AN INTERACTIVE STUDENT INFORMATION SYSTEM

James E. Cofer
University Information Services Department
Mississippi State University

ABSTRACT

This paper describes an on-line interactive student information system design-ed for graduate level student information at Mississippi State University. It was designed with three objectives in mind. The first was to keep graduate students abreast of the requirements to be met for an advanced degree. The second objective was to aid the Office of Graduate Studies and the Registrar in certifying the com-pletion of requirements for advanced degrees. Thirdly, the system was designed so that information retrieval for various colleges, departments and federal agencies could be accomplished without a time-consuming manual search of student records.

A description of the software and data files is given, as well as a descrip-tion of the major report forms produced by the system. In addition, the operation of the system will be briefly described.

SOFTWARE

The Graduate Student Information System at Mississippi State University uses a data base software package called Information Management System for EXEC-8. The procedures used in IMS-8 file structuring are basically the same as those for index-sequential files. The IMS-8 data base is actually two operating system defined mass-storage files, one containing index segments pointing to locations of data tracks in the second which contains the actual data. The system makes use of num-bered files for overall index controls and enables primary and secondary subkeys to control record addressing. Each of the numbered files is assigned a primary search key (PSK) and some files have various secondary indexes.

IMS-8 allows a file to be processed by explicitly designed programs that per-form various functions or it may be accessed by an interactive processor (IP). The interactive processor allows on-line display, modification deletion and insertion of records or portions of records in the data base.

IMS-8 also allows more than one user to access a specified file at the same time. By taking advantage of the ability to allow a reentrant program monitor to run in a "real-time" status, IMS-8 can screen attempts to access the data base, resolve conflicts among users of a specified file, and remain unaffected by user program errors. For user programs, the interface to IMS-8 through the security and access monitor FMS-8 is simply a subroutine to the user's program.

DATA FILES

The Graduate Student Information System is comprised of several IMS-8 "num-bered files." The three major files are: General Information, Graduation Require-ments and Requirements Met. Other files consist of course descriptions, current enrollment and courses taught - current semester. All of the information in these files is generated by different agencies within the University, usually in card form. There is no manual coding of forms for input to the system. The data is collected from the various agencies and reformatted programmatically for input to the system.

The General Information file contains certain demographic data concerning the student. In addition, certain university related data such as, student's major and minors, hours required, previous degree information and department is in the General Information file. Each graduate student at MSU must submit a program of courses that will be taken for an advanced degree. This list of courses is the major portion of the Graduation Requirements file. In addition to these courses, a set of codes for additional graduation requirements are in this file. The codes represent such requirements as thesis required, languages, comprehensive and preliminary exams passed and certain required fees.

The last major file is the Requirements Met File. This file contains all courses that a graduate student has taken and codes for completion of other graduation requirements. When a course is taken by a graduate student, the course symbol and number, grade, hours and major or minor code is inserted in this file.

MAJOR REPORTS

The major report produced by the Graduate Student Information System is the Graduate Student Status Report. An example is shown in Figure 1. This report is produced every semester for currently enrolled graduate students and serves several purposes. This report informs the student of what courses he has taken, what needs to be taken, what courses have been applied to an advanced degree and what requirements must or have been met. A copy of this report is sent to the student's advisor and a copy is kept by the Office of Graduate Studies. In this manner, the advisor or the Graduate Office can take appropriate action when necessary. It also serves as a reference for questions by the advisor and the Graduate Office concerning students. This report can also be produced on a typewriter terminal or CRT device if a request is generated for a particular student.

The second major output of the system is an on-line update program. With this program, five full screens of formatted information can be displayed on the Uniscope 300. Each screen is a fixed format display. Personnel in the Graduate Office can display information for a certain student. In addition, information in a student's record can be modified, added or deleted. This display program is designed to answer daily questions the Graduate Office receives about graduate students and to make low volume corrections in the data base.

With a small revision in the program that produces the Status Report, we can produce a report that indicates whether or not a student is cleared for graduation. This report is similar to the Status Report except that it checks for appropriate QPA, completion of all required courses, residency, and completion of all additional requirements. Since there is only a short time between semester end and graduation this report is important and crucial to the Graduate Office and the Registrar.

SYSTEM OPERATION

Each semester the data base is compared to current student enrollment. If a student is not in the data base, his records are formated programmatically and inserted into the file. Also, those students that graduated are deleted from the file and placed in an archive file. Due to the mobility of college students, the addresses are updated every semester from registration data. In addition, the grades for the previous semester are placed in the student's file. At this point, various reports are generated and distributed to appropriate agencies and departments. These include reports to HEW, Council of Graduate Schools and the Board of Trustees.

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STUDENT NUMBER 300461752

CHRISTINE ANN KREYLING
P. O. BOX 3859
MISS. STATE, MS.   39762

THIS IS A COMPUTER PRINT OUT OF YOUR GRADUATE STATUS.   INDICATE ALL
CORRECTIONS AND RETURN IMMEDIATELY TO: MRS. SUSAN LUMPDEN, P.O.
DRAWER G, MISS STATE, MS 39762.   PLEASE ANSWER THE FOLLOWING:

DO YOU EXPECT TO GRADUATE IN THE 1976 SPRING SESSION?

------------YES   ------------NO

PREVIOUS DEGREES:

DEGREE OBJECTIVE: MA IN EN   DEPARTMENT
   MAJOR: EN   MINOR(S)
ADVISOR: E HAWKINS   TYPE OF ADMISSION--REGULAR

COURSES ON PROGRAM COMPLETED:

EN 6333   MSU   LIT OF THE SOUTH   MAJOR   8/75   I *
EN 8103   MSU   SEM BIBLIO RES METH   MAJOR   8/75   A

* COURSE MUST BE REPEATED OR REMOVED FROM PROGRAM

TOTAL HOURS ON PROGRAM   30.00

TOTAL HOURS ON PROGRAM COMPLETED OR CURRENTLY ENROLLED   6.00
                                              QPA: 4.00

COURSES TAKEN NOT ON PROGRAM:

EN 6903   MSU   AM LIT 1800-1860   1/76
EN 8413   MSU   SEM ENG LIT TO 1066   1/76

   IF COURSE(S) TO BE APPLIED TO YOUR DEGREE, A PROGRAM
   CHANGE FORM MUST BE COMPLETED.

COURSES ON PROGRAM YET TO BE TAKEN:

EN 6343   NEGRO LIT IN US
EN 6533   MILTON
EN 6653   ENG NOVEL 1870-PRES
EN 8633   SEM EN LIT 1832-1900
EN 8833   SEM AM LIT 1860-1914
EN 8843   SEM AM LIT 1914-PRES
EN 8006   THESIS
PREREQUISITE-- FLF 1163   BEG FR READ FOR GRAD
PREREQUISITE-- FLF 1173   FR READ FOR GRAD

OTHER REQUIREMENTS:

              THESIS   NOT COMPLETED
              BINDING FEE   NOT PAID
              MASTERS' LANGUAGE NOT COMPLETED
              ORAL EXAM   NOT TAKEN

         THESIS RESEARCH & WRITING ON PROGRAM- 6 HOURS
    THESIS RESEARCH & WRITING COMPLETED OR CURRENTLY ENROLLED   0 HOURS

Figure 1.

Graduate Student Status Reports are produced at midterm and mailed to the students. If any errors are on these status reports, students are instructed to correct the report and send it to the Graduate Office. The Graduate Office corrects the student's file via the on-line display or the interactive processor.

APPENDIX A

CONTENTS OF MAJOR DATA FILES

GENERAL INFORMATION

    Social Security Number
    Student Name
    Local Address
    Local Telephone
    Date of Birth
    Race/Ethnic Group
    Type of Degree
    Marital Status
    Sex
    Academic Major
        Minor #1
        Minor #2
        Minor #3
    Parent Name
    Permanent Address
    Permanent Telephone
    Mississippi Native?
    Federal Agency Code
    Degree
    Applied for Degree?
    Thesis Title
    Student's Department
    Required Hours:
        Major
        Minor #1
        Minor #2
        Minor #3
    Place of Birth
    Admission Type
    Citizenship Code
    NSF Student?
    Advisor's Name
    Previous Degree Information
        Degree
        Institution
        Major   Repeat 3 times
        Year Granted
        Q.P.A.

GRADUATION REQUIREMENTS

    Social Security Number
    Course Symbol and Number
    Major, Minor, Prerequisite Code
    Codes for each of the following Requirements:
        Thesis
        Thesis Binding Fee
        Comprehensive Exam
        Master's Language

Oral Exam
Preliminary Exam
Transfer Credit
ATGSB
Ph. D. Candidacy Form
Ph. D. Questionnaire
Ph. D. Languages

REQUIREMENTS MET

Social Security Number
Date Course Taken
Course Symbol and Number
Grade
General Extension
Hours Credit
Major, Minor, Prerequisite Code
Codes, Scores, Dates for each of the
  previously given requirements.