A PROTOTYPE DATA BASE FOR COMPUTER SCIENCE GRADUATE ADMISSIONS

by

ALFONSO C. REBONG JR.

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A MASTER'S REPORT

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MASTER OF SCIENCE

Department of Computer Science

KANSAS STATE UNIVERSITY
Manhattan, Kansas

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Approved by:

[Signature]
Major Professor
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CHAPTER I

INTRODUCTION

1.1 BACKGROUND

This report describes the automation of file handling for graduate admissions to the Computer Science Department. At present the graduate admission system is done manually. A master card is filled out with information from the credentials submitted by the student. The student master cards are kept in four different files:

a. Pending File - if applicant lacks some of the required papers.

b. Accepted File - if applicant meets all the requirements for admission.

c. Rejected File - if applicant fails to meet some of the requirements.

d. Graduated File - once the student is done with his program.

Student master cards are kept in card boxes and their credentials are stored in filing cabinets. Figure 1.1 shows a sample student master card. The information on the left side of the card pertains mostly to student credentials.
NAME (Last)  Rebong  -  Alfonso, Jr.
ADDRESS  1700 N. Manhattan #23
          Manhattan, KS  66502

LOCATION  -  KSU  KC  LEAV  NCR
LEVEL  -  MS  PhD  Special
STARTING  -  FALL  SP  SU  1978
STATUS  -  Missing letter sent 7-15-78
          To Committee  7-30-78
          To Xerox
          To Grad. Sch.  8-3-78
          Status letter  8-3-78

TOEFL  550  (Y)  HEALTH  YES  (Y)
$  (6,500)  YES  (Y)

RECOMMENDATIONS  Dlay  5-10-78  (X)
                Eurtaguo  5-13-78  (X)
                Reyes  5-10-78  (X)

GPA  BS/EI.E.  3.0
GRE  477, 607, 538

DATE RECEIVED  6-11-78
EXPERIENCE  420, 405, 560

STUDENT MASTER CARD

FIGURE 1.1
The data on the right side deal with application status, committee recommendation, etc. These information are described in detail in Section 2.2.

1.2 OBJECTIVE

To gain practical knowledge in the use of interactive data base system, a study regarding the automation of file handling for graduate admissions to the Computer Science Department was conducted.

It is expected that the knowledge and experience gained from this study will be beneficial for the author's work in the development of different interactive data base systems for the Philippines Ministry of Agriculture.
1.3 Overview

This report shows the design and implementation of a prototype data base management system. Information from the data base may be used by the faculty committee members to keep track of student status and by the department secretary to answer queries about students.

The automated data base system is implemented as an interactive system using low cost software and hardware currently available at the Computer Science Department. The SCAMP data base management system (DBMS) on Interdata 8/32 running under the MTM 8/32 operating system was selected to implement the prototype data base system.

SCAMP is an acronym for "System for Command Accounting and Monitoring of Projects". It is a DBMS designed to provide users with timely and easy access to accurate information. SCAMP comes from the Manpower and Administration Systems Directorate (code 42) of the Navy Regional Data Automation Center, Washington, DC. It was made available at the Computer Science Department free of charge.

SCAMP was chosen to implement the prototype data base design in this report because it is currently available in the Computer Science Department. Another reason for the selection of SCAMP was it is a real DBMS which can support multiple data bases with several desirable capabilities. The following accolades are excerpted from the SCAMP manual:
a. All data entry and maintenance is performed with a uniform methodology, featuring easy-to-use formatted screens.

b. A powerful query language features cross-data-set queries, and can be used in conjunction with a variety of the SCAMP commands.

c. Data bases can be designed to reflect hierarchical, network, and other structures using a unique "common-key" technology.

d. Authorization is provided at the command, data base, data set, and data item levels, with separate authority possible for list, update, and delete functions.

e. Deletion features a review option.
1.4 Results/Discussion

Facts:

a. A prototype data base for graduate admissions to the Computer Science Department was implemented using the SCAMP software. The prototype consists of records for fifteen students, which is sufficient to illustrate the different access and reporting features. The data base is composed of sixty entries. Four entries are allotted to each student, i.e. one master and three dependent records. The total information stored for each student master card consists of 440 bytes.

b. The data base resides on four different disk files. The blocksize for each of the files is 256 bytes. The number of blocks in the file and the number of records in the block are determined by the size and number of records in the data set. Figure 1.2A shows the names of the files with corresponding block sizes and number of records. The contents of the files are:

   MASALF.DIR - contains the directory for the student master records.

   MASALF.REC - contains the student master records.

   DEPALF.DIR - contains the directory for the dependent records.

   DEPALF.REC - contains records for dependent data
sets.

Figure 1.2B shows a comparison table for the number of blocks allocated for MASALF.DIR and MASALF.REC disk files. Column 1 shows the initial block allocation. Column 3 depicts the number of blocks allocated as the first five students are added. Column 4 and 5 shows the number of blocks contained in the files as the number of students are doubled and tripled. The number of blocks allocated for MASALF.DIR in figure 1.2B is six blocks less than the number of blocks allotted to the same file in figure 1.2A. The six blocks difference between the two figures is due to the tables and pointers provided by SCAMP to MASALF.DIR to link the master data set to the dependent data sets stored in DEPALF.DIR and DEPALF.REC files.

The number of blocks allotted for the directory file is greater than that for the record file because of the following:

1. The directory file is an inverted list which contain pointers and tables for each of the data items.

2. The data in the record file is replicated to the directory file.

3. When a directory block is filled up and more information are to be stored, the second half content of that block is duplicated to the first half of the next block. This technique improves the access time
but results in poor disk memory utilization.

Figure 1.2C shows an access time comparison chart for five, ten and fifteen students respectively. The command:

\[
\text{IF SMCLASS \text{"REJECTED"}}
\]

\[
\text{LIST SMNAME}
\]

was used to measure the three access times. Since SCAMP data structure is configured on lists and pointers, searching for a particular record is done at random. The difference in access time for the three data base sizes as shown in the figure is negligible. If the data base is to be expanded to contain one hundred students, there would be a noticeable increase in access time, but their difference is to the minimal. For other commands, like SET, LIST, BASE, etc., which do not require searching before printing the output, the response time is three seconds. The access times in this report were measured by a stopwatch when the graduate admission data base was the only job on the machine.

c. The SCAMP software that supports the data base is composed of several components. Figure 1.3 lists the components with corresponding sizes. The following describes the components:

 SCAMP.LIB - a collection of routines that all tasks may need to access.
 TSKCOM.TCM - an area which tasks can use to
communicate with each other.

SCAMP.TSK - the task that controls the terminals and determines which task to load, P01 or P02.

SCBDL.TSK - the actual data base task.

P01 and P02 are the tasks loaded for up to two concurrent processes. Their sizes vary up to 15 k, depending on which task is loaded from the library to either P01 or P02.
<table>
<thead>
<tr>
<th>FILENAME</th>
<th>BLOCKSIZE</th>
<th>NO. OF BLOCKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASALF.DIR</td>
<td>256</td>
<td>14</td>
</tr>
<tr>
<td>MASALF.REC</td>
<td>256</td>
<td>4</td>
</tr>
<tr>
<td>DEPALF.DIR</td>
<td>256</td>
<td>62</td>
</tr>
<tr>
<td>DEPALF.REC</td>
<td>256</td>
<td>19</td>
</tr>
</tbody>
</table>

TOTAL NO. OF BLOCKS 99

FILESIZE = 99 x 256 = 25,344 BYTES

FIGURE 1.2A
THIS BOOK CONTAINS NUMEROUS PAGES WITH DIAGRAMS THAT ARE CROOKED COMPARED TO THE REST OF THE INFORMATION ON THE PAGE. THIS IS AS RECEIVED FROM CUSTOMER.
### NO. OF STUDENT MASTER

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>5</th>
<th>10</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>MASALF.DIR</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>MASALF.REC</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Figure 1.2B**

### NO. OF STUDENT MASTER

<table>
<thead>
<tr>
<th>ACCESS TIME</th>
<th>5</th>
<th>10</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 sec</td>
<td>6 sec</td>
<td>6 sec</td>
<td>6 sec</td>
</tr>
</tbody>
</table>

**Figure 1.2C**
<table>
<thead>
<tr>
<th>Module Name</th>
<th>Module Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCAMP.LIB</td>
<td>3.0 K</td>
</tr>
<tr>
<td>TSKCOM.TCM</td>
<td>15.25 K</td>
</tr>
<tr>
<td>SCAMP.TSK</td>
<td>4.5 K</td>
</tr>
<tr>
<td>SCBDL.TSK</td>
<td>41.0 K</td>
</tr>
<tr>
<td>P@1</td>
<td>15 K</td>
</tr>
<tr>
<td>P@2</td>
<td>15 K</td>
</tr>
</tbody>
</table>

SIZE OF SCAMP = 93.75 K

Figure 1.3
The dbgenfile or schema involves the structuring and formatting of the data, i.e. determining the number of data sets in the data base, at what files the data set will reside and identifying the items in the data sets among other things.

Building the dbgenfile is time consuming and difficult. It involves thorough and careful analysis of the problem. In the schema lies the efficiency, integrity and reliability of the data base. Constructing the schema is usually done by an experienced programmer or analyst. The user needs not concern about its development.

Once the dbgenfile is created, entering and maintaining the data are easy and simple using the SCAMP formatted screens. The data base was designed to reflect a hierarchical structure using the master and dependent data sets concept. Cross data set queries are used to access data and generate reports.

SCAMP implementation at the Computer Science Department is fine and easy to use. The user would find satisfaction working with it, except for the following:

a. The system is not robust when executing a command under the format mode. Command termination involves hitting too many "keys". Sometimes the procedure to terminate a command would not work and SCAMP has to be restarted.

b. There is no move command. To transfer a record requires that the record be deleted from a data set
and be added to another data set. These are both time consuming and error prone.

c. The records in the data set are sorted by the primary key. To sort the records by any other fields, an algorithm has to be developed.

d. There is no flexible way of producing appropriate headings to describe reports.

1.5 Organization

The first chapter is a summary of what this report is all about. The chapter presents the following:

a. overview of existing procedures for graduate admissions to the Computer Science Department.

b. Purpose of the report.

c. Brief discussion of the prototype data base system and the SCAMP software used to implement the automated system.

d. Results of the implementation and comments about the automated system.

The second chapter describes the organization of the data base. Two types of design are analysed and contrasted to implement the automated system. This chapter is intended for the analyst who is interested in setting up data bases.

Chapter III is a user's guide to generate reports currently needed for graduate admissions. It is also a
guide to enter and maintain the data.

Appendix A presents in detail the SCAMP commands. This appendix will aid the user in issuing the command and help him respond to the messages displayed on the console. Also, it will help the user produce special reports.

Appendix B identifies the commands that set up the dbgenfile. The prototype data base schema listing is also presented.

Appendix C shows sample reports generated by issuing the SCAMP commands presented at the user's guide.

1.6 Extensions

The performance of the system may be enhanced and the drawbacks cited in Section 1.4 could be offset by working on several areas. If time is not a factor, the following chores are suggested:

a. Write a macro to directly transfer a record or records from one data set to another.

b. Write another macro to produce appropriate headings to describe reports.

c. Write a macro to sort the records by any items or fields.

d. Modify SCAMP implementation such that command termination under the format mode will be done by hitting one or two "keys".
CHAPTER II

The Data Base Design

2.1 Schema Definition

A schema is a description of all the data sets and the relationships between them which make up the data base. A data set is composed of record occurrences. One or more data items comprise a record. A field is a data item or a group of related data items. A data item is the smallest named logical unit in the data base.

In designing data bases to run under SCAMP, data items are grouped into master and dependent data sets. A master data set is an independent data set which can have one or more dependent data sets connected to it. A dependent data set must contain the master data set key as one of its elementary items to provide linkage with the master data set.

2.2 Design Consideration

Two types of data base design, Design A and Design B, were considered in designing the data base schema for graduate admissions to the Computer Science Department. Design A is illustrated in Figure 2.1 and Design B is depicted in Figure 2.2. Design A was implemented, therefore
it is described in detailed. Design B is shown for comparison only. Both Design A and Design B have similar data sets grouping and the same data items content. There is only one structural difference which is discussed in subsections 2.2.1 and 2.2.2.
DESIGN A

FIGURE 2.1
DESIGN B

FIGURE 2.2
2.2.1 Design A Description.

Data items in design A are grouped into one master (student) and three dependent (credentials, status and active) data sets. Figure 2.3 presents the grouping of data items into one master and three dependent data sets. The first column identifies the data sets and the items that belong to them. The second column determines whether the field is numeric, alphabetic or alphanumerical. The third column shows the size of the field. The fourth column gives a sample entry and the last columns describes the data items.

The student master contains the Skey, Sano, Name and Clas items. Skey is the student master data set key. It contains the first three letters of the student's last name and the last four numbers of his social security number. Since records in the data set are sorted by primary key, student master are arranged by last name. Item Sano is the student social security number. The item name contains the name of the student. The Clas item classifies whether the student is applicant, accepted, rejected or graduated.

The Credentials data set has the data set key as the first item and the master data set key as the second. The rest of the items contain the credentials of the student such as the date of transcript, name of school, GPA, GRE, etc. Figure 2.3 describes all the items in the data set.
FIGURE 2.3
(Page 1 of 3)

The following shows the data sets for graduate admissions database and describes the data items within the data sets.

<table>
<thead>
<tr>
<th>FIELD</th>
<th>DESC</th>
<th>N OF</th>
<th>EXAMPLE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>SKEY</td>
<td>N</td>
<td>7</td>
<td>REB2654</td>
<td>MASTER DATA SET KEY</td>
</tr>
<tr>
<td>SSNO</td>
<td>N</td>
<td>9</td>
<td>987652654</td>
<td>SOCIAL SECURITY NUMBER</td>
</tr>
<tr>
<td>NAME</td>
<td>A</td>
<td>30</td>
<td>ALFONSO C REBONG JR</td>
<td>NAME OF STUDENT</td>
</tr>
<tr>
<td>CLAS</td>
<td>A</td>
<td>9</td>
<td>APPLICANT ENROLLED</td>
<td>STUDENT CLASSIFICATION</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>GRADUATED</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>REJECTED</td>
<td></td>
</tr>
</tbody>
</table>
### CREDENTIALS DATA SET

<table>
<thead>
<tr>
<th>FIELD</th>
<th>DESC</th>
<th>N OF</th>
<th>EXAMPLE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRKY</td>
<td>N</td>
<td>6</td>
<td>111111</td>
<td>DATA SET KEY GENERATED BY SCAMP</td>
</tr>
<tr>
<td>SKEY</td>
<td>N</td>
<td>7</td>
<td>REB2654</td>
<td>LINK TO MASTER DATA SET</td>
</tr>
<tr>
<td>DATE</td>
<td>N</td>
<td>6</td>
<td>022630</td>
<td>DATE CREDENTIAL WAS RECEIVED</td>
</tr>
<tr>
<td>ADR1</td>
<td>AN</td>
<td>20</td>
<td>1750 26TH AVE</td>
<td>HOME</td>
</tr>
<tr>
<td>ADR2</td>
<td>AN</td>
<td>20</td>
<td>OAKLAND CALIF 94601</td>
<td>ADDRESS</td>
</tr>
<tr>
<td>PHON</td>
<td>N</td>
<td>10</td>
<td>4152617726</td>
<td>HOME PHONE</td>
</tr>
</tbody>
</table>

* 4 X 3 TRANSCRIPT ARRAY

| DAT1   | N     | 6    | 102779  | DATE DEGREE WAS GIVEN |
| SCH1   | A     | 12   | IN ST UNIV | SCHOOL |
| DEG1   | A     | 3    | COS, AGR | DEGREE |
| GPA1   | N     | 4    | 3.25    | GRADE POINT AVERAGE |
| DAT2   | N     | 6    | 081378  | SECOND |
| SCH2   | A     | 12   | KS ST UNIV | TRANSCRIPT |
| DEG2   | A     | 3    | AGE     | INFORMATION |
| GPA2   | N     | 4    | 3.55    | |
| DAT3   | N     | 6    | 102779  | THIRD |
| SCH3   | A     | 12   | | TRANSCRIPT |
| DEG3   | A     | 4    | | INFORMATION |
| GPA3   | N     | 4    | | |

* 2 X 3 PERSONNAL RECOMMENDATION ARRAY

| DET1   | N     | 6    | 071279  | RECOMMENDATION DATE |
| NEM1   | A     | 12   | JOE BLOW | NAME OF RECOMMENDING PERSON |
| DET2   | N     | 6    | 071279  | SECOND PERSONAL |
| NEM2   | A     | 12   | | RECOMMENDATION |
| DET3   | N     | 6    | 071279  | THIRD PERSONAL |
| NEM3   | A     | 12   | | RECOMMENDATION |

* 1 X 3 GRADUATE REVIEW EXAM ARRAY

| GRE1   | N     | 3    | 477    | VERBAL |
| GRE2   | N     | 3    | 667    | QUANTITATIVE |
| GRE3   | N     | 3    | 538    | ANALYTIC |

* TOEFL | 3 | 550 (OR NULL) | TOEFL |
<p>| FINA   | A     | 1    | Y OR N | FINANCIAL SUPPORT |
| COMT   | A     | 20   | FRIEND OF FISHER | COMMENTS |</p>
<table>
<thead>
<tr>
<th>FIELD</th>
<th>DESC</th>
<th>N OF</th>
<th>EXAMPLE</th>
<th>CHAR</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>STKY</td>
<td>N</td>
<td>6</td>
<td>222222</td>
<td></td>
<td>DATA SET KEY</td>
</tr>
<tr>
<td>SKEY</td>
<td>N</td>
<td>7</td>
<td>REB2654</td>
<td></td>
<td>GENERATED BY SCAMP</td>
</tr>
<tr>
<td>AREA</td>
<td>A</td>
<td>3</td>
<td>KSU NCR KC LEV</td>
<td></td>
<td>LINK TO MASTER</td>
</tr>
<tr>
<td>DATE</td>
<td>N</td>
<td>6</td>
<td>101280</td>
<td></td>
<td>DATA SET</td>
</tr>
<tr>
<td>RECO</td>
<td>A</td>
<td>4</td>
<td>RJCT PRVS</td>
<td></td>
<td>LOCATION OF STUDY</td>
</tr>
<tr>
<td>SUPT</td>
<td>A</td>
<td>15</td>
<td>0.4/$300 PER MONTH</td>
<td></td>
<td>COMMITTEE</td>
</tr>
<tr>
<td>PROV</td>
<td>A</td>
<td>25</td>
<td>305 405 420 560</td>
<td></td>
<td>RECOMMENDATION</td>
</tr>
<tr>
<td>LTR</td>
<td>AN</td>
<td>10</td>
<td></td>
<td></td>
<td>FINANCIAL SUPPORT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PROVISIONAL</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>DEFICIENCY COURSES</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LETTER SENT</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>DATE &amp; COMMENTS</td>
</tr>
</tbody>
</table>

### ACTIVE DATA SET

<table>
<thead>
<tr>
<th>ACKY</th>
<th>N</th>
<th>6</th>
<th>333333</th>
<th></th>
<th>DATA SET KEY</th>
</tr>
</thead>
<tbody>
<tr>
<td>SKEY</td>
<td>N</td>
<td>7</td>
<td>REB2654</td>
<td></td>
<td>GENERATED BY SCAMP</td>
</tr>
<tr>
<td>DATE</td>
<td>AN</td>
<td>4</td>
<td>SP80, F79</td>
<td></td>
<td>LINK TO MASTER</td>
</tr>
<tr>
<td>ADR1</td>
<td>AN</td>
<td>20</td>
<td>1700 N MANHATTAN 23</td>
<td></td>
<td>DATA SET</td>
</tr>
<tr>
<td>ADR2</td>
<td>AN</td>
<td>20</td>
<td>MANHATTAN KS 66502</td>
<td></td>
<td>DATE STUDENT ARRIVE</td>
</tr>
<tr>
<td>PHON</td>
<td>N</td>
<td>10</td>
<td>9135372593</td>
<td></td>
<td>ADDRESS</td>
</tr>
<tr>
<td>ADVR</td>
<td>A</td>
<td>3</td>
<td>PSF</td>
<td></td>
<td>CAMPUS PHONE</td>
</tr>
<tr>
<td>MSEX</td>
<td>AN</td>
<td>7</td>
<td>10/79X</td>
<td></td>
<td>ADVISER</td>
</tr>
<tr>
<td>GRAD</td>
<td>AN</td>
<td>4</td>
<td>SP80</td>
<td></td>
<td>MASTER EXAM</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>EXPECTED GRADUATION</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Status data set contains the data set key and the student master key as the first and second items respectively. The rest of the items describe the status of the applicant. The applicant could be accepted as provisional or regular student. Also included in the data set are the location and level of study, the financial support among other things.

The first and second items of the Active data set are the data set key and the student master key. The other items identifies the student activities while in campus. His date of arrival, campus address and phone, adviser, master exam date and expected graduation are the information contained in the data set.

When the student is classified as applicant, only the Credentials and Status records are connected to the Student record. By the time, he is classified as accepted, the Credentials record is deleted and a new Active record is connected to the master record.

2.2.2 Design B Description

The second data structure is similar to the first one except that the student records are contained into two related master data sets. The data sets are Student-1 and Student-2. When the student was first classified as applicant, the student record are contained in Student-1 data set with the Credentials and Status records connected
to it. Once the student is enrolled, the student record is transferred from Student-1 to Student-2 data set. The Credentials and Status records are deleted from Student-1 master. The Status and a new Active records are connected to Student-2 master.

2.2.3 Comparison of Designs

The second network design is more efficient than the first, because the student records are grouped into two master data sets. Once the grouping for a particular record is known, it is faster for some SCAMP commands to search for the records, e.g.

IF SMCLAS = "APPLICANT"
VIA STUDENT-1 LIST SMNAME

In this example, only the Student-1 data set are to be searched to satisfy the query. The setback of the second network is there is no SCAMP command to directly move a record from one data set to another. To delete a record from a data set and add that record to another data set is time consuming and error prone.

Since the graduate admission to the Computer Science Department automated system will be dealing with small data base (300 students at the most) the advantage of the second network is not significant.

The first network design was chosen for implementation because it is simple in design, easy to maintain, and the
new automated system will be dealing with small data base. However for large data bases where SCAMP would have to search on a large number of records to satisfy a command, the second approach would be more desirable.
CHAPTER III

TYPE OF OPERATION

The following is a user's guide to maintain the database and generate reports for graduate admissions to the Computer Science Department. Appendix A is a good reference when responding to the messages produced by the SCAMP commands.

3.1 User Sign On

Once the terminal is on-line the following message appears on the screen:

SPECIFY TERMINAL TYPE

1 = SUPERBEE
2 = DATASPEED 40/2
3 = ZENTEC

The user enters number 3 and hit the RETURN key, the following message appears on the screen:

* SCAMP
* ENTER SCAMP ACCOUNT CODE

The user keys in an account code, which is checked
against the list of valid account codes known to the system. If a match is made, the following message appears on the screen:

* ENTER PASSWORD

The user keys in a password, which is also checked. If either the account code or the password is invalid, the following message is displayed at the terminal:

* INVALID ACCOUNT/PASSWORD

After a short delay, the sign on process is repeated with the display of the message:

* SCAMP
* ENTER SCAMP ACCOUNT CODE

If both the account code and the password are valid, the READY message is displayed and the sign-on is complete.

3.2 User's Guide to Change, Delete, and Add field content.

After sign on, the BASE command is used to connect the terminal to the graduate admission data base.

BASE GA
where GA is a two character graduate admission data base identifier.

   a. The ADD command is used to add one or more records to the data set.

     Example:

             ADD SM

     where SM is the student master data set identifier.

     This command will add one or more student records to the student master data set. For a detail explanation on
the use of SCAMP commands, please refer to Appendix A.

   b. Two commands are used to change the field content of a record. The CHITEM command is used to change the content
of the master data set key from its current value to another value.

     Example:

             CHITEM SKEY = "978653456" TO "987652654"

     To change the value of a non-key data item, the UPDATE command is used.

     Example:
1. IF SMNAME = "JOHN DOE" UPDATE CR

This command will search the student master data set for the record occurrence with data item name "John Doe". Then SCAMP will traverse from the master record to its corresponding Credentials record. The Credentials record will be displayed on the screen for updating.

2. UPDATE ST

where ST is the status data set identifier.

This command display on the screen the first record on the data set. The user can update any item in the record except the keys. He can go to the next record or records if he so desires. In this type of command all the records in the data set are eligible for updating.

c. To remove one or more data items in a record or eliminate one or more records in the data set, the DELETE command is used.

Example:

1. IF SMNAME = "JOHN DOE" AND SMCLAS = "ACCEPTED"

   DELETE CR

SCAMP will search for the student master record occurrence with item name "John Doe" and item Clas
"Accepted", then SCAMP will traverse to the corresponding Credentials record occurrence and delete the record.

2. DELETE AC

In this command all records in the active data set are eligible for deletion.

3.3 List of Graduates.

The following commands will list the names of the student who received an MS or PhD degree in Computer Science.

1. IF SMCLAS = "GRADUATED" LIST SMNAME

The above command will list the names of all graduates in Computer Science.

2. IF SMCLAS = "GRADUATED" AND STAREA = "KSU"
   LIST SMNAME

This command is used to list the names of the student graduate at KSU.

3. IF SMCLAS = "GRADUATED" AND ACGRAD = "SP73"
   LIST SMNAME
This command will list the names of the students who received their degrees the spring of 78.

3.4 List of Applicants

The following commands will list the names of the applicants for graduate admission to the Computer Science Department.

1. IF SMCLAS = "APPLICANT"
   
   LIST SMNAME

   The above command will list the names of all the applicants.

2. IF SMCLAS = "APPLICANT" AND STAREA = "NCR"
   
   LIST SMNAME

   This type of command will list the names of applicants for graduate admission at NCR.

3. IF SMCLAS = "APPLICANT" AND CRDATE = "FA80"
   
   LIST SMNAME

   This command will list the names of the applicants for the Fall of 1980.
3.5 User Sign Off

Signing off is accomplished by either one of the following:

a. The user keys in the \texttt{BYE} command.

b. \textsc{Scamp} automatically generates the \texttt{BYE} command where the \texttt{READY} message has been displayed for five minutes.

When the sign off occurs, the screen is cleared up and the normal sign on process is initiated.
APPENDIX A
USER'S COMMAND

The commands to enter, display and modify the data are entered via the Video terminals currently installed at the Computer Science Department. Under the SCAMP software, the terminals may be in the Conversational Mode or Format Mode.

A1 Mode Description.

A1.1 Conversational Mode. The terminal is in the Conversational mode most of the time. It is logically connected to the computer. Either it is prepared to received a SCAMP command or it is executing one.

A1.2 Format Mode. In response to the ADD, DELETE, DISPLAY, or UPDATE command, the terminal switches to the Format mode. It is logically disconnected from the computer and the screen is formatted to facilitate the manipulation of a record.

a. Move the Cursor. Use the "TAB" key to advance the cursor to the left end of the next unprotected field. Use the "BACK TAB" key to return the cursor to the left end of the unprotected field where it is currently located. If it's
already at the left end of the field, "BACK TAB" moves the
cursor to the left end of the previous unprotected field.
The four arrows move the cursor in the indicated direction
through protected as well as unprotected fields. Hit the
arrow to move the cursor one position; hold it to move
continuously. If the cursor is left in a protected field,
hitting a character advances it to the left end of the next
unprotected field but no character is produced in the
protected field. The cursor may be backspaced through both
protected and unprotected fields by holding down the "CTRL"
key and hitting the "H" key. Thus, "CTRL" "H" has the same
effect as the left pointing arrow. Hitting "RETURN" moves
the cursor to the left end of the line where it's currently
located regardless of the type of field at that point.

b. Enter Data into an Unprotected Field. Every
unprotected field has a fixed length. This sets a maximum
but not a minimum on the number of characters that can be
entered into that field. For example, to enter two
characters into a ten character unprotected field, it is
not necessary to enter eight blanks following the two
characters. Enter the two characters and use the "TAB" key
to advance the cursor to the beginning of the next
unprotected field. Entering ten characters leaves the cursor
positioned at the beginning of the next unprotected field.
If eleven characters are entered, the field will be filled
by the first ten characters and the eleventh character will
be entered into the first position of the next unprotected field.

c. Enter an Instruction. In the Format Mode, there is an instruction line at the bottom of every formatted screen. It contains between one and three instructions depending on the particular SCAMP command that caused the switch to the Format Mode. Each instruction is preceded by a pair of parentheses. The user chooses one of the actions in the instruction line by moving the cursor to within the appropriate set of parentheses, keying an "X", and entering the instruction by hitting the "SEND PAGE" key.
A2 SCAMP COMMAND TERMINATION

Any SCAMP command can be discontinued before its normal completion. The procedure for doing this depends on the mode the terminal is in at the time the user decides to terminate the command.

A2.1 Terminating a Command Executing in the Conversational Mode.

Conversational Mode commands can be interrupted by hitting the "BREAK" key.

A2.2 Terminating a Command Executing in the Format Mode.

Format Mode commands can be terminated by performing the following:

1. Hit the "BREAK" key.
2. Hit the "ESC" key, then hold the "SHIFT" key while hitting the "C" key.
3. Hit the "ESC" key, then hold the "SHIFT" key while hitting the "7" key.
4. Hit the "ESC" key, then hold the "SHIFT" key while hitting the ":" key.
5. Hit the "RETURN" key.
A3. SCAMP COMMANDS

A3.1 The ADD command

ADD ds

where ds is the two-character name of a data set.

This command permits the addition of one or more records to the data set named.

In response to the ADD command, SCAMP goes into the Format Mode and formats the screen to facilitate data entry. The format for some records fits completely on the screen. Other records are segmented into pages. The cursor is positioned to the first item in an unprotected field. The page format includes an instruction line at the bottom of each page:

FILL IN INFORMATION...( ) PAGE COMPLETE

When the page is complete, key an "X" between the parentheses and enter the page by hitting the "SEND PAGE" key.

If all the items on the page pass the validity tests, the page will be accepted. If there is some error, a diagnostic message will be printed along with the formatted record. Correct the error and reenter the record.
After adding a record the following message is printed:

RECORD SUCCESSFULLY ADDED

HIT RETURN TO CONTINUE ADDING, HOLD THE BREAK KEY WHILE HITTING THE RETURN KEY TO TERMINATE
A3.2 The CHITEM Command

CHITEM xKEY = "old value" TO "new value"

where xKEY is the key of master data set XM,
"old value" is the current item value, and
"new value" is the item value desired.

This command is used to change the content of the
master data set key from its current value to another
value.

Changing a master data set key involves changing both
the master data set record of which it is the primary key
and also any records of other data sets for which it is a
secondary key. The command automatically changes the primary
key and any secondary keys there may be.

Other fields in the record can also be updated by this
command. However, the UPDATE command is normally used to
change those items.
A3.3 The query IF command

[IF relational expression...] action

where the optional IF clause selects the records of the database on which the action clause will operate.

Since the IF clause is optional, the query may take any of the two specific forms:

IF relational expression... action

action

Brackets are used to designate parts of a command that may not be present. The command is valid with or without the bracketed data. The three dots (...) is used to indicate that previous word or bracketed section may be repeated.

A3.3.1 The IF Clause. The IF Clause plays a role in selecting records to which the action clause will apply. Each relational expression applies one or more selection criteria to one or more data items.

The format of a relational expression is:

itemname operator value
Itemnames take one of three forms:

xKEY - the key of a master data set named xM
xyky - the key of a dependent data set named xy
xxyyyy - the non-key data item yyy of data set xx

If there are multiple item names, they are separated by AND's by OR's, or by commas and/or blanks preceding a final AND or OR.

The operator of a relational expression can be any one of the following:

<,LT (less than)
=,EQ (equal to)
>,GT (greater than)
>=,LE,NL (greater than or equal to)
<=,LE,NG (less than or equal to)
<,>,NE (not equal to)

Implied information can also be extended over several relational expressions, generally following the rules of English.

Examples:

(1) If CLAS ="applicant" or "graduated"
(2) If GPA1 > 3.25 and GPA2 > 3.55
(3) If GRE1 EQ and GRE2 NE 477

A3.3.2 The ACTION Clause. The action clause is one of the following commands:

UPDATE ds
DISPLAY ds
DELETE ds
COUNT ds
LIST ds
    item...

These commands are explained on the following pages:
A3.4 THE UPDATE COMMAND.

[IF Clause] UPDATE ds

where ds is the two character name of the data set

This command permits the updating of one or more records in the data set named. If the IF Clause is omitted, every record in the data set is considered for updating.

Before a record is displayed on the screen to be updated, SCAMP determines whether or not the record is being accessed by some other user. If it is, the following message is displayed:

***RECORD IN USE ELSEWHERE IN SYSTEM***

HIT RETURN TO RETRY

This prevents two users from updating the same record at the same time and prevents loss of data. Once it has been determined that the record is free to be updated, it, or its first segment will be displayed on the screen and the terminal switches from Conversational Mode to Format Mode.

With the terminal in the Format Mode, the user is free to change the contents of any data item except the key. To change the key, he must use the CHITEM command. To change any other item, he moves the cursor to the beginning of the
unprotected field it occupies and keys in the new value.

Regardless of the number of segments in the record, the following lines appear at the bottom of the screen.

---------------------INSTRUCTIONS---------------------
SPECIFY ACTION...( )UPDATE ( )NEXT SEGMENT ( )NEW RECORD

If the user has changed any item on the screen, he must indicate the UPDATE action. Otherwise, he may choose to update the next segment or the next record or he may elect to terminate UPDATE command processing. If the instruction is entered with none of the actions specified, the display of the record will remain unchanged, but the two lines at the bottom of the screen will be replaced with:

---------TRANSCRIPTION INCOMPLETE...REENTER---------
SPECIFY ACTION...( )UPDATE ( )NEXT SEGMENT ( )NEW RECORD

If the UPDATE action is specified and the instruction properly entered, each field of the updated screen will be checked for validity. If an error is found, a message identifying what's wrong with the item is displayed asking for the data to be reentered. When all the items on the
page are validated, the page is displayed in its formatted form with the following lines at the bottom of the screen:

----------------------INSTRUCTIONS----------------------
SPECIFY NEXT ACTION... ( )NEXT SEGMENT ( )NEW RECORD

Choosing the NEW RECORD option will result in displaying the next record of the data set, or, if it is segmented, its first segment. If NEXT SEGMENT is specified and the record has another segment, it will be displayed for updating. If the record does not have another segment, NEXT SEGMENT and NEW RECORD have the same effect.
This book contains numerous pages with the original printing on the page being crooked. This is the best image available.
A3.5 The Display Command.

[IF Clause] DISPLAY ds

where ds is the two character name of the data set

This command permits the display on the screen of one or more records of the data set named. If the IF clause is omitted, the entire data set is to be displayed.

After keying the command, the following lines appear at the bottom of the screen:

-------------------INSTRUCTIONS-------------------

SPECIFY ACTION... ( )NEXT SEGMENT ( )NEW RECORD

The user may choose to display the next segment or the next record or he may elect to terminate display command processing. Display logic terminates after the last record has been displayed with the message:

NUMBER OF RECORDS RETRIEVED: xxxx
A3.6 The DELETE Command.

[IF Clause] DELETE ds

where ds is the two character name of the data set.

This command permits deletion of one or more records from the data set named. If the IF Clause is omitted, the entire data set is considered for deletion.

After keying the command, the following message will appear on the screen:

DO YOU WISH TO REVIEW EACH RECORD BEFORE DELETION?

Responding with an "N" will result in the immediate deletion of every record in the specified data set with no opportunity for reconsideration. Responding with a "Y" causes the terminal to switch from the Conversational Mode into the Format Mode. The first segment of the first record considered for deletion will be displayed on the screen in a readable format. The following lines will appear at the bottom of the screen:
SPECIFY ACTION...

( )DELETE  ( )KEEP

If the KEEP action is specified, the record will be retained in the data set and the next record that satisfies the query will be displayed along with the same instructions. If DELETE action is specified, the record will be deleted.

The process will continue until the user terminates DELETE command processing or the query is exhausted.
A3.7 The COUNT Command.

[IF Clause] COUNT ds

where ds is the two character name of the data set.

This command permits counting the number of records in any data set of the data base currently connected to SCAMP. Two types of messages will be printed on the screen. In order to track the progress of the counting, a message will be printed every time the record tally increases to a multiple of 100. When the count is finished, there will be a message giving the total number of records. The messages are as follows:

PARTIAL RECORD COUNT: ppppp

where ppppp is a multiple of 100.

NUMBER OF RECORDS RETRIEVED: xxxxx
where xxxxx is the total count of records in the data set.
A3.8 The LIST Command.

[IF Clause] LIST ds...

item....

where ds is the two character name of a data set all of whose items are to be listed,

and item is a specific data item name, four characters for key items ("xKEY" and xyKY"), six characters for non-key items ("xxyyyy" where xx is the data set name and yyyy the item name).

Double hyphens under ds are used to designate two or more options. One of the options must be provided when the command is used.

This command permits the listing in an easily readable format of either some or all of the items of the data set(s) specified. For misspelled names, SCAMP will terminate the attempt to list with the following message on the user's screen:
***INVALID DATA ITEM NAME***

If the name of a data set is specified, SCAMP will list every item in the data set.

The user can terminate the execution of the command at any time by following the procedure described in section A.2.

The user will be asked to provide the name of the file or device to which the listing is to output by means of the following message:

SPECIFY OUTPUT FILE (for output to this terminal hit RETURN)

The user then either hits return or enters an OS32MT file description.
APPENDIX B

DATA BASE GENERATION

In designing data bases under the mechanics of SCAMP, the DBGEN command is used. The DBGEN formats the data base on the structure set up by the dbgenfile. The dbgenfile is formed by the following DBGEN subcommands:

1. BASE - this command names the data base to be identified to SCAMP.

2. FILE - names and describes the file or files composing the data base.

3. SET - defines the data set and identifies the files the data sets are to reside.

4. ITEM - defines the data item or items comprising the data set. The first item to be identified is the key for the data set.

The following three pages illustrate the dbgenfile for the graduate admissions data base systems:
1 * This database will contain information to be used
2 * to generate reports for graduate admission to the
3 * Computer Science Department.
4
5 BASE GA, TYPE=NEW, AUTH=2, TITLE="Graduate Admission Data Base"
6
7 FILE 1, FD="USR4:MASALF.DIR", ACTION=CREATE
8 FILE 2, FD="USR4:MASALF.REC", ACTION=CREATE
9 FILE 3, FD="USR4:DEPALF.DIR", ACTION=CREATE
10 FILE 4, FD="USR4:DEPALF.REC", ACTION=CREATE
11
12 SET SM, FILE=(2,1), AUTH=(2,2,2,2), TITLE="Student Master Data"
13 ITEM SK, SIZE=7, AUTH=(2,2), TITLE="Master Data Set Key"
14 ITEM SSN, SIZE=9, AUTH=(2,2), TITLE="Social Security Number"
15 ITEM NAME, SIZE=30, AUTH=(2,2), TITLE="Student Name"
16 ITEM CLAS, SIZE=9, AUTH=(2,2), TITLE="Student Classification"
17 EJECT
SET CR, FILE=(4, 3), AUTH=(2, 2, 2, 2), TITLE="CREDENTIALS DATA SET"
ITEM CRAY, SIZE=6, TITLE="CREDENTIALS DATA SET KEY"
ITEM SKEY, SIZE=7, AUTH=(2, 2), TITLE="LINK TO MASTER DATA SET"
ITEM DATE, SIZE=6, AUTH=(2, 2), TITLE="DATE OF APPLICATION"
* HOME ADDRESS AND PHONE
ITEM ADR1, SIZE=22, AUTH=(2, 2), TITLE="STREET ADDRESS"
ITEM ADR2, SIZE=20, AUTH=(2, 2), TITLE="CITY, STATE ADDRESS"
ITEM PHON, SIZE=10, AUTH=(2, 2), TITLE="TELEPHONE NUMBER"
* TRANSCRIPT ARRAY
ITEM DAT1, SIZE=6, AUTH=(2, 2), TITLE="DATE"
ITEM SCH1, SIZE=12, AUTH=(2, 2), TITLE="SCHOOL"
ITEM DEG1, SIZE=4, AUTH=(2, 2), TITLE="DEGREE"
ITEM GPA1, SIZE=4, AUTH=(2, 2), TITLE="GPA"
ITEM DAT2, SIZE=6, AUTH=(2, 2)
ITEM SCH2, SIZE=12, AUTH=(2, 2)
ITEM DEG2, SIZE=4, AUTH=(2, 2)
ITEM GPA2, SIZE=4, AUTH=(2, 2)
ITEM DAT3, SIZE=6, AUTH=(2, 2)
ITEM SCH3, SIZE=12, AUTH=(2, 2)
ITEM DEG3, SIZE=4, AUTH=(2, 2)
ITEM GPA3, SIZE=4, AUTH=(2, 2)
* RECOMMENDATION ARRAY
ITEM DET1, SIZE=6, AUTH=(2, 2), TITLE="DATE OF RECOMMENDATION"
ITEM NAM1, SIZE=12, AUTH=(2, 2), TITLE="RECOMMENDING PERSON"
ITEM DET2, SIZE=6, AUTH=(2, 2)
ITEM NAM2, SIZE=12, AUTH=(2, 2)
ITEM DET3, SIZE=6, AUTH=(2, 2)
ITEM NAM3, SIZE=12, AUTH=(2, 2)
* GRE ARRAY
ITEM GRE1, SIZE=3, AUTH=(2, 2), TITLE="GRAD REVIEW EXAM"
ITEM GRE2, SIZE=3, AUTH=(2, 2)
ITEM GRE3, SIZE=3, AUTH=(2, 2)
ITEM TOFL, SIZE=3, AUTH=(2, 2), TITLE="TOEFL"
ITEM FINA, SIZE=1, AUTH=(2, 2), TITLE="FINANCE"
ITEM CONT, SIZE=20, TITLE="COMMENTS"
EJECT
54 SET ST, FILE=(4, 3), AUTH=(2, 2, 2), TITLE="STATUS DATA SET"
55 ITEM STK, SIZE=6, TITLE="STATUS DATA SET KEY"
56 ITEM SKY, SIZE=7, AUTH=(2, 2), TITLE="LINK TO MASTER DATA SET"
57 ITEM AREA, SIZE=3, AUTH=(2, 2), TITLE="LOCATION"
58 ITEM LEVL, SIZE=3, AUTH=(2, 2), TITLE="LEVEL OF STUDY"
59 ITEM DATE, SIZE=6, AUTH=(2, 2), TITLE="DATE OF RECOMMENDATION"
60 ITEM RECO, SIZE=4, AUTH=(2, 2), TITLE="RECOMMENDATION"
61 ITEM SUPT, SIZE=15, AUTH=(2, 2), TITLE="SUPPORT"
62 ITEM PROV, SIZE=25, AUTH=(2, 2), TITLE="PROVISIONAL"
63 ITEM LETR, SIZE=10, AUTH=(2, 2), TITLE="LETTER SENT DATE & COMB"
64
65 SET AC, FILE=(4, 3), AUTH=(2, 2), TITLE="ACTIVE DATA SET"
66 ITEM ACKY, SIZE=6, TITLE="ACTIVE DATA SET KEY"
67 ITEM SKY, SIZE=7, AUTH=(2, 2), TITLE="LINK TO MASTER DATA SET"
68 ITEM DATE, SIZE=4, AUTH=(2, 2), TITLE="ARRIVAL DATE"
69 * CAMPUS ADDRESS AND PHONE
70 ITEM ADD1, SIZE=20, AUTH=(2, 2), TITLE="STREET ADDRESS"
71 ITEM ADD2, SIZE=20, AUTH=(2, 2), TITLE="CITY, STATE ADDRESS"
72 ITEM PHON, SIZE=10, AUTH=(2, 2), TITLE="TELEPHONE NUMBER"
73 ITEM ADVR, SIZE=3, AUTH=(2, 2), TITLE="ADVISER"
74 ITEM MSEX, SIZE=7, AUTH=(2, 2), TITLE="MASTER EXAM"
75 ITEM GRAD, SIZE=4, AUTH=(2, 2), TITLE="GRADUATION DATE"
76 END

SCAMP DBGEN ERRORS
APPENDIX C
SAMPLE REPORTS

The following pages are generated reports for graduate admissions to the Computer Science Department. Chapter III is a detailed guidance on how to produce these and other reports.

The first page of the report lists the contents of the student master data set. Since SCAMP data sets are sorted by primary key, the listing came out arranged in alphabetical order. The command used to produce the report is:

LIST SM

where SM is the student master data set name.

The second, third and fourth pages present the information from Credentials, Status and Active data sets. Credentials records are printed in a different format because the data items cannot be accommodated using the output format for student master data set. The commands used to generate the reports are:

LIST CR

where CR is the Credentials data set name.
LIST SMNAME STAREA STLEVEL STDATE STRECO STPROV

where SMNAME is the name of the student,
STAREA is the location of study,
STLEVEL is the level of study,
STDATE is the date when the committee made the recommendation,
STRECO is the committee recommendation, and
STPROV contains the deficiency courses of provisional students.

LIST SMNAME ACDATE ACPHON ACADVR, ACMSEX

where SMNAME stands for the student name item,
STDATE is the student's date of arrival,
ACPHON is the student's campus telephone number,
ACADVR is the student's adviser name, and
ACMSEX is the date of master's exam.

The fifth page prints out all the graduates in the Spring, Summer and Fall of 1980. The command used to produce the report is:

IF ACGRAD = "SP80" OR "SU80" OR "FA80"

LIST SMNAME

Note that there is no way to generate an information
title for the qualified test.

The sixth page lists all the enrollees at NCR. The command to do this is:

```
IF SMCLAS = "ACCEPTED" AND STAREA = "NCR"
   LIST SMNAME
```

The seventh page prints the names of students who are admitted at KSU. The command is:

```
IF SMCLAS = "ACCEPTED" AND STAREA = "KSU"
   LIST SMNAME
```

The last page lists the names of the students. Below is the command to generate the report:

```
LIST SMNAME
```
<table>
<thead>
<tr>
<th>SKEY</th>
<th>SMSSNO</th>
<th>SNAME</th>
<th>SMCLASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAR3040</td>
<td>987653040</td>
<td>BARNES GEORGE M</td>
<td>GRADUATED</td>
</tr>
<tr>
<td>CHE2010</td>
<td>987652010</td>
<td>CHAMBERS FRANK GLEN</td>
<td>ACCEPTED</td>
</tr>
<tr>
<td>CHA3030</td>
<td>987653030</td>
<td>CHAO HAN-YING</td>
<td>APPLICANT</td>
</tr>
<tr>
<td>COS2020</td>
<td>987652020</td>
<td>COSTELLO MARK ANTHONY</td>
<td>APPLICANT</td>
</tr>
<tr>
<td>DIL3000</td>
<td>987653000</td>
<td>DILLINGER MARILYN</td>
<td>ACCEPTED</td>
</tr>
<tr>
<td>ENG2090</td>
<td>987652090</td>
<td>ENGLER VERNY ROYCE</td>
<td>ACCEPTED</td>
</tr>
<tr>
<td>FER3050</td>
<td>987653050</td>
<td>FERGUSON BRIAN JOHN</td>
<td>GRADUATED</td>
</tr>
<tr>
<td>JEN2030</td>
<td>987652030</td>
<td>JENN TAI</td>
<td>ACCEPTED</td>
</tr>
<tr>
<td>KIL2040</td>
<td>987652040</td>
<td>KILLIAN ROBERT</td>
<td>APPLICANT</td>
</tr>
<tr>
<td>LAZ2060</td>
<td>987652060</td>
<td>LAZARO JOSE, JR</td>
<td>ACCEPTED</td>
</tr>
<tr>
<td>LLO2000</td>
<td>987652000</td>
<td>LLOYD RAY</td>
<td>APPLICANT</td>
</tr>
<tr>
<td>HAN2050</td>
<td>987652050</td>
<td>MANCHAN ALLAN</td>
<td>APPLICANT</td>
</tr>
<tr>
<td>MOR2080</td>
<td>987652080</td>
<td>MORRIS MARTIN</td>
<td>REJECTED</td>
</tr>
<tr>
<td>TAV2070</td>
<td>987652070</td>
<td>TAVAKOLI NASSRIN</td>
<td>ACCEPTED</td>
</tr>
<tr>
<td>WAL3010</td>
<td>987653010</td>
<td>WALLACE SHELLEY</td>
<td>APPLICANT</td>
</tr>
</tbody>
</table>

NUMBER OF RECORDS LISTED: 15
<table>
<thead>
<tr>
<th>SNAME</th>
<th>STAREA</th>
<th>STLEVEL</th>
<th>STUDATE</th>
<th>STRECO</th>
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* STUDENT MASTER DATA SET *

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ENGLER VERLYN ROYCE
FERGUSON BRIAN JOHN
TAVAKOLI NAZRIN

NUMBER OF RECORDS LISTED: 4
SCAMP GRADUATE ADMISSION DATABASE

STUDENT MASTER DATA SET

SNAME

CHAMBERS FRANK GLEN

NUMBER OF RECORDS LISTED: 1
SCAMP GRADUATE ADMISSION DATA BASE

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STUDENT MASTER DATA SET

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SNAME

DILLINGER MARILYN
ENGELER VERLYN ROYCE
JERN TAI
LAZARO JOSE, JR
TAVAKOLI HASSRIN

NUMBER OF RECORDS LISTED: 5
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COSTELLO MARK ANTHONY
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JEEN TAI
KILLIAN ROBERT
LAZARO JOSE, JR
LLOYD RAY
MANGIAN ALLAN
MORRIS MARTIN
TAVAKOLI NASRIN
WALLACE SHELLEY

NUMBER OF RECORDS LISTED: 15


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I also wish to express my gratitude to a special girl in California. Were not for those inspirational words she has been writing, I may not have achieved my goal.
A PROTOTYPE DATA BASE
FOR COMPUTER SCIENCE
GRADUATE ADMISSIONS

by

ALFONSO C. REBONG JR.

B. S., University of Santo Tomas, RP, 1969

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AN ABSTRACT OF A MASTER'S REPORT

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Computer Science

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1980
A PROTOTYPE DATA BASE
FOR COMPUTER SCIENCE
GRADUATE ADMISSIONS

ABSTRACT

This report consists of a study performed for the COMPUTER SCIENCE DEPARTMENT concerning the automation of their graduate admission system.

The procedure for admitting graduate students, currently used for faculty record keeping, along with some items which they would like added to the system are presented.

A prototype data base was created. The interactive data base system was implemented using the SCAMP data base management system on an Interdata 8/32 running under the MTM 8/32 operating system.