UGANDA MARTYRS UNIVERSITY

TUITION CLEARANCE SYSTEM

CASE STUDY: UGANDA MARTYRS UNIVERSITY

A PROJECT REPORT SUBMITTED TO THE FACULTY OF SCIENCE IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE AWARD OF A DEGREE OF BACHELOR OF SCIENCE IN INFORMATION TECHNOLOGY

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DEDICATION.

This project is dedicated to my Father Mr. Katoto Mulum'ajirwa Christian, Mother Mrs. Chantal Chihuguyu Naweza Katoto, my siblings Ms. Katoto Laura, Mr. Katoto Michael, Ms. Katoto Sylvia and my cousins Mr. Justin Katoto, Ms. Prudence Katoto and Ms. Esperanza Katoto and the woman of my life, Ms. Nansereko Enid who have been a source of inspiration.

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ABSTRACT

A Tuition Clearance System is an information and management center that has come to the rescue of the depletion and duplication of data in the finance department of an institution. But despite having a system that can operate as efficient as possible, data integrity and sovereignty is not a guarantee. A case to consider is where a student comes to pay up their tuition and loses the receipt during times of clearing for tuition, making it difficult to prove that the student paid up their tuition.

A project was carried out at Uganda Martyrs University with the aim of reducing the time taken and cost incurred when managing the different payments made by students. The project looks at addressing the different challenges students and finance department faces to clear and keep tuition payment details of the university. The Tuition Clearance System will be of great importance to users by creating a platform where each transaction is inputted and then a report is generated to create a follow up way for the ability of other departments like registry to follow up a specific student's payment.

The Tuition Clearance System has some of the key features like the ability to capture the finance details of each transaction that the student makes in the finance department as regards to the tuition payment. The System can be able to compute the balance according to the specific course that the student has paid. This will show how dynamic and good the system is at simplifying the calculation issues of the department. To achieve the best out of this work HTML, PHP, JavaScript, CSS and JavaScript were used for the design of the web-based system.

CHAPTER ONE

INTRODUCTION

1.0 INTRODUCTION

The financial world today is developing at a rate that is way faster than any department of any enterprise in terms of databases. At this stage, financial departments in companies or institutes have their own way of keeping records of their employees and how to keep track of their expenditures, compared to the days when all institutions used simple file based and Hierarchical database management systems [6].

The Tuition Clearance System shall be the cure of students' worries about carrying their bank slips to the finance department for the second time after registration of their arrival at the university and the proof as the completion of their tuition in the university. The system will principally be a client-server base system that shall hold a database and a user interface that shall interact with the user with the help of a web based platform as their user interface. The main users of this system shall be the members of the finance department of Uganda Martyrs University.

This system shall be integrated. This shows that it is not only work towards being a solution for the main campus, but all other campuses as they are also victims of this mis-happening with time.

With this comes the new way of storing and retrieving information from the main server or the main database system to the needed end user and vice versa for our great institution. As we go further in details, we will get to know the loop holes that the previous systems in some Ugandan universities carried and how the Tuition Clearance System (TCS) shall get to bridge this gap and further make this system a major example to other universities that have these same issues.

1.1 Background

The system shall be designed and implemented in the finance and accounting department of the institution of Uganda Martyrs University. This project is essential to institutions at large for it shall ensure and guarantee the information and data integrity that shall be input. The idea behind the system is to cater for the problem being faced by students during times of clearing their tuition fees and sorting of their university expenses.

The finance and accounting department of most Ugandan universities have no finance record keeping system that can be depended on fully. The institutions rely on the help of the basic Microsoft Excel, a software created by Microsoft, the sole owner of the Microsoft operating system. Microsoft Excel handles small amounts of data as compared to database information systems. These systems can keep records even in case of loss of data through a change in the operating system, showing its efficiency and flexibility when the change of the operating system occurs.

Although operating a Tuition Clearance System has been an area of concern to many higher institutions, study has been carried out on the need to change the current system to the new object-oriented database management system, but implementation has been a huddle to jump for many of the researchers. This is so because many times the institutions estimate that such changes incur a lot of costs and losses at the same time. To change such a mindset, this project with all its advantages, shall speak for itself as it shall include the use of cloud storage in the long run to eradicate the reliance on a physical database storage system.

1.2 Problem Statement

With over 150 faculties and approximately over 5000 heads of departments under the leadership of the vice chancellors today, some universities still experience the loss of data, a "con" that should not be experienced in institutes of great value to the nation. This can be seen with the way students are always asked to bring back their own bank slips to check through if they fully cleared so that they could sit for their final exams. It shows the typical sign of loss of track of a student's database or monetary record in the university.

Many students tend to lose their bank slips and end up not doing their final exams, but if the university can keep track of these records with the help of this system, the gap shall be bridged and hence putting a better resolution for data loss. But before then, data loss shall always remain a factor that shall lessen the quality of financial ability the university shows.

Students shall keep on losing their bank slips and however much it is their responsibility, they in one way or another, have to be carried off the burden of always carrying them along through this system. This can only be taken care of if we are to embrace the system of a Tuition Clearance System. An integrated and easy-to-use system works magically when the user is able to easily store the students' bank slip number in the system.

1.3 Purpose of The Study

The purpose of this study is to create the Tuition Clearance System that will help Uganda Martyrs University maintain, record and keep track of students' financial records with the aim of minimizing the loss of this data and the costs to train the new employees in the finance and accounting department.

1.4 Objectives of the study

Main Objective

To design, implement and test the Tuition Clearance System on time.

Specific Objectives.

- Use the methodologies to analyze the current system
- Design the system
- Develop the system
- Test the developed system
- Validate the authenticity of the system

1.5 Scope of The Study

This study shall focus on the management of tuition payment and information in the finance and accounting department of Uganda Martyrs University. The study shall also aim at improving on the system the department of finance holds in Uganda Martyrs University due to the limitations like; limited data entry, data insecurity, difficulties during the retrieval of data when the need arises. The study shall also talk about mainly how we can get to operate a hierarchical database system.

This study will particularly be carried out in the Department of Finance and Accounting of Uganda Martyrs University, Nkozi, which is the main branch of the University.

1.6 Significance of The Study

Uganda Martyrs University's financial department has no existing object-oriented Tuition Clearance System, but with the help of this study, if operated successfully, shall come to see this new project eradicate the problems of lack a sole and unique database management system that the financial department shall take full advantage of.

This system shall be designed in a way that it is not limited to only one end user, but more than one who belong to the Finance and Accounting department as well as the heads of the university like the vice chancellor and his deputies, the deans and the registrars.

Once this system is put to use, the finance and accounting department will finally have its own way of keeping records, retrieving that same data, reducing on the processing time and generally reducing on the operational costs.

This system's development will constitute entirely of the information gathered from the research that is underway, and this shall be in line with the system requirements according to the department of Finance and Accounting.

This research in one way or the other shall widen the research base for the future scholars who would wish to undertake the same or similar study.

1.7 Justification of The Study

This study is to be seen as one of the great achievements in the university and if not carried out;

- Students' records can easily be lost since they are poorly kept into a basic and ordinary old-fashioned format of databases.

- The employees in the Finance department will keep experiencing issues with the students who keep on losing their bank slips when time for clearing.

- There will be continued cuing and a tiresome process of clearing which is a stress to both parties in this process.

CHAPTER TWO

LITERATURE REVIEW

2.0. INTRODUCTION

In this chapter, the researcher reviews literature to get appropriate information on the use of a Tuition Clearance System in Universities. In order to create a strong background for discussing the set objectives, we found it important to present an overview of the proposed system. Besides this, the researchers also captured what other scholars have compiled about the system and the other systems of similar structure so as to ascertain whether the system is useful in various Universities. Nevertheless, loopholes were identified from the existing literature but with much combined effort, the study addresses the identified loopholes as clearly discussed in this chapter and it is with this trend that the researchers drew logical conclusion that sprung from the existing knowledge as reflected in the literature.

2.2. An overview of information Systems

An information system can be technically defined as a set of interrelated components that collect, retrieve, process, store, and distribute information to support decision making and control in an organization [4].

Information systems differ in accordance to the organizational level at which they are used and these include the following types of systems;

2.2.1. Office Information Systems (OIS) which use hardware, software and networks to enhance work flow and facilitate communications among employees. They support a range of business

office activities such as creating and distributing graphics and/or documents, sending messages, scheduling and accounting.

2.2.2. Operational/Transaction Processing Systems (TPS) which capture and process data generated during an organization's day-to-day transactions. A transaction is a business activity such as a deposit, payment, order or reservation.

2.2.3. Management Information Systems (MIS) which generate accurate, timely and organized information so managers and other users can make decisions, solve problems, supervise activities and track progress. Because it generates reports on a regular basis, a management information system is sometimes called a **Management Reporting System (MRS)**. They are often integrated with transaction processing systems or one can further describe (MIS) as information systems that take information captured by transaction processing systems and produce reports that management needs for planning and control [4].

2.2.4. Decision Support Systems (DSS); these are designed to help users reach a decision when a decision-making situation arises. They use data from internal and/or external sources. Internal sources include sales, manufacturing, inventory, or financial data from an organization's database. Data from external sources could include interest rates, population trends and costs of new housing construction or raw material pricing(s)[7].

2.2.5. Expert Systems capture and store the knowledge of human experts and then imitate human reasoning and decision-making processes for those who have less expertise. They are composed of two main components: a knowledge base and inference rules [4].

The classification of information systems into different types is important as each type of system has certain features that are relevant in particular situations. The proposed system is therefore a combination of the mentioned features.

The Tuition Clearance System, henceforth, shall incorporate the incentive of achieving the ability to obtain the system that is manageable through its capacity to store information, can transact the payment solutions and be able to help the user make a decision based on the data it has been fed. This grants the system full mandate to coordinate and operate throughout, hence accomplishing its functions.

CHAPTER THREE

METHODOLOGY

3.1. INTRODUCTION

In this chapter, the researcher describes the methods used in this project to collect certain information so as to derive a good conclusion and figure out how to about implementing the new system to be created.

The approaches to be used in this project include case study and design science. With these approaches, solutions to the problems shall be derived from the questions like what, where, who and when.

3.2. Data Analysis

This involves the checking of data for corrections. The type of data analysis described in this project is of qualitative approach. It shall involve approaches such as Case Study

This approach refers to a group of methods which emphasize qualitative analysis [5]. A case study examines a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities.

The case study in this research is Uganda Martyrs University: A prominent and strong university located off the Kampala-Masaka Highway, three kilometers into a village in Kayabwe town, Nkozi.

The advantage of this qualitative approach is that the researcher, gets first-hand information with the help of methods like interviews and observation.

3.3. Population of Study

The Population of Study is the staff of Uganda Martyrs University in Nkozi village, the main branch of Uganda Martyrs University.

3.4. Units of Analysis

The unit of analysis is the choosing of a group of individuals to be studied in that case study. This case of study's unit of analysis is the Finance and Accounting department of the University.

3.5. Data Collection Methods

Questionnaires: Here we intend to print out questions on paper to be filled in by respondents that include students, university administrators of the finance and accounting department, the deans and heads like the registrars or the deputy vice chancellor, among other concerned parties. The questionnaires will aim to collect information from the respondents regarding the current accommodation reservation system in regards to its positives and negatives.

The questionnaires will either be distributed personally by the researcher, by e-mail or postal service in case need arises.

Interviews: In this method, the researcher intends to hold a one on one oral interaction with the respondents that will include various concerned parties such as the university students, university administrators as well as some of the students' parents or guardians.

The researcher will ask the respondents various well researched questions that are to help expand on the researchers' knowledge as to the current dynamics of the current methods used to store the students' financial records and the feelings of the respondents towards these systems and whether they would approve of a new reservation system.

The interviews will be carried out during a one on one meeting or via telecommunication in cases where the researcher cannot get into personal contact with some respondents due to unforeseen circumstances.

Direct Observation: Here the researcher will keenly look at the current Finance Management system and look out for the loop holes in this manual method as is being used currently at Uganda Martyrs' University. The researcher will also look at the storage methods being used to keep the written information concerning the various fees paid like tuition, accommodation in halls, AAR and National Council. The researcher will also be present during times when students come in to confirm their payment dues during the fees clearance period and thus take notes concerning what has been observed.

With the above observations, the researcher will then go forward to suggest better methods of quickening the clearance session of students using the Tuition Clearance System.[1]

[1] The above activities shall be carried out keeping in mind the case study being Uganda Martyrs University (UMU) and the data is to be collected from UMU students and the staff of the Finance department.

3.6. Conclusion

All in all, the identified problem is true to the latter thus giving reason for the research of proposed system to be taken up. However, it should also be noted that it wasn't a smooth sail acquire the literature of this research as the topic lacked enough information in regards to research thesis, dissertations and essays.

Positively, the research carried out by the researcher (Online University Accommodation Reservation) proves valuable to a Systems administrator looking to create an online database system for any organization.

CHAPTER FOUR

ANALYSIS AND DESIGN

4.0 Introduction:

This chapter involves analyzing the data collected and comprehending the end users' requirements. The chapter was a necessity for identifying the functional and non-functional requirements of the system that could meet the end users' requirements. It gives the background and structure of the case study, description of both the current and proposed systems, shows data flow and manipulation in the proposed system, information requirements, system requirements, functional and non-functional requirements.

4.1 Background of the case study (Continuation).

Uganda Martyrs University is an institution owned by the episcopal conference of Uganda. Located in Nkozi village, about 89 Kilometers along the Kampala, Masaka highway and 3 Kilometers in to the village of Nkozi branching off from Kayabwe town, Mpigi District. It is a private owned university under the guidance of the Governing Council and the Episcopal Conference.

Finance department, under the management of the Vice Chancellor and the Chief Finance Officer is a well taken care of department that utilizes a decision support system under the platform of Microsoft Excel worksheets. The banks notify the university about a student's payment, but do not give them any written document as proof of their payment, so the student has to avail proof of payment to show that there is no deception or falsified information that it is indeed under one's names that the tuition was paid. This however is followed up by the finance department during the course of the semester. They request the students to return with their

tuition receipts to prove payment once and for all so as to finalize the payment issue and clear them off for examinations.

This gets too tiring for the students and the finance staff who have to keep on looking at the system over and over again so as to portray the evidence of payment of tuition. Students end up spending more money by going to the bank and requesting for a bank statement to prove their payments have been due, hence delaying their start of the examinations due to no clearance.

4.2 Study of the current system

Uganda Martyrs University relies on the use of decision support system where by a platform like Microsoft Excel is used to input the information concerning the student's tuition and other fees payments are kept in that simple file based system. The finance department caters for each and every student, hence have each work sheet assigned to one student and this work sheet holds each payment that they have made from the very beginning of their year of study in UMU until the very end of their year of study, or past graduation, if they do not come back to UMU for a post-graduate course. Once the student leaves, most times, their financial details are scrapped off due to the creation of space into the system so that it can hold the arrival of new students into the university and also create space for the transaction of tuition payment from the continuing students.

The student visits the finance department twice or more in a semester considering the fact that he or she has not lost their documents at any point. However, to one who has constantly lost their documentation on a usual basis or pays in instalments all semester visits the department more than many times due to either lack of proper documentation or completion of tuition payment, getting the department tired of seeing some faces and getting disappointed in the delay to

complete the semester's work. This makes it hard to keep track of the number of receipts a student has brought for tuition completion however much the date of payment can be shown.

4.2.1 Strength of the current system

The system is cheap because it does not require any extra hardware or software platform for use.

The system is long lasting and does not need so much updating into a new style.

4.2.2 Weaknesses of the current system

The system is not fully reliable into acquiring the proof of payment other than the information from the bank.

There is wastage of students' time who are made to wait for long and sometimes when the finance department is busy, they are told to go and come back after waiting for a long time. There is delay in the computation of the students' finances so as to create the final clearances right on time.

There is also poor management and accountability of the students' tuition. This so happens when student(s) with like names are jumbled up in between hence one is confused for the other for the like payments.

4.3 Information flow in the proposed system

A computer information management system is a system composed of collecting, filtering, processing, creating and distributing data or interprets information by the users of the system and the computers. The term is also sometimes used in more restricted senses to refer to only the software used to run a computerized database.

An information management system focuses on the management of information to provide efficiency and effectiveness of strategic decision making. The concept includes systems that collect, filter, process, create and distribute data or interprets information.

The Tuition Management System is an information system that aims at, collecting, processing, retrieving and storing information concerning tuition payment and other small fees paid into the university account.

The proposed system will consist of sections that are capable of calculating the balances that the student is left to pay in order to clear them. The system will have a user interface that will enable users (finance department) to enter information that will be executed in the system and display required information. The user will be able to compile all payments. This information will be kept in a database and reports will be generated on a weekly basis for proper follow up of the payments.

In this process of clearance of tuition and other fees paid in the university account, the students shall avail their receipts from which ever bank used that is affiliated with the university. The finance department employee fills in their payment input into the system and then compute plus the receipt number into the system so as to remain with proof of payment of the tuition from the student. The default price of the student's tuition computed in the back end of the system will help in the computation of the remaining balance of the student's tuition or fees to be paid.

4.4 Requirements of the system

4.4.1 Functional requirements

These are the tasks that the developed system is required to fulfill in the course of its functioning and they include the following according to the simple observation survey carried out at the finance department of Uganda Martyrs University, Nkozi:

The system should be able to store, update and retrieve students' financial information in the pharmacy.

The system should be able to compute the amount of balance left for the student to pay to complete his or her tuition payments.

The computation should be done at the back end and the required information displayed.

The system should be able to generate reports weekly according to the decision of the finance department.

4.4.2 Non-Functional requirements

These are system requirements that define system properties and constraints. This system meets the following non-functional requirements:

Availability, the system should be accessible to its users whenever they want to use it in order to ensure integrity and reliability.

Performance, the system will be expected to perform data manipulations in the shortest time possible.

Portability, the system should be able to run through many other operating systems or platform operating systems so as to provide its maximum efficiency.

Scalability, the system should be able to accept future improvements in value and quality.

Security, the system will be expected to have security functionalities like the user name and password. This will prevent unauthorized personnel from accessing the data.

User friendliness, the system should have a user-friendly interface that allow users to navigate through the system easily to ensure interactivity of the system with the users.

The system shall be put into implementation at a later stage, but as a requirement of the implementation of this system, some of these details should not be missed especially when one has to have a recount of the system's proper requirements in accordance with the plan.

Table 1: Implementation plan

ACTIVITY	DELIVERABLES	TOOLS
Coding	• Complete implementation of the system architecture • Hand code components of the application's design	PHP, Java script, HTML, Adobe CS6 Suite, MySQL, MS Suite and WampServer.
Testing	• Inspection of code for predictable errors. • Structured walkthrough • Test correctness, performance and reliability • User testing of the system • Security testing and authentication • Test result documentation.	
Installation Hardware	• Installing hardware • Backup and recovery plan	• Servers • Installation CDs • Hard drives

		• PHP scripts for migration of databases • MS word
Installation Software.	• Installation of Adobe CS6 Suite • Installation of WampServer • Validation of the installed system functionality. • Parallel installation and data migration • Documentation of installation procedure	
Documentation	System documentation and key features	MS word, Adobe acrobat
Training	User manuals Technical reference A day's seminar on how to operate the system	CDs, MS word, MS PowerPoint.

4.5 Design of the system

This describes the various data and entity relationships of the tuition clearance system and the various levels of data flows. One will notice the fact that the system through the context diagram, the data flow diagram and the entity relationship diagram show the different depths of the way operations are to be carried out in the system. One will notice that in the Context diagram below, the users, all have different functions and contribute in a different way to the system.

The context diagram shows us the outward process that is mainly physical in a sense that it represents the graphical user interface of the system when it is actually put to the use by the users shown above.

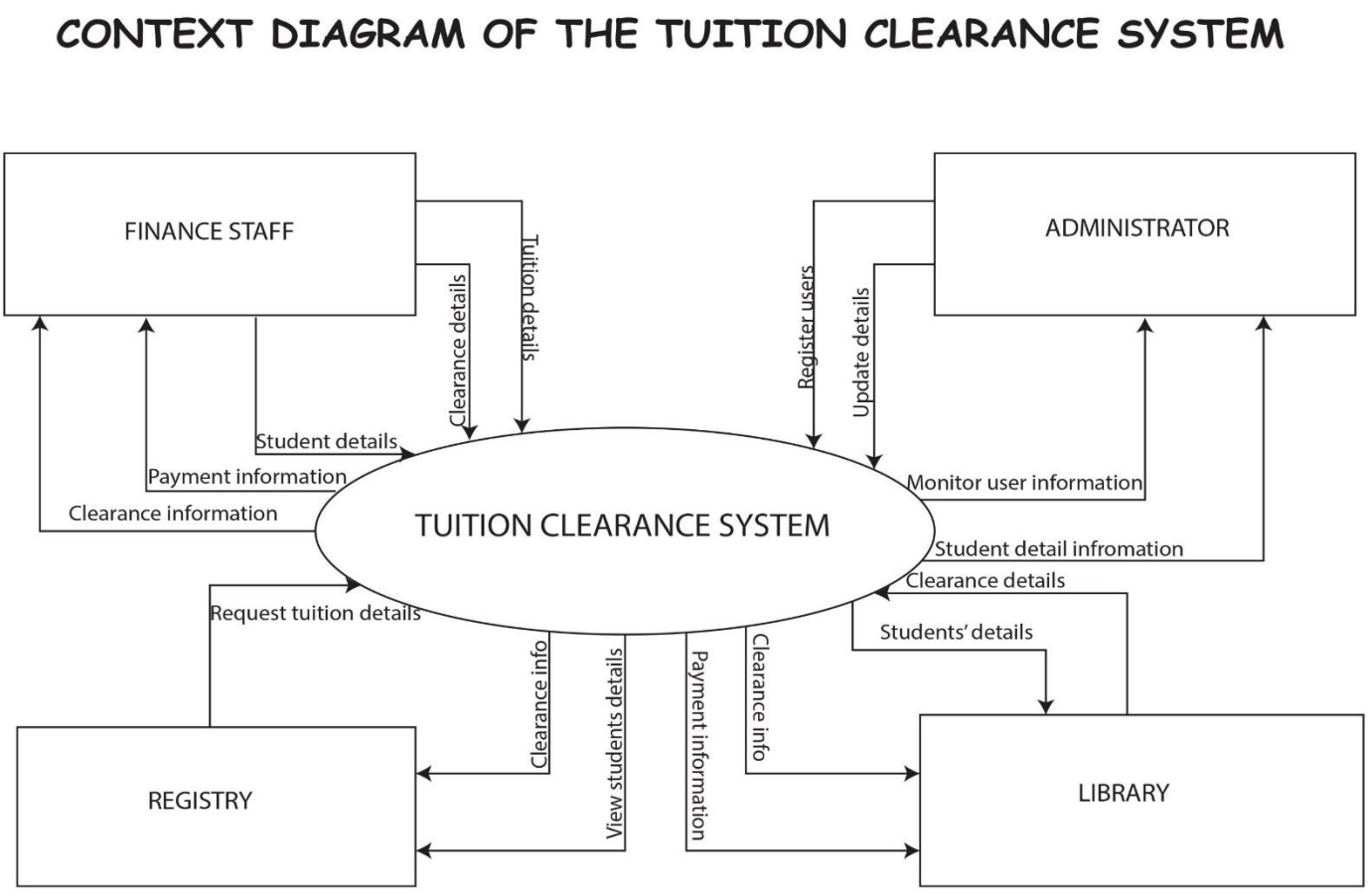


Figure 1 Shows that in the context diagram, the system allows the input and can output information that interacts with the system. The library, registry, finance departments and the system's administrator coordinate towards the operation of the system.

The context diagram displays the entities' interaction with the system and the outside environment, but does not replicate the decisions that can be made by the system to allow authenticated users that are in the system to actually be able to operate the system at their discretion and making it obtain its purpose.

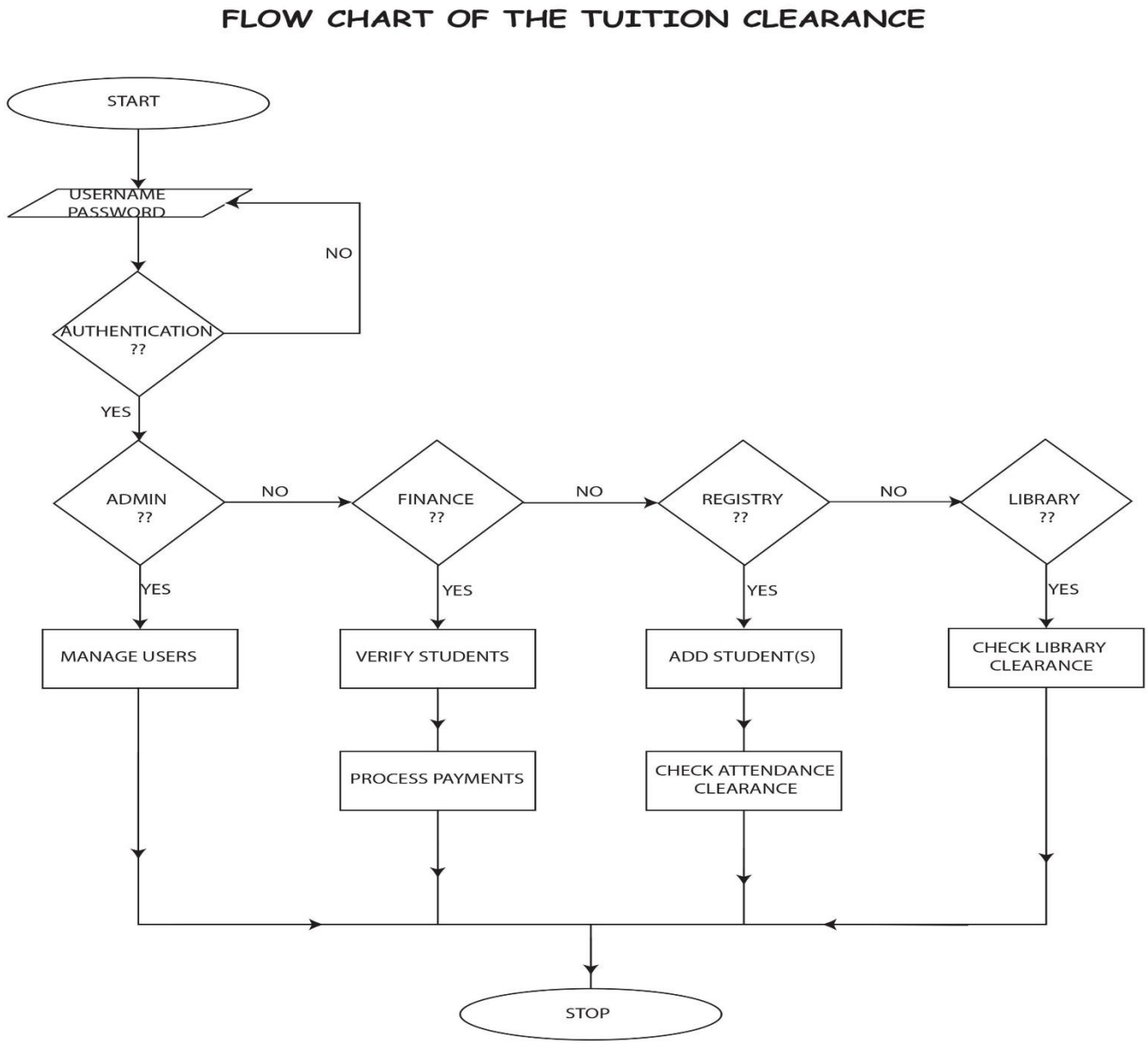


Figure 2 Shows a flow chart that shows the time a user starts to use the system to its end. From the start, a user is required to input the username and password. If the username and password is correct and authenticated, the system then proceed to recognize if the input is admin, finance, registry or library department so as to display the right information for the users. If the authentication of the user and password is not recognized by the system, it just takes the process back to its original page of logging in or denying access to the user.

The system cannot allow a user or an external entity to interact with it without having to authenticate or give permission to the entity itself. This is through the registration of each user in the system by the system's administrator for example as shown in the diagram below:

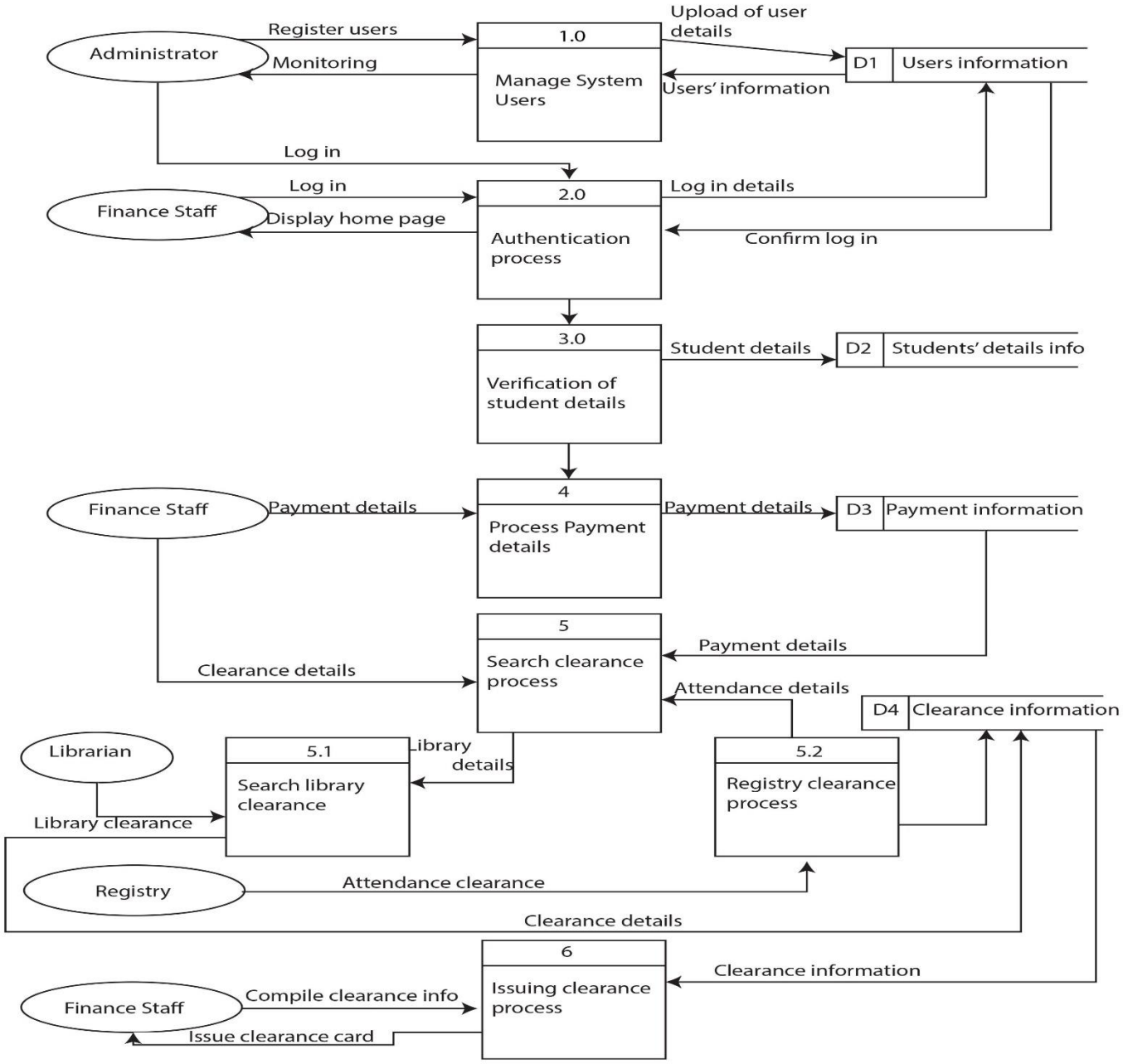


Figure 3 Shows the data flow diagram that shows the input, processing and output of data that is being processed into information and how each external entity contributes to the system alongside the processes that take place into the system.

The data flow cannot be accomplished if it does not have a ground to settle from as its data bank in a way or another. This calls for a database by which it will have the capacity to hold about all the tables and the relationship between one table to the other. Some of the tables will have different relationships from the others depending on the privacy or permission their systems can grant the users. This is so because it will limit the user's authority to capture details that is not meant for them in the end and encourage the data integrity [1]. Below is a view of the entity relationship diagram that shows the entities that shall share information with each other in the same database.

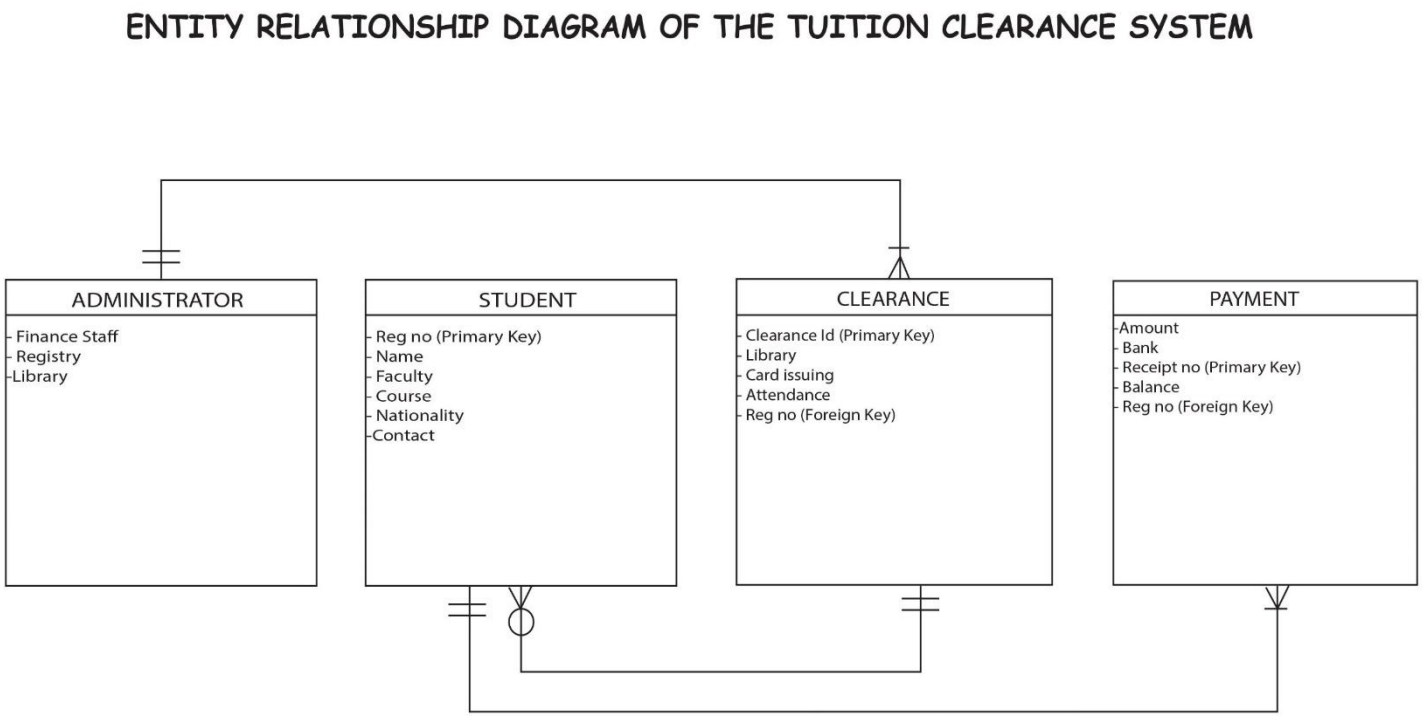


Figure 4 Shows the relationship between various entities in the database. The students table is the main table that holds the main details of a student with the primary key as registration number. Most of the other tables like, admin, clearance and payment get most of their details in order to store details into the database that is relatable with the system. Students relationship with clearance table is zero or many to only one. The relationship between student and payment is only one to one or more. Administrator and Clearance tables also have a relationship of only one to one or more.

CHAPTER FIVE

IMPLEMENTATION AND TESTING

5.1 Introduction

This chapter holds information concerning the implementation of the project. It includes construction of the Tuition Clearance System and putting it to work it as per the objectives set in chapter one. A sample of the system shall be shown in the screenshots that shall be put below and a few sample codes that led to the implementation of the system.

The implementation process includes the following tasks.

-Coding for the system.

-Testing the constructed system.

-Installation of the proposed software and hardware that will support the system.

-Training the proposed users of the system.

5.2 Technologies used

The Tuition Clearance System is a Client-server based system that operates on a web based system as a platform and therefore the technologies used were web based technologies. The technologies used in terms of programming languages include;

HTML stands for hypertext markup language and has been used to implement the interface designs which can be viewed from a web browser.

PHP (Hypertext preprocessor) is a programming tool used to design interfaces and connect to databases. This tool was used because it is easier to learn and use efficiently and effectively. This language is also security enhanced and makes any system secure. It is used to create forms, user

interfaces, sessions to store user information and other functions that are called since it has robust support for object oriented programming languages like java and better support for MYSQL through written extensions and error handling as used in the Tuition Clearance System.

MYSQL is an object-oriented programing language used to design and develop databases. MYSQL is scalable and can accommodate large amounts of data. It also provides high level of security to stored information and it further comes with a low manufacture cost compared to others database system applications. This programming language also enables the researcher to create tables and then normalize them in order to minimize data redundancy and inconsistency.

Java Script is a tool used to write functions behind interactive documentation and dynamic effects with additional registration functionalities. This programming language was employed because it is secure and platform independent, compatible with HTML and also interacts with document Object Model to perform tasks that may not possible in HTML for example accessing the details of the student.

Other technologies in terms of software tools that were used include;

Notepad++ which was used to write the codes that constitutes HTML, PHP, CSS and Java script.

Adobe Dreamweaver CS6 which was also used to write the HTML, PHP, CSS and also create a platform that was used to display progress of the code.

WampServer which was used to validate, test and run the PHP and MYSQL codes.

Adobe Illustrator CS6 was used for modeling purposes and constructing diagrammatic models such as project plans, representing ideas and concepts among others.

Adobe Photoshop CS6 which was used to create a few graphical and logo impressions of the system so that it could look camouflaged.

5.3 Coding of the system

The Tuition Clearance system was coded using PHP as the main programming language. HTML was embedded to produce the structure of the interfaces, CSS was used to just give a little style to all interfaces, but not make it look so fancy and MySQL queries and functions to put the database to operation. Java script was used to implement from validation. Adobe Dreamweaver CS6 was used as the code editor. This section examines the coding practice and implementation style used by the developer to create the Tuition Clearance System.

Some of these coding was taking place at the back end of the system. The balance of the tuition is mainly calculated through the MYSQL coding by requesting the table that holds the amount of the tuition called “Students” and subtract it from the table called “Tuition” that holds the amount of the tuition depending on the course. This was done so to make the system more dynamic and be able to calculate the amount of tuition according to the name of the course a student holds.

5.4 Interface implementation

5.4.1 Log-in interface

On the login page, the user and the administrator have the same passage, but the administrator can easily access the back end of the system.

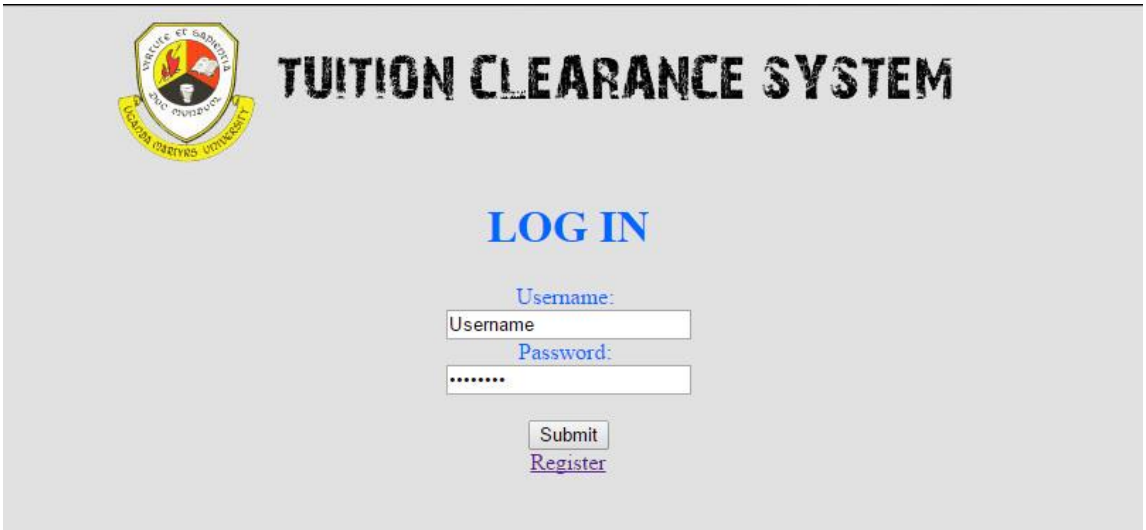


Figure 5: Showing the Log-in page

Source: Primary data.

The system cannot allow one to access without logging in and fully registered in the system. It shows an "**ACCESS DENIED**" page if one attempts to log in without having registered into the system. This improves on the security and authentication purpose of the system, hence being a

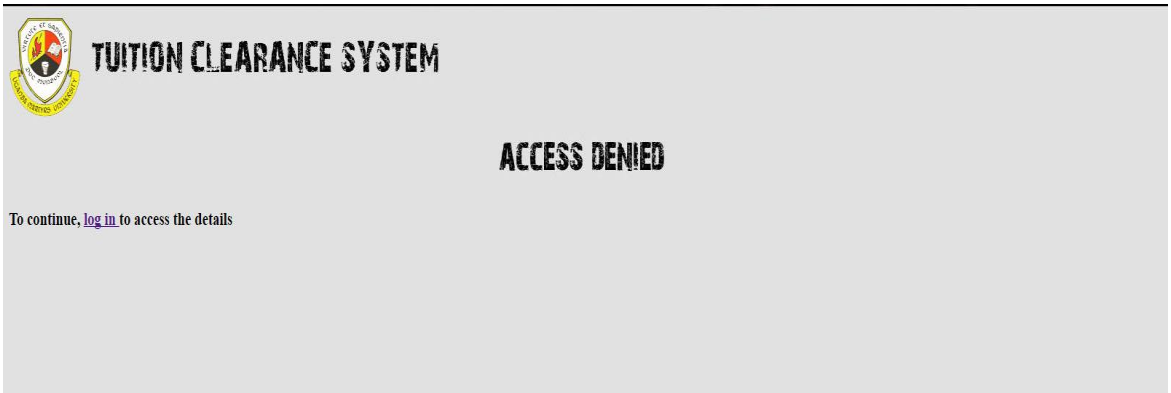


Figure 6 Shows the "ACCESS DENIED" page

trusted system.

Source: Primary Data.

5.4.2 Registration Page

This page is where the users are given an opportunity to use the system, but one needs the authentication allowance of the username in order to accept one into the system. This system requires the username, new password and the department that one is from in order to fully allow the administrator to monitor the new and already accessed users.

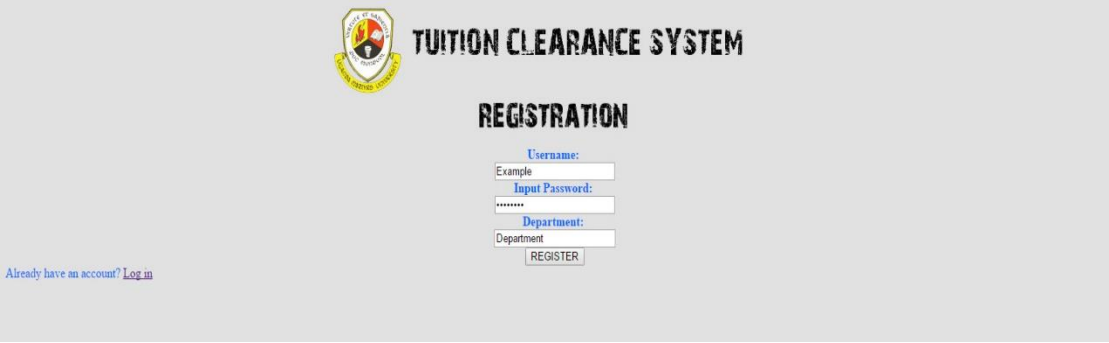


Figure 7 Showing the Registration page

5.4.3 Home page

This is the default page of system. It displays the actual details that the users are supposed to see, where they are able to either edit the financial details and also delete the students' details if they are either duplicate or they are standing in an over-crowded format in a sense that it helps one filter through what should be kept or not. Some of these details cannot be edited depending on the rights one has as regards to the department in which they work.

Figure 8 Shows the Home page

Source: Primary data.

5.4.4 Add Student Payment Details Page: This gives the finance department an opportunity to utilize the system to put in the details of the student who has paid and who has not. The system has the capability to calculate the student's balance according to their courses.

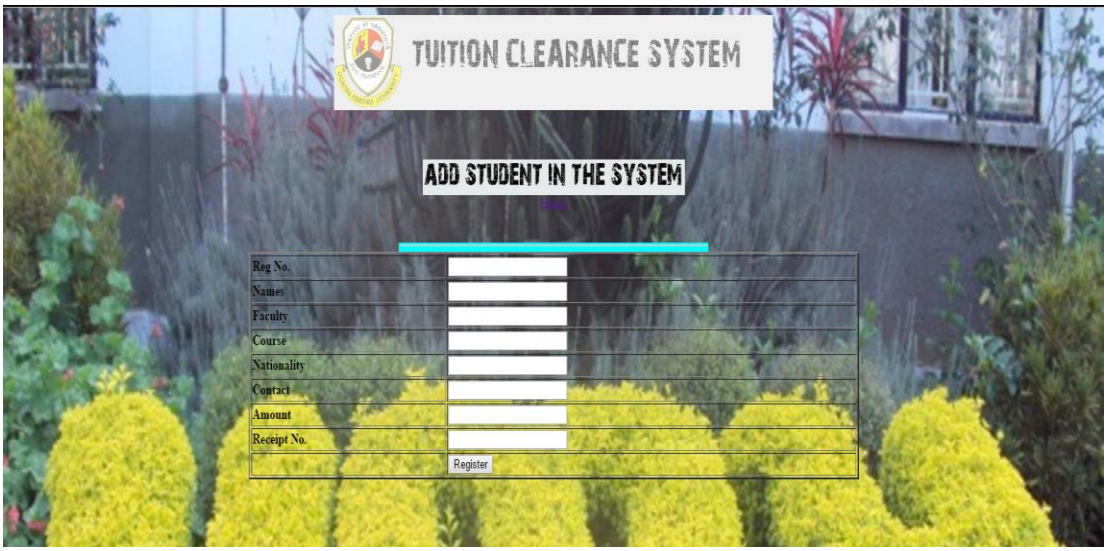
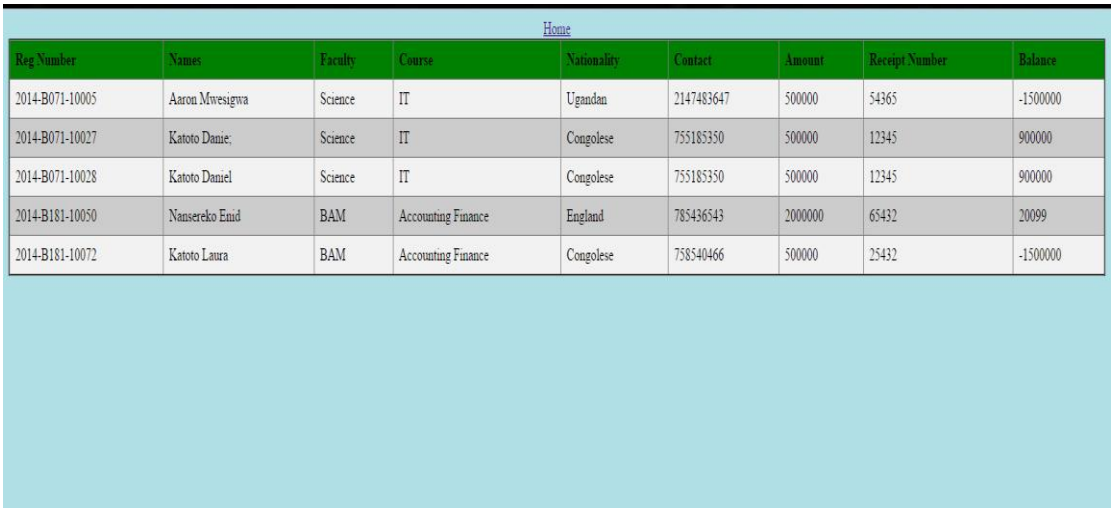


Figure 9 Showing the Add Students' Payment Page

Source: Primary data.

5.4.5 Report page: This shows the report of the students' payment details as regards to the registration numbers. It collects the payments made by the specific registration number and then assembles the payments to show the totality of the payment.



Home

Reg Number	Names	Faculty	Course	Nationality	Contact	Amount	Receipt Number	Balance
2014-B071-10005	Aaron Mwesigwa	Science	IT	Ugandan	2147483647	500000	54365	-1500000
2014-B071-10027	Katoto Danie;	Science	IT	Congolese	755185350	500000	12345	900000
2014-B071-10028	Katoto Daniel	Science	IT	Congolese	755185350	500000	12345	900000
2014-B181-10050	Nansereko Enid	BAM	Accounting Finance	England	785436543	2000000	65432	20099
2014-B181-10072	Katoto Laura	BAM	Accounting Finance	Congolese	758540466	500000	25432	-1500000

Figure 10 Showing the Report Page

CHAPTER SIX

DISCUSSION, CONCLUSION AND RECOMMENDATION

6.1 Introduction

This section compares the project's findings with the file-based system.

6.2 Discussions

6.2.1 Comparison

This system is convenient in terms of availability because the finance department users are ready to just input the details and not be so concerned with the payment calculations because the system takes care of the calculation in the back end of the system.

6.2.2 Opportunities

At the initial stage of the implementation, the administrator was asked to compare the possible advantages of the system in relation to the initial methods. The following advantages were therefore observed: prevent long queues during busy hours in the restaurant, it reduces paper work and human errors especially with calculations, reduces the work load of the finance department and also ensures proper storage of data.

6.2.3 Challenges

Many challenges were met during the implementation of the project.

The system was developed and implemented concurrently with other course units the researcher had to accomplish. This led to implementing of the system in bits which were later on merged. An example is the MYSQL course unit that gave the researcher an in-depth chance to have better data authentication skills however much it was delayed.

Due to time and limitation of the knowledge of the developer the system is completed but it could be better than it is.

The delays in the payment of the students' tuition delaying the implementation of the system in accordance to the months recurring to a stretch in the program's follow up.

The log-in page was not separated fully so the departments can be mistaken and an opportunity will be given to any random department to visit the finance page which could be risky.

6.2.4 Discussion

In regards to create a Tuition Clearance System that can be utilized to make the finance department's operation of keeping the students' records in a much safer database system. A number of functionalities like authentication and the ability to calculate the balances according to each course as spoken of in chapter 1 and 2. This helped in development of the Tuition Clearance System for Uganda Martyrs University finance department. The website was designed using the software prescribed for this project. Adobe dream weaver CS6, note pad++ as programming language software, HTML, PhP, MYSQL, CSS, and other web-based languages are some of the programming languages used. The user requirements of information generation and dispatching about the way the information is operated have also been taken care of in the design stage.

6.3 Conclusion

The purpose of this project was to develop a Tuition Clearance System that could help the finance department of Uganda Martyrs University maintain, record and keep track of students' financial records with the aim of minimizing the loss of this data and the costs to train the new employees in the finance and accounting department. All information is stored in a database including the user details and the finance details of each student.

This purpose was achieved after a thorough analysis of the system's requirements, planning and analyzing basic and complex web design requirements through conceptual and actual design, testing the prototype which can be reviewed and implemented.

6.4 Recommendation

In the essence of using this system properly;

The researcher's recommendations will be based on how to use the implemented system efficiently, how to keep it functioning and how to avoid errors in the near future for better service delivery of the finance department. Having implemented this system, it is clear and evidence that this system will solve the problems met in continuously requesting the students to enroll with their bank slips and hence giving the finance department a chance to focus on more details that do not require seeing the students over and over again. To fully gain from the new system, it is required that the users put into practice the following recommendations:

The administrator should purchase better working hardware and software for proper storage of information in the department for example a mini-server that could work independently from the university's main server.

The administrator should acquire experts or the programmers of the system to train his/her staff in order to know how to use the system and dispatch. That is to say students and staff of Uganda Martyrs University should also be trained on how the system works.

During implementation; since the system has been physically created, it requires retesting after the actual implementation. Before implementation, the developer should check if there is appropriate equipment to automate the entire Clearance system.

6.5 Future Work and Research

Currently, the system is intended to keep track of students' tuition clearance records. However, the researcher recommends that it should be further developed to cater for similar needs in other departments like procurement, administration among others. The researcher could not be able to develop a provision for the students to be able to check their account balances in accordance to the payment schedule. Furthermore, he recommends that this system should further be developed to cater for payments and clearance online. This research project was aimed at designing and developing a Tuition Clearance System for Uganda Martyrs University with the main aim of transition from the file-based system to an automated Information Management System.

If further research is to be made on the system, there should be an added specification of the system should be made which should be being able to scan the receipts of the students and be able to hold each student's account as a specific page when creating the report.

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APPENDIX 1: PROPOSED WORK PLAN

ACTIVITY	TIME	PERSON RESPONSIBLE	RESPONSIBILITY CENTER
Proposal writing	Two weeks	Researcher	Uganda Martyrs University, Nkozi
Feasibility Study	Two week	Researcher and Assistant	Finance department of Uganda Martyrs University
Fact finding and recording	Two weeks	Researcher and Assistant	Finance department of Uganda Martyrs University
Consultation with the Supervisors and Lecturers	Four weeks	Researcher and Supervisor	Uganda Martyrs University, Nkozi
Planning	One week	Researcher and Supervisor	Finance department of Uganda Martyrs University
Requirements Collection	Two weeks	Researcher and Assistant	Finance department of Uganda Martyrs University
Requirements Analysis	One week	Researcher	Uganda Martyrs University
Report Compilation	One week	Researcher and Supervisor	Finance department of Uganda Martyrs University
Design	Three weeks	Researcher	Uganda Martyrs University
Implementation	Five weeks	Researcher and Assistant	Finance department of Uganda Martyrs University
Submitting a report	One week	Researcher	Uganda Martyrs University

APPENDIX 2: PROPOSED BUDGET (DURING RESEARCH)

ITEM	UNITS	PER UNITCOST	TOTAL COST
Printing	50	Shs. 200	Shs. 10,000
Transport		Shs. 500	Shs. 100,000
Storage device	1	Shs. 150,000	Shs 150,000
Assistant	1	Shs. 200,000	Shs. 200,000
Data Collection tools	20 (Various Tools)		Shs. 300,000
Database materials	5 (Various materials)	Shs. 200,000	Shs. 1,000,000
Training of research assistant(s)	- Notebooks - Pens - Meals - Marker pens - Flip chart	Basing on the total cost	Shs. 250,000
TOTAL			**SHS. 2,010,000/=**