1985

Utilization of the Digital VAX 11/750 Computer in the Administration of an Adult Evening Collegiate Program

Barbara Barr Dabbs

UTILIZATION OF THE DIGITAL VAX 11/750 COMPUTER

IN THE

ADMINISTRATION OF AN ADULT

EVENING COLLEGIATE PROGRAM

by

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A Culminating Project Presented to the Faculty of the
Graduate School of the Lindenwood Colleges in Partial
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Degree of Master of Science

1985

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COMMITTEE IN CHARGE OF CANDIDACY:

Arlene Taich, Ph.D.
Dean

CHAPTER I

INTRODUCTION

The Lindenwood College for Individualized Education
was added to the original college in 1975. It is open
to both men and women who wish an individually designed
program of study, leading to a Bachelor's or Master's
Degree. LCIE is quite unique, because it specializes in
fulfulling the educational needs of working adults.
Many of the LCIE students have professions and
family commitments which conflict with the traditional
style of adult education. Some are disillusioned with
the requirement by other educational institutions to
take courses which are redundant of acquired college-
level learning gained through work of life experiences.
For these experiences LCIE offers an opportunity to
apply for college credit for this learning. These rea-
sons combine to make the LCIE unique.

The cluster or seminar, is the principal mode of
teaching and learning in LCIE. Each trimester the stu-
dent enrolls in a cluster, or combination of usually
three to four related components within an academic dis-
cipline. These components are equivalent to distinctive
courses offered by other college or universities. In
LCIE the related components are taught together in an
interdisciplinary manner.

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This alternative is quite popular with working adults. They can concentrate on fewer topics over an intensive period of time, rather than the traditional style of full-time education, with singular subject areas.

LCIE is committed to the idea that students learn more when their past experiences and future goals are taken into account. With this goal in mind, LCIE encourages the student to participate in the planning of their educational program. In addition to having a program of study which takes into account a student's individual needs and purposes, LCIE students are expected to do independent research suitable to their individual and cluster group goals.

Because LCIE is so unique in its educational offerings, the administration of this program must be quite elaborate. In a traditional setting, the courses are offered and students decide which courses in which to enroll. With the individualized concept of course selection, the institution cannot begin to offer all course combinations that the student may elect. For this reason, the registration process for LCIE must be clearly outlined and be flexible enough to accommodate most students without being so elaborate as to confuse those who are responsible for its process. The reporting of the

students, their classes, the instructors and their students can be quite complex.

Before 1983, Lindenwood did not have a major computer system. Before the purchase of the computer system the LCIE administrative staff were manually registering every student, typing class rosters, counting students, adding or dropping courses, and counseling students on academic requirements. Very often at the last minute courses needed to be dropped or rescheduled. The laborous process of looking in student files, finding work and home phone numbers, calling students and changing registration forms took many hours and gave more than one occasional headache.

Now the College has purchased a computer system to aid in the registration process. Unfortunately, there is no "magic button" to push to complete all the work. In fact, unless the computer is used most effectively it will increase the work load and double the amount of headaches felt around the institution.

As with any piece of machinery, one must be instructed on how to operate the machine before it can be used. Using a computer is similar to operating an automobile. One need not be a mechanic to drive; just as one not need to know how to program a computer to use it. The driving force of computer operation is the software. Some software packages are menu driven (comparable to an automatic

transmission), some are user defined, slightly more re-
sponsive to individual input and changes, (similar to
the standard transmission of a car).

The POISE software package, selected for use at
Lindenwood, is menu driven and once one learns the new
rules and languages it is quite simple to operate.
utilization. As with any organization, Lindenwood could
improve its efficiency with some minor as well as major
adjustments in its policies and procedures related to
the use of its computer system. While the following is
in no way a correct or absolute answer to increased
efficiency, I feel that implementation of a few sugges-
tions might prove advantageous.

The specific areas that I feel could use some
changes are those in work flow and data base management.
Upper level managers have begun to realize that the com-
pany cannot have an integrated system unless you have
integrated data. Management's biggest mistake is to
think the problem can be solved by machines, when it's a
people and management problem. Lindenwood specifically
has this problem. Each department has its own data base
and wants to keep it secret from every one else.
The efficient utilization of the data base has be-
come a career specialty. The Data Base Specialist is
responsible for the design and control of the use of an

CHAPTER II

EFFICIENCY AND MANAGEMENT

The effective use of the computer system may very
well separate a successful organization from an unsuc-
cessful one. Management, therefore, must always be
looking for ways to improve effective and efficient
utilization. As with any organization, Lindenwood could
improve its efficiency with some minor as well as major
adjustments in its policies and procedures related to
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has this problem. Each department has its own data base
and wants to keep it secret from every one else.

The efficient utilization of the data base has be-
come a career specialty. The Data Base Specialist is
responsible for the design and control of the use of an

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organization's data resources. He or she analyzes inter-
relationships of data usage and defines physical data
elements.[1] Management often realizes that a problem
exists and does hire a data base specialist. Often
that's where the management support stops. It was deter-
mined that "something is wrong," but the data base
specialist is not given the authority or clout that will
enable him or her to solve the problem. Sometimes
instant results are expected without realistic expecta-
tions.

Lindenwood has a "three person shop." This makes
efficiency of operations almost impossible. The Director
is also the Analyst, Programmer, Data Base Specialist,
Trainer, Software Expert, and if time and energy allows,
the System Manager. The Assistant Director helps the
Director in all of his jobs, plus acts as Lead Operator
and User Assistance Specialist. The third member of the
staff is a Computer Operator, Word Processor and Data
Entry Specialist.

My suggestion to increase efficiency is reassign
job requirements so that personnel resources are better
utilized. The Director should have more time for system
management and oversee the effective utilization of the
system and software. Lindenwood should create the posi-
tion of Data Base Specialist. This person could ensure
proper utilization and train new or existing users in

more efficient system use. The Assistant Director might
be upgraded to include these duties. The other duties
now being done by the Assistant Director could be done
by an operator. Thus the center would have four people.
The Director, the Assistant Director/Data Base Specialist,
one Lead Operator, and one Operator/Word Processor. The
decrease in duties for the Director and Assistant
Director/Data Base Specialist would allow time to devote
to the other critical problem at Lindenwood, work flow.

Lindenwood has neither a centralized nor a decen-
tralized data center. This means that departments do
their work unless it is at a critical time or when dead-
lines are near, then the work is shared or delegated to
the "faster professionals" in the data center. This can
be an efficient way to utilize time and personnel, but
it must be coordinated and the work flow must be smooth.
This is not the case. I suggest a work flow chart be
incorporated and the data center be involved in all
scheduling of deadlines. An example of a problem that
could occur without smooth work flow follows:

The time is very close to the end of a
semester and the grade sheets were due back
from the instructors yesterday. Grade cards
have to be mailed in three days. The computer
center is asked to help enter grades so dead-
lines can be met. Students are wanting to
register for LCIE classes. Course rosters are
needed to identify closed courses. The compu-
ter center is asked to help enter registration
forms so course rosters can be done faster.
The Admissions department needs to know how

much trouble. Management should not be surprised if the

salary scale for specialists aren't in line with the

other compensations. One can expect to pay more for

them, and probably, it is money well invested.

ENDNOTES

[1] Mary Miles, "Information Management: Becoming a Specialist's Game," Computer Decisions, November 1984, pp. 158-159.

[2] Kevin Strehlo, "When the Objective is Efficient Project Management, "Personal Computing, January 1984, pp. 135-137.

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CHAPTER III

COMPUTER TRAINING

The value of the computer is contingent upon the
willingness and abilities of managers to develop the com-
puter literacy necessary for its effective utilization.
Unfortunately, most managers lack computer skills, and
many have a fear of computers or even total resistance
to their use. Although there are many reasons for such
fear and resistance, organizations can do a great deal
to overcome them by carefully developing and implement-
ing systematic computer training.

The overall framework for training in computer liter-
acy should consist of three distinct yet interrelated
phases:

1. Assessment of training needs

2. Implementation of training

3. Evaluation of training

The process should proceed sequentially through these
phases, with the results of the evaluation phase fed back
for improvement of the first two phases.[1]

The assessment phase provides the necessary informa-
tion for the overall training effort. The implementation
and evaluation phases are dependent upon input from the
assessment phase. Care must be exercised not to hastily
jump into actual instruction before identifying training

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needs and formulating educational objectives. Essential-
ly, this phase requires operationalizing the term "com-
puter literacy". Computer literacy has many meanings,
ranging from an understanding of fundamental terminology
to sophisticated programming at the systems level. For
managers, this is likely to mean a level of literacy that
focuses primarily on the use of the software package
rather than on extensive computer programming.[2]

Assessing training needs involves a careful analy-
sis of organizational, position and people factors. At
the organization level, one must look at the overall
goals and strategies of the organization and determine
their implications for the computer's use by management
staff. Furthermore, it will be necessary to asses the
organization's attitude and policy toward the use of the
computer and the need for computer literacy.

Position analysis requires a careful examination of
the management positions scheduled to receive computer
terminals and determination of the kinds of computer
skills that will help these managers perform their jobs
more effectively and efficiently. Computers are used in
a variety of ways at different organizational levels and
computer applications vary greatly in the different func-
tional areas of business.

The third area for assessment, analysis of people
factors, requires direct focus on the managers scheduled

to receive computer training. Collecting information in the assessment phase can be done through a variety of methods. One can review policies, procedures and objective statements, but the greatest amount of information can come from the managers themselves. Several techniques are effective, including face-to-face interviews, group discussions and questionnaires or surveys.

Once training needs have been assessed and instructional objectives have been established, the organization can move into the implementation phase. While this phase naturally involves conducting the training, there are two important preliminary concerns that must be addressed before actual training begins. These two concerns are:

1.   creation of a good learning environment

2.   selection of proper instructional technique

The learning environment is more than just a well lighted classroom. The ideas, materials and skills which a trainee is expected to learn must be carefully divided into modular units, which can be mastered in a sequential fashion. Each trainee must also be provided with some demonstration of the equipment and then have repeated opportunities to practice. The more that managers are allowed to practice with the hardware and the software, the more comfortable they will feel with the computer. Because no two people learn at the same rate, the learning environment must account for such differences. Feed-

back is quite an important part to the learning process.
It serves the dual function of information and motiva-
tion. Feedback need not be continual; it can be provided
at regular or random intervals.[3]

The last element to aid in creating a good learning
environment is "useability". This means that the know-
ledge gained can be directly used by the trainee in his
or her job.

The creation of a good learning environment can be
enhanced by the selection of proper instructional tech-
niques. Some instructional techniques meet more learning
principles than others. For example, computer aided
instruction (CAI) allows individual learning rates and
provides instant feedback, while the lecture method does
not. On the other hand, the lecture method can provide
a quantity of information to many people at a low cost,
while CAI requires a computer and software for each
trainee at considerable cost.

The proper approach to selecting instructional tech-
niques requires consideration of both learning principles
and training objectives. Ideally, the trainer should
first identify methods that can best satisfy the train-
ing objective, then select the method that meets the
most learning principles.

In order to achieve literacy with a specific soft-
ware package, the training should include more than a

demonstration of the package and a quick explanation of the commands. Trainees need hands-on experience, repetition and feedback. These can be achieved through a laboratory style setting or computer aided instruction.[4]

The computer aided instruction has many advantages. First the trainee can learn as much as they want to at their own rate. Secondly, the training packages are separated into modules. Another advantage is that the computer provides immediate feedback. Finally the computer is not judgemental. It does not get exasperated with incorrect answers, it does not react to slow or deliberate learning and finally, the trainee does not feel he is learning too slowly or is "less smart" than another student. As previously discussed the computer aided instruction is more expensive than traditional instruction methods. Regardless of the type of instruction utilized the type of training program should be selected for use by the unfamiliar user, as well as the computer staff.

All computer literacy training programs should have an evaluation phase that assesses the effectiveness of the training. Information obtained in this phase can be very useful in the assessment and implementation phases of the next training program. According to Ralph Catalanello and David Kirkpatrick, training program evaluations should cover four areas:[5]

1. reaction of the trainee
2. learning of the trainee
3. trainees' behavior changes on the job
4. trainees' overall performances.

Trainee reaction can be evaluated through the use of a questionnaire. Negative reactions often are most constructive. The questionnaire should include program content, structure, format, extent to which objectives were achieved and recommendations for improvement.

As the name implies, trainee learning measures what a trainee has learned. It determines whether the training objectives have been met and if the trainee is "computer literate." This information can be gathered through self-evaluation, exercises, or formalized examinations. The most effective means would be a test before and then after the training.

Behavior changes on the job are determined by whether managers apply their newly acquired computer skills to their jobs. There is no point in taking training if the knowledge stays in the classroom. Informal interviews and observations are the best means to determine this phase of the evaluation.[6]

Overall performance is the most difficult portion of the evaluation. One must determine whether changes in performance are due to application of computer skills or other factors. Interviews with the trainee, his

supervisors and his subordinates can subjectively deter-
mine whether computer skills have influenced improved
efficiency.

The administrative staff of LCIE has been designated
for training. The method selected was classroom instruc-
tion, but with individualized attention. Job relativity
and utilization will be of primary concern. After com-
pletion of training, the evaluation methods will be used
to improve the training manual and methods for future use.

ENDNOTES

[1] Robert W. Hollmann and Belva J. Cooley, "Overcoming Managerial Fears of Computers Through Planned Training, "Personnel Administrator, October 1984, pp. 25-27.

[2] Dan McElwreath, "Computer Literacy Training, "Personnel Administrator, October 1984, pp. 37-39.

[3] Ibid.

[4] Harry A. Washing and Kurt W. Boveington, "Are Data Processing Personnel Getting the Most Out of Their Training and Education?" Personnel Administrator, October 1984, pp. 55-56.

[5] Ralph F. Catalanello and David L. Kirkpatrick, "Evaluating Training Programs: The State of the Art, "Training and Development Journal, Vol. 22, May 1968, pp. 2-9.

[6] Washing, op. cit., pp. 59-60.

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CHAPTER IV

THE TRAINING MANUAL

My primary goal in this instructional manual is to provide a step by step process to accomplish the most important and most frequent computer input and output needs. My second goal, which is equal to the first in importance, is to teach the user understanding so that he or she might continue to find ways of utilizing the computer for his use as the needs of the college change. If I were to accomplish only my first goal the user would have gained only a fraction of the knowledge necessary for complete operation. It could be compared to a teacher reading a story to a student instead of teaching the student to read so that he can read not only that story, but open a door to increase knowledge.

POISE is an acronym meaning People Oriented Information Systems for Education. The company is headquartered in Roswell, New Mexico. This software company was selected for use by Lindenwood because their capabilities most closely met Lindenwood's computer needs.

Before final consideration, Lindenwood checked the restrictions and expansion capabilities of the POISE Company. One major restriction was that no one but a POISE Company respresentative could alter the program in any way. One advantage to the POISE contract was that

POISE would make any alterations that Lindenwood request-
ed for them and improve the program without charge. Be-
cause the company specializes in programs for Educational
Institutions, the program can be improved for one insti-
tution and offered to all the others in the group.

POISE is a full service program company. This means
they program for all departments, following the student
from admission through registration, business office,
graduation and finally to alumni status. A few people
think that this full program maintenance program is far
too expensive. One can only ask the school that didn't
pay for the maintenance how much money was saved when
they had to reprogram for new tax changes in their em-
ployee payroll program. This expense is quite necessary
and budgeted in with the original cost of the software.

To ensure the program was written to Lindenwood's
needs, POISE sent questionaires to key administrators.
Their input was the basis for the entire software pack-
age. Unfortunately, some administrators responsible for
this huge task made their decisions independently and are
no longer with the College. This factor has caused
Lindenwood the most problems. Without a joint input into
all phases the different departmental transitions are not
as smooth as they could be. For example, the Admissions
Office and the Registrar's profiles could be programmed
in a way that the Registrar and the Director of Admis-

sions could share information or reports. Unfortunately, each department is a little different making continuity difficult.

Since each program is a little different, this increases the need to understand the program's concept as well as the exact workings of the portion in which the individual user is responsible. This manual will concentrate on the reporting programs but will encourage understanding of the entire software package. The POISE software is totally compatable to Digital software and this allows a mixture of POISE software and the Digital software to give the user the best available features of both software packages.

To accomplish the training necessary, I have written an instruction manual to provide the new user with a basic understanding of the computer and its uses. I will use the manual to teach the LCIE staff members the computer's uses and capabilities.

The first section of instruction will entail an overview of the computer, its uses and capabilities. It will also be an orientation to the keyboard. The course will progress at a pace equal to the class' understanding. Each major section will have an exercise the student will do independently to demonstrate understanding. Each week the previous exercise will be discussed. There will be eight classes, each lasting approximately two hours.

The course is intended for both primary and secondary computer users. If the manager does not know how the computer works then he or she cannot use it effectively in management decisions. Every member of the administrative staff should attend the courses. Those who do not use the computer now may need to in the future when the training is not available.

Initially the course is being offered to the LCIE staff. In the future all staff members should have the training for better computer understanding and use.

Class IV   Qualification of the Data Base for Correct Data Reporting.

Class V   Review and Practice Utilization of the Digital Sort and Qualifying Programs.

Class VI   Introduction to the Digital Print Program.

Class VII   Using Sort, Quality and Print to Automate the LCIE Office.

Class VIII Practice, Review, and Summary.

The following is a schedule of classes:

Class I   Introduction and Orientation
           to the Computer.

Class II   Data Entry and Administrative
           Utilization of the Computer Data Base.

Class III Sorting through the Data Base for
           Best Reporting.

Class IV   Qualification of the Data Base for Correct
           Data Reporting.

Class V   Review and Practice Utilization of the
           Digital Sort and Qualifying Programs.

Class VI   Introduction to the Digital Print
           Program.

Class VII Using Sort, Quality and Print to Automate
           the LCIE Office.

Class VIII Practice, Review, and Summary.

Data Entry

Data Entry is the act of entering the information into the computer through a keyboard. This is often a very tedious but very important part of the computer's use. One cannot expect to have reports unless the data base is formed and accurate. The data base is the pool of information containing all pieces of information. If any part of the information is incorrect the data base is corrupt. An error of omission is as bad if not worse than an error of commission. What this means is, if someone does not type in the city or state because it wasn't filled out on a form; then that individual in the record cannot receive any correspondence. Also, any reports sorted geographically will be incorrect because this record has not been included.

A committed error is one that is typed incorrectly. It could be a misspelled name or the wrong code. Often this error causes incorrect reports but it is most often found during proof-reading or data base verification. Proof-reading or data verification is often overlooked by small inexperienced companies. It is primarily the end user's responsibility. The person who is relying upon the information should check each record thoroughly to insure an accurate data base.

Tricky Terms

Often people are confused only because they are not familiar with the computer vocabulary. Listed below are those most frequently misunderstood words.

1. FIELD:

    A field is a small unit used to identify individual data. An example of a field would be last name, sex, city, age, or any single data unit.

2. RECORD:

    This is a group of fields often describing one person or possibly one course of study. It can also be a vendor or a product.

3. FILE:

    A file is a group of records. It can be quite large, if it is the college's mailing list or it can be quite small, if it is the employees. The size of the file can be large if the number of fields is large or the number of records is large.

Rules of Data Entry

1.   Upper Case vs. Upper and Lower Case

You must always remember to do the entry properly.
The current printer at Lindenwood only prints upper
case letters. If the data entry was all entered in
upper case it would not cause problems today but it
would be very short-sided. If in the future, a band
for the printer was purchased allowing upper and
lower case letters to print, can you imagine what
would happen? Well, a letter would be nicely written
and typed in upper and lower case, but if all add-
resses were typed in upper case, the letter would
look very non-professional.

2.   Corrections

There are different ways to make corrections depend-
ing upon when the error was made. If it is an in-
correct entry the correction can be keyed over the
old one. If the entry must be erased and left blank
you must space once then carriage return. This
makes the space or "blank" the new entry. One very
important rule. "DO NOT USE THE BACKSPACE KEY."
This key is not for corrections. It is used in
programming.

Sorting

The sort program allows you to control the sequence
of information used in reports, labels, or lists.

To arrange the data, you must specify the data file
fields whose contents are to be the basis for sorting.

The first field you name will be the major sort field,

the next field will be the first minor sort field, the

next the third, and so on. These are called sort levels.

Samples of a data file are provided and we will work

together in sorting the file differently to achieve dif-

ferent reports.

As many as fifteen fields can be specified to be

sorted in ascending or descending order. The sort pro-

gram is invoked in the usual manner. It is displayed

below.

```
$ RUN DMS:SORT

Sort-DMS File Sorting Program

Data file name  _ _ _ _

Fields to sort (15 maximum)

Level 1 ..........

Level 2 ..........

Level 3 ..........etc.
```

Sorting on N fields specified.

Select out special records (NO)?

This program is an easy concept program, although practical application does get very involved.

If at the last question you decided to answer yes this invokes the qualify program. You have requested a selection of special records.

If you wish to select only a specific number of records you must qualify for only those records.

To accomplish this, a set of criteria which must be met for record selection, must be defined. You are allowed to identify up to twenty-six criteria. Each criteria is defined by specifying a field and the "low" and "high" contents of data in that field.

Records whose field data are within these limits are considered to meet that criterion. Then by combining the criteria (letters) with "logical operators" (such as and, or, not, etc.), you can have records meeting that criteria be selected or not selected, or various combinations. Examples of the logical operations are explained in the Appendix.

The selection statement, using the letter code (A, B, C, etc.) from each criterion, is simply a means of telling the computer which records of the file are to be selected. The selection statement can be a simple one character response or a complex combination of criteria codes and logical operators.

The selection statement can handle as many criterion as there are letters of the alphabet but not more than the criteria specified.

Qualify

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The qualification program is a continuation of the sort program and is involked when the question "Select out special records?" is answered Y (yes). An example of the program is listed below.

Criterion A

    Field? _ _ _ _

    Low? _ _ _ _

    High? _ _ _ _

Criterion B

    Field? _ _ _ _

    Low? _ _ _ _

    High? _ _ _ _

So On

Selection Statement?

Field Extraction Started

Pointer file build started

Pointers to N records constructed

Finished

$

The criterion will be explained more in class. Each section of the program is explained in detail on the following page.

<u>Selection Statement</u>

This is where you must use the logical operators with the criteria codes to select only those records desired in your report.

<u>Field Extraction started</u>

This explains to the user that the computer is currently selecting the records requested.

<u>Pointer file build started</u>

The computer is notifying the operator that the records are now being isolated.

<u>Pointers to N records constructed</u>

This tells the user how many records were selected.

The user must then invoke the print program to print out the report of records identified.

Print

Print is a general report producing program which allows you to print fields of data from a data file into columns of the report. The data to be printed and the output format are under your control.

The report created has two parts. The "header page" and the report itself. The "header page" contains a listing of: the data file name, all formatting requirements, the columns, spaces, lines per page and the number of copies requested.

At the $ sign you type the words $ run dms: print. This will invoke the program. The next question will be- "Date file name?" Simply follow the prompt one at a time. The program appears on the next page.

```
$Run DMS:Print

    PRINT   DMS REPORT GENERATION

    DATA FILE NAME? _____

    NUMBER OF SPACES BETWEEN LINES (0)? _____

    NUMBER OF SPACES BETWEEN COLUMNS (1) _____

    ENTER COLUMN COMMANDS

    x

    x

    x

    LINE LENGTH: NN

    NUMBER OF LINES PER PAGE (55)? __

    NUMBER OF LEVEL BREAKS (0)? __

    REPORT DATE (DDMMYY)

    HEADING 1

    x

    x

    x

    NUMBER OF COPIES (1)

    REPORT NAME (9 character max)? _____

    PAPER TYPE (0)


    REPORT GENERATION STARTED

    REPORT GENERATION COMPLETED

    N PAGES WRITTEN TO OUTFILESPEC.LIS;

    JOB N ENTERED ON QUEUE SYS$PRINT

    FINISHED

    $
```

Line and Spacing

The operator can format the vertical and/or horizontal spacing of the report. The ranges of spacing values are from 0 to 30 between horizontal lines, 1 to 30 between vertical columns. Zero, the default, spaces between lines indicates single spacing, 1 space indicates double spacing, etc. The default spacing between columns is 1 space.

Column entries

Normally a field identifier (name or number) is given in response to the "column entry" question. Various qualifiers may be used in conjunction with the field identifier. As each position is entered, the computer calculates the starting position of the next column by adding the previous field length and the spacing specified by the user.

Line Length

This is the absolute line length that all your columns have utilized. If your paper is 132 characters wide and you have a line length of 140 characters you have a problem.

Lines per page

The standard is 55 lines per page. This is the
proper length for an eleven inch paper type. The length
can vary if smaller or larger paper types are used.

Level Breaks

The number of level breaks range from 0 to 5, with
0 being the default. This is directly related to sorting.
If you specified sorting by state, you could invoke a
level break of 1. This would put a space between the
stopping of one state the starting of the next.

Date

The date is defaulted by the computer date memory.
If this is not desired you may type in your own date at
this prompt.

Report Heading

This is user identified. It will be centered at
the top of the report and can have a maximum of five
lines.

Number of Copies

This is self-explanatory, but it may be limited by your institution policy.

Report Name

This is the name that will go into your directory. It must be named so that you can identify the report in the future.

Paper type

This is regulated by the Data Processing Director. The default is the paper type most often loaded on the printer.

Report Generation

The rest of the prompts are informational in content. The system is telling you its status as it changes stages.

How are you going to use all this new knowledge?
Well, think how many lists, counts, and rosters are need-
ed each term or semester. Now you know how the reports
are gathered and processed. Even if you don't have the
access to all files necessary, you now have the basic
understanding to request the reports you need to increase
the efficiency of the office. Instead of writing each
and every list by hand you can request, in writing, very
clearly exactly what reports you need. Specifying the
sorting, qualifying and printing you want. Previously
the computer staff has tried to give you what they
thought you wanted, now you can request and receive ex-
actly what you need.

1	TITLE	Mr. Mrs. or Miss	A	4
2	FNAME	First Name	A	15
3	MI	Middle Initial	A	1
4	LNAME	Last Name	A	15
5	SUBT	Sub Title Jr.	A	5
6	STREET	Street Address	AN	20
7	CITY	City	A	15
8	STATE	State	A	2
9	ZIPCODE	Zip Code	N	9
10	SPOUSE	Spouse first name	A	15
11	MAJOR	Code for major (19,21,04)	N	2
12	DEGREE	BS, MBA, MS, PHD	A	3
13	GRAD	Expected Yr Graduated	N	2
14	EMPLOYER	Name of Employer	A	10
15	SSAN	SSAN	N	9
16	Bustitle	Business Title	A	10
17	Busstreet	Business Street	AN	20
18	Buscity	Business City	A	15
19	Busst	Business State	A	2
20	Buszip	Business Zip	N	9
21	Code	Special Codes	N	2
22	DOB	Date of Birth (YYMMDO)	N	6

PRACTICE FILE

NO.	NAME	DESCRIPTION	TYPE	LENGTH
1	TITLE	Mr. Mrs. or Miss	A	4
2	FNAME	First Name	A	15
3	MI	Middle Initial	A	1
4	LNAME	Last Name	A	15
5	SUBT	Sub Title Jr.	A	5
6	STREET	Street Address	AN	20
7	CITY	City	A	15
8	STATE	State	A	2
9	ZIPCODE	Zip Code	N	9
10	SPOUSE	Spouse first name	A	15
11	MAJOR	Code for major (19,21,04)	N	2
12	DEGREE	BS, MBA, MS, PHD	A	3
13	GRAD	Expected Yr Graduated	N	2
14	EMPLOYER	Name of Employer	A	10
15	SSAN	SSAN	N	9
16	Bustitle	Business Title	A	10
17	Busstreet	Business Street	AN	20
18	Buscity	Business City	A	15
19	Busst	Business State	A	2
20	Buszip	Business Zip	N	9
21	Code	Special Codes	N	2
22	DOB	Date of Birth (YYMMDD)	N	6

Using the provided Practice Programs, print your answer to the following problems as if you were typing in the answers on a terminal.

Fields to sort (15 maximum)

1. Level 1 ....

Level 2 ....

Level 3 ....etc.

Exercise 1 - Sorting

Sorting on N fields specified.

Sort the file alphabetically.

Select out special records (NO)?

```
$ RUN DMS:SORT

Sort-DMS File Sorting Program

Data file _ _ _ _


Fields to sort (15 maximum)

Level 1 ............

Level 2 ...........

Level 3 ...........etc.
```

Sorting on N fields specified.

Select out special records (NO)?

$ RUN DMS:SORT

Sort-DMS File Sorting Program

Data file _ _ _ _

.

Fields to sort (15 maximum)

Level 1 ....

Level 2 ....

Level 3 ....etc.

Exercise 2 - Sorting

Sorting on 8 fields specified.

Sort the file so that you can see all people who
have the same major by graduation date.

```
$ RUN DMS:SORT

Sort-DMS File Sorting Program

Data file _ _ _ _


Fields to sort (15 maximum)

Level 1 ............

Level 2 ............

Level 3 ............etc.
```

Exercise 3 - Sorting

```
Sorting on N fields specified.
```

Sort all the files by employer. What problems do

```
Select out special records (NO)?
```

$ RUN DMS.SORT

Sort-DMS File Sorting Program

Data file _ _ _ _

Fields to sort (15 maximum)

Level 1 ....

Level 2 ....

Level 3 ....etc.

Exercise 3 - Sorting

Sorting on N fields specified.

Sort all the files by employer. What problems do
you think could happen?

```
$ RUN DMS:SORT

Sort-DMS File Sorting Program

Data file _ _ _ _


Fields to sort (15 maximum)

Level 1 ............

Level 2 ............

Level 3 ............etc.
```

Sorting on N̲ fields specified.

Select out special records (NO)?

```
$ RUN DMS:SORT

Sort-DMS File Sorting Program

Data file _ _ _ _


Fields to sort (15 maximum)

Level 1 ...............

Level 2 ..............

Level 3 .............etc.
```

Exercise 4 - Sorting

Sorting on N fields specified.

Sort the file for a bulk mailing, to the work
address. ut special records (NO)?

```
$ RUN DMS:SORT

Sort-DMS File Sorting Program

Data file _ _ _ _


Fields to sort (15 maximum)

Level 1 ............

Level 2 ............

Level 3 ............etc.
```

Exercise 5 - Sorting

Sorting on <u>N</u> fields specified.

The Dean wants a list of all the people who are in

Select out special records (NO)?

$ RUN DMS SORT

Sort-DMS File Sorting Program

Data file _ _ _ _

Fields to sort (15 maximum)

Level 1 ....

Level 2 ....

Level 3 ....etc.

Exercise 5 - Sorting

Sorting on N fields specified.

The Dean wants a list of all the people who are in each code alphabetically.

48

```
$ RUN DMS:SORT

Sort-DMS File Sorting Program

Data file _ _ _ _


Fields to sort (15 maximum)

Level 1 ............

Level 2 ............

Level 3 ............etc.
```

Sorting on N fields specified.

Select out special records (NO)?

Criterion A

    Field? _ _ _ _

    Low? _ _ _ _

    High? _ _ _ _

Criterion B

    Field? _ _ _ _

    Low? _ _ _ _

Exercise 6 - Qualifying

Qualify for the records of a group of students who graduated from 1971 to 1978, with an employer in Missouri.

Selection Statement?

Field Extraction Started

Pointer file Build started

Pointers to $\underline{N}$ records constructed

Finished

$

Criterion A

    Field? _ _ _ _

    Low? _ _ _ _

    High? _ _ _ _

Criterion B

    Field? _ _ _ _

    Low? _ _ _ _

    High? _ _ _ _

So On

Selection Statement?

Field Extraction Started

Pointer file Build started

Pointers to N records constructed

Finished

$

51

Criterion A

    Field? _ _ _ _

    Low?   _ _ _ _

    High?   _ _ _ _

Criterion B

    Field? _ _ _ _

    Low?   _ _ _ _

Exercise 7 - Qualifying

So Do Qualify for students with a Masters Degree for whom
we currently do not have an employer's address.

Selection Statement?

Field Extraction Started

Pointer file build started

Pointers to N records constructed

Finished

$

Criterion A

    Field? _ _ _ _

    Low?   _ _ _ _

    High? _ _ _ _

Criterion B

    Field? _ _ _ _

    Low?   _ _ _ _

    High? _ _ _ _

So On

Selection Statement?

Field Extraction Started

Pointer file build started

Pointers to $\underline{N}$ records constructed

Finished

$

Criterion A

Field? _ _ _ _

Low? _ _ _

High? _ _ _ _

Criterion B

Field? _ _ _ _

Low? _ _ _ _

Exercise 8 - Qualifying

Qualify for the students who have not yet graduated
and are currently employed by McDonnell Douglas Elec-
tronics.

Field Extraction Started

Pointer file build started

Pointers to N records constructed

Finished

Criterion A

    Field? _ _ _ _

    Low?   _ _ _ _

    High? _ _ _ _

Criterion B

    Field? _ _ _ _

    Low?   _ _ _ _

    High? _ _ _ _

So On

Selection Statement?

Field Extraction Started

Pointer file build started

Pointers to N records constructed

Finished

$

Criterion A

    Field? _ _ _ _

    Low?   _ _ _ _

    High?   _ _ _ _

Criterion B

    Field? _ _ _ _

    Low?   _ _ _ _

    High?

So On

Selection Statement?

Field Extraction Started

Pointer file build started

Pointers to N̲ records constructed

Finished

$

Criterion A

Field? _ _ _ _

Low? _ _ _ _

High? _ _ _ _

Criterion B

Field? _ _ _ _

Low? _ _ _ _

Exercise 9 - Qualifying

Qualify for the Lindenwood area people to get a mailing.

Selection Statement?

Field Extraction Started

Pointer file build started

Pointers to N records constructed

Finished

$

Criterion A

    Field? _ _ _ _

    Low?   _ _ _ _

    High? _ _ _ _

Criterion B

    Field? _ _ _ _

    Low?   _ _ _ _

    High? _ _ _ _

So On

Selection Statement?

Field Extraction Started

Pointer file build started

Pointers to N records constructed

Finished

$

Criterion A

     Field? _ _ _ _

     Low? _ _ _ _

     High? _ _ _ _

Criterion B

     Field? _ _ _ _

     Low? _ _ _ _

Exercise 10 - Qualifying

Tell me how many records are there with an MBA degree and undergraduate BS degree students.

Selection Statement?

Field Extraction Started

Pointer file build started

Pointers on 6 records constructed

Finished

6

Criterion A

    Field? _ _ _ _

    Low? _ _ _ _

    High? _ _ _ _

Criterion B

    Field? _ _ _ _

    Low? _ _ _ _

    High? _ _ _ _

So On

Selection Statement?

Field Extraction Started

Pointer file build started

Pointers to N̲ records constructed

Finished

$

$Run OMS.PRINT

PRINT OMS REPORT GENERATION

DATA FILE NAME? _____.

NUMBER OF SPACES BETWEEN LINES (0)? _____

NUMBER OF SPACES BETWEEN COLUMNS (1) _____

ENTER COLUMN COMMANDS

R

%

Exercise 11 - Print

LINE LENGTH: NN

NUMBER   All the records have been sorted by zip code.   Print
labels to the person's home address.

REPORT DATE (DDMMYY)

HEADING 1

/

%

%

NUMBER OF COPIES (1)

REPORT NAME (9 character max)? _____

PAPER TYPE (0)

REPORT GENERATION STARTED

REPORT GENERATION COMPLETED

N PAGES WRITTEN TO OUTFILESPEC.LIS.

JOB N ENTERED ON QUEUE SYS$PRINT

FINISHED

$

```
$Run DMS:Print

PRINT   DMS REPORT GENERATION

DATA FILE NAME?   _____

NUMBER OF SPACES BETWEEN LINES (0)?   _____

NUMBER OF SPACES BETWEEN COLUMNS (1)   _____

ENTER COLUMN COMMANDS

x

x

x

LINE LENGTH:   NN

NUMBER OF LINES PER PAGE (55)?   ___

NUMBER OF LEVEL BREAKS (0)?   ___

REPORT DATE (DDMMYY)

HEADING 1

x

x

x

NUMBER OF COPIES (1)

REPORT NAME (9 character max)?   _____

PAPER TYPE (0)


REPORT GENERATION STARTED

REPORT GENERATION COMPLETED

N PAGES WRITTEN TO OUTFILESPEC.LIS;

JOB N ENTERED ON QUEUE SYS$PRINT

FINISHED

$
```

$Run DMS:Print

PRINT   DMS REPORT GENERATION

DATA FILE NAME? _____

NUMBER OF SPACES BETWEEN LINES (5)? _____

NUMBER OF SPACES BETWEEN COLUMNS (1) _____

ENTER COLUMN COMMANDS

=

X

Exercise 12 - Print

LINE LENGTH: NN

Print a report showing all the data except addresses.

NUMBER OF LEVEL BREAKS (0)? ____

REPORT DATE (DDMMYY)

HEADING 1

=

=

=

NUMBER OF COPIES (1)

REPORT NAME (9 character max)? _____

PAPER TYPE (0)

REPORT GENERATION STARTED

REPORT GENERATION COMPLETED

N PAGES WRITTEN TO OUTFILESPEC.LIS;

JOB N ENTERED ON QUEUE SYS$PRINT

FINISHED

$

```
$Run DMS:Print

PRINT   DMS REPORT GENERATION

DATA FILE NAME?  _____

NUMBER OF SPACES BETWEEN LINES (0)?  _____

NUMBER OF SPACES BETWEEN COLUMNS (1)  _____

ENTER COLUMN COMMANDS

x

x

x

LINE LENGTH:   NN

NUMBER OF LINES PER PAGE (55)?  ____

NUMBER OF LEVEL BREAKS (0)?  ____

REPORT DATE (DDMMYY)

HEADING 1

x

x

x

NUMBER OF COPIES (1)

REPORT NAME (9 character max)?  _____

PAPER TYPE (0)


REPORT GENERATION STARTED

REPORT GENERATION COMPLETED

N PAGES WRITTEN TO OUTFILESPEC.LIS;

JOB N ENTERED ON QUEUE SYS$PRINT

FINISHED

$
```

$Run DMS1PRINT

PRINT DMS REPORT GENERATION

DATA FILE NAME? _____

NUMBER OF SPACES BETWEEN LINES (2)? _____

NUMBER OF SPACES BETWEEN COLUMNS (1) _____

ENTER COLUMN COMMANDS

*

*

Exercise 13 - Print

LINE LENGTH: NN

    Print a list of students and their major. The
records have already been sorted by major. Separate the
majors by two blank lines.

HEADING 1

*

*

*

NUMBER OF COPIES (1)

REPORT NAME (9 character max)? _____

PAPER TYPE (0)

REPORT GENERATION STARTED

REPORT GENERATION COMPLETED

N PAGES WRITTEN TO OUTFILESPEC.LIS;

JOB N ENTERED ON QUEUE SYS$PRINT

FINISHED

$

```
$Run DMS:Print

PRINT   DMS REPORT GENERATION

DATA FILE NAME?   _____

NUMBER OF SPACES BETWEEN LINES (0)?   _____

NUMBER OF SPACES BETWEEN COLUMNS (1)   _____

ENTER COLUMN COMMANDS

x

x

x

LINE LENGTH:   NN

NUMBER OF LINES PER PAGE (55)?   _____

NUMBER OF LEVEL BREAKS (0)?   ____

REPORT DATE (DDMMYY)

HEADING 1

x

x

x

NUMBER OF COPIES (1)

REPORT NAME (9 character max)?   _____

PAPER TYPE (0)


REPORT GENERATION STARTED

REPORT GENERATION COMPLETED

N PAGES WRITTEN TO OUTFILESPEC.LIS;

JOB N ENTERED ON QUEUE SYS$PRINT

FINISHED

$
```

$Run DMS:Print

PRINT DMS REPORT GENERATION

DATA FILE NAME? _____

NUMBER OF SPACES BETWEEN LINES (0) _____

NUMBER OF SPACES BETWEEN COLUMNS (1) _____

ENTER COLUMN COMMANDS

*

*

Exercise 14 - Print

LINE LENGTH: NN

NUMBER   Give a report for administrative use with all the
students listed and their social security number. Should
the file have been sorted by SSN or name? Explain.

HEADING 1

*

*

*

NUMBER OF COPIES (1)

REPORT NAME (9 character max)? _____

PAPER TYPE (0)

REPORT GENERATION STARTED

REPORT GENERATION COMPLETED

N PAGES WRITTEN TO OUTFILESPEC.LIS;

JOB N ENTERED ON QUEUE SYS$PRINT

FINISHED

$

```
$Run DMS:Print

PRINT  DMS REPORT GENERATION

DATA FILE NAME?  _____

NUMBER OF SPACES BETWEEN LINES (0)?  _____

NUMBER OF SPACES BETWEEN COLUMNS (1)  _____

ENTER COLUMN COMMANDS

X

X

X

LINE LENGTH:  NN

NUMBER OF LINES PER PAGE (55)?  _____

NUMBER OF LEVEL BREAKS (0)?  ____

REPORT DATE (DDMMYY)

HEADING 1

X

X

X

NUMBER OF COPIES (1)

REPORT NAME (9 character max)?  _____

PAPER TYPE (0)


REPORT GENERATION STARTED

REPORT GENERATION COMPLETED

N PAGES WRITTEN TO OUTFILESPEC.LIS;

JOB N ENTERED ON QUEUE SYS$PRINT

FINISHED

$
```

AND - Using a sample selection of A and B, and is the logical product of A and B. The statement is true only if A and B are true. The statement is false if either A or B is false.

EQV - In a selection statement worded A EQV B, A is logically equivalent to B. The statement is true only

Exercise 15 - Print

if ... are both true or are both false. The statement is false otherwise.

Using exercise 2 print a report and tell how it could be used.

... is false only if A is true and B is false. The statement is true in all other cases. The statement of B IMP A is false only if B is true and A is false. The order of the criteria in the statement is of primary importance.

NAND - This is the negative of and. Occurs only if any of the criteria is not true.

NOR - This is the negative or or. Selection occurs only if all of the criteria are not true.

APPENDIX

AND - Using a sample selection of A and B, and is the
logical product of A and B. The statement is true
only if A and B are true. The statement is false
if either A or B is false.

EQV - In a selection statement worded A EQV B, A is logic-
ally equivalent to B. The statement is true only
if A and B are both true or are both false. The
statement is false otherwise.

IMP - A IMP B is false only if A is true and B is false.
The statement is true in all other cases. The
statement of B IMP A is false only if B is true
and A is false. The order of the criteria in the
statement is of primary importance.

NAND- This is the negative of and. Occurs only if any
of the criteria is not true.

NOR - This is the negative or or. Selection occurs only
if all of the criteria are not true.

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NOT - This is a logical negative of the criterion it
     precedes. If a selection statement reads, not A,
     the statement is true only if A is false. The
     statement is false if A is true.

OR - If A statement reads A or B, it is true if either
      A or B is true, or if both are true. The statement
      is false only if A and B are false.

XOR - This is a logical exclusive or. A XOR B is true if
      either A or B (but not both) is true, and is false
      otherwise.

The last two logical arguements are used with multiple
field list.

Spaces are significant. There <u>must</u> be a space before
and after a logical operator.

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