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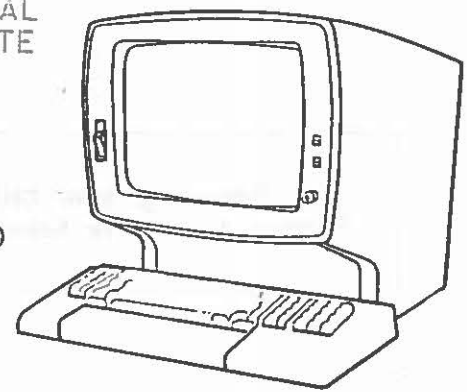
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News Letter

NAVAL POSTGRADUATE SCHOOL
MONTEREY, CALIFORNIA

JANUARY 5, 1984

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USER SERVICES TALKS FOR WINTER QUARTER

The User Services Group will give seventeen talks at the beginning of this quarter to help familiarize users with the various facilities of the VM/CMS timesharing and MVS batch systems available on the IBM 3033 system.

The following nine talks will be given in the In-122 Auditorium. Signup for these sessions is not required.

Introduction to VM/CMS (offered three times)

1510	Wednesday	11 January	Speaker: Larry Frazier
1410	Monday	16 January	Speaker: Larry Frazier
1310	Wednesday	18 January	Speaker: Roger Hilleary

This talk assumes no prior knowledge of the NPS Computer. Topics to be covered include the use of the 3278 terminal, how to logon and log-off, use of the function keys, the HELP facility, and various general-purpose commands. It is strongly recommended for all new users of the Center, and covers information which may not be provided in an introductory programming class. Be sure to bring a copy of Technical Note VM-01, *Users Guide to VM/CMS at NPS* (This publication is included in the Computer Center *User's Manual*).

Introduction to XEDIT (offered three times)

1510	Thursday	12 January	Speaker: June Favorite
1510	Monday	16 January	Speaker: June Favorite
1510	Wednesday	18 January	Speaker: Jerry Norton

This talk provides elementary information about the XEDIT full screen editor. The main emphasis is on methods for creating and changing programs and other files. Use of the PF keys and HELP facility in XEDIT are mentioned. This talk assumes little or no familiarity with XEDIT, but prior attendance at 'Introduction to VM/CMS' is recommended.

Using Script at NPS (offered twice)

1510	Tuesday	17 January	Speaker: Larry Frazier
1410	Thursday	19 January	Speaker: Larry Frazier

Script is a text-formatting system developed at the University of Waterloo for use under CMS. Many students and staff members find it easier to prepare reports with SCRIPT than with a typewriter. This talk pro-

vides an overview of how to use SCRIPT at NPS. It also discusses THESIS9, an extension of SCRIPT that makes it easier to produce a thesis in the form required by the NPS *Thesis Manual*. Information presented should be of interest both to experienced and to beginning users of SCRIPT and THESIS9.

Communication and File Transfer Between Micros and the 3033

1510 Monday 23 January Speaker: Stephan Lamont

This talk will cover basic and intermediate topics in data communication between the IBM 3033 and microcomputers. Subject matter will include data formats, transmission protocols, modem selection and terminal emulator packages. The HOSTCM interface will be covered briefly.

All other talks which are described below will be given in In-119 or In-271. Those interested in attending should sign up in the Consulting Office, In-146, to reserve a seat.

Introduction to SPSS-X: In-119

1310 Tuesday 17 January Speaker: Dennis Mar

SPSS-X, the Statistical Package for the Social Sciences, is a comprehensive tool for managing, analyzing, and displaying information. The speaker will describe the required data formats, SPSS-X control statements, and necessary Job Control Language (JCL). This talk is intended for new users of SPSS-X.

Intermediate Topics in XEDIT: In-119

1310 Wednesday 18 January Speaker: June Favorite

This talk is intended for the VM/CMS user who is familiar with the XEDIT editor and is looking for ways to make editing easier. Topics covered include extended usage of PF keys, exploring XEDIT subcommand options (such as SET and QUERY), creating a PROFILE XEDIT file, customizing your XEDIT screen and editing multiple files.

Introduction to SAS: In-119

1310 Thursday 19 January Speaker: Dennis Mar

SAS, the Statistical Analysis System, is a flexible batch program for handling all phases of data analysis: retrieval, data management, statistical analysis, and report writing. It has excellent features for merging and subsetting data sets. The speaker will describe the required data formats, SAS control cards, and necessary job control language (JCL). This talk is intended for new users of SAS.

Intermediate Topics in VM/CMS (two parts): In-119

1510 Thursday 19 January Speaker: Roger Hilleary
1510 Thursday 26 January Speaker: Roger Hilleary

These talks introduce more advanced features of the time-sharing system. They assume basic familiarity with VM/CMS. The talks are independent; you may sign up for either one or both. The first talk concerns spool files. It will discuss how to control your printed output and how to send files to another user. The second talk covers a variety of topics, including the FILEDEF command, packed files, and creating load modules.

Introduction to DISSPLA: In-271

1510 Monday 23 January Speaker: Jerry Norton

DISSPLA is a device-independent graphics package for use by Fortran programmers. It allows convenient generation of a large variety of graphs, charts, text, etc. It may be used at NPS both on MVS (batch) and CMS (timesharing). This talk provides a general introduction and some examples of usage.

Intermediate Topics in DISSPLA: In-271

1510 Wednesday 25 January Speaker: Jerry Norton

This talk is intended for the person who is familiar with the NPS Computer Center operating systems and is interested in more advanced use of the DISSPLA graphics package. Some common problems and their possible solutions will be discussed. In addition, examples will be given demonstrating the contouring, 3-D and mapping features of DISSPLA. Escape functions and the DISSPOP feature will also be dis-

cussed. This session will be conducted as a workshop, so that participants may discuss their particular problems.

Introduction to Minitab: In-119

1410 Friday 27 January Speaker: Dennis Mar

Minitab is an interactive statistical computing system available on VM/CMS. It is designed for moderate size data sets which can be stored on a CMS A-disk file. Minitab is quick and especially useful for exploring data, plotting, and regression analysis. Attendees should be familiar with the timesharing system.

SUBMIT VERSION 2.0

The CMS SUBMIT command has been enhanced by Mr. Stephan Lamont of the Center's staff. The purpose of the SUBMIT command is to send files in the form of MVS job streams to JES3 for batch processing. Enhancements to SUBMIT include JOB statement validity checking and job submission automatic journaling.

The command syntax is:

```
(EXEC) SUBMIT <filename> ((<filetype>) <filemode>)
```

where

EXEC	is required when SUBMIT is called from another EXEC,
<filename>	specifies the CMS filename of the job to be SUBMITTED,
<filetype>	specifies the CMS filetype of the job to be SUBMITTED and defaults to JOB if not included.
<filemode>	specifies the CMS filemode of the job to be SUBMITTED and defaults to '*' when omitted; i.e., global search of the user's search space.

Parentheses above denote optional parameters.

The file is scanned for the presence of a syntactically valid JOB statement. If a syntax error is encountered in processing, the job is rejected with an appropriate diagnostic message identifying the error as closely as possible.

The submission is journaled in a file named JOB LOG A0. If JOB LOG A0 does not exist, it will be created.

For example, assume that a file containing appropriate MVS Job Control Language resides on the user's A disk as MYJ JOB A. Further assume that the JOB statement reads as follows:

```
//TEST1 JOB (1234,1111),'TEST JOB',CLASS=B
```

and that project number 1111 is associated with Userid 1234P in the MVS system accounting data files.

The terminal session would go as follows:

```
submit myjob
PUN FILE 2997 TO MVS COPY 001 NOHOLD
MYJ JOB A1 (TEST1) submitted to MVS and journaled in JOB LOG A0.
R;
```

and job TEST1 would be sent for batch processing to MVS.

The job would be journaled in the user's JOB LOG as

JOBNAME	CL	DATE	TIME	DAY	FILENAME	FILETYPE	FM	NET
TEST1	B	12/07/83	12:10:21	WED	MYJ	JOB	A1	YES

Jobs are logged with the most recent job at the top. The NET items indicate whether or not a `//*MAIN ORG=` statement was encountered.

Diagnostic messages are reasonably complete and attempt to point out the probable cause of error. For example, consider a JOB statement constructed with an invalid character in the JOB name field (the hyphen character):

```
//TEST-123 JOB (1234,1111),'BAD JCL',CLASS=B
```

A diagnostic message as shown below would be generated with a pointer to the offending character and processing would be abandoned.

```
----- Invalid character in JOB name.
      |
      v
//TEST-123 JOB (1234,1111),'BAD JCL',CLASS=B
SUBMIT of MYJ JOB A1 abnormally terminates.
R(-0005);
```

SUBMIT will complete with a return code of 0 for successful submission and a non-zero return code if an error is encountered.

Documentation is available on-line by issuing

SUBMIT ?

PERSONNEL NOTE

Ms. Patricia Collins joined the User Services Staff during October. She is already well versed in the Pascal language and is available to help users with problems in using either Waterloo Pascal or Pascal VS. Patricia is a recent mathematics graduate of UC Santa Barbara. Her office is in In-163.

NEW EXEC FOR LISTING PERSONAL TAPES

TAPECK is a new CMS exec which will display all the personal tapes checked into the Computer Center tape library under your userid. To invoke this exec, type:

TAPECK

The exec will prompt you for a userid. The exec will then display the VOL=SER names of all the personal tapes listed under that userid. For on-line documentation type

TAPECK ?

COMMON PROBLEMS WITH THESIS9 AND SCRIPT

The points covered in this article are covered also in the THESIS9 documentation, but it may be difficult to find a particular item when you need it.

THESIS9 will occasionally move the final line of a paragraph so that it follows a figure or table. This doesn't look good, and doesn't meet the standards of the *THESIS MANUAL*. To be sure it doesn't happen, just place the command ".br" on a line before the .figure or .table command, like this:

```
.br
.table
or
.br
.figure
```

Of course your .figure and .table command will include the variable name and title you choose for the table or figure.

Occasionally, since SCRIPT follows standard hyphenation rules, it will hyphenate the last word of a paragraph. Again, this is unacceptable. This won't happen often. The best time to correct it is when you are getting ready to print the copy before your final copy, after all other changes are made. Editing your SCRIPT file, put the word being hyphenated on a line by itself. Insert a line with the command ".hy off" before the line containing the word. Add a line containing ".hy on" following the word that was being hyphenated. It should all look like this:

```
final sentence of the paragraph, ending with a
.hy off
hyphenation
.hy on
.para;Beginning of next paragraph.
```

Square brackets can be printed on our line printer when you request upper/lower case output. When using THESIS9, type the cent sign immediately before the { to get a left square bracket, and cent sign } to get a right square bracket. Table II, page 21 in the THESIS9 documentation, shows the other special characters available. Notice that they include superscripts, but not subscripts. There is no way to print subscripts on this printer - nor can we print superscript periods or slashes for those who want fractional exponents.

Remember that SCRIPT talks are now offered at the beginning of each quarter. (See the schedule at the beginning of this issue.) Remember also that recent information about SCRIPT and THESIS9 is available on-line by typing

LINKSCR NEWS

Note that this SCRIPT news has no way of notifying you when there is a new item, as the CHECK option of the regular on-line NEWS does. Check it every week or two. The date of the most recent entry appears on the first line of the news file.

USE OF DISSPLA INTERPOLATION AND SMOOTHING ROUTINES

The information presented in the *DISSPLA Pocket Guide* on interpolation and smoothing has been misinterpreted by a number of users. This article adds a few comments to the summary of these capabilities appearing on page 37 of the *Pocket Guide*.

Item 12.1 INTERPOLATION METHODS lists nine subroutine CALLs that may be used to connect data points with a curve. The points on the curve are interpolated according to nine algorithms represented by nine separate CALLs: RASPLN, POLY3, POLY5, etc. In the case of a standard X - Y plot, the interpolated line passes through each data point. These interpolation routines are also used in contour drawing. The next item, 12.2 SMOOTHING, lists two CALLs that will calculate a smoothed curve determined by the supplied data points. This curve may or may not connect all the points presented and is used where there is "scatter" in the supplied points, representing noise in the data. The *Pocket Guide's* description of smoothing is inadequate and the user must go to the *DISSPLA User's Manual* for more details.

Some confusion arises from the third item on page 37, 12.3 ASSIGNING ADDITIONAL WORKSPACE, and how it relates to smoothing and interpolation. First, the CALL BCOMON (NWORDS) must be accompanied by a COMMON WORK(NWORDS) among the non-executable statements at the top of the program. If CALL BCOMON (...) is included without the necessary COMMON statement, it does not work and may cause the job to fail completely. Second, additional workspace is routinely assigned in programs involving smoothing and contouring, but not in programs using the interpolation routine simply to connect points on a flat X - Y graph. In fact, the use of BCOMON in the latter case can lead to unrecoverable errors that will stop execution with nebulous error messages instead of a graph. Do not depend on luck. Do not use unnecessary CALLs just because they worked in another application. Third, there is an unfortunate bit of terminology on page 37. In item 12.1 the TENS parameter of the RASPLN routine is said to "determine degree of smoothing." This "smoothing" is not the same as the smoothing done by SMOOTH and PSMTH (item 12.2). It does not require additional workspace unless it is part of a contouring program.

The *DISSPLA User's Manual*, which gives detailed explanations and frequent examples, should be consulted when problems arise. The *Pocket Guide* is a useful reference for DISSPLA programming, but it is not complete documentation. *User's Manuals* are available for reference and overnight checkout from the Computer Center Librarian in In-131.

REVISED EDITION OF IMSL

A revised edition of the Interactive Mathematical and Statistical Library (Edition 9.1) was installed during December on both CMS and MVS. Except for improved performance and the correction of errors, the changes should be transparent. There are no changes to the IMSL documentation. The following is a list of changes to individual routines.

The key (severity level) to the type of change is:

- 0 = No change to source code.
- 1 = Old routine is adequate, cosmetic change only, computations are not affected.
- 2 = Old routine is adequate, but computations are affected in some cases. Errors in source code corrected.
- 3 = Old routine is not adequate in some cases. Errors in source code corrected.

Name	Severity	Description of Change
BESTA2	3	Corrected the calculation of overflow and underflow checks for the coefficient of variation
DPDEU	1	Modified to allow fewer than 2*NPDES boundary conditions so that first order equations can be handled
DVCPS	3	Modified to prevent return on error without setting error flag 130
GGAMR	3	Corrected potential underflow situation
GTDDU	2	Corrected call to UERTST
IQHSE	3	Corrected problem which led to numerical instability for certain degenerate cases and corrected type mismatch in call to LLSQF
LSVG1	2	Changed names of variables COS and SIN
LSVG2	2	Changed names of variables COS and SIN
MDBETA	3	Corrected problem of inaccurate results close to underflow limit
MDBIN	2	Corrected code to remove discontinuity in results
MDCHN	2	Removed logical in-line functions
MMBSIR	1	Modified code to use an integer as an exponent

MMLIND	0	Corrected computer-dependent constant
NAFRE	3	Coded ranking calculations in-line
OFPRI	1	Corrected checks for input arguments
RLFOR	3	Included checks for division by zero, corrected erroneous reporting of error code 38, and modified code to detect zero degree of polynomial
RSMITZ	3	Modified code so that an internal variable is always initialized
SSRBLK	3	Corrected computation of variances (and, hence, of confidence intervals) and computation of regression coefficient(s)
USHHST	2	Increased dimension of internal work array to allow for proper scaling
USHST	1	Modified code to include first line of histogram
USWCV	2	Corrected infinite loop condition
USWFV	2	Corrected infinite loop condition
ZSPOW	1	Removed typing of subroutine FCN
ZX3LP	3	Corrected reporting of error from ZXOLP

Any installation difficulties with the IMSL 9.1 should be reported to June Favorite, In-109.

RECENT ADDITIONS TO THE COMPUTER CENTER LIBRARY

BOOKS

Author	Title
Palmer, James et al	1982 The World of Large-Scale Systems
McQuillan, John M.	1978 IEEE Tutorial: A Practical View of Computer Communications Protocols
Basili, Victor R.	1980 IEEE Tutorial on Models and Metrics for Software Management and Engineering

Basili, Victor R.	1981	IEEE Tutorial on Structured Programming: Integrated Practices
Thurber, Kenneth J.	1980	IEEE Tutorial: Computer System Requirements
Jones, Capers	1981	IEEE Tutorial: Programming Productivity: Issues for the 1980s
Abrams, Marshall et al	1980	IEEE Tutorial: Computer Networks
Beatty, John C. et al	1982	IEEE Tutorial: Computer Graphics 2nd Edition
Larson, James A.	1982	IEEE Tutorial: End User Facilities in the 1980's
Freeman, Harvey A.	1981	IEEE Tutorial: Microcomputer Networks
Larson, James A. et al	1981	IEEE Tutorial: Data Base Management in the 1980's
Podell, Harold J.	1981	Computers & Business: How Managers Are Using Computers to Support their Decision Making
Thurber, Kenneth J.	1980	IEEE Tutorial: Office Automation Systems
Abelson, Harold et al	1982	Turtle Geometry
Abelson, Harold	1982	Logo for the Apple II
Myers, Roy E.	1982	Microcomputer Graphics
Abelson, Harold	1982	Apple Logo
Green, Paul E. Ed.	1982	Computer Network Architectures and Protocols
Warlick, Charles H. Ed.	1982	Directory of Computing Facilities in Higher Education
Warlick, Charles H. Ed.	1983	Directory of Computing Facilities in Higher Education
Kehl, William B.	1982	Profiles of Academic Computing

Michie, Donald	1982	Introductory Readings in Expert Systems
Michie, Donald B.	1982	Machine Intelligence and Related Topics
Glass, Robert L.	1983	Real-Time Software
Tennant, Harry	1981	Natural Language Processing
Parikh, Girish	1981	How to Measure Programmer Productivity

Proceedings

ACM	1982	Proceedings of the 1982 ACM SIGMETRICS Conference on Measurement and Modeling of Computer Systems
ACM	1983	Proc. of ACM SIGSOFT/SIGPLAN Software Eng. Sym. of High Level Debugging
ACM	1983	SIGGRAPH: Computer Graphics
ACM	1983	8th Data Communications Sym.

The Newsletter appears semiquarterly and is written by members of the staff, W. R. Church Computer Center (Code 0141), Naval Postgraduate School, Monterey, California 93943. Requests for further information or suggestions for articles for the Newsletter may be addressed to the User Services Manager, Code 0141 (In-133), ext. 2752 (or ext. 2573 for messages).

The Center operates a multiprocessor configuration consisting of an IBM 3033 Attached Processor System (16 Megabytes) loosely coupled with an IBM 3033 Model S (8 Megabytes). Interactive computing is provided under VM/SP CMS and batch-processing service under MVS with JES3 Networking.

Distribution:

List 3, plus: 1-A5, 250-B2, 3-B3, 1-B13, 6-F3, 1-F4, 1-F5, 1-F6, 3-F14, 1-Code 49, 200-Student Mail Center (Lobby)