This booklet describes the Registration Management System, an online computer system developed as one part of a family of educational management systems. The system promotes the rapid collection and storage of course enrollment data and student demographic data through the use of remote timesharing computer terminals located at individual schools. The booklet is organized into two sections—a brief general description and a user's guide, which provides a detailed explanation of how to use the system. Numerous examples of various program functions and output are presented throughout the user's guide. (Author/JG)
REGISTRATION MANAGEMENT SYSTEM:
GENERAL DESCRIPTION AND USERS GUIDE

Research Report No. 75-619

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March, 1975
EXECUTIVE SUMMARY

Objectives of the Project: The Registration Management System is an on-line computer system used to collect, verify, store, and retrieve demographic and course request data for each student registering for the following quarter or year.

The system promotes the rapid collection and storage of accurate data by checking course requests for validity and allowing student demographic data to be updated at computer response speeds. The counselor in conference with a student supplies information to the District computer by keying data into a teletypewriter. This avoids the data resubmission and accompanying delay times associated with detecting and correcting erroneous data in batch computer runs at an off-site computer center. If a student requests a course that is not being taught, requests a course for which he is not eligible, or requests too many or too few courses, the system will immediately issue an error message.

Mass-registration capability by grade and sex reduces individual registration time. For example, all tenth grade boys could be registered into tenth grade Boys P. E. and tenth grade English using only two commands.

The system aggregates and compares course request data by listing and enumerating answers to such questions as:

1. Which students are taking all of the following courses: Advanced Band, Honors Math, and Stagecraft?

2. How many tenth grade girls are of the American Indian race?

The system expedites parent approval by printing the counselor-approved course requests and the standard parental approval paragraph on a "tear-off" sheet for each student before he leaves the counselor's office.

An initial version of this system was tested at T. W. Browne Junior High School in the spring of 1974 to collect course registration data for this year. The current version of the program is being pilot tested this spring at W. W. Samuell High School to collect course registration data for the three quarters of next year.
I. SYNOPSIS

The Registration Management System (RMS) was designed to decentralize and speed up the school enrollment management process by providing enrollment management tools at the local school level. This objective is accomplished by employing remote, time-sharing computer terminals in the local schools. RMS permits each school to collect and process its own student course requests and to instantly update its student demographic data base.

RMS programs are written in Time Sharing FORTRAN IV language. The system is designed to assist the education administrators to quickly:

A. Collect student course enrollment request data
B. Detect and report input typing or data errors
C. Execute massive modifications to existing student enrollment requests very quickly and easily
D. Detect and report illegal course requests (e.g., boy in girl's P.E. class, 7th grader in 9th grade class)
E. Detect and report requests with too few or too many credit hours
F. Generate on-the-spot course enrollment tallys
G. Make instantaneous corrections to the student demographic data base
2. **INPUT REQUIREMENTS**

RMS requires a file of students (which includes their pertinent demographic data and their course enrollment requests).

RMS also requires a file of the names of the courses into which the students can request enrollment. If these two files do not exist, they may be created in part or in whole by typing in the data via the remote teletype terminals. Similarly, any data existing in these files can be updated or corrected using these same terminals.

3. **TEACHING MACHINE CONCEPT**

In order to accept all degrees of terminal operator proficiency, RMS includes a built-in teaching machine which responds differently depending upon the experience of the typist (or operator). For inexperienced operators, it asks questions using complete sentences and generally types out helpful hints to the user. For an average operator, it shortens its questions and gives only a few helpful reminders. For experienced operators, it uses terse symbols and phrases to minimize conversation time.

RMS permits the operators to promote or demote themselves from one experience level to another. The instructions which RMS types to the "Novice" operator are so complete that an instruction book is not necessary. As the experience level of the operator improves, RMS spends less and less time teaching the operators or conversing with them.
4. **OPERATION AND CONTROL OF RMS**

The operator controls the activities of RMS by requesting one of 17 one-letter "options". Each option performs one major student enrollment activity. When any option task is completed, RMS asks for its next option.

5. **OUTPUT REPORTS**

Since RMS maintains a continual dialog with the terminal operator, most output reports are short and pertain generally to the list of courses requested by one student. A few of its longer reports are as follows:

5.1 **OPTION T (TALLY REQUESTS IN ALL COURSES)**

For Option T RMS counts the number of students who have requested each course, then it prints out the list of courses and shows for each course:

1. Course number
2. Abbreviated name of the course
3. Period control, i.e., credit hours for the course
4. Sex restrictions (if any) for the course
5. Grade level for which the course is taught (e.g., 8 = 8th grade, 12 = high school senior)
6. Semester code (which indicates the semesters or quarters in which the course is offered)
7. Tally or number of students who have requested the course.
5.2 **OPTION L (COUNT ALL STUDENTS IN SAME COURSES)**

For Option L RMS searches and finds all students who have requested the same course or the same courses (the operator types in the list of courses when RMS asks for it). RMS will just print the total number of students common to those listed courses or it will also print the identification of each student who requested all of those courses. It permits the operator to specify NAMES for identification of the students by name or TOTAL for just the total number of students. Under the NAMES operation it prints the following information for each student:

1. Student Identification Number
2. Student Sex
3. Grade (1=1st, 12=high school senior)

5.3 **OPTION F (FIND ALL ERRORS IN ONE GRADE)**

For Option F RMS asks the operator to indicate one grade. Then RMS inspects the enrollment requests for every student in that grade. It checks for:

1. Boy enrolled in Girls class
2. Student enrolled in course which is offered for another grade
3. Too many or too few credit hours (period control)
5.4 Student requesting a course that is not being offered. The printed report only contains the names of those students who fail one of the above tests.

Since the teletype terminal is silent while it is looking at student records which contain no errors and only prints something when it discovers an error, the operator may wonder if the computer has broken down when it is silent. In order to alleviate the operator's fears, RMS counts each student. Every time the count reaches a number divisible by 100, it prints out the count (600, 700, 800, etc.) to let the operator know that it is still alive.
THE REGISTRATION MANAGEMENT SYSTEM

USERS GUIDE

Project Simu-School

Dallas Independent School District
REGISTRATION MANAGEMENT SYSTEM

USER'S GUIDE

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2.1 Input Equipment
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2.2.2 Program Inputs and Outputs
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I. SYNOPSIS

The Registration Management System (RMS) was designed to de-centralize and speed up the school enrollment management process by providing enrollment management tools at the local school level. This objective is accomplished by employing remote, time-sharing computer terminals in the local schools. RMS permits each school to collect and process its own student course requests and to instantly update its student demographic data base.

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F. Generate on-the-spot course enrollment tallys
G. Make instantaneous corrections to the student demographic data base
The various programs which comprise RMS were written in:
Time-Sharing Fortran IV.

They were implemented and successfully tested using the enrollment of the 1,789-student T. W. Browne Junior High School of the Dallas Independent School District, Dallas, Texas in May of 1974. The RMS programs can be stored on disc, and all files associated with it are designed to be stored on disc also.

Since the basic student demographic files were normally maintained and processed at the Region 10 Texas Education Agency, an extracted version was obtained from Region 10. This became the student base file for RMS. In order to keep the Region 10 data base in step with the daily updated RMS data base, an "updating deck" of cards was periodically produced and transmitted back to the Region 10 computing center.
2.0 Input Structure

RMS is a data base management system. The main data base is file "STU043", where "043" is the school identification number for T. W. Browne Junior High School. For other schools similar files would be employed using their own 3-digit numeric identification substituted for "043". Since RMS is a time-sharing system there are no input card format requirements. The input-output conversation rules at the teletype terminal are extremely simple:

When RMS wishes the terminal operator to type in some information or to answer a question it:

1) Types the question
2) Types a question mark
3) Waits for the operator to type the reply.

The question mark is the signal that RMS is awaiting some action by the operator.

2.1 Input Equipment

Any type of remote terminal may be employed. The programs are formatted for use with a 72-character wide display employing all upper case alphabetic (plus numeric) characters.

2.2 Computer Programs

The computer program in RMS is named "OLCREQ" (On-Line Course/Request).
2.2.1 Program Storage Requirements

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Number of Records in Source Program</th>
<th>Number of Records in Object Program</th>
<th>Words* per Record</th>
</tr>
</thead>
<tbody>
<tr>
<td>OLCREQ</td>
<td>2021</td>
<td>426</td>
<td>10</td>
</tr>
</tbody>
</table>

* Word Length = 48 Bits

2.2.2 Program Inputs And Outputs

<table>
<thead>
<tr>
<th>Program Name</th>
<th>Inputs</th>
<th>Outputs</th>
</tr>
</thead>
<tbody>
<tr>
<td>OLCREQ</td>
<td>File &quot;COU043&quot;</td>
<td>File &quot;TRX043&quot;</td>
</tr>
<tr>
<td></td>
<td>File &quot;STU043&quot;</td>
<td>Updated &quot;STU043&quot;</td>
</tr>
<tr>
<td></td>
<td>File &quot;IDX043&quot;</td>
<td>Updated &quot;IDX043&quot;</td>
</tr>
</tbody>
</table>

2.2.3 Sequence Of Program Executions

1. Obtain 9-channel tape "STUDNT/MASTER" containing student database from Region 10.
2. Since Region 10 could not create a 7-channel magnetic tape and since the Dallas School computer could only use 7-channel tapes it was necessary to go to a commercial computer faculty to have the data on the Region 10 tape translated into a 7-channel data format and record on a 7-channel tape named "STUDNT/MASTER".
3. Execute program "TAPSTU" to create disc files "STU000" and "IDX000" from the data on the 7-channel tape.
4. Execute program "COPSTU" to create disc files "STU043" and "IDX043" from files "STU000" and "IDX000".
5. Optional: Execute program "SEESTU" to inspect some selected data records of "STU043" to verify that the correct data had been obtained from Region 10. (This is the first convenient point in the process where a printed formatted output of the data base could be obtained on the local teletype terminal.)
6. Execute program "OLCREQ" to:
   A. Insert student course requests into file "STU043".
   B. Modify student demographic data in file "STU043".
   C. Create the list of course offerings file "COU043".
7. Execute program "OLCPUN" to create an 80-column card-image file of student course requests (named "STUPUN").

8. Execute standard computer utility program to punch the contents of file "STUPUN" as a punched card deck (for transmittal to Region 10 so that they can update their students data base).

Note: Steps 7, 8 and 9 would not be needed in other environments where the local school's remote teletype terminal could converse directly with the "official" computer student data base.

9. Daily or periodically execute standard computer utility program to punch the contents of file "TRX043" as a punched card deck for transmittal to Region 10 (to update their student data base). File "TRX043" is an 80-column card-image transaction file of all changes to either the student course requests or to the student demographic data. File "TRX043" is created automatically whenever program "OLCREQ" is executed.

2.3 Data Files

All data files are designed to be resident on disc storage during the execution of the programs.

<table>
<thead>
<tr>
<th>Data File Name</th>
<th>Used With Program</th>
<th>R=Random</th>
<th>S=Sequential</th>
<th>P=Permanent</th>
<th>T=Temporary</th>
<th>I=Inspected</th>
<th>C=Created</th>
<th>M=Modified</th>
</tr>
</thead>
<tbody>
<tr>
<td>COU043</td>
<td>OLCREQ</td>
<td>S</td>
<td></td>
<td>P</td>
<td></td>
<td></td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>IDX043</td>
<td>OLCREQ</td>
<td>R</td>
<td></td>
<td>P</td>
<td></td>
<td></td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>INQ043</td>
<td>OLCREQ</td>
<td>S</td>
<td></td>
<td>P</td>
<td></td>
<td>I</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>STU043</td>
<td>OLCREQ</td>
<td>R</td>
<td></td>
<td>P</td>
<td></td>
<td>M</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRX043</td>
<td>OLCREQ</td>
<td>S</td>
<td></td>
<td>P</td>
<td></td>
<td>C</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.3.1 Data File Storage Requirements

<table>
<thead>
<tr>
<th>File Name</th>
<th>Number of Records</th>
<th>Words Per Record</th>
<th>48 Bits Per Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>COU043</td>
<td>88</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>IDX043</td>
<td>201</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td><em>INQ043</em></td>
<td>Approx. 40</td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>STU043</td>
<td>4000</td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>TRX043</td>
<td>2500</td>
<td></td>
<td>10</td>
</tr>
</tbody>
</table>

*This file is hand-created from the terminal prior to executing OLCREQ. It is only required for one part of Option Q. Since it contains data of variable length it has no specified size.

2.3.2 File Formats

<table>
<thead>
<tr>
<th>File Name</th>
<th>Character Positions</th>
<th>Symbolic Name in Program</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>COU043</td>
<td>N</td>
<td>TT (1 to 3,N)</td>
<td>Course Number</td>
</tr>
<tr>
<td></td>
<td>3-18</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>19-24</td>
<td>TT (4,N)</td>
<td>Course Title</td>
</tr>
<tr>
<td></td>
<td>25-30</td>
<td>TT (4,N)</td>
<td>Not Used</td>
</tr>
<tr>
<td></td>
<td>36</td>
<td>TT (5,N)</td>
<td>Period Control</td>
</tr>
<tr>
<td></td>
<td>37-42</td>
<td>TT (6,N)</td>
<td>Sex</td>
</tr>
<tr>
<td></td>
<td>43-48</td>
<td>TT (7,N)</td>
<td>Grade</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IDX043</th>
<th>Record #0 (Free Form School Identification)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Records #1 Thru 100 As Shown Below</td>
</tr>
</tbody>
</table>
|           | 1-6                                         | Number 1st Student I.D.
<table>
<thead>
<tr>
<th>Field Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-12</td>
<td>2nd Student I.D. Number</td>
</tr>
<tr>
<td>235-240</td>
<td>40th Student I.D. Number</td>
</tr>
<tr>
<td>1-6</td>
<td>1st Student 1st 6 characters of Last Name</td>
</tr>
<tr>
<td>235-240</td>
<td>40th Student 1st 6 characters of Last Name</td>
</tr>
<tr>
<td>STU043</td>
<td>(Free Form) Record Header</td>
</tr>
<tr>
<td>STU043</td>
<td>Student I.D. Number or Student Name (with Slashes)</td>
</tr>
<tr>
<td>INQ043</td>
<td>(Free Form) Detail Record</td>
</tr>
<tr>
<td>INQ043</td>
<td>Course Numbers and Semester Numbers (with Slash Separators)</td>
</tr>
<tr>
<td>STU043</td>
<td>1-6 ISN Student I.D. Number</td>
</tr>
<tr>
<td>7-9</td>
<td>IACT Student Activity</td>
</tr>
<tr>
<td>10-34</td>
<td>SNAME Student Name</td>
</tr>
<tr>
<td>35-59</td>
<td>PNAME Guardian Name</td>
</tr>
<tr>
<td>60-65</td>
<td>ADDR(1) Street Number</td>
</tr>
<tr>
<td>66-67</td>
<td>ADDR(2) Street Name Prefix</td>
</tr>
<tr>
<td>68-82</td>
<td>ADDR(3,4,5) Street Name</td>
</tr>
<tr>
<td>83-84</td>
<td>ADDR(6) Street Suffix</td>
</tr>
<tr>
<td>85-101</td>
<td>ADDR(7,8,9) City Name</td>
</tr>
<tr>
<td>102-106</td>
<td>ADDR(10) ZIP CODE</td>
</tr>
<tr>
<td>107-114</td>
<td>ADDR(11,12) TELEPHONE</td>
</tr>
<tr>
<td>115-121</td>
<td>ADDR(13,14) EMERGENCY TELEPHONE</td>
</tr>
<tr>
<td>122-125</td>
<td>ADDR(15) Apartment Identifier</td>
</tr>
<tr>
<td>126</td>
<td>ADDR(16) Same Mail Address</td>
</tr>
<tr>
<td>127</td>
<td>ISEX SEX</td>
</tr>
<tr>
<td>128</td>
<td>TRACE RACE</td>
</tr>
<tr>
<td>TRX043</td>
<td>I GRADE</td>
</tr>
<tr>
<td>--------</td>
<td>---------</td>
</tr>
<tr>
<td>IADV</td>
<td>Advisor Number</td>
</tr>
<tr>
<td>IREQ(1-16)</td>
<td>16 Course Requests</td>
</tr>
<tr>
<td>ISEM(1-16)</td>
<td>16 Semester Identifiers</td>
</tr>
</tbody>
</table>

**Card Type Identifier**
- (E", "F", or "G")

**School Identifier** ("043")

**Student ID Number**
- (11-14), (19-21), (26-28), (33-35), (40-42), (47-49), 54-56), 61-63)

**Course Requests**
- 17, 24, 31, 38, 45, 52, 59, 66,

** Semester Identifiers**

**constant=RO**
- 72-73 R,O

**Date (MMDDYY)**
- 74-79 MO,DA,YR

**Constant= "C"**
- 80 C
3.1 Human Engineering Features

The program OLCREQ has been "human engineered" to present its questions and its replies in such detail and in such sequences as to virtually preclude operator confusion or misunderstanding. For example, only one syntactic character is ever used, namely, the slash (/) mark. Thus, when typing in a name the system will advise the operator "FORMAT=FIRST NAME(SLASH)MIDDLE INITIAL(SLASH)LAST NAME" and will check when one types in "JOHN/Q/PUBLIK" to verify that the slashes were present.

The program leads the operator through various sequences of dialog. Whenever the system asks for more instructions it always provides a list of acceptable replies so the operator need only select the desired one and type it in. Whenever the system is in a repetitive loop asking for another name or another number it always displays the exit character which will break the loop and return the system to a higher level control point.

Example:
"NEXT STUDENT NAME (EXIT=***)"
"NEXT STUDENT NUMBER (EXIT = Ø)"

The program OLCREQ is designed to be effective with varying experience or intelligence levels of operators. As such, it contains the essential elements of a teaching machine for instructing its terminal operators.

OLCREQ recognizes 3 levels of operator experience: novice, average, expert. There are three sets of answers and three sets of questions for every one of the 17 different tasks (called "OPTIONS") which OLCREQ can be instructed to perform (one set each for novice, average, and expert).
"Expert" questions and answers are very cryptic, assuming that the operator knows all of the system data input format requirements etc., and are executed with the fewest number of typed characters consistent with unambiguous operation.

"Average" questions and answers employ longer phrases and some helpful reminders to keep the terminal operator from forgetting important format details.

"Novice" questions and answers employ sentences and provide additional instructions. It takes the place of an operator's manual and provides helpful suggestions to instruct the operator in becoming proficient. All classes of operation employ extensive error detection routines for finding illegal or operator-caused data input errors. The extent of the error slogans thus produced is either long (for novice), medium (for average) or cryptic (for expert).

At sign-on time the operator is advised of the three operator-experience levels and is requested to identify her experience level. Thus, the system adjusts itself to the current operator's proficiency.

Thereafter, at any time, the operator may promote or demote himself or herself by simply executing Option E, the operator experience option. The inclusion of this self-teaching feature permits any person to become a productive terminal operator with a minimum amount of instruction, and provides a continuity of instruction that is always available to help upgrade operating proficiency.

Figure 3.1-A documents the actual conversation between OLCREQ and a Novice operator. Whenever the computer requires an answer from the operator it
UNCLASSIFIED INTELLIGENCE

LATEST ITF-011C 11-74 NOVEMBER 1974

1. STATUS OF OPERATIONS:

a. 15 NOVEMBER 1974

b. 16 NOVEMBER 1974

2. SUMMARY OF ELEMENTAL FACTORS:

a. 15 NOVEMBER 1974

b. 16 NOVEMBER 1974

3. CONCLUSION:

a. 15 NOVEMBER 1974

b. 16 NOVEMBER 1974

4. RECOMMENDATION:

a. 15 NOVEMBER 1974

b. 16 NOVEMBER 1974

5. ACTION REQUIRED:

a. 15 NOVEMBER 1974

b. 16 NOVEMBER 1974

6. ATTENTION:

a. 15 NOVEMBER 1974

b. 16 NOVEMBER 1974

7. SIGNATURE:

a. 15 NOVEMBER 1974

b. 16 NOVEMBER 1974

Figure 3.1-A
types a question mark as the first character on the line and then waits while the operator types the reply on that line. In this example the operator answered "NO", "NOVICE", and "A".

Part of the "human engineering" in OLCREQ consists of allowing the operator to respond with any alphanumeric character without causing abnormal program termination. After the character is received it is examined and tested for its numeric or alpha identity. If a non-numeric character is detected when a numeric character is required then OLCREQ will notify the operator that an error has been made and request that she re-type the last entry. Input-checking operations of this type are handled in a subroutine named READER contained within OLCREQ.

Part of the human engineering concept in OLCREQ is to permit a large amount of different kinds of data to be typed in at one time. Rather than to ask "SEX" and wait for the operator to type "B" or "G" (Boy or Girl) and then to have the computer ask "RACE" and then wait for the operator to type the reply and then to have the computer ask "GRADE" and then wait for the operator to type the reply, etc., a whole series of questions are asked which can all be answered at one time. The operator merely types the syntactic character "slash mark" (/) between each of the data fields. All of this is explained to the NOVICE operator as shown by Figure 3.1-B which occurs during one part of the execution of Option N.

The contents of each typed-in field (sex, race, grade, etc.) is then checked for reasonableness before being accepted. Rejected fields cause typed-out notice of the reason for its rejection so that the operator may enter the data again correctly.

OPTION N.

API THE STUDENT TO FILE. (F/1 = STUDENT I.D. = 0)

FORMAT = STUDENT I.D. = 0; NAME/INITIAL/LAST NAME

(1) NOT FORCED TO TYPE IN THE OFFICE

20050608 HANNAH T. ALVAREZ

THANK YOU. NEXT THE LEMOGRAPHIC DATA.

ATION IRED RELATIONSHIP (1, 2, 3, 4)

?1

ATION RELATIONSHIP (1, 2, 3, 4, 5, 6, 7, 8, 9)

?2

ATION RELATIONSHIP

FORMAT = FIRST NAME, /orgeous INITIAL/LAST NAME

1000/400/ALVAREZ

JOHN (ALVAREZ)

YOU WILL IMPLEMENT ON HOW TO ENTER LEMOGRAPHIC DATA (YES, NO)

YES

1. EACH ITEMS OF INFORMATION SUCH AS
SEX, COLOR, HOME ADDRESS, STREET, ETC.
IS CALLED A DATA FIELD.

2. A DATA FIELD OCCUPIES THE SPACE BETWEEN 8 AND 50 CHARACTERS.

3. I WILL TYPE A DEPART LINE TO HELP ME ENTER THE NAME OF THE DATA FIELD (EX: CMY IVEL)

4. IF YOU DO NOT KNOW WHAT TO TYPE ANY NAME INTO THE FIELD;
DATA FIELD (SEX: [G, C]) YOU JUST TYPE A BLANK SPACE (X).
(EVERYTHING UP TO THE LAST SPACE IS SEX AND FORM)
YOU TYPE ANYTHING UP TO THE LAST SPACE TO SEAN IF
YOU CHOOSE.

5. THE NEXT DATA FIELD IS BACK, IT IS THE FIRST OF THE NAME
(1ST, 2ND, 3RD, ETC.) FOLLOWED BY A SPACE.

6. AGAIN IF YOU WANT TO PUT THE NEXT FIELD AND
3.2 Operator/OLCREQ Communications

3.2.1 How OLCREQ Asks The Operator Questions

When OLCREQ wishes the operator to answer its question or to type in more data, etc., it types the question it wishes answered. Then it types a question mark on the left margin of the next line and waits.

The lonely question mark at the left of the page is the signal that OLCREQ is now waiting for the operator to type in the reply. After the reply has been typed (immediately to the right of the question mark) one must press the CARRIAGE RETURN key. That key is the signal to OLCREQ that the operator has completed the answer and is now waiting for OLCREQ to continue.
3.2.2 Getting OLCREQ To Start

To start executing program OLCREQ, the operator:

1. Turns the LINE/OFF/LOCAL switch on the teletype to "LINE."
2. Picks up the adjacent telephone.
3. Dials the telephone number of the time-sharing computer.
4. Listens for the "ready tone" signal from the computer.
5. Places the telephone handset into the acoustic coupler (which connects the telephone to the teletype) and waits for the computer to type its introductory remarks on the teletype.
6. Types in the "user number", then the secret password and waits for the computer to verify authorization to use that computer.
7. At that point one can cause the computer to execute any one of many programs stored in the memory of the computer.
8. In this case, to execute (or RUN) program OLCREQ the operator merely types in "RUN OLCREQ."
9. Program OLCREQ will then start "running."
10. Since the program may have not been used for days or months it needs to get oriented so it asks the operator what day it is (see Fig. 3.1-A).
    If one had typed in an illegal or impossible date OLCREQ would have indicated so and then requested the correct date again.
11. OLCREQ then verifies that the necessary data files STU043, IDX043, COU043 and TRX043 are present in the computer memory bank. (It cannot function without them.)

12. It then reads the first record in STU043 which contains the name of the school and prints it out on the teletype for the operator to inspect.

13. It then similarly prints out the name of the school which is present on the "index" file IDX043 for additional verification.

14. OLCREQ does not yet know if it is speaking to a new or an experienced operator so it proceeds to ask if it should skip its advice to new operators. (In Fig. 3.1-A the operator answered "NO" so it describes its 3 levels of operator experience.)

15. OLCREQ then requires the operator to classify oneself (In Fig. 3.1-A the operator types in "NOVICE.")

16. It then lists all of the options available to the operator and asks the operator which option to execute. (In Fig. 3.1-A the operator requested Option A.)

By way of comparison, Fig. 3.2.2-A shows what would happen if the operator had answered "YES", "EXPERT" and "A" respectively. The reduction in typed lines and the improvement in speed of operation is quite evident.

Note that the number 1812 at the end of "WHICH OPTION" is the number of students. It is just another double check that the correct data file is being used.
3.2.3 Getting OLCREQ To Stop

To stop program OLCREQ, the operator merely requests it to execute "Option S" (this is the "STOP" option).
3.3 Description of Operator Options

The operator controls the operation of OLCREQ by requesting it to execute an "OPTION" (identified as OPTION A, OPTION E, OPTION K, etc.).

If the operator should ever forget the various options available, he or she just requests OPTION 0 and OLCREQ will type out a catalog of all the options available.

Figure 3.3-A shows what happens if the operator requests a non-existent option. (Option B was requested. Since there is no Option B, OLCREQ advises the operator and then repeats its question "WHICH OPTION?").
(O=LIST OF OPTIONS)


I DO NOT RECOGNIZE OPTION B

(O=LIST OF OPTIONS)


Figure 3.3-A
3.3.1 Option A: Mass Request To All Of One Grade

Option A permits mass erasures from (and mass insertions into) the records of all students who are of a specified sex (Boy or Girl) and who are in a specified grade (8, 9, 10, 11, 12). In Fig. 3.3.1-A the operator requested Option A specifying B (boys) and 8 (8th grade). OLCREQ then requests the operator to type in a list of course numbers followed by their "semester number" and, for the novice operator, types a sample format for use as a guide. One must be sure to include the syntactic separator mark (slash) following each course number and each semester number. One can type as many courses (with their semester numbers) as possible on one line.

In Fig. 3.3.1-A the operator only wanted all 8th grade boys to request one course (751) whose semester number was 4. (In the Dallas schools a semester number of 4 indicates a two semester course while a semester number of 7 indicates a one semester course.)

OLCREQ then pauses while it compares the course number which the operator had requested against the official list of courses as contained in file COU043. If the operator had inadvertently typed a non-existent course number OLCREQ would have so indicated.

It then types back the list of courses it had received from the operator and also prints the title of each course for operator confirmation of this list. (The operator possibly could have mistyped one or more course numbers). It then waits until the operator types in YES or NO for confirmation. The program then examines every student record in file STU043. Whenever it finds a record which meets these 2 requirements of sex and grade it will:

1. Erase all existing course requests in that record
2. Insert the specified list of course numbers as the only legitimate course requests.
Figure 3.3.1-A
It requires perhaps 5 minutes or more in order to examine each student record in STU043 (depending upon the number of students in the file). An operator sitting in front of a lifeless teletype for one minute or more may start to worry. One may wonder if the telephone line has gone dead or if the computer has stopped. Therefore, in order to allay fears, OLCREQ switches to its "PLACEBO" mode. In this mode it counts each student record which it examines. Each time it counts 100 records it prints out the number. This accomplishes 2 things. It lets the operator know that it is not dead and it lets one gauge how much longer it will take the computer to comply with the present command. In Fig. 3.3.1-A the reader will see the numbers

100
200
300
400

up to 1800 which the PLACEBO operation generated.

The program OLCREQ then types out the actual number of pupils whose schedules were thus modified by Option A. It will then permit the operator to select another option.

Because it erases all previous course requests in the selected records Option A is very powerful and should always be executed before other options such as K, N, Q, or Z. Otherwise, if these other options are executed before Option A is executed, OLCREQ will print out a warning to the operator as follows: "CAUTION. Option A is very powerful. It erases every course for every student of that grade and sex. It will supersede any corrections in Options K, or N, or Q, or Z. Be sure to do all Option A work before starting Options K, N, Q, or Z." Knowing
that the operator will get bored while waiting for this warning to be printed out EVERY time OPTIONS A, K, N, Q, or Z are requested, OLCREQ will only print out the warning once per program execution. In Figure 3.2.2-A to the right of the STUDENT FILE HEADER one will see printed "A103174." The letter "A" indicates that this "Option A" warning has already been printed once before so it will never again be printed. (The first time that OLCREQ is used there is a blank instead of the letter A there.) The data 103174 shows the last date (November 31, 1974) that the file STU043 had been updated. This date is another double check that the operator may use to see that the computer contains the latest version of the STU043 data file.

Option A is particularly useful for grades 7 and 8 where large numbers of students must take standard prescribed courses.

3.3.1.1 Option A Error Exits

The following error exits are provided for Option A:

1. For "sex" if the operator types anything other than B or G it will start Option A over again.

2. When it asks "Is the course list correct" and the operator answers with "NO" OLCREQ will then jump back to "COURSE REQUESTS TO BE INSERTED."

3. Option A temporarily jumps to error checking subroutine "CORSEL" which checks for and reports:
   A. An illegal course number
   B. An illegal semester number for that course
   C. A Boy's request for a Girls' Course (or vice versa)
   D. Student in a particular grade requesting a course for an inappropriate grade
3. Selecting more than 16 courses

F. A course which is not followed by its semester number

G. A course number which contains a minus prefix
3.3.2 Option C: Change Course Offerings

Option C permits additions, deletions, and modifications to the list of authorized courses (in file COU043). Before changes are entered the operator can request a print-out of the existing contents of the file. One is also offered the opportunity to list the contents of the file after changes have been effected.

For each course the file will contain:

A. Course number
B. Course title (free form)
C. Period control (hours per day of credit)
D. Sex restrictions if any (B, G, or blank)
E. Grade
F. Semester identification (4=all year, 7=half year)

Illegal values of Course Number, Sex, Grade or Semester will cause a warning to be printed out. Upon completion, OPTION C will permit the operator to select another option.

Fig. 3.3.2-A shows the operator/OLCREQ dialog. The operator did not want a list of courses printed out at first. (If so, the list would have been similar to the list at the bottom of the figure.) The operator deleted course 117 by inserting a minus sign in front of it. (Note that when a course is deleted the other information is not typed.) The operator added course 206 and then indicated no more course changes by typing in the exit number +999.

Fig. 3.3.2-A was the dialog for a NOVICE operator. Fig. 3.3.2-B is the same dialog for an expert operator. Notice its brevity. (It expects the operator to know the correct format, etc.)

Option C. Change course offerings.
Do you want a list of active courses (yes/no)

(Positive is add, Negative is delete. Positive is all)

Format is:
(-+) Course number (asterisk) semester (which is 4 or 7) sex (P or G or blank) grade (2 digits) period control (2 digits)
TITLE (18 lights please format)

Example: +950*480902PE BOYS 91H

Next course input (+999=exit)

-117

Next course input (+999=exit)

Next course input (+999=exit)

One moment while I input these changes.

Do you want to see the revised list (yes/no)

Yes

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Sex</th>
<th>Grade</th>
<th>Semester</th>
<th>Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>105</td>
<td>FENG LANG AH 7F</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>106</td>
<td>FENG LANG AH 7</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>109</td>
<td>FENG LANG AH 7R</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>110</td>
<td>FENG LANG AH 8</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>113</td>
<td>ENGLISH 1A</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>116</td>
<td>ENGLISH 1B</td>
<td>2</td>
<td>9</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>119</td>
<td>ENGLISH 11A</td>
<td>2</td>
<td>9</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>138</td>
<td>COHK FADING</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>150</td>
<td>LANG ARTS 7CS</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>157</td>
<td>LANG ARTS 8 CS</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>158</td>
<td>ENGLISH 1 CS</td>
<td>2</td>
<td>9</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>161</td>
<td>SPEECH 7</td>
<td>1</td>
<td>7</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>181</td>
<td>ART 7</td>
<td>1</td>
<td>7</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>183</td>
<td>ART 1</td>
<td>2</td>
<td>9</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>206</td>
<td>TEXAS HISTORY GEO</td>
<td>2</td>
<td>7</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>211</td>
<td>AM HIST CITZ R</td>
<td>2</td>
<td>8</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>214</td>
<td>WLL GEO STUD</td>
<td>2</td>
<td>9</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>217</td>
<td>WLL HIST STUD</td>
<td>2</td>
<td>9</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>260</td>
<td>GFV SHOP R</td>
<td>2</td>
<td>8</td>
<td>76</td>
<td>0</td>
</tr>
</tbody>
</table>

Figure 3.3.2-A
OPTION C. CHANGE COURSE OFFERINGS.

DO YOU WANT A LIST OF ACTIVE COURSES (YES/NO)

?NO

NEXT COURSE INPUT (+999=EXIT)

?117
EXECUTE.

NEXT COURSE INPUT (+999=EXIT)

?206*4 0702 TEXAS HISTORY GEO

NEXT COURSE INPUT (+999=EXIT)

?999

ONE MOMENT WHILE I STORE THESE CHANGES.

DO YOU WANT TO SEE THE REVISED LIST (YES/NO)

?NO

WHICH OPTION (A, C, E, F, I, K, L, M, N, O, P, Q, S, T, U, V, Z) [L]

?

Figure 3.3.2-8
3.3.3 **Option E: Change Experience Level**

OPTION E is described in detail in Section 3.1, HUMAN ENGINEERING FEATURES. The program always executes Option E automatically at sign-on. Thereafter it may be executed whenever the operator wishes to be promoted or demoted. If promoted prematurely the operator will soon discover that its cryptic instructions are too confusing. That is when the operator should demote herself or himself to the level (NOVICE or AVERAGE) which matches knowledge and understanding of the system.

OPTION E will print out the name of its newly selected experience level (NOVICE, AVERAGE, EXPERT) and then switch to that mode of operation. It will then permit the operator to select another option. Figure 3.3.3-A illustrates Option E in which the operator classifies oneself as NOVICE while Figure 3.3.3-B illustrates Option E in which the operator classifies oneself as EXPERT. Notice the reduction of descriptive lines in the EXPERT mode.

OPTION E. OPERATOR EXPERIENCE LEVEL

HOW DO YOU CLASSIFY YOURSELF (EXPERT, AVERAGE, NOVICE)?

SWITCHING TO EXPERT EXPERIENCE LEVEL


Figure 3.3.3-A


?E

OPTION E. OPERATOR EXPERIENCE LEVEL

HOW DO YOU CLASSIFY YOURSELF (EXPERT, AVERAGE, NOVICE)?

SWITCHING TO EXPERT EXPERIENCE LEVEL


Figure 3.3.3-B
3.3.4 Option F: Find All Errors In One Grade

Option F requests the operator to type in one grade number. It then examines every student record in file STU043, stopping only at those records which show a student activity code of zero (meaning an ACTIVE student) and a grade number equal to the number which the operator had typed in.

When the system stops at a student record, it examines each course request number for any errors regarding that course, such as:

1. Illegal course number (not in COU043)
2. Course Sex and Student Sex not identical
3. Course Grade and Student Grade not identical
4. Illegal Semester
5. Duplicate course numbers
6. Period Control total not equal to 12.

When errors 4 or 5 (above) are encountered the program will:

A. Erase the course request (if illegal semester) and notify the operator
B. Replace one of the duplicate courses with a zero and notify the operator.

Option F employs the PLACEBO mode (see Section 3.3.1).

Upon completion OPTION F prints out "SEARCH COMPLETE" and then permits the operator to select another option.

Fig. 3.3.4-A shows the operation of Option F.
SEARCH ALL POSSIBLE SCHEDULE ERRORS FOR ONE GRADE.

129711 Martin Kelek
STUDENT I.C. 129711 PERIOD CONTROL = 9 INSTEAD OF 12.
STUDENT I.C. 129712 PERIOD CONTROL = 10 INSTEAD OF 12.

129717 James Pschoen
750 POTENTIAL SEX CONFLICT
STUDENT I.C. 129717 PERIOD CONTROL = 13 INSTEAD OF 12.
STUDENT I.C. 129724 PERIOD CONTROL = 10 INSTEAD OF 12.
STUDENT I.C. 129726 PERIOD CONTROL = 10 INSTEAD OF 12.

129798 Steven Wheeleler
STUDENT I.C. 129798 PERIOD CONTROL = 14 INSTEAD OF 12.

166907 Steven Tmalvem
750 POTENTIAL SEX CONFLICT
STUDENT I.C. 166907 PERIOD CONTROL = 13 INSTEAD OF 12.

277668 Barry WJackson
749 POTENTIAL SEX CONFLICT

SEARCH COMPLETE

(0=LIST OF OPTIONS)


Figure 3.3.4-A
3.3.5 Option I: Count All Inactive Students

Option I inspects every student record in file STU043 stopping only at those records whose Student Activity Flag (character positions 7, 8, 9) contents are NOT zero. Prior to this inspection the operator is given the choice (NAMES, TOTAL) as to whether she or he wishes the name of every inactive student printed on the terminal (plus the total number), or whether just the total number of all inactive students is to be printed on the terminal. Upon completion OPTION I permits the operator to select another option.
3.3.6 **Option K: Change Student Data**

OPTION K first checks for the presence of the OPTION A flag (Section 3.3.1) and prints the standard warning if it is NOT present.

OPTION K permits the operator to select any student record in file STU043 and then to change any information contained within that record. Initially the operator is asked whether the wish is to identify all students by their Student I.D. number or by their name (NUMBER or NAME). Thereafter, as each name (or number) is typed in, that student's record is retrieved.

Changes are made to the data and the record is stored back into file STU043. Simultaneously, an 80-character (punched card image) record is created and stored in the Transaction File TRX043. As each student record is retrieved the operator is given 3 choices of action:

- **D**=Demographic data
- **C**=Course Request data
- **N**=No changes.

If choice "C" is selected the operator is given an opportunity to examine the current list of course requests. Then it is permissible to type in any additions or deletions by simply typing a series of numbers separated by the syntactic character "slash mark" (/). If any of these typed-in numbers are negative, then that course number is deleted.

It is NOT necessary to precede the other numbers with a "+" sign. However, every "added" course must be followed by

A. A slash mark "/"

B. A one-digit semester number (4 or 7)

C. Another slash mark "/".

An error slogan will be typed OPT for each:
2. Added course which is followed by an invalid semester character
3. Added course which is not contained in the list of authorized courses (file COU043)
4. "Deleted" course which had not been present in the student record.
   Under all of these situations the erroneous course changes will be ignored but the remainder of the course changes will be executed.
   There is another class of course changes which WILL be executed, but a warning will be typed concerning them. These are changes in which the:
   1. Student's sex conflicts with the course sex
   2. Student's grade conflicts with the course grade.
   The new revised list of course requests (along with the period control and semester number for each course) will then be printed out automatically (followed by a warning message if the period control total does not exactly equal 12).
   The "Potential Sex Conflict," "Potential Grade Conflict" and "Period Control Not Equal 12" are warning messages only. They do NOT prevent the student from requesting the course.
   If the operator had not wished to make any course request changes (but just wanted to see what courses the student had already requested) she or he would simply have typed a zero (followed by a slash mark) instead of the list of course numbers. Fig. 3.3.6-A illustrates Option K in which the operator selects:
   A. Student Numbers instead of Names
   B. Course data instead of Demographic data.
   The operator attempted to add course 750 (PE GIRL) when the student was a boy. It accepted the course request but printed the "Potential Sex Conflict" warning.
   An attempt to add course 302 was made when the student had already selected course 302. In this case, it refused to accept that course and printed the warning that the "duplicate" course was "erased." With the addition of the new course the period control total was now raised from 12 to 13. Since this is above the limit of 12 a warning was printed to that effect.
OPTION 4. CHANGE STUDENT REQUESTS.

DO YOU WANT TO ENTER THE STUDENTS BY NAME, OR BY STUDENT I.D. NUMBER (NAME/NUMBER)? [3]

NEXT STUDENT NUMBER (EXIT=0) [166807]

I=CHANGE I.D., M=CHANGE MATH DATA, C=CHANGE COURSE REQUEST DATA, V=NO CHANGE

CHOOSE (I,M,C,V)?

DO YOU WANT TO INSPECT THE CURRENT DATA (YES, NO)? [Y]

STUDENT 1 2 3 4 4 7 6 7 4 4 0
COURSE 106 508 206 354 006 166 594 749 0
F. CONT. 5 2 P 1 0 1 1 1 0
TOTAL PERIOD CONTROL=12

TY: ! Courses changes as
M: NEW NUMBER (SLASH) SEMESTER NUMBER (SLASH)
V: Will any courses as will fill one line.
I: If a course is to be deleted insert a minus sign followed by the course number.
W: Leave courses do not use semester numbers.

EXAMPLE: 12/3/4/5/6/7/8/9/10/11/12/13/14/15/16/17/18/19/20/21 (NO CHANGES=0) [750/4/3/10/6/7/2]

COURSE NAME SEX SEM P CR

106 ENG LANG ART 7 7 4 2
206 SCIENCE 7 7 4 2 DUPLICATE COURSE PLEASE.
306 HISTORY GEO 7 7 4 2
506 LIFE SCIENCE 7 7 7 1
606 PHYSICS 7 4 4 2
750 MATH 7 7 4 1 POTENTIAL SEX CONFLICT
120 SPANISH 7 7 7 1
506 STUDY HALL 0 0 1
749 PHYS 7 7 4 1
STUDENT I.D.: 166807 PERIOD CONTROL=13 INSTEAD OF 12.

NEXT STUDENT NUMBER (EXIT=0) [166807]

COUNT OF SILHOUETS)

Figure 3.3.6-A
When OLCREQ asked for the "next student number (EXIT=0)" the operator did not wish to make changes to any other student records so a zero was typed. This caused an "exit" and OLCREQ then asked for the next Option.

Figure 3.3.6-B illustrates what happens when (in contrast to Fig. 3.3.6-A) the operator requested student identification by NAME (instead of number).

Course 476 was entered which is a 9th grade course while the student is a 7th grade student. This caused the warning to be printed. Course 479 was also typed in. However, since course 479 was not listed as an authorized course (in file COU043) a warning was printed. In both cases however, the course requests were entered on the record. Course 479 did not add anything to the period control total but course 476 did add 2 points thus causing the "Period Control = 14 instead of 12" warning to be printed.

Had the operator selected activity "D" (Demographic changes) a chance would have been given to view (or not to view) the current contents of the demographic data. Then one would be instructed to enter the new demographic data separating each data field with a syntactic character "slash mark" (/) as shown in Figure 3.1-B.

The operator can selectively change or not change the content of any field simply by typing or not typing data characters between the appropriate slash marks. Any illegal data will cause the printout of a warning identifying the illegal data field. Simultaneously, any illegal data will be ignored and not cause any change to the current data existing in that particular data field.

The content of any data field which is actually changed during the process will be captured and also recorded in the 80-column card-image Transaction file TRX043 (for future punching and transmittal to Region 10 as updating cards).
**OPTION K: CHANGE STUDENT REQUESTS**

To you want to enter the students by name, or by student I.E. number (name/number)? name

**NEXT STUDENT NAME (EXIT=****)**

?STUDENT NAME/MIDDLE INITIAL/LAST NAME?

?TFEN/W/WHEELER/

1)777 STFEN W WHEELER IX = 572

L=CHANGE DEMOGRAPHIC DATA, C=CHANGE COURSE REQUEST DATA, N=NO CHANGE

WHICH (D, C, or N)?

?C

Do you want to inspect the current data (YES, NO)?

?YES

YES I=4 4 4 7 4 0 7 4 0

GENDER = 10F 562 206 353 465 0 164 594 749 0

if YES = 2 2 2 1 2 0 1 1 1 0

TOTAL 4 1410 CONTROL= 12

**Y/E, IN COURSE CHANGES AS**

COURSE NUMBER (SLASH) SEMESTER NUMBER (SLASH)

Yes, as many courses as will fit on one line.

Note—If a course is to be deleted insert a minus sign

**Delete the course number.**

Initial course to not use semester numbers

EX: L K= 124/3/4/482/4/7/479/4/-35/4/724/2/ (NO-CHANGES=0)

?/7/7/7/7/7/

**0.5.** I I T L P GRADE SEX SFM R C

<table>
<thead>
<tr>
<th>COURSE</th>
<th>GRADE</th>
<th>SEX</th>
<th>SFM</th>
<th>R</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>106</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>107</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>108</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>109</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

472 If 0 COURSE IS NOT OFFERED

STUDENT L E 1979 PERIOD CONTROL= 14 INSTEAD OF 12.

?STUDENT NAME/MIDDLE INITIAL/LAST NAME?

Figure 3.3.6-B
Finally, the current contents of the demographic data will be typed out, thus allowing the operator to visually inspect the final product of the data corrections.

OLCREQ does NOT permit one to tamper with either the Student I.D. Number or the student name. If such change is imperative, it will be necessary to use Option N and add the student as a new student using the newly corrected Student I.D. number and/or the new spelling of his name. One would then use Option W to withdraw (inactivate) the original student record. Upon the completion of changing one student record, OPTION K will immediately request that the next student be identified, etc. If the operator wishes to exit from OPTION K it is necessary to:

A. Type a zero for the student number (if using NUMBER)

B. Or type "***" (3 asterisks if using NAME).

As a result of the exit OPTION K will then permit the operator to select another option.
3.3.7 Option L: List Students in Same Courses

OPTION L asks the operator whether a simple total count or a list of each student name plus a total count is wanted. The operator is then asked to type in a list of course numbers. (See Fig. 3.3.7-A)

OLCREQ selects the first course number from this typed-in list of courses. It then examines every student record in file STU043, stopping at each one which contains that course number as a requested course.

If NAMES had been requested, it will print out the:

1. Student I. D. number
2. Sex
3. Grade
4. Student name
5. ***** (if the student is inactive)

If TOTAL had been requested it would inhibit such printing.

Upon reaching the end of the file it will print out the total number of active students who requested that course.

OLCREQ will then select the next course number on the typed-in list and repeat the search through the entire file STU043, etc., until the list is exhausted. At that time it will permit the operator to select another option.

OPTION L.  COUNT ALL STUDENTS IN EACH COURSE.

DO YOU WANT STUDENT NAMES PRINTED OR JUST THE TOTAL NUMBER (NAMES,TOTAL) NAMES

TYPE IN THE LIST OF COURSES (SEPARATED BY COMMAS) (EXIT=Q) (FILL OUT THE LINE WITH COMMAS)

774,503,478,465,.................................

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TOTAL ACTIVE STUDENT REQUESTS= 5

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<td>G</td>
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TOTAL ACTIVE STUDENT REQUESTS= 7

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TOTAL ACTIVE STUDENT REQUESTS= 7

Figure 3.3.7-A
3.3.8 Option M: Selective Mass Requests

OPTION M first checks for the presence of the OPTION A flag (Section 3.3.1) and prints the standard warning if it is NOT present.

OPTION M requests the operator to type in a list of courses which are to be added or deleted using the same minus sign notation for deletion and the same slash (/) separator characters, etc., as described in OPTION K (Section 3.3.6).

It then verifies that each is a valid course number in file COU043 and prints out errors if detected. It then prints the name and course number of the (valid) courses that had been typed in, and asks the operator if that list is correct before continuing.

It then asks whether the operator wishes to identify the selected students by name or by Student I.D. number (NAME or NUMBER). Then, as each student's name (or I.D. number) is typed in, OLCREQ retrieves the student record from file STU043 and inserts and/or deletes the above specified courses in that student record. It then types out the current list of courses for that student for verification purposes and requests that the next student name (or Student I.D. number) be typed in.

To exit from OPTION M the operator must:

A. type a zero for the next Student I.D. number (if using NUMBER)

B. or type "***" (3 asterisks if using NAME).

As a result of the exit, OPTION K will then permit the operator to select another option.
3.3.9 Option N: Add New Student Record

OPTION N first checks for the presence of the OPTION A flag (Section 3.3.1) and prints the standard warning if it is NOT present.

OPTION N then asks the operator to type in the new student's I. D. number and his first name, middle initial, and last name. It inserts the student I. D. number into the I. D. portion of the index file IDX043 and inserts the first 6 characters of the student's last name into the portion of index file IDX043.

OPTION N then requests the operator to enter the student demographic data in the same manner that OPTION K requested demographic data.

OPTION N then stores the new student record and continues the process by asking for the I. D. number and name of the next new student, etc.

Figure 3.1-B illustrates the essential features of OPTION N as seen by a NOVICE operator.

All student records generated by OPTION N are automatically flagged as pertaining to an ACTIVE student (characters 7, 8, 9 of the student record are set to zeroes).

Exit from OPTION N is accomplished by typing a zero for the student I. D. number.

As a result of the exit OPTION N then permits the operator to select another option.
3.3.10 Option C: Type List of Options

OPTION 0 will type out a list of the 17 available options. OPTION 0 is automatically executed once at sign-on for NOVICE and AVERAGE experience level operators. Thereafter it is only executed when selected by the operator (see Figure 3.1-A).
3.3.11 Option P: Print Results at Computer Center

OPTION P causes the student file STU043 to be printed at the computer center on its high speed page printer. For this purpose the essential information in each student record is condensed into 132 characters and appears as one line of the printed output.

The operator is requested to wait while the information is transmitted to the printer. Upon completion, the following message appears on the operator's terminal:

"SCHEDULES SENT TO PRINTER.
PLEASE TELEPHONE THE SKYLINE COMPUTER OPERATOR.
TELL HIM YOUR USER NUMBER AND ASK HIM TO SEND THE LISTING TO YOU AT YOUR SCHOOL."

OPTION P then permits the operator to select another option.
3.3.12 Option Q: Quick Course Input Only

OPTION Q first checks for the presence of the OPTION A flag (see Section 3.2.1) and prints the standard warning if it is NOT present.

OPTION Q is designed as a streamlined version to input student course requests. It first asks whether the operator wishes to identify students by their student I. D. number or by their name (NUMBER or NAME).

It then asks the operator to identify the first student and retrieves that student's record from file STUØ43. The operator then is requested to type in the series of numbers which identify the course requests which are separated by slash marks as described under OPTION K.

The course requests or course request changes are tested for validity and executed if they represent valid courses in the Course Offering file COUØ43.

A streamlined type-out of the current course requests for that student is then printed on the terminal. The next student's name or I. D. number is then requested and the process continues.

While this is a speeded-up method for inputting a large volume of student requests, there is still some time delay when the system asks the operator to type in a student or a list of courses and then pauses while this is done.

A super-speeded up version is available and the operator is given an opportunity to select it when OPTION Q asks the operator:

"DO YOU WANT TO USE THE PRE-RECORDED DATA FILE NAMED INQØ43 INSTEAD OF HAVING ME ASK YOU FOR EACH NEW STUDENT. (YES, NO)"
If the operator answers "YES" then OPTION Q ceases to look to the operator's terminal for answers. Instead, it reads one record from file INQ043 each time it requires an answer. This means that the operator (or someone else) has had to create the contents of file INQ043 prior to this operation of OPTION Q.

Since OPTION Q only asks two questions per student it is very easy to anticipate these two questions.

The first question is to identify the student by name or number. Hence the first record in INQ043 is a student I. D. number or his name.

The second question is always a request for a list of courses or course changes separated by slash marks. Hence the second record in INQ043 is a list of course numbers separated by slashes.

Record # 3 in INQ043 is the next student's I.D. number or his name
Record # 4 in INQ043 is his list of courses
Record # 5 is the next student's I. D. number or his name
Record # 6 is his list of courses.

File INQ043 is just a card-image file created under the standard time-sharing Text Editing feature of the computer.

File INQ043 can be built by the remote terminal operator days or even minutes before initiating OPTION Q and subsequently OPTION Q.

During the INQ043 operation of OPTION Q, all questions ("WHAT STUDENT" or "COURSE CHANGES") generated by OPTION Q are typed on the remote terminal.
(even though the operator cannot answer the question because OPTION Q reads its answer from the next record in file INQ043).

In addition, every answer which OPTION Q receives from file INQ043 is also typed on the operator's terminal. Thus the operator is kept fully aware of the progress of the program even though control has been relinquished to file INQ043.

The result of this type of operation is that OPTION Q operates so rapidly that the terminal is typing continuously with no interruptions and no pauses (much faster than the operator could possibly type replies to questions).

Since the exit from OPTION Q is either:

A. a zero for student I. D. number (if NUMBER is used)
B. or "***" (3 asterisks if NAME is used)

it therefore becomes necessary for the operator to have planned ahead and typed either zero or "***," as applicable, in the last record of INQ043.

Upon executing the exit, OPTION Q ceases to look to file INQ043 for answers and instead looks to the operator's terminal for all replies. It then permits the operator to select another option.
3.3.13 **Option S: Stop This Program**

OPTION S causes program OLCREQ to:

A. Close all files

B. Store today's date in record zero of file STU043 for reference purposes

C. Stop all further execution of OLCREQ.
3.3.14 Option T: Tally Requests in All Courses

OPTION T will create a counter for each possible 3-digit course identity number. It will then inspect every record in file STU043. If the student activity flag indicates an active student (characters 7, 8, 9 equal zero) it then examines that student's list of course requests. Each course request is used to augment its corresponding "counter" by one.

After all records in STU043 have been examined OPTION T will print out a list of all courses and (from the counters) the number of students who have requested each course (see Fig. 3.3.14-A).

OPTION T will then permit the operator to select another option.
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Figure 3.3.14-A
3.3.15 **Option U: List Unrequested Students**

OPTION U will inspect every record in file STU043.

If the student activity flag indicates an active student (characters 7, 8, 9 equal zero) it will then examine that student's list of course requests. If that student had not requested any courses, then the name will be added to the list of Unrequested Students which prints out on the terminal.

If the operator wishes, a list can be requested of all Unrequested Students regardless of their grade or can be requested for only one grade.

After OPTION U has typed the list, it permits the operator to select another option.
3.3.16 Option W: Withdraw/Reinstate Students

OPTION W is used to change the status of the student activity flag (characters 7, 8, 9 of each record in file STU043).

OPTION W asks whether the operator wants to withdraw or reinstate students (W or R). It then asks whether the students will be identified by:

A. Student I. D. number (NUMBER)
B. Or by student name (NAME).

It then requests the name (or I. D. number as applicable) of the next student. After the operator types in the name (or number as applicable) OPTION W will find the record in file STU043 for that student and change its student activity flag.

It will then request the identity of the next student, etc.

To exit from OPTION W the operator must:

A. type a zero for student I. D. number (if using NUMBER)
B. or type ** (3 asterisks if using NAME).

As a result of the exit, OPTION W will permit the operator to select another option.
Option Z: Counselor Hi-Speed Input

OPTION Z first checks for the presence of the OPTION A flag (see Section 3.3.1) and prints the standard warning if it is NOT present.

OPTION Z is designed for the occasions when students come to see their counselor who is assumed to have a remote terminal in his office.

OPTION Z asks whether the operator (counselor) wishes "tear-off" sheets or not. It then asks whether the students will be identified by student I.D. number or by name (NUMBER or NAME).

It then requests the first student's name. After finding the student's record in file STU043, it then prints his current demographic and course request information. The counselor then discusses this information with the student and, if the data is incorrect the counselor corrects the data immediately using the terminal. After the corrections have been made OPTION Z then prints out a neat, tear-off copy of the most up-to-date demographic and course request information. The counselor tears this sheet from the teletype and gives it to the student who then concludes the interview with an unambiguous typed document of his course selections for the next term, along with a list of his current demographic data.

To exit from OPTION Z the operator must:

A. type a zero for student I.D. number (if using NUMBER)

B. or type *** (3 asterisks if using NAMES).

As a result of the exit OPTION Z then permits the operator to select another option.
OPTION Z. COUNCelor 61-SPEED INPUT

TO YOU WANT SILL-ON, TEAR-OFF SHEETS (YES, NO)?

TO YOU WANT TO ENTER THE STUDENTS BY NAME, OR BY STUDENT I.D. NUMBER (NAME/NUMBER)?

NEXT STUDENT NUMBER (F<11=0)

51160

51160 JOHN A. CHOWIEY
GUARDIAN=WALTER J. CHOWIEY
SEX=M RACE=O GRADE=8 AIV=85
1804 75.15650 LAZIELESS
PHONES 2434567 8901

SEMESTER:
0 4 4 7 7 4 0 0
COURSE:
0 211 30 356 453 214
NUM.
2 1 1 2 0 0 0
TOTAL. 75.15650

YF IN COURSE CHANGES AS
COURSES) NUMBER (SLASH) SEPERATE NUMBERS (SLASH)

NOTE: IF MORE COURSES AS WILL FIT ON ONE LINE.
NOTE- IF A COURSE IS TO BE LEFT OUT INSERT A MINUS SIGN
FRONT THE COURSE NUMBER.
DELETE COURSE TO NOT USE SEMESTER NUMBERS.

EXAMPLE: 1/2/3/4/5/6/7/8/9/10 (NO CHANGES=O)

1/2/3/4/5/6/7/8/9/10 MAY HAVE GRADE CONFLICT
1/2/3/4/5/6/7/8/9/10 MAY HAVE GRADE CONFLICT
AND TO OFF. TRY LEFTLESS CARRIAGE RETURN. (***=SKILL PRVIN001)