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ABSTRACT

This graduate project consisted of the development of a computerized Student Loan Subsidiary Ledger System whose acronym is SLSLS. The system was designed to assist the Corpus Christi State University comptroller's office in maintaining its records for student loans.

SLSLS allows the creation, maintenance, and deletion of student loan records. In addition, it allows the retrieval and summarization of loan data for an individual student as well as the retrieval and summarization of loan data for all students in the system. SLSLS is an interactive, menu-driven system written in MICROSOFT COBOL for the IBM Personal Computer.
BACKGROUND AND
RATIONALE OF THE PROJECT

The Corpus Christi State University comptroller's office has been maintaining student loan records manually since 1973. There are approximately 600 outstanding loans at this time. On a monthly basis it has taken an accountant, Mr. Bill Vaughn, approximately 2-3 days to post and summarize the information required from this ledger by the University's accounting system. There have been many reports that have been requested of Mr. Vaughn on a monthly as well as a yearly basis that he has simply been unable to compile due to lack of time on his part. Due to increasing demands made by the Federal Government for information on government financed loans, the comptroller's office is now in desperate need of a computerized Student Loan Subsidiary Ledger System so that various reports can be generated with minimum effort on the part of its accountants.

The development of SLSLS seemed to be a reasonable choice for a graduate project in Computer Science. It entailed the analysis, design, coding, testing, and documentation of a series of programs. The end result is a useful system which should save the Corpus Christi State University comptroller's office a great deal of time and money.
INTRODUCTION TO SLSLS

SLSLS has a series of program functions which can be executed as
the result of user selection from the main menu. The ten basic
functions of the system are:

0. Initial creation of the SLSLS files
1. Add a new student loan account
2. Post a loan advanced to a student
3. Post a payment made by a student
4. Post a cancellation granted to a student
5. Change information in a student record
6. Delete information in a student record
7. Update the status code in all student records
8. Print/view one of several available reports
9. Run the year-end procedure

The system uses four files: the STUDENT LOAN INFORMATION FILE
which is an indexed-sequential file whose key is student account
number, the LOAN INFORMATION FILE, the PAYMENT INFORMATION FILE, and
the CANCELLATION INFORMATION FILE. These last three files are
organized as relative record files.

The STUDENT LOAN INFORMATION FILE contains salient information
about all students who have been given loans. This information
includes the student's name, account number, social security
number, second note number if one exists, the student's current
status, the date he left school, his required monthly payment, the
date his loan payments should begin, the interest rate of his loan,
the total months of deferment granted to him, his current loan balance, and the totals for loans advanced to him, principal and interest paid by him, late charges paid by him, and loan cancellations granted to him.

Each record in the STUDENT LOAN INFORMATION FILE also has three sets of pointer fields. These pointers contain the relative record number of the student's first and last loan record in the LOAN INFORMATION FILE, his first and last payment record in the PAYMENT INFORMATION FILE, and his first and last cancellation record in the CANCELLATION RECORD FILE. The LOAN RECORD, PAYMENT INFORMATION and CANCELLATION INFORMATION FILES contain the detailed information regarding loans advanced to, payments made by, and cancellations granted to each student in the STUDENT LOAN INFORMATION FILE. The structure of each of these three files is a linked list so that detailed information for each student loan can be listed without requiring that the files be sorted. Since the majority of the time the detailed information for each student loan record is not needed, the important total fields for each student record are maintained in the STUDENT LOAN INFORMATION FILE. Thus, access to these three relative record files is kept at a minimum.

The status field in each record on the STUDENT LOAN INFORMATION FILE is set to one of six possible settings. It can be S "meaning in school", F meaning "has a deferment", C meaning "current with payments", G meaning "in grace period", D meaning "delinquent", and P meaning "past due". As soon as a student loan account is added to the file, the status setting is automatically set to "S". When the user of SLSLS enters the date the student left school, the status code is then automatically changed to "G". That is, a student is given a
grace period of 6 months from the time he leaves school until the time he is required to begin making monthly payments on his loan. The only status code the user can enter himself is "F" meaning deferment. When a student's status code is changed to an "F", the user must also enter the date the deferment began as well as the number of months the deferment lasts. "C", "P", "D" which are the other three SLSLS status codes are determined and set by the system when the UPDDATE STATUS CODES program is run. These settings are based on a series of parameters outlined by the comptroller's office. A student has 30 days to make a payment from the date that his loan is due. During that time he is considered "current". After the 30th day of nonpayment, he is considered "pastdue". He is not considered "delinquent" until after the 90th day of nonpayment. The following example illustrates this logic.

IF THE DATE A LOAN IS DUE IS 05/01/83 THEN STATUS CODES ARE DETERMINED AS FOLLOWS:

FROM 05/01/83 TO 05/31/83 < CURRENT >
FROM 06/01/83 TO 07/31/83 < PASTUE >
FROM 08/01/83 TO ????????? <DELINQUENT>

Thus a student is "current" is he is 0 or 1 payments behind, "pastdue" if he is 2 or 3 payments behind, and delinquent if he is 4 or more payments behind.

Since the comptroller's office also requested that the detailed loan information for each year be kept on a separate diskette, a
special year-end procedure was incorporated into SLSLS to carry forward onto a new diskette only the student loan records with a non-zero balance due. The current year's total fields on all the new diskette's records are zeroed out at the end of each year and each of the LOAN INFORMATION FILE, PAYMENT INFORMATION FILE, and CANCELLATION INFORMATION FILE on this diskette initially contains no records. Records will be added to the new diskette's LOAN INFORMATION, PAYMENT INFORMATION, AND CANCELLATION INFORMATION FILES as loans are advanced, payments are made, and cancellations are granted during the new year. The diskettes for previous years should be labeled by the user and kept in a safe storage location and can be used for further reference at any time.

The report produced by this year-end procedure contains totals by month for all loans advanced, all principal payments paid, all interest paid, all cancelled principal granted, and all cancelled interest granted. The totals accumulated for principal payments are also subtotaled by the specific interest rates of each loan in the system. The totals accumulated for the cancelled principals are also subtotaled by the specific interest rates of cancellation. Yearly totals for all of the above fields are also accumulated.
ENVIRONMENT FOR THE PROJECT

The SLSLS system was developed for the IBM
Personal Computer with:

. 128K of RAM

. PC-DOS 2.0

. Two 5 1/4" doubled sided 360k disk drives

. Monochrome display

. IBM 80 CPS dot matrix graphics printer

The programs were written in MICROSOFT COBOL using a top-down
design approach and structured, modular coding techniques. The editors
used to create the COBOL programs were EASYWRITER 2.0 and MS/DOS
EDLIN.