HONEYWELL

NEW DIMENSIONS OF <u>PROVEN</u> COMPUTER PERFORM-
ANCE WITH EXCEPTIONAL ABILITY TO MATCH
THE EXACT DIMENSIONS OF YOUR BUSINESS

SERIES 200

EDUCATION - PUPIL RECORD PROCESSING

COURSE SCHEDULING
RECORD KEEPING
EDUCATION RESEARCH

HONEYWELL COMPUTER SYSTEMS MEET EDUCATIONAL REQUIREMENTS

Honeywell systems are especially well equipped to handle the data processing requirements of secondary school systems. A combination of high internal speeds, multiple peripheral operations, and communications capabilities makes these systems equally practical for centralized record keeping and decentralized reporting. Individual school districts and combinations of small school districts can find it economically feasible to use Honeywell systems to carry out such necessary functions as student scheduling, record keeping, and educational research studies, as well as instructions relating to computers.

Experience in applying computers to meet data processing requirements at the Christian Brothers Schools, the Youngstown (Ohio) School System, the Sacramento and Ventura County (California) School Systems, and other leading educational institutions enables Honeywell to assist you in analyzing your requirements and in selecting the specific system configuration to meet your needs.

This brochure depicts three typical applications of a Honeywell computer system to the solution of secondary school data processing problems.

PROCESSING PUPIL RECORDS

THE APPLICATION

The applications shown (scheduling, student record-keeping, educational research) are typical of the types of operations which are encountered in any school district.
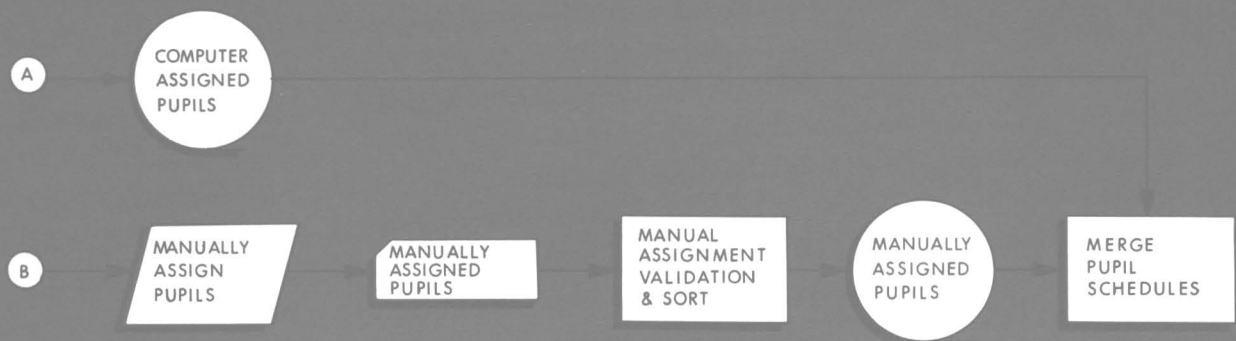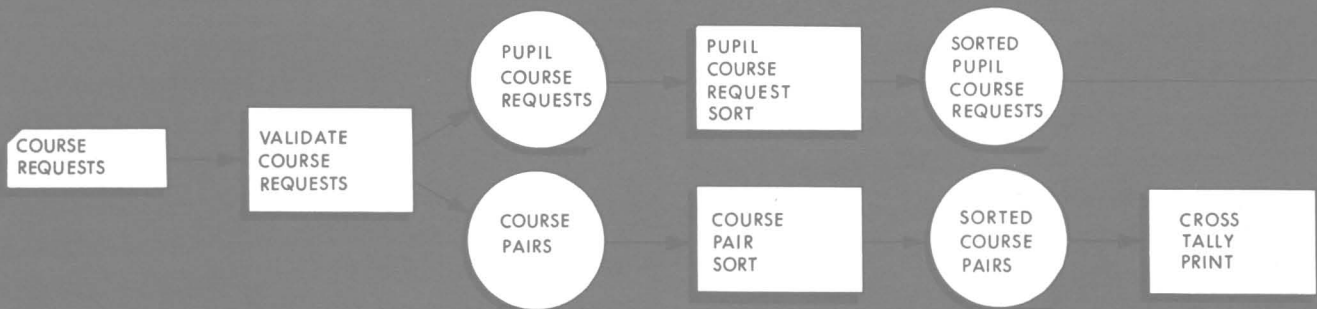
Input consists of attendance records, test scores, student registration data, student changes, information requests.

The output includes attendance reports, report cards, class lists, guidance reports, student schedules and research reports.

HARDWARE AND SOFTWARE DIMENSIONS

Hardware and software components for use in Honeywell systems are summarized below. This total capability assures precise tailoring to current and future application requirements.

- Models 120/200/1200/2200/4200
- Memory speeds ranging from 3 microseconds to 188 nanoseconds per character
- Memory capacities ranging from 2,048 to 524,288 characters
- Up to 30 index registers; flexible nanosecond control memory
- A universal set of powerful instructions
- Advanced programming and memory addressing methods, plus editing, multiply/divide, and floating-point operations
- Up to 16 peripheral operations performed simultaneously with computing
- Up to 64 peripheral control units connected to a processor; each accommodates one or several peripheral devices
- A wide variety of peripheral equipment available in a range of performance capabilities, including communication devices, card equipment, magnetic tape and paper tape units, mass storage units, high-speed printers, MICR equipment, and memory-to-memory adapter units
- Large and powerful real time capability that includes an efficient interrupt facility, single- and multi-channel communication controls, (the latter accepting data from up to 63 lines simultaneously), 8-level code handling, and a range of remote terminal facilities
- Easy-to-use, compatible programming languages; powerful assembly and compiler systems
- Wide array of generalized data manipulation programs: sorts, I/O packages, report generators, and others
- Instruction and data compatibility with 1401, 1410, 1440, 1460, and 7010 systems
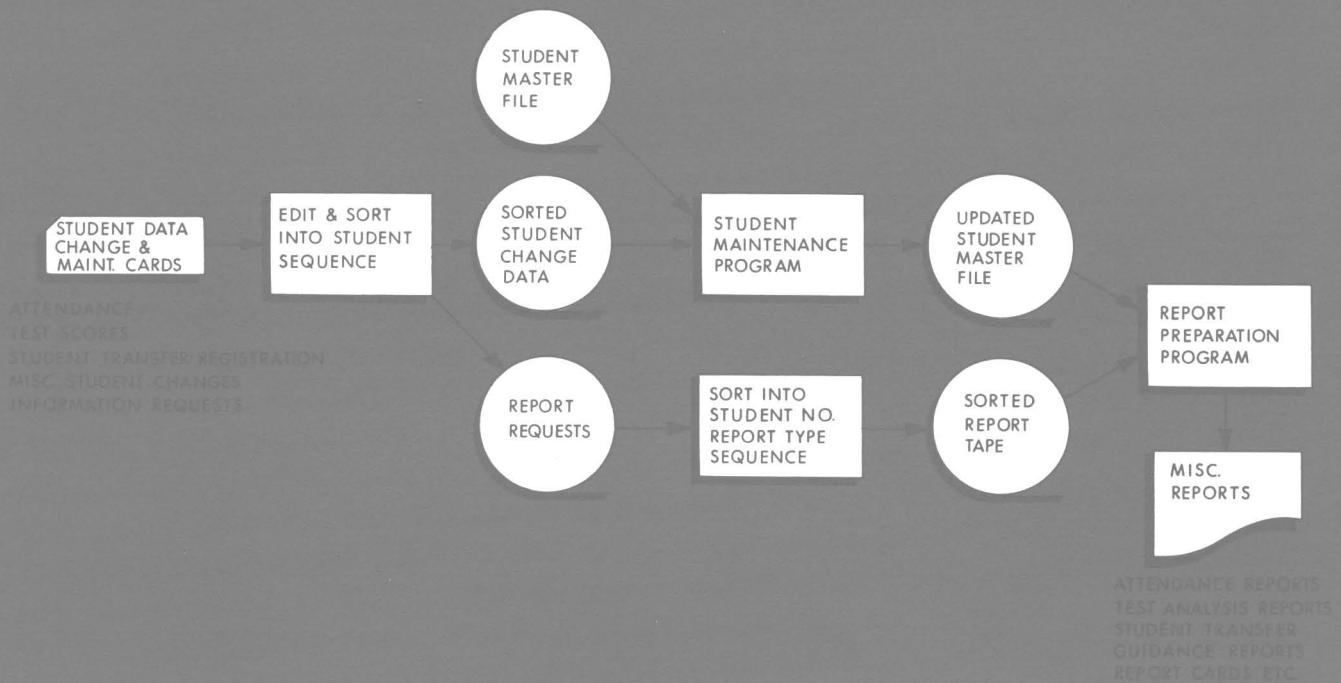- Liberator software for fast and easy program conversion

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COURSE          VALIDATE                PUPIL           PUPIL           SORTED
REQUESTS        COURSE                  COURSE          COURSE          PUPIL
                REQUESTS                REQUESTS        REQUEST         COURSE
                                                        SORT            REQUESTS

                                        COURSE          COURSE          SORTED          CROSS
                                        PAIRS           PAIR            COURSE          TALLY
                                                        SORT            PAIRS           PRINT

  A             COMPUTER
                ASSIGNED
                PUPILS

  B             MANUALLY        MANUALLY        MANUAL          MANUALLY        MERGE
                ASSIGN          ASSIGNED        ASSIGNMENT      ASSIGNED        PUPIL
                PUPILS          PUPILS          VALIDATION      PUPILS          SCHEDULES
                                                & SORT
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PROCESSING PUPIL RECORDS

SCHEDULING

In the scheduling application, student course requests are keypunched and entered on magnetic tape, from which an edit, sort and print program produces a cross tally course list and a tape file of student requests. The cross tally list shows a comparison of all course pair combinations as well as the number of students requesting each course. From this cross tally list a master schedule is prepared which allows for enough sections to accommodate student requests and also allows for scheduling of sections so that popular course combinations do not cause conflicts. The student request file, which is organized by student identification number, contains data concerning the courses requested by each student.

CROSS
TALLY
LISTING

MANUAL *
SCHEDULE
PREPARATION

MASTER
SCHEDULE

VALIDATE *
&
SORT

SORTED
COURSE
FILES

CONFLICT
LIST

PUPIL *
ASSIGNMENT

A

B

* IF NUMBER OF CONFLICTS IS EXCESSIVE, REPEAT MANUAL
SCHEDULE PREPARATION AND RERUN "VALIDATE & SORT"
AND "PUPIL ASSIGNMENT" PROGRAMS.

PUPIL
FILE
MASTER

PUPIL
SCHEDULES

UPDATE
PUPIL FILE

UPDATED
PUPIL
FILE

INSTRUCTOR
FILE

PUPIL
SCHEDULES

INSTRUCTOR
LIST

SORT & PRINT
CLASS LISTS
COMPRESS IN-
STRUCTOR LIST

HOME
ROOM
FILE

COMPRESSED
INSTRUCTOR
FILE

TO BE USED FOR
PREPARING ATTENDANCE
REPORTS FOR EACH
HOME ROOM

TO BE USED FOR
PREPARING GRADE
REPORTING DATA

PROCESSING PUPIL RECORDS

The manually developed master schedule prepared from the cross tally list is keypunched, converted to magnetic tape and sequenced by course and section number. The assignment process proceeds by matching student requests to the file of information on courses so that the most restrictive courses (those with the fewest number of sections) are assigned first. A printout occurs whenever a student cannot be scheduled, and a tape file of students with their assigned classes is prepared. Other outputs from the scheduling operation are instructors' class lists, home room file data (to be used for attendance record keeping), and a comprehensive instructor file which can be used in automated grade reporting procedures.

STUDENT MASTER FILE

STUDENT DATA CHANGE & MAINT. CARDS → EDIT & SORT INTO STUDENT SEQUENCE → SORTED STUDENT CHANGE DATA → STUDENT MAINTENANCE PROGRAM → UPDATED STUDENT MASTER FILE → REPORT PREPARATION PROGRAM

ATTENDANCE
TEST SCORES
STUDENT TRANSFER REGISTRATION
MISC. STUDENT CHANGES
INFORMATION REQUESTS

REPORT REQUESTS → SORT INTO STUDENT NO. REPORT TYPE SEQUENCE → SORTED REPORT TAPE → REPORT PREPARATION PROGRAM → MISC. REPORTS

ATTENDANCE REPORTS
TEST ANALYSIS REPORTS
STUDENT TRANSFER
GUIDANCE REPORTS
REPORT CARDS ETC.

PROCESSING PUPIL RECORDS

STUDENT RECORD MAINTENANCE

Student record maintenance is simply the recording and changing of data which affects each student. The first program converts to tape accumulated student data such as attendance records, test scores, registration data for new students and miscellaneous student data changes (i.e. for counselling purposes, transcripts etc.); also converted are requests for on-demand data such as periodic attendance reports. These data changes and requests are sorted into sequence and are used to update the student master file tape so that all information on tape is current. A second output from the edit-and-sort program is a file of report requests. The report request file is sorted into report type sequence. The updated student master file tape is then used to produce the requested reports.

EDUCATIONAL RESEARCH

A third computer application, and in the long run the most important since it provides the greatest benefit to an educational system, is that of research. A permanent student file maintained on tape from the day the student enters the system provides the raw data necessary to make a variety of statistical studies. Without the use of an electronic data processing system, the magnitude of this work becomes prohibitive. Correlation studies, relating such factors as academic achievement, IQ aptitude, performance, etc., can be easily carried out on a computer.

Positive indices of college success can be developed and tested if the student file is maintained beyond the high school years. The list of research-type studies could be enlarged extensively, but the important fact is that it can never begin unless a tape file of student data is maintained. This of course can only be done effectively with a computer.

PERMANENT STUDENT FILE → RESEARCH PROGRAMS → STATISTICAL REPORTS

ACADEMIC ACHIEVEMENT VS I.Q.
PREDICTION OF SUCCESS AT COLLEGE
TEST SCORE ANALYSIS (LOCAL & NATIONAL NORMS)
CORRELATION BETWEEN APTITUDE & PERFORMANCE

PROCESSING PUPIL RECORDS

INSTRUCTIONAL

More and more universities and colleges are requiring computer knowledge, particularly from those students majoring in the sciences or in engineering. Also, the training of all technically oriented students could include computer operations and/or basic programming. The data processing power of a small-scale Honeywell system can easily absorb the total scope of the applications already mentioned, as well as student training courses in business and scientific programming as well as computer operations. Honeywell has already produced programmed texts dealing with the fundamentals of electronic data processing and programming. In addition, a simplified language is being prepared which will enable pupils to program a Honeywell system without learning the more sophisticated languages normally used. Programs written in this language are ideal training tools for young, beginning students of electronic data processing.

SUMMARY

Honeywell offers system configurations to meet the data processing and budgetary requirements of a wide range of educational situations. Honeywell's interest and experience in the application of computers to the needs of educational environments is available to help your school district plan its data processing system.

Honeywell

SALES OFFICES AND DATA CENTERS
IN PRINCIPAL CITIES OF THE WORLD

DS3-1070
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