

**A STUDENTS' RECORDS MANAGEMENT INFORMATION
SYSTEM IN A SECONDARY SCHOOL**

CASE STUDY: CRESTED SECONDARY SCHOOL (CSS)

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**A PROJECT REPORT SUBMITTED IN PARTIAL FULFILMENT
OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF
BACHELORS IN INFORMATION TECHNOLOGY
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DECLARATION

I, NABAASA MONIC and MBABAZI ELIZABETH here by declare content of this graduation report is the results of our own study and findings, and to the best of our knowledge have not been presented anywhere for the award of a Diploma, Degree or any other professional award in any institution of higher learning.

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APPROVAL

This is to certify that this project report entitled “A students’ records management information system” by Nabaasa Monic and Mbabazi Elizabeth was under my supervision and guidance and is now ready to be submitted to the school of computer studies with my approval.

.

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DEDICATION

I NABAASA MONIC, wish to dedicate this graduation report to the almighty God who kept me healthy and made it possible for this report to be finished, my parents Mr. and Mrs. Ruhara charles, my guardians Mr. and Mrs. Omwami Bafaki Gordon and Mr.and Mrs. Kimbugwe Jonathan , Aunt Jassy Bafaki, my cousins Queen Kezia and King Bafaki, my brothers, sisters, supervisor Mr. Asiimwe John Patrick, my friends like Asiimwe Sumaiya, Mushabe Rogers, Arinitwine Winfred, Mugisha Brian, Mugisha Ronald, uncle Enoth Tumwine, my grandparents Mr. and Mrs. Enoth Tumwine for their inspiration, love, affection and their abundant and exceeding support that they rendered to me in my academic life may the almighty God reward them abundantly.

I MBABAZI ELIZABETH, dedicate this script to the almighty God who has given me the wisdom that enabled me to come up with this marvelous compilation.

I would like to dedicate this work to my Mother Natukunda Mbabazi Rose, my guardians Mr.and Mrs Muhangi Martin, my sisters and friends lastly my supervisor Mr. Asiimwe John Patrick for pushing me through out my studies. May God grant them all that they need and provide them with a gift of life.

ACKNOWLEDGEMENT

Our graduation report was accomplished by the enormous support of a number of individuals, to whom we would like to extend our earnest gratitude:

The management of Crested s.s which gave us the information we needed and for having allowed us to use their school for the case study and research purposes.

We would like to extend our sincere gratitude to our University Supervisor Mr. Asiimwe John Patrick for his contributions, sparing time for our work, enabling us to complete our graduation report in time, cooperation and guidance throughout our project writing.

Our course mates and friends particularly; Mushabe Rodgers for always being there for us and giving all the support we needed. May the Almighty grant you happiness and steady progress in your endeavors.

Last but not least we would like to sincerely thank our parents Mr. and Mrs. Ruhara Charles, Mr. and Mrs. Muhangi Martine, Mr. and Mrs. Omwami Bafaki, Mr. and Mrs. Kimbugwe Jonathan, who provided for us morally and financially and gave us support to make this graduation report a success.

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ABBREVIATION

MIS.....	Management Information System
DBMS.....	Database Management System
CSS.....	Crested Secondary School
IT.....	Information Technology
SQL.....	Structured Query Language
CSSINF.....	Crested Secondary School Information system
MDI.....	Multiple Document Interface

ABSTRACT

All in all, the study is focusing on the development of a students' records management information System for the secondary schools while using Crested SS as the case study. A students' records management information System for the secondary schools, shall be able to track personal record of students, ease searching and updates of students records and provide better security and control over information. The system will ensure that the information is well kept and consistent. A database management system (DBMS) consists of software that organizes the storage of data. A DBMS controls the creation, maintenance, and use of the database storage structures of social organizations and of their users. The major objective of this study is to develop a model database management system for school. Specific objectives include to gather requirements that is needed in the new system, to develop a prototype that provide a firmly information and reduce the risk or likely hood of loosing important data in the school, to test and validate the prototype that evaluates the system functionality.

Both primary and secondary methods of data collection will be used in which case; focus interviews, and observations were employed.

CHAPTER ONE

INTRODUCTION

1.1 General introduction

According to Anderson (1998) Management information system is an important aspect of the business world today since organization must keep up with the competitive market hence Information systems help them to achieve this through security, confidentiality, integrity of data, fast retrieval of information and manipulation of data, and improved customer satisfaction among the many benefits.

A computerized students' record management information system provides better management and monitoring ways and flow of information in the day to day running of the School's activities. The System accepts data from its environment (input) and manipulates the data (processing) to produce information (output).

1.2 Background

Crested Secondary School is a non government aided day school. The school is located in Amazon Makidye Luwafu Kampala District. It was started in 1995 by Dr. Ibingira Charles and Mrs. Ibingira Lydia. It has 56 staff members of which 38 are teaching staff (15 females and 23 males) and the rest are non teaching-staff.

Crested Secondary School was using a manual filing system for management and storage of information on students, and fees payment details, as well as student's report card generation as a result, report cards are not produced in time.

The method of handling results at C.S.S before computerized system had problems such as data duplication and lack of accuracy in producing report cards for the students. Since the whole process was manual, modification or updates of student's results were done manually which was not accurate due to human errors during writing and calculation of student's marks during results processing.

Crested Secondary School had a population of 985 students with 570 boys and 415 girls. The school runs from S 1 to S 6 and the subjects taught by the school includes, chemistry, biology, Maths, CRE, Geography, Luganda, computer, history English, physics, to mention but a few.

O'level students pay school fees Ugandan shilling 350,000/= and A' level student pay 450,000/=.

Records kept in the school are categorized as below:

- i. Registers per class for taking students attendance each day.
- ii. Registers per teacher for taking teachers attendance each day.
- iii. Exams/results file.
- iv. Fees register book.
- v. Enrolment book
- vi. Newcomers file.
- vii. Children with disabilities file.
- viii. Personal teachers file.

With the above background, the researchers found it necessary to design a computerized students' management information system that could help speed up the processes, reduce the number of errors committed while recording and analyzing students' data.

1.3 Statement of the problem

On many occasions Crested Secondary School faces a problem of missing data, long queues during student registration process, inaccurate reporting about students in the school. All this was attributed to the manual filing system used for management and storage of information on students and therefore the new system reduced the above mentioned problems by providing the following functionalities:-

- i. Data and operation sharing
- ii. Multiple interfaces
- iii. Services control.
- iv. Security and privacy controls
- v. Enforcement of standards
- vi. Flexibility
- vii. Data independence

1.4 Objectives

1.4.1 Main objective

To develop a model database management system for handling students' records at C.S.S

1.4.2 Specific objective.

- i. To gather requirements that is needed in the new system.
- ii. To develop a prototype that provide a firmly information and reduce the risk or likely hood of loosing important data in the school.
- iii. To test and validate the prototype that evaluates the system functionality.

1.5 Scope of the study

The Scope of the study covered information on students' results, storage of basic information compute students' marks and process report cards for all the students in the school.

The researchers conducted interviews with the school head teacher, two teaching staff members of whom one was a lady and one gentle man, school secretary, bursar and 12 students two from each class.

Because the whole school was too big, the study concentrated on capturing management information and students' details.

This enabled the researchers to get useful information and it was done at the school campus. Random sampling was carried out for easy collection of information from respondents.

1.6 Significance of the study

The study was important in the following ways.

- i. Control of data duplication
- ii. There shall be timely, accurate and consistent report generation
- iii. Tracking and monitoring students' information
- iv. Easy data sharing
- v. Control of long queues

CHAPTER TWO

LITERATURE REVIEW

2.1 Background

The world of information technology (IT) has been under a continuous and rapid change over the last decade, which has been characterized by an explosion of advanced technology. The diffusion and effective utilization of this technology however has not been evenly spread the world over (Lesley, 1989).

The computer ware is blowing seriously. Computers have become part of us in every aspect; be it at work, at home or in the video libraries. It is very important that anybody also joins the rest of the world in making work easy.

According to Royal bank letter, march 1985, that because a new age is bursting upon us, we had better adjust to conditions of living that are radically different from those of the past.

Successful computerization of management systems like Data base systems brings the following advantages;

- i. Improved decision making through provision of relevant timely information.
- ii. Quick and easy access to relevant information.
- iii. Fewer paper records clogging the administrators department.

Source: (Database system concepts by SilberSchatz Korth Sudarshan 4th Edition)

2.2 Information technology and information systems

Anderson (1998) defines an information system as “a system that collects records, stores and computes business transaction data and presents the results of processing to the appropriate personnel in an organization in the form of information.

A **system** is defined as a group of interrelated components, working together to achieve specific objectives (Fitzgerald, 1987)

An information system is group of things or parts working together. It has been noted that familiarity with computers and their application in business is necessary for effective management in today's business world (Fitzgerald, 1987)

2.3 Data Base Management System

This refers to the compressive software tools that allow users to create, maintain and manipulate an integrated base of data to produce relevant information. These are used by data base designers to program and hence design a data base in a conceptual manner (Stair, 1986)

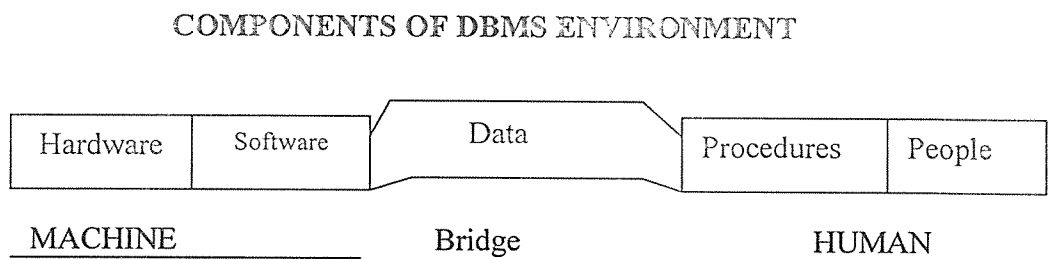


Figure 1

Source: (Database system concepts by SilberSchatz Korth Sudarshan 4th Edition)

2.3.1 Components of a Data Base management System

(Silberschatz et al 1988) hinted that the data base management system is built using:

- i. People to operate the system
- ii. Data processing to the needed speed for information sorting and classifying
- iii. Data communication required to keep the information flowing between the different parts of the system and the people using the system.
- iv. Information storage and retrieval-required to store the information in a proper format and make sure information can be retrieved when needed.
- v. Systems planning-required to integrate the people, data processing, data communications, information storage and retrieval and user of the system into a useful and well organized management system.

2.4 Computers and Business

The key tool today's business environment is the computer. In future we will begin to use computers with a grace and naturalness that's hard for us to imagine today. A substantial amount of work will be done in the electronic. However, with the increase in storage capacity of the computer systems, it was possible to use the computer to solve problem, which involves a lot of data and calculations.

Computers are good at rapid and accurate calculations, manipulations, storage and retrieval. They are applied in areas with the following characteristics;

- i. Speed is an important aspect.
- ii. Large amount of data exist.
- iii. Emphasized accuracy.
- iv. Operations are repetitive.
- v. Existence of interacting variables.

There are several advantages associated with computer based systems among them are;

- i. The storage capacity is very high thus several volumes of files containing information can be accommodated. This eventually reduces on the amount of paper work.
- ii. Computer response time and performance of functions such as calculations are fast, accurate and efficient hence decision making based on these functions is fast.

In 1940's, computers were used with the aim of undertaking addition, subtraction, multiplication and division at extreme speed (Kirkwood, 1984).

The study being taken will take into consideration the above view and it also aims at speeding up mathematical computations of accumulated student results and forecasting future development of the school.

It will also consider the computer's ability to store vast amount of data and so these two aspects will be used to develop a new system and achieving the set objectives.

2.5 Report Generation

Reports are used to display results. They are used for output that will be distributed or stored in a paper form. They are also used to present summarized data. Report can easily handle multiple pages of output and it can also combine both detailed and summarized data. A Database system has the capabilities to generate reports whenever they are needed (Ram Krishnan, 2000).

2.6 Structured Analysis and Design

Structured analysis and design is a process-centered technique that is used to model business requirements for a system and transform them into good software model (Whitten et al, 2001).

2.7 Data Flow Diagram

The researchers intended to use data flow diagrams because they are diagrams that are used to show the context of the system in terms of processes entailed. They involve various stages or a level depending on how big a system to design is. They are used to show the flow of interaction within the system (Hoffer et al, 2001).

2.8 System Architecture

This is the overall organization of the system components called subsystem. System architecture is the context in which more detailed decision is made in later design. The interface specifies the form of all interaction and the information flow across subsystem boundaries but does not specify how the system is to be implemented internally (Raja, 2001).

Three level database architecture

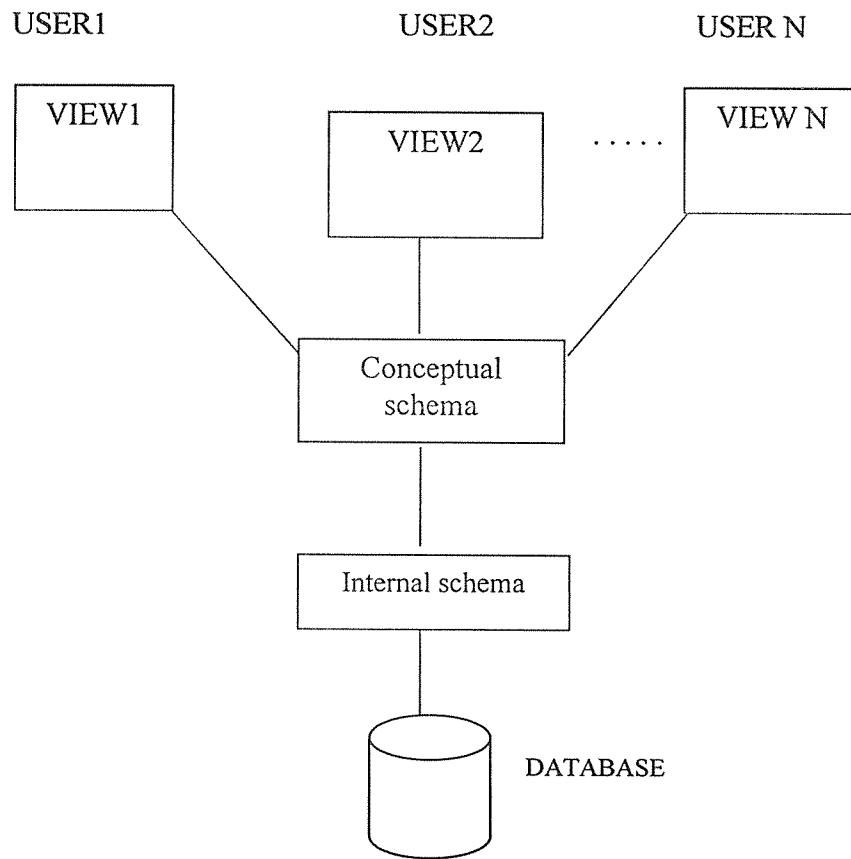


Figure 2

Source: (A practical approach to design, implementation and management page50 by Addison Wesley)

2.9 Manual System

A manual system is a set of integrated components that uses human effort in each and every step of their activities. This also means that data is duplicated and not consistent (Garcia-Molina, 2000).

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter gives the methods that were used in the system development process. This chapter also covered the systems analysis and investigation of the system that was used, and looked at data collection methods used the tools which were used by the researchers to collect data, and the requirements of the designed system.

3.2 Sample Selection

The researchers conducted interviews with the school head teacher, two teaching staff members of whom one was a lady and one gentle man, school secretary, bursar and 12 students two from each class.

Because the whole school was too big, the study concentrated on capturing management information and students' details.

This enabled the researchers to get useful information and it was done at the school campus. Random sampling was carried out for easy collection of information from respondents.

3.3 Data Collection.

The researchers employed several data collection techniques these included both quantitative and qualitative in order to come up with meaningful information.

3.3.1 Primary Data Collection.

Primary data was obtained through observation and interviews, also review of the school documents like box file details, already published reports that are being used by school management.

3.3.1.1 Interviews

The researchers used interview method by arranging interviews with the people who were interviewed and these included school head teacher, two teaching staff members of whom one was a lady and the other was a gentle man, school secretary, bursar and 12 students whereby selecting two from each class.

Two main types of interviews used in evaluation of the research were; structured interviews, and in-depth interviews.

3.3.1.2 Observation

This involved identifying and recording various data concerning students' results, fees, enrolment.

The method provided the researchers with an opportunity to gather important information about students in school.

Direct observation provided information about behavior of individuals and, permitted evaluators to enter into and understand situation/context and provided good opportunities for identifying unanticipated outcomes.

3.3.2 Secondary Data collection.

The data was obtained from secondary source especially by going to the school and examined the results file; fees register books, enrolment books, newcomers files used in the school.

The researchers also discussed with the school stakeholders.

3.4 Feasibility Study

Feasibility study is the intense study of the environment to find out if the problem really exists and to give out the solutions and recommendation for the existing problem.

This enabled the researchers to gain confidence in the system design and implementation.

Technical Feasibility

The researchers found out that the school had staff members who can technically use the system. The school has enough resources which included hardware (computers, printers) and soft wares (application programs like word, SQL, visual studio).

Economic Feasibility and Analysis

Researchers found out that the system is favorable in terms of storage requirements, cost.

3.5 System Analysis

System analysis is a problem solving technique that decomposes a system into small pieces for the purpose of studying how well these pieces work together to accomplish their purpose.

3.5.1 Requirement Analysis

The requirements analysis defines business requirement for new system, the important aspect of the requirements analysis phase is what the system was to achieve their goal. It answered the question, what users needed and want for a new system needed for.

3.5.1.1 Functional Requirements

The functional requirements are the activities and services the system must provide which include;

- i. The system should be in position to maintain student records
- ii. Easy and Faster Update of the Database: Updating of the database would be faster and more effective.
- iii. Security: The system should only allow authorized users into the system to use, view or modify any part of the system.
- iv. A new system should enable the users to enter students' data in the database.

3.5.1.2 Nonfunctional Requirements

Nonfunctional requirements are a description of other features and constraints that define a satisfactory of the system.

- i. Maintenance: The system allows future developments to be conducted and additions to the systems functionality as seamlessly as possible.
- ii. Training of Users: The users would be trained on how to work on the system which should take a shorter period of time.
- iii. Cost Reduction: The system would reduce on most of the costs like stationary costs and enforce tight security of the data.

3.5.3 System Requirements

This is what is required for the system to operate and they fall into two categories which are hardware and software.

3.5.3.1 Hardware Requirements

These are physical components that should be in place for the system to operate as illustrated in the table below.

Table 1

Hardware	Minimum requirements
Processor	Intel® or Pentium (III, IV, V), Cyrix, AMD Athlon, 266 MHz or higher.
Memory (RAM)	Minimum 96MB, 128 MB recommended or higher.
Hard disk space	Minimum 40 MB or higher
Monitor	VGA 800x600 or higher resolution required
Mouse	PS/2 or any compatible.
Keyboard	Any compatible
Speakers	Multimedia speakers, 800 watts
UPS	1000VA/600W capacity
Power stabilizer	Model: AVR-1000W or higher
Printer	Hp DeskJet 1000C or any compatible

3.5.3.2 Software Requirements

In terms of software requirements the software will only function in windows based machines because of the current technology available does not enable the inclusion of various engines to allow it to function in environment of other operating systems like UNIX based system, MAC and other available operating system as illustrated below.

Table 2

Software	Requirement
Application software	Sql server 2005, visual studio 2005
Operating system	Microsoft Windows 2000, or XP and higher versions

3.6 System Design

This follows the data analysis phases after the analysis phase has been completed successfully, this stage used the information already obtained in system analysis and it produced a design specification for the new system by building a representation of the new system.

3.6.1 Logical design

Logically the system was designed to identify the important objects that needed to be represented in the database and the relationships between these objects.

Entities (Tables)

These are objects that can be distinguished from another; they cover the scope of the system design and are necessary for the overall management of the system. The DBMS has six entities, they include the following:

Student

This is where the student's information will be stored; it has attributes that allow data entries.

Teachers

This will stores information about all employees of the school

Results

This stores marks of the pupil scored in each subject offered in each term.

Security

This will store usernames and passwords

Fees payment

This stores details of fees payment.

3.6 Conceptual model of the system

A conceptual model represents system data by entity and relationship between the entities. An

entity was considered an object of interest in the design of the application while relationship is the interconnection of two entities. Conceptual modeling facilitates the design by allowing specification of the system schema that represents the overall structure of the system. During the application design, entity relation modeling was used and the following diagram was developed.

SYSTEM CONCEPTUAL MODEL

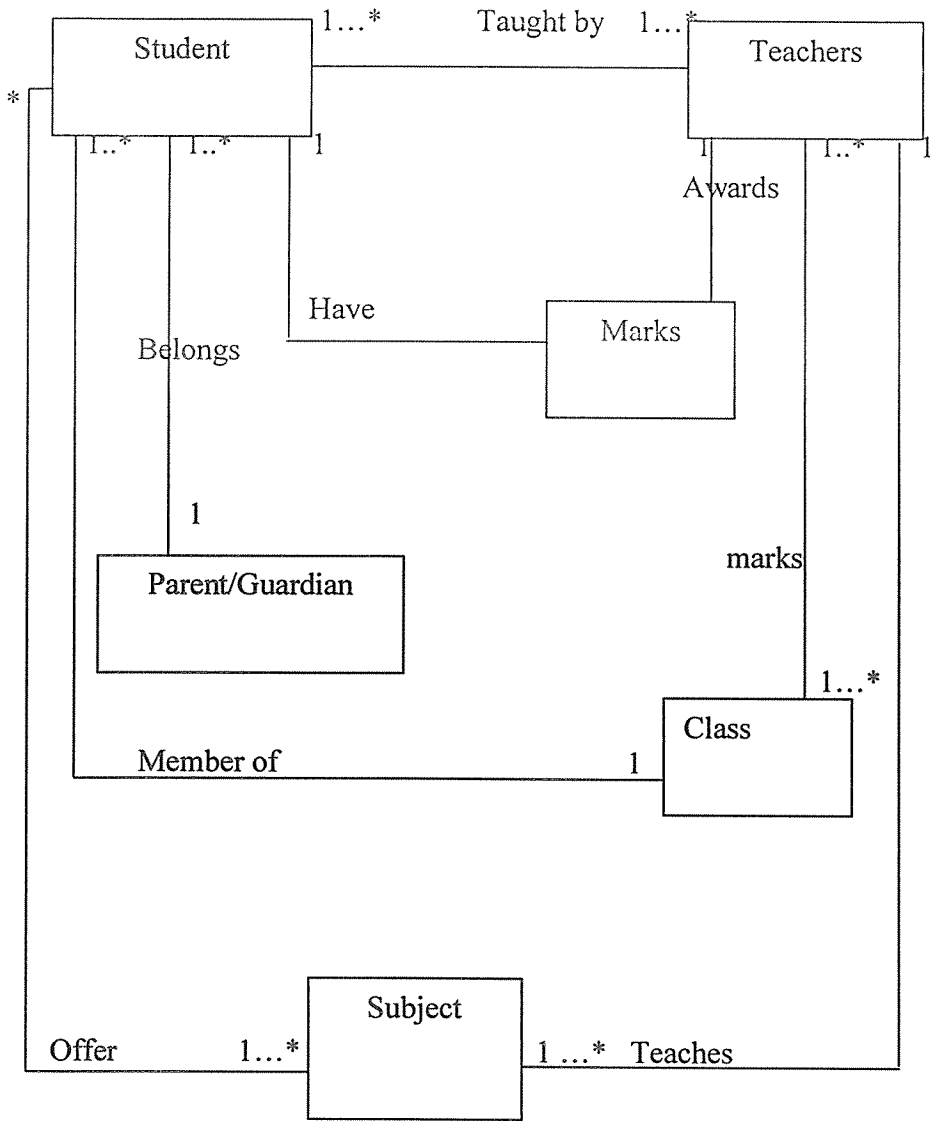


FIGURE .3

Entity Relationship Diagram

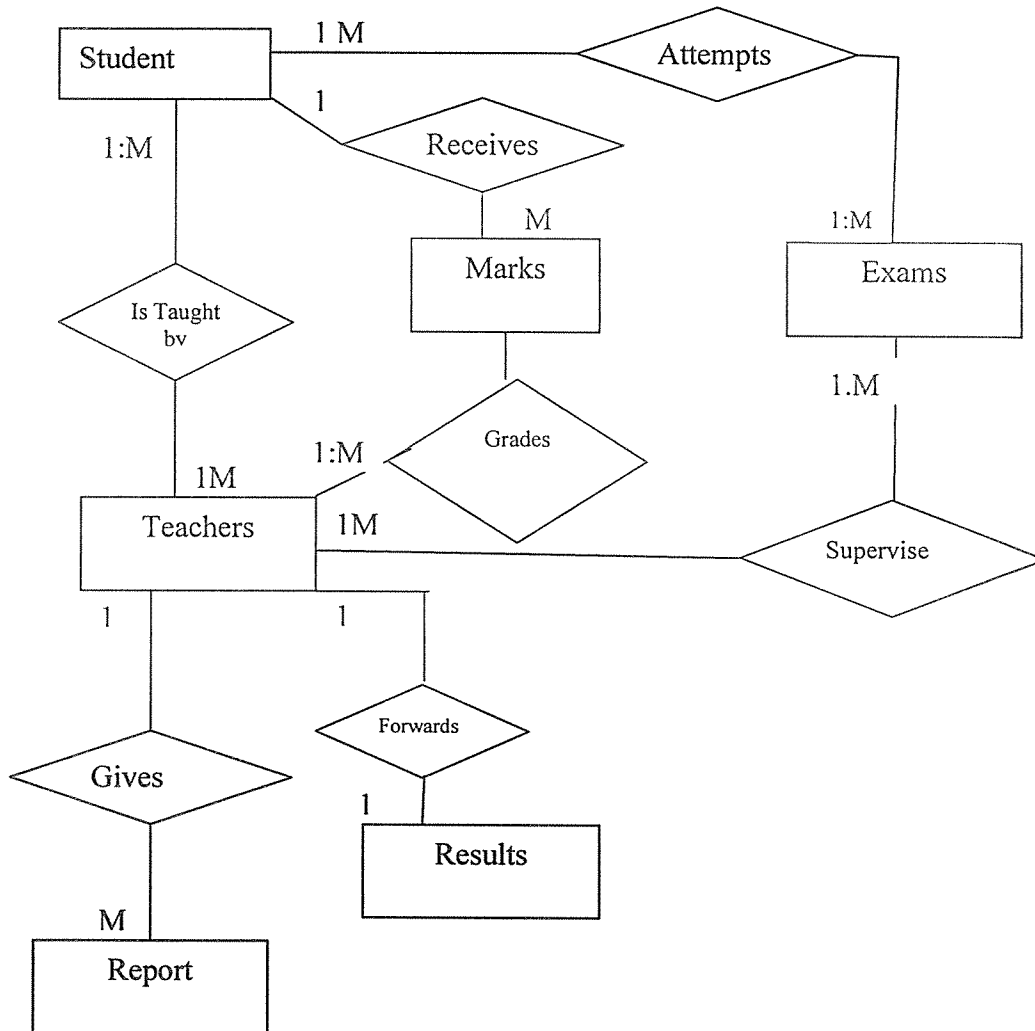


Figure 4

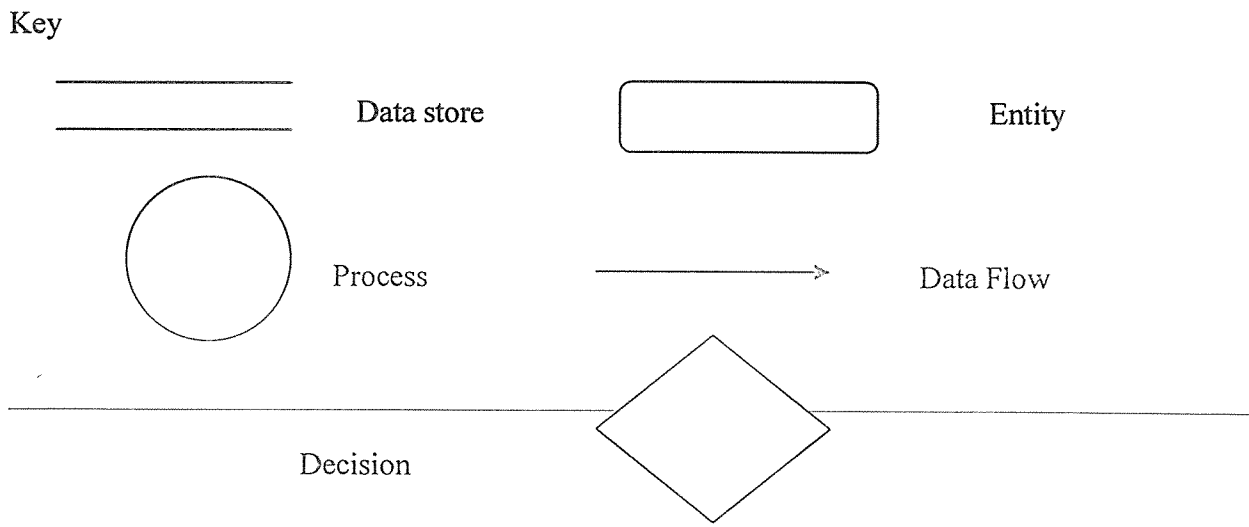


Figure 5

Database table schema

The information below shows the entities and the appended attributes.

Table 3 Student Table

Field name	Data Type	Size	Constraints	Required	Description
StudentID	Text	10	Primary Key	Yes	Student's identity number
FirstName	Text	20	Not Null	Yes	Student's First Name
OtherName	Text	20	Not Null	Yes	Student's Other Name
Sex	Text	10	Not Null	Yes	Student's Gender
DateOfAdmission	Date/Time		Not Null	Yes	Date on which the student was Admitted
DateOfBirth	Date/Time		Not Null	Yes	Student's Date Of Birth
Country	Text	20	Not Null	Yes	Student's Country of Origin
House	Text	20	Not Null	Yes	Student's house
Dormitory	Text	20	Not Null	Yes	Student's Dormitory
Address	Text	20	Not Null	Yes	Student's postal Address
Parent/guardianName	Text	20	Not Null	Yes	Student's parents/guardian Name
Class	Text	15	Not Null	Yes	Student's Current Class

Table 4 Teachers Table

Field name	Data Type	Size	Constraints	Required	Description
TeacherID	Text	10	Primary Key	Yes	Staff Identity number
FirstName	Text	20	Not Null	Yes	Staff's First Name
OtherName	Text	20	Not Null	Yes	Staff's Other Name
Title	Text	10	Not Null	Yes	Staff Position or Title
Gender	Text	10	Not Null	Yes	Staff's Gender
Age	Number		Not Null	Yes	Staff's Age
Qualification	Text	20	Not Null	Yes	Staff's Qualification
DateHired	Date/Time		Not Null	Yes	Date on which the staff was Hired
Salary	Currency	10	Not Null	Yes	Staff's Salary
Address	Text	20	Not Null	Yes	Staff's Postal Address
Email	Text	20	Null	Yes	Staff's Email Address

Table 5 Results Table

Field name	Data Type	Size	Constraints	Required	Description
Student ID	Text	10	Primary Key	Yes	Student's Identity Number
Term Name	Text	20	Not Null	Yes	Term Identification number
Subject	Number	5	Not Null	Yes	Marks for Subject
Academic Year	Date/Time		Not Null	Yes	Year subject was sat
Class	Number	5	Not Null	Yes	Student's Class

Table 6 Fees Payment Table

Field Name	Data type	Size	Constraints	Description
<u>PaymentID</u>	Text	10	Required	Student Identification
<u>StdID</u>	Text	10	Foreign key	Student Identification
Amountpaid	Currency	10	Not indexed	Amount Paid
Balance	Currency	10	Not indexed	Balance
ReceiptNo	Text	10	Not indexed	Receipt number
BankName	Text	50	Not indexed	Bank Name
PaymentMode	Text	20	Not indexed	Payment Mode
Depositor'sName	Text	50	Not indexed	Depositor's Name
Term	Text	03	Not indexed	Term
Year	Text	04	Not indexed	Year
DateOfPayment	Date/time	20	Not indexed	Payment Date

Table 7 Security table

Field name	Data type	size	Constraints	Required	description
username	Text	15	Primary key	yes	User name
password	Text	15	Primary key	yes	User's password

3.7 System development.

After collecting user requirements, the researchers developed a database using sql and later constructed interfaces using visual studio 2005 as the programming language.

3.9 Development tools

The new system was developed on a computer running on windows xp service Pack 2 and using Microsoft visual studio 2005.

The database was created using SQL server 2005.

CHAPTER IV

PROJECT IMPLEMENTATION

4.1 Introduction

This is the construction of the new system and the delivery of the system into production i.e. day-to-day operation.

4.2 System Coding

In this stage, the whole system is converted into a computer understandable language. Coding the new system is an important stage where the defined procedures are transformed into control specifications with the help of a computer language. The programs coordinate the data movements and control the entire process in a system.

This system has been developed using the Visual studio 2005 in the interface i.e. the front end and structured query language as database management software, has been used at the back end.

4.3 Using this computerized student management information system

This application is a menu-driven student management information system. It stores and retrieves structured, numerical and non-numerical data.

Although some features of this system require some experience with computer, once the system is installed it may be used by persons having little or no prior computer knowledge.

4.4 System functions

The major functions provided by this system are that it allows one to:

- i. Enter new records into a given file
- ii. Modify, correct, or update existing records
- iii. Automatically build and maintain fast access to each record in order to maximize retrieval speed
- iv. Display reports either in details or summaries according to your information requirements
- v. Set security at user logon-level thereby allowing you to maximize the security of the data.

4.5 Installing the system

The Setup

This application is on a Compact Disk labeled CSSINF information system. To install the system insert the CD into the CD-ROM drive of your computer, double-click on my computer, then locate the CD, double-click on CSSINF folder, locate the setup icon and double-click on it. The installation wizard will start. Follow the instructions until the process is completed.

4.6 Database structure.

Although the database may appear to you as a single file of information in the actual fact it consists of a number of logically related but physically distinct tables. The management of the database is the responsibility of the developer and the users won't normally have to know the structure in details in order to operate this application. However some basic knowledge of the functions associated with this system will help the users to understand the system.

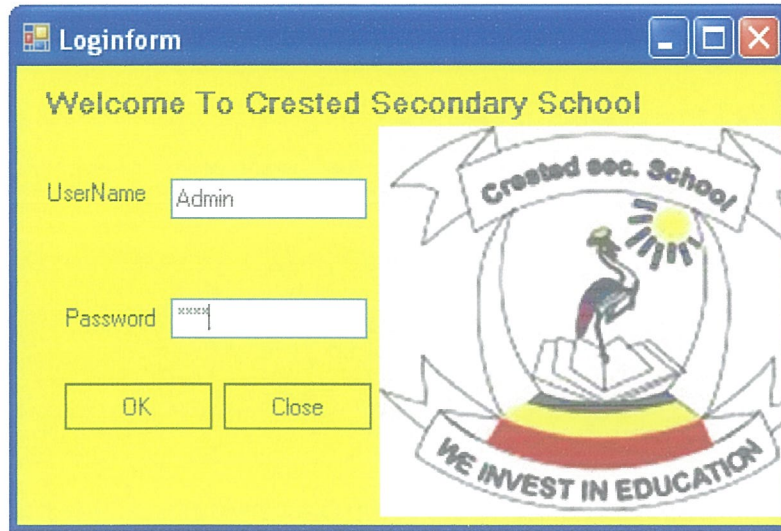
4.7 Getting started with students' records management information system.

To start the students' records management information system/application in windows environment you need to follow the steps below after it has been installed on your Computer:

Click the Start button on the taskbar go to programs, look for the CSSINF option among the listed programs and click it. The logon screen /window appear as shown in Figure 1 below, ready for you to enter your user name and password.

You can logon by entering your user name and password respectively in the spaces provided in the logon dialog box.

Login Screen

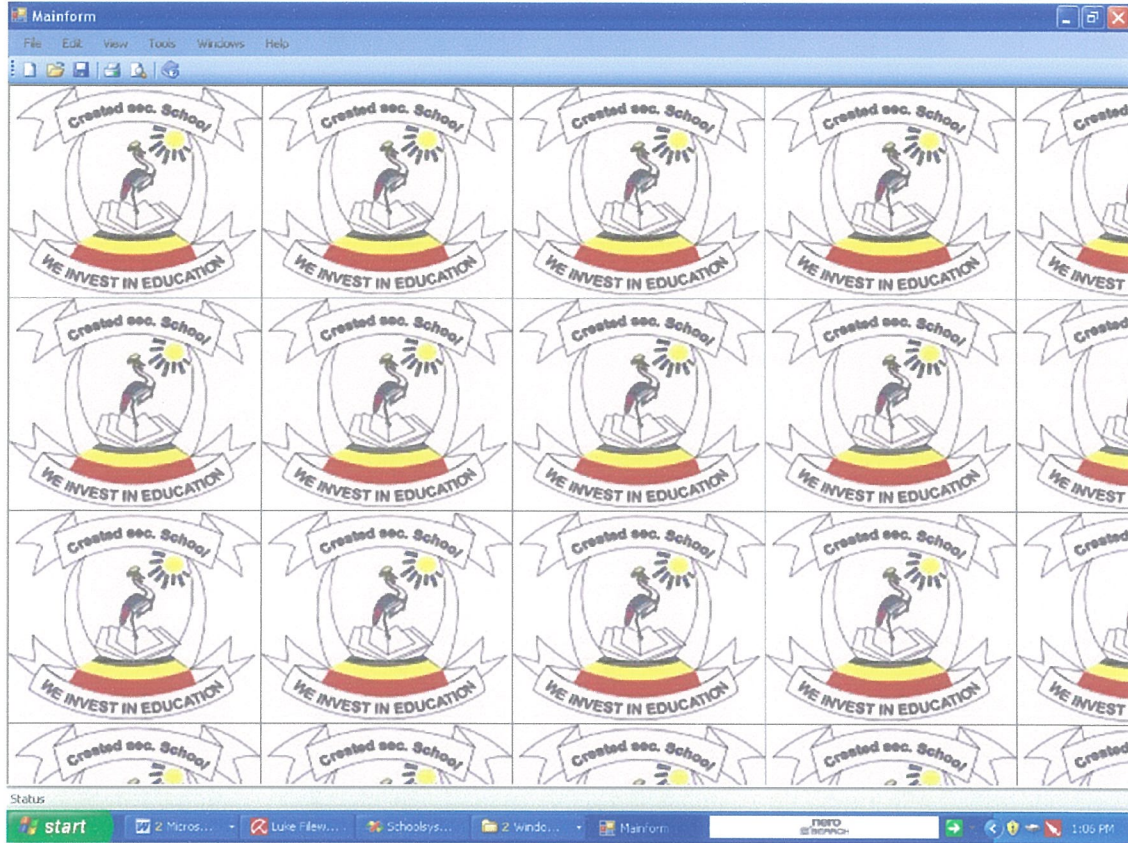


The image shows a Windows-style login window titled "Loginform". The window has a yellow background and a blue title bar. At the top, it says "Welcome To Crested Secondary School". Below this, there are two input fields: "UserName" with the text "Admin" and "Password" with a masked password "XXXXXXXX". To the right of the input fields is a large logo for Crested Secondary School. The logo features a crest with a sun, a book, and a banner that reads "Crested sec. School". Below the crest is a red banner that reads "WE INVEST IN EDUCATION". At the bottom of the window, there are two buttons: "OK" and "Close".

Click on the ok button after keying in your username and password to gain access to the system. If you click close, you will close this logon screen and return to the desktop of your operating system.

When you enter the correct password the system will load and display the following screen showing the different processes.

Main MDI Form



When the system starts it will display the above screen (the Main Multiple Document Interface), which acts like a switchboard of the system. This MDI form has got the main menu, which has got commands that open the different forms and reports.

4.7.1 Menus

Here you select the operation to be performed by looking at the relevant command from the menu that the system displays on the screen. A command is a word or sentence that tells the application to perform a certain operation, a menu on the other hand is a list of commands from which you will make your choice. Menus are displayed from the main menu.

To select a command, first click on the appropriate menu from the main menu with the left mouse button (this will display the commands available on the selected menu, then point to the desired command and click the left mouse button. Follow the instructions thereon the screen to accomplish the task.

4.7.2 Dialog boxes

In some cases the system will require additional information before it can execute a command. The user will have to provide this information by selecting the available option or filling in the blanks in a special Windows/form called dialog box.

4.7.3 Searching

Retrieval of records from this system is done by clicking on the search button on the form associated with the request after typing the search ID in the text box provided. When you click on the search tool, the system manipulates the request and displays the details of the record of searched.

4.7.4 Commands Available on the Main Menu

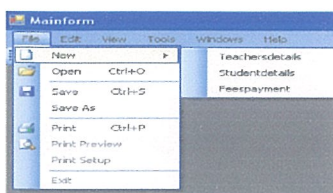
- File
- Edit
- Reports
- Exit

4.7.5 The File Option

The File option on the main menu of the MDI form displays a list of various Data Entry forms. These options include:

- i. Students' Information Form
- ii. Teacher Information Form
- iii. Results Information Form
- iv. Students' Fees Payments Information Form

You can move from one menu option to another by using the mouse to click your choice the selected option opens the respective window.



4.7.6 Students' Main information

This is used by the school bursars and administrators to track down records pertaining to a student's background and general information (physical address and contact person) and student's confidential information. This file stores all the students' information and allows for easy access to each piece of information.

Students' Main Information Form

Student details

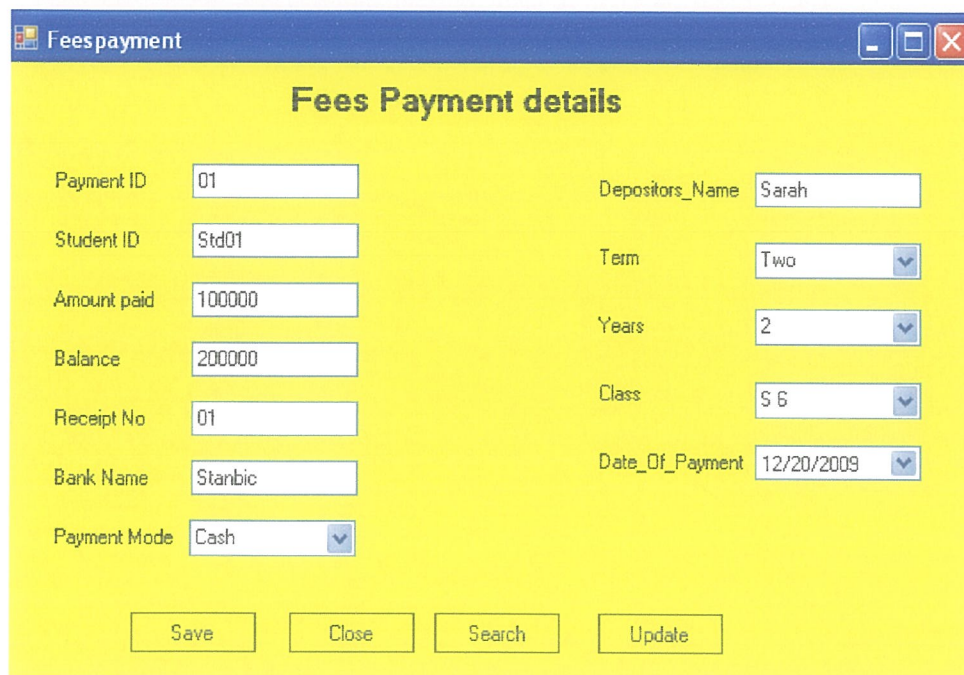
Student ID	Sdt01	House	John
F Name	Tumwine	Dormitory	IBDANI
Other Names	Sarah	AdmissionDate	9/14/2009
Sex	Female	Parent_GuadianName	Bafaki
Address	Kazo	Class	S6
DateOfBirth	9/14/1991		
Country	Uganda		

Save Close Search Update

4.7.7 Students' Fees Payments File

This file is mainly used by bursars for billing students, capture, search, update and printing data related to payments made to the school.

Students' Fees Payments Form



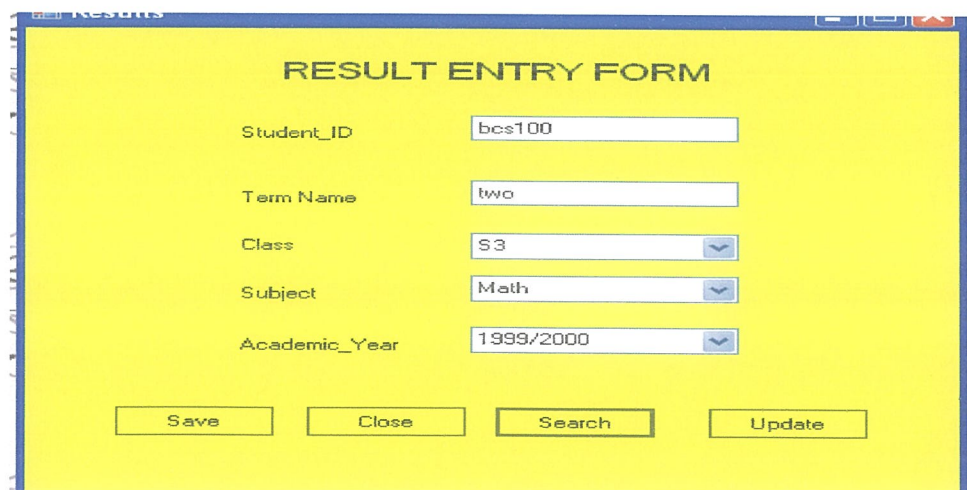
The screenshot shows a window titled "Feespayment" with a yellow background. The title bar includes standard Windows window controls (minimize, maximize, close). The main heading is "Fees Payment details". The form contains two columns of input fields. The left column includes: Payment ID (01), Student ID (Std01), Amount paid (100000), Balance (200000), Receipt No (01), Bank Name (Stanbic), and Payment Mode (Cash, a dropdown menu). The right column includes: Depositors_Name (Sarah), Term (Two, a dropdown menu), Years (2, a dropdown menu), Class (S 6, a dropdown menu), and Date_Of_Payment (12/20/2009, a dropdown menu). At the bottom, there are four buttons: Save, Close, Search, and Update.

Field	Value
Payment ID	01
Student ID	Std01
Amount paid	100000
Balance	200000
Receipt No	01
Bank Name	Stanbic
Payment Mode	Cash
Depositors_Name	Sarah
Term	Two
Years	2
Class	S 6
Date_Of_Payment	12/20/2009

4.7.8 Results Entry form

When entering data results into forms you can move from one field to another by pressing the Enter or Tab Key on the keyboard or clicking into the next field using the mouse. The grayed data fields on the data entry form imply that the data is entered automatically by the system. The data entry screen form can be closed by clicking the close button on that form.

Results Entry form



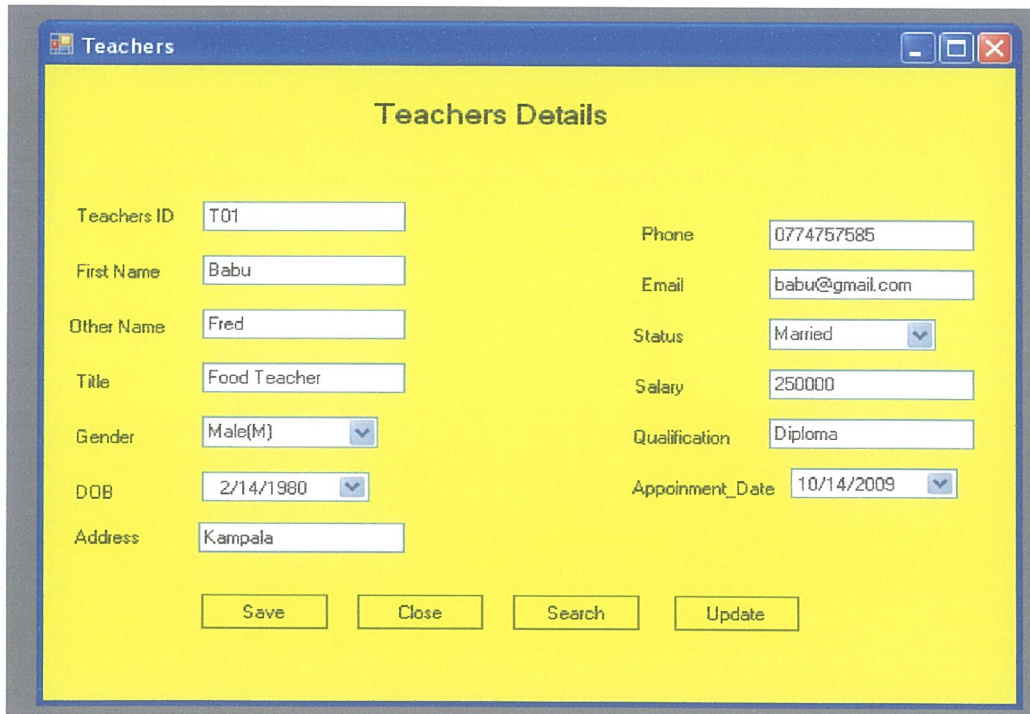
The screenshot shows a window titled "RESULTS" with a yellow background. The title bar includes standard Windows window controls. The main heading is "RESULT ENTRY FORM". The form contains five input fields, each with a label and a value: Student_ID (bcs100), Term Name (two), Class (S3, a dropdown menu), Subject (Math, a dropdown menu), and Academic_Year (1999/2000, a dropdown menu). At the bottom, there are four buttons: Save, Close, Search, and Update.

Field	Value
Student_ID	bcs100
Term Name	two
Class	S3
Subject	Math
Academic_Year	1999/2000

4.7.9 Teachers' Main information

This is used by the school administrator to track down records pertaining to a teacher's background and general information (physical address and contact person) and teacher's confidential information. This file stores the entire teacher's information and allows for easy access to each piece of information.

Teacher Entry Form



The screenshot shows a software window titled "Teachers" with a yellow background. The window contains a form titled "Teachers Details". The form has two columns of input fields. The left column includes: Teachers ID (text box with "T01"), First Name (text box with "Babu"), Other Name (text box with "Fred"), Title (text box with "Food Teacher"), Gender (dropdown menu with "Male(M)"), DOB (date picker with "2/14/1980"), and Address (text box with "Kampala"). The right column includes: Phone (text box with "0774757585"), Email (text box with "babu@gmail.com"), Status (dropdown menu with "Married"), Salary (text box with "250000"), Qualification (text box with "Diploma"), and Appointment_Date (date picker with "10/14/2009"). At the bottom of the form are four buttons: "Save", "Close", "Search", and "Update".

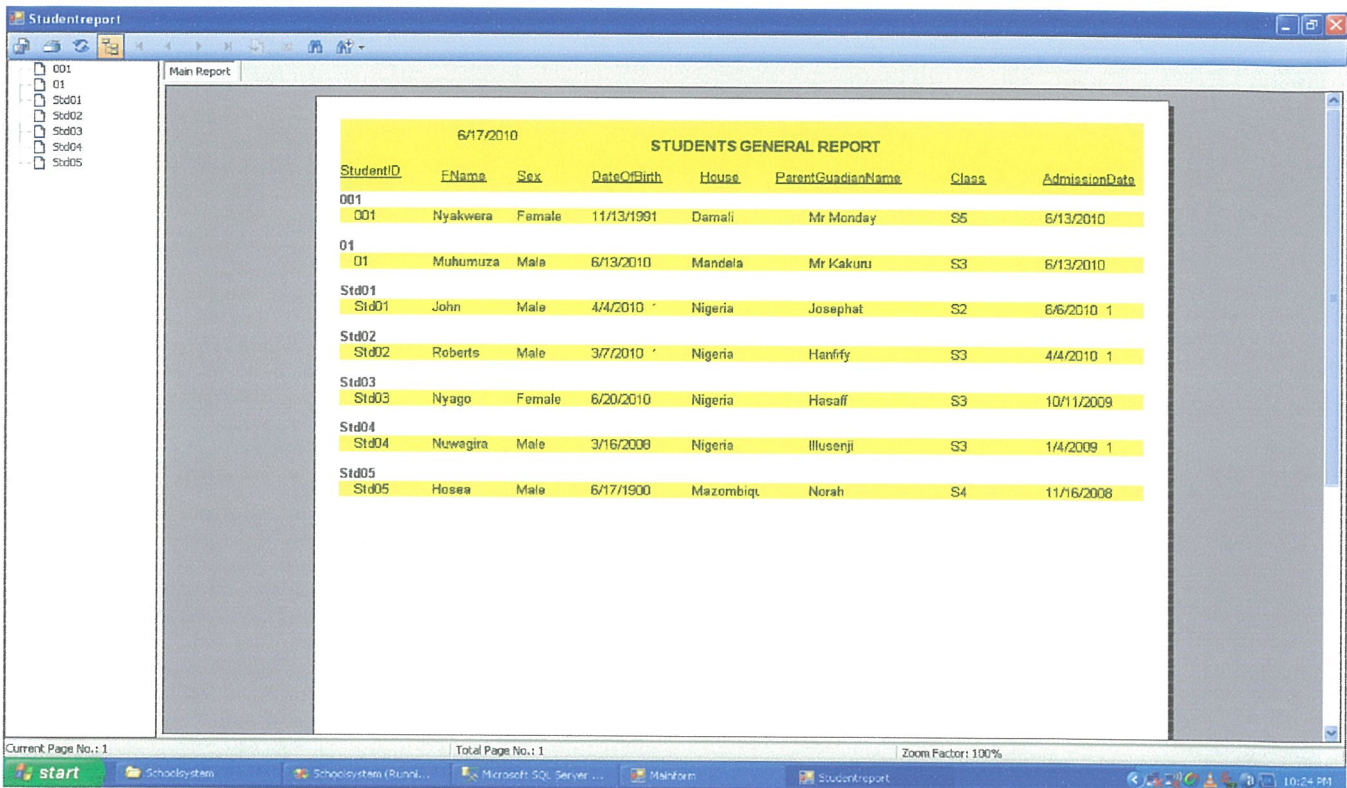
Field	Value
Teachers ID	T01
First Name	Babu
Other Name	Fred
Title	Food Teacher
Gender	Male(M)
DOB	2/14/1980
Address	Kampala
Phone	0774757585
Email	babu@gmail.com
Status	Married
Salary	250000
Qualification	Diploma
Appointment_Date	10/14/2009

REPORTS

The system generates a number of reports. The reports are classified according to the data outputs that are required from the system.

A sample of the above mentioned reports has been given below:

Student General Information Report



The screenshot shows a web application window titled "Studentreport". On the left is a navigation menu with a tree structure containing "001", "01", "Std01", "Std02", "Std03", "Std04", and "Std05". The main content area displays a report titled "STUDENTS GENERAL REPORT" dated "6/17/2010". The report contains a table with the following columns: StudentID, FName, Sex, DateOfBirth, House, ParentGuardianName, Class, and AdmissionDate. The table lists 10 student records. The status bar at the bottom indicates "Current Page No.: 1", "Total Page No.: 1", and "Zoom Factor: 100%". The Windows taskbar at the very bottom shows the Start button and several open applications including "Schoolsystem", "Schoolsystem (Run...", "Microsoft SQL Server...", "Mainform", and "Studentreport".

StudentID	FName	Sex	DateOfBirth	House	ParentGuardianName	Class	AdmissionDate
001							
001	Nyakwera	Female	11/13/1991	Damali	Mr Monday	S5	6/13/2010
01							
01	Muhumuza	Male	6/13/2010	Mandela	Mr Kakuru	S3	6/13/2010
Std01							
Std01	John	Male	4/4/2010	Nigeria	Josephat	S2	6/6/2010 1
Std02							
Std02	Roberts	Male	3/7/2010	Nigeria	Hanrfy	S3	4/4/2010 1
Std03							
Std03	Nyago	Female	6/20/2010	Nigeria	Hasallf	S3	10/11/2009
Std04							
Std04	Nuwagira	Male	3/16/2008	Nigeria	Illusenji	S3	1/4/2009 1
Std05							
Std05	Hosea	Male	6/17/1900	Mazombiq	Norah	S4	11/16/2008

All reports, regardless of the category can be displayed on the screen for viewing as a softcopy before printing the hardcopy on the printer. A report is displayed on the screen automatically immediately you click icon on the menu.

Printing

If you intend to get a printout copy of any previewed report, you must ensure that the printer is connected and ready, and there is enough paper loaded in the printer. In most cases you will be required to specify directly from a dialog box the kind of records to print. To print, when the report is in print preview click on the print icon in the file menu of your screen, then specify the number of copies to print and click on the Ok button.

Exit Program Option

If you want to exit this program click on the exit option on the MDI form. When clicked, this option exits the system thus taking you back to the desktop of your operating system.

4.9 System Testing

This was done by conducting a test run of the entire system to find out whether there were errors. It is an important phase of a successful system.

4.9.1 Unit Testing

This is the first stage of testing; this was done by using written test plan and prepared test data. The path consisted of a number of test runs such as valid paths through the codes. For each test run, there was a list of conditions tested, the test data used and the expected results. All the forms that are on the system were tested against the test plan and the conditions.

4.9.2 Integration Testing

This was used to test the interfaces between programs in the same functional area. Each program was linked to other programs with which it interacts. The whole process was in a specified sequence and within specified response time. The integration between the program interfaces created in Microsoft visual studio 2005 and the database created in SQL was fully tested to ensure that they effectively link.

4.10 Testing and Implementation.

This was used to test the whole system by linking together all the programs subsystems. Bugs were recorded and then categorized in terms of priority they were fixed and those with less priority were addressed in the follow-ups releases. The following were also carried out.

1. Performance Testing

This process was carried out to find out whether the system meets the user requirements such that all the response times or transaction periods specified in the functional specifications can be met by the system especially when it is fully loaded. The process involved timing how long the system takes to respond to a user request, timing normal processing and exception cases.

2. Acceptance testing.

This was used to prove to the client that the system, meets the business requirements agreed upon, in the functional specifications. The test data was replaced with live data provided by the client. The client recorded all errors, discrepancies and other aspects. They were discussed with the developer whereby, the errors were corrected by the developer and the changes were implemented.

3. Data take-on and conversion

Small bits of data from the old system were transferred safely to the new system. This was done by:

- Users entering data; the developer had to ensure that data entry errors are controlled.

4. User Training

User Training was conducted and covered all the functions of the system to ensure that the users were competent in the use of the system. The training was done by the system developer.

5. Installation and change over.

i. Installation on site

Hardware was brought and the system was installed (this included operating system, and the student management information system)

ii. System change over

Parallel conversion method was used, the advantage is that it is the safest and there is a clear break between the old and the new system. However, apparently both the old and the new system are being used concurrently until such a time when the users will be very sure and confident about the functionality of the new system

CHAPTER FIVE

DISCUSSION, LIMITATION, RECOMMENDATIONS, AND CONCLUSIONS

5.0 Introduction

This section covers the discussion of the report on the study; it includes recommendations on how to use system, limitations and conclusions.

5.1 Discussion of results

Security

The computerized system has the ability to prevent unauthorized entry into the store data/information. This is done by restricting access to the system and only the users with valid usernames and passwords can capture, edit and make any changes to the data stored. This improves on the level of consistency which lacked in the old system.

Speed and Storage

Since computers have speed as one of the major properties, the system users also enjoy it. This is due to the fact that data can easily be captured, stored and retrieved with great ease of time.

Flexibility and Automation

Since some tasks are repetitive, it has been automated and simplified. This is by use of a database for all students details.

5.2 Limitations.

Researchers would have done much better than this but due to a number of factors they could not, as given below.

Budget: Factors such as finance for purchase of a computer, software resources e.g. Visual Studio, SQL server 2005, Microsoft Office, Microsoft Windows XP, printing costs and transport costs to and from the project area, airtime calling the supervisor to give advice and guidance on the research report, were also a major set back.

The researchers had to visit web sites to search for some important information yet the Service had to be paid for.

Time: The researchers had to design this system in a short period of time. It was stressful on the side of the researchers because they had to extend their working hours to beat the deadline

Rigidity of staff towards new system:

Some of the staff was not co-operative for fear that they would lose their jobs.

Also there was difficulty in collecting the actual data, given the fact that this system deals with management, the concerned staff were not willing to give all of the details required to develop this system for security reasons.

Power failure:

Some times power could get off and this caused delays.

Poor scheduling, the time table was not followed well.

5.3 Recommendations

The researchers recommend that the computerized system should be updated regularly to avoid system breakdown. There is need to implement the system in all the other departments of the school to improve on the general efficiency in the services offered. The System should be flexible to all authorized Users and adoptable to all future system Technologies. Any consultation to Computer System experts and the designer is vital to the school management.

5.4 Conclusions

The computerized system has proved a model database management system for handling students' records at C.S.S, and shortcomings of the old system have been addressed and there is hope that all the other sections of the school will emulate the student information so as to improve on the general performance and efficiency of the school.

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Jeffrey L. Whitten. et.al. (2001), Systems analysis and Design methods; 5th Edition,
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Ram Krish Man(2000) Database system concepts 4th Edition. An imprint of McGraw-Hill companies, Inc. 1221 Avenues of the Americas, New York, NY, 10020, 6th Edition, Prentice-Hall International

Silbers Chatz Korth Sudarshan.(2000). Database system concepts .4th edition. India, pearson education, inc oz 2002 MIS

APPENDIX 1

Sample questionnaire used

SECTION A

The purpose of this document is to gather information that will guide the researchers in the design and implementation of a students' records management information system at CSS. You are requested to answer up to your best the questions as follow. The information you give us is very vital and shall be kept with at most confidentially between the researchers and you.

SECTION B

You are requested to answer the questions that follow. Only the blue or black ball pens shall be used to ensure consistency

To be answered by all participants

Question 1

What is your name?

.....

Question 2

How old are you?

.....

Check the right answer

Question 3

Gender

☐ Female

☐ Male

Question 4

Which responsibilities do you hold in the hostel?

☐ HeadTeacher ☐ Teacher ☐ Student ☐ Others

Question 5

How long have you been in this school?

☐ (below 2) years

☐ (2-4) years

☐ (5 plus) years

SECTION C

This part shall be filled in by administrator only

Question 6

Who is the owner of this school?

a) When did this school start?

b) With how many students

c) What is the current number of students in the school?

Question 7

a) What causes the changes of students in the school?

b) What is the performance of the school?

O poor

O average

O good

Question 8

What are your future plans for this school?

Question 9

a) what is the total number of employees?

.....

b) are they all permanent

☐ No

☐ Yes

c) if not in question 9b how many are permanent and those who are not?

.....

SECTION D

To be answered by system users.

Question 10

a) How is student's and employees' data being collected and stored?

.....

.....

.....

b) How efficient is the current system?

.....

.....

c) What are weaknesses / problems being faced while using the current system?

.....

.....

.....

.....

d) What is suggestion / possible solutions to such problems faced in Question 10 c above.

.....

.....

.....

Question 11

A database is a collection of logically related information designed to meet information needs of an organization.

a) What is your opinion towards the replacing the current with the database system?

.....
.....

b) Do you think that the school has the capacity to support 1.5 m project?

.....

c) What are sources of income that you think can enable the school to support 1.5 m project?

.....

d) What would do you think or like the proposed system to have or do?

.....
.....
.....

Question12

a) Does the school have computers?

.....

b) What is the computer literacy level in this school?

☐ poor ☐ average ☐ good ☐ excellence

Question 13

a) What do you think would be impact of the building a students' records management information system?

.....

.....

.....

b) What do you think will be the effect of the system specified in Qn 13a above on the cost of operations?

☐ good

☐ bad

Question14

What is your comment about this time I have had with you?

.....

.....

APPENDIX II

Sample codes used.

Database codes

```
use School
go
if exists (select * from sysobjects where name='uspinsertstudentdetails')
drop proc uspinsertstudentdetails
go
create proc uspinsertstudentdetails
(
    @StudentID varchar(30),
    @FName varchar(30),
    @OtherNames varchar(50),
    @Sex varchar(10),
    @Address varchar(20),
    @DateOfBirth datetime,
    @Country varchar(30),
    @House varchar(30),
    @Dormitory varchar(40),
    @AdmissionDate datetime,
    @Parent_GuadianName varchar(30),
    @Class varchar(20))
as
INSERT INTO tblstudentdetails
    (StudentID, FName, OtherNames, Sex, Address, DateOfBirth, Country, House,
    Dormitory, AdmissionDate, Parent_GuadianName, Class)
VALUES
    (@StudentID,@FName,@OtherNames,@Sex,@Address,@DateOfBirth,@Country,@House,@
    Dormitory,@AdmissionDate,@Parent_GuadianName,@Class)
```

```

go
if exists(select* from sysobjects where name='uspinsertStaffinfor')
drop proc uspinsertStaffinfor
go
create proc uspinsertStaffinfor
(
@TeachersID varchar(30),
@FirstName varchar(40),
@OtherName varchar(50),
@Title varchar(40),
@Gender varchar(10),
@DOB Datetime,
@Address varchar(40),
@Phone varchar(20),
@email varchar(50),
@Status varchar(10),
@Salary decimal(18,0),
@Qualification varchar(50),
@Appointment_Date Datetime)
as
INSERT INTO tblStaffinfor
(TeachersID, FirstName, OtherName, Title, Gender, DOB, Address, Phone, Email,
Status, Salary, Qualification, Appointment_Date)
VALUES
(@TeachersID,@FirstName,@OtherName,@Title,@Gender,@DOB,@Address,@Phone,@Email,@Status,@Salary,@Qualification,@Appointment_Date)
go
go
if exists(select* from sysobjects where name='uspinsertFeespayment')
drop proc uspinsertFeespayment
go

```

```

create proc uspinsertFeespayment
(
    @PaymentID varchar(30),
    @StudentID varchar(30),
    @Amountpaid decimal(18, 0),
    @Balance decimal(18, 0),
    @ReceiptNo varchar(25),
    @BankName varchar(30),
    @PaymentMode varchar(30),
    @Depositors_Name varchar(30),
    @Term varchar(20),
    @Years varchar(20),
    @Class varchar(20),
    @Date_Of_Payment datetime)
as
INSERT INTO tblFeespayment
    (PaymentID, StudentID, Amountpaid, Balance, ReceiptNo, BankName,
    PaymentMode, Depositors_Name, Term, Years, Class, Date_Of_Payment)
VALUES
    (@PaymentID,@StudentID,@Amountpaid,@Balance,@ReceiptNo,@BankName,@PaymentMo
    de,@Depositors_Name,@Term,@Years,@Class,@Date_Of_Payment)
go
go
go
if exists(select*from sysobjects where name='uspinsertresultinfor')
drop proc uspinsertresultinfor
go
create proc uspinsertresultinfor
(
    @StudentIDs varchar(30),

```

```

@TermName varchar(20),
@Class varchar(25),
@Subject varchar(30),
@Academic_Year datetime)
as
INSERT INTO tblResultinfor
        (StudentIDs, TermName, Class, Subject, Academic_Year)
VALUES  (@StudentIDs,@TermName,@Class,@Subject,@Academic_Year)
go
go
if exists (select * from sysobjects where name='uspinsertlogin')
drop proc uspinsertlogin
go
create proc uspinsertlogin
(
@Usernames varchar(30),
@Password varchar(15))
as
INSERT INTO tblLogin
        (Usernames, Password)
VALUES  (@Usernames,@Password)
go
Visual studio connection and interface codes
Imports System.Data.SqlClient
Public Class Studentdetails
    Dim con As New SqlConnection(constring)
    Dim cmd As New SqlCommand
    Dim da As New SqlDataAdapter
    Dim dataset1 As Data.DataSet
    Dim sqlclient1 As SqlClient.SqlDataAdapter
    Dim datarow1 As Data.DataRow

```

Dim comBuilder As SqlClient.SqlCommandBuilder

Private Sub btnSave_Click(ByVal sender As System.Object, ByVal e As System.EventArgs)

Handles btnSave.Click

Try

Me.Cursor = Cursors.WaitCursor

cmd = New SqlCommand("uspinsertstudentdetails", con)

cmd.CommandType = CommandType.StoredProcedure

With cmd.Parameters

.Add(New SqlParameter("@StudentID", txtStudentID.Text))

.Add(New SqlParameter("@FName", txtFName.Text))

.Add(New SqlParameter("@OtherNames", txtOtherNames.Text))

.Add(New SqlParameter("@Sex", cboSex.Text))

.Add(New SqlParameter("@Address", txtAddress.Text))

.Add(New SqlParameter("@DateOfBirth", dtpDateOfBirth.Text))

.Add(New SqlParameter("@Country", txtCountry.Text))

.Add(New SqlParameter("@House", txtHouse.Text))

.Add(New SqlParameter("@Dormitory", txtDormitory.Text))

.Add(New SqlParameter("@AdmissionDate", dtpAdmissionDate.Text))

.Add(New SqlParameter("@Parent_GuardianName", txtParent_GuardianName.Text))

.Add(New SqlParameter("@Class", cboClass.Text))

End With

con.Open()

cmd.ExecuteNonQuery()

txtStudentID.Text = ""


```

txtFName.Text = ""
txtOtherNames.Text = ""
Me.cboSex.Text = ""
Me.cboClass.Text = ""
txtAddress.Text = ""
txtCountry.Text = ""
txtDormitory.Text = ""
txtParent_GuadianName.Text = ""
dtpDateOfBirth.Value = Today
Catch ex As Exception
MsgBox(ex.Message, MsgBoxStyle.Information)
Finally
con.Close()

```

```

Me.Cursor = Cursors.Default
End Try
End Sub

```

```

Private Sub btnUpdate_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles btnUpdate.Click

```

```

Try
Me.Cursor = Cursors.WaitCursor

cmd = New SqlCommand("uspupdate_StudentdetailsatStudentID", con)
cmd.CommandType = CommandType.StoredProcedure

```

```

With cmd.Parameters
.Add(New SqlParameter("@StudentID", txtStudentID.Text))
.Add(New SqlParameter("@FName", txtFName.Text))
.Add(New SqlParameter("@OtherNames", txtOtherNames.Text))
.Add(New SqlParameter("@Sex", cboSex.Text))

```

```

.Add(New SqlParameter("@Address", txtAddress.Text))
.Add(New SqlParameter("@DateOfBirth", dtpDateOfBirth.Text))
.Add(New SqlParameter("@Country", txtCountry.Text))
.Add(New SqlParameter("@House", txtHouse.Text))
.Add(New SqlParameter("@Dormitory", txtDormitory.Text))
.Add(New SqlParameter("@AdmissionDate", dtpAdmissionDate.Text))
.Add(New SqlParameter("@Parent_GuardianName", txtParent_GuardianName.Text))
.Add(New SqlParameter("@Class", cboClass.Text))

```

End With

```
con.Open()
```

```
cmd.ExecuteNonQuery()
```

```
txtStudentID.Text = ""
```

```
txtFName.Text = ""
```

```
txtOtherNames.Text = ""
```

```
Me.cboSex.Text = ""
```

```
Me.cboClass.Text = ""
```

```
txtAddress.Text = ""
```

```
txtCountry.Text = ""
```

```
txtDormitory.Text = ""
```

```
txtParent_GuardianName.Text = ""
```

```
dtpDateOfBirth.Value = Today
```

Catch ex As Exception

```
MsgBox(ex.Message, MsgBoxStyle.Information)
```

Finally

```
con.Close()
```

```
Me.Cursor = Cursors.Default
```

End Try

End Sub

Private Sub get_Studentdetails()

Try

```

Me.Cursor = Cursors.WaitCursor

cmd = New SqlCommand("uspget_StudentdetailsatStudentID", con)
cmd.CommandType = CommandType.StoredProcedure
With cmd.Parameters
    .Add(New SqlParameter("@StudentID", txtStudentID.Text))
End With
da.SelectCommand = cmd
Dim ds As New DataSet
da.Fill(ds, "muk")
If ds.Tables("muk").Rows.Count > 0 Then
    txtStudentID.Text = ds.Tables("muk").Rows(0).Item("StudentID")
    txtFName.Text = ds.Tables("muk").Rows(0).Item("FName")
    txtOtherNames.Text = ds.Tables("muk").Rows(0).Item("OtherNames")
    cboSex.Text = ds.Tables("muk").Rows(0).Item("Sex")
    txtAddress.Text = ds.Tables("muk").Rows(0).Item("Address")
    txtCountry.Text = ds.Tables("muk").Rows(0).Item("Country")
    dtpDateOfBirth.Value = ds.Tables("muk").Rows(0).Item("DateOfBirth")
    dtpAdmissionDate.Value = ds.Tables("muk").Rows(0).Item("AdmissionDate")
    txtHouse.Text = ds.Tables("muk").Rows(0).Item("House")
    txtDormitory.Text = ds.Tables("muk").Rows(0).Item("Dormitory")
    txtParent_GuadianName.Text =
ds.Tables("muk").Rows(0).Item("Parent_GuadianName")
    cboClass.Text = ds.Tables("muk").Rows(0).Item("Class")
End If
Catch ex As Exception
    MsgBox(ex.Message, MsgBoxStyle.Information)
Finally
    Me.Cursor = Cursors.Default
End Try
End Sub

```

```
Private Sub btnSearch_Click(ByVal sender As System.Object, ByVal e As
System.EventArgs) Handles btnSearch.Click
    get_Studentdetails()
End Sub
Private Sub btnClose_Click(ByVal sender As System.Object, ByVal e As System.EventArgs)
Handles btnClose.Click
    Me.Close()
End Sub
End Class
```