

DECUS



PROGRAM LIBRARY DECSYSTEM-10/20 CATALOG

DIGITAL EQUIPMENT COMPUTER USERS SOCIETY
APRIL 1978

DECUS PROGRAM LIBRARY DECSYSTEM-10/20 CATALOG



**DIGITAL EQUIPMENT COMPUTER USERS SOCIETY
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This is a complete DECUS DECsystem-10/20 Library Catalog. It includes a complete listing of DECsystem-10 and DECSYSTEM-20 programs currently available from the DECUS Library.

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DECsystem-10	FLIP CHIP	OS-8	TYPESET-11
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HOW TO USE THIS CATALOG AND SUBSEQUENT UPDATES

GENERAL INFORMATION - gives details about ordering, charging, and other information not explained in the Program Distribution Methods and Abstract sections.

PROGRAM DISTRIBUTION METHODS - describes the organization of the DECsystem-10/20 Library and the methods of distribution.

PROGRAM ABSTRACTS - descriptive paragraphs of each DECUS program are included in this section. Media/Price (M/P) codes follow the program abstract. The Media/Price coding system is explained in the general information section of this catalog.

ALPHABETICAL INDEX - lists all programs currently available from the DECsystem-10/20 DECUS Library. The index lists programs alphabetically by title.

KEYWORD INDEX - lists program numbers from the DECsystem-10 Library according to associated keywords.

CONTACTS

UNITED STATES AND CANADA

Users in the United States and Canada, as well as those residing in an area outside the definition of the Europe or Australia Chapter, should deal directly with the DECUS Library at the following address:

DECUS LIBRARY, 129 Parker Street, Mail Stop: PK3-1/E55, Maynard MA, 01754

To obtain additional information concerning the DECsystem-10/20 DECUS Library,
contact the DECsystem-10/20 Library Administrator (617) 493-2524

To obtain additional information concerning Standards,
contact the Standards Librarian (617) 493-2524

For information on service charges, status of a Library order, and shipping information,
contact the DECUS Order Desk (617) 493-2447

For information on payments and billing,
contact the DECUS Accounting Coordinator (617) 493-3063

COPY-N-MAIL (617) 493-5086

U.S. Symposia Information (617) 493-2414

Membership (617) 493 5283

DECsystem-10 Reports (617) 493-5086

OUTSIDE THE U.S. AND CANADA

For policies or procedures needing clarification, currency exchange information, order status, shipping information, handling charge information, questions concerning payment and billing outside the U.S., contact your local Chapter Office:

Australia and New Zealand: DECUS Australia, P.O. Box 491, Crows Nest, N.S.W., 2065, Australia.
Telephone: [61]-(2)-4392566.

Canada: DECUS Canada, P.O. Box 11500, Ottawa, Ontario, K2H 8K8, Canada. Telephone: (613) 592-5111.

Europe and Middle East: DECUS Europe, 12, avenue des Morgines, C.P. 510, 1213 Petit-Lancy 1, Geneva, Switzerland. Telephone: [41]-(22)-93-33-11.

PAYMENT INFORMATION

U.S. and Canada users - Payment must be made in U.S. dollars. Checks and purchase orders must be made payable to DECUS.

Users outside the U.S. and Canada - Payment must be made in your currency to your local Chapter Office. Checks and purchase orders must be made payable to DECUS.

GENERAL INFORMATION

PAYMENT

All DECUS service charges are to defray the cost of media, reproduction, handling, and postage. All orders must be accompanied by cash, DECUS coupons, or a purchase order. Please make purchase orders and checks payable to DECUS. DECUS order processing and accounting functions are completely separate from the Corporation. Do not combine DECUS orders with Digital Equipment Corporation orders.

Please do not request that DIGITAL field personnel place a DECUS order for you. This may delay direct response from DECUS.

All service charges quoted in this catalog are in U.S. Dollars. A \$2.00 invoice charge is added to all orders that are not prepaid.

Users outside the United States and Canada should make payment in local currency and forward to the local Chapter office.

Users in the United States and Canada should make payment in U.S. dollars to DECUS and forward to Maynard.

DECUS COUPONS

Because of the difficulties encountered by many installations in obtaining purchase orders for small amounts, DECUS coupons may be ordered for any amount and used as subsequent payment for DECUS orders. They may be ordered in \$1, \$5, and \$10 denominations as DECUS No. 0051. Payment for DECUS coupons must be made in advance. Purchase orders for coupons must be paid before coupons may be redeemed for DECUS material. DECUS coupons may not be used as payment for DECUS symposia fees.

RETURN POLICY

Tapes may not be returned for credit. It is therefore important that the correct media be specified at the time the order is placed. For further information, see the Program Distribution Methods section of this catalog.

The DECUS Library reproduces user programs and documentation and distributes them essentially at cost. Occasionally, the medium or copying procedure may be faulty and flawed copies may be inadvertently distributed. DECUS is working to minimize these problems and encourages users to return faulty copies so that the source of the error may be traced. Accordingly, the following policies have been established to serve as guidelines:

1. Any copy of a DECUS Library program that is unreadable on the distributed medium will be replaced by DECUS at no charge if returned, with a written explanation, within 60 days of receipt. This includes orders which are filled incorrectly by DECUS staff (e.g., wrong program), copied incorrectly, or copied to flawed medium.
2. Users who specify the wrong program on their order form must bear the cost of reordering.
3. Neither exchanges nor refunds will be granted for programs which were copied correctly but which do not fulfill the user's needs. DECUS would appreciate being informed if users consider the program abstract (in the catalog) to be misleading.
4. Refunds (in cash or DECUS coupons) will not be issued under any circumstance.

DOCUMENTATION

"A" and "D" code documents are distributed automatically and at no additional charge, with individual programs, when the program tape is ordered. However, if the cost of the "A" or "D" code document exceeds 15% of the media service charge, the service charge for the corresponding tape or disk will be increased to reflect the cost of the documentation. "C" code documents, where available, will be automatically distributed at no additional charge with individual programs, when the program tape is ordered. If the document is also available in hard-copy, unless otherwise specified, the "C" code document will be automatically supplied. "C" code documents will not be automatically supplied with program tapes that contain documentation files.

"E" code documents will not be distributed automatically. A service charge will apply whether or not the program tape or disk is ordered.

Documentation may be requested without media, in which case a service charge per document will apply.

MEDIA

Media on which specific programs are available is indicated by the first letter of the media/price codes in the Abstract section of this catalog. (Also see program Distribution Methods section.)

Conversion (of sources) for operation under a different system is the responsibility of the person ordering or receiving the item.

Due to recurring problems with user-supplied media, the DECUS Program Library no longer accepts orders to copy programs onto user tapes and disks. This decision was made so that your Library staff may fill Library orders more promptly, and process new submittals more efficiently.

MEDIA/PRICE (M/P) CODES

The media/price codes are alpha-numeric. The letter indicates the medium on which the product can be supplied (see table below). The number(s) specify the actual service charge for the item in U.S. dollar currency. For example: H32 indicates a program available on DECTape at a service charge of \$32.00

In the abstract sections of this catalog other uncoded information is given to clarify the availability of material which may or may not be available on the program tape. For example: No source available. Write-up on media.

MEDIA CODES

A	Write-up	J	LINCtape
B	Listing	K	Floppy Disk
C	Microfiche	L	Cassette
D	Write-up and Listing	M	Magtape 600'
E	Manuals	N	Magtape 1200'
F	Binary Paper Tape	P	Magtape 2400'
G	ASCII Paper Tape	Q	RK05 Disk
H	DECTape	R	Card Deck

NOTES

This catalog is divided into three sections: DECsystem-10, DECSYSTEM-20, and Standards. Programs are numbered sequentially in each category. The DECSYSTEM-20 section lists programs submitted for the DECSYSTEM-20 Library (preceded by a 20-), and DECsystem-10 programs that are expected to be compatible with the DECSYSTEM-20.

Prices quoted in this catalog will be valid until July 1, 1979, unless extreme circumstances evolve that require DECUS to adjust them prior to this date.

Changes in pricing or availability may occur at any time. Please consult COPY-N-MAIL and the various newsletters for changes in Library information, pricing, and policy.

Overseas Users should allow six to eight weeks for delivery.

U.S. and Canada Users should allow three to six weeks for delivery.

Requests for multiple catalogs will be honored, but a nominal service charge will apply. Contact your Chapter office if you require additional catalogs.

The DECUS Library requests that all inquiries concerning DECUS programs be communicated in writing and forwarded to the DECUS Maynard office, not to the authors/submitters. DECUS will request assistance from the responsible author/submitter, assuming they are available.

Information on new and revised programs will be published periodically in COPY-N-MAIL. Complete catalogs will be published annually.

STANDARDS AVAILABLE THROUGH DECUS

The DECUS Library distributes some Digital Equipment Corporation Software Standards and other documentation related to standards such as programming conventions and guidelines.

DIGITAL Software Standards are a collection of software-related technical documents developed by Digital. These standards cover items such as the format and organization of data on a tape, or how the month, day, and year should be printed on a directory listing.

DIGITAL Standards specify areas of compatibility across multiple products. In general, new products are required to conform to applicable standards, however, the applicability of any standard is subject to review in terms of the market needs of the particular product. The existence of a particular standard is NOT a commitment by DIGITAL to conform to specifications detailed in that standard.

Many software development issues are not covered by existing DIGITAL Standards, and not all existing DIGITAL Software Standards are available from DECUS. Users must make their own evaluation of whether or not these documents might be of value to them.

PROGRAM DISTRIBUTION METHODS

Programs in the DECUS DECsystem-10/20 Library may be obtained:

1. As individual programs on DECtape or magtape.
 - A. Only those programs specified as available on DECtape may be obtained on DECtape, e.g., 10-223A (SIMULA) is on one 2400' magtape, and is not available on DECtape.
 - B. All DECtape programs may be obtained on magtape.
2. As packed library magtapes which contain complete segments of the Library.
3. As custom packed magtapes (Two or more programs), where the customer specifies which programs are to be contained on the magtape.
 - A. DECUS will not pack multiple programs on DECtape.
 - B. For custom packing, the customer must first contact DECUS for:
 1. Determination of tape size and quantity required.
 2. Cost (Custom packing charges differ from standard service charges.)

When ordering magtapes, please specify your requirements: track, bpi, and format. BACKUP format is recommended, and users are urged to order the standard Library Tapes since they are less expensive per program and can generally be shipped more promptly.

If not otherwise specified, DECsystem-10 programs ordered on magtape will be shipped 9-track, 800 bpi, BACKUP format; DECSYSTEM-20 programs will be shipped 9-track, 800 bpi, BACKUP INTERCHANGE mode.

DECUS will not accept returned tapes for credit; therefore, it is important that the complete media requirements be specified at the time the order is placed.

The DECUS Library does not distribute DECsystem-10/20 programs on paper tape, nor line printer listings for programs that have either a .LST or complete source file contained on the tape.

Since DECsystem-10/20 users generally have access to high-speed printers, documentation available on machine readable media is not normally duplicated in hard-copy.

See the program abstract for M/P codes and availability information.

Each program package is stored under a separate PPN of the form [43,500nnn], where nnn is the octal equivalent of the program package library number. For example, library package # 10-65, LEARNS, is stored in PPN [43,500101]. The files within each directory are sorted in alphabetical order, and each tape is sorted in order of increasing PPN. Each tape begins with the content of [43,500000], which contains a copy of PRGDIS.RNO, PRGDIS.DOC, and review files DECnnn.RNO, for programs that have been reviewed. File REVIEW.FOR is an interactive program which creates the machine-readable reviews. Users are encouraged to use it to review programs they have used. They may also submit written reviews to DECUS by using the form generated by DEC000.RNO, which is also on the [43,500000] area.

Individual program packages can be restored from the tapes by the command sequence:

```
.MOUNT MTA MTA/REE:DECUSn/VID:'LIBRARY TAPEn'/WL
.R BACKUP
/TAPE MTA
/REWIND
/RESTORE = [43,500nnn]
/↑C
.DIS MTA
```

This restores the package to the user's area. To restore the complete tape, the user must be logged into [1,2]. The restore command is: /RESTORE.

Note that the tapes are not filled so that 7-track, 800 bpi tapes will have the same organization as 9-track, 1600 bpi tapes.

The contents of the Library Tapes are listed on the following pages.

Comments or suggestions on the formats of the tapes are welcome. Please direct any questions or comments to:

DECUS
DECsystem-10/20 Library Administrator
129 Parker St., PK3-1/E55
Maynard, MA 01754
U.S.A.

DECUS DECsystem-10 Library Tapes

ORDER NUMBER	M/P code	ORDER NUMBER	M/P code
10-LIB-1	P190	10-LIB-7	P140
10-LIB-2	P85	10-LIB-8	P180
10-LIB-3	P85	10-LIB-9	P160
10-LIB-4	P170	10-LIB-10	P130
10-LIB-5	P85	10-LIB-11	P100
10-LIB-6	P85		
	Complete Library of Documents		\$475.00
	Complete Library of Tapes*		\$900.00
	Complete Library of Documents and Tapes		\$1,375.00

* Library Tapes, without documentation, can be ordered separately at a service charge of \$85.00 per tape.

DECUS users who have already received the ten Library Tapes released January 1977, may update their library by ordering the following tapes:

10-LIB-A: 10-265 through 10-288	P115
10-LIB-B: 10-289 through 10-294 plus 10-296, and all revisions and fixes to prior release**	P90

** 10-281 and 10-282 files are distributed on 10-LIB-9, only documentation will be supplied with 10-LIB-B.

Because the original tapes are bad, the Library Tapes will not include:

10-86 SAIL/FAIL (revision Oct'76)
 10-274 CADA Monitor
 10-295 SIMULA for KA-10

LIBRARY TAPES

DECUS LIBRARY TAPE #1

Order Number: 10-LIB-1

Contents: Program Packages 10-3 to 10-127

Exceptions: 10-86 (SAIL), on 10-LIB-2; 10-101A (SSP) on 10-LIB-3

Number	Program/Package	Storage PPN			
10-3	DTLOTS: Lots of Copies of a DECtape	43,500003	10-61	MLISP	43,500075
10-6	Scholar-Teach	43,500006	10-65	LEARNS: For Learning MACRO-10 Instruction Set	43,500101
10-8	DECtape DDT	43,500010	10-68	PAL-12	43,500104
10-9	Music System for the PDP-10	43,500011	10-70	FAKE	43,500106
10-10	Eight and EDIT8	43,500012	10-72	Dartmouth BASIC Library	43,500110
10-12	PAL-10	43,500014	10-87	Matrix	43,500127
10-15	FAIL	43,500017	10-88	Salesman	43,500130
10-21	REDUCE 2	43,500025	10-89	JOTTO	43,500131
10-22	JACOBI	43,500026	10-90	BARTEE	43,500132
10-23	PDP-10/8 Loader	43,500027	10-93	BCDPIP	43,500135
10-25	ONCE Only Code-User Mode	43,500031	10-97	17 Teaching Programs for BASIC	43,500141
10-27	GASP II	43,500033	10-98	Punch	43,500142
10-28	SIM-11	43,500034	10-100	On-Line Systems BASIC and FORTRAN Package	43,500144
10-29	PDP-8/PDP-10 Real Time Data Acquisition System	43,500035	10-102	PDP-8 Simulator on the PDP-10	43,500146
10-30	NVERTX	43,500036	10-103	RESDEC.MAC	43,500147
10-31	PALX-11	43,500037	10-104	SNOBOL4	43,500150
10-33	W-Complex Error Function for Complex Argument	43,500041	10-105	Doctor and Eliza	43,500151
10-34	ECAP	43,500042	10-107	CFILE	43,500153
10-36	ARP	43,500044	10-110	Chess	43,500156
10-37	Trace Program	43,500045	10-112	GOOF.MAC	43,500160
10-38	Flow Charter	43,500046	10-113	MULPAC: A Multiple Precision Package for the PDP-10	43,500161
10-43	Random Number Package	43,500053	10-114	MATTAC: Matrix TIC-TAC-TOE	43,500162
10-57	Simple	43,500071	10-115	TAPBLK.MAC	43,500163
10-59	LISP 1.6	43,500073	10-116	QED	43,500164
			10-117	IFTYP	43,500165
			10-120	DYNAM	43,500170
			10-121	CUSPER	43,500171
			10-122	CSMP-10	43,500172
			10-126	TAPTST.MAC	43,500176
			10-127	PCPY.MAC and PCPY1.MAC	43,500177

DECUS LIBRARY TAPE #2

Order Number: 10-LIB-2
Contents: 10-86 (SAIL)

<i>Number</i>	<i>Program/Package</i>	<i>Storage PPN</i>
10-86	SAIL	43,500126

DECUS LIBRARY TAPE #3

Order Number: 10-LIB-3
Contents: 10-101 (SSP)

<i>Number</i>	<i>Program/Package</i>	<i>Storage PPN</i>
10-101	SSP	43,500145

DECUS LIBRARY TAPE #4

Order Number: 10-LIB-4
Contents: 10-130 to 10-191
Exceptions 10-176 (ACCTG), on 10-LIB-5; 10-179 (FASBOL-II), on 10-LIB-6

<i>Number</i>	<i>Program/Package</i>	<i>Storage PPN</i>
10-130	RENBR: The FORTRAN Renumbering Program	43,500202
10-133	ALGOLW	43,500205
10-134	FISHER	43,500206
10-135	ALOCSP	43,500207
10-136	PDP-10 Demonstration Package	43,500210
10-137	COB300.CBL	43,500211
10-138	FORTTRAN File Maintenance System	43,500212
10-139	TALK8F: An Encoding Program for PAL10 Binary Output	43,500213
10-140	DSKDTA	43,500214
10-141	EXCON	43,500215
10-142	MATHLAB	43,500216
10-143	COBSTD	43,500217
10-145	RUNH: An Additional FORTRAN Library Routine	43,500221
10-148	PDP-11/10 Loader	43,500224
10-149	Editor	43,500225
10-151	KWIC	43,500227
10-152	RIPOFF	43,500230
10-153	Change	43,500231
10-154	Subroutines for COBOL: COBQUE, COBSLP, COBWAk	43,500232
10-155	USET	43,500233
10-156	Asynchronous Communications Package for PDP-10's to PDP-8's	43,500234
10-157	Stream	43,500235
10-159	Pager	43,500237
10-160	TERBIN	43,500240
10-161	ABACUS	43,500241
10-162	POOMAS: Poor Man's Simula	43,500242
10-164	CROSS: Correlation of Responses with options for the Social Sciences	43,500244
10-165	RDMT11	43,500245
10-166	Block	43,500246
10-167	GENPLT-II: A General Plotting Package	43,500247
10-168	TBLTRN: A Symbolic Table Assembler Written in FORTRAN	43,500250
10-169	CTFFT	43,500251
10-170	UFLIP: User File Library Implementation Program	43,500252
10-171	Cardiac Machine Language Simulator for PDP-10 BASIC	43,500253
10-173	FLMON: Process Flowsheet Monitor	43,500255

10-174	LCAP	43,500256
10-175	CHAINR: Diagnostic Chainer	43,500257
10-177	Sign Maker	43,500261
10-178	MTIO: Industry Compatible Magnetic Tape I/O	43,500262
10-180	FORFLO: FORTRAN Flowcharting	43,500264
10-181	EDITS	43,500265
10-182	TXTPAD: A Textual Illustration Sketchpad	43,500266
10-183	GRAPH.F4: Graphing/Plotting on a Line Printer	43,500267
10-184	Spell: Spelling, Checker and Correction Program	43,500270
10-185	Syntax	43,500271
10-186	META2	43,500272
10-187	Asynchronous Communications Subroutines with Error Detection and Correction	43,500273
10-188	Z: The Job Status Cusp	43,500274
10-189	MAFIA: Magnetic Filer Advanced	43,500275
10-190	BTLSHP.BAS	43,500276
10-191	DECtape Accounting and Handling	43,500277

DECUS LIBRARY TAPE #5

Order Number: 10-LIB-5
Contents: 10-176 (ACCTG)

<i>Number</i>	<i>Program/Package</i>	<i>Storage PPN</i>
10-176	ACCTG: Resource Accounting System	43,500260

DECUS LIBRARY TAPE #6

Order Number: 10-LIB-6
Contents: 10-179 (FASBOL-II)

<i>Number</i>	<i>Program/Package</i>	<i>Storage PPN</i>
10-179	FASBOL II, A SNOBOL4 Compiler	43,500263

DECUS LIBRARY TAPE #7

Order Number: 10-LIB-7
Contents: 10-193 to 10-214

<i>Number</i>	<i>Program/Package</i>	<i>Storage PPN</i>
10-193	*1 (Star One)	43,500301
10-195	GRAFITI: Interactive Program for Plot Generation	43,500303
10-196	MTFILE	43,500304
10-197	Filter	43,500305
10-198	IMP: PDP-10 IMP72 Compiler	43,500306
10-199	COFUP: Core File Utility Program	43,500307
10-200	VTED and RTRANS: Display Editor and Runoff Translator	43,500310
10-201	Lost	43,500311
10-202	MANTIS	43,500312
10-203	GUNNER	43,500313
10-204	OPR	43,500314
10-205	OPEN.MAC	43,500315
10-206	BAKWDS	43,500316
10-207	EYES: A Program to Convert an ASCII File to Braille	43,500317
10-208	SCAT2: Standard Complex Algebra	43,500320
10-209	RANDU	43,500321
10-210	UCI—LISP	43,500322
10-211	GNOSIS: A System for Computer Aided Instruction	43,500323

10-212	SPPLT and SPTEK: Hybrid Orbital Contour Plotting Program	43,500324
10-213	BLISS-11	43,500325
10-214	ABACUS: Advanced Bowdoin Arithmetic Calculator Utility System	43,500326

DECUS LIBRARY TAPE #8

Order Number: 10-LIB-8
Contents: 10-217 to 10-247
Exception: 10-223 (SIMULA), on 10-LIB-9

<i>Number</i>	<i>Program/Package</i>	<i>Storage PPN</i>
10-217	DFCODE: DECtape File Protection Program	43,500331
10-218	PALDIS: PDP-10 Disassembler for PDP-8 Binary Files	43,500332
10-219	Checking Account Balancer	43,500333
10-220	TOPSTEACH: A Computer-Assisted Course on the Use of the DECsystem-10	43,500334
10-221	NMRSIM and TTYOPS: NMR Simulation and Plotting Program	43,500335
10-222	FFT.MAC RADIX Two Fast Fourier Transform Subroutine	43,500336
10-224	SPICE/SLIC/SINC	43,500340
10-225	Poet	43,500341
10-226	AVAIL	43,500342
10-227	Utility Programs for Commercial Users	43,500343
10-228	CALCOMP Plotter Package	43,500344
10-229	ASTRO.F4: Multi-Purpose Astrology Program	43,500345
10-230	Interprocessor Communications over an Asynchronous Line	43,500346
10-231	TULIP: The UUO/LEXINT I/O Package	43,500347
10-233	ZAP: Zoftig Alteration Program	43,500351
10-234	SFTRAN: A Structured FORTRAN Translator	43,500352
10-235	LAN: Linear Active Network Analysis Program	43,500353
10-236	FOLD	43,500354
10-237	PILOT	43,500355
10-238	EXETER	43,500356
10-239	RWATCH	43,500357
10-240	KISMET	43,500360
10-241	FORTH	43,500361
10-242	IOLIB	43,500362
10-243	PIRETS	43,500363
10-244	WGMM10: Shomer's Wargame, Testing Risk Taking	43,500364
10-245	MESS	43,500365
10-246	RECSM	43,500366
10-247	HEXPAWN	43,500367

DECUS LIBRARY TAPE #9

Order Number: 10-LIB-9
Contents: 10-223, 10-281, 10-282

<i>Number</i>	<i>Program/Package</i>	<i>Storage PPN</i>
10-223	SIMULA 67 for KI-10	43,500337
10-281	SAFIO	43,500337
10-282	SIMDBM	43,500337

DECUS LIBRARY TAPE #10

Order Number: 10-LIB-10
Contents: 10-248 to 10-283
Exceptions: 10-274 on hold. 10-281 and 10-10-282 on 10-LIB-9

<i>Number</i>	<i>Program/Package</i>	<i>Storage PPN</i>
10-248	TR.MAC	43,500370
10-249	GAUSS	43,500371
10-251	Student's-T and Behrens-Fisher Probabilities List and Density Sketch	43,500373
10-252	SOS	43,500374
10-253	Read	43,500375
10-254	MAGGIE	43,500376
10-255	INVSIM	43,500377
10-256	D2D	43,500400
10-257	LINCUR	43,500401
10-258	NONLIN	43,500402
10-259	PDO	43,500403
10-260	Information Storage and Retrieval	43,500404
10-261	Sorter: Illustrating and Comparing Sorting Methods	43,500405
10-262	COMPUT and TWOPER	43,500406
10-263	DSKCPY	43,500407
10-264	XTEC	43,500410
10-265	BASIC	43,500411
10-266	Simulation Model of TOPS-10	43,500412
10-267	COBEDT: A COBOL File Editor	43,500413
10-268	IPCF10: FORTRAN-10 IPCF Routines	43,500414
10-269	ADRES: For Handling Address Files and Printing Adhesive Labels	43,500415
10-270	PROC10	43,500416
10-271	PASCAL	43,500417
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10-275	DTSORT	42,500423
10-276	FPRINT	43,500424
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10-280	CLUSTR: A Comprehensive Suite for Numerical Classification	43,500430
10-283	System Programmers PASCAL	43,500433

DECUS LIBRARY TAPE #11

Order Number: 10-LIB-11
Contents: 10-284 to 10-296
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<i>Number</i>	<i>Program/Package</i>	<i>Storage PPN</i>
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10-285	Squash	43,500435
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10-287	BOSS: System Statistic Reporting	43,500437
10-288	TOPS-20 Interlisp	43,500440
10-289	REV	43,500441
10-290	VENN: A Generative Program for Computer-Assisted Instruction	43,500442
10-291	XPL: A Compiler Generator System	43,500443
10-292	Revised Plotter Subroutines for DEC-10	43,500444
10-293	FLECS: FORTRAN Language with Extended Control Structures	43,500445
10-294	GIDUS/DISLIB: GT40 Interactive Display Utility System	43,500446
10-296	BLISS-11/RXS-11M Interface MACROS	43,500450

DECSYSTEM-10 ABSTRACTS

- DTLOTS: Lots of Copies of a DECTape** 10-3
Program Version or Creation Date: 1
Keywords: PDP-10-DECTape
Author: Robert Clements
Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: MACRO-10, 10/50 Monitor (DEC-10-MTC0)
Hardware Requirements: PDP-10 with disk, 2 or more DECTapes, Line Printer (optional), 3K or more
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.
Listing or source on media.
M/P Codes: A1, H32 *Library Tape No. 1:P190*
- SCHOLAR-TEACH** 10-6
Program Version or Creation Date: 1
Keywords: CAI Instruction
Author: Staff
The Boeing Company, Seattle, WA.
Submitter: E. Nemeth
Language or Program Requirements: MACRO-10, PDP-10 System Monitor (DEC-10-MKB0)
Hardware Requirements: None
Abstract: SCHOLAR-TEACH is a generalized system for computer-assisted instruction. The system is designed to provide for both the easy on-line construction of lessons on a variety of subjects, and the actual presentation of the completed lessons to students at communications terminals remote from the computer.
Listing or source on media.
M/P Codes: E8, H64 *Library Tape No. 1:P190*
- DECTape DDT** 10-8
Program Version or Creation Date: 3
Keywords: PDP-10-DECTape
Author: Ian Pugsley
Digital Equipment Corp., Australia.
Language or Program Requirements: MACRO-10, DDT (DEC-10-CDDA), JOBDAT (DEC-10-SSB1-UA)
Hardware Requirements: None
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.
M/P Codes: D2, H32 *Library Tape No. 1:P190*
- Music System for the PDP-10** 10-9
Program Version or Creation Date: 1
Keywords: Music
Author: P. R. Samson and R. Clements
M.I.T. and Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: MACRO-10, Time-Sharing Monitor (DEC-10-MTC0)
Hardware Requirements: PDP-10/40, MK10 or transistor radio
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.
Write-up/Listing or source on media.
M/P Codes: H32 *Library Tape No. 1:P190*
- EIGHT and EDIT8** 10-10
Program Version or Creation Date: 1
Keywords: PDP-8-DECTape
Author: Teunis Korteweg
Submitter: Roger Pyle
Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: MACRO-10, PAL-10
Hardware Requirements: PDP-10 with 2 DECTapes, PDP-8 with 2 DECTapes
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.
Listing or source on media.
M/P Codes: A1, H32 *Library Tape No. 1:P190*
- PAL-10** 10-12
Program Version or Creation Date: 1
Keywords: PAL-10; PDP-8; Cross Assembly
Author: R. Bowering
Submitter: Nicholas Pappas
Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: MACRO-10
Hardware Requirements: None
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.
M/P Codes: A1, H32 *Library Tape No. 1:P190*
- FAIL** 10-15
Program Version or Creation Date: 2
Keywords: FAIL; PDP-10 Assembler
Author: P. M. Pettit, F. H. G. Wright, R. E. Gorin, et al
Latest Revisor: Ralph E. Gorin
Stanford Univ., Stanford, CA.
Language or Program Requirements: TOPS-10 System, LINK-10 or LOADER (with FAILSW), CREF (V.51(20))
Hardware Requirements: KA10 with 20K user core or, KI10 or, TENEX ITS and Stanford TIMSHARE system
Abstract: 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 different things in different blocks.
1. There are some known classes of bugs in FAIL:
A. Initialization problems: ↑C.START to FAIL may not fully reinitialize the assembler.
B. Errors in the program being assembled may cause FAIL to crash without any indication of where the problem might be. Although these problems exist, they don't usually cause real difficulties.

2. FAIL allows three arithmetic operators, JFFO, remainder, and absolute value, that are not recognized by old versions of LOADER or LINK-10. Problems result only when operands are EXTERNAL. A warning appears in the FAIL manual, and a subsequent release of LINK-10 will support these features fully. FAIL itself can be loaded without difficulty.
3. FAIL uses substantially more main memory than MACRO-10. This could be a problem at sites without large amounts of core.
4. FAIL lacks locality of reference; if it is run on a VM system, it may not perform well.
5. If a user requests a program listing (or CREF listing) FAIL runs about 3 times slower than if only a .REL file is requested.
6. FAIL was developed prior to the 5- and 6-series versions of the TOPS-10 monitor. Therefore, features relating to files structures and SFDs are not implemented in FAIL.

Associated Documentation: Manual Available from National Technical Information Service, Springfield, VA, 22151.

Write-up/Listing or source on media.

M/P Codes: H64

*Library Tape No. 1:*P190

REDUCE 2

10-21

Program Version or Creation Date: 3

Keywords: Algebraic Manipulation

Author: Anthony C. Hearn

Univ. of Utah, Salt Lake City, UT.

Latest Revisor: Anthony C. Hearn

Language or Program Requirements: LISP (DECUS No. 10-59)

Hardware Requirements: PDP-10 with 42K user core

Abstract: REDUCE 2 is an interactive program designed for general algebraic computations of interest to physicists, mathematicians and engineers. Its capabilities include: expansion and ordering of rational functions of polynomials, symbolic differentiation, substitutions for variables and expressions, options on symbolic matrices and calculations in high-energy particle physics (including gamma matrix and tensor algebra). This latest version incorporates the Stanford LISP 1.6 program.

Associated Documentation: DECUS No. 10-59, LISP 1.6.

Listing or source on media.

M/P Codes: E8, H64

*Library Tape No. 1:*P190

JACOBI

10-22

Program Version or Creation Date: 1

Keywords: EIGEN Systems; Diagonalization

Author: Todd Wagner

Submitter: William Merserve

Digital Equipment Corp., Los Angeles, CA.

Language or Program Requirements: MACRO-10

Hardware Requirements: None

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

M/P Codes: D2, H32

*Library Tape No. 1:*P190

PDP-10/8 Loader

10-23

Program Version or Creation Date: 1

Keywords: PDP-8; PDP-8-Loader

Author: Allan B. Wilson

Max Planck Inst., Germany

Language or Program Requirements: PAL-10, MACRO-10

Hardware Requirements: PDP-10 with line scanner, PDP-8 with special interface to PDP-10 line scanner

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.

M/P Codes: D2, H32

*Library Tape No. 1:*P190

ONCE Only Code-User Mode

10-25

Program Version or Creation Date: 1

Keywords: ONCE Loader

Author: David M. Nixon

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: MACRO, Time-sharing Monitor (DEC-10-MTC0)

Hardware Requirements: None

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.

Write-up/Listing or source on media.

M/P Codes: H32

*Library Tape No. 1:*P190

GASP II

10-27

Program Version or Creation Date: 1

Keywords: Simulation; GASP

Author: A. Alan, B. Pritsker and Philip J. Kiviat

Submitter: Donald R. Mick

Sanders Assoc., Nashua, NH.

Language or Program Requirements: FORTRAN Users' Random Number Generator

Hardware Requirements: None

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

Write-up/Listing or source on media.

M/P Codes: H32

*Library Tape No. 1:*P190

SIM-11

10-28

Program Version or Creation Date: 1

Keywords: PDP-11-Simulator

Author: Peter Goldstern

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: FORTRAN IV, MACRO-10

Hardware Requirements: 16K Core Including I/O Buffer

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.

Listing or source on media.

M/P Codes: E5, H32

*Library Tape No. 1:*P190

PDP-8/PDP-10 Real Time Data Acquisition System

10-29

Program Version or Creation Date: 1

Keywords: PDP-8; Data-Acquisition

Author: Peter M. Hurley

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: MACRO-10, PAL, PDP-10/40 Monitor

Hardware Requirements: PDP-10, with 16K Core, PDP-8, with 4K Core, DA 25A, DA 25C

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.

Listing or source on media.

M/P Codes: A2, H32

*Library Tape No. 1:*P190

NVERTX

10-30

Program Version or Creation Date: 1

Keywords: High Energy; Physics; Monte-Carlo

Author: Dr. A. E. Brenner

Harvard Univ., Cambridge, MA.

Submitter: Peter M. Hurley

Language or Program Requirements: FORTRAN, MACRO-10

Hardware Requirements: None

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.

Listing or source on media.

M/P Codes: A1, H32

*Library Tape No. 1:*P190

PALX-11

10-31

Program Version or Creation Date: 1

Keywords: PDP-11; Cross-Assembler; PAL-11

Author: L. McGowan

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: MACRO-10, PDP-10 Monitor

Hardware Requirements: 4K Core

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.

Listing or source on media.

M/P Codes: E6, H32

*Library Tape No. 1:*P190

W: Complex Error Function for Complex Argument

10-33

Program Version or Creation Date: 1

Keywords: Error-Function; Probability-Integral

Author: Ian Pugsley

Digital Equipment Corp., Australia.

Language or Program Requirements: FORTRAN

Hardware Requirements: Approx. 300 word storage

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.

Write-up/Listing or source on media.

M/P Codes: H32

*Library Tape No. 1:*P190

ECAP

10-34

Program Version or Creation Date: 2

Keywords: Electronics; Transient-Analysis; ECAP

Author: Stevens Inst. of Tech.

Latest Revisor: Leslie Maltz

Stevens Inst. of Tech., Hoboken, NJ.

Language or Program Requirements: FORTRAN, Queensland Overlay, Loader

Hardware Requirements: 24K of core

Abstract: A revised version of ECAP, considerably faster and offering device independence, usable from Teletype terminals or batch. Handles DC, AC Transient Analysis. Description found in "1620 Electronic Circuit Analysis Program User's Manual," (H20-0170-1).

Note: Stevens Institute of Technology no longer supports ECAP in the DECUS Library.

Listing or source on media.

M/P Codes: A2, M55

*Library Tape No. 1:*P190

ARP

10-36

Program Version or Creation Date: 1

Keywords: Byte-Manipulation

Author: unknown

Submitter: Ed Nemeth

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: MACRO-10

Hardware Requirements: None

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.

Listing or source on media.

M/P Codes: E5, H32

*Library Tape No. 1:*P190

Trace Program

10-37

Program Version or Creation Date: 1

Keywords: DDT; Debug-Aid

Author: unknown

Submitter: Ed Nemeth

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: FORTRAN

Hardware Requirements: None

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).

Listing or source on media.

M/P Codes: A1, H32

*Library Tape No. 1:*P190

Flow Charter

10-38

Program Version or Creation Date: 4

Keywords: Flowcharting

Author: unknown

Latest Revisor: David Dyer

Information International, Los Angeles, CA.

Language or Program Requirements: FORTRAN IV

Hardware Requirements: PDP-10 LPT or modify for disk, 11K core

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.

Write-up/Listing or source on media.

M/P Codes: H32 *Library Tape No. 1:*P190

Random Number Package 10-43

Program Version or Creation Date: 1

Keywords: Random Numbers

Author: unknown

Submitter: Staff

Bolt, Beranek and Newman, Inc., Cambridge, MA.

Language or Program Requirements: FORTRAN

Hardware Requirements: None

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

Listing or source on media.

M/P Codes: A2, H32 *Library Tape No. 1:*P190

SIMPLE 10-57

Program Version or Creation Date: 1

Keywords: Simulator; Analog-Computer

Author: B. P. Molinari

Univ. of Western Australia, Australia.

Submitter: Ian Pugsley

Language or Program Requirements: FORTRAN, MACRO

Hardware Requirements: PDP-6 or, PDP-10 with Teletype

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.

M/P Codes: D2, H32 *Library Tape No. 1:*P190

LISP 1.6 10-59

Program Version or Creation Date: 2

Keywords: LISP; List-Processing

Author: Lynn H. Quan and Whitfield Diffie

Latest Revisor: Lynn H. Quan

Stanford Univ., Stanford, CA.

Language or Program Requirements: MACRO-10, DEC PDP-10, Timesharing Monitor, MACRO-10, PDP-10 Loader

Hardware Requirements: PDP-6 or, PDP-10 with 32K Core, DECTapes, Disk Desired

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 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.

Listing or source on media.

M/P Codes: E10, H32 *Library Tape No. 1:*P190

MLISP 10-61

Program Version or Creation Date: 1

Keywords: LISP

Author: David Canfield Smith

Stanford Univ., Stanford, CA.

Language or Program Requirements: LISP 1.6, SCAN, (See Below)

Hardware Requirements: 25K Core

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.

Listing or source on media.

M/P Codes: E4, H32 *Library Tape No. 1:*P190

LEARNS: For Learning MACRO-10 Instruction Set 10-65

Program Version or Creation Date: 1

Keywords: Instruction; Assembly-Language

Author: Stephen F. Clouther

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: MACRO-10, PDP-10 Monitor

Hardware Requirements: 2K Core

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.

Listing or source on media.

M/P Codes: A1, H32 *Library Tape No. 1:*P190

PAL-12 10-68

Program Version or Creation Date: 1

Keywords: PDP-12; Cross-Assembler; PAL-12; DIAL

Author: L. Elekman

Submitter: G. Thissell

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: MACRO-10, Timesharing Monitor

Hardware Requirements: 4K Core

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.

Listing or source on media.

M/P Codes: A3, H32 *Library Tape No. 1:*P190

FAKE 10-70

Program Version or Creation Date: 1

Keywords: FORTRAN-Arrays; Arrays; Utility—FORTRAN; Core-Allocation

Author: Philip J. Hogan

Nuclear Physics, England.

Language or Program Requirements: MACRO

Hardware Requirements: None

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

Write-up/Listing or source on media.

M/P Codes: H32 *Library Tape No. 1:*P190

- Dartmouth BASIC Library** **10-72**
Program Version or Creation Date: 1
Keywords: Dartmouth; BASIC
Author: Dartmouth BASIC Library
 Dartmouth College, Hanover, NH.
Submitter: Bernhard Eiben
Language or Program Requirements: BASIC
Hardware Requirements: None
- 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.
- Write-up/Listing or source on media.*
- M/P Codes:* M55 *Library Tape No. 1:P190*
- SAIL** **10-86**
Program Version or Creation Date: 18
Keywords: SAIL; ALGOL
Author: Dan Swinehart, Robert Sproul
Latest Revisor: Russell H. Taylor and J. Reiser
 Stanford Univ., Stanford, CA.
Language or Program Requirements: FAIL
Hardware Requirements: 50K of User Core, 4-Series or Later, Monitor
- Abstract:* SAIL is a high-level programming system for the PDP-10. Based on ALGOL-60, it contains extensions for simple string and complicated associative processing. The system as distributed includes text, binary and documentation for the compiler, the execution-time routines and required support software.
- Note:*
- A. No commitment is made to support this or any other version of SAIL with bug fixes or subsequent releases.
 - B. 1. SAIL also runs under TENEX.
 2. When putting up this SAIL system the author suggests first running the file TELLEM.
- Write-up/Listing or source on media.*
- M/P Codes:* P85 *Library Tape No. 2:P85*
- MATRIX** **10-87**
Program Version or Creation Date: 1
Keywords: Matrices; Linear-Algebra
Author: Computer Center Corp.
Submitter: Ed Nemeth
 Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: FORTRAN
Hardware Requirements: None
- 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.
- Listing or source on media.*
- M/P Codes:* E6, H32 *Library Tape No. 1:P190*
- SALESMAN** **10-88**
Program Version or Creation Date: 1
Keywords: Sales; Business
Author: Stephen W. Albert
 Newton Computer Club, Newtonville, MA.
Language or Program Requirements: BASIC
Hardware Requirements: None
- 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.
- M/P Codes:* D1, H32 *Library Tape No. 1:P190*
- JOTTO** **10-89**
Program Version or Creation Date: 1
Keywords: Games; JOTTO
Author: James Whynot
 Newton Computer Club, Newtonville, MA.
Language or Program Requirements: FORTRAN IV
Hardware Requirements: None
- 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.
- M/P Codes:* D2, H32 *Library Tape No. 1:P190*
- BARTEE** **10-90**
Program Version or Creation Date: 1
Keywords: Logic; Networks
Author: R. Perry and A. Cantoni
 Univ. of Western Australia, Australia.
Submitter: Ian Pugsley
Language or Program Requirements: MACRO
Hardware Requirements: 1K Core
- 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).
- Write-up/Listing or source on media.*
- M/P Codes:* H32 *Library Tape No. 1:P190*
- BCDPIP** **10-93**
Program Version or Creation Date: 1
Keywords: IBM-7094; Character-Conversion; BCD
Author: Donald R. Todd
 Brookings Inst., Washington, DC.
Language or Program Requirements: MACRO-10
Hardware Requirements: PDP-10, 1 TU20-7 TRACK 4S50, Monitor or Newer, 1K Core High Segment, 2K Core Low Segment
- 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.
- M/P Codes:* D1, H32 *Library Tape No. 1:P190*

- 17 Teaching Programs for BASIC** **10-97**
Program Version or Creation Date: 1
Keywords: Teaching; BASIC-CAI; CAI-BASIC
Author: unknown
Submitter: Bernhard Eiben
 Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: BASIC
Hardware Requirements: None
- Abstract:* This tape contains seventeen lessons for learning BASIC and writing BASIC programs for the PDP-10.
Write-up/Listing or source on media.
M/P Codes: H32 *Library Tape No. 1:P190*
- PUNCH** **10-98**
Program Version or Creation Date: 1
Keywords: Paper Tape
Author: Richard Maliska
 Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: MACRO-10
Hardware Requirements: 1K Core Low Segment, 1K Core High Segment
- 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.
Write-up/Listing or source on media.
M/P Codes: H32 *Library Tape No. 1:P190*
- On-Line Systems BASIC and FORTRAN Package** **10-100**
Program Version or Creation Date: 2
Keywords: Mathematics; Statistics; Business
Author: On-line Systems
Submitter: Bernhard Eiben and Patricia Osten
 Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: BASIC, FORTRAN
Hardware Requirements: None
- 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.
Listing or source on media.
M/P Codes: A2, H160, M55 *Library Tape No. 1:P190*
- SSP** **10-101**
Program Version or Creation Date: 3
Keywords: Scientific; IBM-SSP; SSP
Author: Sandia Laboratories (I.B.M.)
Latest Revisor: H. David Todd
 Wesleyan Univ., Middletown, CT.
Language or Program Requirements: FORTRAN IV
Hardware Requirements: PDP-10, Disk, Magtape Unit
- 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. See IBM document GH20-0205-4.
Listing or source on media.
M/P Codes: A2, H160, N65 *Library Tape No. 3:P85*
- PDP-8 Simulator on the PDP-10** **10-102**
Program Version or Creation Date: 2
Keywords: PDP-8 Simulator
Author: D. McClure
 Digital Equipment Corp., Waltham, MA.
Latest Revisor: D. McClure
Language or Program Requirements: None
Hardware Requirements: None
- Abstract:* This program is available on DECTape in PDP-10 format. Documentation is available on DECTape as OPR file as well as write-up.
Listing or source on media.
M/P Codes: A2, H32 *Library Tape No. 1:P190*
- RESDEC.MAC** **10-103**
Program Version or Creation Date: 1
Keywords: DECTape—PDP-10; Utility—DECTape
Author: C. B. Eckhardt
Submitter: L. M. Mitchell
 Aeronautical Res. Lab., Australia.
Language or Program Requirements: MACRO
Hardware Requirements: None
- 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 overwritten, since certain partial files are recoverable.
Write-up/Listing or source on media.
M/P Codes: H32 *Library Tape No. 1:P190*
- SNOBOL4** **10-104**
Program Version or Creation Date: 3.4
Keywords: SNOBOL
Author: Larry Wade
 Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: MACRO-10
Hardware Requirements: PDP-10, 35K User Core
- 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.
Listing or source on media.
M/P Codes: E6, H128 *Library Tape No. 1:P190*
- DOCTOR and ELIZA** **10-105**
Program Version or Creation Date: 1
Keywords: Doctor; Eliza; Games; Psychology
Author: Anthony Lauk, et al
Submitter: Anthony Lauk
 Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: LISPI.6 (DECUS No. 10-59)
Hardware Requirements: 16K User Core
- 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.
No source available, write-up on media.
M/P Codes: H32 *Library Tape No. 1:P190*

CFILE

10-107

Program Version or Creation Date: 1*Keywords:* Command-Control*Author:* Walter Metcalf*Submitter:* Kay Latven

Brookings Inst., Washington, D.C.

Language or Program Requirements: MACRO-10*Hardware Requirements:* 1K Core

Abstract: CFILE 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.

*Listing or source on media.**M/P Codes:* A2, H32*Library Tape No. 1:*P190**CHESS**

10-110

Program Version or Creation Date: 1*Keywords:* Games; Chess*Author:* Richard Greenblatt*Submitter:* Ed Nemeth

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: FORTRAN*Hardware Requirements:* None

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.

*No source available. Write-up on media.**M/P Codes:* H32*Library Tape No. 1:*P190**GOOF.MAC**

10-112

Program Version or Creation Date: 1*Keywords:* DECTape—PDP-10; Utility—DECTape*Author:* Buren Hoffman*Submitter:* Ed Mason

E.G.&G., Las Vegas, NV.

Language or Program Requirements: MACRO-10*Hardware Requirements:* 4K Core, not Reentrant

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.

*Listing or source on media.**M/P Codes:* A2, H32*Library Tape No. 1:*P190**MULPAC: A Multiple Precision Package for the PDP-10**

10-113

Program Version or Creation Date: 1*Keywords:* Arithmetic; Multiple-Precision; Functions*Author:* J. M. Bennett

Univ. of Western Ontario, Canada.

Submitter: Ed Nemeth*Language or Program Requirements:* FORTRAN or MACRO*Hardware Requirements:* None

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.

*Listing or source on media.**M/P Codes:* A2, H32*Library Tape No. 1:*P190**MATTAC: Matrix TIC-TAC-TOE**

10-114

Program Version or Creation Date: 1*Keywords:* Games; TIC-TAC-TOE*Author:* Merton E. Kenniston

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: MACRO-10*Hardware Requirements:* 1K Core

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 UJO for all I/O.

*Write-up/Listing or source on media.**M/P Codes:* H32*Library Tape No. 1:*P190**TAPBLK.MAC**

10-115

Program Version or Creation Date: 1*Keywords:* Magtape; Utility—Magtape; Blocking—Magtape*Author:* A. J. Copanas

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: MACRO-10*Hardware Requirements:* RP02 DSK (or Drum), Magtape Drive, 2K Core

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.

*Write-up/Listing or source on media.**M/P Codes:* H32*Library Tape No. 1:*P190**QED**

10-116

Program Version or Creation Date: 1*Keywords:* Editor—Line*Author:* University of Utah

Salt Lake City, UT.

Submitter: Ed Nemeth*Language or Program Requirements:* TECO*Hardware Requirements:* None

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.

*Listing or source on media.**M/P Codes:* A2, H32*Library Tape No. 1:*P190

- IFTYP** 10-117
Program Version or Creation Date: 1
Keywords: Utility—FORTRAN
Author: Stephen Kidd
 Brookings Inst., Washington, D.C.
Submitter: Kay Latven
Language or Program Requirements: MACRO-10
Hardware Requirements: None
- 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.
- Listing or source on media.*
- M/P Codes:* A1, H32 *Library Tape No. 1:*P190
- DYNAM** 10-120
Program Version or Creation Date: 1
Keywords: Utility—FORTRAN; Core-Allocation; FORTRAN-Arrays; Arrays
Author: Stephen Kidd
 Brookings Inst., Washington, D.C.
Submitter: Kay Latven
Language or Program Requirements: MACRO-10
Hardware Requirements: None
- 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.
- Listing or source on media.*
- M/P Codes:* A1, H32 *Library Tape No. 1:*P190
- CUSPER** 10-121
Program Version or Creation Date: 1
Keywords: Utility—FORTRAN
Author: Jon K. Peck
 Brookings Inst., Washington, D.C.
Submitter: Kay Latven
Language or Program Requirements: MACRO-10
Hardware Requirements: 2K Core
- 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.
- Listing or source on media.*
- M/P Codes:* A2, H32 *Library Tape No. 1:*P190
- CSMP-10** 10-122
Program Version or Creation Date: 1
Keywords: Simulation; CSMP
Author: Carnegie-Mellon University
 Pittsburgh, PA.
Submitter: Ed Nemeth
Language or Program Requirements: FORTRAN
Hardware Requirements: None
- Abstract:* CSMP-10 is a block-oriented continuous dynamic system modeling program. Its primary function is to assist in the accurate simulation of dynamic systems modeled by ordinary differential and difference equations. With a few exceptions it is used about the same way as the PDP-9 version.
- Listing or source on media.*
- M/P Codes:* E4, H32 *Library Tape No. 1:*P190
- TAPTST.MAC** 10-126
Program Version or Creation Date: 1
Keywords: Magtape; Diagnostics—Magtape
Author: Andy Copanas
 Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: MACRO-10
Hardware Requirements: KA10, MAGTAPE Drive, TTY, 6K Core Low Segment
- 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.
- Write-up/Listing or source on media.*
- M/P Codes:* H32 *Library Tape No. 1:*P190
- PCPY.MAC and PCPY1.MAC** 10-127
Program Version or Creation Date: 1
Keywords: Utility—Disk
Author: Maria Plaza
 Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: MACRO-10, 5502 Monitor
 + Supporting CUSP's
Hardware Requirements: 2 RP02, 48K Core
- Abstract:* PCPY.MAC will copy blocks from one RP02 disk pack to another. Running stand-alone and using SUPERUSET 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].
- Write-up/Listing or source on media.*
- M/P Codes:* H32 *Library Tape No. 1:*P190
- RENBR: The FORTRAN Renumbering Program** 10-130
Program Version or Creation Date: 3
Keywords: Utility—FORTRAN
Author: Donald E. Barth
 Harvard Univ., Cambridge, MA.
Latest Revisor: Donald E. Barth
Language or Program Requirements: FORTRAN
Hardware Requirements: 48K Core
- Abstract:* RENBR is a program written in hardware independent FORTRAN which gives sequential statement numbers and/or forms cross-reference listings of FORTRAN programs read as data.
- This new version of RENBR incorporates several new features, among which are the following.
1. Selection of options by typing the desired switches together on a single line.
 2. Support for listing devices which do not have a hardware formfeed and/or which have narrow carriages.
 3. Ability to maintain logical blocks of statement numbers, or to maintain the high order digits of the original statement numbers.
 4. Alphabetical ordering of the table of contents in addition to the original serial ordering.
 5. Ability to multiple space statements in the listing.

6. Ability to indent statements which are within the range of DO loops.
7. Ability to include sample data and/or assembly language routines in the listing. These are treated as comments sections and are listed in a single pass. No attempt is made to index the words in these comment sections, although the titles assigned to the sections are included in the table of contents.
8. Support of the ENTRY statement.
9. Ability to renumber properly marked statement numbers contained in comment lines.
10. Ability to have a special comment line in the program or in the routine specify a subtitle for the listing.

The instruction manual has also been updated to include specific instructions for use on the PDP-10. This version does not include any bug fixes since I know of none in the previous DECUS release of RENBR.

Write-up/Listing or source on media.

M/P Codes: H32

Library Tape No. 4:P170

ALGOLW

10-133

Program Version or Creation Date: 2

Keywords: ALGOL

Author: Michael Green

Submitter: W. D. Wagers

Digital Equipment Corp., Maynard, MA.

Latest Revisor: W. D. Wagers

Language or Program Requirements: META 2, TOPS-10

Hardware Requirements: None

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.

Listing or source on media. No write-up available.

M/P Codes: H32

Library Tape No. 4:P170

FISHER

10-134

Program Version or Creation Date: 1

Keywords: Probability

Author: J. D. Perry

Univ. of Vermont, Burlington, VT.

Language or Program Requirements: BASIC

Hardware Requirements: None

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).

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

Listing or source on media. No write-up available.

M/P Codes: H32

Library Tape No. 4:P170

ALOCSP

10-135

Program Version or Creation Date: 1

Keywords: Utility—Disk

Author: John Connor

Digital Equipment Corp., Mountain View, CA.

Language or Program Requirements: MACRO-10

Hardware Requirements: None

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 5S02 or later, and to be used only for disks.

Listing or source on media.

M/P Codes: A2, H32

Library Tape No. 4:P170

PDP-10 Demonstration Package

10-136

Program Version or Creation Date: 1

Keywords: Demonstration; Games; PDP-10

Author: Roger L. Fisher

Grosvenor House, Seattle, WA.

Language or Program Requirements: BASIC, MACRO-10,

FORTRAN IV

Hardware Requirements: None

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.

Listing or source on media.

M/P Codes: A1, H32

Library Tape No. 4:P170

COB300.CBL

10-137

Program Version or Creation Date: 1

Keywords: Filter—COBOL; COBOL—Filter

Author: Alan Blackington

Digital Equipment Corp., Maynard, MA.

Submitter: D. A. Mormile

Language or Program Requirements: COBOL, MACRO-10,

ASCOD.MAC Subroutine for COB300.CBL

Hardware Requirements: PDP-10, Disk, Line Printer, Card Reader

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.

Listing or source on media.

M/P Codes: A1, H32

Library Tape No. 4:P170

FORTRAN File Maintenance System

10-138

Program Version or Creation Date: 1

Keywords: Utility—FORTRAN; File-Handling

Author: Myron N. Curtis

Bowdoin College, Brunswick, ME.

Language or Program Requirements: FORTRAN IV, MACRO

Hardware Requirements: PDP-10, 32K Core, Disk

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.

Write-up/Listing or source on media.

M/P Codes: M55

Library Tape No. 4:P170

TALK8F: An Encoding Program for PAL10 Binary Output 10-139

Program Version or Creation Date: 1

Keywords: PAL-10

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

Language or Program Requirements: FORTRAN IV, MACRO-10, PAL 10 or, PAL 12 on PDP-10, TALK10 on PDP-8

Hardware Requirements: Time-Shared PDP-10, Dataphones,
5K Core

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.

Write-up/Listing or source on media.

M/P Codes: H32

*Library Tape No. 4:*P170

DSKDTA 10-140

Program Version or Creation Date: 3

Keywords: Utility—DECTape; Utility—Disk

Author: Anne Lane
Essex Univ., England.

Latest Revisor: Bernhard Eiben

Language or Program Requirements: MACRO-10

Hardware Requirements: 2 DECTape Drives, Disk File Storage

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.

Listing or source on media.

M/P Codes: A1, H32

*Library Tape No. 4:*P170

EXCON 10-141

Program Version or Creation Date: 1

Keywords: Utility—DECTape

Author: John J. Sigona

U.S. Dept. of Transportation, Cambridge, MA.

Language or Program Requirements: MACRO-10

Hardware Requirements: 717 Octal Locations

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.

Listing or source on media. No write-up available.

M/P Codes: H32

*Library Tape No. 4:*P170

MATHLAB 10-142

Program Version or Creation Date: 1

Keywords: MATHLAB; Symbolic-Processing

Author: Carl Engelman

The Mitre Corp., Bedford, MA.

Language or Program Requirements: LISP

Hardware Requirements: 59K User Core, Some Disk

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.

Listing or source on media.

M/P Codes: E10, H96

*Library Tape No. 4:*P170

COBSTD 10-143

Program Version or Creation Date: 1

Keywords: Utility—COBOL; COBOL—Formatting

Author: Anne Pearson

Submitter: Ewart Davies

Digital Equipment Corp., England

Language or Program Requirements: MACRO-10

Hardware Requirements: A Directory Device, (i.e., Disk Pack),
1K Core

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.

Listing or source on media.

M/P Codes: A1, H32

*Library Tape No. 4:*P170

RUNH: An Additional FORTRAN Library Routine 10-145

Program Version or Creation Date: 1

Keywords: Utility—FORTRAN

Author: Robert Hsu

First National City Bank, NY, NY.

Submitter: Howard Huang

Language or Program Requirements: MACRO

Hardware Requirements: PDP-10

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.

Listing or source on media. No write-up available.

M/P Codes: H32 Library Tape No. 4:P170

PDP-11/10 Loader 10-148

Program Version or Creation Date: 1

Keywords: PDP-11; Cross-Loader

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

Language or Program Requirements: TECO

Hardware Requirements: PDP-10;2K Core, Disk, PDP-11/20;4K Core, DC11AB-Full Duplex

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.

M/P Codes: D1, H32 Library Tape No. 4:P170

EDITOR 10-149

Program Version or Creation Date: 1

Keywords: Editor—Line; Utility—DECtape

Author: unknown

Submitter: G. B. Harrington

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: MACRO-10

Hardware Requirements: DECsystem-10, DECtape, 1K

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.

Listing or source on media.

M/P Codes: A2, H32 Library Tape No. 4:P170

KWIC 10-151

Program Version or Creation Date: 1

Keywords: KWIC-Index

Author: G. B. Moersdorf

Ohio State Univ., Columbus, OH.

Language or Program Requirements: MACRO-10

Hardware Requirements: KT10, 3K User Core, Device Capable of Mode 1, 10 I/O

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.

Note: Runs under 4NN72 or later monitor.

Listing or source on media.

M/P Codes: A2, H32 Library Tape No. 4:P170

RIPOFF 10-152

Program Version or Creation Date: 4 (16)

Keywords: Utility—Disk; Debugging—Disk; Diagnostic—Disk

Author: Steve Bush

Univ. of Texas, Dallas, TX.

Latest Revisor: Steve Bush

Language or Program Requirements: MACRO-10

Hardware Requirements: KA10, One Disk Device and Controller, 8K Core

Abstract: RIPOFF is a generalized disk system utility. Running from [1, 2] only (SUSET, UUU), it bypasses all monitor disk UUU's thereby gaining tremendous speed and the ability to work with "trashed" file systems. It completely replaces DEC's DSKLST, DSKRAT, DELFIL, and CREDIR. In addition, RIPOFF can edit individual disk blocks at physical addresses, re-create SAT blocks, and recover files that have been recently "deleted" by scrounging up left-over RIBs.

Restrictions: Does not support SFD's—yet.

Write-up/Listing or source on media.

M/P Codes: H32 Library Tape No. 4:P170

CHANGE 10-153

Program Version or Creation Date: 2

Keywords: Character-Conversion

Author: David Kiarsis

Digital Equipment Corp., Maynard, MA.

Latest Revisor: David Kiarsis

Language or Program Requirements: MACRO

Hardware Requirements: DECsystem-10, 506 or Later Monitor, 5 + 12K Core

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 is mainly designed for user with magnetic tapes and disks. CHANGE will perform blocking, duplication, character set conversion, unblocking, and reading and writing of tape labels.

Listing or source on media.

M/P Codes: A2, H32 Library Tape No. 4:P170

Subroutines for COBOL: COBQUE, COBSLP, COBWAK 10-154

Program Version or Creation Date: 1

Keywords: COBOL; Queuers

Author: David Kiarsis

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: MACRO, PDP-10 Monitor, COBOL + MPB Programs

Hardware Requirements: PDP-10

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.

Listing or source on media.

M/P Codes: A2, H32 Library Tape No. 4:P170

- USET** 10-155
Program Version or Creation Date: 1
Keywords: Debugging-Disk; Diagnostic-Disk; Utility-Disk
Author: C. Mitchell
 The Hatfield Polytechnic, England.
Language or Program Requirements: MACRO-10
Hardware Requirements: PDP-10, CTY, DSK, 2K Core
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 UUO's
Listing or source on media.
M/P Codes: A2, H32 *Library Tape No. 4:P170*
- Asynchronous Communications Package for PDP-10's to PDP-8's** 10-156
Program Version or Creation Date: 1
Keywords: PDP-8; Communications
Author: Peter Hurley
 Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: MACRO-10, PAL-10, 5.05 Monitor or Later
Hardware Requirements: DC-10 or, 680 for PDP-10, PT08 or Equivalent for PDP-8
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. (Also see DECUS No. 10-187)
Write-up/Listing or source on media.
M/P Codes: H32 *Library Tape No. 4:P170*
- STREAM** 10-157
Program Version or Creation Date: 1
Keywords: Utility-FORTRAN; Byte-Manipulation
Author: Martin A. Schultz
 Syosset High Sch., Plainview, NY.
Language or Program Requirements: MACRO-10 V44 / Later, PDP-10 Monitor, IOPS-10 Series 5, FORTRAN V24 or Later, Loader V52A or Later
Hardware Requirements: PDP-10, 600 word storage
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.
M/P Codes: D2, H32 *Library Tape No. 4:P170*
- PAGER** 10-159
Program Version or Creation Date: 4(6)
Keywords: Utility
Author: Martin A. Schultz
 Syosset High Sch., Plainview, NY.
Latest Revisor: Martin A. Schultz
Language or Program Requirements: MACRO-10
Hardware Requirements: 1K Core
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.
M/P Codes: D2, H32 *Library Tape No. 4:P170*
- TERBIN** 10-160
Program Version or Creation Date: 1
Keywords: Paper-Tape; Utility
Author: Stuart Skalka
 Syosset High Sch., Plainview, NY.
Language or Program Requirements: MACRO-10
Hardware Requirements: PDP-10 with Image Mode for TTY's, TTY, Punch/Reader, 1K Core
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.
M/P Codes: D2, H32 *Library Tape No. 4:P170*
- ABACUS** 10-161
Program Version or Creation Date: 1
Keywords: Calculator
Author: Martin A. Schultz
 Syosset High Sch., Plainview, NY.
Language or Program Requirements: MACRO-10, LIB40 Routines, ABHELP.SAV OPTIONAL
Hardware Requirements: PDP-10, Monitor 5.03 / Later, TTY, 2K Core Impure, 1K Core Pure
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.
Listing or source on media.
M/P Codes: A2, H32 *Library Tape No. 4:P170*
- POOMAS: Poor Man's SIMULA** 10-162
Program Version or Creation Date: 1
Keywords: Simulation; SIMULA
Author: Amund Lunde
 Carnegie-Mellon Univ., Pittsburgh, PA.
Language or Program Requirements: Bliss, Bliss Compiler
Hardware Requirements: BLISS:40-50K Core, POOMAS:25K Core
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.
Write-up/Listing or source on media.
M/P Codes: H32 *Library Tape No. 4:P170*
- CROSS: Correlation of Responses with options for the Social Sciences** 10-164
Program Version or Creation Date: 1
Keywords: Statistics; Correlation
Author: Norman W. Johnson
 Wheaton College, Norton, MA.
Language or Program Requirements: FORTRAN IV, MACRO-10, FORTRAN IV SUBR.: Date, Time, IFILE, OFILE, IFIL, OFIL
Hardware Requirements: 17K User Core, 711 Disk Blocks, (24 Files)
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: DEctape includes procedure for implementation.

Listing or source on media.

M/P Codes: A2, H32

*Library Tape No. 4:*P170

RDMT11 10-165

Program Version or Creation Date: 1

Keywords: PDP-11-Magtape; Utility—Magtape

Author: William J. Meserve

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: MACRO-10

Hardware Requirements: Monitor 5 Series, 9-Track Magtape, Disk, 3K Core

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.

Listing or source on media. No write-up available.

M/P Codes: H32

*Library Tape No. 4:*P170

BLOCK 10-166

Program Version or Creation Date: 2

Keywords: Character-Conversion; Magtape-Copying

Author: W. H. Kropp

Brook Haven National Lab., Upton, NY.

Latest Revisor: W. H. Kropp

Language or Program Requirements: MACRO-10

Hardware Requirements: PDP-10, Magnetic Tapes, 2K Core Plus Expansion for Buffers

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.

Listing or source on media.

M/P Codes: A2, H32

*Library Tape No. 4:*P170

GENPLT-II: A General Plotting Package 10-167

Program Version or Creation Date: 1

Keywords: Plotting

Author: Donald E. Barth

Harvard Univ., Cambridge, MA.

Language or Program Requirements: FORTRAN

Hardware Requirements: None

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.

Listing or source on media.

M/P Codes: A3, H64

*Library Tape No. 4:*P170

TBLTRN: A Symbolic Table Assembler Written in FORTRAN 10-168

Program Version or Creation Date: 2

Keywords: Tables; Symbols

Author: Donald E. Barth

Harvard Univ., Cambridge, MA.

Latest Revisor: Donald E. Barth

Language or Program Requirements: FORTRAN

Hardware Requirements: 23K Core

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.

Listing or source on media.

M/P Codes: E13, H64

*Library Tape No. 4:*P170

CTFFT 10-169

Program Version or Creation Date: 1

Keywords: Cooley-Tukey; FFT; Fourier-Transforms

Author: Norman Brenner

Latest Revisor: A. Grayson

Digital Equipment Corp., Marlboro, MA.

Language or Program Requirements: FORTRAN

Hardware Requirements: 5 Series Monitor, Level D

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.

Write-up/Listing or source on media.

M/P Codes: H32

*Library Tape No. 4:*P170

UFLIP: User File Library Implementation Program 10-170

Program Version or Creation Date: 1

Keywords: Utility—Disk; Utility—DEctape

Author: Dr. James B. Moorhead

Knolls Atomic Power Lab., Schenectady, NY.

Language or Program Requirements: MACRO, MACRO-52 or Later

Hardware Requirements: KA10, Disk

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.

Listing or source on media.

M/P Codes: A2, H32

*Library Tape No. 4:*P170

- Cardiac Machine Language Simulator for PDP-10 BASIC** 10-171
Program Version or Creation Date: 1
Keywords: Cardiac
Author: Stuart Hollander
 State Univ. of New York
Language or Program Requirements: BASIC (Version 17)
Hardware Requirements: None
- 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.
- M/P Codes:* D2, H32 *Library Tape No. 4:*P170
- FLMON: Process Flowsheet Monitor** 10-173
Program Version or Creation Date: 1
Keywords: Flowsheets
Author: John B. Vinturella
 Louisiana State Univ., New Orleans, LA.
Language or Program Requirements: FORTRAN, Plotter Routines
Hardware Requirements: 48K Core, Digital Plotter
- 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.
- M/P Codes:* D3, H32 *Library Tape No. 4:*P170
- LCAP** 10-174
Program Version or Creation Date: major #3, minor #2
Keywords: Logic; LCAP; Circuit Analysis
Author: Professor Stephen R. Alpert
 Worcester Polytechnic Inst., Worcester, MA.
Language or Program Requirements: ALGOL 2A(144), MACRO-10, ALGOL Operating SYS
Hardware Requirements: Monitor:Level 503/505, 10K + ALGOTS HISEG, TTY, DSK
- Abstract:* LCAP is a simulator of synchronous logic networks which will equip the user with a real-time tool for circuit design and verification. The program recognizes all the standard gates, two kinds of flip-flops, and a gate that may be designed by the user. A circuit may be entered within the program and tested for up to seventy-two time steps. Such a circuit may be saved in a file named by the user and may be recalled at any time. If the circuit does not perform satisfactorily, it may be modified and retested or may be expanded to include more inputs and/or gates.
- Listing or source on media.*
- M/P Codes:* A2, H32 *Library Tape No. 4:*P170
- CHAINR: Diagnostic Chainer** 10-175
Program Version or Creation Date: 1
Keywords: Diagnostics
Author: Duane W. Moore
 Digital Equipment Corp., Portland, OR.
Language or Program Requirements: MACRO-10
Hardware Requirements: KA10;8K User Core, Random Access DIR., Type Storage Device, 393 DSK Blocks
- 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.
- M/P Codes:* D2, H32 *Library Tape No. 4:*P170
- ACCTG: Resource Accounting System** 10-176
Program Version or Creation Date: 1
Keywords: Accounting; Resource-Accounting
Author: Sanders Associates, Inc.
 Nashua, NH.
Submitter: A. Ryder
Language or Program Requirements: MACRO-10, FORTRAN
Hardware Requirements: Magtape or Great Deal of Disk, 20K Core, TOPS-10 5S03C, Monitor
- 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.
- Listing or source on media.*
- M/P Codes:* A2, P85 *Library Tape No. 5:*P85
- Sign Maker** 10-177
Program Version or Creation Date: 1
Keywords: Sign-Maker
Author: Irwin L. Goverman
 Brandels Univ., Waltham, MA.
Language or Program Requirements: FORTRAN, FORTRAN Operating System
Hardware Requirements: 10K Core, PDP-10, Line Printer, Random Access, Storage Device
- 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).
- M/P Codes:* D2, H32 *Library Tape No. 4:*P170
- MTIO: Industry Compatible Magnetic Tape I/O** 10-178
Program Version or Creation Date: 1
Keywords: Utility—Magtape; Utility—FORTRAN
Author: Steven J. Fortune and Thomas W. Burnett
 Pennsylvania State Univ., University Park, PA.
Language or Program Requirements: MACRO, 4 or 5 Series, Time-Sharing Monitor
Hardware Requirements: PDP-10, Magnetic Tape, 220 Word Storage
- 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.
- Listing or source on media.*
- M/P Codes:* A2, H32 *Library Tape No. 4:*P170

FASBOL II: A SNOBOL4 Compiler 10-179
Program Version or Creation Date: 21-Sep-76
Keywords: SNOBOL; FASBOL
Author: Paul J. Santos, Jr.
Latest Revisor: Don Peters
Sanders Assoc., Nashua, NH.
Language or Program Requirements: FASBOL, MACRO 50
Hardware Requirements: DECsystem-10

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.

Write-up/Listing or source on media.

M/P Codes: M55 *Library Tape No. 6:P85*

FORFLO: FORTRAN Flowcharting 10-180
Program Version or Creation Date: 1
Keywords: Flowcharting; Utility—FORTRAN
Author: Ralph E. Gorin
Stanford Univ., Stanford, CA.
Submitter: Al Ryder
Language or Program Requirements: MACRO-10, FAIL, Compatibly
Hardware Requirements: PDP-10, 5K User Space, Disk or DECTape, LPT

Abstract: This program reformats FORTRAN source files and produces a cross reference of statement labels and a flowchart of the source file.

Listing or source on media.

M/P Codes: A2, H32 *Library Tape No. 4:P170*

EDITS 10-181
Program Version or Creation Date: 1
Keywords: Editor—Line; EDITS
Author: W. Weiher, J. Sauter, R. Gorin
Sanders Assoc., Nashua, NH.
Submitter: A. Ryder
Language or Program Requirements: MACRO, TOPS-10
Hardware Requirements: DECsystem-10, Any Input, Output Pair

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

Listing or source on media.

M/P Codes: E4, H32 *Library Tape No. 4:P170*

TXTPAD: A Textual Illustration Sketchpad 10-182
Program Version or Creation Date: 1
Keywords: Illustration
Author: Donald E. Barth
Harvard Univ., Cambridge, MA.
Language or Program Requirements: FORTRAN
Hardware Requirements: PDP-10, ARDS Storage Scope and Stylus, 15K Core

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.

Listing or source on media.

M/P Codes: A2, H32 *Library Tape No. 4:P170*

GRAPH.F4: Graphing/Plotting on a Line Printer 10-183
Program Version or Creation Date: 1
Keywords: Plotting; Graphing; Utility—LPT
Author: William D. Gustafson
Stevens Inst. of Technology, Hoboken, NJ.
Language or Program Requirements: FORTRAN, 5504A Monitor
Hardware Requirements: PDP-10, Line Printer

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

Restrictions: Program uses PRINT statements.

Listing or source on media.

M/P Codes: A2, H32 *Library Tape No. 4:P170*

SPELL: Spelling, Checker and Correction Program 10-184
Program Version or Creation Date: 1
Keywords: Speller
Author: Ralph Gorin
Stanford Artificial Intell. Lab., Stanford, CT.
Submitter: Al Ryder
Language or Program Requirements: MACRO, Fail
Hardware Requirements: DECsystem-10, 35K User Core

Abstract: This program will read text files and check them for corrections of spelling. In addition to the spelling check it will attempt to correct words that it thinks are misspelled.

Listing or source on media.

M/P Codes: A2, H32 *Library Tape No. 4:P170*

SYNTAX 10-185
Program Version or Creation Date: 2
Keywords: Syntax; Utility—Programming; Grammar
Author: Michael Green
Submitter: W. D. Wagers
Digital Equipment Corp., Maynard, MA.
Latest Revisor: Michael Green
Language or Program Requirements: ALGOLW(DECUS No. 10-133), TOPS-10
Hardware Requirements: None

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.

Listing or source on media. No write-up available.

M/P Codes: H32 *Library Tape No. 4:P170*

- META2** 10-186
Program Version or Creation Date: 2
Keywords: META2; Compiler-Writer
Author: Michael Green
Submitter: W. D. Wagers
 Digital Equipment Corp., Maynard, MA.
Latest Revisor: Michael Green
Language or Program Requirements: TOPS-10
Hardware Requirements: None
- 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.
- Listing or source on media. No write-up available.*
- M/P Codes:* H32 *Library Tape No. 4:P170*
- Asynchronous Communications Subroutines with Error Detection and Correction** 10-187
Program Version or Creation Date: 1
Keywords: Communications; Utility—COBOL; Utility—FORTRAN; Dial-Out-Transmission
Author: Peter M. Hurley
 Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: MACRO, FORTRAN, TOPS-10
Hardware Requirements: PDP-10, DC-10, or DC-68
- 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.
- Write-up/Listing or source on media.*
- M/P Codes:* H32 *Library Tape No. 4:P170*
- Z: The Job Status Cusp** 10-188
Program Version or Creation Date: 1
Keywords: Utility; Job-Status
Author: Will Wagers
 Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: MACRO-10, TOPS-10
Hardware Requirements: DECsystem-10, TTY, 2K Core
- 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.
- Note:*
- Loading Instructions:**
 .LOAD Z.MAC
 .SSSAVE
Operating Instructions:
 .RUN Z
- Restrictions:* No command options exist at this time.
- Listing or source on media. No write-up available.*
- M/P Codes:* H32 *Library Tape No. 4:P170*
- MAFIA: Magnetic Filer Advanced** 10-189
Program Version or Creation Date: 1
Keywords: Utility—Magtape
Author: M. Richter
 Technical Univ. of Munich, Germany.
Submitter: Stephen F. Clouther
Language or Program Requirements: MACRO
Hardware Requirements: DECsystem-10, 5 Series Monitor
- 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.
- Listing or source on media.*
- M/P Codes:* A2, H32 *Library Tape No. 4:P170*
- BTLSHP.BAS** 10-190
Program Version or Creation Date: 2
Keywords: Games; Battleship
Author: David Dyer
 Immaculate Heart College, Los Angeles, CA.
Latest Revisor: Ed Mason
 E.G.&G., Las Vegas, NV.
Language or Program Requirements: Standard BASIC
Hardware Requirements: None
- Abstract:* Plays the game of battleship on a 10 × 10 matrix. As programmed the game is similar but not identical to commercially marketed versions.
- Write-up/Listing or source on media.*
- M/P Codes:* H32 *Library Tape No. 4:P170*
- DECtape Accounting and Handling** 10-191
Program Version or Creation Date: 1
Keywords: Utility—DECtape; DECtape-Accounting
Author: L. K. Salmonson, Sally Browning
 Univ. of Oregon, Eugene, OR.
Language or Program Requirements: MACRO-10
Hardware Requirements: PDP-10, 2K Core Low Segment
- 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.
- Listing or source on media.*
- M/P Codes:* A1, H32 *Library Tape No. 4:P170*
- *1 (Star One)** 10-193
Program Version or Creation Date: 1
Keywords: Star-One; List-Processing
Author: Richard A. Stone
 Western Electric, Princeton, NJ.
Language or Program Requirements: SNOBOL 4, SITBOL
Hardware Requirements: PDP-10 or PDP-11, or 5/360/370, 15 + 10K Core
- 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.
- Listing or source on media.*
- M/P Codes:* E9, H32 *Library Tape No. 7:P140*

GRAFITI: Interactive Program for Plot Generation 10-195

Program Version or Creation Date: 1

Keywords: Plotting; Graphing

Author: Marjorie Odle

Brookings Inst., Washington, DC.

Language or Program Requirements: MACRO

Hardware Requirements: PDP-10, CALCOMP 565 Plotter, 21K Core

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).

Listing or source on media.

M/P Codes: A2, H32

Library Tape No. 7:P140

MTFILE 10-196

Program Version or Creation Date: 1

Keywords: Utility—Magtape

Author: Richard N. Freedman

First Data Corp., Waltham, MA.

Language or Program Requirements: MACRO

Hardware Requirements: None

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.

Listing or source on media.

M/P Codes: A2, H32

Library Tape No. 7:P140

FILTER 10-197

Program Version or Creation Date: 1

Keywords: COBOL—Filter; Filter—COBOL

Author: Fred Smith

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: COBOL, MACRO-10, LIBOL

Hardware Requirements: DECsystem-10, Disk, 10K Core

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.

Write-up/Listing or source on media.

M/P Codes: H32

Library Tape No. 7:P140

IMP: PDP-10 IMP72 Compiler 10-198

Program Version or Creation Date: 1.5

Keywords: IMP; System-Programming

Author: Walter Bilofsky

Bolt Beranek and Newman, Inc., Cambridge, MA.

Submitter: Sonya Shapiro

Latest Revisor: Walter Bilofsky

Language or Program Requirements: IMP72

Hardware Requirements: DECsystem-10, V5.06 + TENEX, 37K User Core

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.

Listing or source on media.

M/P Codes: E8, H64

Library Tape No. 7:P140

COFUP: Core File Utility Program 10-199

Program Version or Creation Date: 1

Keywords: Utility

Author: William D. Wagers

Rapidata, Fairfield, NJ.

Language or Program Requirements: MACRO-10, TOPS-10, HELPER.REL

Hardware Requirements: 3 plus 1 P Storage

Abstract: This program is designed to allow the knowledgeable user or system programmer to examine and modify temporary incore files via the TMPCOR UUU.

Write-up/Listing or source on media.

M/P Codes: H32

Library Tape No. 7:P140

VTED and RTRANS: Display Editor and Runoff Translator 10-200

Program Version or Creation Date: 1

Keywords: Editor-Display

Author: Peter M. Hurley

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: MACRO-10

Hardware Requirements: 2K Core

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.

Write-up/Listing or source on media.

M/P Codes: H32

Library Tape No. 7:P140

LOST 10-201

Program Version or Creation Date: 1

Keywords: Utility—Disk

Author: Mrs. Anne Lane

Univ. of Essex, United Kingdom

Language or Program Requirements: MACRO-10, TOPS
10-Tested on 506 or Later

Hardware Requirements: 48K Core, DSK Sub-System e.g., RP10
(RP02, RP03), RD10 Spooled Line Printer

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.

Listing or source on media.

M/P Codes: A2, H32 *Library Tape No. 7:P140*

MANTIS 10-202

Program Version or Creation Date: 5

Keywords: MANTIS; Debugging—FORTRAN

Author: Loren Salmonson

Univ. of Oregon, Eugene, OR.

Submitter: Gordon P. Ashby

Latest Revisor: Loren Salmonson

Language or Program Requirements: MACRO-10, Loader, F40
Compiler, FOROTS Runtime Sys., COMPIL Concise, Com-
mand Processor

Hardware Requirements: 2 + 3K Over, Same as FOROTS

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 ...

Write-up/Listing or source on media.

M/P Codes: H96 *Library Tape No. 7:P140*

GUNNER 10-203

Program Version or Creation Date: 1

Keywords: Games; GUNNER

Author: Kenneth A. Ascher

Eastern Michigan Univ., Ypsilanti, MI.

Language or Program Requirements: BASIC

Hardware Requirements: PDP-10, TTY

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.

Write-up/Listing or source on media.

M/P Codes: H32 *Library Tape No. 7:P140*

OPR 10-204

Program Version or Creation Date: 1

Keywords: OPR; Utility—Operator; DAEMON

Author: Stephen Covitz

Tufts Univ., Medford, MA.

Submitter: David Solomont

Language or Program Requirements: MACRO

Hardware Requirements: DECsystem-1050, 506B Operating Sys.,
2 + 4K Core

Abstract: OPR provides a DEC-10 operator with the facility to attach any job to any terminal, stop, continue, kill, or put a time limit on any job, purge all detached jobs from the system, put a job in a low priority queue, bomb the system, free any peripheral device, change in-core privilege bits for any job, force a command on a particular job, and watch the system via a DAEMON-like program (SPIRIT). Both users and operators can use OPR to locate any device, perform a light show on the console, get system stats (response time, null time, etc.), and get SYSTAT info on everyone, everyone but OPR jobs, or anyone knowing the job number, TTY number, user name, or program name.

Note: MAC file is not complete.

Write-up on media.

M/P Codes: B10, H32 *Library Tape No. 7:P140*

OPEN.MAC 10-205

Program Version or Creation Date: 1

Keywords: Utility—FORTRAN

Author: Irwin L. Goverman

Brandeis Univ., Waltham, MA.

Language or Program Requirements: MACRO-10, F40 Compiler,
FOROTS OTS

Hardware Requirements: DECsystem-10, 231 (Base 8)
Word Storage

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.

Listing or source on media. No write-up available.

M/P Codes: H32 *Library Tape No. 7:P140*

BAKWDS 10-206

Program Version or Creation Date: 1

Keywords: Utility—Conversion; Utility—FORTRAN

Author: Digital Equipment Corp.

Submitter: H. P. Weiss

Language or Program Requirements: MACRO-10

Hardware Requirements: DECsystem-10

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.

Listing or source on media. No write-up available.

M/P Codes: H32

Library Tape No. 7:P140

EYES: A Program to Convert an ASCII File to Braille 10-207

Program Version or Creation Date: 1

Keywords: EYES; Braille

Author: Edward Dirling

Univ. of Pittsburgh, Pittsburgh, PA.

Submitter: Edward Jankowski

Language or Program Requirements: MACRO-10

Hardware Requirements: DECsystem-1077, Printer, 56A.13 Operating Sys., 1K Core

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.

M/P Codes: D2, H32

Library Tape No. 7:P140

SCAT2: Standard Complex Algebra 10-208

Program Version or Creation Date: 1

Keywords: Algebra; Complex-Arithmetic

Author: C. J. Andrews

Univ. of Queensland, Australia.

Language or Program Requirements: MACRO-10

Hardware Requirements: 2 + 2K Core

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.

Write-up/Listing or source on media.

M/P Codes: H32

Library Tape No. 7:P140

RANDU 10-209

Program Version or Creation Date: 1

Keywords: Probability; Random Numbers

Author: Art Retti

Digital Equipment Corp., Switzerland.

Language or Program Requirements: FORTRAN

Hardware Requirements: None

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.

M/P Codes: D1, H32

Library Tape No. 7:P140

UCI-LISP 10-210

Program Version or Creation Date: 1

Keywords: LISP; UCI-LISP; List-Processing

Author: Univ. of California, Irvine

Language or Program Requirements: MACRO-10

Hardware Requirements: DECsystem-10

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.

Listing or source on media.

M/P Codes: A1, N65

Library Tape No. 7:P140

GNOSIS: A System for Computer Aided Instruction 10-211

Program Version or Creation Date: 1

Keywords: GNOSIS; CAI

Author: Jacob Palme

Research Inst. of National Defense, Sweden.

Language or Program Requirements: TOPS-10, ALGOL, DEC10 ALGOL Compiler and System

Hardware Requirements: 16K Core

Abstract: GNOSIS receives lessons in a special language for writing computer aided lessons. The lessons are translated to ALGOL programs which will, when compiled and run, give the lesson to the student. GNOSIS allows the teacher to specify different correct and incorrect answers to the questions, and to react in different ways to each answer. GNOSIS also allows the teacher to adjust the course to the students achievement, e.g., by extra sections for poor students or by skipping sections for good students. When the student runs a GNOSIS lesson, a report is automatically produced containing that information which the teacher needs to improve the lesson.

Note: All files for this program are also contained in DECUS No. 10-220.

Listing or source on media.

M/P Codes: E8, H32

Library Tape No. 7:P140

SPPLT and SPTEK: Hybrid Orbital Contour Plotting Program 10-212

Program Version or Creation Date: 1

Keywords: Chemistry—Quantum; CAI; Plotting

Author: James S. Evans and Stephen L. Holmgren

Lawrence Univ., Appleton, WI.

Language or Program Requirements: BASIC

Hardware Requirements: TSP-212 Plotting Sys., TSP-12 Plotter Ctrl., and X-Y Recorder, Tektronix 4010, Graphics Terminal

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.

Restrictions:

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.

Listing or source on media.

M/P Codes: D3, H32

Library Tape No. 7:P140

- BLISS-11** 10-213
Program Version or Creation Date: 1
Keywords: BLISS-11
Author: Dr. Wulf, Bruce W. Leverett, et al
 Carnegie-Mellon, Pittsburgh, PA.
Submitter: Stephen Lieman
Language or Program Requirements: BLISS-10, TOPS-10; Suitable for TENEX Operating Sys., PA1050
Hardware Requirements: 35-55K Core, see below
- 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.
- Note:*
1. TOPS-10; a version suitable for TENEX operating systems with PA1050 emulators can be generated.
 2. 35-55K "normal" usage requires 45-55K, large input files may require more than 55K.
- Listing or source on media.*
M/P Codes: E12, H160, M55 *Library Tape No. 7:*P140
- ABACUS: Advanced Bowdoin Arithmetic Calculator Utility System** 10-214
Program Version or Creation Date: 1
Keywords: Calculator
Author: William E. Severance, Jr.
 Bowdoin College, Brunswick, ME.
Language or Program Requirements: MACRO-10, 504B Monitor
Hardware Requirements: TTY, DSK, 1K User, 4K SHAR Seg., Optional Devices, LPT;DTA;PTP;PTR
- 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.
- Listing or source on media.*
M/P Codes: A3, H32 *Library Tape No. 7:*P140
- DFCODE: DECTape File Protection Program** 10-217
Program Version or Creation Date: 1
Keywords: Utility—DECTape; Security—DECTape
Author: Robert J. Frohreich
 Stevens Inst. of Technology, Hoboken, NJ.
Language or Program Requirements: MACRO-10, Monitor Series-5, Version 506B(7)
Hardware Requirements: 1K Core, High, 1K Low or 2K Low
- 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.
- Write-up/Listing or source on media.*
M/P Codes: H32 *Library Tape No. 8:*P180
- PALDIS: PDP-10 Disassembler for PDP-8 Binary Files** 10-218
Program Version or Creation Date: 1
Keywords: PDP-8
Author: Mark R. Crispin
 Stevens Inst. of Technology, Hoboken, NJ.
Language or Program Requirements: MACRO-10
Hardware Requirements: KA10, High Speed PTR, 1K Core for KA10, 1P for KI-10
- 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.
- M/P Codes:* D2, H32 *Library Tape No. 8:*P180
- Checking Account Balancer** 10-219
Program Version or Creation Date: 1
Keywords: Checking-Account
Author: Michael Mitchell
 Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: FOCAL, FOCAL 10
Hardware Requirements: PDP-10, TTY, 8K Core
- 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.
- Listing or source on media.*
M/P Codes: A2, H32 *Library Tape No. 8:*P180
- TOPSTEACH: A Computer-Assisted Course on the Use of the DECsystem-10** 10-220
Program Version or Creation Date: 1
Keywords: TOPSTEACH; CAI; DECsystem-10—Intro.
Author: Jacob Palme
 Research Inst. of National Defense, Sweden.
Language or Program Requirements: GNOSIS
Hardware Requirements: 23K Core User Area
- Abstract:* This course is intended for students with little or no knowledge of the TOPS10 operating system. It will give enough knowledge to use the DECsystem-10, but programming in a programming language is not included in the course. The course communicates with the user at the console, it imparts facts and asks questions. Answers are checked and any misunderstanding is explained and clarified.
- Note:* GNOSIS (10-211) is contained in full on this magtape.
- Listing or source on media.*
M/P Codes: A2, M55 *Library Tape No. 8:*P180
- NMRSIM and TTYOPS: NMR Simulation and Plotting Program** 10-221
Program Version or Creation Date: 1
Keywords: Chemistry—NMR; NMR-Simulation; NMR-Plotting
Author: James S. Evans
 Lawrence Univ., Appleton, WI.
Language or Program Requirements: FORTRAN, MACRO-10, PDP-10 FORTRAN, Library
Hardware Requirements: Timesharing PDP-10, TSP-12 Plotter Controller with X-Y Recorder, 12K Word Storage

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.

Listing is part of manual.

M/P Codes: E4, H32

Library Tape No. 8:P180

FFT.MAC: RADIX Two Fast Fourier Transform Subroutine 10-222

Program Version or Creation Date: 1

Keywords: Cooley-Tukey; FFT; Fourier-Transforms

Author: A. R. Baldock

Univ. of Western Australia, Australia.

Language or Program Requirements: MACRO-10

Hardware Requirements: None

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."

M/P Codes: D2, H32

Library Tape No. 8:P180

SIMULA 67 for KI-10 10-223

Program Version or Creation Date: 3

Keywords: SIMULA; ALGOL; Programming-Language

Author: Graham Birtwistle and Jacob Palme

Swedish National Defense Research Inst., Sweden.

Submitter: Lars Enderin

Latest Revisor: Jacob Palme

Language or Program Requirements: MACRO-10, TOPS-10

Hardware Requirements: DECsystem 1070, Disk Pack or Equivalent, 25K to 30K Core

Abstract: SIMULA 67 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, text-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 67 will often considerably reduce programming time compared to conventional languages like FORTRAN, COBOL or PL/I. SIMULA 67 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.

Note:

Order 10-223B for Part I of the language handbook: E34, also on tape.

Order 10-223C for Part II of the language handbook: E25, also on tape.

Order 10-223D for Part III of the language handbook: E13.

Listing or source on media.

M/P Codes: E34, E25, E13, P85 *Library Tape No. 9:P85/P160*

SPICE/SLIC/SINC 10-224

Program Version or Creation Date: 1

Keywords: Simulation; Circuit-Analysis

Author: Staff

Univ. of California, Berkeley, CA.

Submitter: Ashley Grayson

Language or Program Requirements: FORTRAN, FORTRAN-10, TOPS-10

Hardware Requirements: DECsystem-10, Disk, 50K Word Storage

Abstract: SPICE is a general purpose simulation program for integrated circuits. It contains the three basic analysis capabilities which provide the bulk of information of circuit's performance:

1. Non-linear DC analysis
2. Small-signal sinusoidal steady-state analysis
3. Non-linear, time-domain, transient analysis.

The circuit size limitations for SPICE are 400 nodes, and 200 total elements of which no more than 100 can be semiconductor devices. Built-in models are included for the most common semiconductor devices. SPICE was designed to be easy to learn and easy to use. The input language is free format. Where possible, the program supplies "default" values for circuit parameters that are not specified. Simulation results are available either as tabular listings of the output variables or as line printer plots. The program contains 8000 FORTRAN IV statements, and requires 40,000 decimal words of core memory to execute.

SLIC solves for the DC node-to-datum voltages, transistor operating points, small-signal poles, zeros, and frequency response, noise performance, and sensitivity of circuits containing resistors, capacitors, inductors, voltage-controlled current sources, mutual inductors, bipolar transistors, junction and MOS field-effect transistors, current sources, and grounded voltage sources. SLIC allows the user to choose a combination of the above types of analyses. Analyses may be repeated for several different temperatures and/or for several different values of any DC source.

SINC is a simulator of non-linear electronic circuits. The program calculates the node voltages and branch currents as a function of time. Initial conditions are determined as the DC operating points at time zero. Allowed circuit elements are bipolar transistors, resistors, capacitors, inductors, current sources, and grounded voltage sources.

Note: For use on the KI10.

Restrictions: This program may not be sold or used for profit without written permission from the University of California, Berkeley.

Listing or source on media.

M/P Codes: E8, N65

Library Tape No. 8:P180

POET 10-225

Program Version or Creation Date: 1

Keywords: UTIL TY—Disk

Author: Richard N. Freedman

First Data Corp., Waltham, MA.

Language or Program Requirements: MACRO, C, SCNMAC, SCAN, WILD

Hardware Requirements: 506A

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.

Listing or source on media. No write-up available.

M/P Codes: H32

Library Tape No. 8:P180

AVAIL 10-226
Program Version or Creation Date: 1
Keywords: Help
Author: Pete Schilling
Aluminum Co. of America, Alcoa Center, PA.
Language or Program Requirements: FORTRAN, FORTRAN-10
Hardware Requirements: DECsystem-10, Disk, Line Printer, 5K Core, FOROTS

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.

Listing or source on media.

M/P Codes: A2, H32 *Library Tape No. 8:*P180

Utility: Utility Programs for Commercial Users 10-227
Program Version or Creation Date: 1
Keywords: Utility—COBOL; Commercial
Author: Fred Smith
Digital Equipment Corp., Marlboro, MA.
Language or Program Requirements: MACRO, BASIC, COBOL
Hardware Requirements: None

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.

Listing or source on media.

M/P Codes: A2, M55 *Library Tape No. 8:*P180

CALCOMP Plotter Package 10-228
Program Version or Creation Date: 2
Keywords: Plotting; Graphing
Author: Harold V. McIntosh
National Inst. of Nuclear Energy, Mexico.
Latest Revisor: Harold V. McIntosh
Language or Program Requirements: FORTRAN, LIB40 Plotter, Subroutine
Hardware Requirements: PDP-10, CALCOMP Model 565, Drum Plotter (11'), 100 × 100 Data Arrays, Require 22K Core

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.

Write-up/Listing or source on media.

M/P Codes: H32 *Library Tape No. 8:*P180

ASTRO.F4: Multi-Purpose Astrology Program 10-229
Program Version or Creation Date: 6-Nov-75
Keywords: Astrology
Author: Houston P. Lowry
Pitzer College, Claremont, CA.
Latest Revisor: Houston P. Lowry
Language or Program Requirements: FORTRAN IV, FORTRAN IV Compiler
Hardware Requirements: DECsystem-10, TTY, Line Printer (Option), 21 + FOROTS

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.

Listing or source on media.

M/P Codes: A2, H32 *Library Tape No. 8:*P180

Interprocessor Communications over an Asynchronous Line 10-230
Program Version or Creation Date: 1
Keywords: Communications; PDP-11-Communications
Author: Richard Palm and Thomas Richburg
Digital Equipment Corp., Syracuse, NY.
Language or Program Requirements: MACRO-10
Hardware Requirements: DECsystem-10, TOPS-10 Monitor, Asynchronous Communications HDW.

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.

Listing or source on media.

M/P Codes: E9, H32 *Library Tape No. 8:*P180

TULIP: The UO/LEXINT I/O Package 10-231
Program Version or Creation Date: 1
Keywords: Utility—MACRO; MACRO-10-IO
Author: Edward Taft
Xerox Palo Alto Research Ctr.
Submitter: Eric Werme
Language or Program Requirements: MACRO-10, C.MAC
Hardware Requirements: 1K Core

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.

Write-up/Listing or source on media.

M/P Codes: H64 *Library Tape No. 8:*P180

- ZAP: Zoftig Alteration Program** 10-233
Program Version or Creation Date: 1
Keywords: Disk
Author: Daniel Kohanski
 Rutgers Univ., New Brunswick, NJ.
Submitter: Eric Werme
Language or Program Requirements: MACRO-10, TOPS-10
Hardware Requirements: PDP-10, Disk, 5K Core
- 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.
- Write-up/Listing or source on media.*
- M/P Codes:* H32 *Library Tape No. 8:P180*
- SFTRAN: A Structured FORTRAN Translator** 10-234
Program Version or Creation Date: 1.2(11)-3
Keywords: FORTRAN; Translator
Author: Donald S. Higgins
Latest Revisor: William G. Madison and James C. Corvart
 Harvard Business Sch., Boston, MA.
Language or Program Requirements: Structured FORTRAN, F40 (V.27) or, F10
Hardware Requirements: 23 Page Low Segment
- Abstract:* Program SFTRAN provides the capability of a structured programming language by extending the syntax of ANS FORTRAN. A total of 15 new statements are added to the language in order to implement the required control structures. The translator is itself written in Structured FORTRAN. When compiled under F40 (v.27), translation speed is approximately 1200 cards per CPU minute. Under F10, translation speed is approximately 1600 cards per CPU minute. In both cases timings are with both output options selected.
- Listing or source on media.*
- M/P Codes:* A2, H32 *Library Tape No. 8:P180*
- LAN: Linear Active Network Analysis Program** 10-235
Program Version or Creation Date: 1
Keywords: Linear
Author: Duane W. Moore
 Digital Equipment Corp., Portland, OR.
Language or Program Requirements: BASIC, DECsystem-10
 BASIC
Hardware Requirements: User Terminal, 300 Disk Blocks, 27K Core
- 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.
- Listing or source on media.*
- M/P Codes:* E12, H64 *Library Tape No. 8:P180*
- FOLD** 10-236
Program Version or Creation Date: 1
Keywords: Paper-Tape
Author: Robert Wilson
 Syosset High Sch., Syosset, NY.
Language or Program Requirements: MACRO-10
Hardware Requirements: DECsystem-10, Disk Storage, TTY with Paper Tape Punch, 1 to 2K Core
- 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.
- M/P Codes:* D2, H32 *Library Tape No. 8:P180*
- PILOT** 10-237
Program Version or Creation Date: 10-Nov-75
Keywords: Instruction
Author: Bruce Tanner
 Cerritos College, Norwalk, CA.
Latest Revisor: Bruce Tanner
Language or Program Requirements: MACRO-10, MACRO-10V50, HELPER, MACTEN, JOBDAT
Hardware Requirements: DECsystem-10, Timesharing Monitor, DSK
- 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.
- Write-up/Listing or source on media.*
- M/P Codes:* H32 *Library Tape No. 8:P180*
- EXETER** 10-238
Program Version or Creation Date: 1
Keywords: Simulation; Games
Author: Kay Fisher
 Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: COBOL, TOPS-10, MACTEN, JOBDAT
Hardware Requirements: None
- 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).
- Write-up/Listing or source on media.*
- M/P Codes:* H32 *Library Tape No. 8:P180*
- RWATCH** 10-239
Program Version or Creation Date: 1
Keywords: Utility—Operator
Author: Robert Wilson
 Syosset High Sch., Syosset, NY.
Language or Program Requirements: MACRO-10, 5.06
Hardware Requirements: DECsystem-10, Disk Storage, 5K Core
- 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.
- Write-up/Listing or source on media.*
- M/P Codes:* H32 *Library Tape No. 8:P180*

- KISMET** 10-240
Program Version or Creation Date: 1
Keywords: Games
Author: Robert Wilson
 Syosset High Sch., Syosset, NY.
Language or Program Requirements: MACRO-10, 5.06, MACTEN, JOBDAT
Hardware Requirements: DECsystem-10, TTY or Printer
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.
Write-up/Listing or source on media.
M/P Codes: H32 *Library Tape No. 8:P180*
- FORTH** 10-241
Program Version or Creation Date: 1
Keywords: System-Programming; Data-Acquisition
Author: H. Wayne Hammond and Martin S. Ewing
 California Inst. of Technology, Pasadena, CA.
Language or Program Requirements: MACRO-10, TOPS-10
Hardware Requirements: Disk or DECTape, 4K Impure plus 1K Pure Core
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. FORTH maintains a direct-access file on disk or DECTape. The DECsystem-10 FORTH system is largely compatible with the PDP-11 version (DECUS No. 11-232).
Listing or source on media.
M/P Codes: E11, H32 *Library Tape No. 8:P180*
- IOLIB** 10-242
Program Version or Creation Date: 5
Keywords: IO; MACRO; Programming-System
Author: Rob Cook
 Latrobe Univ., Australia.
Language or Program Requirements: MACRO-10, C.MAC V:7, MACRO-10 V:50+
Hardware Requirements: 5.07/6.01 or Later, 500 Words + Storage
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).
Listing or source on media.
M/P Codes: A2, M55 *Library Tape No. 8:P180*
- PIRETS** 10-243
Program Version or Creation Date: 1
Keywords: Games; Star Trek
Author: Daniel R. Strick
 Univ. of Pittsburgh, Pittsburgh, PA.
Language or Program Requirements: MACRO-10, TOPS-10
Hardware Requirements: 2 + 5K Core (Sharable), DECsystem-1077, TTY, 8K Core
Abstract: This game is based on the television series STAR TREK. It teaches coordinating system and geometry.
Write-up/Listing or source on media.
M/P Codes: H32 *Library Tape No. 8:P180*
- WGMM10: Shomer's Wargame, Testing Risk Taking** 10-244
Program Version or Creation Date: 3-Dec-76
Keywords: Games; DEMO
Author: Houston P. Lowry
 Pitzer College, Claremont, CA.
Latest Revisor: Houston P. Lowry
Language or Program Requirements: FORTRAN IV, FOROTS, Version 27, FORTRAN IV
Hardware Requirements: 8 + FOROTS, Disk, 2 Teletypes
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 as of 1-Jun-76 support will be provided by Dr. Robert Shomer, Pitzer College, Claremont, CA.
Write-up/Listing or source on media.
M/P Codes: H32 *Library Tape No. 8:P180*
- MESS** 10-245
Program Version or Creation Date: 1
Keywords: Simulation
Author: Robert L. Stout and others
 Univ. of Montana, Missoula, MT.
Language or Program Requirements: FORTRAN-10
Hardware Requirements: 35K Core, Disk, 2 Teletypes
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.
Listing or source on media.
M/P Codes: E27, N65 *Library Tape No. 8:P180*

- RECSM** 10-246
Program Version or Creation Date: 1
Keywords: Programming-Language
Author: Carlos Garcia Jurado
 Inst. National De Energia Nuclear, Mexico.
Language or Program Requirements: MACRO-10
Hardware Requirements: Operating System 506, 4 Low + 2 High, 2 Teletypes
- 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.
- Write-up/Listing or source on media.*
M/P Codes: H32 *Library Tape No.* 8:P180
- HEXPAWN** 10-247
Program Version or Creation Date: 1
Keywords: Games; Chess
Author: Ralph Klestadt
 Birmingham High Sch., Encino, CA.
Language or Program Requirements: BASIC, or XBASIC, ICS (Integrated Command System)
Hardware Requirements: 1 + 2/64 Core Storage
- 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.
- Write-up/Listing or source on media.*
M/P Codes: H32 *Library Tape No.* 8:P180
- TR.MAC** 10-248
Program Version or Creation Date: 1
Keywords: PDP-8; Simulator
Author: Obed Shmueli and Kwabana Akufo
 Brandeis Univ., Waltham, MA.
Language or Program Requirements: MACRO-10, MACRO Assembler
Hardware Requirements: 507, 5-Series, Monitor and Later, 50 Blocks Disk, 7K Core
- 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 micro-programming 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.
- Write-up/Listing or source on media.*
M/P Codes: H32 *Library Tape No.* 10:P130
- GAUSS** 10-249
Program Version or Creation Date: 1
Keywords: Probability; Statistics
Author: W. G. Madison
 Harvard Business Sch., Boston, MA.
Language or Program Requirements: FORTRAN, SFTRAN (DECUS No. 10-23)
Hardware Requirements: None
- 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.
- Listing or source on media.*
M/P Codes: A2, H32 *Library Tape No.* 10:P130
- Student's-T and Behrens-Fisher Probabilities List and Density Sketch** 10-251
Program Version or Creation Date: 1
Keywords: Probability; Statistics
Author: James Fennessey and Susan Radius
 The Johns Hopkins Univ., Baltimore, MD.
Language or Program Requirements: TOPS-10, BASIC
Hardware Requirements: CPU, Disk, Remote Terminal, 9485 Chars or Approx. 7K Words
- 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.
- Listing or source on media.*
M/P Codes: A2, H32 *Library Tape No.* 10:P130
- SOS** 10-252
Program Version or Creation Date: 23(220)
Keywords: Editor
Author: William Franklin
 Brookings Inst., Washington, DC.
Language or Program Requirements: MACRO
Hardware Requirements: None
- 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.
Write-up/Listing or source on media.
M/P Codes: M55 *Library Tape No.* 10:P130
- READ** 10-253
Program Version or Creation Date: 2-Feb-76
Keywords: Instruction
Author: Eliezer Naddor and Mark Sapsford
 The Johns Hopkins Univ., Baltimore, MD.
Language or Program Requirements: BASIC
Hardware Requirements: None

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.

Listing or source on media.

M/P Codes: E4, H32

Library Tape No. 10:P130

MAGGIE

10-254

Program Version or Creation Date: 1A(1)

Keywords: Utility—DECtape

Author: J. L. Moss

Brandeis Univ., Waltham, MA.

Language or Program Requirements: MACRO-10, 5.07 or Earlier, Monitor

Hardware Requirements: 1 Magtape Drive

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.

Write-up/Listing or source on media.

M/P Codes: H32

Library Tape No. 10:P130

INVSIM

10-255

Program Version or Creation Date: 2-Feb-76

Keywords: Business; Inventory-Simulation; Simulation

Author: Eliezer Naddor

The Johns Hopkins Univ., Baltimore, MD.

Language or Program Requirements: BASIC

Hardware Requirements: 14 Blocks Storage

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.

Listing or source on media.

M/P Codes: A2, H32

Library Tape No. 10:P130

D2D

10-256

Program Version or Creation Date: 1(5)

Keywords: Utility—Disk

Author: S. Fortune, P. Dewolf, T. Burtnett

Univ. of Illinois, Urbana, IL.

Language or Program Requirements: BLISS, TOPS-10

Hardware Requirements: Disks, 6 Pages Core

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.

Write-up/Listing or source on media.

M/P Codes: H32

Library Tape No. 10:P130

LINCUR

10-257

Program Version or Creation Date: 1

Keywords: Statistics

Author: Fred S. Wood

Aluminum Co. of America, Alcoa Center, PA.

Submitter: Robert F. Kohm

Language or Program Requirements: FORTRAN, TOPS-10, F10 or F40 Compiler

Hardware Requirements: Disk, Line Printer, Card Reader, 17K Core or 57K + FOROTS

Abstract: This program is the DEC-10 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. The current version of the program was updated by one of its authors, Fred S. Wood, and adapted for DECsystem-10 computers by Robert F. Kohm, ALCOA R&D Laboratories. The program has many options that allow the user to transform data into an appropriate form, fits specified equations to the transformed data by linear least-squares, and provides both statistics and plots to aid in evaluating the fit. A C(p)—statistic search technique determines if smaller sets of the variables will represent the data equally well. The transformations which are available to the user include reciprocals, sums, difference, products, quotients, logarithms and exponentials. Such transformations are used to convert the observed data to more convenient or more rational units, to add terms that are functions of the data-variables, to stabilize variance, and to omit variables.

Listing or source on media.

M/P Codes: E8, H64

Library Tape No. 10:P130

NONLIN

10-258

Program Version or Creation Date: 1

Keywords: Statistics

Author: Fred S. Wood

Aluminum Co. of America, Alcoa Center, PA.

Submitter: Robert F. Kohm

Language or Program Requirements: FORTRAN, TOPS-10, F10 Compiler

Hardware Requirements: 29K + FOROTS, Disk Line Printer, Card Reader

Abstract: The program allows the user to estimate the coefficients of a nonlinear equation such as $Y = A/(x + B)$ to the second power and $Y = Ax^2 + C -$ equations that are nonlinear in the coefficients. An iterative technique is used; the estimates at each iteration are obtained by Marquardt's Maximum Neighborhood Method which combines the Gauss (Taylor Series) Method and the Method of Steepest Descent. The output of the program is a printed report which includes a description of the problem, the starting values of the coefficients, the size of the incremental steps, a summary of each iteration and a summary of the final fit (in terms similar to those in LINCUR). The statistics calculated include the number of observations, the number of coefficients, the residual degrees of freedom, the maximum and minimum value of the dependent variable as well as its range, the standard error and t-value for each coefficient, the residual sum of squares, the residual mean square and the residual root mean square.

Listing or source on media.

M/P Codes: A3, H32

Library Tape No. 10:P130

PDO**10-259***Program Version or Creation Date:* 15-Mar-76*Keywords:* Utility—DECtape*Author:* Eugene L. Ziegler

Colgate Univ., Hamilton, NY.

Language or Program Requirements: FORTRAN, F40, OPR.SYS.506B, FORTRAN Dynamic, Dimensioning*Hardware Requirements:* Disk, Line Printer, DECtape Drive, 5K + FOROTS

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.

*Listing or source on media.**M/P Codes:* A2, H32*Library Tape No.* 10:P130**Information Storage and Retrieval****10-260***Program Version or Creation Date:* 18-Mar-76*Keywords:* Business*Author:* Mark Sapsford and Eliezer Naddor

The Johns Hopkins Univ., Baltimore, MD.

Language or Program Requirements: BASIC*Hardware Requirements:* 20 + 35 + 10 Blocks of Core

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.

*Listing or source on media.**M/P Codes:* A2, H32*Library Tape No.* 10:P130**SORTER: Illustrating and Comparing Sorting Methods****10-261***Program Version or Creation Date:* 24-Mar-76*Keywords:* Sorting*Author:* Eliezer Naddor

The Johns Hopkins Univ., Baltimore, MD.

Language or Program Requirements: BASIC*Hardware Requirements:* 8 Blocks Core

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.

*Listing or source on media. No write-up available.**M/P Codes:* H32*Library Tape No.* 10:P130**COMPUT and TWOPER****10-262***Program Version or Creation Date:* 31-Jan-76*Keywords:* Instruction*Author:* Eliezer Naddor

The Johns Hopkins Univ., Baltimore, MD.

Language or Program Requirements: BASIC, FORTRAN, ALGOL, COBOL, APL*Hardware Requirements:* Core Minimal

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.

*Listing or source on media.**M/P Codes:* A2, H32*Library Tape No.* 10:P130**DSKCPY****10-263***Program Version or Creation Date:* V2A(53)-1*Keywords:* Utility*Author:* Phil Harding*Latest Revisor:* Dick Baker-Munton

Digital Equipment Corp., England.

Language or Program Requirements: MACRO-10, TOPS-10, HELPER*Hardware Requirements:* 1K Expanding, + 2K Shareable

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.*Write-up/Listing or source on media.**M/P Codes:* H32*Library Tape No.* 10:P130**XTEC****10-264***Program Version or Creation Date:* %0(427)*Keywords:* Editor; System-Programming*Author:* Jack W. Krupansky and Mark R. Crispin

Stevens Inst. of Technology, Hoboken, NJ.

Language or Program Requirements: MACRO-10 Using,

JOB DAT, UUOSYM, COMPIL, LINK-10

Hardware Requirements: Mass Storage Device, (i.e., Disk, DTA, MTA)

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.

Listing or source on media.

M/P Codes: A2, H32

Library Tape No. 10:P130

BASIC

10-265

Program Version or Creation Date: 17E(143)

Keywords: BASIC; Programming-System

Author: Univ. of Pennsylvania

Philadelphia, PA.

Latest Revisor: Univ. of Pennsylvania

Language or Program Requirements: None

Hardware Requirements: None

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.

No source available. Write-up on media.

M/P Codes: H32

Library Tape No. 10:P130

Simulation Model of TOPS-10

10-266

Program Version or Creation Date: 5.06

Keywords: TOPS-10; Simulation

Author: Rollins Turner

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: SIMULA Compiler, Loader or Linker

Hardware Requirements: DECsystem-10

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 write-up.

Listing or source on media.

M/P Codes: E5, H32

Library Tape No. 10:P130

COBEDT: A COBOL File Editor

10-267

Program Version or Creation Date: 4(1)

Keywords: COBOL; Editor; Manipulation; Utility—
Programming

Author: David Gorka

Digital Equipment Corp., Columbus, OH.

Language or Program Requirements: MACRO-10, Opr. Sys. 601B

Hardware Requirements: KI-10 CPU, 5K Core

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.

Write-up/Listing or source on media.

M/P Codes: H32

Library Tape No. 10:P130

IPCF10: FORTRAN-10 IPCF Routines

10-268

Program Version or Creation Date: 1

Keywords: Communications; FORTRAN; MACRO

Author: Mike Barnes

University of Texas, Carrollton, TX.

Language or Program Requirements: FORTRAN-10, MACRO, Monitor 5.07 or later

Hardware Requirements: None

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 UUU's (IPCFR., IPCFS., IPCFQ.) plus easy use of many [SYSTEM] INFO and [SYSTEM] IPCC functions.

Write-up/Listing or source on media.

M/P Codes: H32

Library Tape No. 10:P130

ADRES: For Handling Address Files and Printing Adhesive Labels

10-269

Program Version or Creation Date: V.1

Keywords: Labels; Sorting; Utility

Author: Jacob Palme

Swedish National Defense Research Inst., Sweden.

Latest Revisor: Jacob Palme

Language or Program Requirements: TOPS-10, SIMULA (DECUS No. 10-223A)

Hardware Requirements: 28K Core

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.

Listing or source on media.

M/P Codes: A2, H32

Library Tape No. 10:P130

PROC10**10-270***Program Version or Creation Date:* 3-Jan-76*Keywords:* Image Processing System; Manipulation*Author:* P. Lemkin, B. Shapiro, R. Gordon, L. Lipkin
National Institutes of Health, Bethesda, MD.*Language or Program Requirements:* TOPS-10, SAIL
(DECUS No. 10-86), Ommigraph*Hardware Requirements:* PDP-10, 200 pages min. core, 512 pages
max. core

Abstract: PROC10, an interactive image processing system, runs on a PDP-10 computer. It can manipulate picture, mask, 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.

*Write-up/Listing or source on media.**M/P Codes:* C1, H128*Library Tape No.* 10:P130**PASCAL****10-271***Program Version or Creation Date:* 30-Dec-76*Keywords:* Compiler; PASCAL*Author:* H.-H. Nagel

University Hamburg, Germany.

Submitter: Bill Koteff/H.-H. Nagel*Language or Program Requirements:* TOPS-10 (v.602 + 5.07),
FORTRAN Library, PASCAL, MACRO*Hardware Requirements:* 47K Words, DSK

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: Also distributed as DECUS No. 20-2.*Write-up/Listing or source on media.**M/P Codes:* M55*Library Tape No.* 10:P130**BESLIB****10-272***Program Version or Creation Date:* 18-Nov-76*Keywords:* Mathematics*Author:* Fredrick W. Cotton and Harold Salwen

Stevens Inst. of Technology, Hoboken, NJ.

Language or Program Requirements: FORTRAN IV, F40, IN-
DEX (DECUS No. 10-273)*Hardware Requirements:* 10 + 7 Core

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.

Note: Requires DECUS No. 10-273, INDEX.*M/P Codes:* D2, H32*Library Tape No.* 10:P130**INDEX****10-273***Program Version or Creation Date:* 18-Nov-76*Keywords:* Mathematics*Author:* Fredrick W. Cotton & Harold Salwen

Stevens Inst. of Technology, Hoboken, NJ.

Language or Program Requirements: FORTRAN IV, F40*Hardware Requirements:* 4 + 7 Core

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 $1.7 \cdot 10^{37}$). 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 DATAN(x) and DATAN 2(Y,X). INDEX is required for the use of BESLIB, DECUS No. 10-272.

*Listing or source on media.**M/P Codes:* A2, H32*Library Tape No.* 10:P130**CADA Monitor****10-274***Program Version or Creation Date:* 1976*Keywords:* Instruction; Statistics*Author:* Isaacs, DeKeyrel, Novick

The Univ. of Iowa, Iowa City, IA.

Language or Program Requirements: BASIC Plus or, DEC-10
BASIC*Hardware Requirements:* PDP-11/RSTS or, PDP-10

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.*M/P Codes:* This program is on hold.**DTSORT****10-275***Program Version or Creation Date:* 1*Keywords:* Utility—DECTape*Author:* Tom Hornyak

Chase Brass & Copper Co., Montpelier, OH

Language or Program Requirements: MACRO-10, TOPS-10*Hardware Requirements:* 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.

*Write-up/Listing or source on media.**M/P Codes:* H32*Library Tape No.* 10:P130

FPRINT 10-276
Program Version or Creation Date: 1
Keywords: IBM-COBOL
Author: Barry Ferris
Submitter: Bill Fernald
Digital Equipment Corp., Maynard, MA.
Language or Program Requirements: MACRO-10, TOPS-10,
COBOL/LIBOL
Hardware Requirements: Minimum Core

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:

- when line printer files are written using FORTRAN-type carriage control characters;
- when the COBOL program already uses an IBM ASSEMBLER program for producing line printer files;
- 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.

Listing or source on media.

M/P Codes: A2, H32 *Library Tape No.* 10:P130

TWOSID 10-277
Program Version or Creation Date: 1(2)
Keywords: Editor; Two-Sided Paper
Author: John Edgecombe
Atomic Energy of Canada, Ltd., Ontario, Canada.
Language or Program Requirements: BLISS-10
Hardware Requirements: Mass Storage

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.

Write-up/Listing or source on media.

M/P Codes: H32 *Library Tape No.* 10:P130

CLUSTR: A Comprehensive Suite for Numerical Classification 10-280
Program Version or Creation Date: 24-Aug-77
Keywords: Scientific; Engineering
Author: C. J. Andrews
University of Queensland, Australia.
Latest Revisor: C. J. Andrews
Language or Program Requirements: Batch System, CALCMP, SSP, FORTRAN, TOPS-10 602, MACRO
Hardware Requirements: PDP-10, Disk, PLT, LPT, CDR, Min. 6K core

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.

Listing or source on media.

M/P Codes: E5, H32 *Library Tape No.* 10:P130

SAFIO 10-281
Program Version or Creation Date: 7-Jul-76
Keywords: SIMULA; Utility
Author: Mats Ohlin
Submitter: Jacob Palme
Swedish National Defense Research Inst., Sweden.
Language or Program Requirements: TOPS-10, SIMULA (DECUS No. 10-223A)
Hardware Requirements: Conversational Terminal

Abstract: SAFIO is a package to enable a safe question-and-answer dialogue with a conversational terminal. The programs in the package allow you to ask the user for variables of various SIMULA types. The user answers are checked for correct type and for acceptance according to criteria specified by the programmer. Help and error messages are given.

The package protects from error interrupts in programs which may receive faulty input data from the user. The user may save his input in a log file. This file can later be used as input instead of the tty. Other files may also be used as input, intermixed with tty input.

SAFEIO is distributed as the files SAFEIO.SIM, SAFMIN.SIM, SIMEIO.SIM, SIMMIN.SIM, SAFEIO.RNM, SAFEIO.MAN, SAFEIO.NEW, SAFMIN.HLP, SAFEIO.ENG, SAFEIO.SWE, and SAFEIO.HLP. These files are present on the DECUS SIMULA distribution tape (DECUS No. 10-223A*).

Listing or source on media.

M/P Codes: A2, P85* *Library Tape No.* 9:P85/P160

SIMDBM 10-282
Program Version or Creation Date: 1
Keywords: Data Base Handling Sys.; SIMULA; Utility
Author: Kalle Makila
Submitter: Jacob Palme
Swedish National Defense Research Inst., Sweden.
Language or Program Requirements: TOPS-10, SIMULA (DECUS No. 10-223A)
Hardware Requirements: 16K—40K, Disk

Abstract: SIMDBM is a data base handling system based on the ideas in the CODASYL DBTG proposal, but written entirely in SIMULA for use by SIMULA programs. Facilities exist for defining SCHEMAs (Data Base Structure Descriptions) and storing them in the data base, for accessing the SCHEMA from the SIMULA program and for accessing data using the SCHEMA. Data base fields of type Text or Array have indefinite length. New fields can be added to existing records. Memory need not be reserved for the largest instance of each record type. Data base records are mapped onto CLASS instances in core. A SIMULA program can access and use the SCHEMA, which allows the writing of "data-independent" programs in SIMULA. These files are present on the DECUS SIMULA distribution tape (DECUS No. 10-223A*).

Restrictions: No built-in facilities exist for privacy constraints or for solving multi-terminal access conflicts.

Listing or source on media.

M/P Codes: A1, P85* *Library Tape No.* 9:P85/P160

System Programmers PASCAL 10-283
Program Version or Creation Date: 3(41)
Keywords: PASCAL; System-Debugging; System-Programming
Author: H.-H. Nagel / Charles Hedrick
Submitter: Charles Hedrick
Rutgers University, New Brunswick, NJ.
Language or Program Requirements: PASCAL, MACRO, VM Monitor
Hardware Requirements: KI-10 or KL-10, 31 + 51 P to compile itself

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. User's not needing its special facilities should first consider using the current Hamburg compiler.

Write-up/Listing or source on media.

M/P Codes: N65

Library Tape No. 10:P130

PICTURE BOOK

10-284

Program Version or Creation Date: 23-Mar-77

Keywords: Loader; File-Handling; Graphing; PDP-11-Communications

Author: Bob Friedenthal

Submitter: Hank Maurer

Digital Equipment Corp., Marlboro, MA.

Language or Program Requirements: MACRO-11, FORTRAN, MACRO-10, TOPS-10

Hardware Requirements: GT40 connected to PDP-10 via serial line

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.

Listing or source on media.

M/P Codes: E5, H32

Library Tape No. 11:P100

SQUASH

10-285

Program Version or Creation Date: 27-Apr-77

Keywords: Manipulation; Sorting; Utility—Disk

Author: Michael D. Fry

University of Illinois, Urbana, IL.

Language or Program Requirements: MACRO, DSKCHR UUO

Hardware Requirements: 3K (or 2K + 2K), 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.

Write-up/Listing or source on media.

M/P Codes: H32

Library Tape No. 11:P100

CUSH2.FOR: Designing Package Cushioning by Computer

10-286

Program Version or Creation Date: 24-May-77

Keywords: Utility

Author: Ben Wacholder

Digital Equipment Corp., Maynard, MA.

Language or Program Requirements: FORTRAN

Hardware Requirements: 18K Core

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.

Listing or source on media.

M/P Codes: A2, H32

Library Tape No. 11:P100

BOSS: System Statistic Reporting

10-287

Program Version or Creation Date: 1

Keywords: Utility; Statistics

Author: Mike Barnes

University of Texas, Carrollton, TX.

Language or Program Requirements: IPCF Optional, Opr. Sys. 5.07 or later, FORTRAN-10, MACRO

Hardware Requirements: None

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.

Note: See documentation for restrictions.

Write-up/Listing or source on media.

M/P Codes: M55

Library Tape No. 11:P100

TOPS-20 INTERLISP

10-288

Program Version or Creation Date: 27-Apr-77

Keywords: Programming-System; LISP

Author: Warren Teitelman & Alice Hartley

Xerox Park & Bolt Beranek & Newman, Inc., Cambridge, MA.

Language or Program Requirements: BOOT.SAV, INTERLISP, MACRO, TOPS-20

Hardware Requirements: 100 Pages Working Set, KL-10 or KL-20

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.

Note: Also distributed as DECUS No. 20-3.

Restrictions: Requires ECO level IO in CPU.

No source available.

M/P Codes: A1, N65

Library Tape No. 11:P100

REV

10-289

Program Version or Creation Date: 2(4)

Keywords: File-Handling

Author: David Rolfe

APH Technological Consulting, Pasadena, CA.

Language or Program Requirements: MACRO-10, TOPS-10

Hardware Requirements: 1K + 2K or, 1K + 3K Core

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.

Write-up/Listing or source on media.

M/P Codes: H32 Library Tape No. 11:P100

VENN: A Generative Program for Computer-Assisted Instruction 10-290

Program Version or Creation Date: 1

Keywords: CAI; Heuristic; Instruction; Logic; VENN

Author: Dr. Walter Maner

Old Dominion University, Norfolk, VA.

Language or Program Requirements: SIMULA (DECUS No. 10-223A), TOPS-10

Hardware Requirements: PDP-10, 47 + 12 P Max. Core, KL602A+VM

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.

Write-up/Listing or source on media.

M/P Codes: M55 Library Tape No. 11:P100

XPL: A Compiler Generator System 10-291

Program Version or Creation Date: 27-Jul-77

Keywords: Programming-Language; XPL

Author: R. L. Bisbey, R. W. Hay, McKeeman, Horning, Wortman

Submitter: B. Dawson

University of Louisville, Louisville, KY.

Language or Program Requirements: XPL, MACRO, TOPS-10 6.02A

Hardware Requirements: 60 pages optional

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.

Write-up/Listing or source on media.

M/P Codes: N65 Library Tape No. 11:P100

Revised Plotter Subroutines for DEC-10 10-292

Program Version or Creation Date: 3-Apr-77

Keywords: Plotting

Author: L. Kuokkanen, O. Nevalainen

University of Turku, Finland.

Language or Program Requirements: FORTRAN-10, FORTRAN-10 Plotter Subroutine-Plot (DECUS No. 10-228)

Hardware Requirements: KA-10 CPU, Drum Plotter, 2600 wds. (OPLOT), 64 wds. (OLINE), 138 wds. (OPOINT)

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.

Listing or source on media.

M/P Codes: A2, H32 Library Tape No. 11:P100

FLECS: FORTRAN Language with Extended Control Structures 10-293

Program Version or Creation Date: 7-Apr-77

Keywords: Translator; FORTRAN

Author: T. Beyer

University of Oregon, Eugene, OR.

Submitter: L. D. Yarbrough

Language or Program Requirements: FORTRAN IV, MACRO-10, FORTRAN Compiler, TOPS-10

Hardware Requirements: None

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 write-up.

Listing or source on media.

M/P Codes: A3, H32 Library Tape No. 11:P100

GIDUS/DISLIB: GT40 Interactive Display Utility System 10-294

Program Version or Creation Date: 1

Keywords: Utility

Author: Bill Wilder

Acadia University, Canada.

Language or Program Requirements: F40, MACRO-10, MACRO-11, TOPS-10, MACDLX-SHR (DEC)

Hardware Requirements: 1 GT40 (PDP-11/05) Interfaced to DEC-10 as a tty, 3K in GT40, 2—7K on KA-10

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.

Write-up/Listing or source on media.

M/P Codes: N65 Library Tape No. 11:P100

SIMULA for KA-10**10-295***Program Version or Creation Date:* 3*Keywords:* SIMULA; ALGOL; Programming-Language*Author:* Swedish National Defense Research Inst., Sweden.*Submitter:* K. Roberts

Univ. of Western Ontario, Canada.

Language or Program Requirements: MACRO v. 50, MACRO-10, SIMULA, TOPS-10*Hardware Requirements:* 32K to use, 64K to build, KA-10 CPU*Abstract:* SIMULA is a general-purpose high-level programming language comparable in power to PL/I or ALGOL 68.

The KI-10 SIMULA (DECUS No. 10-223) language handbooks also apply to the KA-10 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 86 of part II of the handbook, lines 6-8, should read:

"The fractional part has a range in magnitude of $\frac{1}{2}$ to $(1-2^{-54})$ with a precision of approximately 16 decimal digits."

Note: For further information see abstract for DECUS No. 10-223.*M/P Codes:* This program is on hold.**BLISS-11/RXS-11M Interface MACROS****10-296***Program Version or Creation Date:* 24-May-77*Keywords:* Programming-System; RSX-11M*Author:* Keith E. Gorlen

National Institutes of Health, Bethesda, MD.

Language or Program Requirements: BLISS-11 V76050 (not DECUS)*Hardware Requirements:* DECsystem-10, PDP-11*Abstract:* The BLISS-11/RXS-11M Macro Libraries furnish a convenient interface to the RSX-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 RSX-11M.*Write-up/Listing or source on media.**M/P Codes:* H32*Library Tape No.* 11:P100

DECSYSTEM-20 ABSTRACTS

PASCAL

20-2

Program Version or Creation Date: 3-Dec-76

Keywords: Compiler; PASCAL

Author: H.-H. Nagel

University Hamburg, Germany

Submitter: Bill Koteff/H.-H. Nagel

Language or Program Requirements: TOPS-10 (V.602 + 5.07),
FORTRAN LIBRARY, PASCAL, MACRO

Hardware Requirements: Disk 47K WORDS

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: Also distributed as DECUS NO. 10-271

Write-up/Listing or source on media.

M/P Codes: M55

TOPS-20 INTERLISP

20-3

Program Version or Creation Date: 27-Apr-77

Keywords: Programming-System; LISP

Author: Warren Teitelman

Xerox Park

Submitter: Alice Hartley, Bolt Beranek & Newman, Inc., Cambridge, Ma.

Language or Program Requirements: TOPS-20, INTERLISP, MACRO, BOOT.SAV

Hardware Requirements: 100 page working set, KL-10 or KL-20

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.

Note: Also Distributed as DECUS NO. 10-288

Restrictions: Requires ECO Level IO 6n CPU

No source available.

M/P Codes: A1, N65

There are a number of programs in the DECUS DECsystem-10 Library that will be of use on DECSYSTEM-20's. Following appears a list of those packages which are either known to run on DECSYSTEM-20's or which we can predict will run because they are written in a higher level language like BASIC, COBOL, FORTRAN, or ALGOL, which are present themselves on the DECSYSTEM-20.

I urge users who have moved packages to the DECSYSTEM-20 to inform DECUS and resubmit any changed code to the library to help start a new DECSYSTEM-20 segment.

Bill Koteff
 Digital Equipment Corporation
 Educational Marketing

Please refer to the DECsystem-10 sections of this catalog for further information concerning these programs.

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STANDARDS

DEC Standard for Basic Key Keyboard

DEC STD 107

Date: 11-Jan-74

Submitter: Digital Equipment Corp.

Abstract: This specification describes a DEC standard basic 60-key keyboard layout which conforms to the ANSI X4.14-1971 standard typewriter keyboard. Two additional keys are reserved for future standardization requirements. This keyboard is available as a keyswitch array only, without electronics or with electronics completely encoded. In addition, an 11-key numeric pad is offered as an accessory attachment to the main keyboard, and a 19-key array pad without electronics is available for additional capability.

These keyboard layouts are intended for use on all new equipment designs introduced into production after January 1, 1974.

M/P Codes: A2

DEC Standard for Escape Sequences

DEC STD 110

Date: 1-Jul-74

Submitter: Digital Equipment Corp.

Abstract: Indiscriminate echoing of ESC as (33)8 is prohibited. Where it is desirable to print some displayable character to provide visible confirmation that ESC has been received by the program, then that character must be single dollar sign (\$; (44)8).

ESC is the character which initially delimits an ESC sequence and ESC may carry no other meaning, even though ESC currently has many other meanings. Applies to all new DEC terminals.

M/P Codes: A2

DEC Standard for Terminal Synchronization

DEC STD 111

Date: 6-Mar-77

Submitter: Digital Equipment Corp.

Abstract: DC1 and DC3, 21(8) and 23(8) formerly XON and XOFF respectively, are to be used for synchronization of terminal keyboards in the manner described in the standard, DC2 and DC4, 22(8) and 24(8) formerly TAPE and NOT-TAPE respectively, are reserved for future use, likely for synchronization as well.

M/P Codes: A2

Standard Date Format for Output

DEC STD 112

Date: 10-Feb-77

Submitter: Digital Equipment Corp.

Abstract: This standard ensures an unambiguous interpretation of dates by readers around the world. This format is one which is in common use throughout most of the world, is reasonably terse, is well human-engineered and is easy to produce in any computer system.

M/P Codes: A2

Standard for Indexes, Appendixes, Running Heads and Section Numbering for Software Documentation Manuals

DEC STD 118

Date: 22-Jan-76

Submitter: Digital Equipment Corp.

Abstract: The requirements for an index are defined. Material suitable for appendixes is described. The use of running heads for chapter-oriented manuals is specified. The acceptable levels and numbering schemes of headings' for both chapter-oriented and nonchapter-oriented software manuals are explained.

M/P Codes: A2

Cassette Format Standard for Labelled and Unlabelled Files

DEC STD 125

Retrieval number: 005-003-016-06

Date: 21-Feb-77

Submitter: Digital Equipment Corp.

Abstract: This standard should be read by hardware and software people. It describes the format and labelling conventions for files, physical blocks, logical records and data written on Digital Equipment Corporation Cassettes. It also describes the unlabelled standard. This standard must be followed when reading and writing cassettes intended for interchange between systems; it is recommended for other cassettes.

M/P Codes: A2

Standard for Updating Hardware/Software Manuals

DEC STD 143

Date: 19-Aug-76

Submitter: Digital Equipment Corp.

Abstract: Document updates provide corrected, modified, or new information concerning a hardware/software product. This standard defines the format in which document updates are to be published.

M/P Codes: A2

DEC Representation of Data Values in ASCII Character Strings for Information Interchange Standard

DEC STD 145

Date: 27-May-76

Submitter: Digital Equipment Corp.

Abstract: This standard defines the representation of data in character strings for interchange among DEC systems. It is an extension of ANSI X3.42. American National Standard for the Representation of Numeric Values in Character Strings for Information Interchange.

M/P Codes: A2

User Mode Diagnostic Standard

DEC STD 148

Date: 10-Feb-77

Submitter: Digital Equipment Corp.

Abstract: This document defines general guidelines for user mode diagnostics. User mode diagnostics are tasks which run under the control of an operating system and attempt to detect and report hardware malfunctions to enable maintenance personnel to quickly complete corrective or preventive maintenance while the operating system continues to perform meaningful applications work. This standard specifies both the functions performed by the diagnostic and the operating system services required to support each of these levels of user mode diagnostics. Applies to PDP-10 and PDP-11 processor families and all future systems.

M/P Codes: A2

Punched Card Format Standard

DEC STD 151

Date: 19-May-77

Submitter: Digital Equipment Corp.

Abstract: This standard defines two formats for encoding data on industry-compatible 80 column tabulating cards for the purpose of ensuring that such cards may be used as a compatible means of information interchange between DIGITAL computer systems.

M/P Codes: A2

**Volume Identification for Removable Disk Pack
Disk Systems**

DEC STD 167

Date: 19-May-1977

Submitter: Digital Equipment Corp.

Abstract: This standard defines the format and location of the volume identification block required to allow disk packs of removable disk-pack

systems to be identified in all CPU families. This block will enable operating systems to identify the origin and format of a volume and decide if the volume can be processed. This standard also defines a standard error message for volumes that can not be processed.

M/P Codes: A2

BASIC-PLUS Software Conventions

DECUS STD A001

Date: 28-Feb-77

Submitter: Martin Minow, Digital Equipment Corp.

Abstract: This specification defines the software conventions that BASIC-PLUS programs to be run under RSTS/E should follow. These conventions include coding and program documentation/commenting techniques. The conventions are intended to simplify software maintenance, to ease software release activities, to aid the software librarian, and to allow the use of standard function libraries. (This standard is part of DECUS NO. RSTS11-101.)

M/P Codes: A2



CHAPTER OFFICES

Australia/NZ:

DECUS Australia
P.O. Box 491
Crows Nest, N.S.W. 2065
Australia

Canada:

DECUS Canada
P.O. Box 11500
Ottawa, Ontario K2H 8K8
Canada

Europe/Middle East:

DECUS Europe
C.P. 510
12, avenue des Morgines
CH-1213 Petit-Lancy 1, Geneva
Switzerland

U.S. and All Others:

DECUS U.S.
129 Parker Street
Maynard, MA 01754
U.S.A.