SUPPLEMENT

decsystem10

Applications Software Bulletin

No. 3 Supplement

digital

Fall 1972

decsystem10 Applications Software Bulletin

Supplement to No. 3

(Fall 1972)

This document was produced on the DECsystem-10 using the RUNOFF text manipulation system.

For information on obtaining a machine readable version of this document, or for additions, corrections, etc., contact:

Editor: Applications Software Bulletin
DECsystem-10 Marketing
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decsystem10 Applications Software Bulletin

The DECsystem-10 Applications Software Bulletin serves as a catalog of software available to DECsystem-10 users from either Digital Equipment Corporation Users Society (DECUS) or from suppliers of software. DEC supplied and supported software is described in the DECsystem-10 Handbooks and Introduction to DECsystem-10 Software.

This Bulletin is divided into three parts:

PART I: Software available from the Digital Equipment Corporation Users Society (DECUS). These packages are generally available at no cost other than clerical overhead charges, postage, etc.

PART II: Software available from various other sources, the terms and conditions of which are a matter of negotiation for the interested party. This section in particular, is far from complete and we encourage everyone who has DECsystem-10 related software available to contact DECsystem-10 Marketing so that it can be listed in the next issue.

ASB No. 3 (Spring 1972)

PART II: Supplement

This document (Fall 1972)

DECsystem-10 Software for Sale

The following writeups describe software that has been written for the DECsystem-10 and is available for purchase through the contact mentioned in the description. All contacts are to be made directly to that individual and not to any DIGITAL employee. DIGITAL, in no way, endorses, approves or verifies the software listed here. All tests and terms are strictly the responsibility of the parties concerned.
DIGITAL is pleased to serve as an intermediary for these products that could prove useful to DECsystem-10 Users.

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CHECK RECONCILICATION

This on-line interactive system reconciles bank statements easily. Designed for multi-bank and multi-plant input and processing. Automatic inputs from our other systems (Payroll, Accounts Payable, etc.) speeds and simplifies data input.

The system features the following:

- Outstanding checks entered after statement date will not print.
- Amount deposited after statement date will print and be added to balance.
- Cleared checks are printed as cleared and purged from file.
- Void checks are printed as void and purged from file.
- Checks written off are printed as void and purged from file. The amount is not subtracted from current balance.
- Credit memo will be identified and the amount added to present balance.
- Debit memo will be identified and the amount deducted from present balance.
- Checks for a zero amount will print for audit trail and be purged from file.

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A Subsidiary of the Copley Press, Inc.
Box 9860, 1253 Garnet Avenue
San Diego, California
(714)272-6800

MAILING ADDRESS LABEL SYSTEM

This on-line interactive system produces five line three up labels for any mailing purpose. The user can change any field in the subscriber master file through the use of the on-line interactive data collection program.

The system features the following:

- On-line interactive data collection
- 26 possible sort combinations
- Three two-position special codes
- One one-position special code
- Fourteen publication codes
- Up to 100,000 subscriber masters per publication
- Up to 999 number of copies
- Up to ten requests for labels and/or listings can be made at one time.
- Change any field in the subscriber master
- Complete audit trail for changes, additions and deletions.

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MAIL/LABEL

MAIL/LABEL is a timeshared service used to process highly selective mailings from a firm's address files which contain firm names, addresses, people names and positions, company codes, and position codes - all user designated. It enables more precisely aimed mailings which are far more effective and also more economical than shotgun mailings.

FEATURES

- Total in-house control
- Customized selection criteria
- One or more address files
- Easy file creation and upkeep
- Simple operating procedures
- Upper/lower case terminals
- TTY or high-speed printers
- Print labels, envelopes, lists
- Displays count and errors

SELECTION CRITERA

Includes S.I.C. numbers, ZIP Codes, and user-designated codes with arbitrary meanings to sort by company types or position types to permit a wide range of selectivity for small to large mailings.

ADDRESS FILES

Files are created by typists using a direct entry technique which is very easy to learn.

Files are easily maintained by typists; error messages are produced after any selection sort of the files as a guide to upkeep.

Files are organized according to company name and address, any number of persons and their respective position titles may be associated with the company.

OPERATING CONTROL

Complete operating control of MAIL/LABEL is from a terminal at the user's own premises. Since only in-house personnel can access the address files, the proprietary aspect of the firm's files is more secure.

MAIL PROCESSOR

The MAIL PROCESSOR is used to perform the selections of the files and to print lists, envelopes, and "one-up" labels. For the printing of labels "two-up" or more, a file is named for subsequent processing by the LABEL PROCESSOR.

LABEL PROCESSOR

The LABEL PROCESSOR is used to control the printing of more than "one-up" labels on the local terminal or to setup a print file for the computer's high-speed line printer.

LABEL and PRINT files are saved for repeated use if desired, or until a new selection sort is required. This affords great economy in being able to re-use these files.

Computeria Inc.
148 Old Colony Ave.
Quincy, Mass. 02170
(617)472-9012

JOBS

JOBS is a timeshared program which provides the recruiter, organization planner, or municipal agency with a fast, simple means of maintaining resume files and selecting potentially qualified candidates for specific job openings.

CODED SEARCH PARAMETERS

JOBS stores and matches against coded search parameters of profession, position, salary range, education, experience, travel preference, and actual resume numbers.

RESUME FILES

Any one Resume File can handle the coded resumes for up to 8,000 resumes. Each resume record consists of six search fields and the resume number. Files are maintained current through election of the Update and Delete modes.

UPDATE/DELETE MODE

Additions are made to resume files by first creating an Update File which contains the records to be added and then automatically merging the records. Duplicate resume numbers are inhibited with an error message to denote same.

Deletions are made to resume files by first creating a Delete File which contains the records to be deleted and then automatically erasing the records. Records specified for deletion must precisely match or deletion is inhibited with and error message to denote same.

SEARCH MODE

A resume file is prepared for the Search Mode by first processing any deletions or updates. The search code must contain at least the business field. The fewest parameters in the search code string will in most cases locate the largest number of resume numbers. The search is made more selective when more parameters are present, usually causing the fewest number of resume numbers to be located. In practice, users will tend to be as selective as possible.

Whenever 8 matching resumes are located and their numbers printed, an option is given to stop the search or to allow it to continue.

ECONOMICAL

Operating costs are proportional to measured usage, hence are easily monitored and controlled. Resume Files consist of condensed search code parameters to minimize storage costs. JOBS can be run by clerical personnel, thereby freeing managers of routine tasks.

EASY TO USE

No programming knowledge is assumed or required to use JOBS. Its dialog is very straightforward; appropriate error messages and corrective instructions are provided where necessary. Clerical staff can, and should operate JOBS.

Computeria Inc.
14 Wood Road
Braintree, Mass. 02184
(617)848-2511

PICA - Production Information Cost Accounting

The on-line data entry system PICA gives production costs by Press Plate, Page, Ad, Number of Page Impressions and Mail Room activity. The Production Cost Summary report from PICA provides cost and man hours showing percentage variance and average cost to-date on the following items:

- News Page Cost
- Classified Advertising Page Cost
- Display Advertising Page Cost
- Camera/Engraving Page Cost
- Plate/Stereo Cost
- News Pages Percent of Copy Set
- Classified Advertising Pages Percent of Copy Set
- Display Column Inches Percent of Copy Set
- Cost of an Ad thru Dispatch
- Pressroom Cost for Number of Page Impressions
  - Daily Draw
  - Shopper Draw
  - Commercial Draw
- Mailroom Cost for Papers
  - Daily Draw
  - Shopper Draw
  - Commercial Draw

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SURVEY ANALYSIS SYSTEM

This on-line interactive system is a fast efficient way to enter, edit and analyze survey data. The system is divided into three phases; On-line Data Collection, File Maintenance and Cross Tabulation. A Control program with interactive conversation allows the user to set parameters and select the system phases to be executed.

The Survey System features the following:

- On-line Data Entry
- Immediate Validity Check on all Data Input
- Master File Maintenance
- Master File Distrbution Totals
- Edit Mask for Survey Under Analysis
- Weight Factors
- Response Filters
- Question Summation
- Partial Three Dimensional Report
- User Report Headers Inserted at Run Time for Each Report Produced
- All Cross Tabulations have Vertical, Horizontal and Total Percentage for Each Response
- Selective Use of Options; any Combination

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TRANSIENT ADVERTISING BILLING SYSTEM

This interactive on-line data entry system provides immediate credit checking, using customer telephone numbers. This system has a full complement of user reports, including file maintenance, balancing of cash, ninety day write-offs, aged trial balance, daily statements, three levels of late notices, bad debt and salesman performance statistics. A completely flexible billing frequency is provided.

The system features the following:

- On-line data entry.
- On-line credit checking by customer telephone number with pay phones identifiable.
- Complete dollar control on all files.
- Billing frequency for First Notice daily.
- Automatic Second and Third Notices.
- Credit report after non-payment of Third Notice.
- Automatic write-off after ninety days.
- Separate phase for Cash and File Maintenance so file can be kept current without running First Notices every day.
- Current account status is printed each time cash or new revenue (First Notice) is applied.
- Full range of cash payments and write-off reports. Monthly and Year-to-Date.
- Salesman and Rate Analysis produced at end of each accounting cycle.
- User designates accounting cycle.

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TOPS - Terminal Oriented Payroll System

The TOPS on-line data collection and inquiry payroll system prepares payrolls with lightning ease. TOPS features a highly sophisticated flexible report generator in the inquiry phase which allows the user to produce reports in any format, using any field(s). Selective or inclusive totaling of any field(s) in the master file is also permitted. These reports may be one-time or recurring.

TOPS is a default payroll system where only exception to employe data need be entered. When all default options are applied, the only required data input through the data collection phase is the effective date.

System flexibility is unique in that only four tables need be entered to tailor TOPS to any installations: the Edit Table, Tax Table, General Ledger Table and Date Table.

No program changes are necessary due to a minimum of hard programmed routines.

TOPS provides the following features:

- Simultaneous Multi-terminal input.
- Immediate editing and limit checking (with override options).
- Complete Audit file of all valid and invalid responses (the Auditors love it).
- Minimum input using default pay options.
- Immediate input field size checking.
- User optional input codes convert to standard system codes.
- Variable number of fixed length records on Master (assures minimum disk space use).
- Complete tax structures (provides for any City/State/County and Federal Government taxing).
- High level security with option limiting Keyword.
- Unlimited inquiry for those authorized.
- Tallying options available through inquiry (terminal output).
- Report generator options through inquiry. (List in any format, any fields with totals all automatically.)
- Minimal hard programming of processing (flexible based on Edit Table, Tax Table, General Ledger Table, Date Table coding).
- Up to 1,000 types of Earnings codes.
- Up to 100 types of Deduction codes.
- Handles taxable and non-taxable Earnings (Edit Table controlled-user specified).

- Tax inclusively, exclusively or not at all (user specified).
- Automatic period end processing with options to Update and/or Correct fields prior to period end release.
- Complete provision for special payrolls, bonuses, etc.
- Manual adjustment ability - manual check data and adjustments are shown on next series of registers.
- User determined deduction schedule (one time/to a balance/weekly/monthly, etc.).
- Includes bond accounting information (not personnel data).

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ACCOUNTS PAYABLE - Available fourth quarter 1972

On-line with inquiry capability featuring cash requirements for selected periods which will take advantage of discounts available, outstanding accounts payable by period or total amount, vendor master file, prepares transactions for general ledger and check reconciliation. Provides for input of handwritten accounts payable checks. System produces checks, check register, master file listing showing status and activity and cash requirements report, vendor update report which reflects any changes to vendor master file, accounts payable update report which reflects any changes to the Accounts Payable Master file and the Accounts Payable Trial Balance and Accounts Payable History Register, which provides a complete detailed Audit Trail.

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CIRCULATION - Available first quarter 1973

The Circulation package is a broad-ranged total system designed for user flexibility with on-line data entry and inquiry. Features Paid-in-Advance, Mail Subscriber and Carrier/Dealer/Street Sales Accounting. Automatic expiration date extension or subscriber crediting and carrier delivery crediting on PIA. Press Run Order, daily draw statistics, truck loading information, draw reporting for ABC, starts, stops and service error data. System design includes Audit Bureau of Circulation approval for all reports with complete audit trails. User options allow use of any or all the system's processing capabilities.

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NEWSPRINT INVENTORY - Available first quarter 1973

The inventory control portion includes on-line data gathering, management inquiry, HIFO costing method, variable basis weight and extensive report generation. Inventory reports may be run daily, weekly or monthly. Reports pertaining to receipts by price, press consumption and press waste can be generated by the user daily, weekly, monthly or year-to-date. Reports of actual consumption by color and size, and by color and paper are available. The performance portion of the system includes such factors as shipping damage, cause of web breaks and mileage measurement to provide feedback to management and newsprint suppliers.

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ACCOUNTS RECEIVABLE - Available fourth quarter 1973

This system currently under design will include but not be limited to the following features: Billings for Transient Advertising, Contract Classified Advertising, National and Retail Display Advertising and Commercial billing with billing cycles daily, weekly, monthly and special. Full on-line inquiry capability, on-line credit checking, a completely flexible rating module, rate analysis, sales analysis, space reservation and run sheets will also be provided.

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GENERAL LEDGER - Available 1974

The system, currently in the preliminary design stages, will feature multi-plant on-line terminal input as well as direct input from our other systems. The system will highlight a broad spectrum of features such as total inquiry ability, flexible chart of account structure, inter-department and inter-plant transfers. A daily Profit and Loss statement will be provided for those users having fixed charges for items or services sold.

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ETL: A Computer Assisted Instruction Programming System

ETL is a special purpose computer language to facilitate programmed instruction on a general purpose, time-shared PDP-10. The language is based upon the CAN language which originated at the Ontario Institute for Studies in Education.

The ETL System consists of two basic programmes; the pre-processor, ETLGEN, and the interpreter, ETL. An author uses ETLGEN to translate a source lesson, written using symbolic programme statements, into a lesson file on the disk suitable for input to ETL. An optional listing file is also produced. Students interact with the lesson through ETL which expects as input lesson files previously authored using ETLGEN. As optional facility exists within ETL for collecting statistics on overall student performance on each lesson.

The ETL language consists of the following facilities:

Textual Display
Answer Judging
Transfer of Control
Statistics

The language is line oriented rather than frame oriented, because symbolic labels can be assigned to any line in an ETL source programme. A frame orientation may be imposed upon a lesson explicitly by an author through the use of symbolic labels; however, the display of textual material is line oriented giving greater flexibility to the placement of textual material within a lesson.

For the purposes of answer judging, a student's answer is considered as a string of characters. The answer is compared against a model response and judged correct or incorrect within certain variable constraints.

There is some branching capability based on student performance during the current running of a lesson. This capability is of two types; the first is an implicit branching based upon the number of times a statement has been executed, the second is an explicit branching based upon counter settings. The numberical facility of the language, at present, is limited to simple counter manipulation. The language also includes a subroutine capability and conditional transfer of control to another lesson at specified entry points.

Finally, there is a rudimentary statistical capability. Questions may be identified by number and overall student performance on these selected questions recorded, again through the use of counters.

MINIMUM HARDWARE	-	PDP-10 with disk storage
CORE REQUIREMENTS	-	ETLGEN High Segment 2K Low Segment 3K
	-	ETL High Segment 2K Low Segment 3K minimum

NOTE: the size of the ETL Low segment is an assembly parameter. Greater efficiency can be achieved by setting this large enough to keep an entire lesson in core.

IMPLEMENTATION LANGUAGE	-	MACRO10 (version 47)
AVAILABILITY	-	Sources
	-	User's Manual

Available on an informal trade basis

CONTACT

Lorine McHardy (Mrs)
Systems Programmer
Computer Science Department
University of Western Ontario
London 72, Ontario, Canada
(519)679-2636

LOGIC

LOGIC is a timesharing program used by logic designers to simulate digital logic circuits and to produce timing diagrams similar to those printed by multi-channel strip chart recorders.

BENEFITS

LOGIC allows the designer to pre-test many alternate designs prior to starting "bread-board" experiments. More designs can be explored in less time and at less cost.

EASY TO USE

Working in the privacy of his terminal, the designer creates a Circuit File which specifies the proposed circuit, starts the program, inserts the name of the Circuit File, and promptly begins to obtain the printout of the timing diagram. Stored Circuit Files are easily modified to allow alternate designs to be tested.

ELEMENT TYPES

AND	Up to 8 inputs
BUFFER	
(INVERT	(NOT also acceptable
OR	Up to 8 inputs
XOR	Up to 8 inputs
NAND	Up to 8 inputs
NOR	Up to 8 inputs
SWITCH	Programable switches
JK/FF	Set and reset
RS/FF	Set and reset
D/FF	Set and reset
T/FF	Set and reset
CLOCK	Free running P/Gen.

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LS747 - LOGIC SIMULATION

Logic simulation is the process of analyzing the performance of either modules or systems to ensure that they will work correctly once fabricated. These analyses not only evaluate the logical correctness of the design but also the effect of delays in each of the gates or modules.

Logic simulation is primarily used to check designs before they are fabricated. In the case of designs for MSI or LSI modules, this is very important because the masks used to fabricate the modules cost many thousands of dollars, and these masks cannot be reworked to correct a faulty logic design.

Simulation can also significantly reduce costs and time in the design of systems made up of modules. Using simulation, and engineer can check out his design in a few hours, bypass the breadboard stage, and proceed directly to the prototype printed circuit board.

The use of simulation also results in better designs with higher production yields and lower field maintenance costs, because engineers can rapidly evaluate different design approaches to determine the optimum one. Further, they can easily compare different manufacturers components in a circuit and test out the what-if questions that arise with any new design.

THE LS747 LOGIC SIMULATOR

LS747 is an advanced logic simulator written by logic design engineers. This program can simulate circuits with up to 2000 gates, including the effect of delays. LS747 has a powerful MACRO capability whereby users can define a complete MSI or LSI chip and then use this in their logic description.

LS747 can analyze both synchronous and asynchronous logic or a mixture of these with the individual logic elements having different rise and fall times. Further simultaneous level changes and parallel/serial operations are accurately simulated without user intervention.

LS747 uses look-ahead simulation techniques, taking advantage of the fact that only a small percentage of the elements in a digital system change state at any time. It provides simulation of an element if and only if one of the inputs to the elements change state. By this means, extremely efficient simulations can be performed.

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LOFTAID

LOFTAID is a comprehensive and proven series of computer-aided design programs developed and applied by Peter F. Loftus Corporation of Pittsburgh.

FOOTING
For design of square or rectangular concrete footings with moment and horizontal load acting in one direction. The engineer, at his terminal, is guided to continually adjust footing design parameters until one of proper dimensions is determined, whereupon a table is printed which shows the reinforcement steel requirements.

COLUMN
Used to specify steel columns by selection from commonly employed column sections. The engineer, at his terminal, can initiate the selction process by either submitting a trial section or starting without one. Successive sections are tried by the program until an acceptable section is found. Up to three designs will be specified for a column with multiple spans, one for the greatest span between lateral supports, one for the bottom span where the maximum vertical load is to be applied, and one to satisfy the condition subjected to the greatest bending moment.

BEAM
Analyzes a simply supported beam for reactions, shears, and moments and then selects from the AISC Tables: (1) the most economical section regardless of deflection and depth limitations, (2) an economical shape with regard to deflection when the choice in (1) exceeds the allowable; and (3) possible alternate shapes with depths down to 6 inches less deep than the economical shape. By cascading beam end-reactions, it is feasible to design an entire floor framing system in a single run of the program.

STRAN
Analyzes the displacements of joints, support reactions, and member end actions in a plane frame structure composed of slender, straight, prismatic members, all in a single plane which is also a plane of symmetry of the members. The engineer, at his terminal, submits data in the form of specifications, geometry, and loading to obtain a frame analysis listing the structural data, coordinates of joints, member designations and properties, joint restraints, loads applied to members, joint displacements and support reactions, and member end actions.

FIXEND
Used for the determination of fixed end beam reactions. The engineer, at his terminal, may submit any combination or type of vertical loads and moments in order to initiate calculation and printout of the vertical reactions and end moments for the subject beam.

MSD
Used for the determination of reactions, moments, shears, and deflection of beams. The engineer, at his terminal, may submit any combination or type of vertical loads and moments, including end moments for which is computed and printed reactions and a table of moments, shears, and deflections for any specified location along the beams under study.

CURVE
Used for the design of belt-conveyor structures; determines the locations, elevations, and slopes of sections of a conveyor belt (composed of straight and curves portions) and the support channels. Dimensions produced are accurate to within one-sixteenth of an inch.

TRUSS
Used for the analysis of statically determinate trusses. By interpolation, this program computes as many joint coordinate as possible. Explicit commands are utilized to insert and manipulate loading conbinations, minimum and maximum member forces, loading factors, and moving loads. An extensive set of error messages are provided to assist the engineer in the verification of input data.

STEELDRAW
Using a computer-driven plotter, this program controls the drawing of plans and elevations of steel structures and buildings. With only minor instruction, any draftsman can easily prepare the required program input data from engineering sketches.

ISO
ISO will control the drawing of an isometric of any piping system to scale with all common symbols. All three axes may have dirrerent scales in order to compact the drawings. Angles other than the standard 30 degrees may be applied to obtain different views of a piping system. The program's input data is easily prepared from the rough plans in minimum time.

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PSTEAM-1

PSTEAM is a version of the ASME Steam Table Subroutines for the DECsystem-10 series of computers.

The package occupies 12K, in its current form and is written in FORTRAN IV.

Purchase price is $1,500; negotiable. Discounts available to educational institutions. Can be leased on a CPU surcharge basis through DECsystem-10 time-sharing vendors. Immediately available.

PACKAGE DESCRIPTION

Information and a raw-form listing of the ASME Steam Table Subroutines is available in Formulations and Interactive Procedures for the Calculation of Properties of Steam, R.. McClintock and G.J. Silverstri, American Society of Mechanical Engineers, 1968. Revisions are published in "Some Improved Steam Property Calculation Procedures," Journal of Engineering for Power, pp. 123-134, April 1970. The program is available in hard copy for the CDC 6400 computer from Aerospace Research Applications Center, Indiana University Foundation, Bloomington, Indiana 47405.

InterTechnology Corporation (ITC) has made several improvements to the original version of the ASME Steam Table Subroutines as well as revisions for compatability with the DECsystem-10 FORTRAN IV compiler. New functions have been added to make the package easier to use. For example, a single region-independent function call statement returns the desired property in the superheated, compressed liquid, or wet regions, and provides a trap at saturation conditions. Those who are experienced users of the formulations will appreciate the solution to convergence problems near the critical point.

Agreement of output data with the ASME Tables is such as to satisfy virtually any application requirement, but tolerances are adjustable where greater accuracy is required. This package has been thoroughly tested and successfully interfaced to ITC's Steam Plant Computer Model, results of which are published in ITC Report C-645, The U.S. Energy Problem.

FEES AND SUPPORT

Installation. If purchased, the subroutines will be provided on DECtape (1) or magtape, storage device to be returned. If leased, a surcharge on CPU time will be

negotiated with a time-sharing vendor.

Documentation. ITC will provide information for each function contained in the package including a table of ENTRY statements substituted for by computed GO TO statements, useful to more experienced users.

Support. ITC will provide support for minor changes desired by customers for their convenience without charge.

Purchaser will receive documentation on improvements or new variations in the subroutines as they are made. New copies of the program will be forwarded on request free of charge.

Dr. G.C. Szego, President
InterTechnology Corporation
P.O. Box 340
Warrenton, Virginia 22186

BAR/CUT - Cutting Stock System

BAR/CUT is a versatile interactive system for selecting lengths of stock from inventory and cutting them into ordered sizes to minimize waste for a class of problems such as arise in various bar-, tube-, rod- and pip- cutting operations wherein the size of an ordered item may not be specified uniquely by rather by a nominal size and acceptable tolerance.

BENEFITS

- Produces schedules with reduced inventory and waste costs.
- Permits rapid re-scheduling upon receipt of new orders.
- Saves time of scheduling and inventory personnel.
- Provides management with a tool for evaluating alternative stack sizes.

APPLICATIONS

- Re-bar suppliers
- Plastics
- Metals detributors
- Fabricators
- Lumber cutting

CAPABILITIES

- Operates in either an on-line interactive or a batch processing mode.
- Handles order lists of 100 and more sizes.
- Permits manual, computer-aided or automatic inventory stock planning.
- Accommodates limitations on the maximum acceptable number of active sizes or "pockets" in use at any given stage.
- Uses a very fast code.

OPERATION

- BAR/CUT accepts as input the present inventory status, the demands for ordered sizes, and the tolerance. Under control of the user it then determines the inventory usage and shop production plans, and out-puts inventory balance and summary information.

PRICING

- Outright purchase or lease plans available.
- Price dependent upon modules required for your application.

Management Decisions Development Corp.
680 Northland Road
Cincinnati, Ohio 45240
(513)851-2200

FASTRIM

FASTRIM is a comprehensive on-line, interactive system for solving one-dimensional cutting stock problems such as arise in the paper and related industries. Included in the system is the capability for explicitly taking into account the downstream converting and finishing operations.

CAPABILITIES

- Operates in either an on-line, interactive or a batch processing mode.
- Considers downstream converting and finishing equipment capabilities including additional edge trim required.
- Provides a "rounding" scheme which considers for each item the amount ordered versus allowable trade customs.
- Trims simultaneously in a given run, rolls of multiple diameters, cores and side out, and sheets for cutting by either simplex or duplex cutters.
- Schedules simultaneously multiple machines with variable costs and capacities.
- Permits scheduler to assign any order to a specific machine or group of machines.
- Handles multiple-period scheduling.
- Accommodates both mandatory orders and optional, future orders which may be pulled forward (with or without penalty cost).
- Permits scheduler to control cutting pattern parameters, e.g. maximum number of rolls in a pattern, maximum occurrence of any particular item in a pattern and packing multiple.
- Permits "two-stage trimming" for such processes as extruders, coaters, and laminators.
- Cutting patterns are sequenced to reduce knife changes.
- Precombines "like" and "near-like" width sheet orders to reduce cutter setups.

BENEFITS

- Generates schedules minimizing production and inventory costs - explicitly considering the economic trade-offs between rewinding costs and edge trim losses.
- Enables scheduler to re-schedule quickly and easily.
- Provides a powerful tool to aid management in evaluating operating policies and new equipment alternatives.
- Saves time of scheduling personnel.

OPERATION

- FASTRIM input is simple in design and is easy to prepare due to unformatted data requirements and elimination of repetitive data from order to order. For control of problem-solving logic and computation termination the user has available interactively a number of parameters. Output is directly useable on the machine floor and includes in addition to the trimming schedule, order assignments for finishing and converting equipment.

PRICING

- FASTRIM is modularly priced - you use only those modules you need - you pay for only what you use.
- Additional modules can be added as required.

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NEWS/TRIM

NEWS/TRIM has been developed specifically for cutting stock problems occurring in the newsprint industry, where they differ quite markedly from those arising in, say, fine paper manufacture. Not uncommonly there is more than a single machine to be scheduled, and orders for both regular and offset grades in various shades to be considered, simultaneously. Typically there are items of dirrerent diameters in the same run which, if economic, can be inter-trimmed and then "slabbed" to the ordered diameter. Frequently, shipping priorities of orders must be explicitly considered.

BENEFITS

- Generates schedules minimizing production and inventory costs - explicitly considering the economic trade-offs between "slabbing" and edge trim losses.
- Enables scheduler to re-schedule quickly and easily.
- Provides a powerful tool to aid management in evaluating operating policies and new equipment alternatives.
- Saves time of scheduling personnel.
- Available in modules, allowing user to acquire only those features currently required.

APPLICATION

- Newsprint
- Paper and Board

CAPABILITIES

- Operates in either an on-line, interactive or a batch processing mode.
- Evaluates inter-trimming of mixed diameters with "slabbing".
- Allows, also, diameter-ranging and inter-trimming without "slabbing".
- Schedules simultaneously multiple machines with variable costs and capacities.
- Permits scheduler to assign any order to a specific machine or group of machines.
- Handles multiple-period scheduling.
- Accommodates both mandatory orders and optional, future orders which may be pulled forward (with or without penalty cost).
- Permits scheduler to control cutting pattern parameters, e.g. maximum number of rolls in a pattern, maximum occurrence of any particular item in a pattern and packing multiple.

- Accommodates unique user trade custom table for fulfillment tolerances, with override capability item by item.

OPERATION

- NEWS/TRIM, even with all of its flexibility and complexity, is an extremely fast system, written in FORTRAN IV. Easy to use, NEWS/TRIM allows the scheduler considerable flexiblility in input/output mode and formatting. Its output is directly useable on the production floor.

PRICING

- NEWS/TRIM is modularly priced - you use only those modules you need - you pay for only what you use.
- Additional modules can be added as required.

Management Decision Development Corp.
680 Northland Road
Cincinnati, Ohio 45240
(513)851-2200

2D/TRIM - Two-Dimensional Cutting Stock Problems

2D/TRIM is an interactive system designed to minimize total variable material, inventory and cutting costs associated with processes in which smaller ordered size rectangles are being cut from larger production or parent size retangles. 2D/TRIM employs a fast algorithm which explicitly considers a variety of operational constraints and limitations.

BENEFITS

- Provides schedules with reduced trim losses.
- Enables scheduler to re-schedule quickly and easily.
- Provides management with a tool for evaluating alternative master size panels.
- Provides management with a tool for production analyses of alternative equipment designs.
- Saves time of scheduling personnel.

APPLICATIONS

- Particleboard
- Hardboard
- Plywood
- Glass
- Laminates
- Cabinet and Furniture
- Photo-sensitive Papers
- Metals
- Plastics

CAPABILITIES

- Handles simultaneously multiple master sizes with variable costs and availabilities.
- Accommodates both mandatory orders and optional, future orders which may be pulled forward (with or without penalty cost).
- Plans simultaneously items with and without pre-specified grain orientation.
- Permits scheduler to control cutting pattern parameters, e.g. number and types of strips in a pattern, maximum number of ordered sizes in a strip, and cost or permissability of "third-stage cutting".
- Sequences cutting patterns to minimize average item in-process time.

OPERATION

- The interactive capability of 2D/TRIM makes it an extremely flexible tool to assist the scheduler of 2D types of cutting operations. Order changes and additions can be handled easily and efficiently. The output format is readily adapted to serve the planning and control needs on the manufacturing floor.

PRICING

- 2D/TRIM is modularly priced - you use only those modules you need - you pay for only what you use.
- Additional modules can be added as required.

Management Decisions Development Corp.
680 Northland Road
Cincinnati, Ohio 45240
(513)851-2200

SRP

SRP, a shortest route planner, determines for a given network of locations and inter-connecting links, the shortest route between any specified origin and destination in the network, or between all pairs of locations. Route "length" may represent time, money, distance or other measure, and can include both values associated with the links (e.g. travel time) and values associated with passage through enroute locations (e.g. the time to change travel carrier or mode).

BENEFITS

- Enables reduction in travel, shipment communication costs, time or distance through use of route which is guaranteed to be a shortest route.
- Saves time of planning personnel in route determination between new orgin-destination pairs, and in re-evaluating present routes after rate changes.
- Easy to understand and use.

APPLICATIONS

- Inbound/outbound traffic management
- Vehicle fleet routing
- Communications routing
- Plant or distribution center location analysis

CAPABILITIES

- Operates in either an on-line interactive or a batch processing mode.
- Explicitly considers in the optimization the time (cost or other "length" measure) incurred in passing through enroute locations.
- Can determine the shortest route between all origin-destination pairs in the network in only twice the time for a single pair.

OPERATION

- Operaition of SRP is governed by the options specified by user, including requests for the route and route length between specified origin-destination pairs, a catalog of optimal routes between all pairs, a summary table of the optimal route lengths between pairs, etc.

PRICING

- Purchase price: $6,000
- Lease price: $250/month with a minimum of 6 months

Management Decision Development Corp.
680 Northland Road
Cincinnati, Ohio 45240
(513)851-2200

APT

UNIAPT (R) is United Computing Corporation's small memory requiremnent, disk oriented implementation of the powerful APT Numberical Control Part Programming language. UNIAPT is compatible with APT having identical syntax structure, processing features and variable field formats. The differences in the two systems exists only in the internal design of the processors and do no effect the external form of the language as seen by the user.

UNIAPT is capable of processing point-to-point, 2-axis contouring, full 3-axis contouring, and most 4 and 5 axis part programs. In the 5 axis mode UNIAPT can handle point-to-point operations and three-plus-two axis continuous path operations. Full 5 axis continuous path part program processing capability is available as an option.

UNIAPT is a supported system. United Computing Corporation supplies all maintenance associated with the software and from time to time distributes new versions of the system containing modification and revisions. United Computing also develops all the postprocessors required by the UNIAPT user. There are currently over 100 postprocessors available. New postprocessors are developed on demand to meet the users requirements.

UNIAPT on DEC System-10 requires 3K Pure Code (high segment) area and 18K User Area (low segment). The system also requires disk storage space for data bases, program storage and temporary scratch area.

UNIAPT implementations are also available for the PDP-8/I,E,F,L and the PDP-11 as well as computers of other manufacturers.

R Registered trademark United Computing Corporation

M. Leonard Simon
Director of Marketing
United Computing Corporation
22500 South Avalon Boulevard
Carson, California 90745
(213)830-7720

PROFILE - Probabilistic Forecasting Language

PROFILE is a report generation and risk analysis package that can be used to solve a variety of decision problems involving a number of uncertain factors. PROFILE's Monte Carlo simulation methods to do risk analysis have been designed to be a direct extension of normal report generation to facilitate introduction of risk analysis into an organization. PROFILE makes full use of the efficiency and power of FORTRAN, and memory requirements are dynamically allocated to fit the size of the user's problem.

APPLICATIONS:

Operating interactively on the DECsystem-10 time-sharing system, PROFILE allows the user to rapidly build and execute a Monte Carlo simulation model without worrying about setting up the complex routines and systems necessary to perform the analysis. PROFILE is well suited for analyzing situations which involve summarizing or tabulating information at the end of fixed time periods (months, quarters, or years).

PROFILE is built around three inter-related modules:

1. PROREP is the report file builder and editor through which the user custom designs his output report by specifying report titles, column headings, row names, report formats (specify number of decimals, suppress zeroes, skip & underline, $, %), and report types (standard, risk profiles, present & future value, and ROI).

2. PRODEP is the data file builder and editor through which the user builds a data base for analysis by specifying the variable number,the type of variable (constant, vector, discrete or continuous probability distributions, normal distribution, trend data, or multivariate distribution), and the variable description.

3. PROFILE is the executive program that allows the user to run a PROFILE analysis, print output reports to the teletype or disk file, perform sensitivity analyses, retrieve selected report and data files for analysis, or execute new PROFILE models.

PROFILE was designed to be used by both technical and non-technical personnel. The user enters the logic for his application in the form of a set of "RULES" relating input data to the output reports. The rules can call upon all the features of standard DEC FORTRAN, and may call in other subroutines (e.g. Scienctific Subroutine Package) for additional calculations or tabulations.

The PROFILE Package is available on a rent-as-you-use basis or for outright source code purchase. Purchase price is $12,000 plus installation.

Core & Code
26 Grozier Road
Cambridge, Mass. 02138
(617)491-8440

PROFORMA

PROFORMA is the computerized planning, forecasting and reporting service used by controllers, analysts, planners and managers in over two hundred corporations. PROFORMA assists them in the creation of customized "spread sheets" by assisting them in loading, changing, and merging (consolidate) data, examining alternatives, and producing periodic reviews.

FEATURES

- Broad range of applications
- Quick results
- On-line model building
- Data consolidation
- Packaged special arithmetic
- Output LOOKAHEAD
- Optional printout control
- Up to 200 rows by 30 columns

APPLICATIONS

Applications are as broad as a user's needs. Some typical ones include budgeting, cash flows, income projections, project control, bank budgeting, hotel operations, bid preparation, product planning, debt/equity planning, and custom planning models. Representative application briefs are available upon request.

QUICK RESULTS

Models are created and put into use in just hours without help from programmers, in privacy, and able to be run whenever desired.

EASY TO USE

No complex instructions, commands or programming to learn; user provides names, input data, and yes/no answers.

A simple model builder/changer, sample models and an explicit dialog-driven technique - help a PROFORMA user become proficient.

DATA ENTRY

Data can be entered from files and modified from keyboard changes or entirely inserted through the keyboard. Automatic merging with accumulation permits consolidated products, departments, divisions, or companies to be

reported easily.

PACKAGED ARITHMETIC FUNCTIONS

- Profitability index, descrete
- Above, in continuous form
- Loss carry forward
- Loss carry backward/forward
- Shift data, four directions
- Depreciation, five methods
- Amortization
- Zero negatives, set min/max
- Exponentials and logarithms
- Conditional logic (IF)

LOOKAHEAD

Lookahead at selectable prevues prior to printing entire report; data changes can be made after a lookahead to permit esploration of alternatives. Any number of lookaheads and data changes may be made.

PRINTOUT CONTROL

Width control provides capability for either narrow width or the new, wider-page terminals. Optionally, printout can be specified for the computer center's high speed line printer. Reports may be submitted to management without typewritten transcription.

PROVEN

Operational since 1967, PROFORMA continues to be improved based on user feedback while maintaining upward model compatibility.

Computeria Inc.
60 Brooks Drive
Braintree, Mass. 02184

ROUTE/SEQ

ROUTE/SEQ is system both for optimally routing a traveler (e.g. a vehicle, a salesman) through a set of destinations in the presence of constraints on the earliest and/or latest acceptable visit time at each destination, and equivalently, for optimally sequencing through a facility with sequence-dependent setup times jobs having earliest acceptable start times and/or latest acceptable completion time. ROUTE/SEQ yields routes and sequences requiring minimum total time or cost.

BENEFITS

- Provides routes and sequences which are less time-consuming or costly.
- Yields routes and sequences which satisfy all visit time and processing time constraints.
- Optimally selects and routes (sequences) "optional" destinations (jobs) together with the "mandatory" destinations (jobs).
- Saves time of routing/scheduling personnel.

APPLICATIONS

- Routing of vehicles, sales representatives, field service personnel.
- Routing of internal messengers, maintenance craftsmen, security personnel.
- Sequencing of work through production and service facilities.

CAPABILITIES

- Operates in either an on-line, interactive or a batch processing mode.
- Determines at the user's option either a single optimal solution or up to the ten best solutions.
- Can be terminated by the user prematurely, if desired, with the best solution(s) discovered so far.

OPERATION

- ROUTE/SEQ accepts as input (in a routing context, for example) the travel times and/or costs between each pair of destinations, together with the visit time and earliest and latest calling time for each destination, and produces the desired number of solutions and their supporting detail.

PRICING

- ROUTE/SEQ is modularly priced - you use only those modules you need - you pay for only what you use.
- Additional modules can be added as required.

Management Decisions Development Corp.
680 Northland Road
Cincinnati, Ohio 45240
(513)851-220

NUSTAT

NUSTAT is a timeshared statistical service used by economists, researchers, managers, scientists, statisticians, and engineers to perform immediate correlation and regression analyses upon data.

Written by Charles River Associates, Inc. of Cambridge, NUSTAT enables the user to create his own data bases as well as to access externally maintained data banks.

ON-LINE FILE ENTRY

Using a simple format, data is entered on-line to create stored files which are reusable for selection, transformations, reorganization, and combination. Equations may be pre-stored or entered during a run. Time series data can be specified as daily, weekly, monthly, quarterly, or annual.

DATA BASE FILES

Users can establish one or more data base catalog files of any grouping of variables for processing and subsequent re-use. Optionally, users may access the data base maintained by the National Bureau of Economics which contains several hundred key economic indicators updated monthly.

HIGH ACCURACY

NUSTAT matched or exceeded the best reported results of various commercial regression programs compared in the Journal of the American Statistical Association.

FLEXIBILITY

In addition to its fully interactive capability, a full range of other devices including magnetic tape, paper tape, cards, and line printer can be controlled by the user. The built-in editor allows for on-line corrections, changes to equations, adoption of new techniques - without having to start over again.

CAPABILITIES

NUSTAT operations include data preparation, editing, transformation, access and manipulation of the NBER Data Bank, data graphing, simple statistics, corelation analysis, simple regression, multiple regression with stepping options, residual analysis, and two-stage least squares analysis. NUSTAT handles files of unlimited size; up to 25 variables may be handled in a given equation. Transformations include addition, subtraction, division, multiplication, logarithms, exponentials, lead, lag, and forward and backward differences. A brief summary of NUSTAT's powerful commands is given on the reverse side of this sheet.

Printout control allows selection of either total or partial printout of results; time is saved by stepping over un-needed printout. Graphing of results is also available as a standard feature.

EASY TO USE

No programming knowledge is required to use NUSTAT - it was designed for the researcher, or his assistant, to use. Clearly defined program cues and explicit error messages are provided to guide the user.

Computeria Inc.
14 Wood Road
Braintree, Mass. 02184
(617)848-2511

CSSL

Simulation has been applied for nearly two decades in various desciplines of scientific and engineering endeavors. Aerospace and petro-chemical industries originally led the way to utilize digital and/or analog computers to simulate their physical models. For example, simulation with computers is substantially the way in which evolving aircraft and missile design has been accomplished. However, with the advent of faster digital computers, the emphasis has shifted to the point where a majority of problems have been solved on the digital computers. In order to utilize digital computers in an efficient manner, many varieties of simulation languages have been developed since the early part of 1962.

Simulation languages have been used extensively in the aerospace industry to implement control system models. The process industries have used simulation languages to determine the kinetics of various complex reactions. In the biomedical area various groups have used simulation languages for modeling different biomedical systems. The educational community makes use of simulation languages to solve problems associated with the various scientific and engineering disciplines. Simulation languages have been accepted with enthusiasm and its applications are ever growing.

In an attempt to standardize on a single language for the simulation industry, the Simulation Software Committee of Simulation Councils, Inc. (SCI), introduced specifications for a new digital simulation language, CSSL (Continuous System Simulation Language), incorporating all the features of the previous languages and introducing new features. The CSSL specification has been published in a technical magazine called "SIMULATION" in December, 1967.

Young Lee and Associates has developed a proprietary package called PDP10/CSSL to serve the ever growing PDP 10 computer users. We are pleased to announce the availability of PDP10/CSSL. In accordance with our policies, we will provide installation, maintenance and training to assure complete satisfaction.

Young Lee and Associates
2710 W. 233rd Street
Torrance, California 90505

DYNAMO IIF

DYNAMO II is a continuous simulation language that has been used extensively in the simulation of industrial, social, economic and engineering problems. Until now, it has only been available on the larger IBM S/360's and S/370's. But since many model builders do not have easy access to such machines, there has been a need for a DYNAMO that would operate on other computers. In response to this need, a DYNAMO to FORTRAN precompiler which is written in FORTRAN, has been developed. The general availability of FORTRAN makes this a nearly universal tool.

DYNAMO IIF consists of two subsystems which, in conjuction with a FORTRAN compiler and a loader, for the complete system. One subsystem is the precompiler which translates the model into two FORTRAN programs. After compilation, these programs are loaded with the run-time subsystem to generate both tabular and plotted results.

The system has been carefully designed to be compatible with the standard DYNAMO II compiler. These design features include the following:

- time subscripts are checked;
- the order of the equations is totally optional;
- simplified model initialization and specification of tabular and plotted results are supported;
- the standard DYNAMO functions are available; and,
- the lastest feature of DYNAMO II, user defined macros, is supported.

DYNAMO IIF has been carefully designed to minimize the problems of adapting it to a particular computer. It is entirely written in FORTRAN and has been conceived in a modular manner to permit flexibility in implementing it on a small computer.

The system is a proprietary product of Pugh-Roberts Associates, Inc. The license and warranty agreement are for one year. After the first year, the license can be renewed annually for $10. The price for extending the warranty has not been fixed.

Price:

License and Warranty for one (1) year $3,000

(An educational institution may purchase the above for $2,000 provided it reports its experience implementing the system.)

Pugh-Roberts Associates, Inc.
5 Lee Street
Cambridge, Mass 02139

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