

PHI: Program for Hierarchical Information, Version: 1/5, November 1982 10-349

Author: Ray Horne, Middlesex Polytechnic, London, England

Operating System: TOPS-10 V7.01 **Source Language:** MACRO-10

Memory Required: (min)6KW + 4KW **Keywords:** Hierarchical; Information; Help; Tree

Abstract: PHI is a program for setting up files of information which have a hierarchical "tree" structure, and for examining them on-line. It has three principle uses:

(1) As a comprehensive "HELP" system. All the information can be stored as a tree structure extending over any number of files. Users can browse through the tree in order to find what information is available, or may go directly to the particular subject of interest.

(2) Storing large manuals for easy online access (they can also be linked into the "HELP" system described above). Existing documentation can readily be converted to PHI form by editing it with SOS or TECO. PHI can be used to print such manuals on the lineprinter, and provides automatic paging, spacing, title underlining and generation of section numbers.

(3) Setting up personal files of notes which can be added to or modified.

Information required can be found either by descending through the tree, selecting at each level from a list of titles, or by searching for user-specified strings.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 10-LIB-11

Section 3.3

DECSYSTEM-20 PACKAGES

The DECSYSTEM-20 Library Tapes listed below contain the individual DECSYSTEM-20 programs offered within this catalog. Revisions of programs received after the publication of this catalog are not included on the Library Tapes, but will be available separately.

Most individual DECSYSTEM-20 programs have documentation on the magnetic media. In cases where only hard copy documentation is available, the documentation is listed with the Library Tape.

The Library tape do not include programs listed in this Special DECSYSTEM-20 Packages section of the catalog and must be ordered separately. (i.e., 20-SP-1 is not contained on the Library Tapes.)

The DECSYSTEM-20 Library Tape 1, Ver- 20-LIB-1 sion: 1983/1984

Abstract: The DECSYSTEM-20 Library Tape 1 contains programs 20-1 through 20-25.

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AD), 2400' Magtape (PC) 1600 BPI only

The DECSYSTEM-20 Library Tape 2, Ver- 20-LIB-2 sion: 1983/1984

Abstract: The DECSYSTEM-20 Library Tape 2 contains programs 20-26 through 20-76.

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AE), 2400' Magtape (PC) 1600 BPI only

The DECSYSTEM-20 Library Tape 3, Ver- 20-LIB-3 sion: 1983/1984

Abstract: The DECSYSTEM-20 Library Tape 3 contains programs 20-77 through 20-99.

Restrictions: SPICE2 (20-79) is included on this tape. The U.S. Government export regulations prohibit distribution of this program outside the United States without appropriate export licenses.

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AF), 2400' Magtape (PC) 1600 BPI only

The DECSYSTEM-20 Library Tape 4, Ver- 20-LIB-4 sion: 1983/1984

Abstract: The DECSYSTEM-20 Library Tape 4 contains programs 20-100 through 20-135.

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AD), 2400' Magtape (PC) 1600 BPI only

The DECSYSTEM-20 Library Tape 5, Ver- 20-LIB-5 sion: 1983/1984

Abstract: The DECSYSTEM-20 Library Tape 5 contains programs 20-136 through 20-152.

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AE), 2400' Magtape (PC) 1600 BPI only

The DECSYSTEM-20 Library Tape 6, Ver- 20-LIB- sion: 1983/1984

Abstract: The DECSYSTEM-20 Library Tape 6 contains programs 20-153 through 20-160.

Documentation on magnetic media.

Media (Service Charge Code): 2400' Magtape (PC) 1600 BPI only

The DECSYSTEM-20 Library Tape 7, Ver- 20-LIB- sion: 1983/1984

Abstract: The DECSYSTEM-20 Library Tape 7 contains programs 20-161 through 20-168.

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AA), 2400' Magtape (PC) 1600 BPI only

The DECSYSTEM-20 Library Update Tape, 20-LIB-A Version: 1983/1984

Abstract: The DECSYSTEM-20 Library Update Tape for 1983/1984 will update the DECSYSTEM-20 Library for users who purchase the six library tapes (20-LIB-1 through 20-LIB-6) from the 1982/1983 Software Catalog.

This update tape contains programs 20-161 through 20-168, plus revisions to 20-4, 20-42, 20-79, 20-100 and 20-145.

Restrictions: SPICE2 (20-79) is included on this tape. The U.S. Government regulations prohibit distribution of this program outside the United States without appropriate export licenses.

Note: The Write-Up listed below includes the documentation not available on the magnetic media.

Media (Service Charge Code): Write-Up (AA), 2400' Magtape (PC) 1600 BPI only

Symposium Tape from the DECSYSTEM-20 20-SP-1 SIG, Fall 1981, Los Angeles, Version: Fall 1981

Author: Various

Submitted by: Douglas Bigelow, Wesleyan University, Middletown, CT
Operating System: TOPS-20 V4 or 5 **Source Language:** MACRO-10
Special Hardware Required: Optical Scanner Device required for one of the six submissions on the tape. **Keywords:** Fall 1981; Symposium; DECSYSTEM-20; TOPS-20; Los Angeles

Abstract: The TOPS-20 symposium tape from the Fall 1981 DECUS convention is a 1600 BPI DUMPER tape in non-interchange mode. It contains six savesets, each labeled by author and contents, followed by duplicate savesets to allow recovery from tape reading problems.

Items of interest on the tape include an optical scanner program for processing student examination grades; a statistical package written in FORTRAN but using TOPS-20 command recognition; a word processor simulator program/screen editor; and a program allowing simultaneous multiple process control under TOPS-20.

No guarantees are made as to the completeness, useability, or quality of the programs on the tape and the material has not been checked or reviewed.

Documentation may or may not be included on the magnetic media.

Media (Service Charge Code): 600' Magtape (MS)

Section 3.4

DECSYSTEM-20 ABSTRACTS

The following are the individual DECUS programs currently available for the DECSYSTEM-20.

CALC: A Calculator Program, Version: 3, May 1978 **20-1**

Author: Peter Baum

Submitted by: Paul Lemaire, Digital Equipment Corporation, Maynard, MA

Operating System: FORTRAN IV-PLUS **Source Language:** FORTRAN IV; MACRO-20 **Keywords:** Calculator

Abstract: CALC is a calculator designed to evaluate arithmetic expressions. In its basic form, expression evaluation is similar to that used by ANSI FORTRAN with calculations performed on INTEGER*4 and REAL*8 constants. Variables may also be invoked but are limited to single alphabetic characters. It is assumed that the reader is familiar with FORTRAN data types, constants, expression syntax, operator precedence, and the syntax for assigning values to variables. Additional features include octal, hexadecimal, and multiple precision arithmetic capabilities. Commonly used commands and expressions can be placed in a file and executed when convenient.

Note: This program was previously distributed as DECUS No. 20-7, the program has not been updated, only the program number has changed. A PDP-11 version of CALC is being distributed as DECUS No. 11-341.

Review Note: Compiles, loads, and runs successfully. Indirect commands do not appear to function.

Documentation on magnetic media.

Media (Service Charge Code): Microfiche (CA), Manual (EB), 600' Magtape (MA) or order 20-LIB-1

SAIL/FAIL, Version: 18, August 1976 **20-2**

Keywords: SAIL; ALGOL; System-Programming; Compilers; Debugging

Refer to 10-86 abstract for further information.

Review Note: Original DEC-10 version has been supplemented by some routines supplied by Charles Hedrick of Rutgers which fix bugs on the DEC-20. Program appears to compile correctly.

Documentation on magnetic media.

Media (Service Charge Code): 2400' Magtape (PA) or order 20-LIB-1

PASCAL, Version: May 1981 **20-3**

Author: Charles Hedrick, Rutgers University, New Brunswick, NJ

Submitted by: David Todd, Wesleyan University, Computing Center, Middletown, CT

Operating System: TOPS-20 V. Release 4 **Source Language:** MACRO-10, PASCAL **Memory Required:** 90 Pages **Keywords:** PASCAL; Compiler

Abstract: This is a modified version of Hamburg PASCAL intended for system programming. It allows full access to the facilities of the TOPS-20 operating system. It is also somewhat easier to use than the Hamburg version. Debugger and cross-reference listing facilities (using DEC's CREF) are included. Object programs and compiler are entirely native mode, except for the compiler command scanner.

Note: This version should be used only by TOPS-20 sites. Sites using TOPS-10 should use DECUS No. 10-283. Tenex sites should contact the submitter. Users should read the file PASCAL.OPR for instructions. The following improvement has been made: Minor bug fixes.

Review Note: Native-20-mode system programmer's PASCAL from Charles Hedrick at Rutgers.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1

INTERLISP for TOPS-20, Version: June 1982 **20-4**

Author: Larry Masinter, Xerox Palo Alto Research Center, Palo Alto, CA

Operating System: TOPS-20 **Source Language:** MACRO-10, LISP **Keywords:** LISP; Interlisp

Abstract: LISP systems have been used for highly interactive programming for more than a decade. During that period considerable effort has been devoted to developing tools and techniques for providing powerful interactive support to the programmer. The Interlisp programming system represents one of the more successful projects aimed at developing a

system which can be used by researchers in computer science for performing their day to day work, and can also serve as a testbed for introducing and evaluating new ideas and techniques for providing sophisticated forms of programmer assistance.

Restrictions: Requires ECO level 10 in CPU. The program uses page-mapping techniques available under TOPS-20 or TENEX of KL-10's and will not run under TOPS-10. If you have a KL-10 and can run TENEX or if you have a 1090T or 1091 CPU and can run TOPS-20, then the program can be run directly. This program will not run under Version 3 of TOPS-20.

Associated Documentation: The documentation on the media is out of date. For a more up-to-date manual, call or write to the following for ordering information: Phone: (213)-351-2351 x2222. Address: Xerox Electro-Optical Systems, 300 North Halstead Street, Pasadena, CA 91107. Attention: INTERLISP MANUAL.

No source available. Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), 2400' Magtape (PA) or order 20-LIB-1

PAL-10, Version: 1, October 1969 **20-5**

Keywords: PAL-10; PDP-8; Cross Assembly

Refer to 10-12 abstract for further information.

Review Note: Minor modification required in logical name list; compiles, loads, and runs successfully.

Documentation may be obtained by ordering 10-12, Write-up (AA), also documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1

JACOBI, Version: 1, May 1972 **20-6**

Keywords: EIGEN Systems; Diagonalization

Refer to 10-22 abstract for further information.

Review Note: Converted subroutine calls to PUSHJ/POPJ; now compiles correctly. Execution testing not done.

Documentation may be obtained by ordering 10-22, Write-up and Listing (DA).

Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1

Speedy PDP-10/8 Loader, Version: 1, November 1969 **20-7**

Keywords: PDP-8; PDP-8-Loader

Refer to 10-23 abstract for further information.

Review Note: Loader appears to run from a load of the .REL file (no testing done). Source file is garbled and cannot be used to generate the .REL file.

Documentation may be obtained by ordering 10-23, Write-up and Listing (DA).

Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1

GASP II, Version: 1, December 1969 **20-8**

Keywords: Simulation; GASP

Refer to 10-27 abstract for further information.

Review Note: Compiles and loads cleanly. No further testing done.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1

NVERTX, Version: 1, February 1970 **20-9**

Keywords: High Energy; Physics; Monte-Carlo

Refer to 10-30 abstract for further information.

Review Note: Compiles with some warning messages, loads, and runs to completion with the test data supplied.

Documentation may be obtained by ordering 10-30, Write-up (AA).

Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1

PALX-11, Version: 1, March 1970 **20-10**

Keywords: PDP-11; Cross Assembler; PAL-11

Refer to 10-31 abstract for further information.

Review Note: Compiles, loads, and begins execution. No testing done.

Documentation may be obtained by ordering 10-31, Manual (EB).

Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1

- W:Complex Error Function for Complex Argument, Version: 1, April 1970** 20-11
Keywords: Error-Function; Probability-Integral
Refer to 10-33 abstract for further information.
Review Note: Converted octal constants to form required by FORTRAN-20: program compiles and runs.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- Flow Charter, Version: 4, October 1973** 20-12
Keywords: Flowcharting
Refer to 10-38 abstract for further information.
Review Note: Compiles, loads, and runs successfully.
Documentation may be obtained by ordering 10-38, Write-up (AA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- Random Numbers, Version: 1, May 1970** 20-13
Keywords: Random Numbers
Refer to 10-43 abstract for further information.
Review Note: Converted subroutine calls to PUSHJ/POPJ; programs now compile, load, and run successfully. Results not checked for accuracy.
Documentation may be obtained by ordering 10-43, Write-up (AA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- SIMPLE, Version: 1, June 1970** 20-14
Keywords: Simulator; Analog-Computer
Refer to 10-57 abstract for further information.
Review Note: Converted subroutine calls to PUSHJ/POPJ; programs now compile, load, and correctly run the test data supplied with the programs.
Documentation may be obtained by ordering 10-57, Write-up and Listing (DA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- LISP 1.6, Version: 2, September 1969** 20-15
Keywords: LISP; List-processing
Refer to 10-59 abstract for further information.
Review Note: Redefined JOBDAT symbols and replaced one outdated JSYS. Some possible problems with source file ALVINE.MAC (HRRZ@ opcodes). No testing done on this package.
Documentation may be obtained by ordering 10-59, Manual (EC).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- MLISP, Version: 1, January 1969** 20-16
Keywords: LISP
Refer to 10-61 abstract for further information.
Review Note: No modifications required. Package is expected to be a transportable LISP package, but no testing was done.
Documentation may be obtained by ordering 10-61, Manual (EB).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- LEARNS: For Learning MACRO-10 Instruction Set, Version: 1, April 1970** 20-17
Keywords: Instruction; Assembly-Language
Refer to 10-65 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation may be obtained by ordering 10-65, Write-up (AA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- PAL-12, Version: 1, June 1970** 20-18
Keywords: PDP-12; Cross-Assembler; PAL-12; DIAL
Refer to 10-68 abstract for further information.
Review Note: Modified logical name search; program compiles, loads, and successfully executes two test programs supplied.
Documentation may be obtained by ordering 10-68, Write-up (AA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- FAKE, Version: 1, May 1970** 20-19
Keywords: FORTRAN-Arrays; Arrays; Utility-FORTRAN; Core-Allocation
Refer to 10-70 abstract for further information.
Review Note: Converted subroutine calls to PUSHJ/POPJ and redefined JOBDAT symbols. Program assembles; no testing done.
Documentation may be obtained by ordering 10-70, Write-up (AA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- Dartmouth BASIC Library, Version: 1, September 1970** 20-20
Keywords: Dartmouth; BASIC
Refer to 10-72 abstract for further information.
Review Note: Random sample of programs tested appear to function correctly.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- SALESMAN, Version: 1, May 1970** 20-21
Keywords: Sales; Business
Refer to 10-88 abstract for further information.
Review Note: Program compiles and runs successfully.
Documentation may be obtained by ordering 10-88, Write-up and Listing (DA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- JOTTO, Version: 1, June 1970** 20-22
Keywords: Games; JOTTO
Refer to 10-89 abstract for further information.
Review Note: Typographical errors were corrected. Program compiles but needs a dictionary.
Documentation may be obtained by ordering 10-89, Write-up and Listing (DA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- BARTEE, Version: 1, June 1970** 20-23
Keywords: LOGIC; Networks
Refer to 10-90 abstract for further information.
Review Note: Redefined JOBDAT symbols; program compiles, loads, and correctly executes test data given in .DOC file.
Documentation may be obtained by ordering 10-90, Write-up and Listing (DA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- BASIC Tutorial, Version: 1, October 1970** 20-24
Keywords: Teaching; BASIC-CAI; CAI-BASIC
Refer to 10-97 abstract for further information.
Review Note: A random sample of programs tested functioned correctly.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1

- On-Line BASIC and FORTRAN Demos, Version: 2, March 1971** **20-25**
Keywords: Mathematics; Statistics; Business
Refer to 10-100 abstract for further information.
Review Note: A random sample of the BASIC programs ran. FORTRAN files which did not run were modified for FORTRAN-20 compatibility. Files were given filetypes .BAS, .FOR, and .TXT, depending upon their functions. Calling sequence of RAND.MAC was converted to PUSHJ/POPJ.
Documentation may be obtained by ordering 10-100, Write-up (AA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-1
- SSP, Version: 3, July 1973** **20-26**
Keywords: Scientific; IBM-SSP; SSP
Refer to 10-101 abstract for further information.
Review Note: Programs ran without modification and gave results in agreement with expected test results to within 5 to 7 significant figures.
Documentation may be obtained by ordering 10-101, Write-up (AA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-2
- PDP-8 Simulator, Version: 2, June 1969** **20-27**
Keywords: PDP-8 Simulator
Refer to 10-102 abstract for further information.
Review Note: Changed JOBDAT symbols; compiles, loads, and runs successfully.
Documentation may be obtained by ordering 10-102, Write-up (AA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-2
- SNOBOL4, Version: 3.4, November 1970** **20-28**
Keywords: SNOBOL
Refer to 10-104 abstract for further information.
Review Note: Converted .SHR to .EXE file; the .EXE file runs. No attempt to recompile and reload (which should be done).
Documentation may be obtained by ordering 10-104, Manual (EB), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-2
- DOCTOR and ELIZA, Version: 1, December 1970** **20-29**
Keywords: Doctor; Eliza; Games; Psychology
Refer to 10-105 abstract for further information.
Review Note: Converted .SAV to .EXE file, which functions correctly. No source file is included.
No source available. Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-2
- CHESS, Version: 1, June 1970** **20-30**
Keywords: Games; Chess
Refer to 10-110 abstract for further information.
Review Note: Converted .SAV file to .EXE file, which functions correctly. No source file is included.
No source available. Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-2
- MATTAC: Matrix TIC-TAC-TOE, Version: 1, January 1971** **20-31**
Keywords: Games; TIC-TAC-TOE
Refer to 10-114 abstract for further information.
Review Note: Converted .SAV file to .EXE file, which runs.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-2
- TAPBLK, Version: 1, January 1971** **20-32**
Keywords: Magtape; Utility-Magtape; Blocking-Magtape
Refer to 10-115 abstract for further information.
Review Note: Converted .SAV file to .EXE file, which begins execution. Did not test.
Documentation may be obtained by ordering 10-115, Write-Up (AA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-2
- QED, Version: 1, March 1969** **20-33**
Keywords: Editor-Line
Refer to 10-116 abstract for further information.
Review Note: Redefined JOBDAT symbols. Program compiles, loads, and executes.
Documentation may be obtained by ordering 10-116, Write-up (AA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-2
- RENBR: The FORTRAN Renumbering Program, Version: 4, May 1979** **20-34**
Keywords: Utility; FORTRAN; Renumbering
Refer to 10-130 abstract for further information.
Review Note: Compiles, loads, and runs successfully. The .CMD file was modified for TOPS-20.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-2
- ALGOLW, Version: 2, December 1973** **20-35**
Keywords: ALGOL
Refer to 10-133 abstract for further information.
Review Note: Redefined JOBDAT symbols. Program compiles, loads, and runs successfully.
No Documentation Available.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-2
- FISHER, Version: 1, April 1971** **20-36**
Keywords: Probability
Refer to 10-134 abstract for further information.
Review Note: Edited the source file to delete extra CRLF's. Program compiles, loads, and runs successfully.
No Documentation Available.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-2
- COB300, Version: 1, August 1971** **20-37**
Keywords: Filter-COBOL; COBOL-Filter
Refer to 10-137 abstract for further information.
Review Note: Modified one variable to be a non-reserved word; program compiles and loads. Should be tested on a Burroughs COBOL program.
Documentation may be obtained by ordering 10-137, Write-up (AA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-2
- TALK8F, Version: 1, March 1971** **20-38**
Keywords: PAL-10
Refer to 10-139 abstract for further information.
Review Note: Redefined format of octal constants and redefined JOBDAT symbols. Program compiles, loads, and runs. Needs a PDP-8 for testing.
Documentation may be obtained by ordering 10-139, Write-up and Listing (DA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-2

MATHLAB, Version: 1, December 1971**20-39****Keywords:** MATHLAB; Symbolic-Processing

Refer to 10-142 abstract for further information.

Review Note: Converted .SAV to .EXE file, patched ESC character as described in manual. Program ran test case in manual correctly. Program should be recompiled and reloaded.*Documentation may be obtained by ordering 10-142, Manual (EC).***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**COBSTD, Version: 1, November 1971****20-40****Keywords:** Utility-COBOL; COBOL-Formatting

Refer to 10-143 abstract for further information.

Review Note: Minor syntactical correction required, but otherwise program compiled, loaded, and ran successfully.*Documentation may be obtained by ordering 10-143, Write-up (AA).***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**KWIC, Version: 2, October 1978****20-41****Keywords:** KWIC; Index; Keyword

Refer to 10-151 abstract for further information.

Review Note: Compiles, loads, and runs successfully.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**CHANGE, Version: V4, July 1982****20-42****Author:** David Kiarsis, Digital Equipment Corporation**Submitted by:** Ardeth A. Hassler, The Catholic University of America, Washington, D.C.**Operating System:** TOPS-20, TOPS-10 V7.01 **Source Language:** MACRO-10 **Memory Required:** 5 + 12K Core **Special Hardware Required:** 701 or later monitor **Keywords:** Character; Conversion**Abstract:** CHANGE is a program to aid in the conversion of character sets foreign to the DECsystem-10. It is capable of using any I/O device on the DECsystem-10, but it is mainly designed for the user with magnetic tapes and disks. CHANGE will perform blocking duplication, character set conversion, unblocking and reading and writing of tape labels.**Documentation on Magnetic Media.****Media (Service Charge Code):** Write-Up (AA), 600' Magtape (MA) or order 20-LIB-2**Asynchronous Communication with PDP-8, Version: 1, March 1972****20-43****Keywords:** PDP-8; Communications

Refer to 10-156 abstract for further information.

Review Note: Redefined JOBDAT symbols and altered logical name search. Programs now compile, load, and run. Needs testing with a PDP-8.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**STREAM, Version: 1, April 1972****20-44****Keywords:** Utility-FORTRAN; Byte-Manipulation

Refer to 10-157 abstract for further information.

Review Note: Changed subroutine calls to PUSHJ/POPJ's. Fixed up argument list references. Program now compiles and loads. Needs testing.*Documentation may be obtained by ordering 10-157, Write-up and Listing (DA).***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**PAGER, Version: 4(6), November 1972****20-45****Keywords:** Utility

Refer to 10-159 abstract for further information.

Review Note: Program compiles, loads, and runs successfully.*Documentation may be obtained by ordering 10-159, Write-up and Listing (DA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**ABACUS, Version: 1, May 1972****20-46****Keywords:** Calculator

Refer to 10-161 abstract for further information.

Review Note: Minor modifications required because of MACRO version changes. Program compiles, loads, and runs successfully.*Documentation may be obtained by ordering 10-161, Write-up (AA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**CROSS: Correlation of Responses with Options for the Social Sciences, Version: 1, September 1972****20-47****Keywords:** Statistics; Correlation

Refer to 10-164 abstract for further information.

Review Note: Created IOFIL.FOR to handle IFIL/OFIL subroutine calls from F40 and modified RENAME.MAC to use PUSHJ/POPJ calls. Modified FORMAT statements. Program now compiles, loads, and runs test case correctly.*Documentation may be obtained by ordering 10-164, Write-up (AA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**RDMT11, Version: 1, September 1972****20-48****Keywords:** PDP-11-Magtape; Utility-Magtape

Refer to 10-165 abstract for further information.

Review Note: Compiles, loads, and runs successfully. Needs testing with PDP-11 magnetic tapes, though.*No Documentation Available.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**GENPLT-II: A General Plotting Package, Version: 1, September 1972****20-49****Keywords:** Plotting

Refer to 10-167 abstract for further information.

Review Note: Added DOUBLE PRECISION statement to allow 6 characters per word. Programs compile, load, and run test case correctly.*Documentation may be obtained by ordering 10-167, Write-up (AA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**TBLTRN: A Symbolic Table Assembler Written in FORTRAN, Version: 2, February 1973****20-50****Keywords:** Tables; Symbols

Refer to 10-168 abstract for further information.

Review Note: Modified one MACRO subroutine to use PUSHJ/POPJ calling convention. Program compiles, loads, and runs successfully.*Documentation may be obtained by ordering 10-168, Manual (EC), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**CTFFT, Version: 1, October 1972****20-51****Keywords:** Cooley-Tukey; FFT; Fourier-Transform

Refer to 10-169 abstract for further information.

Review Note: Program compiled, loaded, and ran one test file correctly (within roundoff error). Other test file (for subroutine FOURG) was garbled at time of original submittal. Subroutine compiles, though no testing was done on it.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**UFLIP: User File Library Implementation Program, Version: 1, September 1972****20-52****Keywords:** Utility-Disk; Utility-DEctape

Refer to 10-170 abstract for further information.

Review Note: Program compiled, loaded, and ran test case correctly.*Documentation may be obtained by ordering 10-170, Write-up (AA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2

Cardiac Machine Language Simulator, Version: 20-53
*1, September 1972***Keywords:** Cardiac

Refer to 10-171 abstract for further information.

Review Note: Corrected one mistyped line in the BASIC program. Program runs successfully.*Documentation may be obtained by ordering 10-171, Write-up and Listing (DA).***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**FLMON: Process Flowsheet Monitor, Version: 20-54**
*1, October 1972***Keywords:** Flowsheets

Refer to 10-173 abstract for further information.

Review Note: Program compiles, loads, and runs successfully. Needs testing with a plotter.*Documentation may be obtained by ordering 10-173, Write-up and Listing (DA).***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**Sign Maker, Version: 1, November 1972 20-55****Keywords:** Sign-Maker

Refer to 10-177 abstract for further information.

Review Note: Changed format of octal constants to FORTRAN-20 form; changed DEFINE FILE to OPEN; and changed search for SIGN.LIB from [1,4] to SYS:. Program compiles, loads, and runs correctly.*Documentation may be obtained by ordering 10-177, Write-up and Listing (DA).***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**MTIO, Version: 1, December 1972 20-56****Keywords:** Utility-Magtape; Utility-FORTRAN

Refer to 10-178 abstract for further information.

Review Note: Changed calling sequence to PUSHJ/POPJ. Program compiles and loads. Needs to be tested with a magtape and main program.*Documentation may be obtained by ordering 10-178, Write-up (AA).***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**FASBOL, Version: September 1976 20-57****Keywords:** SNOBOL; FASBOL

Refer to 10-179 abstract for further information.

Review Note: Converted .SAV to .EXE file, which appears to run (saved as FASBOL.EXE). Recompiled, reloaded, and saved as SNOBOL.EXE (which appears to run correctly).*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**EDITS, Version: 1, January 1973 20-58****Keywords:** Editor-Line; EDITS

Refer to 10-181 abstract for further information.

Review Note: A spurious character in source file was deleted. Program compiles, loads, and runs successfully.*Documentation may be obtained by ordering 10-181, Manual (EB), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**TXTPAD and TXTTAB, Version: 1, February 1973 20-59****Keywords:** Illustration

Refer to 10-182 abstract for further information.

Review Note: Programs compile. TXTPAD has undefined globals on loading because of need for hardware routines. TXTTAB ran successfully.*Documentation may be obtained by ordering 10-182, Write-up (AA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**GRAPH, Version: 1, January 1973 20-60****Keywords:** Plotting; Graphing; Utility-LPT

Refer to 10-183 abstract for further information.

Review Note: Subroutines compile with warnings.*Documentation may be obtained by ordering 10-183, Write-up (AA).***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**SYNTAX, Version: 2, December 1973 20-61****Keywords:** Syntax; Utility-Programming; Grammar

Refer to 10-185 abstract for further information.

Review Note: Fails to compile, but code is sufficiently similar to PASCAL that only minor modifications should be needed to convert to PASCAL. Files left on distribution in hopes that an interested user will revise and resubmit.*No Documentation Available.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**META2, Version: 2, December 1973 20-62****Keywords:** META2; Compiler-Writer

Refer to 10-186 abstract for further information.

Review Note: Redefined .JBFF; program compiles, loads, and runs successfully.*No Documentation Available.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**Asynchronous Communication, Version: 1, April 1973 20-63****Keywords:** Communications; Utility-COBOL; Utility-FORTRAN; Dial-Out-Transmission

Refer to 10-187 abstract for further information.

Review Note: Converted calling sequence to PUSHJ/POPJ for FORTRAN subroutines. Programs compile and load. Needs testing.*Documentation may be obtained by ordering 10-187, Write-up and Listing (DA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**MAFIA: Magnetic Filer Advanced, Version: 1, March 1973 20-64****Keywords:** Utility-Magtape

Refer to 10-189 abstract for further information.

Review Note: Redefined JOBDAT symbols. Program compiles, loads, and runs successfully. Needs testing.*Documentation may be obtained by ordering 10-189, Write-up (AA), also documentation on magnetic media in German.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**BATTLESHIP, Version: 2, January 1974 20-65****Keywords:** Games; Battleship

Refer to 10-190 abstract for further information.

Review Note: Program runs.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2***1 (Star One), Version: 1, March 1973 20-66****Keywords:** Star-one; List-Processing

Refer to 10-193 abstract for further information.

Review Note: Needs to be recompiled. No testing done.*Documentation may be obtained by ordering 10-193, Manual (EC).***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2

FILTER, Version: 1, July 1973 20-67**Keywords:** COBOL-Filter; Filter-COBOL

Refer to 10-197 abstract for further information.

Review Note: Sources compiled with numerous errors caused by use of (new) reserved words. Changes yet to be made but should be easy to fix.*Documentation may be obtained by ordering 10-197, Write-up (AA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**IMP72 Compiler, Version: 1.5, October 1973 20-68****Keywords:** IMP; System-Programming

Refer to 10-198 abstract for further information.

Review Note: Converted .SAV file to .EXE, which ran successfully. Recompilation fails for some program modules.*Documentation may be obtained by ordering 10-198, Manual (EB), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**VTED and RTRANS, Version: 1, August 1973 20-69****Keywords:** Editor-Display

Refer to 10-200 abstract for further information.

Review Note: RTRANS runs correctly. VTED needs testing on DEC VT terminals.*Documentation may be obtained by ordering 10-200, Write-up (AA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**GUNNER, Version: 1, January 1974 20-70****Keywords:** Games; Gunner

Refer to 10-203 abstract for further information.

Review Note: Program runs correctly.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**EYES, Version: 1, January 1974 20-71****Keywords:** EYES; Braille

Refer to 10-207 abstract for further information.

Review Note: Compiles, loads, and runs successfully.*Documentation may be obtained by ordering 10-207, Write-up and Listing (DA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**SCAT2: Standard Complex Algebra, Version: 1, March 1974 20-72****Keywords:** Algebra; Complex-Arithmetic

Refer to 10-208 abstract for further information.

Review Note: Program compiles, loads, and runs successfully.*Documentation may be obtained by ordering 10-208, Write-up (AA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**RANDU, Version: 1, March 1974 20-73****Keywords:** Probability; Random Numbers

Refer to 10-209 abstract for further information.

Review Note: Subroutine compiles, loads, and runs successfully. Results not verified for accuracy.*Documentation may be obtained by ordering 10-209, Write-up and Listing (DA).***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**GNOSIS: A System for CAI, Version: 2, June 1978 20-74****Keywords:** GNOSIS; CAI; Instruction; Teaching; Pedagogics; ALGOL; SIMULA; Education; Computer; Learning; School

Refer to 10-211 abstract for further information.

Review Note: Program compiles, loads, and runs successfully.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**SPPLT and SPTEX, Version: 1, June 1973 20-75****Keywords:** Chemistry-Quantum; CAI; Plotting

Refer to 10-212 abstract for further information.

Review Note: Programs compile and run successfully.*Documentation may be obtained by ordering 10-212, Write-up and Listing (DA).***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**ABACUS: Advanced Bowdoin Arithmetic Calculator Utility System, Version: 1, April 1974 20-76****Keywords:** Calculator

Refer to 10-214 abstract for further information.

Review Note: Converted JOBDAT symbols. Program compiles, loads, and runs successfully.*Documentation may be obtained by ordering 10-214, Write-up (AA).***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-2**NMRSIM and TTYOPS, Version: 1, August 1974 20-77****Keywords:** Chemistry-NMR; NMR-Simulation; NMR-Plotting

Refer to 10-221 abstract for further information.

Review Note: Changed subroutine calling sequence to PUSHJ/POPJ; programs compile, load, and run successfully. No testing without plotter hardware.*Documentation may be obtained by ordering 10-221, Manual (EB)-listing is part of the manual.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-3**SIMULA, Version: 4A (310), August 1978 20-78****Keywords:** SIMULA; ALGOL; Programming-Language; Utility; SAFIO; SIMDBM

Refer to 10-223 abstract for further information.

Review Note: Compiler assembled, loaded, and ran successfully. Note an error message associated with module M2.MAC which is apparently caused by a misplaced conditional terminator, but the resulting symbol is properly defined as external nevertheless. Note that the package has been reorganized to contain just DEC-20 code.*Documentation may be obtained by ordering as specified in the "Ordering Information" for 10-223, also documentation on magnetic media.***Media (Service Charge Code):** 2400' Magtape (PA) or order 20-LIB-3**SPICE V2G.5, Version: 2G.5, September 1981 20-79****Author:** Richard Newton, University of California at Berkeley, Berkeley, CA**Submitted by:** Dee Ramee, Digital Equipment Corporation, Marlboro, MA**Operating System:** TOPS-20 **Source Language:** FORTRAN IV, MACRO-10 **Memory Required:** 256K **Keywords:** Simulation; Nonlinear; Linear**Abstract:** SPICE is a general-purpose circuit simulation program for nonlinear dc, nonlinear transient, and linear ac analysis. Circuits may contain resistors, capacitors, inductors, mutual inductors, independent voltage and current sources, four types of dependent sources, transmission lines, and the four most common semiconductor devices: diodes, BJTS, JFETS and MOSFETS.**Restrictions:** Requires FORTRAN V6 on TOPS-20.

U.S. Government export regulations prohibit distribution of this program outside the United States without appropriate export licenses.

Note: TOPS-10 sites should order 10-224.*Documentation on magnetic media.***Media (Service Charge Code):** Manual (EB), 600' Magtape (MA) or order 20-LIB-3**AVAIL, Version: 1, December 1974 20-80****Keywords:** Help

Refer to 10-226 abstract for further information.

Review Note: Programs compile, load, and run correctly. Note that there is a requirement for directory numbers, though. This program should be modified when a native-20 FOROTS system is available.*Documentation may be obtained by ordering 10-226, Write-up (AA).***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-3

- Utilities, Version: 1, January 1975** **20-81**
Keywords: Utility-COBOL; Commercial
Refer to 10-227 abstract for further information.
Review Note: Some programs in this package needed COBOL variable-names to be changed because of changes in COBOL reserved words; they then compiled, loaded, and ran successfully. Others in the package appear to be incomplete and unusable. Complete package is left in the library for those who want to work on them.
Documentation may be obtained by ordering 10-227, Write-up (AA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- CALCOMP Plotter Package, Version: 2, July 1975** **20-82**
Keywords: Plotting; Graphing
Refer to 10-228 abstract for further information.
Review Note: Some modifications required to get package to load properly. Programs compile, load, and run successfully. Requires plotter hardware to verify.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- ASTRO, Version: November 1975** **20-83**
Keywords: Astrology
Refer to 10-229 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation may be obtained by ordering 10-229, Write-up (AA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- Interprocessor Communications over an Asynchronous Line, Version: 1, August 1974** **20-84**
Keywords: Communications; PDP-11-Communications
Refer to 10-230 abstract for further information.
Review Note: Programs compile, load, and run successfully. No testing done.
Documentation may be obtained by ordering 10-230, Manual (EC).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- ZAP: ZOFTIG Alteration Program, Version: 1, April 1975** **20-85**
Keywords: Disk
Refer to 10-233 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation may be obtained by ordering 10-233, Write-up (AA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- To be announced.** **20-86**
- LAN: Linear Active Network Analysis Program, Version: 1, March 1975** **20-87**
Keywords: Linear
Refer to 10-235 abstract for further information.
Review Note: Programs run. No testing done.
Documentation may be obtained by ordering 10-235, Manual (EC).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- PILOT, Version: November 1975** **20-88**
Keywords: Instruction
Refer to 10-237 abstract for further information.
Review Note: Modified compiler to look for PILOT.EXE rather than PILOT.SHR. Compiler compiles with a few MACRO "E" errors, but loads successfully. Resulting program successfully compiled the demo program supplied.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- EXETER, Version: 1, June 1975** **20-89**
Keywords: Simulation; Games
Refer to 10-238 abstract for further information.
Review Note: Programs compile (with truncation warnings), load, and run successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- KISMET, Version: 1, May 1975** **20-90**
Keywords: Games
Refer to 10-240 abstract for further information.
Review Note: Modified search path for help file. Program compiles, loads, and runs successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- FORTH Programming System, Version: November 1978** **20-91**
Keywords: System Programming; Data-Acquisition
Refer to 10-241 abstract for further information.
Review Note: Compiles, loads, and runs successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- WGMM11, Version: May 1976** **20-92**
Keywords: Games; Demo
Refer to 10-244 abstract for further information.
Review Note: Corrected garbled characters in middle of source file. Program now compiles, loads, and runs successfully.
No Documentation Available.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- MESS, Version: 1, November 1975** **20-93**
Keywords: Simulation
Refer to 10-245 abstract for further information.
Review Note: Programs compile, load, and run successfully.
Documentation may be obtained by ordering 10-245, Manual (ED).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- TR, Version: 1, December 1975** **20-94**
Keywords: PDP-8; Simulator
Refer to 10-248 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- TBF: Student's-T and Behrens-Fisher Probabilities List and Density Sketch, Version: 1, January 1976** **20-96**
Keywords: Probability; Statistics
Refer to 10-251 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation may be obtained by ordering 10-251, Write-up (AA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- READ, Version: February 1976** **20-97**
Keywords: Instruction
Refer to 10-253 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation may be obtained by ordering 10-253, Manual (EB).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3

- MAGGIE, Version: 1A(1), February 1976** **20-98**
Keywords: Utility-DECTape
Refer to 10-254 abstract for further information.
Review Note: Program compiles, loads, and runs successfully. Needs testing with magnetic tape.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- INVSIM, Version: February 1976** **20-99**
Keywords: Business; Inventory-Simulation; Simulation
Refer to 10-255 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation may be obtained by ordering 10-255, Write-up (AA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-3
- Linwood Linear Least-Squares Curve-Fitting Program, Version: April 1981** **20-100**
Author: Fred S. Wood, Standard Oil Company, Chicago, IL
Submitted by: Eric R. Ziegel, Standard Oil Company, Naperville, IL
Operating System: TOPS-20, TOPS-10 **Source Language:** MACRO-10, FORTRAN II **Memory Required:** 65K Core or 39K + FOROTS
Keywords: Linear Least Squares; Curve Fitting; Regression
Abstract: This program is the DEC 10/20 implementation of the Linear Least-Squares Curve-Fitting program described in the book "Fitting Equations to Data" by C. Daniel and F.S. Wood, Wiley 1980 (for User's Manual see, glossary of terms, and interpretation of results). The program is designed for the analysis of both global and interior characteristics of data - determining the influence of each observation on the fit, assessing the plausibility of assumptions, searching for influential subsets of variables, estimating measurement error to judge the fit of candidate equations, providing statistics on the range and relative influence of variables to recognize the strengths and limitations of the fit, and for checking the validity of fitted equations as additional observations become available.
Associated Documentation: For User's Manual, glossary of terms, and interpretation refer to fitting equations to data by Daniel and Wood, Second edition, Wiley, 1980.
Documentation on magnetic media.
Media (Service Charge Code): Write-Up (AB), 600' Magtape (MA) or order 20-LIB-4
- NONLINWOOD: Nonlinear Least-Squares Curve-Fitting Program, Version: 2, January 1979** **20-101**
Keywords: Nonlinear Least Squares; Curve Fitting
Refer to 10-258 abstract for further information.
Review Note: Revised submittal lacked functions DARCOS and DARSIN which were in the sources for the original submittal. These were copied from original into file DAFUNS.FOR and the load command string modified. File NONLIN.CTL contains revisions necessary to compile, load, and test revised version on a DEC-20. Programs compile, load, and run test data correctly.
Documentation may be obtained by ordering 10-258, Write-up (AA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- Information Storage and Retrieval, Version: March 1976** **20-102**
Keywords: Business
Refer to 10-260 abstract for further information.
Review Note: Program compiles and runs successfully.
Documentation may be obtained by ordering 10-260, Write-up (AA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- SORTER, Version: March 1976** **20-103**
Keywords: Sorting
Refer to 10-261 abstract for further information.
Review Note: Program compiles and runs successfully.
No Documentation Available.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- COMPUT and TWOPER, Version: January 1976** **20-104**
Keywords: Instruction
Refer to 10-262 abstract for further information.
Review Note: Programs compile and run successfully.
Documentation may be obtained by ordering 10-262, Write-up (AA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- XTEC, Version: %0(427), January 1976** **20-105**
Keywords: Editor; System-Programming
Refer to 10-264 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation may be obtained by ordering 10-264, Write-up (AA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- BASIC, Version: 17E(143), January 1976** **20-106**
Keywords: BASIC; Programming-System
Refer to 10-265 abstract for further information.
Review Note: Note that there are no sources. The .SHR files were converted to .EXE files and ran correctly. Note the bugs listed in the review.
No source available. Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- TOPS-10 Simulator, Version: 5.06, August 1976** **20-107**
Keywords: TOPS-10; Simulation
Refer to 10-266 abstract for further information.
Review Note: Compiles with warnings, loads, and runs successfully. No documentation of format of parameter file.
Documentation may be obtained by ordering 10-266, Manual (EB).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- COBEDT: A COBOL File Editor, Version: 4(1), October 1976** **20-108**
Keywords: COBOL; Editor; Manipulation; Utility-Programming
Refer to 10-267 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- ADRES: For Handling Address Files and Printing Adhesive Labels, Version: 1.0, March 1977** **20-109**
Keywords: Labels; Sorting; Utility
Refer to 10-269 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation may be obtained by ordering 10-269, Write-up (AA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4

- PROC10, Version: January 1976** 20-110
Keywords: Image Processing System; Manipulation
Refer to 10-270 abstract for further information.
Review Note: Converted .SHR to .EXE file, which runs. Cannot recompile and reload because of missing source modules.
Documentation may be obtained by ordering 10-270, Microfiche (CA) also, documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- BESLIB, Version: November 1976** 20-111
Keywords: Mathematics
Refer to 10-272 abstract for further information.
Review Note: Program compiles, loads, and correctly runs test case.
Documentation may be obtained by ordering 10-272, Write-up and Listing (DA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- INDEX, Version: November 1976** 20-112
Keywords: Mathematics
Refer to 10-273 abstract for further information.
Review Note: Program compiles, loads, and runs BESLIB test case successfully.
Documentation may be obtained by ordering 10-273, Write-up (AA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- CADA Monitor, Version: August 1976** 20-113
Keywords: Instruction; Statistics
Refer to 10-274 abstract for further information.
Review Note: Program compiles and runs successfully.
Documentation may be obtained by ordering 10-274, Manual (EB).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- FPRINT, Version: 1, October 1976** 20-114
Keywords: IBM-COBOL
Refer to 10-276 abstract for further information.
Review Note: Subroutine compiles correctly. Not tested.
Documentation may be obtained by ordering 10-276, Write-up (AA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- TWOSID, Version: 1(2), March 1977** 20-115
Keywords: Editor; Two-Sided Paper
Refer to 10-277 abstract for further information.
Review Note: Program compiles, loads, and runs correctly.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- PICTURE BOOK, Version: March 1977** 20-118
Keywords: Loader; File-Handling; Graphing; PDP-11-Communications
Refer to 10-284 abstract for further information.
Review Note: Modified INCH and OUTCH for TOPS-20 MACRO. Programs compile, load, and run successfully.
Documentation may be obtained by ordering 10-284, Manual (EB).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- SQUASH, Version: April 1977** 20-119
Keywords: Manipulation; Sorting; Utility-Disk
Refer to 10-285 abstract for further information.
Review Note: Modified subroutines to use PUSHJ/POPJ convention; program compiles, loads, and runs successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- CUSH2: Designing Package Cushioning by Computer, Version: May 1977** 20-120
Keywords: Utility
Refer to 10-286 abstract for further information.
Review Note: Program compiles, loads, and correctly executes test data from documentation.
Documentation may be obtained by ordering 10-286, Write-up (AA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- VENN: A Generative Program for Computer-Assisted Instruction, Version: 1, July 1977** 20-121
Keywords: CAI; Heuristic; Instruction; Logic; VENN
Refer to 10-290 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- XPL: A Compiler Generator System, Version: July 1977** 20-122
Keywords: Programming-Language; XPL
Refer to 10-291 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- Revised Plotter Subroutines, Version: April 1977** 20-123
Keywords: Plotting
Refer to 10-292 abstract for further information.
Review Note: Programs compile, load, and run successfully.
Documentation may be obtained by ordering 10-292, Write-up (AA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- FLECS: FORTRAN Language with Extended Control Structures, Version: April 1977** 20-124
Keywords: Translator; FORTRAN
Refer to 10-293 abstract for further information.
Review Note: Program compiles, loads, and runs successfully. Implementation manual is not in machine readable form.
Documentation may be obtained by ordering 10-293, Write-up (AA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- GIDUS/DISLIB: GT40 Interactive Display Utility System, Version: 1, August 1977** 20-125
Keywords: Utility
Refer to 10-294 abstract for further information.
Review Note: Programs compile successfully. No testing done. New command file was created.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- ATOPLT, Version: 2A(47), July 1977** 20-126
Keywords: Graphics; Plotting; FORTRAN
Refer to 10-297 abstract for further information.
Review Note: Program compiles, loads, and runs successfully. Needs testing.
Documentation may be obtained by ordering 10-297, Write-up (AA); this document is an addendum to the documentation file on the tape.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4

- Normalizing Raw Test Scores, Version: 1, December 1977** 20-127
Keywords: Teaching; Statistics; Testing; Scoring
Refer to 10-298 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation may be obtained by ordering 10-298, Write-up and Listing (DA).
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- COPYMT, Version: 7(40), March 1977** 20-128
Keywords: Utility; Magtape-Copying; Disk
Refer to 10-299 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- BAKGMN, Version: 5, December 1977** 20-129
Keywords: Games
Refer to 10-300 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
No Documentation Available.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- STRMAC, Version: March 1977** 20-130
Keywords: Programming-Language; MACRO
Refer to 10-301 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- LIBMAN, Version: 3(21), March 1977** 20-131
Keywords: Utility-Disk; Utility-DECTape
Refer to 10-302 abstract for further information.
Review Note: Program compiles, loads, and runs correctly (except that the DIRECT program doesn't exist on TOPS-20).
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- DUMPR, Version: 5(26), March 1977** 20-132
Keywords: Utility; File-Handling
Refer to 10-303 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- BIORTH, Version: 2(6), March 1977** 20-133
Keywords: Games; Biorhythms; Date
Refer to 10-305 abstract for further information.
Review Note: Replaced a GETTAB UO with GTAD JSYS. Program compiles, loads, and runs successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- FOCAL-10, Version: October 1976** 20-134
Keywords: Language; FOCAL-10
Refer to 10-306 abstract for further information.
Review Note: Program compiles, loads, and runs successfully. Extensive testing not done.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- VIDED: A Display Oriented Text Editor, Version: 4A, April 1979** 20-135
Keywords: Text Editor; Display; Data Handling
Refer to 10-307 abstract for further information.
Review Note: Source files for latest version are in COMP subdirectory but will not load correctly because of multiply-defined globals. Source files for older version are in SOURCE and will not compile under current SIMULA (DECUS No. 20-78). The .EXE files from the earlier version are in the SYS subdirectory.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-4
- MACY-11/LNKX-11, Version: 27(655), December 1974** 20-136
Keywords: Cross-Assembler; MACRO-11; PDP-11
Refer to 10-309 abstract for further information.
Review Note: Programs compile, load, and run correctly.
Documentation may be obtained by ordering 10-309, Manual (EA), also documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-5
- Western Michigan University Applications Library, Version: See 10-310 abstract** 20-137
Keywords: BCD; CPM; CSMP; ECAP; KOLM; KWIC; LCAP; MATRIX
Refer to 10-310 abstract for further information.
Review Note: Most programs work as submitted. Some work done to load without overlays. Complete package has been split into separate subdirectories for ease of access.
Documentation may be obtained by ordering 10-310, Microfiche (CA), or Manual (ED).
Media (Service Charge Code): 2400' Magtape (PA) or order 20-LIB-5
- Magtape Utility Package, Version: See 10-312 abstract** 20-138
Keywords: Utility; Utility-magtape; media conversion; EBCDIC; BCD; SIXBIT; Translation; Unblocking; ASCII; PDP-11; FIELDATA
Refer to 10-312 abstract for further information.
Review Note: Programs compile, load, and run successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-5
- TECO-10, Version: 3, October 1979** 20-139
Keywords: TECO-10; VT; VTEDIT; Video Editor
Refer to 10-316 abstract for further information.
Review Note: Renamed files to TECO-20, recompiled with TOPS-20 option on. Compiles, loads, and runs. Does not recognize filename supplied on command line, but does seem to function.
To obtain the hard-copy standard TECO manual order DECUS No. 11-450.
Media (Service Charge Code): Manual (EC), 600' Magtape (MA) or order 20-LIB-5
- CROSS, Version: 6(31), February 1978** 20-140
Keywords: Micro Processor; Assembler
Refer to 10-317 abstract for further information.
Review Note: Program compiles, loads, and runs successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-5
- FASP: FORTRAN Alphameric Subroutine Package, Version: June 1978** 20-141
Keywords: Utility; FORTRAN; FORTRAN-Arrays; Alphanumeric IO
Refer to 10-318 abstract for further information.
Review Note: Modified dimensions of COMMON FASPG to have modules agree on size. Program compiles, loads, and runs successfully.
Documentation on magnetic media.
Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-5

WKDAY, Version: July 1978**20-142****Keywords:** Games; Date

Refer to 10-319 abstract for further information.

Review Note: Program compiles, loads, and runs correctly.*Documentation may be obtained by ordering 10-319, Write-up and Listing (DA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-5**STRUCT: MACRO-10 Structured Programming Macros, Version: 1(0)-2, November 1978****20-143****Keywords:** Structured Programming; Macros

Refer to 10-320 abstract for further information.

Review Note: Macros compile and seems to work.*Documentation may be obtained by ordering 10-320, Write-up (AA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-5**Calendar Maker, Version: February 1979****20-144****Keywords:** Calendar; Demonstration

Refer to 10-322 abstract for further information.

Review Note: Data files generate output as desired.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-5**ANTE: A Nother Text Editor, Version: November 1981****20-145****Author:** W. R. Bush, Harvard University, Cambridge, MA**Operating System:** TOPS-10, TOPS-20, TENEX **Source Language:** MACRO-10 **Memory Required:** 2K+4K, 12 pages **Keywords:** Text Editor; Editor**Abstract:** ANTE is a flexible, general-purpose text editor. It is based on both TOPS-10 and TENEX TECO, combining features from both versions (and running identically on TOPS-10, TENEX and TOPS-20). It has been deliberately kept simple, offering a powerful, symmetric set of commands rather than a cluttered set of special purpose ones.

Besides supporting TECO-style editing, ANTE provides new features: multiple editing environments (q-registers have been extended with the slight additional machinery necessary to make each a separate, complete environment); automatic typeout at the end of command streams (displaying the changes made by the commands); two word-oriented commands, which are analogous to the character commands C and D (and are particularly useful when editing documents); command stream syntax validation before execution (if any errors are detected no commands are executed); and a block-structured goto-less control structure for Macros (with which a video editor has been implemented).

Note: The following changes and improvements have been made: four bugs fixed, six commands added (that aid primarily the writing of Macros-the commands EV, FE, FH, FR, FU, FY), improvement of start-up/initialization code.*Documentation on the magnetic media.***Media (Service Charge Code):** Write-Up and Listing (DA), 600' Magtape (MA) or order 20-LIB-5**KEYWRD, Version: September 1980****20-146****Keywords:** Keyword

Refer to 10-326 abstract for further information.

Review Note: Compiles, loads, and successfully runs test case supplied by author.*Documentation may be obtained by ordering 10-326, Manual(EB), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-5**FORMAT, Version: September 1980****20-147****Keywords:** FORTRAN; RUNOFF

Refer to 10-328 abstract for further information.

Review Note: Compiles, loads, and successfully runs test case supplied by author.*Documentation may be obtained by ordering 10-328, Manual (EC), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-5**SPELL, Version: 7A(7), January 1979****20-148****Keywords:** Spelling Corrector

Refer to 10-184 abstract for further information.

Review Note: Original program failed to compile because symbols in conditional statements weren't assembled and defined. Simple fixes to source file were required. Also fixed error which demanded a dictionary file even if one had been loaded. Program now compiles and runs correctly.*Documentation may be obtained by ordering 10-184, Write-up (AA), also documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-5**MULREG: Multiple Linear Regression Analysis Program, Version: 5H(246), February 1980****20-149****Keywords:** Multiple Linear Regression Analysis

Refer to 10-324 abstract for further information.

Review Note: Compiles using SIMULA (DECUS No. 20-78) with warning messages, loads successfully, and appears to process author-supplied test data correctly.*Documentation on magnetic media.***Media (Service Charge Code):** 600' Magtape (MA) or order 20-LIB-5**Improved Random Number Generator, Version: 1 August 1980****20-150****Author:** P. N. Daykin, University of Lethbridge, Lethbridge, Canada**Source Language:** MACRO-10/20 **Special Hardware Required:** KL10 **Keywords:** Random Numbers**Abstract:** TAUS is a Simula and FORTRAN callable Procedure. In FORTRAN it is a subroutine TAUS(A,R) with integer A(7) and integer R. TAUS generates a new word of 36 bits in the TAUSWORTHE PSEUDO noise sequence: $A(P) = A(O) + A(Q1) + \dots + A(Qn), \text{MOD } 2$. It pushes the new word onto the stack A, discarding word 0. It converts the new word to a floating point real in the open range (-1, +1) and returns it via parameter R.User will set up a seed of 7 words in A, more or less random. The last P bits will be used in each recurrence. ($P = 241$ for this version). The new random 36 bits are stored in A(7). The array should not subsequently be altered unless user wishes to restart at a new point in the TAUSWORTHE sequence. The sequence has period 2^{241-1} . 241 adjacent bits are linearly independent.This procedure is based on the primitive polynomial $1 + X^{19} + X^{73} + X^{107} + X^{139} + X^{193} + X^{241}$ which has the full period for any decimation other than 22000409. The MACRO code is DEC-10/20. The algorithm is based on A 36 bit word: for a different word length recalculate WA, BA & WN.**Restrictions:** FORTRAN and Simula Callable Subroutine.**Note:** To use with FORTRAN compile with MACRO. For Simula compile also with Simula to make an ATR file.**Review Note:** (None at this time.)*Documentation on magnetic media.***Media (Service Charge Code):** Write-Up and Listing (DA), 600' Magtape (MA), or order 20-LIB-5**SETUP: A Batch .CTL File Editor For Job Stream Creation, Version: 5(57), September 1980****20-151****Author:** Ralph R. Swick, Carnegie-Mellon University, Pittsburgh, PA**Operating System:** TOPS-20 V3A and later **Source Language:** MACRO-10/20 **Keywords:** JCL; Batch; Control Files; Parameter Substitution**Abstract:** SETUP is designed to facilitate the creation of data processing batch job control files. The program uses a previously created master control file (MCF) and user responses to produce the batch control file (CTL).

SETUP is interactively and, using special commands previously placed into the Master Control File, prompts the user for parameters to substitute for dummy parameters in the MCF. SETUP then creates the batch control file based upon these responses from the user. The user's responses may be checked for validity prior to creating the CTL file.

Review Note: (None at this time.)*Documentation on magnetic media.***Media (Service Charge Code):** Manual (EB), 600' Magtape (MA), or order 20-LIB-5

VT105 FORTRAN Subroutine Package, Version: January 1981 **20-152**

Author: Art Beane, Digital Equipment Corporation, Marlboro, MA
Source Language: FORTRAN IV **Special Hardware Required:** VT105 required to run programs linked with this library **Keywords:** Display; Graphics

Abstract: The VT105 Graphics Package consists of 44 FORTRAN subroutines, 3 MACRO subroutines and 13 demonstration programs. The graphics subroutines perform the necessary functions that enable you to use the VT105 as a graphics terminal; the demonstration programs include examples of some of the graphics subroutines. The package also includes three spline fitting routines that enable you to draw smooth nonlinear curves for data where relationships cannot be easily defined mathematically.

Note: DECsystem-10 users see DECUS No. 10-333.

Review Note: (None at this time.)

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA), or order 20-LIB-5

RPG-II Educational Compiler, Version: V3, May 1981 **20-153**

Author: Cerritos Community College and Robert Currier
Submitted by: Anker Berg-Sonne, Digital Equipment Corporation, Marlboro, MA

Operating System: TOPS-10 V6.03A or later, TOPS-20 V3A or later
Source Language: MACRO-10 **Keywords:** Education; Compilers

Abstract: DECSYSTEM-20 RPG-II is a one-pass, multi-phase, compiler and run time system. Along with the other programs on the DECSYSTEM-20, RPG-II resides on the system device, a disk. RPG-II operations have three phases; compilation, linking, and execution. Input to the compilation phase is a set of specifications for the application program, and sometimes additional data arranged in tables or arrays. Such data is usually information that is unlikely to change for the life of the program. Output from the compilation phase includes (1) a relocatable binary (REL) module (input to the linking loader) and (2) a listing of the specifications plus any error messages.

Note: RPG-II editor and test system included.

Review Note: (None at this time)

Documentation on magnetic media.

Media (Service Charge Code): Manual (ED), 2400' Magtape (PA) or order 20-LIB-6

SPR: Software Problem Reporting System, Version: 1B, May 1981 **20-154**

Author: Steve Berlin, Computing Center, Wesleyan University, Middletown, CT

Submitted by: Douglas Bigelow, Computing Center, Wesleyan University, Middletown, CT

Operating System: TOPS-20 V.4 **Source Language:** MACRO-10
Keywords: System management

Abstract: At most computer centers, there exists no formal mechanism whereby users can officially report problems encountered with system software. Users often ignore bugs in languages or in cusps and find ways to work around them, simply because they do not know who to report them to. SPR is a user-runnable program which allows you to report a system software problem via a simple series of questions. The program prompts for software affected, suggested priority of problems, description and problems and any way around it, and files needed to reproduce the problem. The system administrators and software maintainers run the same program in privileged command code in order to access the SPR data base and add comments and reviews, or delete or revise the data. When SPR is given sufficient publicity, users prove eager to use it, and the resulting problem data base should be of great documentation value to systems programmers and administrators.

Documentation on magnetic media.

Media (Service Charge Code): Write-up (AA), 600' Magtape (MA) or order 20-LIB-6

SYSBUL: Systems Bulletin Review Program, Version: 1, May 1981 **20-155**

Author: Douglas Bigelow, Computing Center, Wesleyan University, Middletown, CT 06457

Operating System: TOPS-20 V.4 **Source Language:** MACRO-10
Keywords: System management

Abstract: SYSBUL is intended to keep users informed of important changes to system software. System mail is the wrong forum, being designed for short urgent notices instead of long-term and long-content messages. SYSBUL is a program which users run to review current or past bulletins about changes to system software. Users have the option of listing bulletin titles and typing or printing out any selected combinations of bulletins. A suggested use is to create a bulletin or several bulletins explaining changes to system programs or procedures and how the users will be affected. Then a system mail message may be posted indicating the availability of new bulletins that may be read via SYSBUL. SYSBUL is particularly useful as a method of catching up on several months of evolution to a program - for example a user could browse through all bulletins that mention RUNOFF in the title before starting to write a sizeable paper using the computer.

Documentation on magnetic media.

Media (Service Charge Code): Write-up (AA), 600' Magtape (MA)

TAPSAV: Tape Utility for Saving and Restoring User Files, Version: V2D, May 1981 **20-156**

Author: Douglas Bigelow, Computing Center, Wesleyan University, Middletown, CT

Operating System: TOPS-20 V.4 **Source Language:** MACRO-10
Keywords: Utility magtape

Abstract: TAPSAV was designed to provide a friendly and convenient tape storage utility for the maintenance of user files. DUMPER tends to be awkward for a beginning user to work with, because of the dangers of overwriting savesets by accident and the necessity to update the tapes by saveset instead of by file.

TAPSAV is a directory-oriented utility that maintains the tape directory on disk. This allows for very quick and convenient wild card searches for files, easy deletion and un-deletion of files, and instant directory listings. Overwriting files by accident is guarded against and you can even get a directory listing of a tape without having the tape mounted. If the tape's directory is ever accidentally deleted from the disk, it can be quickly recreated from the tape with no loss of information.

TAPSAV has proven to be very fast, convenient and safe, and there is extensive build-in error recovery. TAPSAV works exclusively on TOPS-20 V.4 labeled tapes.

Restrictions: Uses TOPS-20 V.4 tape labels.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EA), 600' Magtape (MA) or order 20-LIB-6

BIBLIO: Bibliographic References Program, Version: June 1980 **20-157**

Author: Mike Rubin, Computing Center, Wesleyan University, Middletown, CT

Submitted by: Janet Morgan, Computing Center, Wesleyan University, Middletown, CT

Operating System: TOPS-10, TOPS-20 **Source Language:** MACRO-10
Keywords: Data handling

Abstract: BIBLIO is a program which creates and/or searches through bibliographical references in an on-line data file. Its capabilities include:

- Creating a data file
- Appending bibliographical references to an old data file
- Finding the next match of a search string in a data file
- Finding all matches of a search string in a data file
- Editing the data file

Note: TOPS-10 sites should order 10-338.

Documentation on magnetic media.

Media (Service Charge Code): Write-up and Listing (DB), 600' Magtape (MA)

ACCT20: DECSYSTEM-20 Usage Accounting, 20-158
Version: September 1981

Author: H. David Todd, Computing Center Wesleyan University, Middletown, CT

Operating System: TOPS-20 V4 **Source Language:** MACRO-10 **Memory Required:** 17 pages for start up **Keywords:** DECSYSTEM-20; Usage Accounting

Abstract: This program generates usage summary statistics and detailed usage reports from DECSYSTEM-20 system data files. This is not a real-time account monitoring system; it simply reports on usage as recorded by TOPS-20. It runs in native TOPS-20 mode, uses command recognition features, and generates a variety of system-usage reports.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EA), 600' Magtape (MA) or order 20-LIB-6

DSTATS: Disk Status Program, Version: 20-159
3B(77), September 1981

Author: Randall W. Weeton, Camp Dresse & McKee, Inc., Boston, MA
Operating System: TOPS-20 V3 and later **Source Language:** MACRO-10
Memory Required: 10K **Keywords:** Disk; Statistics; Data Management

Abstract: DSTATS allows a user to monitor disk space usage by directories. It will return current disk page usage, disk allocation (both working and permanent), percentage of permanent allocation used, and (optionally) the default account of the directory. Summary total can also be included. Output from DSTATS may be directed to a disk file, terminal, or any other output device. Commands are parsed via COMND sys.

Restrictions: PS:(SYSTEM) will reflect incorrect disk usage (due to MONITOR bug).

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-6

NDTRAN2, Version: June 1981 20-160

Author: William I. Davisson, John J. Uhran, Jr., University of Notre Dame, South Bend, IN

Submitted by: P. Charest and J. A. Middleton Fordham Road & Bathgate Ave. Bronx, NY 10458, Fordham University, Bronx, NY

Operating System: TOPS-20 V4 **Source Language:** FORTRAN IV
Keywords: Simulation

Abstract: NDTRAN2 is a dynamic simulation interpreter capable of carrying out dynamic and stochastic simulations. It is available in two basic versions:

- 1) A research version that will accept a source simulation program of up to 4000 statements.
- 2) A standard version which has the capability of executing programs somewhat larger than WORLD3, but more limited than the research version. Both versions are provided; 44 test programs are also included.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-6

PANTT: A Pert and Gantt Program, Version: 20-161
May 1981

Author: Peter M. Hurley, Digital Equipment Corporation, Marlboro, MA
Operating System: TOPS-20 V3 or greater **Source Language:** MACRO-10
Keywords: Pert; Gantt Charts; Document Retrieval; Data Management

Abstract: PANTT is a program written for project managers to aid them in both scheduling and daily tracking of their projects. PANTT is an interactive data base management program that allows the project manager to enter and update project information and status as each project progresses.

Unlike most other computerized PERT systems, PANTT is designed to produce the optimum schedule for more than one interdependent project being staffed by a common set of developers.

PANTT also makes it possible for the project manager to set up dependencies of some projects on other projects.

Restrictions: Runs on DECSYSTEM-20 only under the TOPS-20 monitor.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up (AA), 600' Magtape (MA) or order 20-LIB-7

CDRIS: Directory Lister Program, Version: 20-162
December 1981

Author: Joshua Brodsky, University of D.C., Washington, D.C.

Operating System: TOPS-20 V4 **Source Language:** MACRO-10
Keywords: Directory Lister

Abstract: CDRIS is a directory lister program. It lists any directory in a selectable number of columns. The output is exactly like that of the DIRECTORY Command (i.e. with two space indentation for new file extension, and new generations separated by commas). CDRIS also uses the RSCAN buffer for use of the command line. It is ideal for use on video terminals with a directory of 20-100 files, because the entire listing will fit on one screen. It is also handy for saving paper on printing terminals, where EXEC normally puts one file name to a line.

Documentation on magnetic media.

Media (Service Charge Code): Listing (BA), 600' Magtape (MA) or order 20-LIB-7

KILL: A Program to Selectively KILL Multiple 20-163
Directories, Version: December 1981

Author: Joshua Brodsky, University of D.C., Washington D.C.

Operating System: TOPS-20 V4 **Source Language:** MACRO-10
Keywords: KILL; Directory killing

Abstract: Kill is a program to selectively kill multiple directories by a wildcard specification. KILL accepts commands in standard TOPS-20 format (i.e. with the COMND JSYS). It has a test mode, where it will simulate a killing to see which directories would be killed if it were real, and a confirm mode, where each directory must be confirmed before it is killed. It has numerous safety devices, and requires WHEEL or OPERATOR privileges to run. KILL is useful for killing a group of directories under the same heading with a single command. Kill also has commands for killing all directories in a group except certain ones. Kill has successfully been used in the University of D.C. for killing student directories at the end of the semester, without affecting teacher directories, or students with incompletes.

Media (Service Charge Code): Write-Up and Listing (DA), 600' Magtape (MA) or order 20-LIB-7

CODE: A General Purpose Encoder/Decoder, 20-164
Version: July 1982

Author: Joshua Brodsky and Larry Hinden, University of D.C., Washington, D.C.

Operating System: TOPS-20 V4 **Source Language:** MACRO-10
Keywords: Encoder; Decoder; Code; Crypt

Abstract: CODE is a medium-security general purpose encoder/decoder. Its feature is not the encoding routine, but ease of use, and the use of passwords. The encoding routine involves a password. The encoded file CANNOT be decoded without that password due to the way the file is encoded. The password may be guessed, and a complex routine for trial-and-error could figure out the password with just a few days of CPU. But for general use, CODE is safe. CODE flawlessly codes line-numbered files and .EXE and .REL files. It uses the COMND JSYS for parsing in standard TOPS-20 (using ESC and editing control codes).

Documentation on magnetic media.

Media (Service Charge Code): Write-Up and Listing (DA), 600' Magtape (MA) or order 20-LIB-7

DSORT and DSOPE: Two Efficient Hybrid 20-165
Sorting Programs, Version: November 1981

Author: J. Ernvall and O. Nevalainen, University of Turku, Turku, Finland

Submitted by: Markku Suni, University of Turku, Turku, Finland

Operating System: TOPS-20, TOPS-10 **Source Language:** FORTRAN IV
Keywords: Subroutine; Sort; Quicksort

Abstract: The FORTRAN-subroutine DSORT will sort an array A(I), I=1,...,N, in ascending order. The subroutine DSOPE additionally determines a permutation array IR of the elements; IR(I)=K means that the Ith element of the final ordering was the Kth in the original one. The programs apply the distributive sorting technique but they can also be used as Quick-sort by a setting of a switch. When operating as Quicksort programs DSORT and DSOPE are somewhat faster than the IMSL-subroutines VSTRA and VSRTR, respectively. As distributive versions, the programs are for large files of uniformly distributed keys considerably faster than Quicksort. The growth of the running time is then linear. The

same is true also for other smooth distributions. For worst case distributions the running time is dominated by the time of Quicksort. Then the additional loss of the time due to the bucketing is about one forth of the total running time.

Documentation on magnetic media.

Media (Service Charge Code): Write-Up and Listing (DA), 600' Magtape (MA) or order 20-LIB-7

CPUTIM, Version: V1, July 1982 20-166

Author: Siamak Afsoos, University of D.C., Washington D.C.

Operating System: TOPS-20 V4 **Source Language:** MACRO-10

Keywords: CPU; CPU-Sorter

Abstract: CPUTIM monitors cpu usage in some interval of time. This program takes the time interval from a file called CPU.INI and monitors the cpu for that amount of time. After the time is reached the program will list users in ascending order by the time of cpu they used in that interval. This program is a very good way to detect system heavy users.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-7

Generic Survey System, Version: V1.0, June 1982 20-167

Submitted by: Pom S. Kim, Digital Equipment Corporation

Operating System: TOPS-20 4(3345)-6/2A **Source Language:** 1022

Memory Required: 60,928 Words **Other Software Required:** 1022 (Data Base Management System), SOS Editor, MIC utility for TOPS-10, CTL utility for TOPS-20. **Keywords:** Survey System

Abstract: The ultimate goal of the Survey System is to improve communications between 2 or more groups.

This automated Survey System will provide users with a tool that will help them analyze the survey questionnaire they set from their survey respondents.

The Survey System generates analyzed reports by totalling, averaging, prioritizing the answers on the survey questionnaires.

The types of questions that Survey System deals with are:

1. Satisfaction degree type questions
2. Yes-No type questions
3. Percentage type questions
4. Priority type questions

Restrictions: The Survey System will not generate reports for questions that can not be calculated numerically. The maximum number of questions on one questionnaire is 100.

Note: User of Survey System needs basic knowledge on any one file editor (e.g. SOS, TECO, EDIT).

TOPS-10 sites should order 10-347.

Documentation on magnetic media.

Media (Service Charge Code): Manual (EB), 2400' Magtape (PA) or order 20-LIB-7

CSSDBM: User Friendly Application Generator, Version: V5, July 1982 20-168

Submitted by: Robert W. Conlon, Digital Equipment Corporation

Operating System: TOPS-10, TOPS-20 **Source Language:** COBOL

Memory Required: 25KW **Keywords:** Application Generator

Abstract: CSSDBM is a highly user oriented application generator. It provides the tools necessary to define appropriate data elements and produce COBOL programs for file maintenance as well as report generation. This package also includes modules which result in dynamic record changes to accomodate evolving application requirements over time. Optional file update features include a transaction audit trail and character validation. Users of this software have experienced significant cost savings as a result of the expeditious generation of business application code, thus totally eliminating the need, in many instances, for staff programmers. Further development savings are realized by the fact that appropriate software is generated in minutes rather than days or weeks if hand coded.

Note: TOPS-10 sites should order DECUS No. 10-348.

Documentation on magnetic media.

Media (Service Charge Code): 600' Magtape (MA) or order 20-LIB-7