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DECsystem-10

COLLEGE ADMINISTRATIVE APPLICATIONS PACKAGE

-CAAP-10-

ACKNOWLEDGMENT
Many of the programs making up CAAP-10 were originally developed at Burlington County College, Pemberton, New Jersey. Acknowledgment is also made to Newport-Mesa Unified School District as the original developer of a number of financial system modules.

The software described in this publication is subject to change without notice. Consult your local DECsystem-10 representative for details.

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Computers, long a part of the academic scene, are assuming more and more of the administrative load, helping to meet a myriad of operating and planning needs. Some of the areas academic administrators have identified as ideally suited to computer application are listed below. While not exhaustive, the list indicates the scope of activities involved in educational administrative data processing.

Student affairs
Registration
Grading records
General student records
Admissions
Testing
Alumni records
Residence halls
Class scheduling

Financial administration
General accounting
Payroll
General inventories
Budget preparation
Cost analysis of operations
Investment records and analysis
Alumni gift-giving
Purchasing

Physical plant management
Space inventories
Space-cost analysis
Assignment of classroom space
Assignment of office space

Policy planning
Long-range planning
Institutional research
Simulation of institutional operations

Miscellaneous administration
Library
Cafeteria and dining halls
Athletic association
State and federal governmental reporting
Placement office
Credit union

Education isn't cheap. The job of efficiently running a college or university while holding costs in line is a challenge to the most able administrator. Digital Equipment Corporation has been helping to meet that challenge with DECsystem-10.

DECsystem-10 is a complete hardware/software computer system, ideally suited to academic/administrative application. In a typical college or university installation, DECsystem-10 routinely handles administrative data processing, computer-assisted instruction, student programming, and faculty research. DECsystem-10 simultaneously performs timesharing (accommodating up to 127 users at once), multiprogram batch processing (local and remote), and real-time, on-line applications.

DECsystem-10 is accepted in academic circles as a scientific data processing system. Less well known is DECsystem-10's role in helping to keep administrative data processing costs down. Many users have developed their own software in an effort to take advantage of the -10's outstanding timesharing and multiprogramming characteristics. They have implemented programs which permit them to handle administrative data processing on the same computer that serves their academic needs. These programs, together with software put together by DIGITAL, have been assembled into the College Administrative Applications Package, CAAP-10.

With CAAP-10, educators can computerize the day-to-day administrative tasks which are a necessary part of the education process...things like admissions, registration, scheduling, grade reporting, and test scoring. The package also contains programs which can computerize library lending, simulate conditions for long-range policy planning, and automate business office applications.

Since different colleges and universities seldom structure their administrative data processing along the same lines, the modules are designed with flexibility in mind. Programs are primarily written in COBOL, although some assembly language modules are also included. In some cases, alternative versions of the same module are available, permitting the user to choose the one best suited to his individual requirements. The CAAP-10 library also includes segments of the Planning and Management System developed by the National Center for Higher Education Management Systems at the Western Interstate Commission for Higher Education.

The following sections highlight some of the modules in the CAAP-10 library which are available to serve the requirements of DECsystem-10 academic/administrative users.

Admissions

One of the first places CAAP-10 becomes useful is in the admissions office. The original data base entry is initiated through program modules comprising the admissions segment of the CAAP-10 library. As information relating to a particular student application is accumulated, the data base is updated. The admissions program produces acceptance reports, applications-received reports, student profiles, and ACT profiles.

The student master profile is similar to the format recommended by the Western Interstate Commission for Higher Education. It consists of a variable number of fixed-length modules for each student, for example:

MODULE 0—The student's major information area; contains basic personnel information gathered from the application form and subsequent sources. This module must be present.

MODULE 3—Contains current courses for which the student is registered as well as those requested for next semester.

MODULE 4—Contains transfer courses. This module is present only if required.

MODULE 6—Contains academic history of courses taken at this institution.

Registration

Registration at any large college or university can be an aggravating bottleneck for students, faculty, and staff. Using effective pre-registration techniques—plus the flexibility of on-line DECsystem-10 terminals—can help minimize the hassle, providing a quicker, smoother, more equitable experience for everyone.

CAAP-10 registration modules provide the means for on-line verification of student data; for scheduling registration appointments; for processing pre-registration data; for printing student fee statements; for updating active and inactive data bases; for printing enrollment reports; for printing student directories; for listing all students who carry insurance; for printing mailing labels; for compiling statistical surveys about the student body. One of the modules produces the HEGIS reports required by the registrar.

An on-line inquiry program allows an authorized terminal operator to display information from the student master file in three basic ways:

1. A summary in numerical, count form of all students with any given set of characteristics as, for example, the overall grade-point average of all students in a certain curriculum.

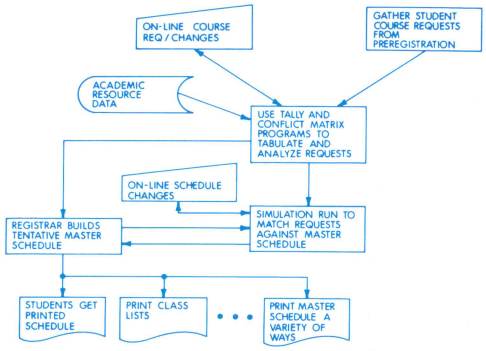
2. A search and listing of all students by name who meet certain criteria as determined by the user of the program. Example: List the names of all pre-med students with a grade-point average of 3.75 or higher.

3. A selection of information as determined by the program user for any individual student as, for example, a list of all academic credit courses successfully completed by John Doe.

Student Scheduling

Efficiently matching students' needs to available institutional resources of faculty, space, and time is a complex process. With CAAP-10, student course requests are gathered, tabulated, and analyzed by the tally and conflict matrix programs. This data, along with related academic resource data, is used to build a tentative master schedule of course offerings. A simulation of the scheduling program is then run, matching student course requests against the master schedule. The results are analyzed and necessary changes made in the master schedule. The scheduling program is re-run as often as required until the results are satisfactory, at which point the student schedules are printed. Class rosters are also prepared in time for the first class meeting.

By gathering data from students during pre-registration, then using the student scheduling system, an accurate determination can be made as to which courses are popular enough to warrant multiple sections. The conflict matrix printout helps in scheduling minority courses at a day and time most accessible to the students requesting them, and allows schedules to build without conflict.



CAAP-10 Student Scheduling Program

Grade Reporting

The CAAP-10 grade reporting system involves the collection of grades from the faculty, updating of the student master file, reporting of grades to the student, and the compilation of analysis and summary reports. The grade analysis programs also provide statistical information concerning grade distributions and can be organized by instructor and course.

CAAP-10 also contains program modules which help the instructor in grading. These modules comprise the Computer Managed Instruction (CMI) system, which allows an instructor to maintain a file of test answers and questions along with performance information about student test results. There are also programs for grading tests and performing item analysis on test results.

Student Accounts Receivable

Operation of the CAAP-10 student accounts receivable program is based on forms completed by the student at pre-registration. These forms are used to generate bills and pre-punched fee cards. The bills and cards are distributed to the students through the accounting department. Students who do not return a portion of the bill and appropriate fee cards with payment by a specified date are prevented from registering. Schedules are automatically produced for students whose accounts are cleared. There are also programs which can be used to produce a variety of accounting reports.

RRPM 1.6 from NCHEMS at WICHE

(Resource Requirements Prediction Model 1.6 developed by the National Center for Higher Education Management Systems at the Western Interstate Commission for Higher Education).

The RRPM 1.6 is a long-range planning model designed to aid educational administrators in rapidly determining how alternative policies and planning changes will affect the resources of their institutions. The RRPM utilizes a "what if" mode that enables the user to experiment on paper with a variety of changes. The "what if" questions are classified into four categories, for example:

STAFFING CHANGES—What if the current staffing ratio of support personnel were increased or decreased by 10%? What if the average faculty load in a given college were increased to the average of other colleges? What if there were an X% raise in faculty salaries and a Y% raise in staff salaries? What if the faculty mix were changed? (Such changes might be in the ratio of full to assistant professors or in the ratio of graduate assistants to assistant professors.) What if instructional techniques were changed? (Capital equipment might be substituted for faculty.)

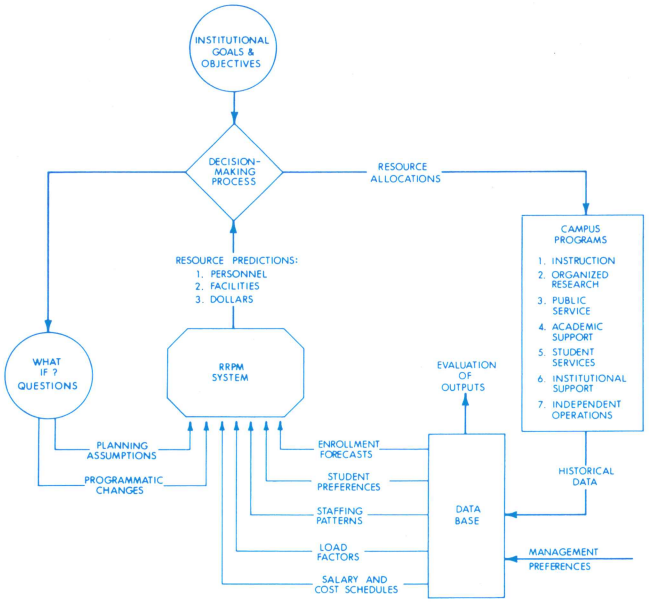
CURRICULUM CHANGES—What if a new degree program were added and another were dropped? What if a non-degree service discipline were offered? What would be the effect on math service courses if junior college transfers were increased by 60%? What would be the effect on the English department if the English composition requirement for math majors were removed?

ADMISSIONS POLICY—What if a specific change were made in the mix of students, either by degree program, by level, or both? What would be the effect if admissions in various fields were limited three years from now? What if enrollment for a given level of students were initiated or eliminated?

OTHER—What would be the effect of additions or deletions to public service and research programs? What if one or more space or construction factors were to change? What if the cost relationships for travel, equipment, and supply were altered? What if library costs per student were increased by 10%?

The resource implications of questions such as the preceding may be resolved in an aggregate manner using RRPM. Some of the reports which may be obtained include:

1. Personnel by FTE and salary expenses for each of five faculty ranks and four non-academic ranks, including supply, travel, and equipment expenses.
2. Space requirements for five types of instruction facilities.
3. Cost per student hour by level of course and by level of student.
4. Total construction costs required by space type.



Where RRPM Fits In

Library Circulation Processing System

On-line terminals located in the library are used to inquire into circulation files containing information about books and borrowers. Communication is interactive so that files are always up to date. Numerous reports and displays on file contents and activity are available at remote terminals or from high-speed computer printouts.

Library materials are charged out using a badge reader at the checkout terminal. The on-line circulation program checks the borrower's ID against the library users' master file and the circulation file. The borrower must be a valid user with no overdue library materials. If the student meets the criteria check, the clerk reads-in the punched card from each book to be borrowed and the system records the transaction.

Financial System

The CAAP-10 financial system is made up of a variety of subsystems which perform the following specific functions. Operations oriented towards file maintenance use such subsystems as file record addition, deletion, update, and record inquiry. Transaction-oriented operations include transaction recording, transaction inquiry, transaction batch listing, and voiding. In many cases, several functions—maintenance, transactional, or both—are included in a common program or routine available to a specific department.

The budget is established at the beginning of the fiscal year using the fiscal planning subsystem. The budget includes the formulation of operating accounts and the allocation of funds which are recorded as appropriations. As various departments submit requisitions for goods or services, the amounts are recorded as pre-encumbrances against the appropriate accounts. When the purchasing subsystem writes a purchase order, or the personnel department issues a notice of employment, an appropriate encumbrance is generated and the pre-encumbrance liquidated. When either the accounting or payroll subsystem makes an expenditure against a previous encumbrance, that portion of the encumbrance is reduced and the amount of payment is entered as an expenditure against the account. The effective balance of any line account or operating unit can be obtained according to the formula: BALANCE=APPROPRIATION −(PRE-ENCUMBRANCES+ENCUMBRANCES+ EXPENDITURES)

Other Software

The specialized programs of CAAP-10 are designed by and for academic administrators. DIGITAL also offers the capabilities of the basic DECsystem-10 software in support of administrative data processing applications:

DBMS-10—A data base management system which permits DECsystem-10 users to organize and maintain data in forms suitable to the integration of a number of related, but separate, processes and applications. DBMS-10 software is intended for applications where centralized definition and control of data processing and program development functions require data structures and processing techniques not satisfied by traditional data management facilities.

COBDDT—An interactive program used to debug COBOL programs. With COBDDT, the user can change the contents of a data name; set up to 20 breakpoints in a program; continue from a breakpoint or any other point; display the contents of a data name; trace paragraphs and sections.

COBOL—(ANSI standard.) Operates within the DECsystem-10 operating system and offers the business processing capability of COBOL as well as DECsystem-10 features like batch and timesharing modes of operation, on-line editing and debugging, sharable compiler and object code, and compatibility with a wide choice of peripheral devices.

FILE SYSTEM—Provides extensive data file protection mechanisms which ensure that private files are accessible only to the file owner or authorized users.

Software Consulting Services

Because CAAP-10 is a series of program modules and not a turnkey system, the academic/administrative user may elect to arrange for assistance in software installation and implementation. DIGITAL offers software consulting services which can aid the user in the smooth, custom implementation of CAAP-10 program modules. Professional software consultation, routinely available either through resident service, scheduled consultation, or per-call service, helps reduce the development costs associated with obtaining quality, customized software. The service can be especially useful during initial program development stages when detailed knowledge of CAAP-10 software is necessary.

CAAP-10 HIGHLIGHTS

ADMISSIONS
Student applications
Student profiles
Admissions application status reports
Accepted full-time application reports
Application-received reports
Student progress reports
Student acceptance and tuition reports
ACT student profiles

REGISTRATION
Pre-registration
Pre-advisement
Pre-advisement billing
Pre-advisement scheduling
Registration Day information
Registration Day fees
Registration Day class assignments
Enrollment reports
Student directory
Student insurance report
Student labels
HEGIS report

STUDENT SCHEDULING
Schedule preparation
Course request tally
Conflict matrix
Master schedule
Master schedule by day/hour
Simulation versus real run
Student schedule listing
Drop/Add
Drop/Add output listing

GRADE REPORTING
Mid-term grade reports
Mid-term grade analysis
Final grade reports
Final grade analysis
Grade cards
Grade-card tally reports
Dean's list reports
Grade changing
Grade changing, X to I to F

ACCOUNTS RECEIVABLE
Accounting inputs
Transaction inputs
Fee-card inputs
Accounting status reports
Transaction journal
Student billing (statement of charges)
Student receipt (statement of account)

COMPUTERIZED LIBRARY SYSTEM
Determine whereabouts of a book
Check if student is in good standing
Overdue book notices
Daily circulation reports
Year-to-date circulation reports

FINANCIAL SYSTEM
Budget appropriations
Requisition control
Purchasing
Accounting
Personnel
Payroll
Budget analysis

RRPM FEATURES
Converts student enrollment projections to necessary supporting resources

Gives projections for each year for 3 to 10 years

Allows administrators to test changes in the institutional system by simulation

Provides a powerful data base

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