A COMPUTERIZED STUDENT REGISTRATION SYSTEM

USING VISUAL BASIC AND MICROSOFT ACCESS

CASE STUDY: SCHOOL OF COMPUTER STUDIES KAMPALA INTERNATIONAL UNIVERSITY

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Agraduation project report submitted to the school of computer studies

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APPROVAL

This is to certify that this research report entitled "A computerized student registration system" submitted in partial fulfillment of diploma in computer science of Kampala international university by Mushabe Rogers and Nyabongo Apollo was under my supervision and guidance and is now ready to be submitted to the school of computer studies with my approval.

Signature……..

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Supervisor

Date 18th/09/07

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Abbreviations and Acronyms

BAL.....Basic Assembly Language

CODASYL.....Conference on Data System Language

CADF.....Committee Advanced Data Function.

DB.....Database.

DBA.....Database Admistrator.

DBMS.....Database Management System

DBS.....Database System.

DBTG.....Data Base Task Force

DDL.....Data Definition Language

DFD.....Data Flow Diagram.

DL/1.....Data Language one

DML.....Data Manipulation Language

DSS.....Decision Support System.

ERDM.....Extended Relational Data Model.

ESS.....Execution Support System.

GE.....General Electric

GUAM.....Generalized Update Access Method

IBM.....International Business Machine

IDS.....Integrated Data Store

IMS.....Information Management System

KBS.....Knowledge Base System

KIU.....Kampala International University

LPTF.....List Processing Task Force.

MIS.....Management Information System

MVS.....Manual Virtual Storage

NDBS.....Network Database System.

OODM.....Object Oriented Data Model.

OS/VS1.....Operating System/Virtual Storage One

SQL.....Structured Query Language.

TPS.....Transactional Processing System

VS.....Virtual Storage

ABSTRACT

The study focused on the developing a computerized student registration System for the faculty of computer studies Kampala International University. A computerized student registration System is the one that provides for management oriented reporting, for example a DBMS. A DBMS is a software program designed to assist in maintaining and utilizing large amount of data for the purpose of management in an organization, The DBMS enabled maintaining, organizing and retrieving information efficiently, These reports are usually generated from a shared Database that stores data from many sources, The objective of this study was to analyze and design a computerized student registration Application which is a DBMS that addresses the problems of delay in student registration process, security of students' results, searching of information, efficiency in report generation for the student and also the difficulties faced while updating student's record in the faculty.

CHAPTER ONE

INTRODUCTION

1.1 GENERAL INTRODUCTION

A computerised student registration system is a collection of programs and tools to create and maintain a database through, defining and specifying types of data, constructing, storing and populating a database, manipulating, querying, updating and reporting. It is a computer-based application for managing student registration in particular School of computer studies.

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

School of computer studies was using traditional file system for managing the student information and therefore was facing the following problems:-

- Uncontrolled redundancy
- Inconsistent data
- Inflexibility
- Limited data sharing
- Poor enforcement of standards
- Excessive data maintenance

Given the above weaknesses in that system at the school of computer studies, the researcher observed that to have an efficient and effective way of managing and monitoring student information within the School required the conception, development and implementation of an automated computer system. The system would come with the following strengths:-

- Services and Controls
- Security and privacy controls
- Backup and recovery

- Enforcement of standards
- Flexibility
- Data independence
- Easy Data accessibility
- Reduced program maintenance
- Controlled redundancy
- Consistency of data and integrity constraints
- Integration of data
- Data and operation sharing
- Multiple interfaces

This application consists of a multifunctional database of students and staff information. The system keeps track of staff and students. The purpose of the system is to allow easy retrieval of information according to detailed descriptions and to be able to carry out searches for the purpose of the mapping information. The system provides periodic reports to allow monitoring the school's registration performance exercise.

1.1 BACKGROUND OF THE STUDY

Kampala international University is located in Kabalagala-Kansanga, 3km from the city center and 2km from the shores of Lake Victoria the largest fresh water lake.

Kampala international university is a private bona fide institution of higher learning fully licensed by the national council of higher education Uganda in 2004.

However, at Kampala international university the situation of student registration system has revealed a much less encouraging picture about future prospects of the university and seems to have been one of the situations of education through institutions.

Like any other university or higher institution of learning, Kampala international university offers a number of courses such as computer science, information technology and mass communication to mention but a few which calls for a great number of students to join the university.

A classic data management system has to be put in place to avoid all the misfortunes like duplication of results, loss of financial data and other documents of the university.

The researcher came up to address the poor student registration management systems at the university by scrapping the old manual systems and then develop a computerized package to eliminate all the disadvantages associated with old systems.

1.2 STATEMENT OF PROBLEM

Kampala international university is private university in Uganda. On many occasions there has been a lot of;

- Anomalies in results capture.
- Anomalies in the result processing
- High expenses of employing faculty assistants
- Delays in processing of lecturer information
- Problems with data interpretation for decision makers
- A lot of time taken to update the manual books of registration

This is as stated by the dean and secretaries in the school of computer studies. The faculty was not giving any special consideration to the computerized student registration systems. This posed a setback as there was

- Duplication/redundancy of data.
- Inconsistent data
- Inflexibility in data manipulation
- Limited data sharing
- Poor enforcement of standards

It was therefore, upon this background that the researcher set out to find a workable solution to these problems.

1.3 OBJECTIVES OF THE STUDY

The main objective of this study was to design a prototype of a reliable computerised student registration system for the School of computer studies to manage the student's data. A system that will also help in reduction of data redundancy, enhance data integrity and security there by improving both confidentiality and privacy of the provided information.

1.3.1 MAIN OBJECTIVE

The aim of this study was to analyze the existing manual system in the School of computer studies and design a computerized student registration system that would help solve problems related to result capture, data processing and subject handling.

1.3.2 SPECIFIC OBJECTIVES

- To review the students data management system at the university and identify inefficiencies in the system.
- To design and develop computerized system for the faculties in the university in particular the school of computer studies to eliminate identities inefficiencies.
- To test the developed computerized student registration system.
- To implement the system in the faculties specifically school of computer studies at the university.
- Improve on information flow and accessibility of data and simplify the modification and retrieval of records and to develop a system that provide a user friendly interface that will reduce fatigue, and improve on efficient running of activities within the school.

- Establish a system that will efficiently keep track of the students and their results information, by providing periodical reports on performance of the school activities.
- Enhance security and privacy controls of data and important information of the school
- Uphold consistency of data, allow backup and recovery within the school database.

1.4 SCOPE OF THE STUDY

The study was aiming only to the faculty of computer studies at Kampala international university because it is the main faculty that the university excels in and builds its strength.

The study was conducted at Kampala international university.
This research was mainly considering ways of managing data and registration flow in the school of computer studies. The research did not capture all the records of the school but was limited to students' registration, result handling, preparation of course units and their related aspects.

School of computer studies was chosen because the researchers are students in this school therefore they believe that they would have better access to information since most staff of the school are known to them.

The target of the project was to develop and implement a computerized student registration system for School of computer studies and to enhance management of the existing information system.

The system was designed to keep track and monitor students' information, process their results to facilitate planning, control and decision making by management within the school.

The outcome of the system will help in policy making and program planning by providing important information on students' data to recognize and respond to their needs in a timely manner and in preparation of the results which will motivate them pursue their studies.

1.5 LIMITATIONS OF THE STUDY

During the courses of conducting the study the researcher faced the following limitations:

- Funds to carry out data searching from the Internet and movement to various places to gather texts were not sufficient.
- Rigidity of some staff to release information needed for accomplishing the research work.
- Time allocated to complete the research was quite short. This is especially when consideration is to be given doing other areas such as class work.
- Difficulty in collecting the actual data: Given the fact that this system deals with results, the concerned staff were not willing to give all of the details required to develop this system for security reasons.
- Internet Expenses: The researcher had to visit web sites to search for some important information yet the Service had to be paid for.
- Lack of books in the university library: The university library is not well stocked with the necessary books. The researcher had to seek access to other means.

1.6 METHODOLOGY

Focuses on the methodology that was used in the study, specifies the research design, the variables, data source, data collection methods, analysis and presentation of data, the limitation encountered in the study, cost incurred and time frame used during the study. The methods used to collect data were mainly observation, interviews and review of the school's documents like registration forms, books, among others.

1.7 SIGNIFICANCY OF STUDY

The study is intended to analyze the effectiveness and the performance of the old system used in the faculties of Kampala international university plus the positive and negative effects of the system.

Because of increasing number of students, the new system should be implemented to meet changes and goals of faculties of the university, the study findings and outputs could be extended else where in the nation with related conditions where universities or higher institutions of leaning are facing similar challengers

In general the new system is expected to improve record management of the results, lecture progress and information processing for the university, reduce on time delays in accessing or tracing for a record on a particular student or staff and improve faculty activities.

1.8 JUSTIFICATION OF THE STUDY

Since a computerised student registration system is designed and implemented, faculty administrator will have a secure, reliable, efficient and effective information flow.

The new system will help to reduce the amount of storage space, keep track of the entire students' records and staff information flow.

The new system has equipped the Designers with the skills of database design and has helped them to produce a project, which will be used as researchers' references. Development of the system has exposed the designers to problem identification and problem solving, which will be useful to them in future and is also partial fulfillment of a course before graduating.

The system will help reduce on complaints from students and will also help the administrator in improving on the efficiency and convenience of their work thereby improving their productivity.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

According to Ralph m. Stair, Jr. (1985), a computer is a device that accepts information (in the form of digitalized data) and manipulates it for some result based on a program or sequence on how the data is to be processed. Complex computers include the means for storing data (including the program, which is also a form of data) for some necessary duration. A program may be invariable and built into the computer (called logic circuitry as it is on micro processors) or different programs may be provided to the computers (loaded into its storage and then started by an administrator or user). Today's computers have both kinds of programming languages.

The history of the modern computer begin with the analytical Engine envisioned by Charles Babbage following the mathematical ideas of George_Bool, the mathematician who first stated the principles of logical inherent in today's digital computers. Babbage's assistant and collaborators, Ada Lovelace, is said to have introduced the ideas of program loops and sub routines and is sometimes considered the first programmer. Apart from mechanical calculators, the first really useable computers began with the vacuum tube, accelerated with the invention of the transistor, which then became emended in large numbers in integrated circuits, ultimately making possible the relatively low-cost personal computer. Modern computers inherently follow the ideas of the stored programs laid out by Jon von Neumann in 1945. Essentially, the program is read by the computer one instruction at a time, an operation is performed, and the computer then

reads in the next instruction, and so on. Recently, computers and programs have been devised that allow multiple programs (and computers) to work on the same problem at the same time in parallel. With the advent of the internet and higher bandwidth data transmission, programs and data that are part of the same overall project can be distributed over a network and embody the sun Microsystems slogan: "The network is the computer".

It is perhaps stating the obvious that computers appears to be everywhere today. Even when we don't encounter them directly in their various forms of modern convenience deices, such as digital watches, microwave ovens, VCRs, and the like, we generate transactions that are processed via computers without actively doing anything, the utility companies are recording our usage, the phone company records incoming calls, our answering machine might be recording a massage while we doing something else, someone is performing a credit check on us, and the like.

2.1.1 Manual file based system compared to Computerized Information Systems

Data processing is essentially the same, no matter whether it is done manually or by computers. Computers use programs instead of instruction book and they store data on disks and tapes instead of in filing cabinets, but their work still follows the input, processing, output and storage pattern. When compared to human beings however computers can process data much more quickly, are generally accurate (where as human beings are prone to errors), can process both large volumes of data and share information at a very high speed with other computers (using networks), (Williams etal sawwyer 1999)

2.1.2 Features of Computers

- Speed: Since all operations of a computer are caused by electrical pulse, computers can perform innumerable operations in just one second.
- Storage: Computers have very large storage capacity. Apart from storing text information, it is possible to store pictures and sounds in a digital form.
- Diligence: Computers being machines do not suffer from fatigue and lack of concentration.
- Easy Communication: Computers can be networked to share resources. Networks can link microcomputers, terminals, minicomputers, mainframe computers and computer devices as printers and storage devices.
- Security: Computers provide administrators a way to control what each individual user is able to do without standing behind users and watching.

Given those features, you find that to solve the problems faced by faculty of computer studies we need to implement a computer-based information system.

2.2 DATABASE SYSTEMS.

It is a larger collection of records that are created, stored, retrieved and manipulated with flexibility. It is managed using a set of programs called database management system (DBMS) which acts as an interface between the DB and the user. KSNM information system operates within the environment of software, hardware, data/information and users.

Kenneth C.and Jane P.Laudon (1998) defined a database as a collection of data organized to service many applications at the same time by sorting and managing data so that they may appear to be in one location.

Peter Bishop (1976, Red) talks of a Database as consisting of the stored data, the various model, a piece of software called a DBMS and a person called a database administrator.

DBMS is a large and complex piece of software responsible for all aspects of the location, accessing and updating of the database. Database administrator is a person in charge of the overall running of the database system.

In general all users of the DB do the following operations on the same files. Adding a new empty file to database, insert data into existing files, retrieve the data from the existing files, change data in existing files, delete data from existing files and removing existing files from the database.

2.2.1 HISTORY OF DATABASE SYSTEM.

Database system has its roots in 1960s, Apollo Moon-Landing project which was initiated in response to President J.F Kennedy's objective of landing a man on the moon by the end of the decade. During this time there was no system that could handle and manage the vast amounts of information that the project would require.

As result North America Aviation (now Rockwell International) the prime contractor for the project, developed a software called Generalized Update Access Method (GUAM) Which was based on the concept that small components come together as parts of large components until the final product is assembled, and this came to be known as hierarchical structure.

In the mid 1960s, IBM and NAA developed GUAM into information management system(IMS).IMS is still the main hierarchical database used in most large mainframe installation. At the same time (mid 1960s), another significant development was the emergence of integrated data store (IDS) from General Electric (GE), this was headed by Charles Bachmann. This led to a new type of DBMS known as Network Database system (NDBS) this was developed to address the needs to present more complex data

relationships than could be modeled with hierarchical structures and partly to impose a database standard. It was here that the conference on Data system languages(CODASYL) representatives of the US Government and the World business and Commerce formed a List processing task force(LPTF) in 1965, subsequently renamed it Data Base Task Group(DBTG) in 1967.DBTG was to defined standard specifications for environment that would allow DB creation and manipulation. The hierarchical and CODASYL approaches represent the first generation of the DBMS.

However the two models have some fundamental demerits.

- Complex programs have to be written to answer even simple queries based on navigational record-oriented access
- There is no widely accepted theoretical foundation.
- There is minimal data independence.

In 1970, E.F Cod of IBM Research Laboratory produced an influential paper on the relational data model, timing and addressing the disadvantages of the former approaches. Many experimental relational systems were implemented thereafter, with first Commercial products appearing in early 1980s, in a particular note System Relational project at IBM's san Jose Research Laboratory in California was developed (Astrahan etal, 1976). This project was designed to prove the practicality of the relational modal by providing implementation of its data structures which led to two major developments.

- The development of a structured query language (SQL) which is today a standard language for relational systems.

- The production of various commercial relational database management system products during 1980s, example DB2 and SQL/DS from IBM and ORACLE from ORACLE corporation

Relational DBMS are today referred to as second generation DBMSs. In 1979 Codd reversed his original work with extended version of the relational model called RM/T (1979) and recently RM/V2 (1990) and this has been classified as semantic data modeling.

In the increasing Complexity of DB applications two new data models have emerged

- The Object-Oriented Data Model (OODM)
- The Extended Relational Data Model (ERDM)

The committee of Advanced DBMS function (CADF) has published a third generation Database System manisfestro (Stonebraker et al; 1990). It has the following features for the third generation DBS.

- A third-generation DBMS must have a rich type system
- Inheritance is a good idea.
- Functions including DB procedures and methods and encapsulation, are a good idea.
- Unique identifiers for record should be assigned by DBMS only if a user-defined a primary key is not available.
- Rules (triggers, constraints) will become a major feature in the future systems. They should not associated with specific functions or collection.

- Essentially all programmatic access to a DB should through a nonprocedural, high level access Language.
- There should be at list two ways to specify collections, one using enumeration of members and one using the query language to specify membership.
- Updateable views are essential
- Performance indicators have almost nothing to do with data models and must appear in them.
- DBMS must be accessible from multiple high-level languages.
- Persistent forms of a high-level language, for a variety of high-level languages are a good idea. They will all be supported on top of single DBMS by compiler extensions and Complex runtime systems.
- For better or worse SQL is "intergalactic data speak"
- Queries and their resulting answers should be the lowest level of communication between a client and a server.

2.2.2 COMPONENTS OF DATABASE SYSTEMS

As it is mentioned in the history of DB, the DBTG (1971) proposal identified three components.

- The Network Schema, this is the logical organization of the entire DB as seen by the DB administrator which includes a definition of the DB name, the type of each record and the components of each record type.
- The subschema, this part of the DB is seen by the User or application program.

- A data management language, this is to define the data Characteristics and the data structure and, to manipulate the data.
- People to operate the system
- Data processing to the needed speed for information sorting and classifying
- Data communication required to keep the information flowing between the different parts of the system and the people using the system.
- Information storage and retrieval-required to store the information in a proper format and make sure information can be retrieved when needed.
- 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.

2.2.3 LANGUAGES USED IN DATABASE SYSTEMS.

For standardization, the DBTG(1969) specified three distinct languages:

1. A schema Data Definition Language (DDL) that enables the DBA to define the schema.
2. A subschema Data Definition Language(DDL), this allows application programs to define the parts of the DB they require.
3. A Data Manipulation Language (DML), this is used to manipulate the data in the DB.

2.3 INFORMATION SYSTEMS

A collection of interrelated data together with a set of programs to access the data, also called database system, or simply database. The primary goal of such a system is to provide an environment that is both convenient and efficient to use in retrieving and storing information. A management information system (MIS) is meant to manage a large piece of information. Data in an IMS poses a merit of having the security required,

consistency and easier to back up to avoid any loss due system crashes or any other catastrophe. Security comes in form of the abstract view of data in the system. That is the system hides some of the details of how data is stored and manipulated.

2.3.1 TYPES OF INFORMATION SYSTEMS

1 Transactional processing system (TPS)

This is series of actions carried out by a single user or application program that access the contents of the database. The basic properties of transactions are ACID (Haerder and Reuter, 1983).

- Atomicity, the all or nothing. This is an indivisible transaction unit that is either performed in its entirety or it is not performed at all.
- Consistency, a transaction that transforms database from one consistent state to another consistent state.
- Independence, transaction that execute independently. The partial effects of incomplete transactions should not be visible to other transactions.
- Durability, the effects of successfully completed (committed) transactions are permanently recorded in the database and must not get lost because of subsequent failure.

2. Management Information System. (MIS)

MIS is a hierarchical DBMS and it ranks as a dominant system in the Commercial market for support of large-scale accounting and inventory systems. IBM is a full product as IMS/Virtual storage (VS), installed under Manual Virtual Storage (MVS) operating System**(Harvard Business Review, article 41).**Other versions that support IMS include Data Language One (DL/1), Operating System/Virtual storage one (OS/VS1), Operating system/Virtual Storage two (OS/VS2), and MVS.

MIS runs under different versions on the IBM 370 and 30XX family of Computers. The Data Definition and Manipulation language of IMS is DL/1. The Application programs are written in COBOL, PL/1 FORTRAN, and Basic Assembly Language (BAL) interface with DL/1. Information Management system (MIS) is designed to manage a large body of information. Data management involves both defining structures for storing information and providing mechanisms for manipulating the information. In addition, the system must provide for the safety of the stored information, despite system crashes or attempts at unauthorized access. If data are to be shared among several users, the system must avoid possible anomalous results due to multiple users concurrently accessing the same data. **Jack line Merior (1988)**

3. Executive support System (ESS).

ESS is that which can respond to ad hoc requests for information that require to be answered quickly, that is, capability to process ad hoc requests by generating quickly a program that will respond to the requests. The program must be generated quickly by means of a data-base interrogation Language (**James Martin, 1999).**

4. Decision Support system (DSS).

This is a system that helps in the analysis of business information. Its main aim is to help management 'spot trends, pinpoint problems and make intelligent decisions'' (**David McGovern, 1960**) The Characteristics of Decision support include:

- The database (DB) is primarily (though not totally) read only Columns tend to be used combination.
- The DB tends to be large (especially where the business transactions details are accumulated over time.).
- Integrity in general is not a concern (data is assumed to be correct when first loaded and is not a subsequently updated).
- Keys always include temporal components.
- The DB tend to be heavily indexed
- The DB often involves various kinds of Controlled redundancy.

5. Knowledge Base System (KBS)

This is software that manages the Knowledge base. It is a term practically used as a synonym for deductive DBMS which supports the proof-theoretic view of DBs and capable of deducing additional information from the extensional DB by applying inferential (deductive) rules that are stored in the intentional DB. DBMS certainly support recursive rules and therefore perform recursive query processing in the DB system.

2.4.1 EFFECTS OF INFORMATION MANAGEMENT SYSTEMS

Access to information continues to increase at hard to believe speeds. To begin with, the vast quantities of information available on-line (for instance, the Internet) appear to be growing exponentially. In addition, we now have unprecedented accessibility to information and communications from nearly anywhere we happen to be. Next,

information is available to an unprecedented number of people. Finally, the promises of the "information superhighway" to open up new lanes of access, including data retrieval, capture, and report generation from the stored data besides accuracy, consistency and the ability to save a large amount of data are also some of the positive effects realized through the application of the new information management system.

2.4.2 COMPONENTS OF A MANAGEMENT INFORMATION SYSTEM.

Some of the major components of a management information system include,

- Data to be captured and stored in the system.
- Data managers and well trained system managers to operate the new system.
- Passwords and standard security policies to avoid unauthorized entry into confidential University data.
- Information storage and retrieval-required to store the information in a proper format and make sure information can be retrieved when needed.

At the end of it all, reports should be generated in a format that is acceptable to the business managers and to allow future planning for the university.

A major purpose of an information management system is to provide users with an abstract view of the data. That is, the system hides certain details of how the data are stored and maintained. Thereby, data can be stored in complex data structures that permit efficient retrieval, yet users see a simplified and easy-to-use view of the data. The lowest level of abstraction, the physical level, describes how the data are actually stored and

details the data structures. The next-higher level of abstraction, the logical level, describes what data are stored, and what relationships exist among those data. The highest level of abstraction, the view level, describes parts of the system that are relevant to each user; application programs used to access a database form part of the view level. **(Kirkwood 1984)**According to **Walpole (1982)**, management information system (MIS) is a science that deals with the methods used in collection, analysis, and interpretation of data. Therefore MIS may be defined as the use of different data management methods to basically set data in a desired manner. Here data is in a group stated and all the groups can be are integrated that is to say, it's interrelated **Walpole (1992)**. The data collection, analysis, and interpretation can be performed faster using computers as data processing tools. We need computers because in most statistical investigations, we deal with many quantitative data whose manual manipulation may not be easy to deal with.

Data manipulation is the retrieval, insertion, deletion, and modification of information stored in the MIS. A data-manipulation language enables users to access or manipulate data as organized by the appropriate data model. There are basically two types of data-manipulation languages: Procedural data-manipulation languages which require a user to specify what data are needed and how to get those data and nonprocedural data-manipulation languages which require a user to specify what data are needed without specifying how to get those data. **Mari john Claire (1996).**

Database languages support both data-definition and data-manipulation functions. Although many database languages have been proposed and implemented, visual basic has become a standard language supported by most relational management information

systems (MIS). MIS based on the object-oriented model also support declarative query languages. A query is a statement requesting the retrieval of information. The portion of a data-manipulation language that involves information retrieval is called a query language. Although technically incorrect, it is common practice to use the terms query language and data-manipulation language synonymously. **Martin Dahlin (1992)**

It is not difficult to get computer professionals to agree that computers have a significant impact on society and business; it is rather more difficult to get them to agree on *why* they impact as they do. Mac Cathy further discusses several characteristics of computer technology that may be at the center of the effects. It is intended that this list become a focal point around which the design of new technology can revolve, in order to anticipate the social consequences of a new product and mitigate any potential negative effects it may have on society and business. Management information systems, databases and programming languages are some of the applications for computer that create a link between society and business.

The intent of developing a list of these characteristics is that it could lead to a better understanding of the nature of the social impact of computers. In this way, it might be possible to examine a new computer project at the time of its *design* (not, as is the usual case, a long time after the project has been implemented and disseminated) to determine its potential impacts as a social and economic change agent. **Mac Cathy (1998)**

Mathew's (1999) in his book "**management information system basics**" view mainly focuses on data Security and he says that the MIS can prevent unauthorized users from viewing or updating the database. Using passwords, users are allowed access to the entire

database or a subset of it known as a "subschema." For example, in an employee database, some users may be able to view salaries while others may view only work history and medical data.

CHAPTER THREE

METHODOLOGY

3.1 INTRODUCTION

In this chapter, the researcher came up with a standard system that can replace the old problematic system of handling data at the directorate of finance at Kampala University. The methodology used was a structured analysis and design. A clear feasibility study and analysis of the existing system in the directorate of finance is done then a new finance management information system for Kampala University is modeled and implemented.

3.2 DATA COLLECTION

The methods used to collect information by the researcher include conducting the Interviews, questionnaires and observations. These were some of the data collection techniques used to get information about the existing system used by the directorate of studies and to find out clear standards for developing a new system that will not bring back all the shortcomings of the old system.

3.2.1 INTERVIEWS

An interview is a fact-finding technique where by the systems analysts collect information from individuals through face-to-face interaction.

The researcher set a number of questions mainly to employees in the department of computers studies which some were answered. From such answers, the researchers noted down some important information. This is face to face talk with the interviewee with an

aim of getting the required information. Questions asked can be written down on a piece of paper or formed as the discussion goes on. This gave the researchers the opportunity to carry out both formal and informal interviews. The following are the problems faced when trying to access information

- There was difficulty in accessing the records and information during the start of the study which resulted to frequent reporting to the faculty.
- There was limited time to carry on with the project and despite all these the developer put in much effort to complete the project.
- Difficulty in financial facilitation this happened since the researcher is just a student who had no true sources of finance to carry on activities like printing, frequent reporting to the faculty, surfing the internet and typing the work.

Advantages of Conducting Interview

- The management was so excited when they discovered the benefits of the proposed system hence the interview went on smoothly.
- The interviews were all carried out on the same day thus time saving.
- All members who participated in the interview were quite fluent in English and friendly so communication barriers were not encountered.
- Many views were also colleted from the casual talks.
- A copy of the questions asked during the interviews, has been attached to this report.

Disadvantages

- The major problem with this method is that some interviewees give in opinions not facts. Other problems faced were bureaucracy, inconvenient results, expenses and difficulties faced. The interview demanded lot of patience and persistence especially when the interviewees were so busy
- Interview may be impractical due to the location of interviewees.
- It is a highly time Consuming and therefore costly, fact-finding approach.
- The success of it is highly dependent on the systems analyst's human relations skill.

3.2.2 QUESTIONNAIRES

It is a special-purpose document that allows the analysts to collect information and opinions from the respondents.

A questionnaire can also be defined as a written or electronic survey instrument comprised of a series of questions, designed to measure a specific item or set of items. These questionnaires were directed to concerned groups of people who answered precisely all the questions by writing in the spaces left.

Advantages of using Questionnaires.

- They can be answered quickly
- Responses were tabulated and analyzed quickly
- The researcher was able to get relatively simple options from a large group of data.

- They allowed people to give real facts to the researcher.
- They are useful in getting feedback in the cost implementation audit.

Disadvantages

- The number of respondents is always low.
- Good questionnaires are difficult to prepare.
- There is no immediate opportunity to clarify a vague answer.
- It is not possible for the system analysts to observe and analyze the respondent's body language.

3.2.3 Observations

Lastly the researcher took a close observation of the daily operations at the University's directorate of finance. Observation is a physical being in one's place of interest to watch both people and activities flow. It can bring in many facts and new ways to improve the existing procedures. The researcher stayed at the office promises for a good time and occasionally visited the University finance department observing how the office operates.

Observation looks out for the following:

- Different rules and procedures used.
- Operation inefficiency.
- Information communication channels.
- Use of files.
- Interruption in normal flow of work

Advantages of Observation:

- The method is Cheap.
- People work and their schedules are not interrupted.
- Provides a cross view of the work, that is to say people, objects, documents and other occurrences are observed concurrently.

Disadvantages of Observation

- Many people don't like to be observed during time of work.
- For better results the researcher must be kin which is time consuming.

This showed how all data and finance details are handled plus the positive and negative impacts of using the old system.

3.3 System Analysis

3.3.1 Introduction

System analysis is a problem solving technique that decomposes a system into component pieces for the purpose of studying how well those component parts work and interact to accomplish their purpose.

3.3.2 Requirement Analysis

The requirements analysis defines business requirement for new system, the key issue in the requirements analysis phase is "what" not "how". Requirements analysis phase,

answers the question; what do users need and want for a new system? Functional and Nonfunctional requirements are needed to meet the objectives.

3.3.3 Functional Requirements

The functional requirements are the activities and services the system must provide. The system will maintain the;

- Students records
- Study Records
- Result details
- Finance information

3.3.4 Nonfunctional Requirements

Nonfunctional requirements are a description of other features, characteristics and constraints that define a satisfactory system. Below is the list of the nonfunctional requirements;

- **Training of Users**: The users will be trained on how to work on the system which will take a shorter period of time.
- **Maintenance**: The system allows for future developments to be conducted and additions to the systems functionality as seamlessly as possible. And it also allows the administrator to have access to the database
- **Usability**: The system allows users to view and edit information on the same page.
- **Enhance Decision-making**: The school's information flow will be done automatically thus decision making will be fast.
- **Security**: The system shall only allow authorized users into the system to use, view or modify any part of the system. It will prevent attackers and hackers by limiting the inputs the system will accept. The system allows a systems administrator to add extra users by assigning them user name s and passwords to the system, and limiting their access rights.
- **Cost Reduction**: The system would reduce on most of the costs like stationary costs and enforce tight security of the data.

- **Easy and Faster Update of the Database**: Updating of the database will be faster and more effective

3.4 System Requirements

3.4.1 Hardware Requirements

- A Pentium III running 266 Mhz or higher Processor
- Minimum of 96 MB of RAM 128 recommended.
- Minimum of 20 GB of hard disk space, 40 GB recommended
- Monitor VGA 800 x 600 or higher resolution.
- Mouse any compatible.
- Keyboard any compatible
- Re-writable CD, Magnetic tapes, or Flash Disks of 10 GB and above for backup.
- Printer any compatible
- Network Equipment to connect the accounts office to the head teacher's office. Network Cables, Network Adaptor Card and a Network Switch.

3.4.2 Software Requirements

- Windows 98 Operating System or higher version
- Visual basic 6.0 or Higher Version
- Microsoft Access 2000 or higher version
- Macromedia Flash

3.4.3 User Requirements

After interviewing the users of the system and observing the different activities in this faculty the researcher identified the following as the user requirements.

- They need an automated system to speed up their work
- A system that would store large amounts data without congesting their office with paperwork.

- A system that will not cost them much in terms of initial capital of acquiring it, which is also easy to maintain.
- A system that can retrieve accurate summaries and reports about students results within the shortest possible time
- They need a simple system that is easy to learn, use and should have an attractive user-friendly interface.
- A system that can make automatic updates to avoid duplication and data redundancy

3.5 System Design

3.5.1 Introduction

This is the phase, which follows the data analysis phase after the analysis phase has been completed successfully, this stage uses the information already obtained in system analysis and it produces a design specification for the new system by building a representation of the new system. It normally involves two broad stages namely logical design and physical design. At this period the interaction between the users and the developers is a key factor to a successful system, which will meet the required information requirements determined by the system analysis.

3.5.2 Stages of System Design

Logical design is concerned with conversion of logical records structures to a data model supported by a database management system

Physical design transforms the logical design material into real computer work by designing the inputs, outputs, and processes. Below are some of the diagrams that were used in designing the system.

In the process of designing this system the researcher used Flow Charts, Data Flow diagrams, Data Decomposition Diagrams and Entity relationship diagram.

Figure 1 Data process Management System

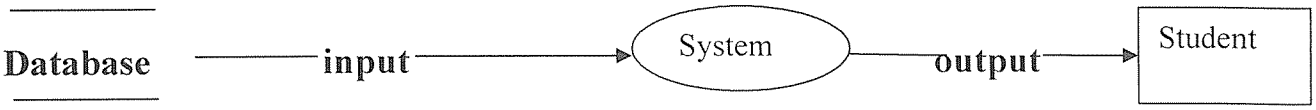
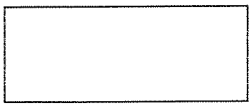


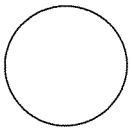
Figure 2 shows tools used in DFD

3.5.3 The four components of a data flow diagram (DFD) are:

Tool	Description
	File/database



Input/out put



Function

Data flow

3.5.4 DATA FLOW DIAGRAM NOTATION

External Entities/Terminators

These are outside the system being modeled. Terminators represent where information comes from and where it goes. In designing a system, we have no idea about what these terminators do or how they do it.

Processes

Modify data inputs in the process of generating the outputs

Data Stores

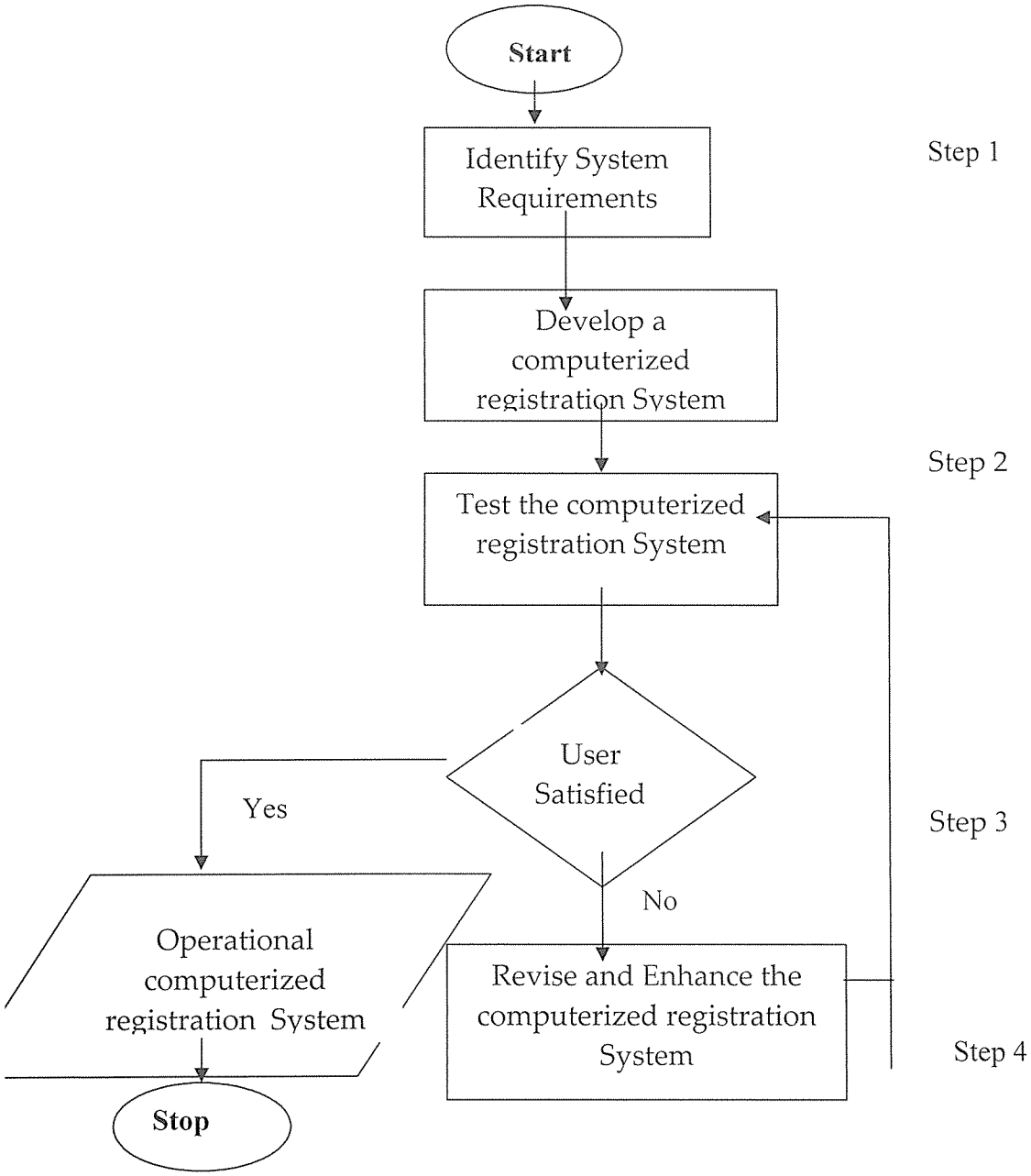
A data store is a repository for data. Data stores can be manual, digital, or temporary. Represent a place in the process where data comes to rest. A DFD does not say anything

about the relative timing of the processes, so a data store might be a place to accumulate data over a year for the annual accounting process.

Data Flows

Is how data moves between terminators, processes, and data stores (those that cross the system boundary are known as Input Output (I/O) Descriptions).

A Flow Chart of the computerized student registration System



The development process of this computerized registration System took four steps. The system took the designer through several alterations, repeating steps 3 and 4, to refine and enhance the prototype before arriving at the final solution.

CHAPTER FOUR

SYSTEM DESIGN, TESTING AND IMPLEMENTATION.

4.1 INTRODUCTION

In this chapter, the researcher looks at the real design and usage of the new system. The tools used to show data flow, processing and out put in the new computerized management information system for the directorate of studies for Kampala International University were system flow charts and the pseudo code.

4.2 SYSTEMS DESIGN

System design can be described as a process of defining the hardware and software architecture, components, modules, interfaces, and data for a system to satisfy specified requirements. The preparation of an assembly of methods, procedures, or techniques united by regulated interaction to form an organized whole.

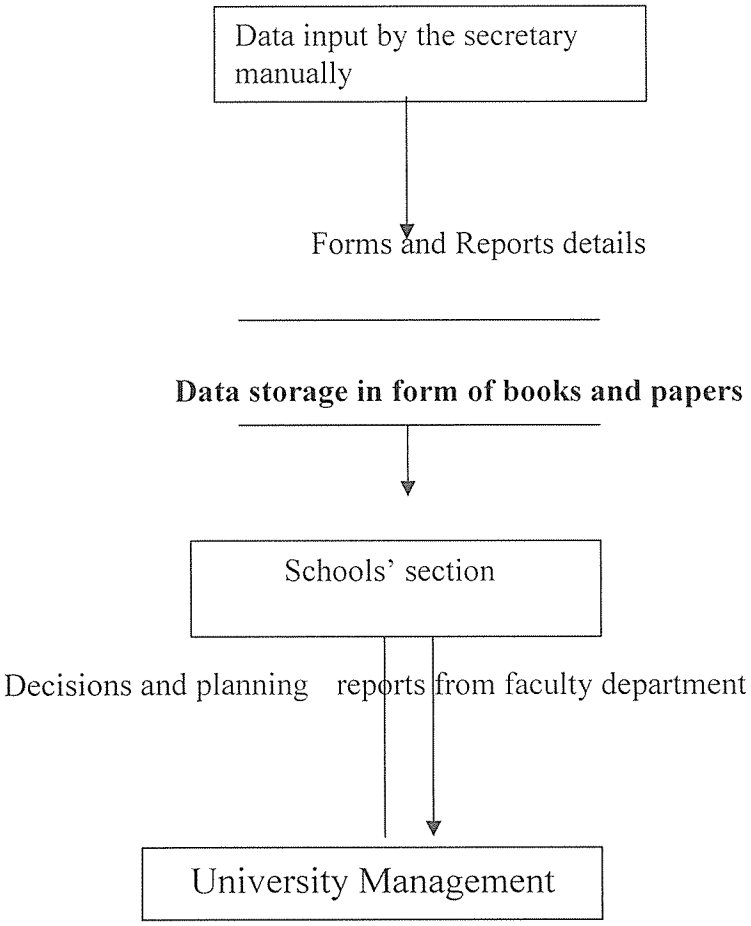
4.2.1 REVIEW OF THE EXISTING SYSTEM.

In this chapter, the researcher looked at the existing system at the directorate of studies of Kampala International University. Looked at all the processes that take place when dealing with faculty information, once any student pays fees or consolidation fee, the accountants just take note of the name, course, registration number of the student plus the amount paid and the balance. It becomes so hard in the sense that some payments are partial so a number of updates have to be made for proper data flow. In addition, any

expenditure made is just recorded and at the end of the day, books are balanced. Many processes other than the above mentioned take place in the directorate of studies like marks transfer, salary payments to mention but a few but all the recording is done manually. At the end of a given period, reports are generated and submitted to the administrators.

Diagrammatically, the data processes and flow can be illustrated as shown below.

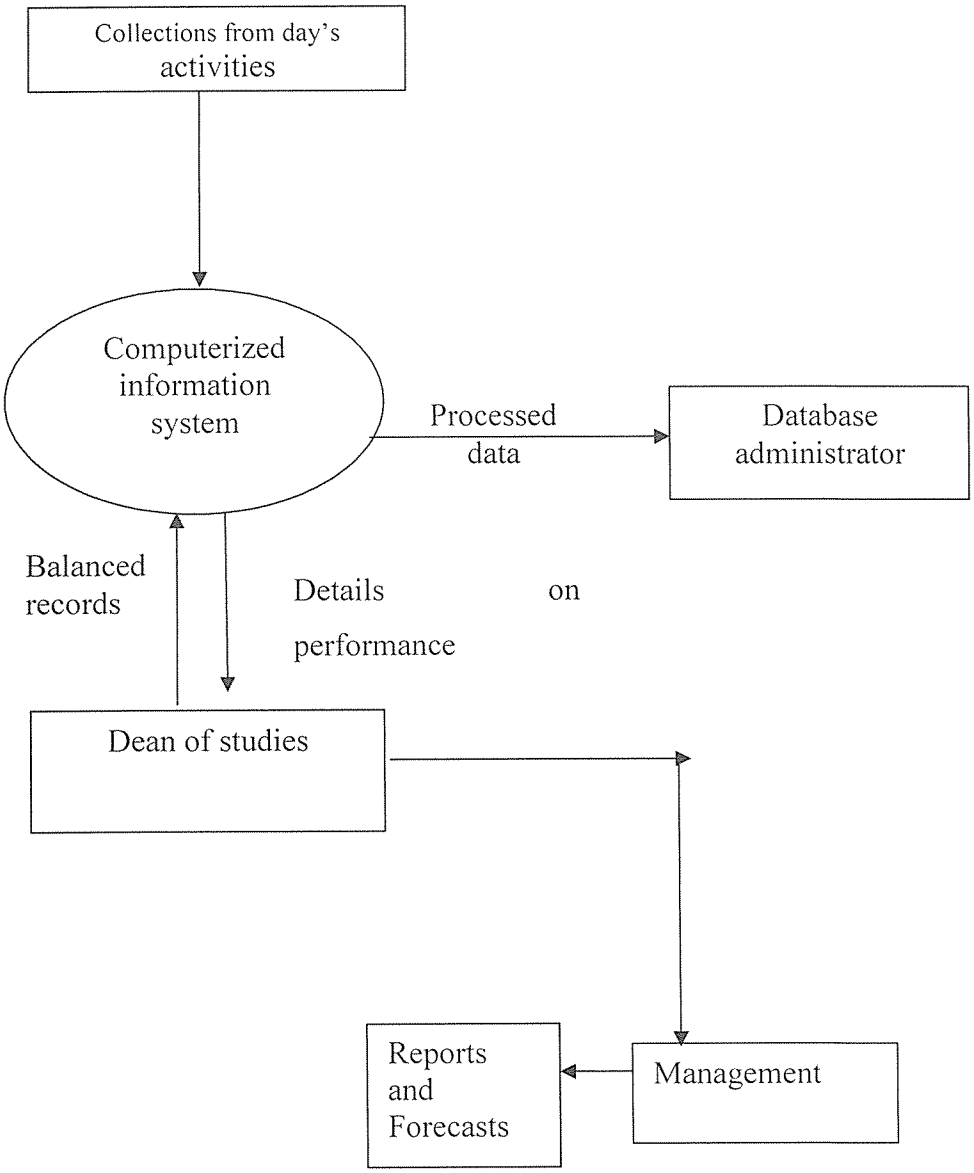
Fig 3: The data flow diagram of the current manual system.



4.2.2 THE NEW COMPUTERIZED SYSTEM.

A new computerized system was developed with the capability for storing a vast piece of data/information. The main difference between the old system and the new computerized system is that data capturing and processing is computerized and that computers are used instead of papers and books. It requires less storage space. It is also much more efficient since it can generate reports within minimum time and with minimal errors.

Fig 4: The context diagram of the new computerized system.



4.2.3 FUNCTIONALITY OF THE NEW SYSTEM

A functional requirement is a feature that must be included in the information system to satisfy the business need and be acceptable to the User.

In this section, each process is explained precisely including inputs, conditions /logic, outputs and data stores associated with each process.

The functionality of the system is built on processes shown bellow.

Figure 5:Context Level Diagram

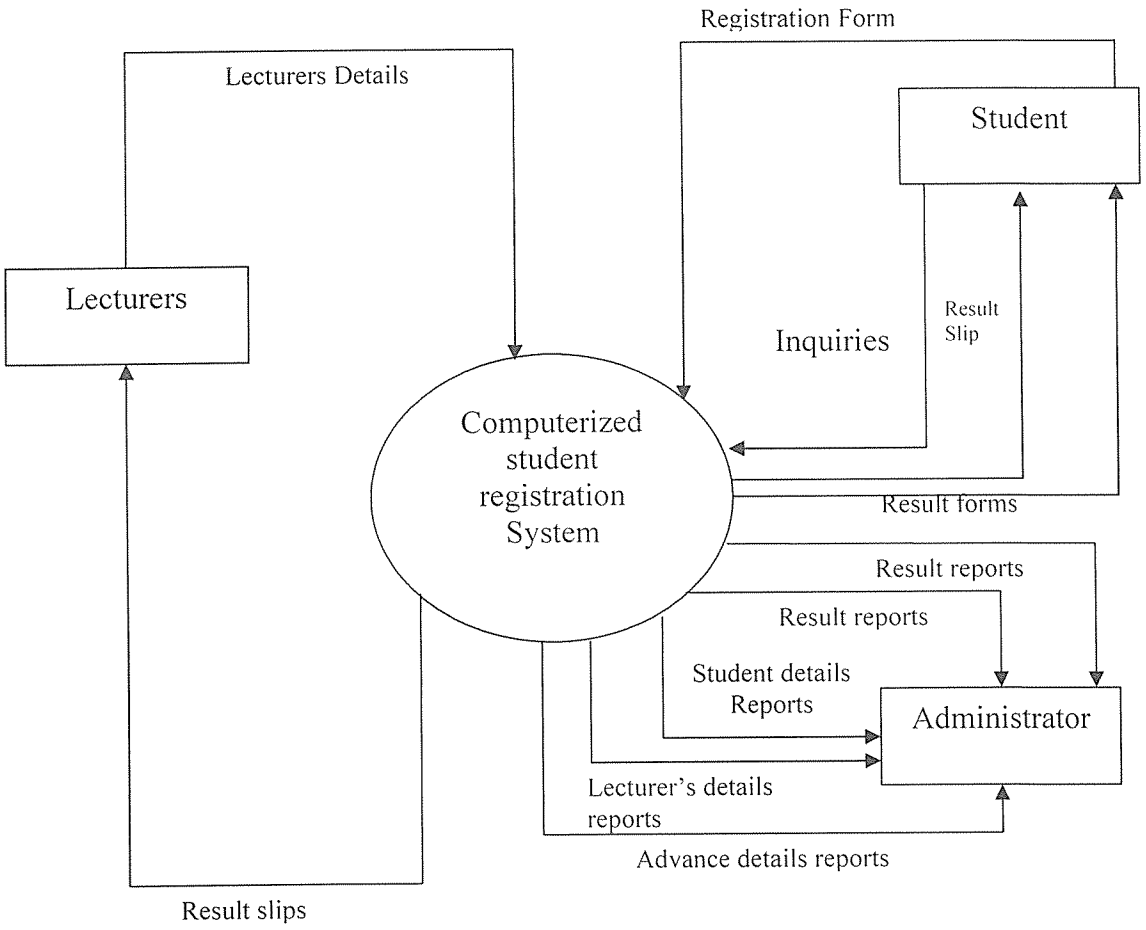


Figure 6:Data Decomposition Diagram

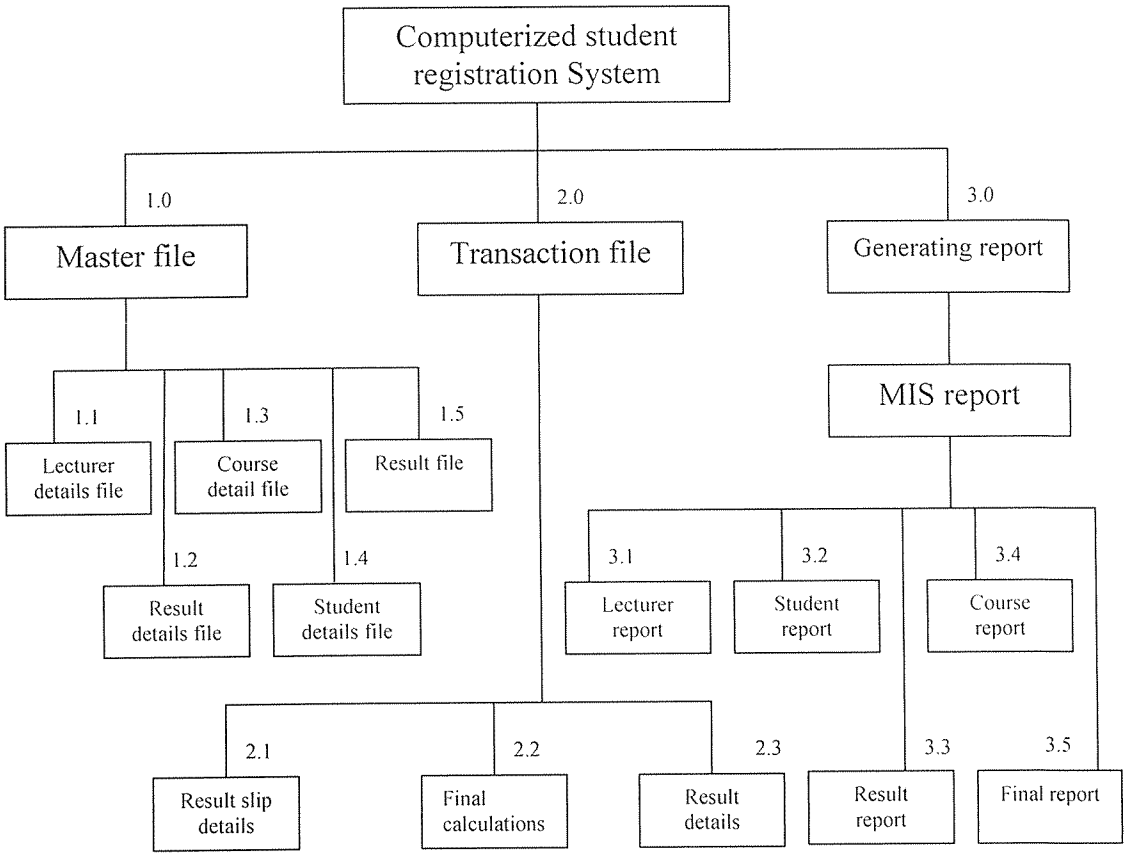


Figure 7:Entity Relationship Diagram

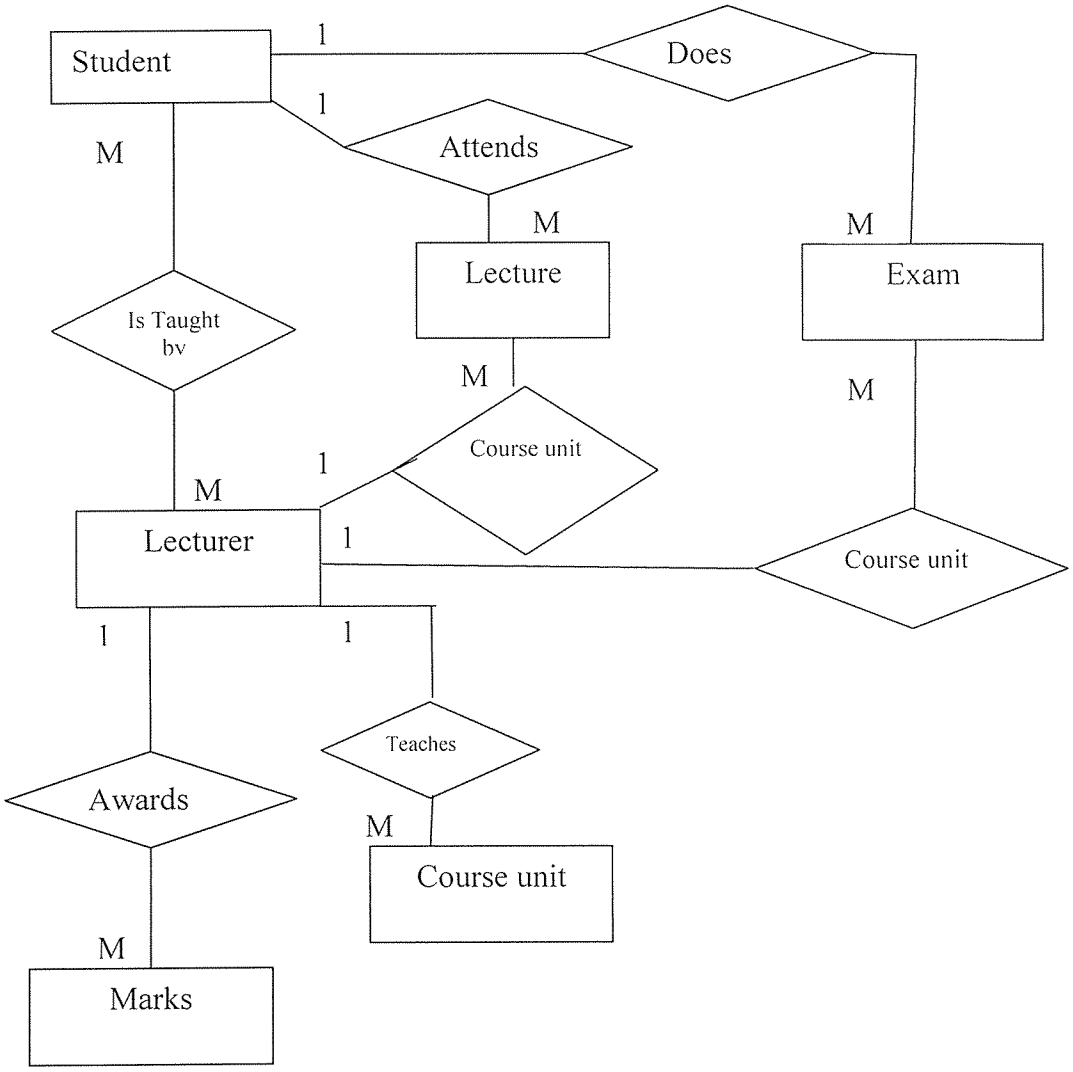
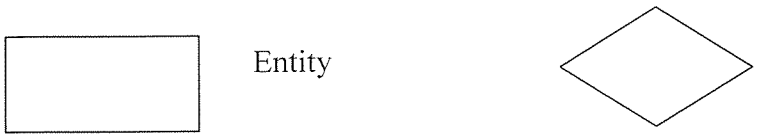


Figure 8:Entity-Relationship



1 ——————— 1 One to One Relationship

1 ——————— M One to Many Relationships

M ——————— M Many to Many Relationship

4.3 Table Mapping

The entities in the tables are described as follows.

Student(StdRgNo,

SurName,OtherNames,DOB,Nationality,Gender,Religion,ContactAddress,HomeAddress,NextKin)

Finace(StdRgNo,Sponsorship,SponsorName,SponsorAddress, StudentName,Program)

Study(RegNo, Program, DateOfAdmission, AcademicQualification, IdNo, Session)

Results(RegNo, Program, CourseName, CourseCode, Grade)

4.3.1 Data Dictionary for Tables

Student's Table

Field Name	Data type	Size	Constraints	Description
StdRgNo	Text	20	Required	Student Registration Number
Fname	Text	20	Not indexed	Student's first Name
Other Names	Text	50	Not indexed	Student's other names
DOB	Date/Time	10	Not indexed	Student'sDateof Birth
Nationality	Text	10	Not indexed	Nationality
Gender	Text	10	Not indexed	Sex
Religion	Memo	255	Not indexed	Religion
Contact address	Text	16	Not indexed	Student's contact address
Home address	Text	20	Not indexed	Student's home address
Next of kin	Text	20	Required	To contact

Finance Table

Field Name	Data type	Size	Constraints	Description
StdRgNo	Text	20	Required	Student Registration Number
Sponsorship	Text	20	Not indexed	Student's sponsor
Sponsor Name	Text	50	Not indexed	Student's Sponsor Name
Sponsor Address	Date/Time	10	Not indexed	Student's sponsor Address
Student's Name	Text	10	Not indexed	Student's Name
Program	Text	10	Not indexed	Student's program

Study Table

Field Name	Data type	Size	Constraints	Description
StdRgNo	Text	20	Required	Student Registration Number
Program	Text	20	Not indexed	Program
DateAdmission	Text	50	Not indexed	Date of admission
Academic Qualification	Date/Time	10	Not indexed	Student's Qualification
IDNo	Text	10	Not indexed	Identification number
Session	Text	10	Not indexed	Student's session

Result Table

Field Name	Data type	Size	Constraints	Description
StdRgNo	Text	20	Required	Student Registration Number
Program	Text	20	Not indexed	Program
CoureName	Text	50	Not indexed	Course Name
CoursCode	Date/Time	10	Not indexed	Course code
Grade	Text	10	Not indexed	Student's grade

4.4 System installation

Before installation is performed, the hardware and software requirements have to be taken into consideration.

4.4.1Hardware Requirements Table

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

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

4.4.2 Software Requirements Table

Software	Requirement
Operating system	Microsoft Windows 98 or NT, and higher versions

4.5 Installing the system

4.5.1 The Setup

This application is on a Compact Disk labeled RAPM 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 folder RAPM, locate the setup icon and double-click on it. The installation wizard will start. Follow the instructions until the process is completed.

4.5.2 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.

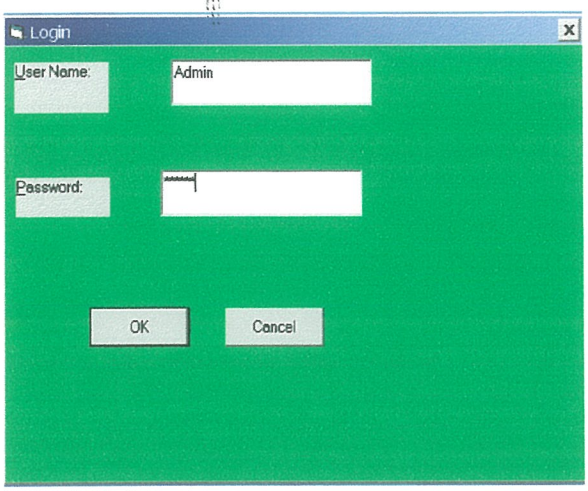
4.5.3 Getting Started with A computerized student registration System

To start the computerized student registration 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 RAPM 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 login by entering your user name and password respectively in the spaces provided in the logon dialog box.

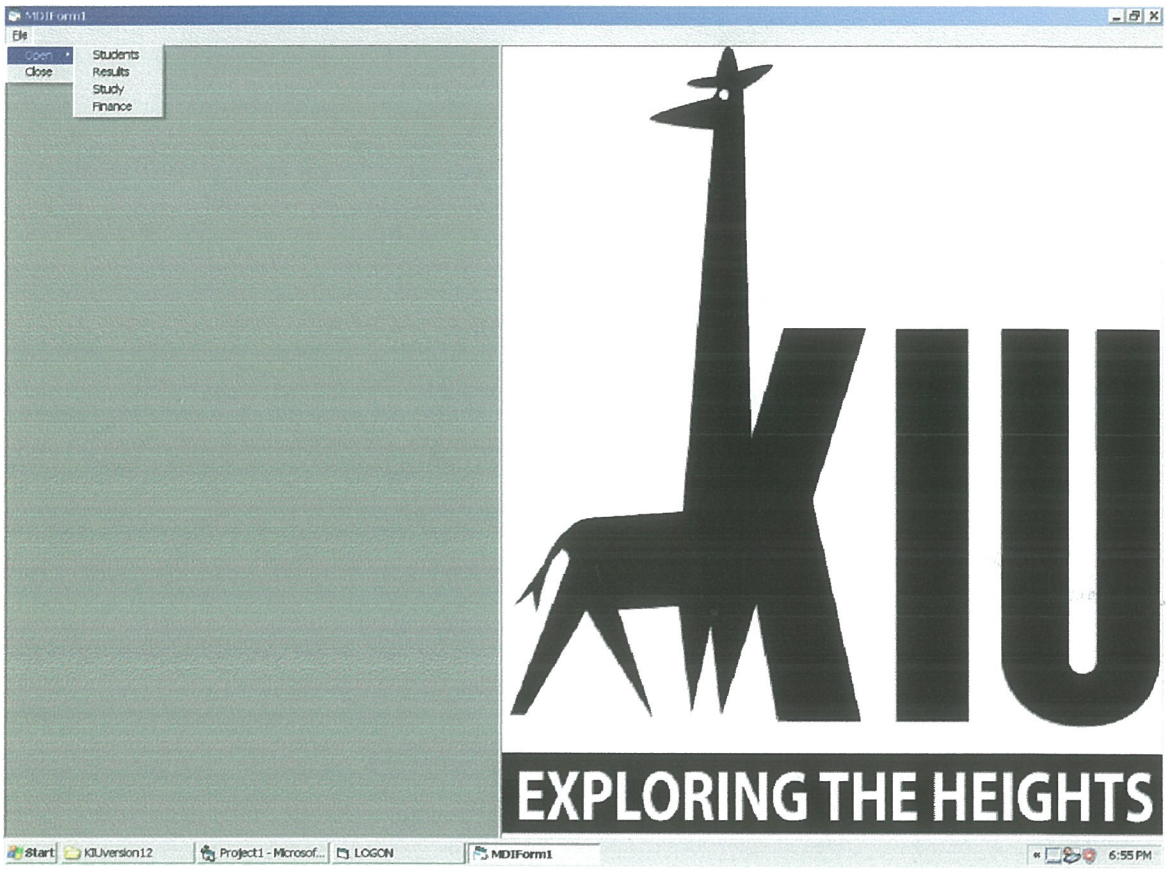
Login form



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

When you enter the correct password the system will continue loading the logon form and will display the following screen showing log on the main form (MDI).

The main form (MDI)



Student Information Form

This is used by secretaries and administrators to track down records concerning 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.

Finance Information Form

This is mainly for billing students, capture, delete, update and edit data related to payments made to the University.

Result Information Form

This form is used in tracking student results and printing a variety of reports about them.

Study Information Form

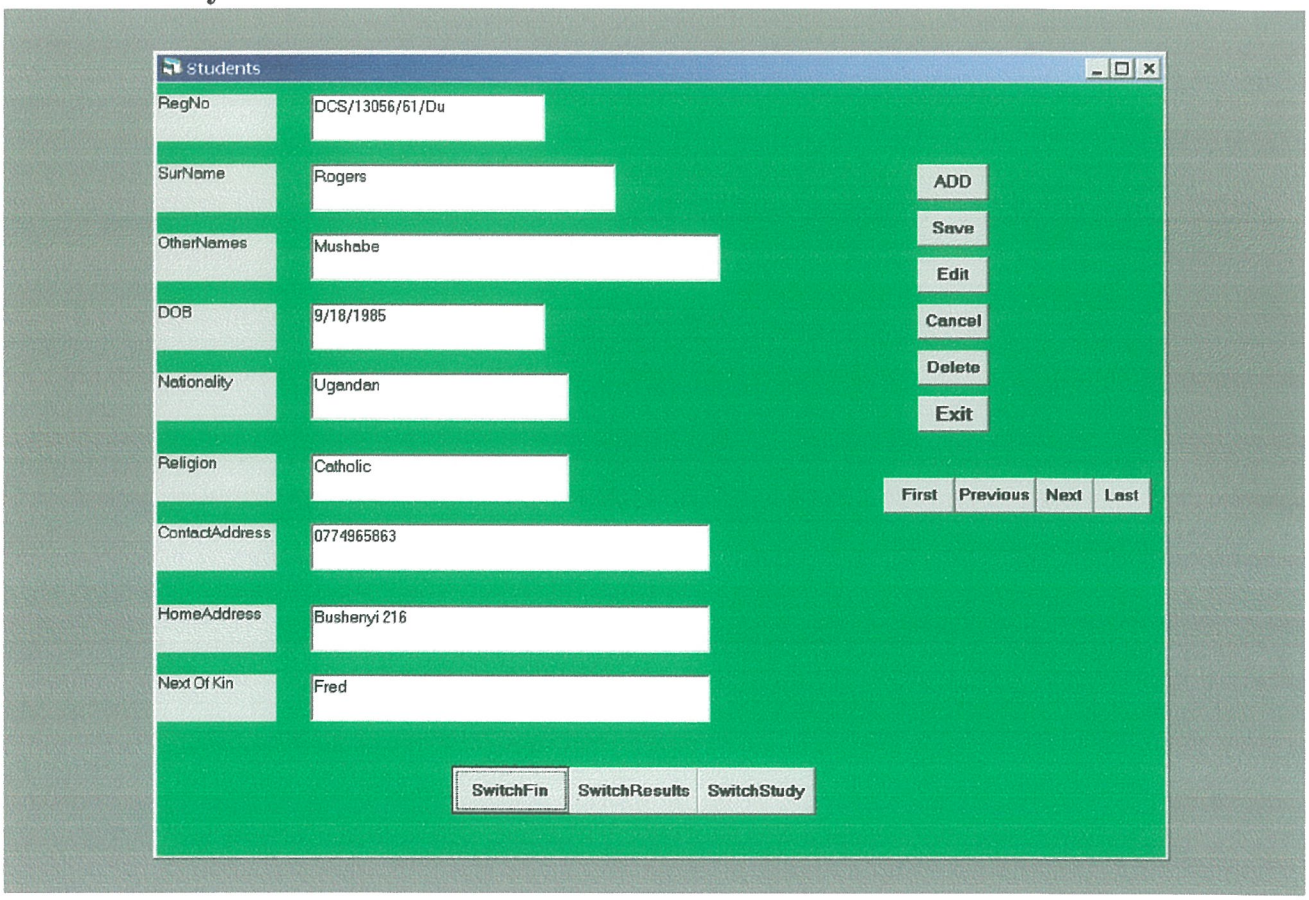
This form is used in tracking student courses, programs and subjects in their respective courses.

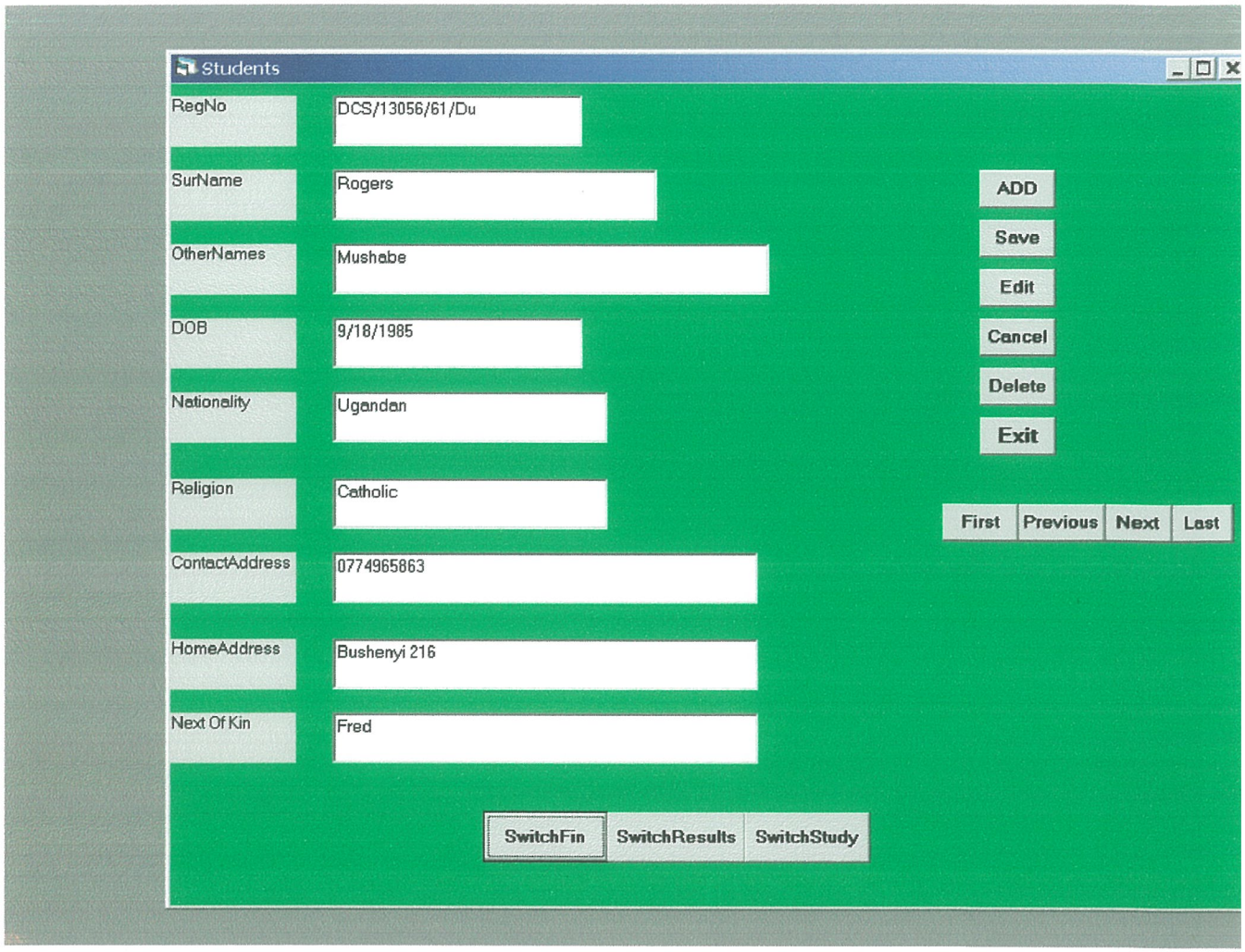
Data Entry

When entering data into forms you can move from one form to another by clicking ***switch***(form name) then the form becomes active to start entering data .

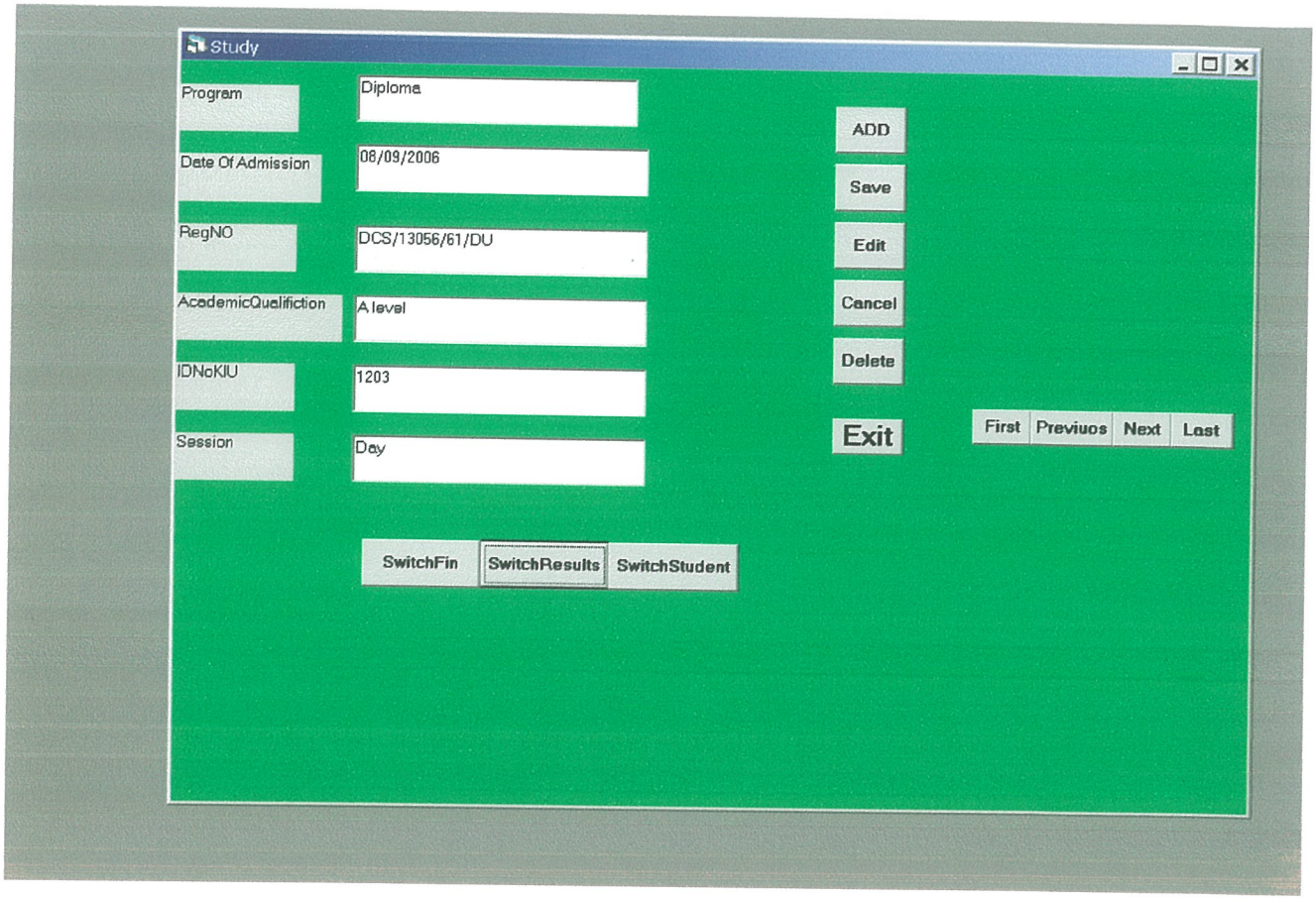
Examples of a data entry forms for this computerized student registration system have been given below:

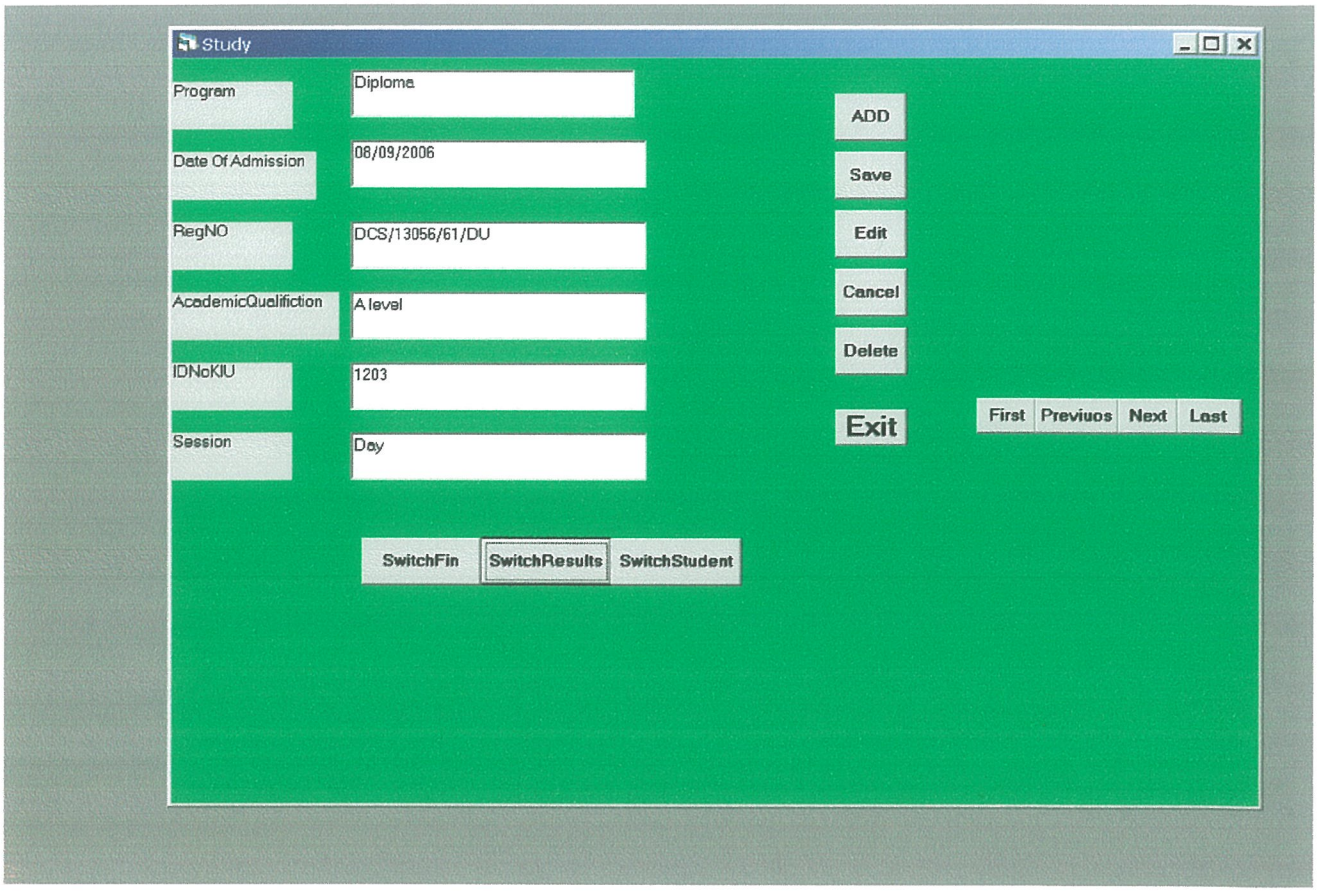
Student entry form



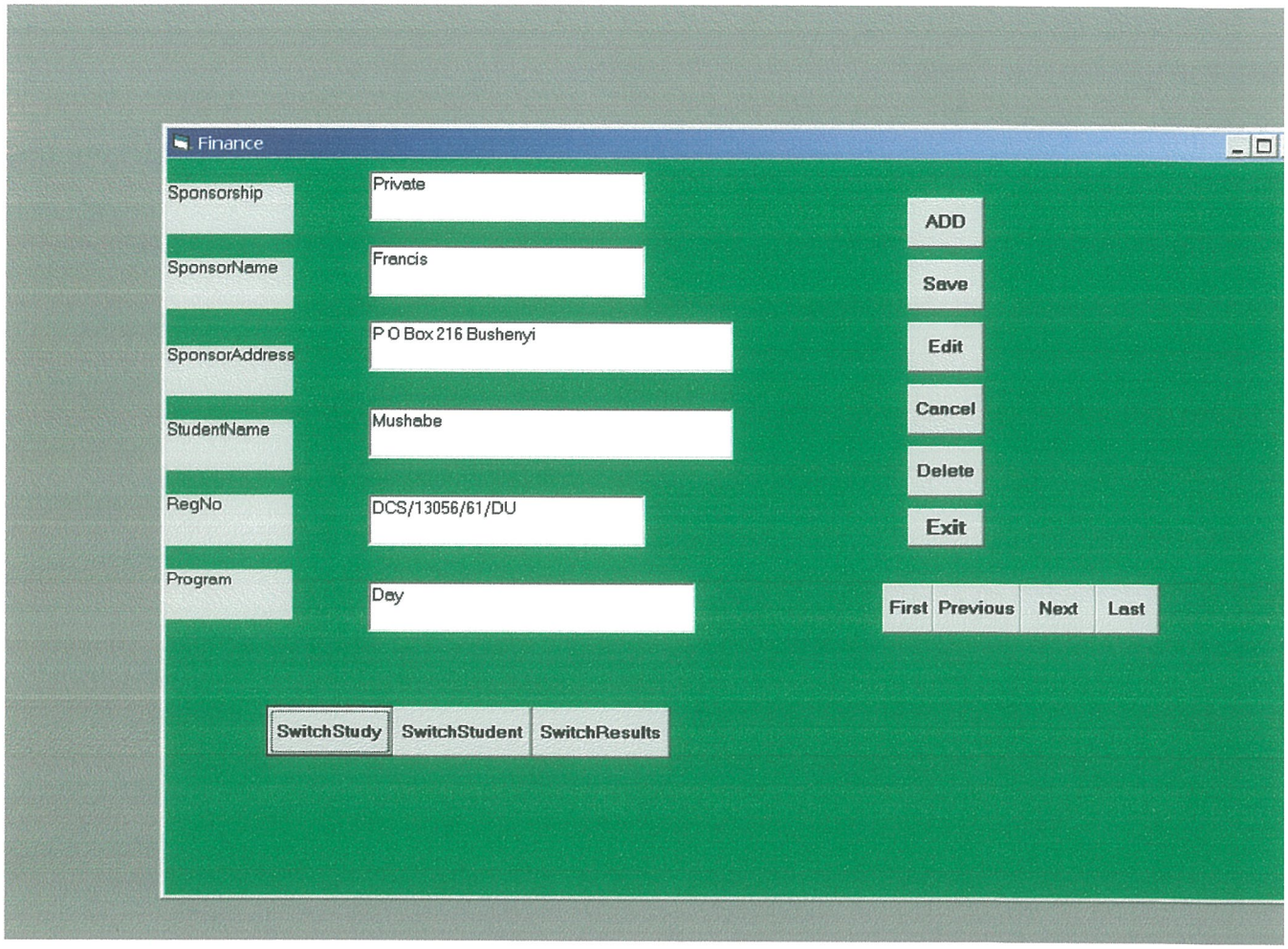

Students
RegNo
DCS/13056/61/Du
SurName
Rogers
OtherNames
Mushabe
DOB
9/18/1985
Nationality
Ugandan
Religion
Catholic
ContactAddress
0774965863
HomeAddress
Bushenyi 216
Next Of Kin
Fred
ADD
Save
Edit
Cancel
Delete
Exit
First
Previous
Next
Last
SwitchFin
SwitchResults
SwitchStudy

Study entry form

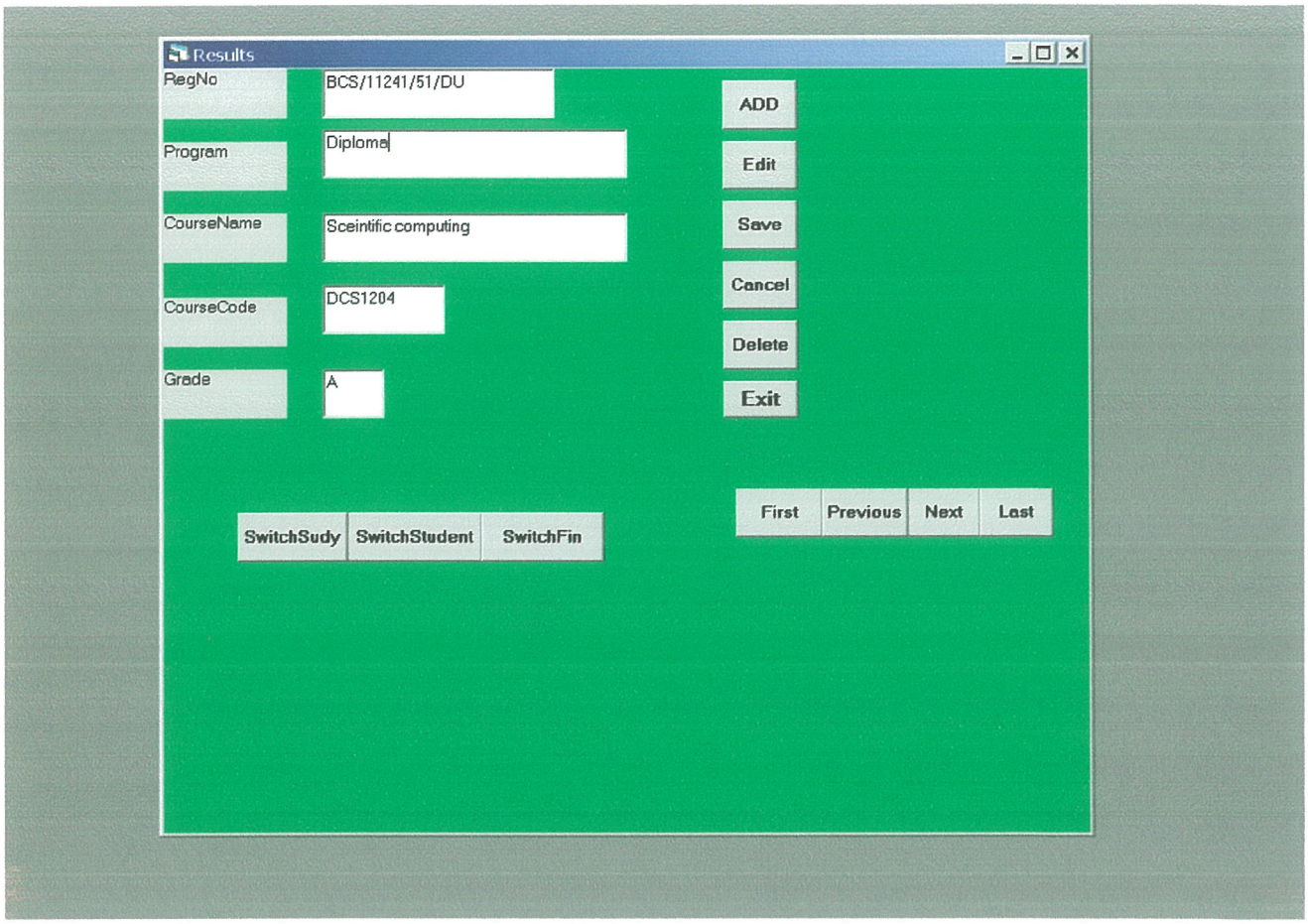



Study
Program
Diploma
Date Of Admission
08/09/2006
RegNO
DCS/13056/61/DU
AcademicQualifiction
A level
IDNoKIU
1203
Session
Day
ADD
Save
Edit
Cancel
Delete
Exit
First
Previuos
Next
Last
SwitchFin
SwitchResults
SwitchStudent

Finance entry form



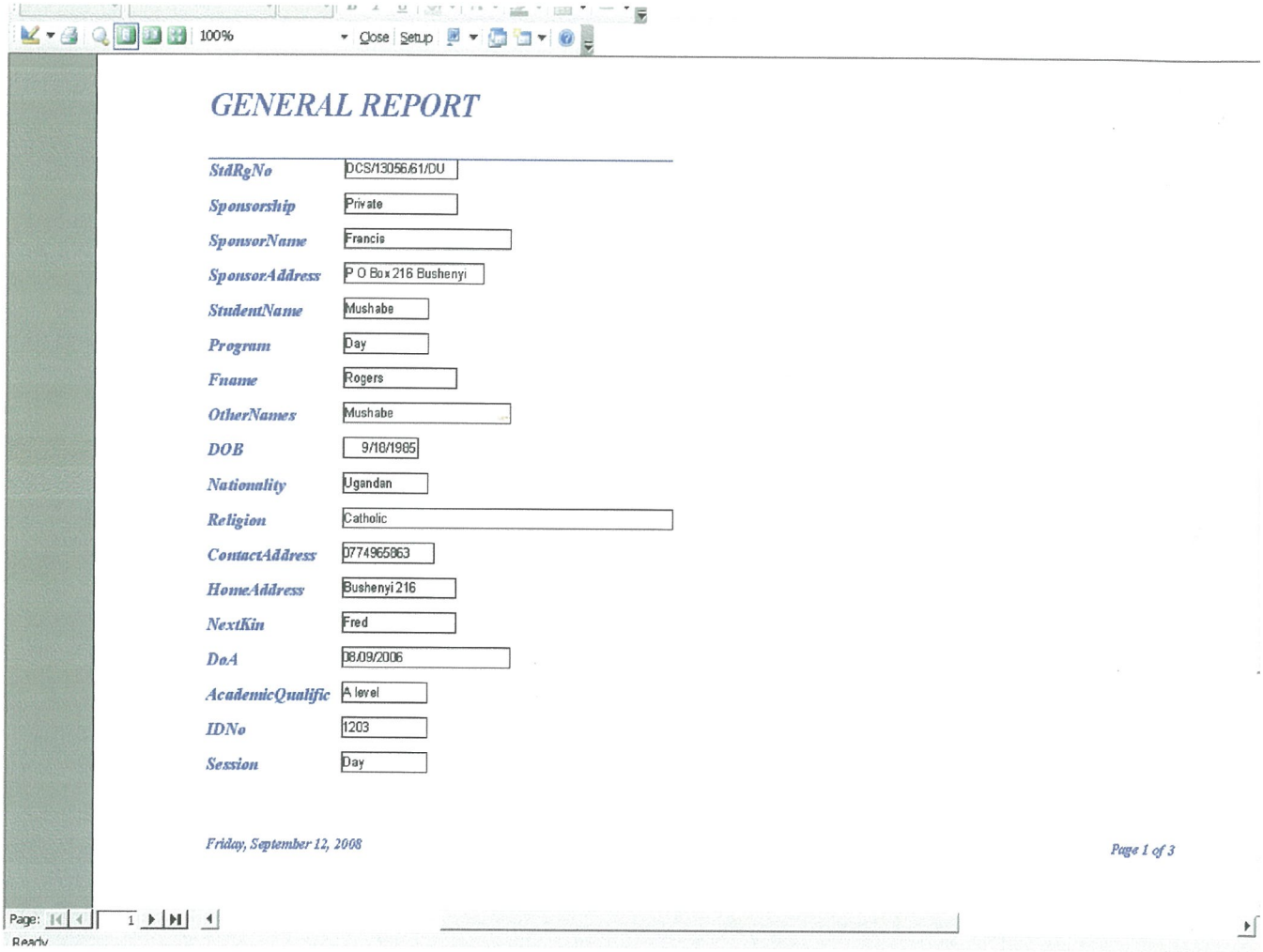
Result entry form



REPORTS

The system generates a number of reports or a general report that contains all the information from the four forms. The reports are categorized according to the data outputs that are required from the computerized student registration System.

A general report as mentioned above has been given below



CHAPTER FIVE.

SUGGESTIONS, RECOMMENDATIONS AND CONCLUSION

5.1 Introduction

The current system was evaluated and found to be having efficiencies and effectiveness in the following areas of operation

5.1.1 Efficiency of data entry and information retrieval

The new system automatically builds and maintains fast access to each record in order to maximize retrieval speed as compared to the previous system where data entry had to be done manually by writing down on forms for particular records. There was no data validation scheme, the faculty as a result was prone to errors leading to mishandling, loss of data, and other inconveniences associated with lack of proper record keeping. There was also a direct setback being experienced through wastage of materials such as stationery, time loss through tedious manual data entry and retrieval methods.

5.1.2 Performance

The system allows a user to enter new records into a given file, modify, correct, or delete existing records, and displays reports either in detail or summaries according to the user's information requirements.

5.1.3 Security

The system offers security at user level thereby allowing you to maximize the security of the data. Users have to log on using passwords however, passwords have to be kept confidential so as to prevent unauthorized users from gaining access to the system.

5.1.4 Accuracy

The system offers a high degree of accuracy. The system can perform millions of data entry with same accuracy unlike in the previous system where sometime administrators would get tired and commit errors.

5.2 Limitations

5.2.1 The System is Windows Based:

The system will not run on other platforms like Disk Operating System or Linux it was developed to run under windows environment.

5.2.2 Training of Users.

Although the system is user friendly, It will require users who have basic knowledge in computing who will be trained to use this new system.

5.3 Recommendations

With the obvious advantages that have accrued to the faculty in terms of faster time response, reduced volume of paper work, improved decision making, improved data integrity and security, resulting into saving costs in stationery usage, it is highly recommended that further developments on the system is needed to Changing the back end to SQL and Wamp Server, Adjusting the system to new requirements or re-designing or modifying the application system in response to constantly changing environment. It is evident that it will result in savings, which will lead to improved data storage, and also improved performance of the faculty.

The project has achieved virtually all the objectives it was meant for, though there may be some limitations. It's upon this background that the researchers recommended for further modifications were necessary.

System Maintenance and Security

5.4 Maintenance:

This is the maintenance of the system when it is in operation. It includes program maintenance and system improvements. For maintenance of this system the following activities will be carried out:

- Recover the system; a system might crash or hang and depending on the nature of the cause the system must be recovered, by the system analyst, system administrators, or users.
- Backup of the system such that in case of system crash there is still a provision of the copies to turn to.
- Correct errors or bugs, which may have been due to design flaws, miscommunication of requirements, situations that were not anticipated and thus not tested.
- Assist users of the system by observing the use of the system, conducting user satisfaction surveys and meetings, providing additional training, logging enhancement ideas and requests, assisting users in the day to day use of application.

5.5 Security Controls

5.5.1 Physical Controls

These are the control measures that should be done on the site of the system to ensure that natural disaster like rain, sun heat, dust and other conventional threats can be prevented from causing malfunctioning of the system.

5.5.2 Electronic Controls

This control is to identify any one accessing the system. Intruder detection, e.g. passwords, logon identification, voice and hand detection.

5.5.3 Software Controls

They are program codes and software used to prevent, identify or recover from errors, unauthorized access and other threats.

5.5.4 Management Controls

The management can implement policies and procedures e.g. employees should back up and or archive data at regular intervals and take back ups to secure sites.

5.6 Common Threats

- Virus which refers to a package automated combination of program codes that are designed to alter the normal functioning of the program.

- Trojan horse this is software that outwardly has a legitimate purpose but that when executed, compromises the security of the user.
- Hacking, this refers to an attempt to gain unauthorized access to the system illegally.
- Natural threats, which could be from floods, sun heat, and many others.

Suggestions and Conclusions

5.7 Introduction

The scope of understanding at every stage of computer science and information technology was mentally overwhelming such that the research project is such a very educative field of study.

5.7.1 Suggestions

Putting into consideration the levels of management in an organization, projects on MIS require the researchers to be well equipped with the types of information being dealt with, which may be, structured, unstructured and semi structured information. These types of information will enable the researchers know the specific properties of information types, and these include, the level and, degree of accuracy, effectiveness, and performance.

5.7.2 Expansion and Development of the System in future.

- Converting the back end to SQL and Wamp Server
- Adapting the system to new requirements or re-designing or modifying the application system in line to constantly changing environment.
- Improving the system to be in a server- based technology
- Addition of features that will enhance better sorting and filtering of data to come up with sophisticated and analytical reports.

5.7.3 Problems Encountered During Project Development

- Time was short and the researchers had to work overtime to meet the objectives.

- Lack of enough finance for meeting costs such as, printing, Internet surfing, airtime, transport costs to and from the case study area and purchasing of storage devices like flash disks.
- Power failures at times led to loss of data that would cause delays on the time schedules.

- Computer viruses at one time destroyed the computer which lead to loss of the work.
- Making appointments with the management and the users of the system, and the supervisor was a big problem since most of the time they were not available to give the required information or they were very busy.

5.7.4 Conclusion

The research on a Management information system for any organization has proven to be very educative, relevant and vital in the study of computerized database development.

The researchers were able to study and analyze the key elements of the Manual student registration System at Kampala international university to analyze its weaknesses and strength which enabled them to design an improved suitable solution (that is still a prototype) which is now ready for use. The new system will support the administrators at Kampala international university in faster processing reports and will also facilitate administrators to make informed decisions.

APENDIX

Appendix I

Codes used

```
Option Explicit

Public LoginSucceeded As Boolean

Private Sub cmdCancel_Click()
   'set the global var to false
   'to denote a failed login
   LoginSucceeded = False

'Me.Hide
End
End Sub

Private Sub cmdOK_Click()
   'check for correct password
   If txtPassword = "rogers" Then
```

```
        'place code to here to pass the
        'success to the calling sub
        'setting a global var is the easiest
        LoginSucceeded = True
        frmloginn.Show
        Me.Hide
    Else
        MsgBox "Invalid Password, try again!", , "Login"
        txtPassword.SetFocus
        SendKeys "{Home}+{End}"
    End If
End Sub

Private Sub Form_Load()

End Sub
Option Explicit

Private Sub cmdShowOtherForm_Click()
frmStudents.Show
End Sub

Private Sub cmdShowMDIForm1_Click()
MDIForm1.Show
End Sub
Private Sub cmdAddNew_Click()
AdoStudents.Recordset.AddNew
End Sub

Private Sub cmdCancel_Click()
AdoStudents.Recordset.Cancel
```

```
End Sub

Private Sub cmdDelete_Click()
AdoStudents.Recordset.Delete
AdoStudents.Recordset.Delete
Dim intdel As Integer
intdel = MsgBox("Are sure you want delete?", vbYesNo, "Conform delete")
If intdel = vbYes Then
AdoStudents.Recordset.Delete
Else
MsgBox ("Record not deleted")
End If

End Sub

Private Sub cmdEdit_Click()
AdoStudents.Recordset.EditMode
End Sub

Private Sub cmdExit_Click()
Unload Me
End Sub

Private Sub cmdSave_Click()
AdoStudents.Recordset.Save
End Sub

Private Sub cmdShowOtherForm_Click()
frmFinance.Show
End Sub
```

```
Private Sub cmdShowResults_Click()
frmResults.Show
End Sub

Private Sub cmdShowStudy_Click()
frmStudy.Show
End Sub

Private Sub cmdShowStuday_Click()
frmStudy.Show
End Sub

Private Sub Command1_Click()
AdoStudents.Recordset.MoveLast
End Sub

Private Sub Command2_Click()
AdoStudents.Recordset.MoveNext
End Sub

Private Sub Command3_Click()
AdoStudents.Recordset.MovePrevious
End Sub

Private Sub Command4_Click()
AdoStudents.Recordset.MoveFirst
End Sub

Private Sub Form_Load()

End Sub
```

```
Option Explicit

Private Sub cmdAddNew_Click()
AdoFinance.Recordset.AddNew
End Sub

Private Sub cmdCancel_Click()
AdoFinance.Recordset.Cancel
End Sub

Private Sub cmdDelete_Click()
AdoFinance.Recordset.Delete
AdoFinance.Recordset.Delete
Dim intdel As Integer
intdel = MsgBox("Are sure you want delete?", vbYesNo, "Conform delete")
If intdel = vbYes Then
AdoFinance.Recordset.Delete
Else
MsgBox ("Record not deleted")
End If

End Sub

Private Sub cmdEdit_Click()
AdoFinance.Recordset.EditMode
End Sub

Private Sub cmdExit_Click()
Unload Me
End Sub
```

```
Private Sub cmdSave_Click()
AdoFinance.Recordset.Save
End Sub

Private Sub cmdShowOtherForm_Click()
frmStudy.Show
End Sub

Private Sub cmdShowResults_Click()
frmResults.Show
End Sub

Private Sub cmdShowStudents_Click()
frmStudents.Show
End Sub

Private Sub Command2_Click()
AdoFinance.Recordset.MoveFirst
End Sub

Private Sub Command3_Click()
AdoFinance.Recordset.MovePrevious
End Sub

Private Sub Command4_Click()
AdoFinance.Recordset.MoveNext
End Sub

Private Sub Command5_Click()
AdoFinance.Recordset.MoveLast
End Sub
```

```
Private Sub Form_Load()

End Sub
Option Explicit

Private Sub cmOtherForm_Click()
frmResults.Show
End Sub

Private Sub cmdAddNew_Click()
AdoStudy.Recordset.AddNew
End Sub

Private Sub cmdCancel_Click()
AdoStudy.Recordset.Cancel
End Sub

Private Sub cmdDelete_Click()
AdoStudy.Recordset.Delete
AdoStudy.Recordset.Delete
Dim intdel As Integer
intdel = MsgBox("Are sure you want delete?", vbYesNo, "Conform delete")
If intdel = vbYes Then
AdoStudy.Recordset.Delete
Else
MsgBox ("Record not deleted")
End If

End Sub
```

```
Private Sub cmdEdit_Click()
AdoStudy.Recordset.EditMode
End Sub

Private Sub cmdSave_Click()
AdoStudy.Recordset.Save
End Sub

Private Sub cmdShowFinance_Click(Index As Integer)
frmFinance.Show
End Sub



Private Sub cmdShowResults_Click(Index As Integer)
frmResults.Show
End Sub

Private Sub cmdShowStudents_Click()
frmStudents.Show
End Sub

Private Sub cmdShowOtherForm_Click(Index As Integer)
frmResults.Show
End Sub

Private Sub Command1_Click()
AdoStudy.Recordset.MoveFirst
End Sub

Private Sub Command2_Click()
```

```
AdoStudy.Recordset.MovePrevious
End Sub

Private Sub Command3_Click()
AdoStudy.Recordset.MoveNext
End Sub

Private Sub Command4_Click()
AdoStudy.Recordset.MoveLast
End Sub

Private Sub Command5_Click()
Unload Me
End Sub

Private Sub Form_Load()

End Sub
Option Explicit
Private Sub cmOtherForm_Click()
frmResults.Show
End Sub
Private Sub cmdAddNew_Click()
AdoResults.Recordset.AddNew
End Sub

Private Sub cmdCancel_Click()
AdoResults.Recordset.Cancel
End Sub

Private Sub cmdDelete_Click()
```

```
AdoResults.Recordset.Delete
Dim intdel As Integer
intdel = MsgBox("Are sure you want delete?", vbYesNo, "Conform delete")
If intdel = vbYes Then
AdoResults.Recordset.Delete
Else
MsgBox ("Record not deleted")
End If

End Sub

Private Sub cmdEdit_Click()
AdoResults.Recordset.EditMode
End Sub

Private Sub cmdExit_Click()
Unload Me
End Sub

Private Sub cmdSave_Click()
AdoResults.Recordset.Save
End Sub

Private Sub cmdShowFinance_Click()
frmFinance.Show
End Sub

Private Sub cmdShowOtherForm_Click(Index As Integer)
frmStudents.Show
End Sub
```

```
Private Sub cmdShowStudents_Click()
frmStudents.Show
End Sub

Private Sub cmdShowStudy_Click()
frmStudy.Show
End Sub

Private Sub Command1_Click()
AdoResults.Recordset.MoveNext
End Sub

Private Sub Command2_Click()
AdoResults.Recordset.MoveLast
End Sub

Private Sub Command4_Click()
AdoResults.Recordset.MoveFirst
End Sub

Private Sub Command5_Click()
AdoResults.Recordset.MovePrevious
End Sub

Private Sub Form_Load()
End Sub
```