

# MSU ONLINE CLEARANCE SYSTEM FOR GRADUATING STUDENT



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**(R141650Z)**

# **MSU ONLINE CLEARANCE SYSTEM FOR GRADUATING STUDENT**



By  
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## **BSc (HONS) INFORMATION SYSTEMS**

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## **ABSTRACT**

The project outlines and gives support for the Online Clearance System for Graduating Student which was developed as a final year Project at the Midlands State University. The system has been developed for Midlands State University and it is a web based to cater for technological rapid changes. The research was guided by seven objectives; to develop a platform that facilitate information exchange between the clearance information units (the Library, Student Accounts and Departmental) and the graduating student. This enables both the student and clearance staff to clearly communicate upon the clearance process. Secondly, to develop a system that allows the graduating student to fill the transcript request form online. Geographical barriers are alleviated as the student can be able to commence the process of clearance as long as the student is using an internet able access device. To develop a system that allows the student to send issue requests on the academic fixed information. In the event that a module was added or removed by mistake, the student can be able to request for such corrections online. To develop a system that enables the student to check the clearance status online. This enables the student to actually see how far the clearance process have going without the even coming physically to the clearance departments. Provided that the student has been successfully cleared, the ticks will be shown on each respective department. To develop a system that allows the clearance sections to flight requirements as well as sending messages to the student. The author used research instruments such as Dreamweaver, MySQL, Php, Apache and Wamp server. In addition to this, some information gathering methodologies such as the interviews, observations as well as questionnaires were used. Finally the new system was implemented using parallel conversion method.

## **DECLARATION**

I GREATMAN MHANDU hereby declare that I am the sole author of this dissertation. I authorise the University MIDLANDS STATE to lend this dissertation to other institutions or individuals for the purpose of scholarly research.

Signature \_\_\_\_\_ Date \_\_\_\_\_

## **APPROVAL**

This dissertation entitles “ MSU ONLINE CLEARANCE SYSTEM FOR GRADUATING STUDENT” by GREATMAN MHANDU meets the regulations governing the award of the degree of BSC INFORMATION SYSTEMS HONOURS of the Midlands State University and is approved for its contribution to knowledge and literal presentation.

Supervisor .....

Date .....

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I would like to give my gratitude to the following for making this project a success;

The Almighty God for guiding me through my studies and the subsequent work on this project.

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Amen...

## **DEDICATION**

Special dedication goes to my father Mr. L Mhandu and my mother Mrs. E Mhandu for moulding me into the man I am today. May the Lord continue to bless them.

Amen....





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## **LIST OF ACRONYM**

<b>MSU.....</b>	<b>Midlands State University</b>
<b>PHP.....</b>	<b>PHP Hyper text pre-processor</b>
<b>Dprt.....</b>	<b>Department</b>
<b>DFD.....</b>	<b>Data flow diagram</b>
<b>EER.....</b>	<b>Enhanced entity relationship diagram</b>
<b>OCS.....</b>	<b>Online clearance system</b>
<b>for graduating student</b>	
<b>HTML .....</b>	<b>Hyper Text Mark-up Language</b>
<b>CSS.....</b>	<b>Cascading Style Sheet</b>
<b>HDD.....</b>	<b>Hard Drive</b>
<b>RAM.....</b>	<b>Random Access Memory</b>
<b>GB.....</b>	<b>Giga bytes</b>



## **CHAPTER 1: INTRODUCTION**

In this modern age, Information Technology is perceived as an instrument which brings about change around many spheres if considered. Thus the capability of academic resource sharing, instantaneously communication between students and lecturers, accurate and relevant informational retrieval to complement the learning process. This chapter explains the Midlands State University Online Clearance System for Graduating student that will facilitate communication between the student and the clearance information units. In addition to this, the system will enable the student to fill the transcript request form online thereby overcoming the geographical barriers and the queuing of the students at various clearing points. The clearance process has three processes that a student will undergo which involves the Student's Academic Department, the Student Affairs Department and the Library Department. Also in the event that there are some errors on the student academic fixed information, the systems will allow the student to send the requests online. The system will allow the clearance information units to approve on or off the work and finally enables the student to download the approved form in order to completely disengage from the university and to collect the graduation certificate.

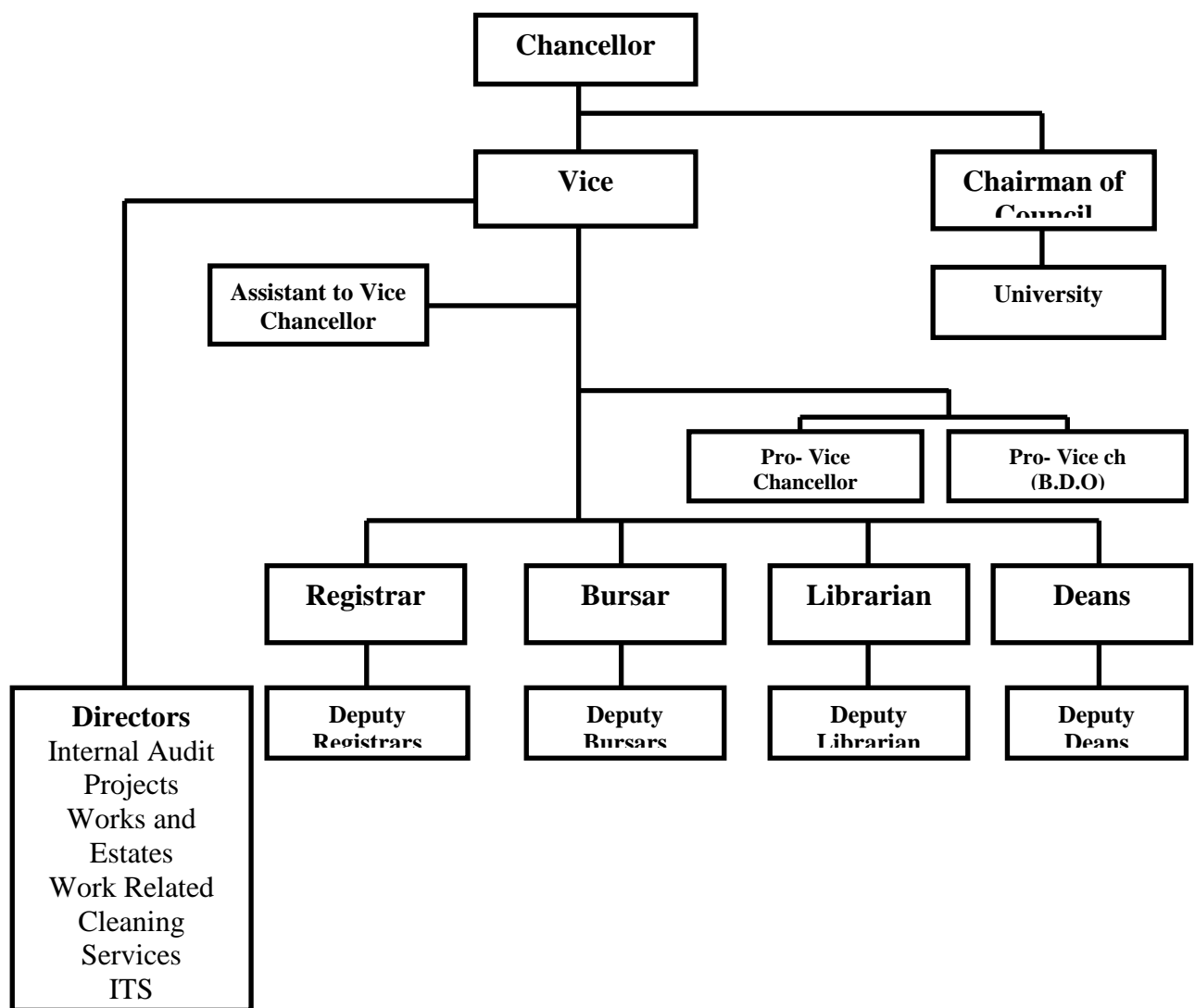
### **1.2 BACKGROUND OF THE STUDY**

Clearance is defined as a formal authorisation giving permission to someone to do something. A clearance can be characterised as the way toward negotiating and determining any authorisations that are needed to incorporate the use of someone's property. In almost many institutes, clearance systems for graduating students are very important since they derive a number of benefits. To ensure that the student is eligible to for work without owing the institute anything, the clearance process must be carried out. Moreover it is a mandate of the university after the student's completion of the final examinations to do these processes provided that the student did not carry some modules on the previous levels. The system was developed after comprehensively analysed some problems that were experienced during clearance process. The system was developed because it proved to have the ability of alleviating the pressure on the clearance in the event that vast number of students wants to be cleared within a short period of time. The system is an equalizing agent as both the student and the university management since the can have access to it. More so, with the new system, there is ubiquity that is the student or even the staff don't have to worry about moving from one point to another to conduct the clearance process. Finally, the system offers some

sophisticated search functionalities to search for one student's information from more than a thousand registered students in a system.

### 1.2.1 ORGANISATIONAL STRUCTURE

Porter (1980) asserts the organisational structure as the system which is used to characterise the lines of authority within an organisation and this is shown in the diagrammatic representation below.



**Fig 1.1: Midlands State organisational structure**

### **1.2.2 VISION**

Porter (1980) characterised a vision as an optimistic description of what the organisation might want to achieve in the long run. “To be a unique, development-oriented, pace-setting and stakeholder-driven University that produces innovation, enterprising and internationally acclaimed graduates for the empowerment of the society and creation of wealth”.

### **1.2.3 MISSION**

Guided by its Vision, Midlands State University aims at being a leading internationally respected University which embraces diversity and community engagement whilst at the same time inspiring a spirit of life-long learning.

This would be achieved through commitment to:

- a results based culture of problem solving through quality and relevant research, teaching and training by means of flexible packaging, work related learning and strategic partnerships with the University’s stakeholders for the immediate and ultimate benefit of humanity;
- sustainable socio-economic transformation through promotion of managerial skills and generation, dissemination and application of knowledge,
- total human capital development in an environment of a caring institution;
- good corporate governance policies and practices which are underpinned and expressed through the values of honesty, integrity, accountability and transparency and internationalization of higher education.

### **1.3 RESEARCH PROBLEM**

A problem statement is a clear description of issues that need to be addressed Kendall and Kendall (2011). At Midlands State University, clearance process for graduating students has dependably been manual. It requires that the graduating students must be cleared in their various departments and information units among which are:

1. Admissions to collect the Transcript Request Form
2. University Librarian Clearance
3. Students Affairs Clearance
4. Departmental Clearance

Apparently we are presently in an innovation era where technology and science is connected to practically every part of life to enhance work in an efficiency and effective manner.

As a result implementing an automated systems that will complement and replace all manual process within the institution is a way to go. The research problems identified are as follows:

- Information integrity if not completely ensured as there is high danger of information to unapproved individuals that can unlawfully manipulate data thereby causing information inconsistencies in the database.
- Provided that the personnel in charge is absent of the clearance processes, the entire process is deferred until such a staff is available.
- It is time consuming in that too much time is squandered before a student successfully finishes the clearance process.
- Unlawful clearance process by fraudulent personnel causing insecurity.
- Only predetermined number of students are attended a day, subsequently unattended student should return the following day until they are attended. Considering the case that the graduating students are over one thousand, the manual system will work but it takes ages.

#### **1.4 AIM**

The point is to come up with MSU Online Clearance System for graduating students which will save user information, facilitate the manipulation of information in unprecedented rate, provision of concurrent access to information ( access to many user simultaneously) to authorise users, and also ensure the integrity and accuracy of the information system stored by the authorised users. The proposed system will compliment and help to ease the students from queuing to have them cleared by the university.

## **1.5 OBJECTIVES**

An objective is a particular outcome that a system or an organisation is intended to accomplish in the future Stimpson (2013).

1. To develop a platform that facilitate information exchange between the clearance information units (the Library, Student Accounts and Departmental) and the graduating student.
2. To develop a system that allows the graduating student to fill the transcript request form online.
3. To develop a system that allows the student to send issue requests on the academic fixed information.
4. To develop a system that enables the student to check the clearance status online.
5. To develop a system that allows the clearance sections to flight requirements as well as sending messages to the student.
6. To develop a system that enables the student to track the progress of the clearance process.
7. To develop a system that provides the statistical analysis on all the system modules.

## **1.6 INSTRUMENTS AND METHODS**

According to Welling (2001), instruments and methods are seen as the means of rectifying a particular problem. These instruments involves-:

- **DREAMWEAVER**

A Dreamweaver is a computer software program which is used for the development of the web-based systems Welling (2001). It assists in designing intuitive and responsive web systems despite the resolutions.

- **PHP**

PHP is a powerful computer programming language which is designed in distinction from other programming languages to assists in the development of highly featured web-based systems Welling (2001).



## **MYSQL 5.0**

According to Welling (2001), MYSQL is a relational database which is used in conjunction with PHP in the development of the web-based systems.

- **APACHE**

Apache is a tool which is found under XAMPP and it is used as a go between the server and the application system Welling (2001).

### **1.6.2 METHODS**

A qualitative research was done so as to meet the objectives of this dissertation. Qualitative research is more appropriate for small samples even though outcomes are quantifiable as well as measurable. The basic advantage of conducting this research over quantitative research is that of offering a comprehensively complete analysis as well as description of a particular research subject without reducing the participant's response. On the other hand, the effective of qualitative research is based on the abilities of the researcher since they come from the personal interpretations as well as the judgments of the researcher. Regarding the purpose of this research some comprehensive interviews were conducted. Comprehensive interviews are defined as the unstructured interviews which aims to uniquely identify the opinions, emotions as well as the feelings of the interviewees. Personal interviews involves direct as well as personal contact between the interviewees as well as the interviewers. The sample selections were conducted to those who had special relationship with the process under investigation.

### **1.7 JUSTIFICATION**

The Online Clearance system will help in a favourable number of ways in reducing the queuing as the proposed system will assist student to achieve anything they desires to accomplish without physically coming to several units for clearance provided that they are using internet able access devices or gadgets.

Internet information processing have a clear advantage of higher yields in comparison to the traditional manual system. The proposed system enables students to check their clearance status as if they are indebted to the institute, fill, request corrections on either the academic results or student profile fixed data and submit the form to obtain the clearance letter. Some of the advantages of automating the clearance processes are listed below.

1. Vast number of students are cleared within a short period of time.
2. Information security is enforced.
3. The proposed system has the capability to automatically update various number of files thus relieving the university personnel the cognitive energy of working from one file to another.
4. Ubiquity that is one can use the system anywhere in the world and at any time of the day.
5. The information is processed at unprecedented rates thus delays are eradicated.
6. It is cheap for both the student and university management.
7. It is an equalizing agent to both the student and the university management as they can have access to it.
8. It helps the university in reducing costs such as stationary and labour.

## **1.8 CONCLUSION**

The problem statement discussed has reviewed that some of the issues that should be tended to and henceforth the online clearance system will complement and work hand in hand with the current system. Nevertheless, the online clearance system will offer greater opportunities in university management.

All transactions or payments with regards to student would be carried out online. The proposed system will be able to process data with great speed thereby removing the queuing-up of students at various clearance points.

## **CHAPTER TWO: PLANNING PHASE**

### **2.1 INTRODUCTION**

This stage seeks to show the reasons for developing the new system as well as determining the benefits or values that it would give to the institute. It analyses the feasibility study by evaluating operational, economic as well as technical factors that are concerned with the development cycle of the system. In addition to this, the planning phase considers the information gathering tools as well as pointing how the organizational entities or stakeholders will be affected by the proposed system. Henceforth, the project can only commence based on the results driven from this study. This stage will finally conclude with a work plan clearly showing all the necessary project activities that will be carried out during the system development.

### **2.2 BUSINESS VALUE**

According to Porter (1980), the business value is an informal term that takes into account all the kinds of benefits or the value that determine the health as well as the well-being of the organization in the long run. Midlands State University will enjoy a number of benefits due to the use of the online web based system. Alleviation of the time conducted until all the students are cleared as well as costs related to the process. The whole process will be streamlined thus ensuring the best practices. Ubiquity that is despite the fact that one is not at the institute, the platform will be available any time and at any place thus increasing efficiency and effectiveness. Complimenting with the manual operations will bring about change within the institute as all the student information will be managed in a single central database.

#### ➤ Customer value

- Customer value is characterised as the value or the benefits that customers get through the system usage, Cadle (2008).
- Geographical barriers are alleviated thus low costs in the sense that a student will no longer move from their homes to get cleared at Midlands State University.
- There is improved communication between the student and the staff.
- The student can be able to track the clearance progress even if they are at home.

➤ Managerial value

- Managerial value is characterised as the value or benefits that the management get through the system usage, Cadle (2008).
- They aid in decision making process; the system have capabilities of sending the data to Microsoft Excel. System reports can be manipulated using the advanced features of Ms Excel.
- Data can be retrieved from the database at anytime and anywhere as long as internet able access devices are used.
- Vast number of students are cleared within a short period of time thereby time saving.

➤ Stakeholder value

- According to Firth and Fung (2006), shareholder value is defined as the benefits whether in monetary or non-monetary acquired by a share for possessing shares within an organisation.
- Involvement of employees- the proposed system has incorporated MSU staff since they are the system entities who utilise the system day in day out. The major advantage being the alleviation of resistant to change.
- Secured information storage- the system was extremely secured and the access was strictly given to authorised users.

### **2.3 FEASIBILITY**

Feasibility study seeks to objectively and rationally bring out the weakness and the strength of an existing proposed venture as well as threats which are found in the present environment Castro (2002). The feasibility is used to determine as well as to document the project's viability hence the decision whether to do the project or not will be made. Regarding that, economic, social, technical as well as operational benefits will be assessed. This analyses will be used to determine the two options that is outsourcing or developing the system.

### 2.3.1 TECHNICAL FEASIBILITY

Technical feasibility focuses on comprehension of the current technical resources of the institute or organization that the new system will provide, Castro (2002). Under this, there will be a determination on whether the institute had enough technology such as hardware, software as well as the technical expertise for the development of the system. However the smooth operation of the new project is assured since the resources are available at Midlands State University. For example the computers with the processing speeds and all the specs that are need can be found at the market.

#### 2.3.1.1 SOFTWARE REQUIREMENTS

RESOURCE	SOFTWARE VERSION	AVAILABLE
DREAMWEAVER	8	YES
MYSQL	5.0	YES
WAMP SEVER		YES
APACHE	2	YES

**Table 2.1: Software requirements of the proposed system**

#### 2.3.1.2 HARDWARE REQUIREMENTS OF THE NEW SYSTEM

ITEM	QUANTITY	DESCRIPTION
LAPTOP	1	2 gb ram 2.40 ghz 500 gbdd
ROUTER	2	(cisco) 1900
SWITCH	2	5 pots
SERVER	1	8 gb ram, core I processor
HP LaserJet Printer P1305	1	
Client server	1	8 gb ram, core I processor
Network modem	1	GSM Dongle

**Table 2.2: Hardware requirements of the proposed system**

### 2.3.2 ECONOMIC FEASIBILITY

Gibson and Hughes (1994) postulates that economic feasibility is comparing as well as identifying the estimated cost against estimated value. The expected costs will be measured against the expected gains that is the cost based analysis. The system is only considered economically and worthwhile to be developed provided that the value outweighs the costs. If

the value of the new system is overwhelmed by the operating costs, the project will not be economically feasible.

### 2.3.2.1 COSTS

The costs are as follows:

- Developmental costs
- Operational costs

#### 2.3.2.1.1 DEVELOPMENTAL COSTS

According to Porter (1980), the total costs incurred by an organization from the commencement to the implementation of the project is known as the developmental costs.

<b>ITEM</b>	<b>2017 COSTS (\$)</b>	<b>2018 COSTS (\$)</b>	<b>2019 COSTS (\$)</b>	<b>TOTAL COST(\$)</b>
LAPTOP	400	700	900	2000
BACKUP SERVER	800	900	1000	2700
SYSTEM SOFTWARE	700	800	1200	2700
SWITCH	100	200	400	700
NETWORK MODEM	40	70	80	90
HP LASERJET PRINTER P1305	700	800	1200	2700
<b>TOTAL</b>	<b>2740</b>	<b>3470</b>	<b>4780</b>	<b>10990</b>

**Table 2.3: Developmental costs**

#### 2.3.2.1.2 OPERATIONAL COSTS

Porter (1980) defined operational expenses as the expenses that the organization incur during its operations. They constitute the system maintenance, user training as well as all other operational related costs.

<b>ITEM</b>	<b>2017 COSTS (\$)</b>	<b>2018 COSTS (\$)</b>	<b>2019 COSTS (\$)</b>	<b>Total COSTS (\$)</b>
User training	800	900	1200	<b>2900</b>
System Maintenance	700	900	1300	<b>2900</b>
Software Licensing	1000	800	700	<b>2500</b>
Stationary	250	200	100	<b>550</b>
<b>TOTAL COSTS</b>	<b>2750</b>	<b>2800</b>	<b>3300</b>	<b>8850</b>

**Table 2.4: Operational costs**

### **2.3.2.2 BENEFITS**

Castro (2002) defined benefits as the long term achievements being derived from the system usage. There are two types of benefits such as those are complex to quantify that is indirect benefits and those are easy to quantify that is direct benefits. They can be classified into:

- Tangible benefits
- Intangible benefits

#### **TANGIBLE BENEFITS**

The direct benefits are those that are tangible as well as easy to quantify. According to Castro (2002) tangible benefits can be measured in terms of the annual savings or the returns for example the savings from the old system which is no longer used.

<b>BENEFITS</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>TOTAL</b>
Goodwill	250	340	410	1000
Error reduction	420	430	490	1340
Stationary reduction	200	230	320	750
Time saving	150	250	330	730
<b>TOTAL TANGIBLE</b>	<b>1020</b>	<b>1200</b>	<b>1520</b>	<b>3820</b>

**Table 2.5: Tangible benefits**

## INTANGIBLE BENEFITS

Intangible benefits are those that are more complex to quantify such as employees moral as well as more informed decision making. They can include:

- Increase in efficiency and performance
- Increase in employee performance

### 2.3.2.3 COST BENEFIT ANALYSIS

Randall (1996) defined cost benefit analysis as a measure that compares the benefits of the proposed system against the costs of development. There are three ways in which they can be used in calculating the returns of the new system such as net present value, pay back analysis as well as return on investment.

#### Cost benefit analysis table

<b>BENEFITS</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>Total</b>
<b>Total tangible benefits</b>	1 010	1 300	1 400	3 710
<b>Total intangible benefits</b>	5 235	6 450	7 450	19 135
<b>Total benefits</b>	<b>6 245</b>	<b>7 750</b>	<b>8 850</b>	<b>22 840</b>
<b>COSTS</b>				
<b>Developmental</b>	2 740	3 470	4 780	10 990
<b>Operational</b>	2 750	2 800	3 300	8 850
<b>Total</b>	<b>(5 490)</b>	<b>(6 270)</b>	<b>(8 080)</b>	<b>(19 840)</b>
<b>Net benefit / loss</b>	<b>755</b>	<b>1 480</b>	<b>770</b>	<b>3 000</b>

**Table 2.6: Cost benefit analysis table**

### 2.3.2.4 RETURN ON INVESTMENT

The benefits to the investors as a result from the investments of some resources is known as the return on investment. ROI helps in determining the feasibility of the project.



$$\text{ROI} = \{(\text{total benefits} - \text{total costs}) / \text{total costs}\} * 100$$

$$\text{Total benefits} = \{(6\ 245 - 5\ 490) / 5\ 490\} * 100\%$$

$$= (755 / 5\ 490) * 100\%$$

$$= 50\%$$

After the calculation of ROI it is clear that the development of the proposed system is less risky since the initial investment could be covered at unprecedented rate.

### 2.3.2.5 PAY BACK PERIOD

The time consumed to pay back the initial amount invested in a project is known as the pay back, Randall (1996). In order to calculate the payback, net cash inflows of the new project will be estimated and compared against the cash outflows including the amount invested initially. As a result the short payback would be considered first. This method uses the cash projects instead of the profits or returns after the accounting and it is simple.

YEAR	CASH INFLOW	BALANCE
0	(3 000)	3 000
1	1 500	1 500
2	1 000	500
3	500	-

**Table 2.7: Payback period calculation**

Payback (years) = (cumulative investment \* number of years) / cumulative cash inflow

$$(3\ 000 * 3) / 3\ 000 = 3 \text{ years}$$

From the calculations, the project takes short period to regroup the initial amount invested and this shows that it is economically feasible.

### 2.3.2.6 NET PRESENT VALUE

Randall (1996) defined net present value as the summation of the present values of outgoing and incoming cash flows over a period of time. In that light, the investment will acquire the rate of return if the present values is zero. If greater positive NPV, the project is more profitable.

Years	Cash inflow	Balance
0	(3000)	3000
1	2000	3000
2	2000	1000
3	1000	

**Table 2.8: Cash inflows and related balances**

$$NPV = \{1 / (1 + r)^n\} * \text{Cash Flow}$$

Where n = number of years

r = rate of discount = 10%

YEAR	DISCOUNT FACTOR	CASH FLOW	PRESENT VALUE \$
0	1	(3 000)	(3 000)
1	0.9980	2 000	1 996.3
2	0.8343	2 000	1 668.5
3	0.8215	1 000	821.9
NPV			1 544

**Table 2.9: Calculated figures of net present value**

After the calculation, the results reviewed that the project was economically feasible as the present value exceeds zero hence investment.

### 2.3.3 SOCIAL FEASIBILITY

Castro (2002) defined social feasibility as the interactions of various entities within the system environment. Under this study, some evaluations of the project alternatives are conducted on the aspects of the general culture and societal ethics. For example the factors that affect the environment needed to be carefully known and weighed. At Midlands State University they depend excessively on the system so the proposed system must provide at least no wrong as well as obsolete information.

Considering the staff or personnel in charge, the proposed system will provide more information about the student profile and more information about the clearance process. The

results of this study showed that the development of the project is feasible socially as well as worthy to continue to the analyses phase.

#### **2.3.4 OPERATIONAL FEASIBILITY**

Castrol (2002) defined operational feasibility as a measure of how good the system in finding the solution of the problems effectively as well as to take advantage of the opportunities and satisfying the requirements of the system under development. As a result, the analyses will assist with the knowledge of whether the proposed system would rectify problems as well as taking advantage of the opportunities. It is vital to comprehend how the proposed system will fit into the daily operations of the institute. It is not always important to evaluate whether the system can work instead the evaluations should be on how the system will work. It investigations reviewed that the manual system was not working as expected as seen by some forms that get lost.

#### **2.4 RISK ANALYSIS**

Porter (1980) defined the risk analysis phase as the assessment of the risk that might occur as the project development is going. In addition to this, it referred to the uncertainty of the predicted future cash flows as well as the statistical analysis in order to determine the probability of the project success or failure. This stage is very important as it alleviate the closer risks as well as the probability of their occurrence.

<b>RISKS</b>	<b>MEASURE</b>
Technical risks	User training to familiarize them
Costs risks	Take into consideration the environmental and organizational factors such as political, social, technical and economic
Operational risks(the end-users as well as their missions)	Stakeholders must not be excluded during the risk identification process.
Information security during the development	Clearly write the risks statement using IF condition statement.

**Table 2.10: Risks versus measures**

## **2.5 STAKEHOLDER ANALYSIS**

Porter (1980) defined stakeholder analysis as the process of assessing the decision's impact on relevant parties. The information from the stakeholder analysis was used to assess how the interests of those stakeholders should be addressed in a software project. Stakeholder analysis is the process which is frequently used during the preparation phase of a software project in order to assess the attitudes of the stakeholders regarding the potential change. Stakeholder analyses in this project was done once to track the changes in stakeholder attitudes over time. This process brought some advantages on the software development such as:

- ❖ Information about the stakeholder's interests.
- ❖ Mechanisms to influence other stakeholders
- ❖ Potential risks
- ❖ Key people to be informed about the project
- ❖ Negative stakeholders as well as their adverse effects on the software project.

## **2.6 WORK PLAN**

According to Porter (1980), work plan is defined as a document that is used by the consulting organisations to schedule a project and its activities. It is normally used to define the timeframes between the start of the project and its ending. In addition to this, it is used to show or determine the resources that might be needed until the project is done. In order to come up with the dates of each and every process or phase, the work plan, the Gantt chart and the schedule table will be used.

### 2.6.1 SCHEDULE TABLE

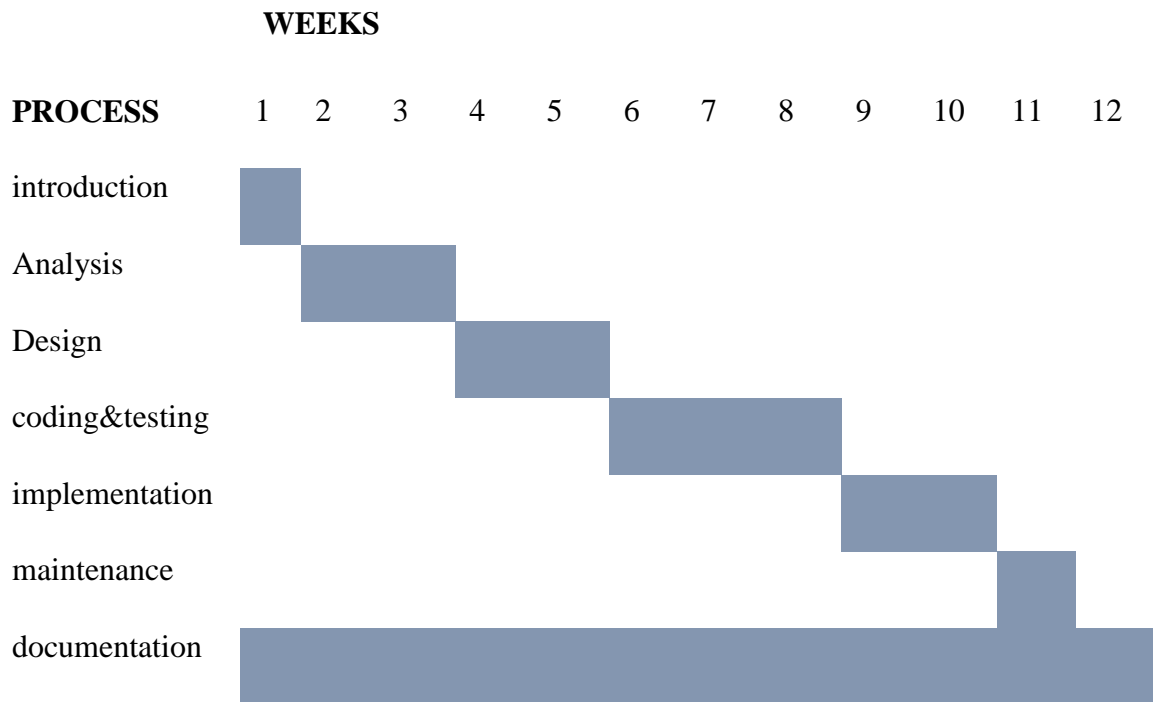
According to Castrol (2002) schedule table is defined as the list of the events logically organized in accordance to the time will they take place.

<b>PHASE</b>	<b>START</b>	<b>END</b>	<b>DURATION (weeks)</b>
Introduction	14/04/2017	28/04/2017	2
Analyses	01/05/2017	14/05/2017	2
Design	18/05/2017	30/05/2017	2
Coding and testing	01/06/2017	22/06/2017	3
Implementation	01/07/2017	14/07/2017	2
Maintenance	01/08/2017	14/08/2017	1
Documentation	01/09/2017	01/10/2017	13

**Table 2.11: Schedule table**

### 2.6.2 GANTT CHART

A project schedule is graphically represented by a Gantt chart. It measures the commencement as well as the finishing date of the project thus assisting the project manager in planning.



**Fig 2.12: Gantt chart**

## 2.7 CONCLUSION

After analysing the feasibility of MSU Online Clearance System for Graduating student is has been realized that coming up with the new system will derive a number of benefits to the institute since all the loop holes are to be alleviated. The systems requirement proved to be feasible and to this it was figured worthwhile for Midlands State University. In conclusion it is necessary to proceed to the analysis phase the system under development.



## **CHAPTER 3: ANALYSIS PHASE**

### **3.1 INTRODUCTION**

The analysis stage will give a comprehensive understanding of how the current system is performing through the current process's strength and weaknesses. It will take into consideration the methodologies for the information gathering as well as the analysis of the current system. More so, it will review how the presently revealing system is working as well as its related shortcomings. For a better comprehension, the data flow diagrams will be considered in the data analysis clearly illustrating the flow of data from one phenomenon to another. Furthermore, the analysis phase will give an in depth overview of the presently revealing system's weaknesses. Finally, the evaluation of the alternatives will be conducted in order to decide whether to improvise, complement, develop the system or outsource the system.

### **3.2 INFORMATION GATHERING METHODOLOGIES**

According to Hamdy (2004), information gathering methodologies are used to collect the information of the presently prevailing system with a particular organisation in order to evaluating its shortcomings and weaknesses. The main objective was to gather as much information as possible from all the entities (all the clearance information unit entities and the students) in order to thoroughly evaluate the advantages and disadvantages for each. During the process of the information gathering, several methods can be considered such as observations, interviews, questioners as well as the records review. However for this project research the following data gathering methodologies were used:

- Interviews
- Observations
- Questioners

#### **3.2.1 INTERVIEWS**

According to Hamdy (2004), an interview is defined as a question and answer session between two or more people in order to gather the facts of interests for a particular domain. The major advantage of interviews is that the first-hand information as well as the in depth information is acquired from a pool of interviewees and it enables the instant evaluation through the face to correspondence. The following are the types of the interviews:



- Structured
- Unstructured
- An initial interview
- Facts gathering interview
- Final interview

### **3.2.1.1 STRUCTURED INTERVIEW**

According to Kendall and Kendal (2003), a structured interview is sometimes called a standardised interview, a qualitative method of research used in survey research. Data was collected by the interviewer rather than the use of self-administered questionnaires. The output of this research was the reliable aggregated answers and comparisons were made with confidence between sample subgroups. The order of the interview questions were standardised in that the questions were answered within the same context where the answers which were provided to a survey question depended on the nature of preceding questions.

### **3.2.1.2 UNSTRUCTURED INTERVIEW**

According to Kendall and Kendal (2003), unstructured interviews are sometimes called discovery interviews or informal interviews. They are more like guided conversation as compared to a strict structured interview. The interview questions were asked in any order thus open-ended interview questions. Some of the questions were missed as well as added during the progression of the interview. The methods in which the student used under unstructured interview is:

### **3.2.1.3 AN INITIAL INTERVIEW**

An initial interview shows the shortcoming that the proposed system was to resolve as well as the problems in existing system. However, this clearly reviews the comprehensive understanding of the targeted goals.

### **3.2.1.4 FACTS GATHERING INTERVIEW**

The facts gathering interview was intended to gather detailed data about the system as well as the information that helped in developing the requirements draft document.

#### **a) ADVANTAGES**

- They assisted with the instant response as well as the opportunities to explain and the questions clarifications.
- They assisted with the ability to deduce the answers upon taking a closer look to the interviewee's reactions.
- They assisted with the instant feedback as well as the thoroughly investigations on the interviewee's side.
- The interviews were very flexible since they were conducted anytime and at any place.

#### **b) DISADVANTAGES**

- The targeted interviewee's response were not that good since they had the fair of the unknown.
- The process consumed some amount of time and to this some of the targeted interviewee's were not interviewed.
- It was difficult to analyse data since a lot of data was gathered in a short period of time.

### **3.2.1.5 FINDINGS FROM INTERVIEWS**

After the completion of the interviews, all the interviewee's responses were comprehensively assessed. The researcher managed to gather the expectations of the graduating student since they were making their suggestions. The clearance staff facing some challenges during retrieval of documents as well as the time they spent working on one student. From the interview it was considered worthwhile to proceed with the development of the anticipated system.

### **3.2.2 OBSERVATIONS**

Denis (2002) defined the observations as the technique used by the system analyst in order to give a closer look on how the workers conducted their day to day operations within the system environment. More so, the observations are used as the information gathering tools that gathers information about a particular event. Two types of observations can be used by the analyst such as:

- Direct observations
- Indirect observations

### **3. 2.2.1 DIRECT OBSERVATION**

Direct observations is often called the observational study which is used by system analyst to closely monitor the performance of the workers within the working environment without the disturbances so as to come up with the evaluated information. During the process of direct observations, the system analyst was next to the users as the user was doing the work and this gave the room for the analyst to ask questions instantly. However the system users were not comfortable since the analyst were next to their shoulders.

### **3.2.2.2 INDIRECT OBSERVATIONS**

The indirect observations mainly focuses on capturing videos, pictures, recordings as well as reading maps (Denies, 2002). While doing such, the analysts makes us of the video correspondences such as the CC TVs as well as the video cameras to monitor the performance of the workers. With this method, the users were very comfortable but the setup of such gadgets were expensive. The advantages and disadvantages of the observations were as follows:

#### **a. ADVANTAGES**

- Only few materials were used.
- The first-hand information was gathered.
- There were no disturbances with the indirect observations.
- They were less biased data with the direct observations.

#### **b. DISADVANTAGES**

- They were biased information because some of the workers figured that their performance was watched.
- Some behaviours or performance were difficult to observe.

### **3.2.2.3 FINDINGS FROM OBSERVATIONS**

The observations proved to be very vital since the researcher managed to closely monitor the performance of each and every staff within the working environment. The probability acquiring some fake answers were alleviated. This enabled the researcher to have the knowhow of what was needed on the actual ground. It was considered worthwhile to proceed with the system development.

### **3.2.3 QUESTIONNAIRES**

Kendall and Kendal (2003) defined the questionnaires as the set of questions printed on a document which are directed to the users of the system and later returned to the system analyst. These questionnaires were given to all the target users at the Midlands State University. They were presented so as to identify the drawbacks of the current system at the same time stating the recommendations for the proposed system. The following were the advantages and disadvantages of the questionnaires:

#### **Open ended questions**

Open ended questions have no prepared response choices which enables and empower the interviewee to shift the direction of the interview and to bring in unanticipated information.

#### **Closed ended questions**

Open ended questions have no prepared response choices which enables and empower the interviewee to shift the direction of the interview and to bring in unanticipated information. Whereas closed ended questions require only that the interviewer read the question and marks the appropriate answer, “open ended questions can require the interview to transcribe a lengthy statement”. It can require a skillful interviewer to bring a talkative respondent back on topic. However, these open ended questions give the ability for the respondent to reply about a topic which neither the interviewee nor the interviewer may have thought about before. Some evidence shows that using open ended questions in interviews “result in greater reporting of sensitive or socially disapproved behavior than when closed-ended questions on a self-reporting questionnaire are used”. Although open-ended questions can be used in both quantitative and qualitative studies, they are much more prominent and favored in qualitative work as they produce information from the respondents with greater detail and depth.

#### **a) ADVANTAGES**

- It was very easy to conduct as many people as possible with the use of questionnaires.
- It was very easy to conduct the closed ended questions.
- Abundant amount of data was acquired in no time and with the little effort.
- The evaluations were very easy since the responses were fixed.
- The questionnaires gave the workers the room to freely ask questions.

#### **b) DISADVANTAGES**

- The process of coming up with the effective questionnaires consumed more time and it was difficult as well.
- Not all the answered questionnaires were returned from the users.
- Sometimes the questionnaires were inflexible for the data capturing.

#### **3.2.3.1 FINDINGS FROM QUESTIONNAIRES**

The researcher managed to collect responses from many student thus abundant amount of data was acquired in no time and with the little effort. It was very easy to make some evaluations since the responses were fixed. In addition, the staff were able to ask free questions. Questionnaires gave the researcher more knowledge of what was needed to increase the efficiency of the system.

#### **3.3 ANALYSIS OF THE EXISTING SYSTEM**

Apparently, Midlands State University is using a semi-manual clearance system for the graduating students since some of the processes are conducted using the computers and printers while others are done manually. The process commences when the student seek for the transcript request form from the student admissions. The form allows the student to fill the student academic information. The student have to cleared by the student accounts department checking if the student have fully paid the fees as well as all other monetary accountabilities. Afterwards the university library department will check if the student is owing the library or not. Provided that the two consecutive processes are done, the academic department will then approve the student. More so, the system allows the student to request for the academic profile corrections in the event that the results contains some errors. After that, the student has to confirm for the changes or additions by signing on the transcript request form. Upon the completion of all the necessary processes, the form is returned back waiting to be cleared by the Ministry of Higher and Tertiary Education. Considering all these processes, the students flood at various clearance units waiting to be cleared. Also the process is time consuming in that too much time is squandered before a student successfully finishes the clearance process. Finally, provided that the personnel in charge is absent of the clearance processes, the entire process is deferred until such a staff is available. Once the request transcript form is signed, it signifies that the graduating student has been cleared. Sometimes the process takes some days to be completed resulting to too much stress to both the student

and the staff involved. Apparently with the manual operation, a search process is undertaken on the file cabinet in order to locate a particular clearance document or form. However the current system can be analysed by its inputs, processes as well as outputs.

### **3.3.1 INPUTS**

The input data comes from various entities such as the student, departments as well as the administrator after which they have gathered it from the external system environment that it interacts with. These inputs are:

- Student details – for example Reg Number, Full names and Program.
- Clearance requirements
- Physical address
- Student Academic information
- Department approvals

### **3.3.2 PROCESSES**

The processes include:

- Collecting Transcript Request Form
- Clearance by various departments
- Looking up for available requirements by departments
- Updating the students

### **3.3.2 OUTPUTS**

- Completed Transcript Request Form
- Reports on the number of student cleared

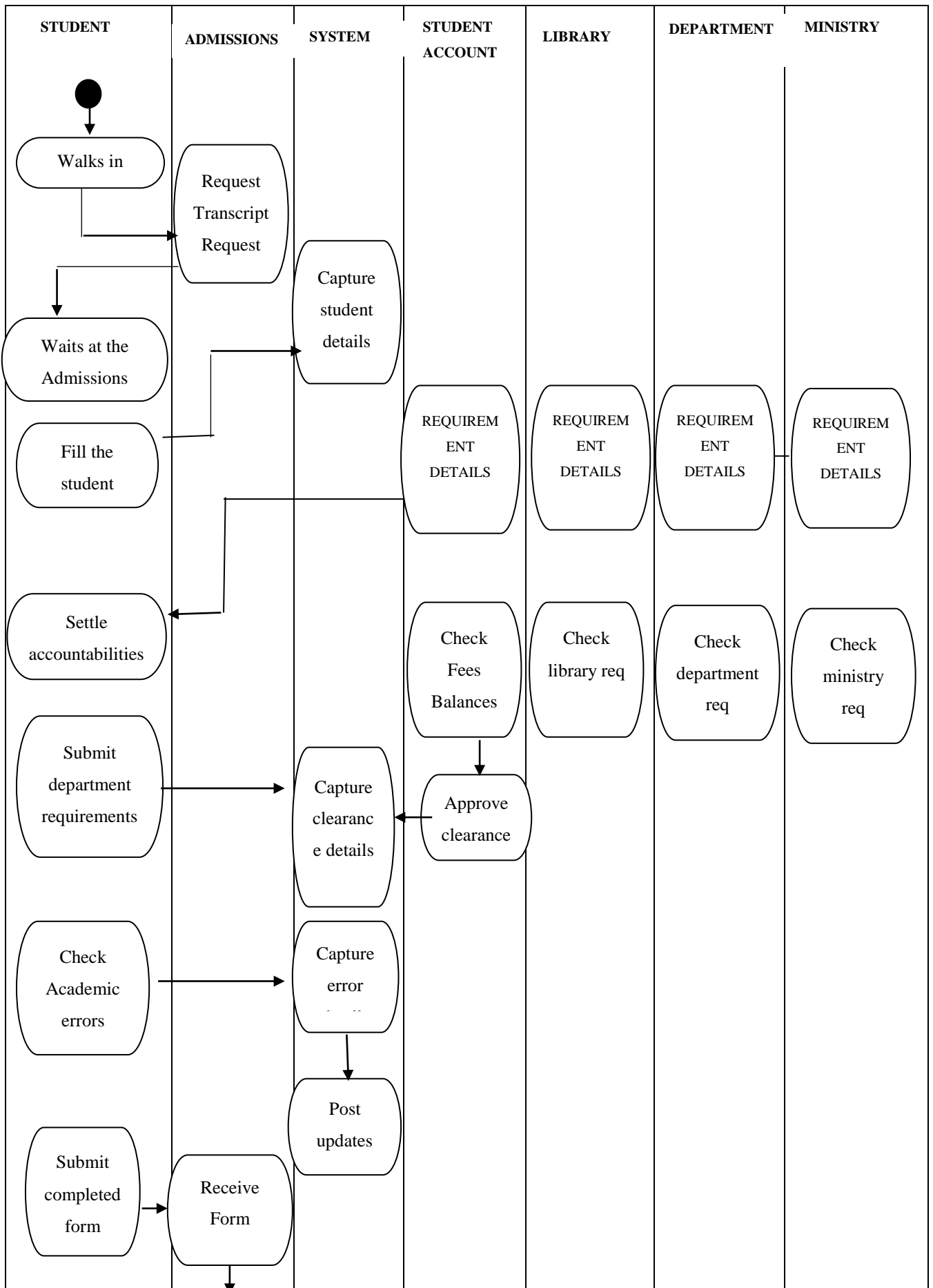
## **3.4 PROCESS ANALYSIS**

Process analysis is undertaken in order to show the activities that take place in the system. It clearly illustrate the sequential order in which the activities take place as well to show who does which activity.

### **3.4.1 ADVANTAGES OF THE PROCESS MODELLING**

- There is little technical know-how needed.

- It is a tool which facilitate communication between the system analysts as well as the users.
- It is very easy to assimilate as well as to comprehend.
- It clearly illustrate the sequential operations of the system.



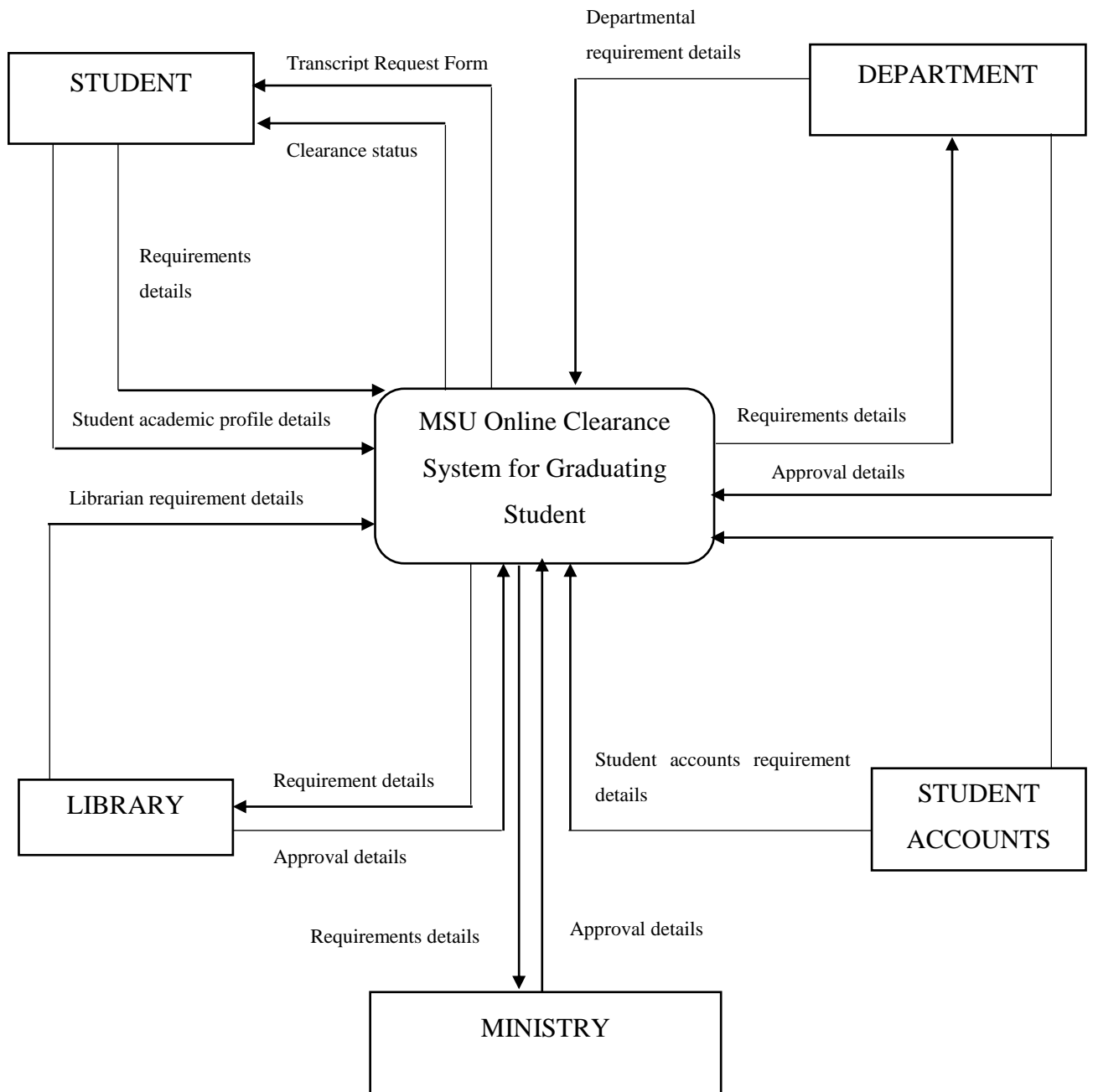


### **3.5 DATA ANALYSIS**

Godfrey (1999) defined data analysis as the technique that assists in describing the facts, testing for the hypothesis as well as providing the explanations. The process of data analysis was conducted to clearly show the significant of information through data modelling, altering as well as the examinations. The dataflow diagram as well as the context diagrams were used to illustrate the inputs, processes as well as the outputs of the currently prevailing system.

#### **3.5.1 CONTEXT DIAGRAM**

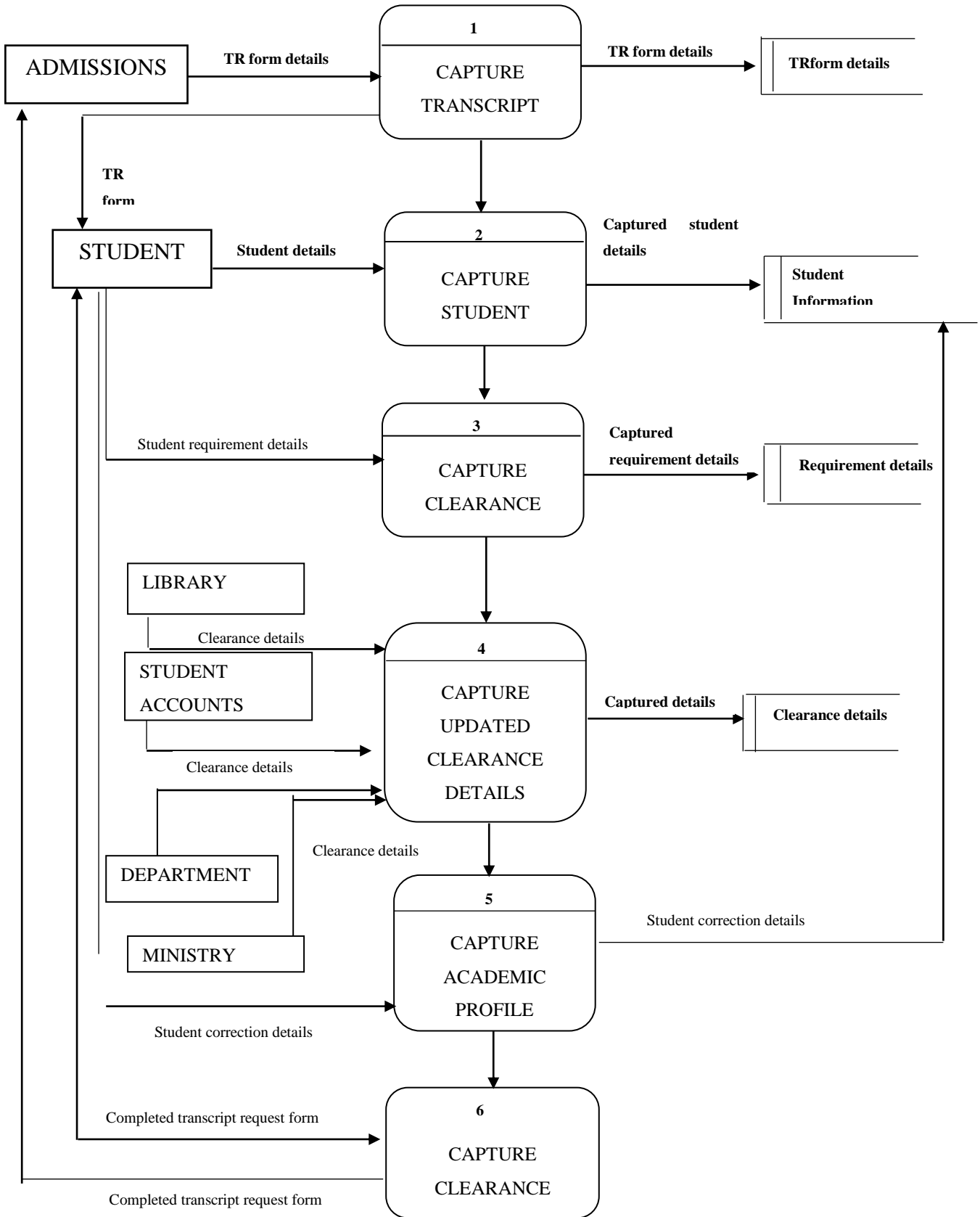
Kendall and Kendal (2003) defined the context diagram as the diagram that clearly shows the system environment as well as the relationships that exists among various targeted entities (both internal and external). The context diagram shows the data flows with their associate annotations. It takes into account the components such as the data flow, processes as well as the external entities.



**Fig 3.2 Context diagram**

### **3.5.2 DATA FLOW DIAGRAM FOR THE CURRENT SYSTEM**

Denis (2012) ascertains that a data flow diagram is a diagram that visually represents the data flow through an information systems while modelling its process aspects.



**Fig 3.3 Data flow diagrams**

### **3.6 THE WEAKNESS OF THE CURRENT SYSTEM**

The use of the current system at Midlands State University was productive but it possess some weaknesses that reduces its productivity somehow. The problem of information integrity as there is high danger of information to unapproved individuals that can unlawfully manipulate data thereby causing information inconsistencies in the database. Provided that the personnel in charge of the clearance processes is absent, the entire process is deferred until such a staff is available. Furthermore, it is time consuming in that too much time is squandered before a student successfully finishes the clearance process. More so unlawful clearance process by fraudulent personnel causing insecurity. Finally, only predetermined number of students are attended a day, subsequently unattended student should return the following day until they are attended. Considering the case that the graduating students are over one thousand, the manual system will work but it takes ages.

### **3.7 EVALUATE ALTERNATIVES**

Under the evaluation of alternatives, the choices were evaluated which proved to be helpful in eradicating the shortcomings that the existing system is giving. The four basic as well as the fundamental alternatives in the development of the proposed system were as follows:

- Off-shelf
- Outsourcing
- In house development
- Improvement

#### **3.7.1 IN HOUSE DEVELOPMENT**

According to Munn (1990), in-house development is defined as the use of the organisational resources to come up with the system from scratch. In house development encourages the commitment of the project manager to schedule the project activities as well as managing the software project itself, the software developers or the programmers to write code and the systems administrators. It assists in the analysis of figuring the new methodologies as well as a way of coming up with the business problem solutions. The advantages and disadvantages of the in house development are as follows:

## **ADVANTAGES**

- If the organisation possess the highly skilled team members, in-house development tends to be cheaper.
- There is total ownership of the software with the in-house development.
- The risk of failure from the end users is alleviated since there is high rate user involvement.
- The system costs will adhere to the budget set aside by the project manager since there will be the negotiation of the costs of various project activities.

## **DISADVANTAGES**

- A lot of effort is required from the project team members.
- Too much stress on the project manager in the event that the activities does not tally with the available resources.
- A lot of time is sometimes consumed.
- Conflicts from the project team might arise thereby causing the software project failure.
- It requires highly skilled team members for effective software project.

### **3.7.2 OUTSOURCING**

Outsourcing is defined as the process of contracting out of an organisation's functions or activities to a third part or an external service provider. Also it is a scenario whereby the organisation opt to buy than to develop in-house, Denies (2012). There are different types of outsourcing that the organisation might consider to adopt such as the total outsourcing (where by all the software activities are conducted by the third part), selective outsourcing (where by some of the activities are selected to be conducted by the third part) as well as the defacto outsourcing. The following are the advantages as well as the disadvantages of outsourcing the software project:

## **ADVANTAGES**

- There is direct access to specialists.
- There is improved software focus.
- There is subcontracting of work load.
- There is better risk management.

- It consumes less time.
- The organisation will be provided with the skills that it does not possess
- The day in day out activities of the business operations will not be altered or disturbed since a lot of work will be contracted out.

### **DISADVANTAGES**

- Sometimes there is a loss of the organisational competence.
- Sometimes the software quality is alleviated.
- The organisation will be highly depended in the event of the software maintenance.
- There is less power over the software.
- It requires the project manager with the good communication skills to negotiate with the offshore vendors.
- Sometimes outsourced software projects are difficult to test.
- The chances of purchasing the poor quality software project are very high.
- The software project tends to be expensive at the end.
- There is high rate of the user training programs.

### **3.7.4 IMPROVEMENT**

Improvement is characterised as the process into which the currently prevailing system components are being closely comprehended as well as investigated in order to customise the system. Automation of the manual paper system to paperless system will be of great importance in order to alleviate the risks associated to files and more so, it gives enough room for improvements, advancements as well as upgrades. However there are advantages and disadvantages associated with improvements.

### **ADVANTAGES**

- It is very cheap to improve the existing system as compared to building the system from scratch.
- The system after which it is improved normally meets the requirements of the users and it is usually up to date.
- There is less risk during the process of implementation as well as using the system.
- Workload for the developers is reduced as well as time saving.

## DISADVANTAGES

- In most cases, operational costs will be incurred during the process of improving the system thus costly.
- Not all the problems are solved during the system improvement.
- Sometimes there might be perpetuation of the existing system problems in the long run.

### 3.7.5 ALTERNATIVE SELECTION

The analysis was conducted thoroughly and the outcome was to do the in-house development rather than outsourcing the software project. In addition to this, the decision was justified by the fact that all the proposed system requirements such as the funding as well as the technical expertise were found at the Midlands State University. The aim here was to develop the system that will adhere to the user specifications or requirements. However the worthiness of the in-house development was presented in the monetary value in the fig below.

Substitute	Costs (\$)
In house development	2 500
Outsourcing	3 200
Off-shelf development	2 850
Improvement	2 550

**Table 3.1 Alternative price preview**

### 3.8 REQUIREMENTS ANALYSIS

According to McConnell and Steve (2009), requirements analysis is sometimes called requirements engineering, it is defined as the phenomenon of determining the expectations of the users for modified or new system. However it must be relevant, detailed as well as quantifiable. The process is done by regularly conducting with the system operators so as to regulate exact features, customise at the same time adhering to the user requirements as well as considering all the project development aspects. This stage was undertaken in order to come up with the needed requirements aimed at the system. With regards to the above problems, the following aspects were put under consideration.

### **3.8.1 FUNCTIONAL REQUIREMENTS**

McConnell and Steve (2009), functional requirements are defined as those requirements which are related to the technical functionality of the system. They takes into account various system inputs, processes as well as outputs that the system should give. These are as follows:

#### **a) Data entry**

The system is obliged to allow the following with respect to the entry of data:

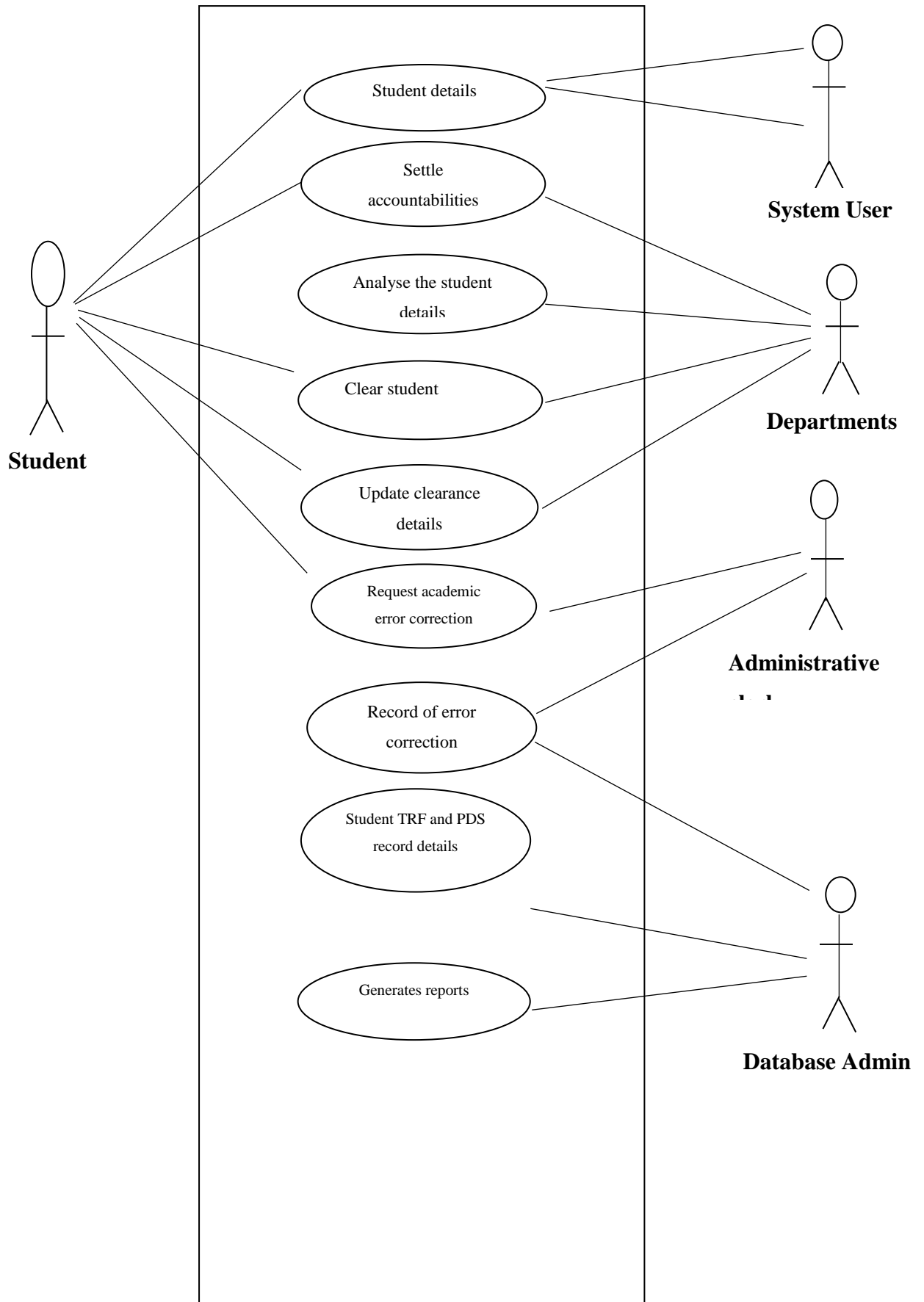
- Capture student details
- Data entry validation - this could be achieved with AJAX technology
- Verification for example student details
- System concurrency

#### **b) Reports**

Reports summarises the data in the database relations to produce vital information for decision making. As a result, the system should produce detailed reports at any point in time with the absence of errors. These reports should be complemented by Microsoft Excel. More so, the system should allow Graphical Presentations of Reports. Below are the standard reports that the system should produce.

- Students cleared in categories like campus name and department or faculty.
- List of students not cleared
- List of inactive students





**Fig 3.4 Use case diagram for the proposed system**

### 3.8.2 NON-FUNCTIONAL REQUIREMENTS

McConnell and Steve (2009), non-functional requirements is defined as the requirements that specifies criteria that can be used to judge the operations of the system in certain conditions rather than specific behaviours. They take into account how the system behaves in the working environment. There are as follows:

- System security should be emphasised to avoid unauthorised access through the use of strong passwords.
- The system should not require too much effort to use it and this could be achieved with good and intuitive interfaces.
- The system should enable the backup of the database regularly in the event of virus, data loss as well as natural disasters.

#### 3.8.2.1 CONSTRAINTS

As the development of the system progresses some constraints maybe encountered in different stages.

**a) Technical constraint**

Lack of knowledgeable staff to articulate some work on different project development modules

**b) Time constraint**

The amalgamation of modules needs time to be comprehended thus challenges to complete in the desired time.

**c) Response time**

It is defined as the time elapsed between submitting a transaction and receiving the response. Managing this might be a constraint.

**d) Transaction throughput**

It is defined as the average number of transactions produce per given time.

### **3.9 CONCLUSION**

The information from the analysis phase reviewed that it is the high time to automate the clearance system so as to improve the efficiency of the University as well as catering the shortcomings of the currently prevailing system. A proper as well as the comprehensive analysis was conducted through the use of various methodologies such as the observations, interviews as well as the questionnaires.

The proposed system tends to give many benefits to the institute and with regards to that it was found worthwhile to continue to the next level of the software development. The preceding level is the designing of the proposed software project.

## CHAPTER 4: DESIGN PHASE

### 4.1 INTRODUCTION

After comprehending how the currently prevailing system works or operates, it was considered worthwhile to venture into the system designing of the proposed system. This phase mainly focuses in coming up with the effective and efficient system that is easy to upgrade, maintain as well as easy to use. The design phase put much emphasis on how the proposed system is going to be articulated; development, configuration as well as deployment. It takes into account the system itself as well as its physical designing that is clearly illustrating how the hardware interacts with the software. Furthermore, it considers the database design (clearly showing all the relations, relationships as well as the structure of the database), the interface design (illustrating how the system will reflect to the real world environment), architectural of the system and the program design. The diagrammatic representation of the data flows, database designs and tables as well as the interface strategies were highly considered in this phase.

### 4.2 SYSTEM DESIGN

According to Cliff (1994), the system design is defined a way of describing the setup of the modules, structural planning, parts, information as well as the interfaces of the proposed system in order to adhere to the user requirements. The proposed system has to be in a state of being relayed upon, agent as well as kept up. With regards to this, a fully functional system must possess the following characteristics.

- **Dependability:** The users must relay to the system as it will be precise, alleviate the loss of data as well as articulating the problems brought forward by the current system.
- **Operability:** This means that the system must be easy to use, require less effort as well as the level of skills. The users must perceive the system as user friendly. In doing such, there is high rate of the end user involvement.
- **Reparability:** This means that the system be easy to repair, maintain as well as easy to upgrade. With regards to that, the system performance needs to be monitored.

#### **4.2.1 DESCRIPTION OF THE PROPOSED SYSTEM**

The motive behind developing the MSU Online Clearance System for graduating students is to facilitate information exchange between the clearance information units and the graduating student. This will overcome both the geographical or time barriers during the time when the student desires to conduct the process. The process commences when the graduating student authenticates to the web portal. The student has to fill the academic profile details on the transcript request form online. The graduate student will be able to track the movements of the process that is the Clearance Library, the Student Accounts as well as the Academic Department. Provided that the student owes the University, the description of the requirements will be sent to the respective student account. There is another option to request for the academic profile corrections online in the event of some errors but before the student click the send button, the student has to confirm for the changes. After completing all the necessary steps, the student has to wait to be cleared by the Ministry of Higher and Tertiary Education. Finally, the student will download that completed form that signifies the reflection of the student clearance. To conclude the student can either return the form to the Student Records and Registration Office physically or online. The system inputs, processes and outputs were as follows:

##### **Inputs:**

- The academic student details
- The student academic error corrections
- The Clearance Library Stamp
- The Student Accounts Stamp
- The Academic Department Stamp

##### **Processes:**

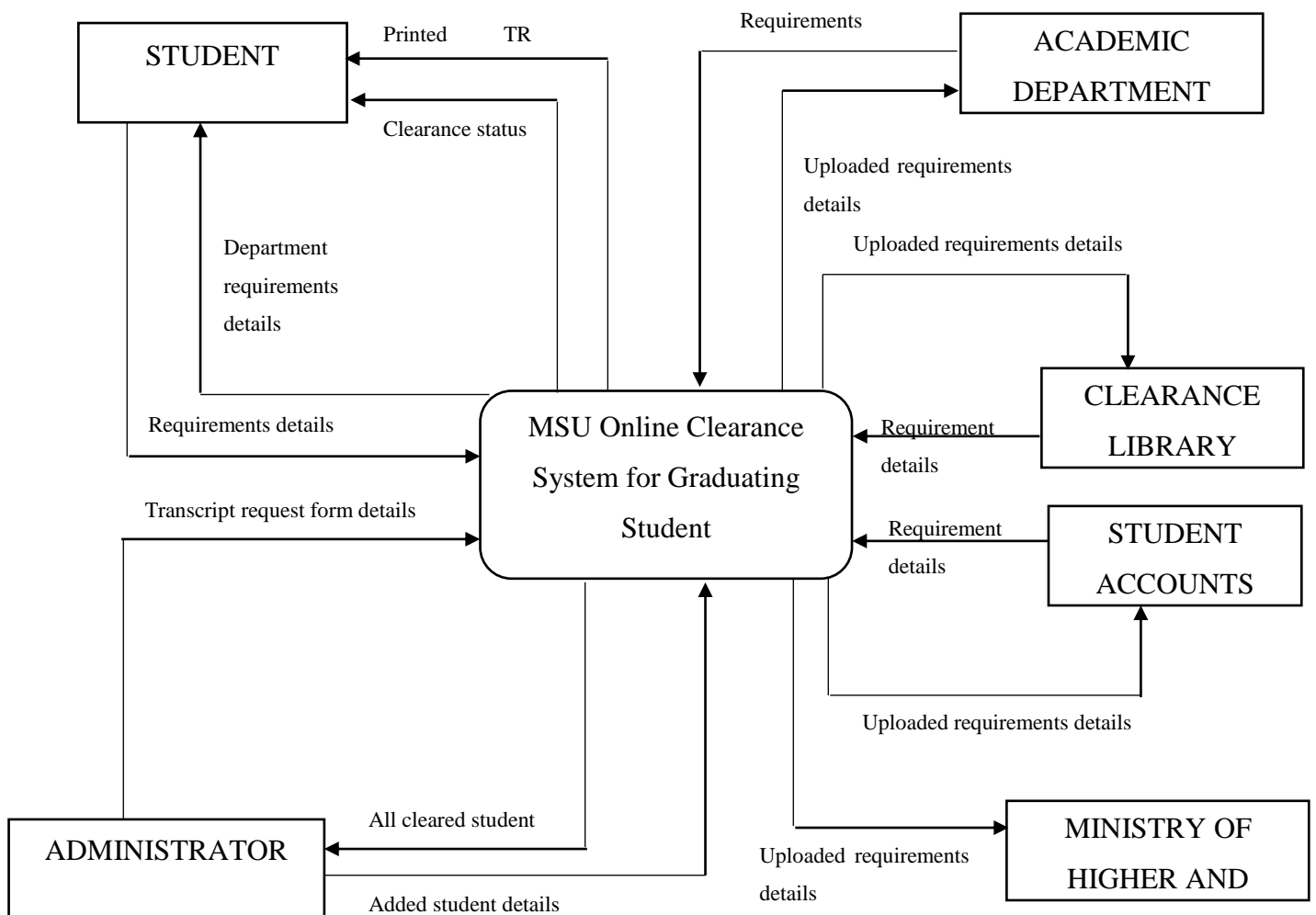
- Create the student accounts
- Generate the ID
- Upload the request transcript form
- Stamp generation from the clearance units
- Error correction
- Track the process
- Form filtering
- Database update

**Outputs:**

- The request transcript form
- The reports

**4.2.2 CONTEXT DIAGRAM**

Kendall and Kendal (2003) defined the context diagram as the diagram that clearly shows the system environment as well as the relationships that exists among various targeted entities (both internal and external). The context diagram shows the data flows with their associate annotations. It takes into account the components such as the data flow, processes as well as the external entities.



**Fig 4.1 context diagram**

### 4.2.3 DATA FLOW DIAGRAM

Denis (2012) ascertains that a data flow diagram is a diagram that visually Requirements flow through an information systems while modelling its process aspects.

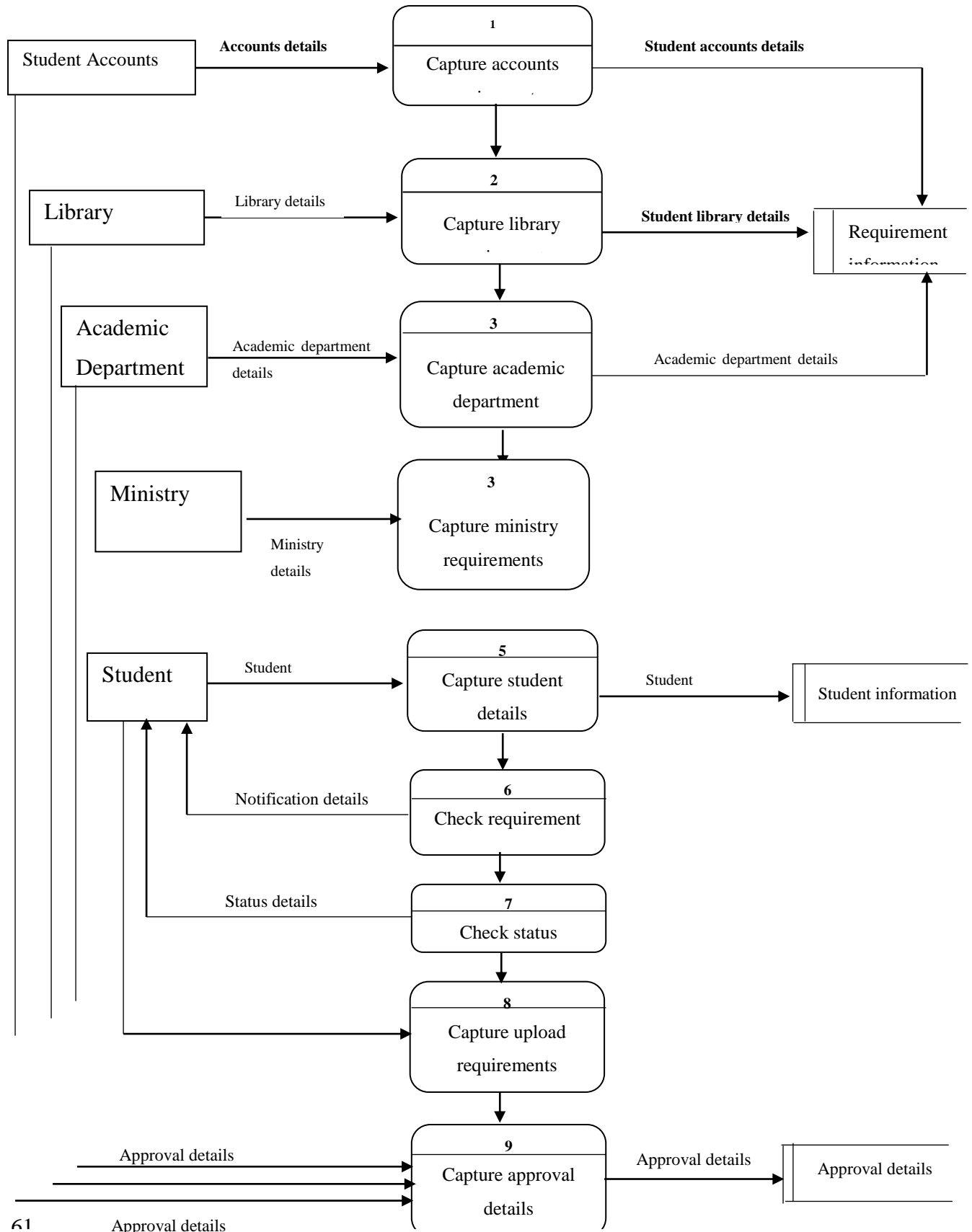


Fig 4.2 data flow diagrams

### 4.3 ARCHITECTURAL DESIGN

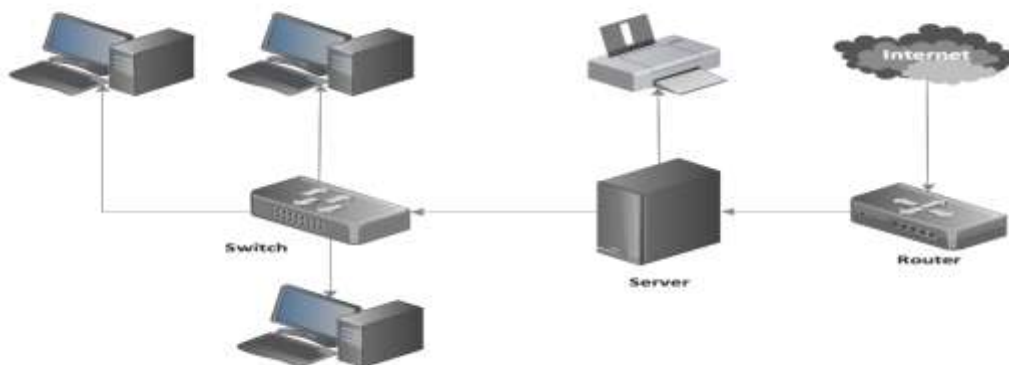
Kendal and Kendall (2005) defined the architectural design as a way that differentiates the basic components or the parts of the system and combines into a utilitarian sound system. It focuses on the hardware aspect of the proposed system. The major goal is to alleviate the shortcomings or the poor performance of the system during its day to operations. Also the hardware components will be therefore put under consideration with the affordable costs. For the development of the proposed system, the LAN was used. So as to emphasis the effectiveness, efficiency as well as the system reliability, some strict methods were used. The following were the architectural design:

#### 4.3.1 ETHERNET CABLES

Munn (1990) defines the Ethernet cables as the network cables that facilitates the data exchange between the internet able access device such as the computers, switches, printers and the routers.

#### 4.3.2 SERVER

A server is defined as the technology that hosts the database as well as satisfying the needs of the client programs within the same or geographically dispersed areas, James and Pedrycz (2002). All the necessary information and internet gadgets at Midlands State University will be repositioned on the server. Apache was the server that was used to host the MySQL database as well as ensuring the reliability of the system and it was set to be running all the time. The following was the client server relationship:



#### 4.3 Client-server-relationship



## 4.4 PHYSICAL DESIGN

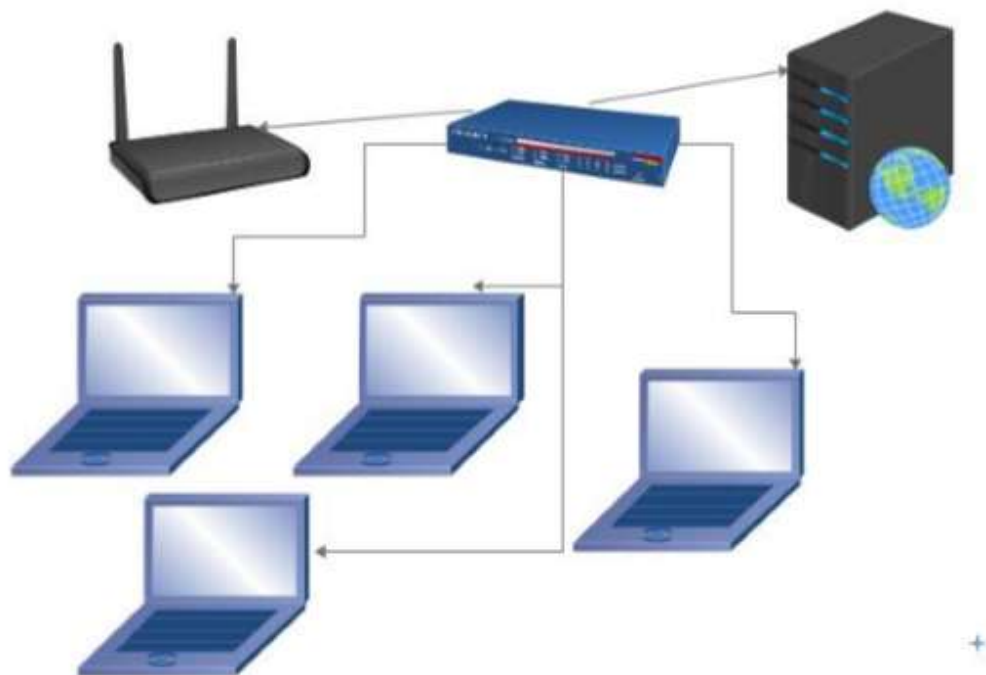
The physical design comes behind the circuit design into which the logical abstract version is transformed into the technical design that occurs. The physical design put much more emphasis on the interconnection of the software as well as the hardware components for which the proposed system will be running on. It interacts the several hardware components among themselves thus facilitating the communication. The following devices are considered:

### 4.4.1 APPLICATION SERVER

The application server is regarded as the hosting machine that accommodates all the information at Midlands State University. Under the application server, security is the major aspect to be considered first that securing the user confidentiality.

### 4.4.2 ROUTER

It plays a significant role of distributing as well as combining the network both wirelessly or with the LAN cables to all the internet able access devices. So as to communicate with other branches, the router was of great considerate.

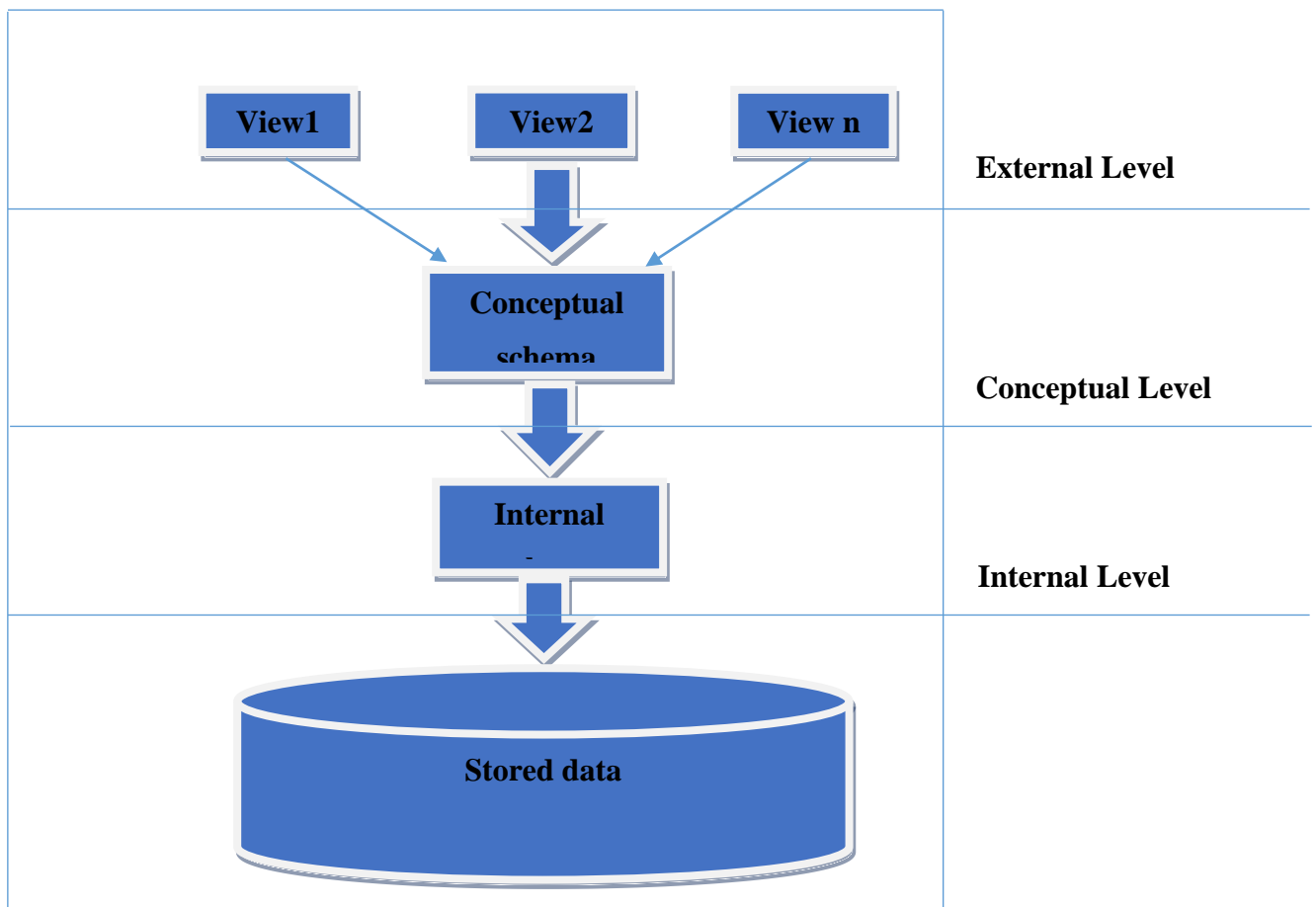


**Fig 4.4 Physical design**

## 4.5 DATABASE DESIGN

The database design is defined as a way of developing as well as creating a refined data model of the relational database structure with the regards to the user specifications, Dennis (2012). Sometimes the process is iterative in its nature because it have the starting point as well as the refinements endless processions. Regarding such, the users perceived it as a learning phenomenon. Specifically the conceptual as well as the logical database design are extremely important to the achievement or success of the information system. In the event that the designs have failed to give the true reflection of the organisation, data integrity will be a major problem. In addition to the above, coming up with the physical implementation might be the major problem as well. Three phase in the database design are consider such as:

- Physical Database Design
- Conceptual Database Design
- Logical Database Design



**Fig 4.5 Structural design**

Source: Humphrey (1999).

### 4.5.1 CONCEPTUAL DATABASE DESIGN

Hamdy (2004) defined the conceptual database design as the relationship that exists among the stored data. Also the detailed views of the independent data specifications take place under this stage. The conceptual database design illustrate all the entities, attributes as well as their relationships. Furthermore it represents the constraints, data security as well as the data integrity.

### 4.5.2 PHYSICAL DESIGN

This level covers all the physical representation of the relational database on the respective devices. Additionally it defines the storage of the organisational files and the data structures. The physical design phase generally gives a closer look on the way in which the indexes storage space as well as the data is allocated, Sommerville (2007). Also it goes on by giving a short description of the form that the tuples will take when stored. In conclusion the techniques for encryption as well as the compression of data will take place here.

### 4.5.3 LOGICAL DATABASE DESIGN

Hamdy (2004) defined the logical database design as the logically defined relationship in order to develop the real world data structure. The relationships can be the entities (external or internal) as well as attributes (entity descriptions). Nevertheless the logical database design is independent of any particular database management system designs. With regards to that the data is returned as well making it available to programs.

Field_Name	Data_Type	Description
Student_Id	varchar	Unique Identification
Full_Names	varchar	Student Full name
Username	varchar	Student Username
Password	varchar	Student Password
Cell_Number	int	Phone number
Address	varchar	Physical Address
Email	varchar	Email address
Status	varchar	Clearance status

**Table 4.1 student table**

<b>Field_Name</b>	<b>Data_Type</b>	<b>Description</b>
Department_id	Int	Unique Identification
Department_name	varchar	Department name
Username	varchar	Username
Password	varchar	Password
Cell_Number	int	Phone number
Address	varchar	Physical Address
Email	varchar	Email address
Requirements	varchar	Clearance status

**Table 4.2 department table**

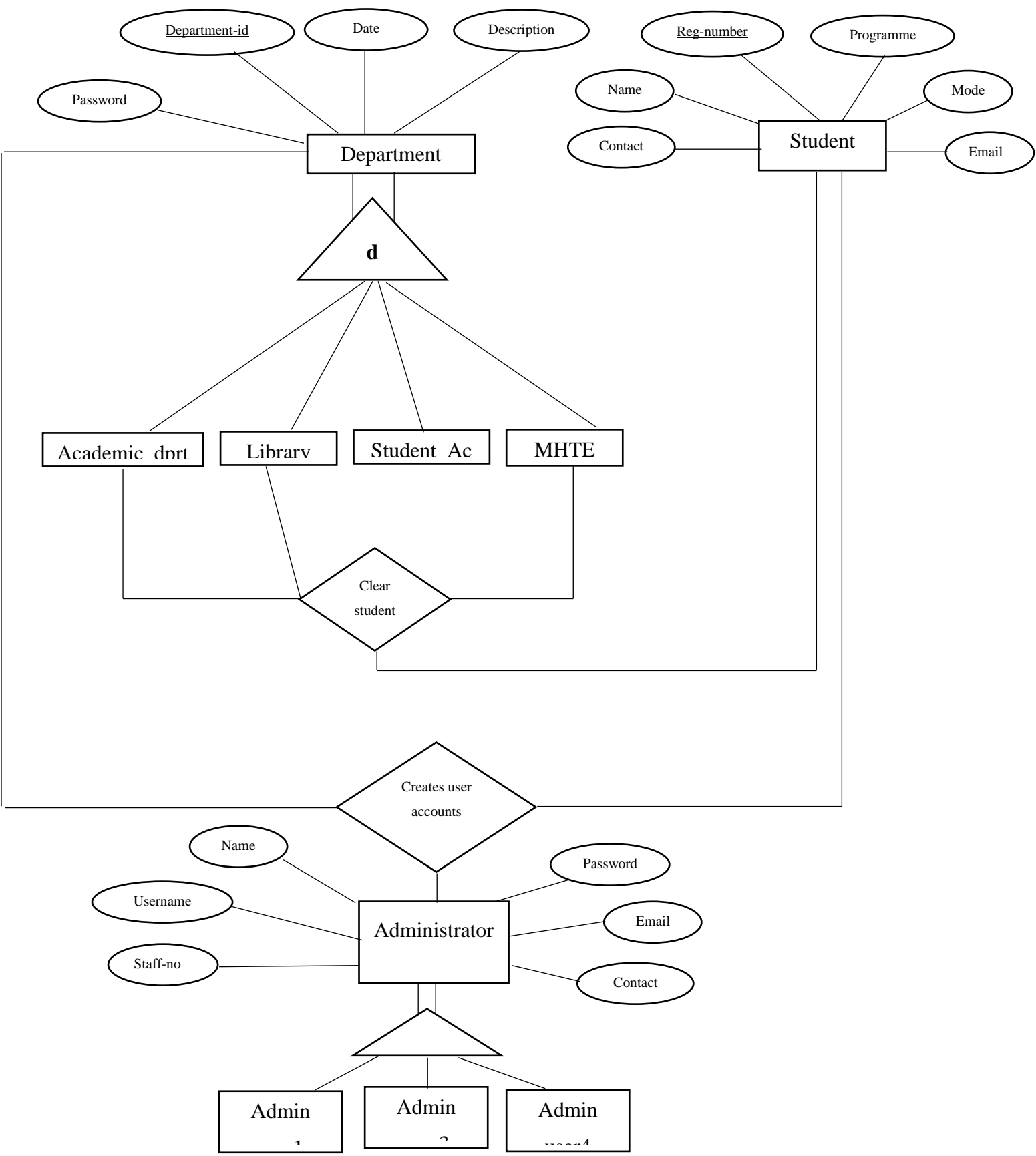
<b>Field_Name</b>	<b>Data_Type</b>	<b>Description</b>
Req_Id	varchar	Unique Identification
Req_descrp	varchar	Full description of the requirement
File_name	varchar	File name
Date	Date	Requirement date
Status	varchar	Requirement status

**Table 4.3 requirement table**

<b>Field_Name</b>	<b>Data_Type</b>	<b>Description</b>
Admin_Id	Int	Unique identifier
Admin_user	varchar	Administrator username
Admin_pass	varchar	Administrator Password

**Table 4.4admin table**

# EER DIAGRAMS



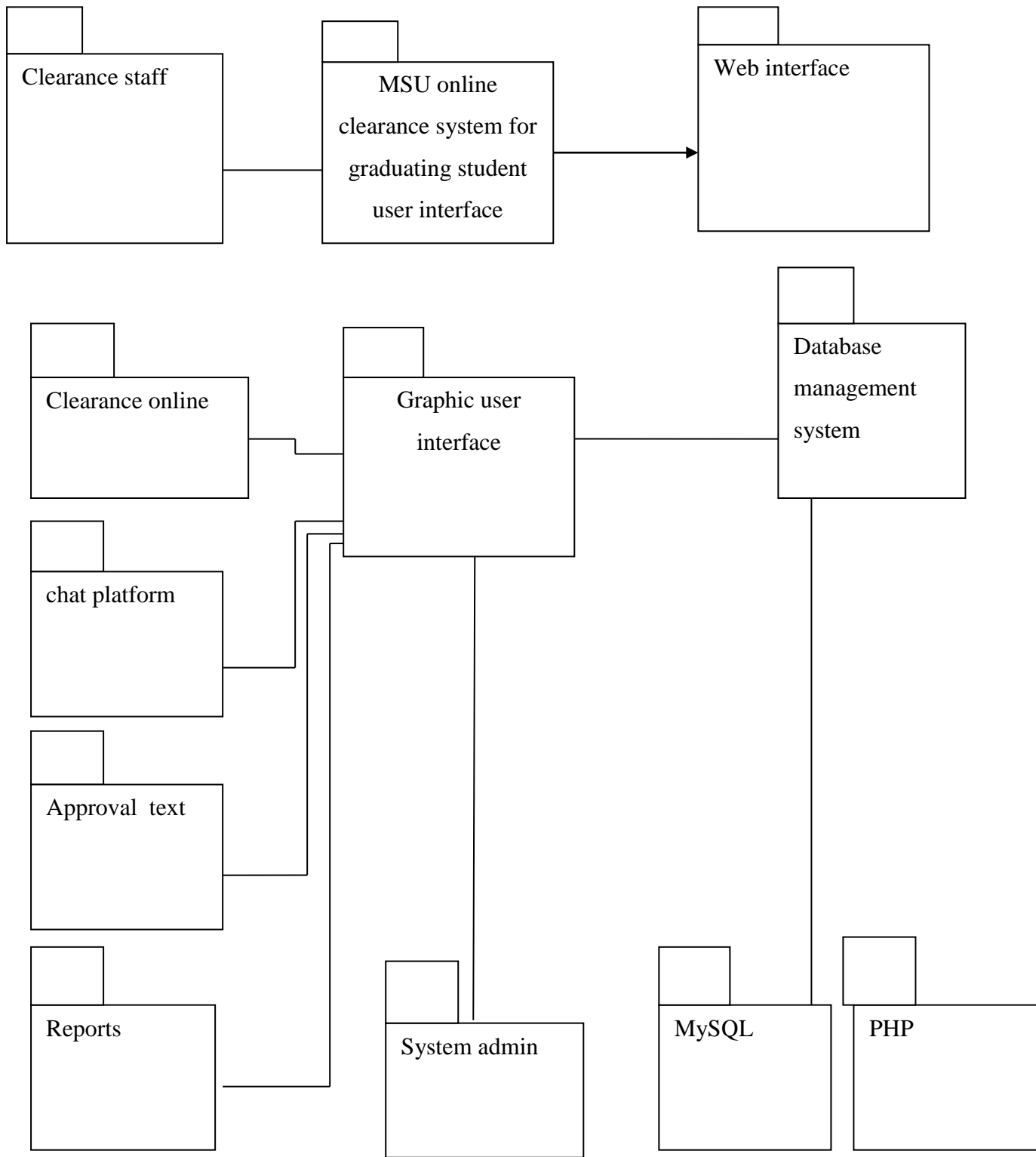
**Fig 4.6 EER diagram for the proposed system**

## **4.6 Program design**

A program design according to Hamdy (2004) is an activity which shows the progression from the program specification requirements to program description. In order to come up with a program design the input is the specific requirements of the program, thus what the program is required to do. Therefore at this phase decisions are made such as how the program is to meet these requirements. The output of the program design is the description of the program itself in a form that will provide a basis suitable for subsequent implementation. This phase also entails the use of package diagrams and class diagrams so as to illustrate how the major components are to be employed within the system as well as the data structure.

### **4.6.1 Package diagram**

A package diagram is a pictorial diagram which is of a unified modeling language (UML) structure illustrating packages and the dependences between these packages, Hamdy (2004). It is also a model diagram as it allows different views of the system to be shown and it includes the following components package element, dependency, element import, package import and packages merge.

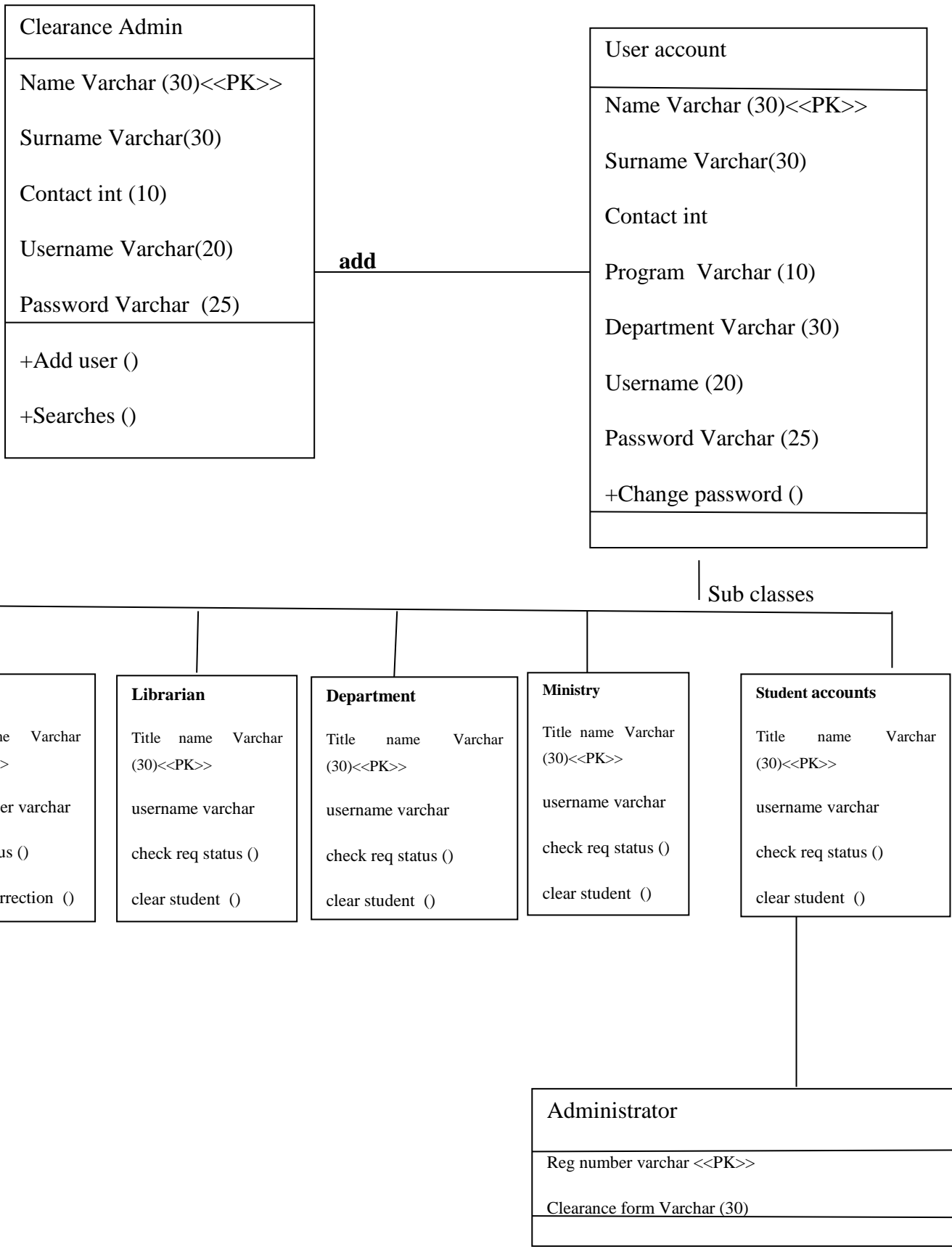


**Fig 4.7 package diagram**

#### **4.6.2 Class Diagram**

A class diagram is characterised as a diagram representation of a unified modeling language with a static structure which describes the structure of a system and this is according to Hamdy (2004). It illustrates the classes of the system as well as their attributes, the relationships among the classes including their operations as well. This diagram is mainly used as a building block for object oriented modeling as it shows general conceptual modeling of the system application and as well as detailed modeling which translates models into the programming code.



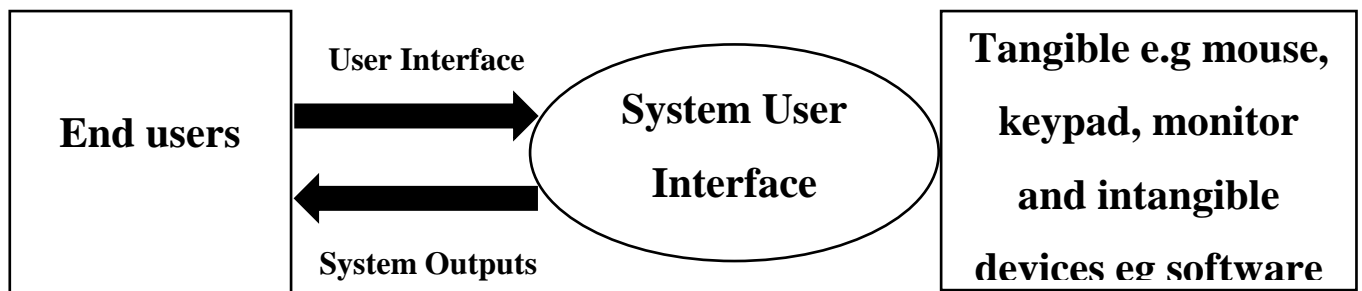


**Fig 4.7 class diagram for proposed system**

## 4.7 INTERFACE DESIGN

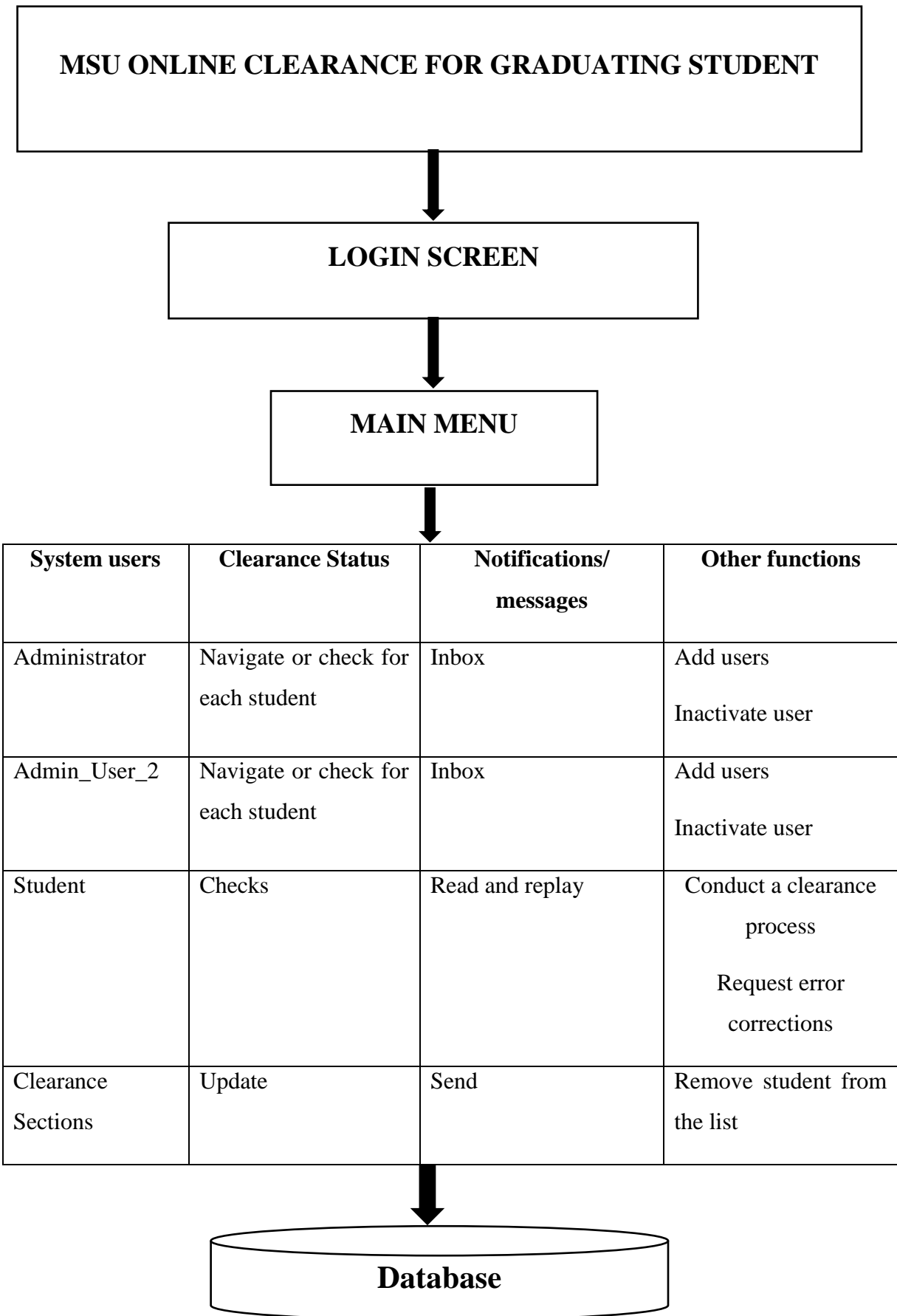
Denis (2012) defined the interface design as the point in which the users interacts with the system. The interface design starts by doing the task analysis thus comprehension of the user underlying tasks as well as the problem domain. When designing such, the user specifications as well as the concepts must be considered first rather than the desires of the researcher. Moreover it illustrate the link between the application operations and the database as well as the provision of a short summary of layouts and activities.

The figure below clearly illustrates how the end users will use the anticipated system. The system's interface was designed in a simple way in order to allow end users to navigate as well as interacting with the system.



**Fig 4.7 Interface design**

MSU Online Clearance for Graduating Student is going to have three main entities namely the chief administrator whose main job is to create system users, manage the database as well as delivering the completed Transcript Request Form accompanied by the student personal data sheet. Secondly the graduating student who conduct the clearance process and lastly the Clearance Information Unit Sections whose main job is to clear the student.



**Fig 4.8 system overview**

#### 4.7.1 SYSTEM LAYOUT

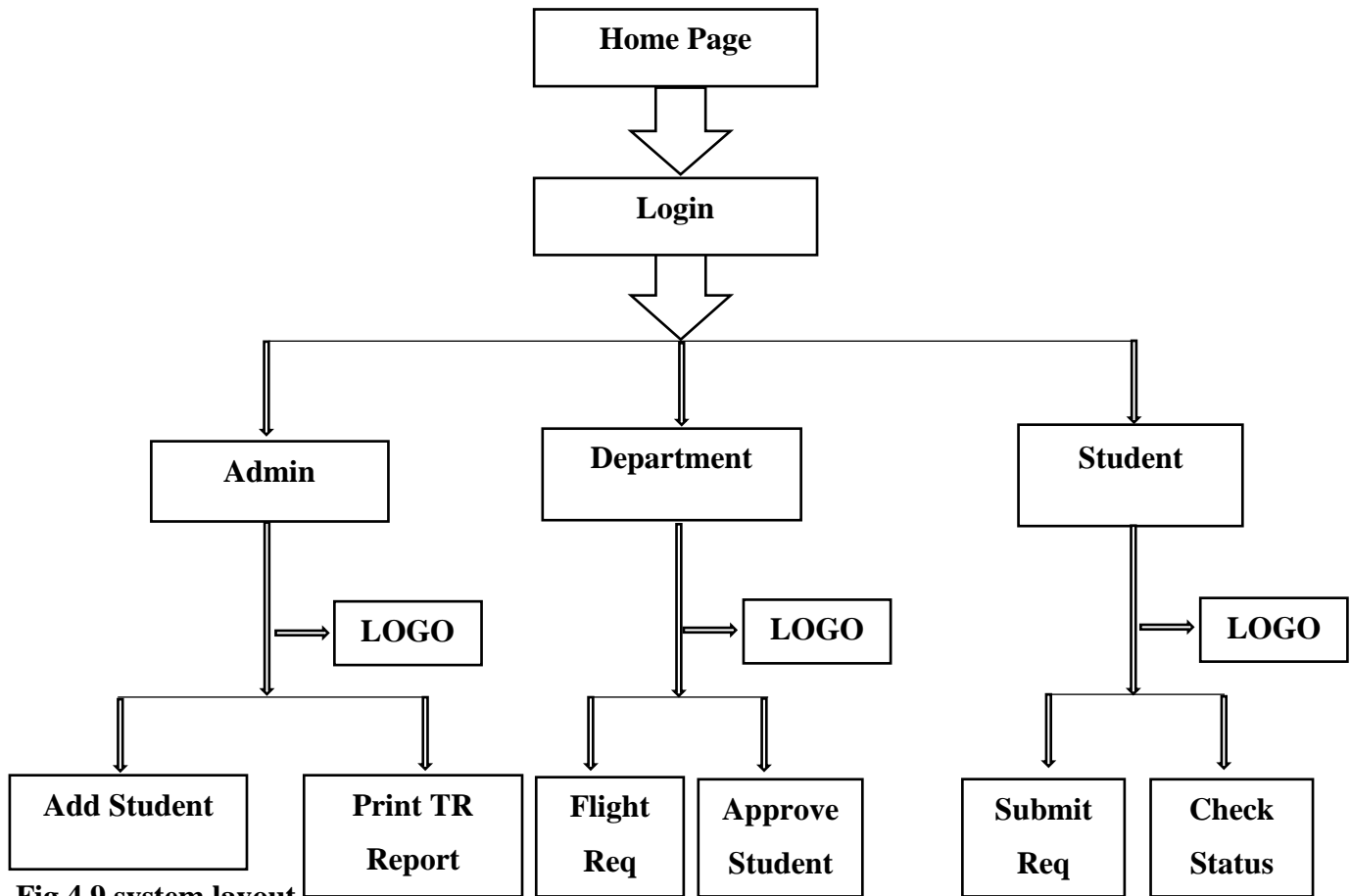


Fig 4.9 system layout

##### 4.7.1.1 MENU DESIGN

##### 4.7.1.2 MAIN MENU

<i>ONLINE CLEARANCE SYSTEM FOR GRADUATING STUDENT</i>	
<b>Midlands State</b> Graduates List Main Campus TelOne Campus Zvishavane Campus	<b>Admin Dash Board</b>
	<b>Graduating List</b> Reg Number    Full names    Mode of Entry    Campus    Prog Code

Fig 4.10 admin dash board

### 4.7.1.3 SUB-MENUS

**Midlands State University**

Welcome,  
Greatman Mhandu

General

HOME

- Clearance status
- My Personal Data Sheet
- Edit Profile Picture

Clearance Info Units

- Student Accounts
- University librarian
- Academic Depart
- Registrar

Greatman Gee Mhandu Logout

## MSU Online Clearance System for Graduating

### Graduating Student Dashboard

Student Clearance

Midlands State University  
Transcript request form

Student Accounts	30/082017
Department	
Librarian	
Ministry of Higher Tertiary	

✓

Student Acc                      Depart                      Library

Ministry of Higher and Tertiary

Fig 4.11 student menu

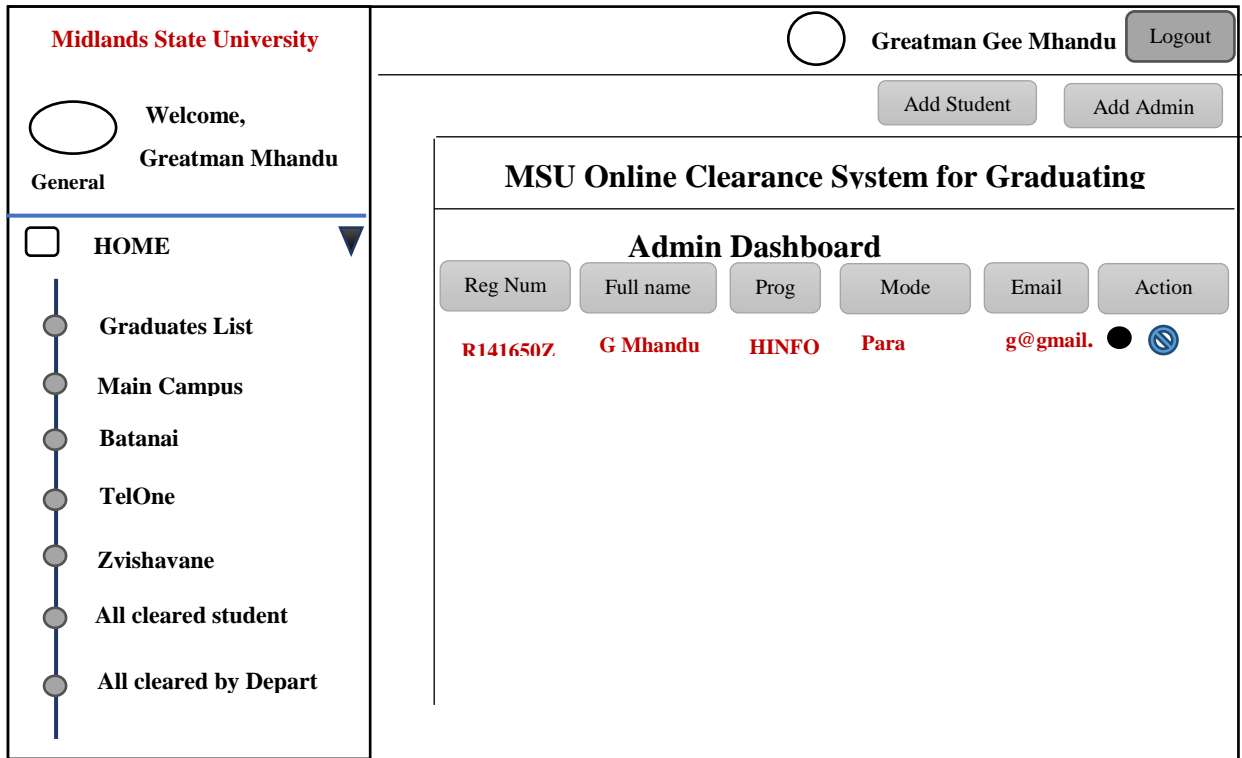


Fig 4.12 admin menu

#### 4.7.2 INPUT DESIGN

According to Jaelson (2013) input design is defined as the forms that enables the users to enter values which will be processed later as well as facilitating communication between the system and the users. This form has to be user friendly in order to allow effective and efficient communication.

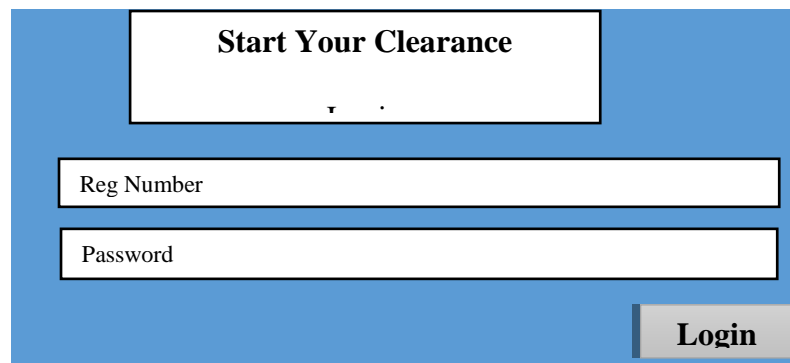


Fig 4.13 Login interface

Logou

### Student Registration

<b>Reg_num</b>	
<b>Fullname</b>	
<b>Prog_code</b>	▼
<b>Departme</b>	▼
<b>Campus</b>	▼
<b>Email</b>	
<b>Phone_nu</b>	

**Fig 4.14**admin student registration

### 4.7.3 OUTPUT DESIGN

The outputs design is characterised as the visual reports that clearly shows the results of the processed data.

**Transcript request form**

Midlands State University

Purpose (disengaging the student from the university)

Date

Greatman Mhandu

I have the honour to inform your good office that.....

Student Accounts     
  Academic Department     
  Library

Ministry of Higher and  
 Tertiary Education

Fig 4.15 student dash board to check clearance status

**Transcript request form**

Midlands State University

Purpose (disengaging the student from the university)

12/11/2  
Date

Greatman Mhandu

I have the honour to inform your good office that.....

**CERTIFICATION**

We hereby certify that Greatman Mhandu is cleared for all accountabilities.....

Student Accounts     
  Academic Department     
  Library

**APPROVED:**     
   
 Ministry of Higher and  
 Tertiary Education

Fig 4.16 Transcript request form



### List of all cleared students

Registration number	Full names	Program	Mode Of Entry	Email	Date
(value)	(value)	(value)	(value)	(value)	(value)

### List of all inactive students

Registration number	Full names	Program	Mode Of Entry	Email	Date
(value)	(value)	(value)	(value)	(value)	(value)

### List of all departments

Department number	Department Name	Department Code	Staff responsible	Email	Date
(value)	(value)	(value)	(value)	(value)	(value)

### List of all academic error corrections

Registration number	Full names	Program	Mode Of Entry	Action	Date
(value)	(value)	(value)	(value)	(value)	(value)

### List of all departments

Department number	Department name	Number of students	Department contact	Email	Date
(value)	(value)	(value)	(value)	(value)	(value)

## 4.8 PSEUDO CODE

Pseudo code is characterized as an informal high level description of the operating rule of a software program or other algorithm. Pseudo code uses the structural convention of a normal computer programming language which can be understood by human rather than a compiler.

## Login

Select login on the main page

Select login option on the pop up dialog box

IF Student THEN

    Enter Reg\_num and Password

ELSE IF Department THEN

    Enter Department\_name and Password

ELSE

    Enter Username and Password

Connect to MYSQL Database

IF Login credentials found THEN

    Check login information's permission levels

    Send user to the respective page according to the permission level fetched

ELSE

    An error alert should pop out

IF Student home page THEN

    Check clearance status

    IF Student is not cleared THEN

        Commence the process

        Check clearance requirements

        Check notifications

    ELSE

        Update Personal Data Sheet

Seek the completed Print out from the Admin

ELSE IF Department home page THEN

Set clearance requirements

Clear Student

Send notifications

ELSE IF Administrator home page THEN

Add users

Check all cleared student

END IF

## **GENERATION OF REPORTS**

Select the report output (Excel or Comma Separated Value or Word)

Enter the report period

Validate the span of the report

Connect to MYSQL Database

IF the report format is valid THEN

Produce the respective output

Show an option for report generation

ELSE

Warning alert pop up

Send the user to the main menu

END IF

## **4.9 SECURITY DESIGN**

Security design is considered as a significant component of the system. It is undertaken at each and every level of the software development so that risks associated to software such virus attacks, spoofing as well as hacking can be catered for in projects.

### **4.9.1 PHYSICAL SECURITY**

The physical security describes the measures that were made in order to restrict unauthorised access to the system equipment as well as resources, facilities and to protect personnel as well as property from distractions namely attacks and theft. In order to commence the security design, the physical level is considered first. Some aspects such as the locking up of the server room door in order to monitor the entrances of unauthorised users were done by the software project team. In doing so, the team make use of the biometric system. In addition, the system developers should do regular backup of the database as well as adopting the cloud technologies so that important data will not get lost. The system administrators should as well keep the backup tapes as well as disks in a safe places thus locking in private drawers.

### **4.9.2 NETWORK SECURITY**

Network security is defined as the specialized field in computer networking that takes into account securing the infrastructure of a network Gottesdiener (2005). Network security characterises a specialise area in networking that takes into account securing a computer infrastructure. It is usually handled by the systems network administrator whose main job is to implement the security policies, network hardware as well as software that are needed to protect a network as well as the resources accessed through the network. This level relies on layers of protection as well as multiple components such as security and monitoring components. In doing so, the project team used security devices such as active devices, passive preventative security in order to keep the system secure. The active devices were used to block surplus traffic. Such devices include antivirus scanning devices, firewalls as well as content filtering devices. A firewall is described as a network security system that regulates as well as managing the traffic of the network based on some certain protocols. In addition, a firewall was used to establish a barrier between the internet and a trusted internal network. The passive devices will be considered in order to identify and report on unwanted traffic such as detection appliances as well as intrusion. Lastly preventative devices should be used to scan through the networks as well as identifying potential security problems such as penetration testing devices and vulnerability assessment appliances.

### **4.9.3 OPERATIONAL SECURITY**

Operational security is defined as the security measures that are put in place in order to compliment or supplement the organisation in a manner in which both the technical and

physical elements are utilised. It is also referred to as administrative or procedural security. They include security awareness training policy, clean desk policy as well as disaster recovery policy.

#### **4.10 CONCLUSION**

This phase played a significant role of showing how the proposed was going to look like thus its appearance. Without these detailed designs the proposed system can neither operate or developed. A good foundation of the project came after the decisions that were made. With regards it was considered worthwhile to proceed to the operational. The next phase focuses on the logical coding, unit testing, integrating the tested units, the system setup as well as the system maintenance.

## **CHAPTER 5: IMPLEMENTATION PHASE**

### **5.1 INTRODUCTION**

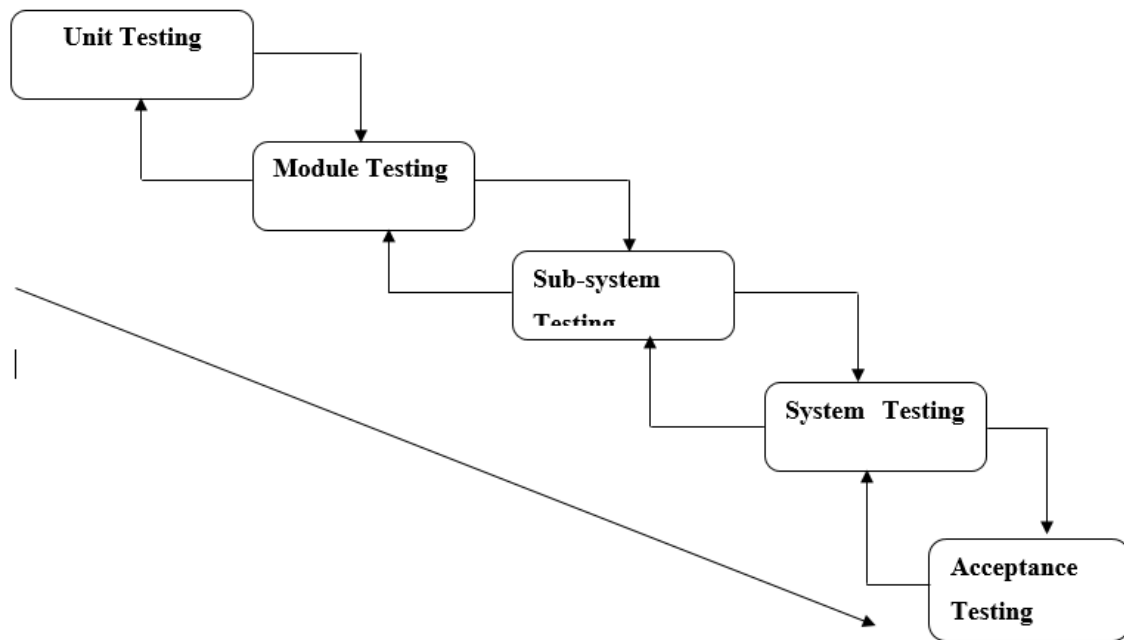
According to Gottesdiener (2005), the implementation phase in a software project is defined as the process of translating the design model into a function system through coding the various modules that interact together to form subsystem. These subsystems will in turn communicate to form the complete system that satisfies the desires of the users. Considering the Agile Development Model, the implementation phase is done incrementally during the iterations construct. The purpose of this phase is to alleviate errors before the completion of the system. It takes into account coding thus making the system reasonable to the computer. In addition, testing will be considered to test if the system is behaving as desired by the users. Testing will be undertaken in distinct stages namely unit testing, system testing as well as the general system testing. The researcher will go on to describe the system deployment as well as explaining the major functionalities with the aid of the system screen shots where necessary. The final part to be looked at is the system maintenance.

### **5.2 CODING**

Myers (2004) defined coding as the process of changing from the human language to computer programming language so as to match with the objectives. Coding involves programming, documenting, testing as well as bug fixing during the development of applications. All the system modules will be looked at as well as setting them in a systematic and sequential manner. Some technologies such as Asynchronous JavaScript and XML as well as Larval framework were utilised to complement with the PHP Hypertext Pre-processor in order to come up with the responsive system as well as enhanced sophisticated search functionalities. XAMPP was the server which was used to host the MySQL Database.

### **5.3 TESTING**

Testing is considered as an essential phase of the software development, and it is vital to commence with it as early as possible as well as making it a part during the process of deciding the system requirements (Dennis,2002). Testing verifies the deliverables of the implementation stage against the requirements. Some strategies were put in place to check whether the system adheres to the user's desires. Various techniques such as unit testing, subsystem testing, system testing as well as acceptance module testing were considered.



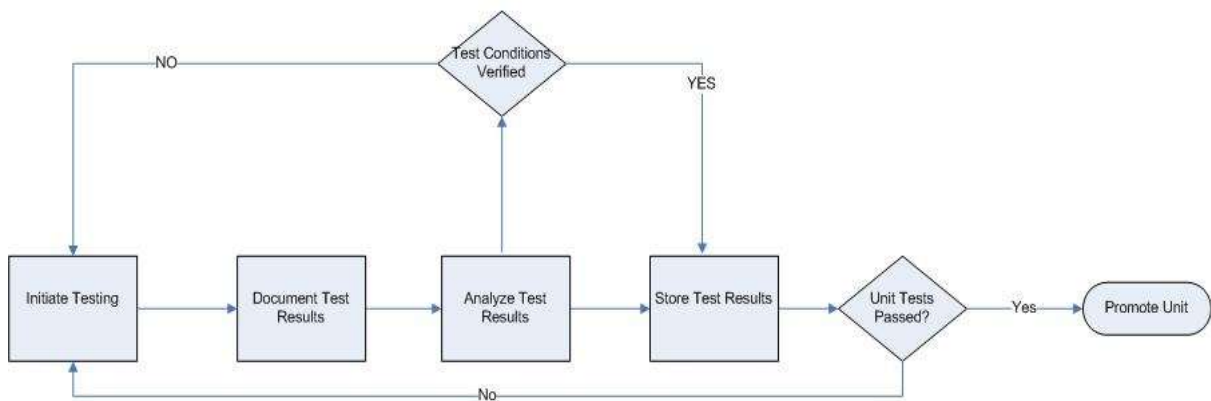
**Fig 5.1 Testing process flow**

Source Glanford and Hughes (2004)

### **5.3.1 UNIT TESTING**

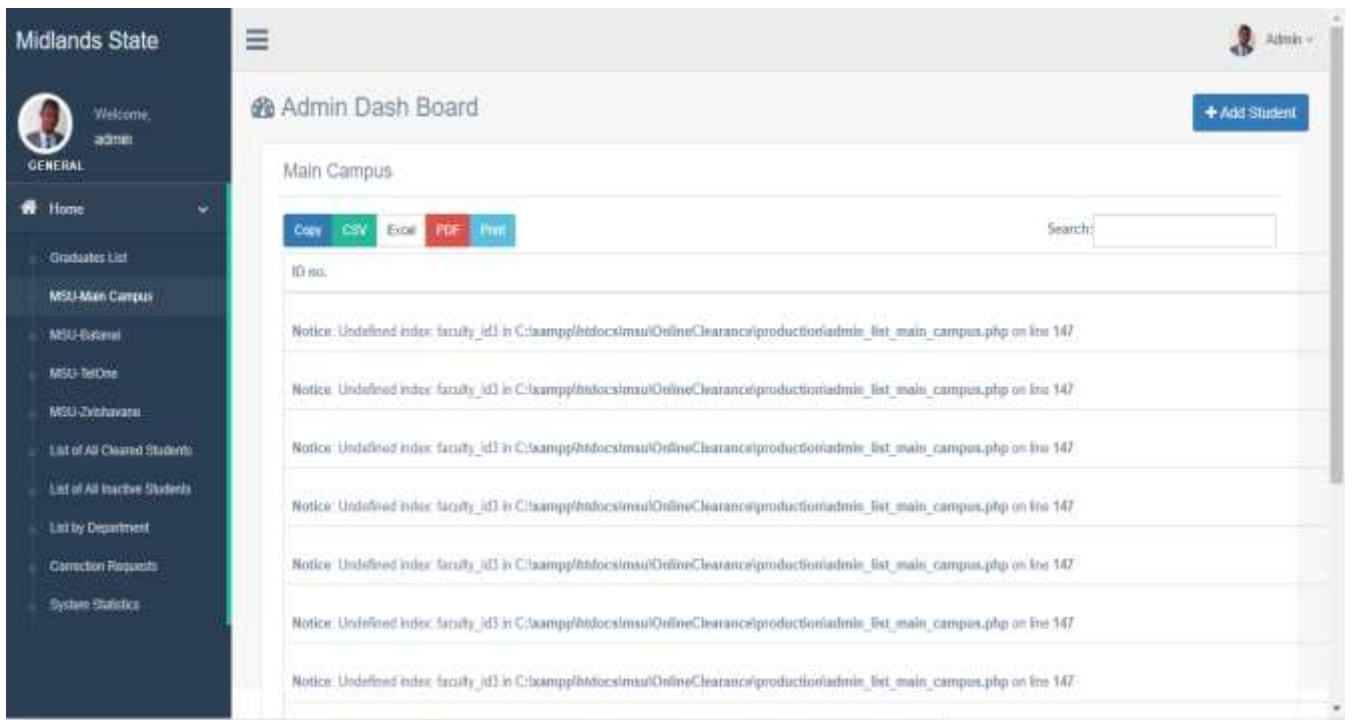
Unit testing is often automated but sometimes can be done manually. It is defined as the process in which the smallest testable parts of the system called units are being scrutinised independently in order to the system behaviour. The main objective is to debug and see the errors in small units. It includes only those characteristics that are important to the performance of the unit under consideration. It allows the programmers to manipulate the code without the worry about how such manipulations alter the functionality of the whole system or other units.

# Unit Testing



**Fig 5.2 Unit testing process flow**

Source: Glanford and Hughes (2004).



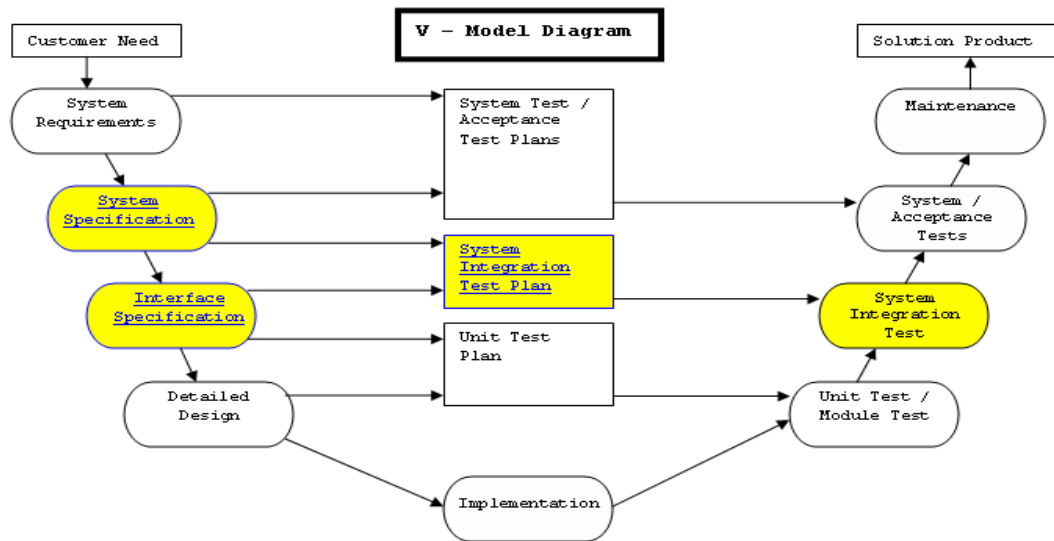
**Fig 5.3 showing errors after unit testing**

## 5.3.2 SUB SYSTEM TESTING

The sub systems are integrated to form the whole application. This process is mainly focused with finding some bugs that come from unanticipated interactions between the system

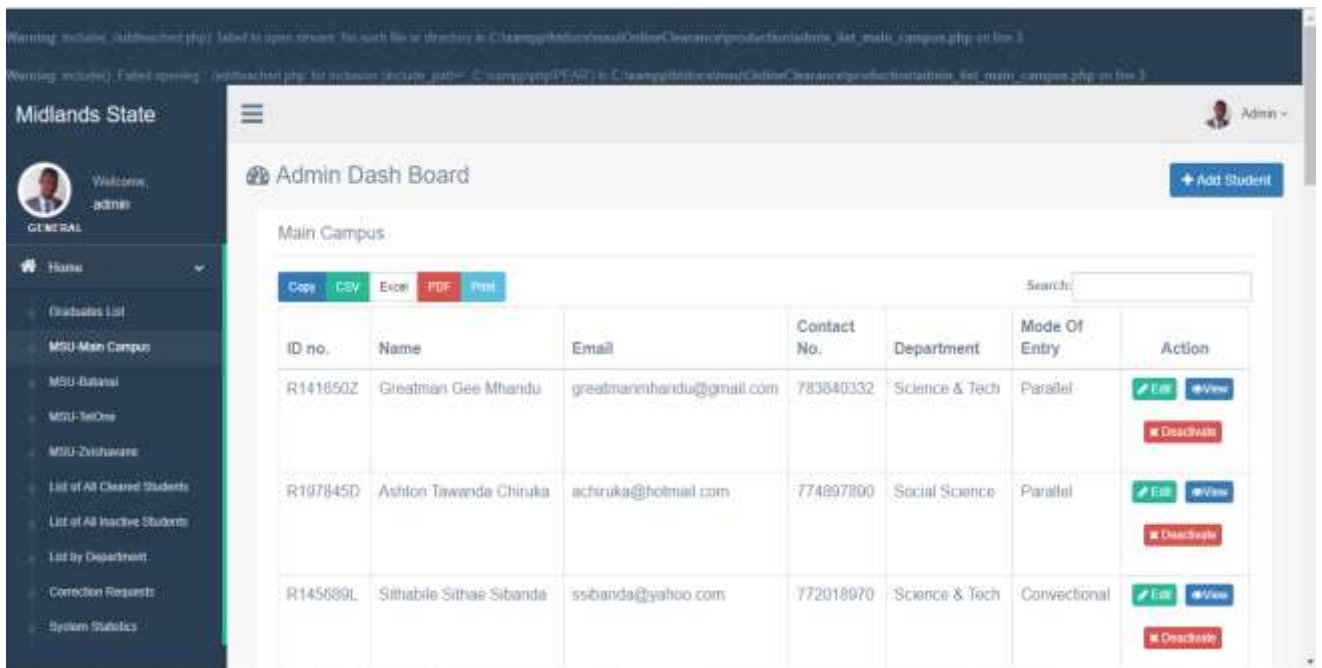


components and the sub systems. Sub system testing also focuses on the system validation that meets its non-functional as well as functional requirements.



**Fig 5.4 Unit testing process flow**

Source: Glanford and Hughes (2004)



**Fig 5.5 Failing to open a stream of a file**

### 5.3.3 MODULE TESTING

According to Godfrey (1999) module testing is characterised as the testing of the reciprocal connected modules of the system. It is used as the tool to check or test the system validation. All the units that were connected to the menu of the system were comprehensively tested in order to check the dependability as well as the usefulness of the units and the system as a whole. The process goes on to test individual subprograms, sub functions, classes as well as procedures in the computer system. In place of testing the entire system at once, it recommended the testing for smaller building blocks of the system. It is largely a white box oriented. The major reason is to show the presence of bugs in the module instead of the proper module functioning.

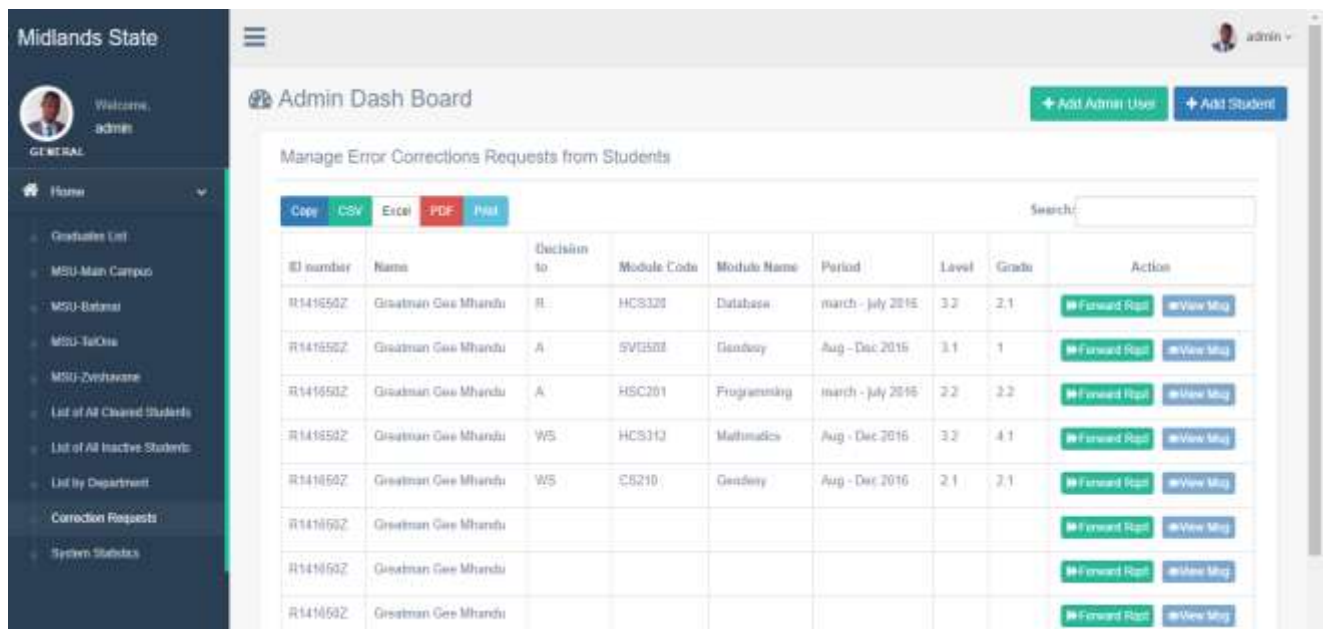


Fig 5.2 Testing the error correction module

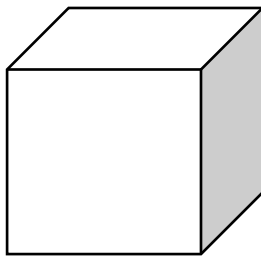
### 5.3.4 SYSTEM TESTING

Jaelson (2013), defined system testing as a method or the process used for checking as well as conforming whether all the system functions and features are dealt with or not. The system managed to summarise the database data thus producing meaningful reports as well as providing a consistent central data repository. This technique is sometimes called the black box testing performed in order to make evaluations of the entire system performance against the defined objectives. The system capabilities are comprehensively tested from an end to end perspective. This process is normally done by a team that is not part of the development team

so as to make the measurements of the biases made by the system. System testing takes into account both functional as well as non functional testing.

### 5.3.5 WHITE BOX TESTING

Jealson (2013) characterised it as a means of testing the innermost layout of the system. When the system was developed, the system was executed in distinct units and the results produced by each were put across so as to have the assurance of the system validation as well as reliable verification.



**Fig 5.7 white box testing**

Source Glanford and Myers (2004)

```
<div class="modal-dialog">
  <div class="modal-content">
    <form method="post" action="save_deadline">
      <div class="modal-header">
        <button type="button" class="close" data-dismiss="modal" aria-hidden="true">&times;</button>
        <h4 class="modal-title"> Set</h4>
      </div>
      <div class="modal-body">
        <?php
        $sql1 = "SELECT * FROM deadline ORDER BY id DESC LIMIT 1";
        $query1 = $conn->prepare($sql1);
        $query1->execute();
        $fetch = $query1->fetch();

        if ($fetch['status'] == 0){
          ?>
          <input type="date" name="deadline" class="form-control" required>
          <?php
        }else{
          ?>
          <a href="javascript" class="reset_dl">Click here to reset deadline</a>
          <?php }
          ?>
        </div>
        <div class="modal-footer">
          <span style="float: left" class="save_dl"></span>
          <button type="button" class="btn btn-danger" data-dismiss="modal"><i class="fa fa-close"></i> Close</button>
          <button type="submit" class="btn btn-primary">Save</button>
        </div>
      </div>
    </form>
  </div>
</div>
```

**Fig 5.8 testing the innermost of the module**

**a) Advantages**

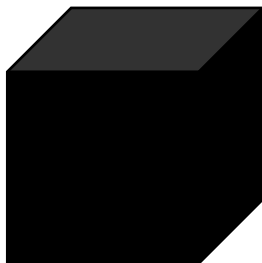
- White box testing assists in discovering the logical as well as design time errors.
- White box testing helps in having the assurance all the separate units within a module are executed at the same time.
- It is very much possible for a tester to achieve high level of thoroughness as each and every path will be completely tested.

**b) Disadvantages**

- It is difficult to tests and follow every system loop in a program.
- Changing graphical user interface results in difficult maintenance of the scripts.
- Constantly interacting with the graphical user interface sometimes results in fragile test script and it might not execute properly.

### 5.3.6 BLACK BOX TESTING

Jealson (2013) characterised it as the process of testing the functionality of the system without considering the system innermost structure. It was essential to conduct this kind of testing of each and every level. The system outputs were produced from the inputs without the worry of the processes within the system.



**Fig 5.5 black box testing**

Source Glanford and Myers (2004)

**a) Advantages**

- Sometimes the tester can be non technical.
- It is very efficient on large programs.
- No need for one who is testing to have detailed know how of the system functionality.
- The testing is done from the end user side since they are the ones to accept the system at the end.

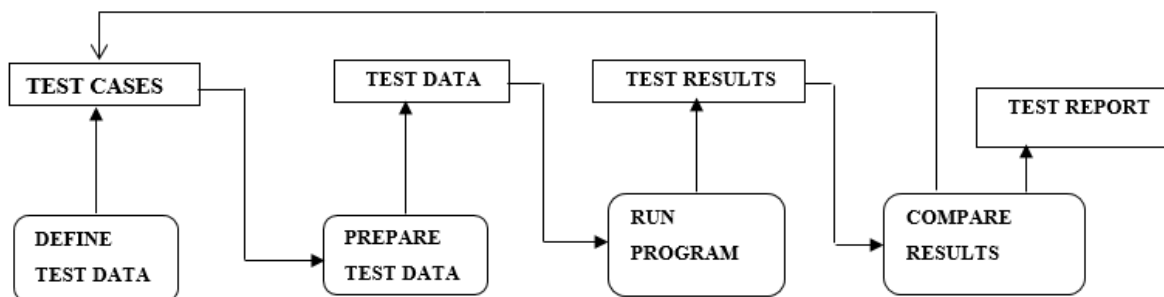
**b) Disadvantages**

- The inputs to be tested should be from a large sample.

- There is high possibility of having unidentified paths during the testing process.
- Sometimes test scenarios are challenging to design when functional requirements are not clear.
- Sometimes unidentified paths are experienced during the process of testing.
- Sometimes the possibility of replicating the tests which was performed by the system developer is very high.

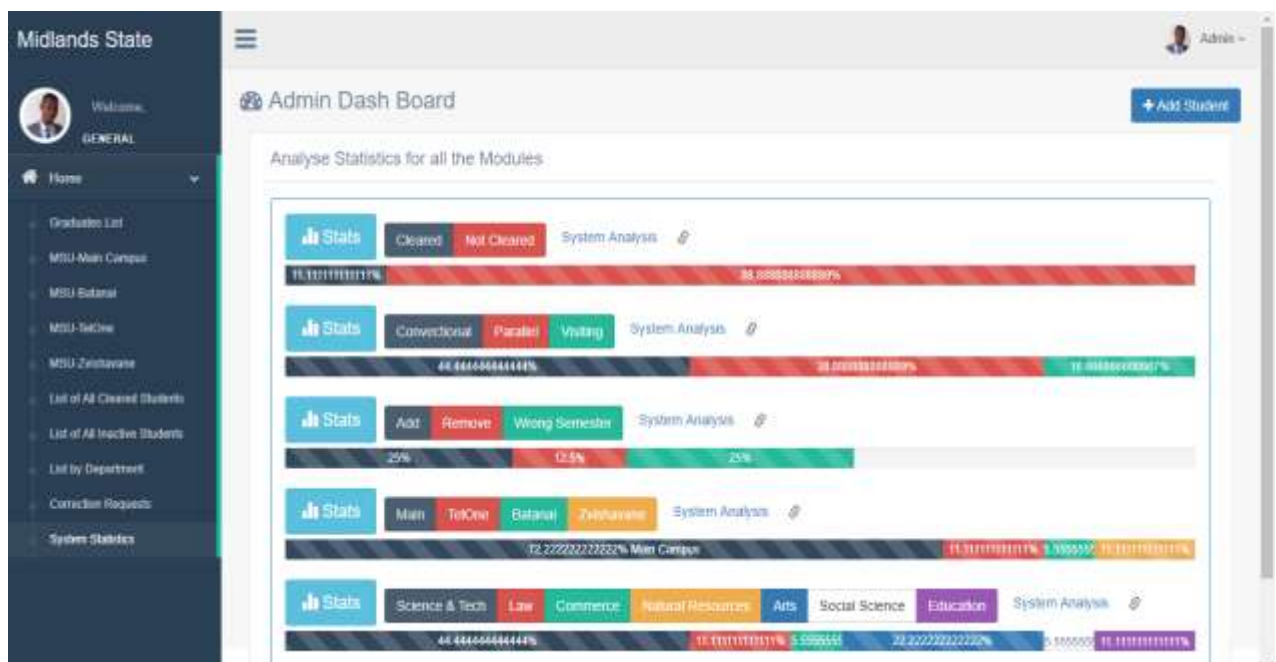
### 5.3.7 DEFECT TESTING

Defect testing was undertaken so as to see the areas that caused the system not to adhere to the system requirements. It is essential in figuring the system defects before the implementation process.



**Fig 5.6 defect testing**

Source Tannenbanum (1990)



### **5.3.8 ACCEPTANCE TESTING**

Watts (1999) defined acceptance testing as the process of testing whether if the program is matching the specifications as well as the requirements of the clients. This process occurred before the system was delivered to Midlands State University for the system acknowledgement to test user's data instead of repeated test data. Each and every entity of the system partake in the acceptance testing. The major reason of acceptance testing is to make some evaluations on the system compliance against the organisational objectives and make some verification to check if it has met the expected criteria for delivery to the system users. There are many forms of this testing process namely:

- System user acceptance testing
- Organisation acceptance testing
- Alpha testing
- Beta testing

### **5.3.9 RECOVERY TESTING**

A method which is used in figuring the lost data, restoring data as well as different techniques of data recovery is called recovery testing Watts (1999). It is one of the non functional testing technique which is done in order to check how fast the program can recover after a system crash as well as failures in hardware. The steps for recovery testing are as follows:

- First determine the recovery process feasibility
- Make the backup verification
- Document in order to verify the backup compatibility.
- Team training
- Updating as well as maintaining the recovery plan regularly.

### **5.3.10 REGRESSION TESTING**

Watts (1999) defined regression testing as an essential process to test changes made on the system in order to see if older programming is adhering with the changes made. This process is normally part of the software program development process which is done by the code testing specialist.

### **5.3.11 SECURITY TESTING**

Security testing was put in place to restrict unauthorised users to access the system. This was done in order to monitor as well as assessing the risks associated with the system intruders. Security testing mainly focuses on testing the robustness of the computer system. This testing helps both the software developers as well as the system users by securing their confidentiality.

### **5.3.12 ALPHA AND BETA TESTING**

Myers (2004) characterised alpha and beta testing as the testing which occurs during the time the system is delivered to its owners. After conducting this testing, some user requirements or evaluations were noted and resolved accordingly.

### **5.3.13 USABILITY TESTING**

In order to solve all the user desirable changes, all the system prototypes were thoroughly tested.

### **5.3.15 VALIDATION**

Levine (1996) defined validation as the process of evaluating as well as comparing whether the system design and the actual system developed. All the system objectives were taken into account to check if they had been achieved. This helped to check if the system matches with the defined objectives of the organisation. The main objective of validation is to help users to enter correct data in the system as well as notifying them in the event that wrong data was entered by mistake.

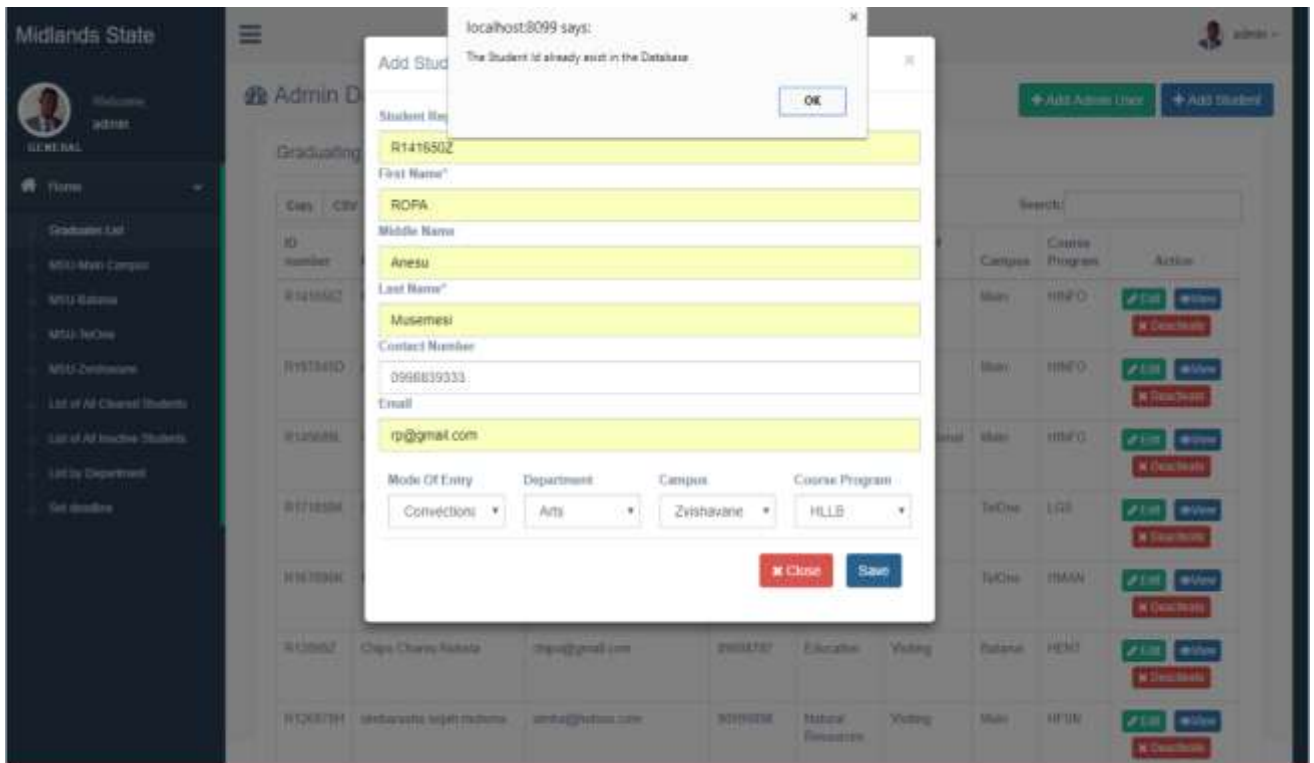


Fig 5.7 validating the student registration number

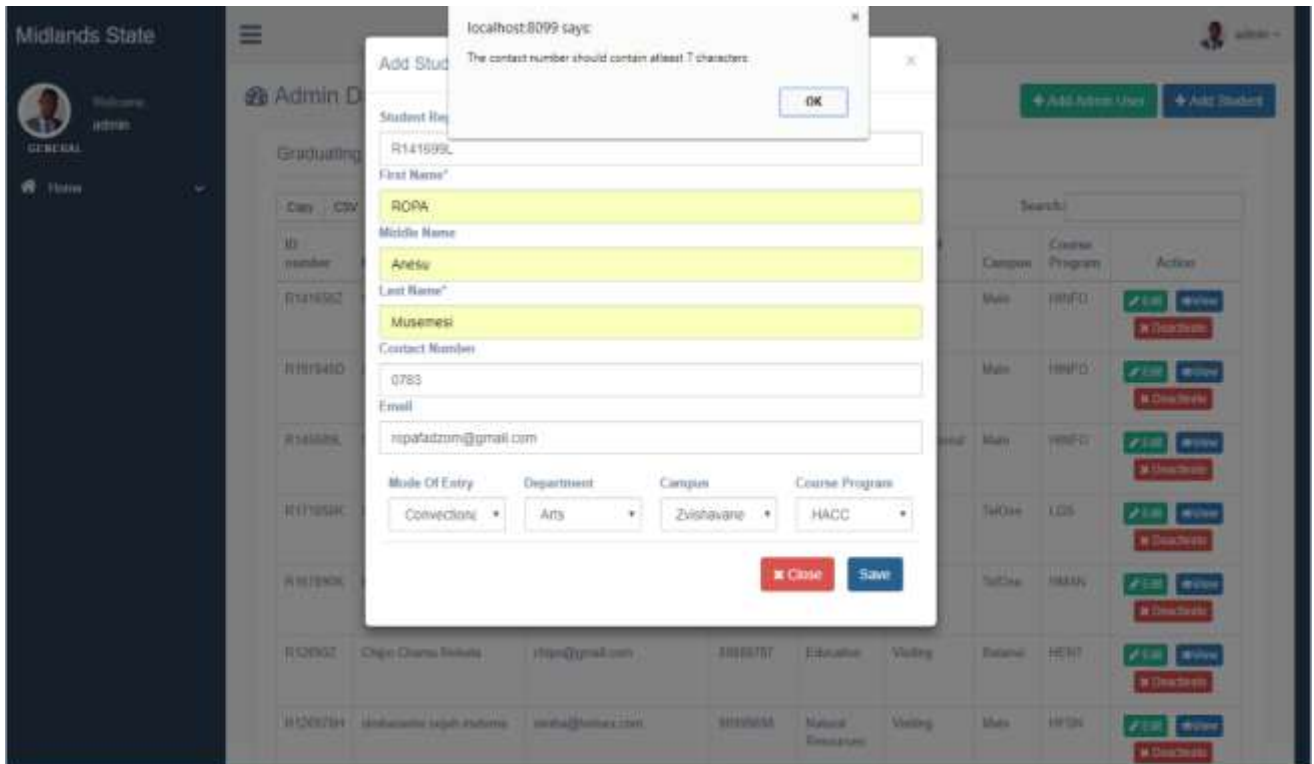
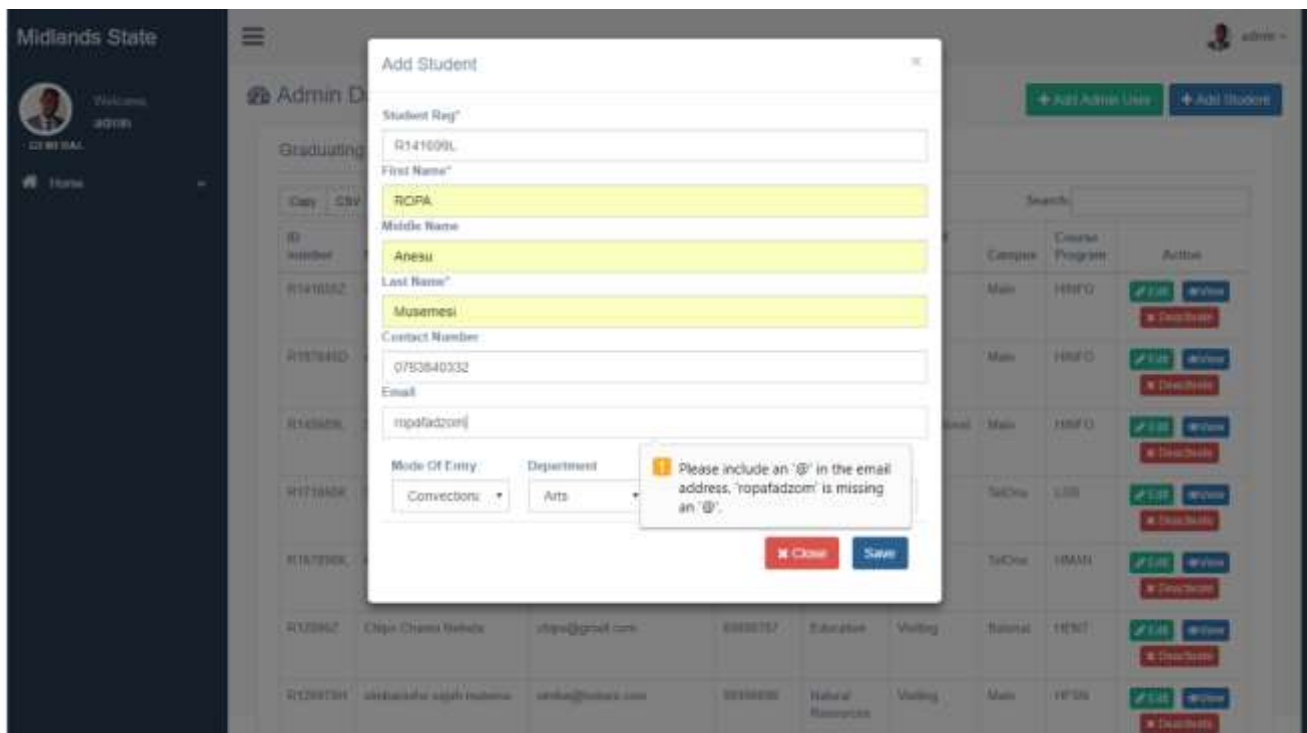


Fig 5.8 validating the student contact number





**Fig 5.9 validating the student email address**

### 5.3.1 VERIFICATION

This was also intensively done. This is whereby we looked at the system to see whether we had developed the correct system. This means that the system was checked to see if it was meeting the customer specifications and requirements. The system might be excellent (running and fully functional) but not meeting the user requirements. Verification was also done intensively. We managed to check and analyse system representation using static techniques to check on requirements documents, design diagrams, program source code and inspections. We tested the system with some data and compared the results with already known results. We used the white box method of verification where the tests were conducted to ensure that the internal operation of the system performed according to specifications and all the internal components had been adequately exercised.

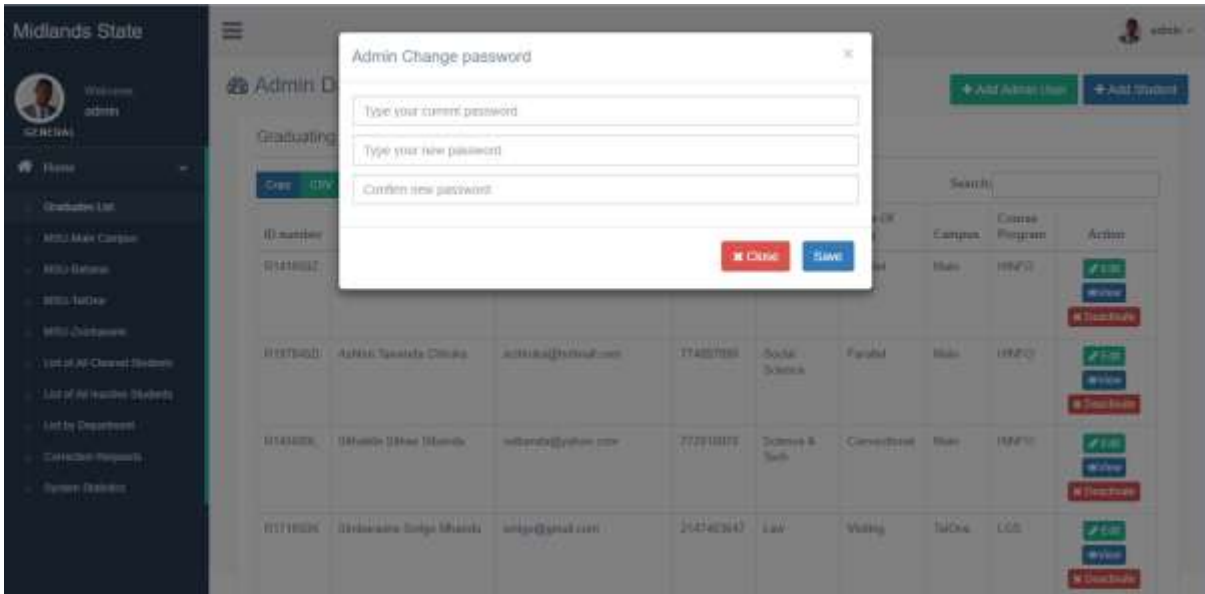


Fig 5.10 verifying the student password

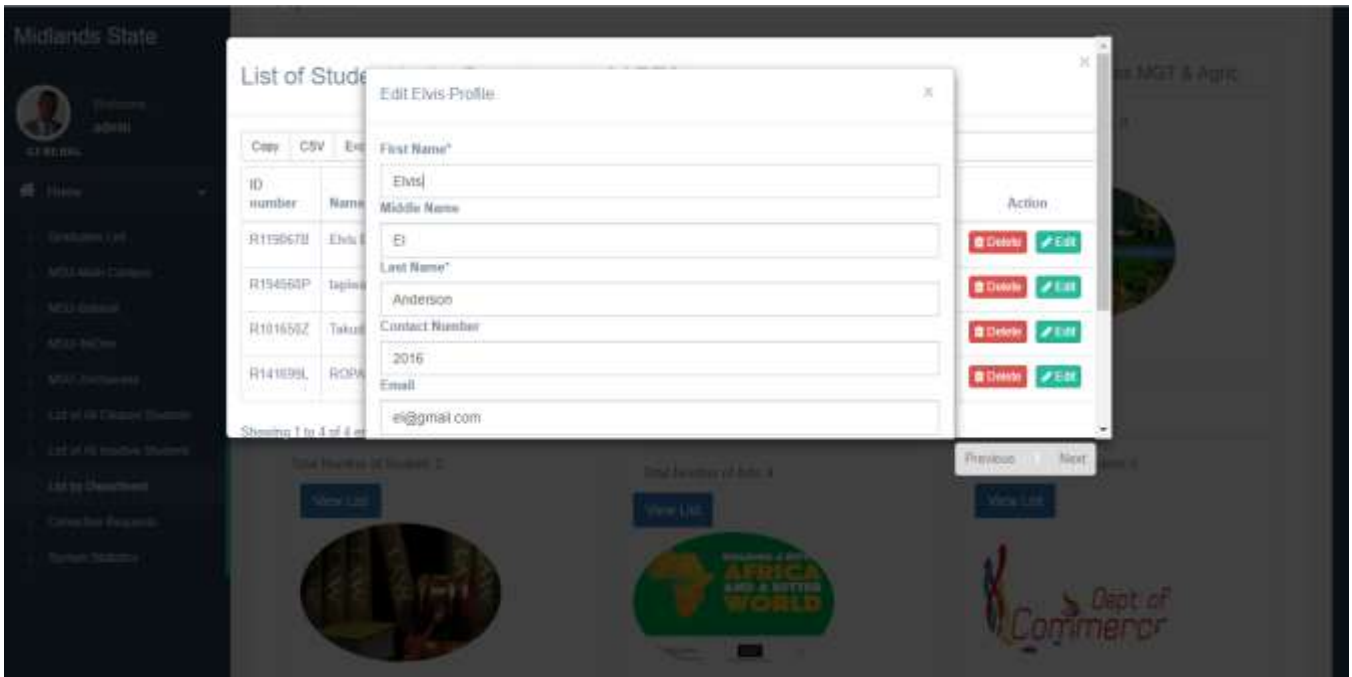
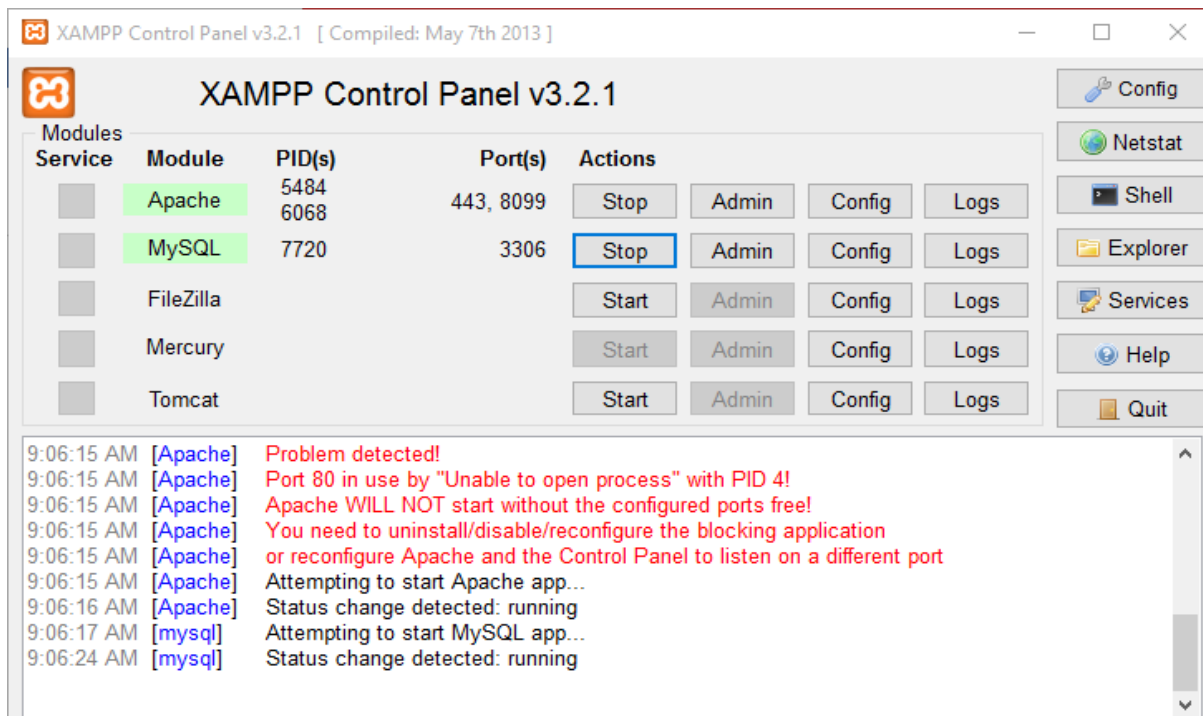


Fig 5.11 verifying the student details

## 5.4 INSTALLATION

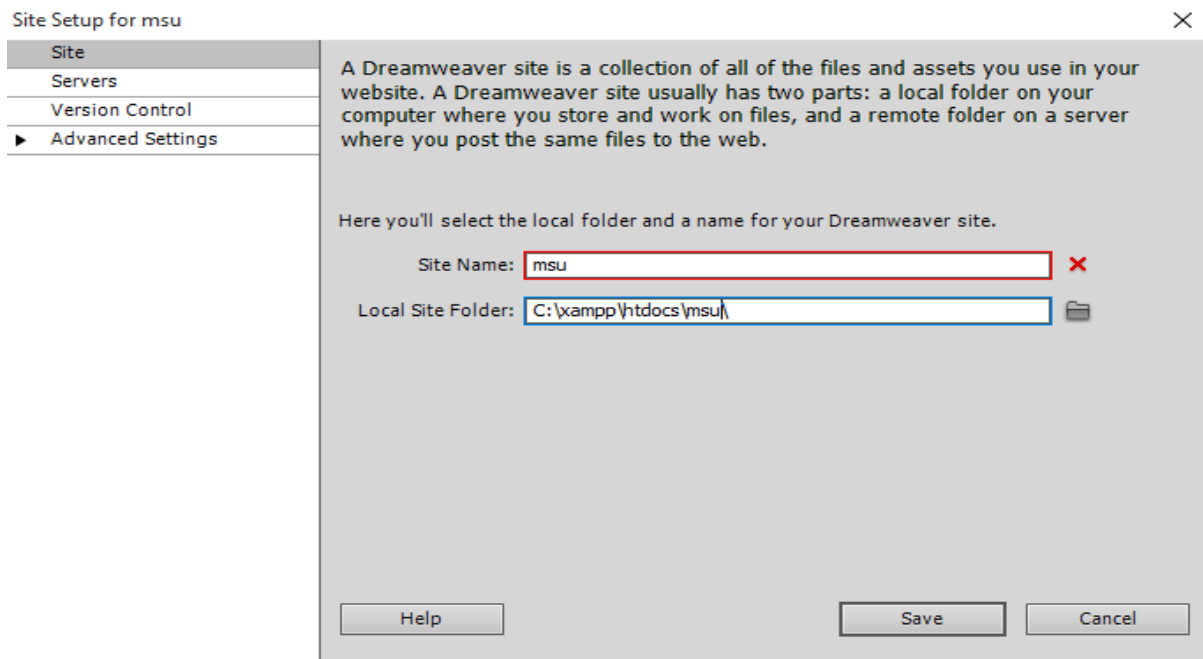
According to Alter (2002), parallel conversion strategy is process of installation which encompasses both the old as well as the new system to run at the same time in order to prevent data loss. The proposed system was installed and it was working together with the manual system. The system implementation was done successfully as the user interaction with the system was good. Some of these factors are explained below:

- ❖ Install XAMPP which has a server name called Apache as well as a database called MySQL
- ❖ Start the services Apache and MySQL.



**Fig 5.20 XAMPP configuration**

- ❖ Install Dreamweaver version 6.0
- ❖ Navigate the site tab and click , the below below will be populated. Create a site called msu as show below.



**Fig 5.21 Site window**

- ❖ Click the link <http://localhost:8099/phpmyadmin> and import MySQL database on the phpmyadmin page.



**Fig 5.22 The import database window**

❖ <http://localhost:8099/msu/OnlineClearance/> to open the home page of the system.

The page below will be displayed.



**Fig 5.23 System home page**

## **5.4.1 USER TRAINING**

The user training process is undertaken to familiarise the users about the system functionality. This process was conducted in groups of people and as a result, the administrative time was alleviated. The system users comprehensively understood all the system modules as well as its functionality. In addition to this, they understood how to produce the reports to Excel and mastered some of the excel features to manipulate those reports. This training was conducted in two ways such as:

### **5.4.1.1 SYSTEM LEVEL**

According to Myers (2004), the system level training is characterised as the process into which the internal system users will taught how to work with the system. This process was undertaken at MSU clearance departments.

### **5.4.1.2 MODULE LEVEL**

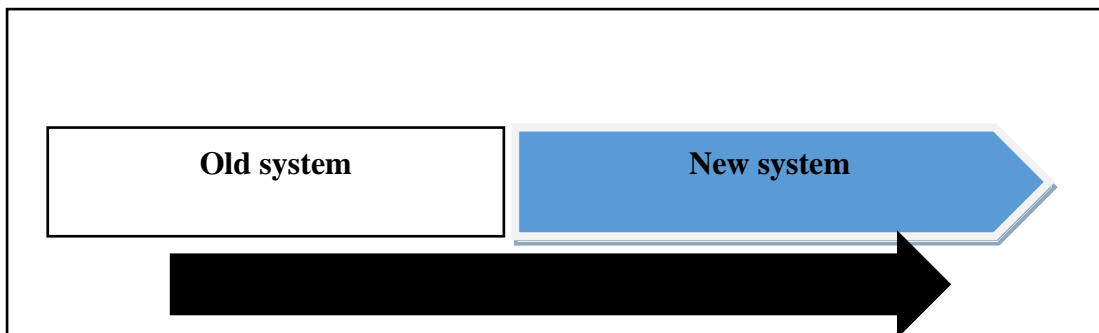
This process is sometimes called mass training where by all the system users are considered during the familiarization process. Each module was compressively exhausted and the users were able to ask questions which showed high level of understanding.

## 5.4.2 CONVERSION

Humphrey (1999) defined conversion as the process of transition from the old system to the new system using various strategies such as direct, pilot and parallel conversion. This process was undertaken after the training process. The techniques of conversion are explained below:

### 5.4.2.1 DIRECT CONVERSION

This type of conversion is time oriented. The old system will be completely replaced by the new system. Time schedules were done in order to alleviate some interruptions during the working hours.



**Fig 5.20: direct conversion**

Source: Joel (1996)

### 5.4.4.2 PILOT CONVERSION

According to Dennis (2002), pilot conversion is the process in which the system under development will be implemented to a very few number of users such as a branch. This is done to test the vulnerability of the system and provided that the system testing proved to be successful, it will be implemented and used by all its entities. The old system will then be replaced by the new system.



### **Fig 5.13: Pilot conversion**

Source: Joel (1996)

#### **5.4.4.3 PARALLEL CONVERSION**

Parallel conversion is characterised as a process in which two systems will be running at once that is the old and the new system, for a defined time Denis (2002). In the event that users feel confident enough to use the new system, the old system will be abandoned. The writer make use of parallel conversion as it is associated with some number of benefits.



### **Fig 5.14: Parallel conversion**

Source: Joel and Levine (1996)

#### **5.5 MAINTANACE**

According to Alter (2002), maintenance is defined as a process which is done continuously and on regularly in order to keep the system secure as well as checking if the system is still meeting its objectives. In order to satisfy the choices of the system users, this process was undertaken every three months. There are different types of maintenance that can be considered namely adaptive, corrective as well as perfective.

##### **5.5.1 CORRECTIVE MAINTENANCE**

Corrective maintenance is characterized as a process alleviating as well as eradicating the bugs of the system, O' Leary and Williams. Basically corrective maintenance put emphasis on reducing some errors that may have been discovered. This process gives details upon the causes of the errors when discovered. In the event that some efforts were put in place to remove errors, the system will be then checked if it is adhering to its objectives.

### **5.5.2 PERFECTIVE MAINTENANCE**

Perfective maintenance is defined a process of modifying the system after delivery in order to enhance its performance. This modification is very importance as it correct as well as to detect latent faults before they turn to be more effective faults. Perfective maintenance put more emphasis on enhancing the functionality of the system. This process helps in closely monitoring all the progressions that will be taking place. The perfections include a better data input form, some sophisticated search functionalities as well as better error handling.

### **5.5.3 ADAPTIVE MAINTENANCE**

Adaptive maintenance is defined as a process which occurs as a result of the influences from the external environment as well as the company's strategic changes. The system is supposed to be always up to date. A typical example the changes of the Government VAT from 10% to 15%. Another good example is of integrating the old manual clearance system with this web based system. These modifications will be done in order to provide what is need for the system on-going that will have been perceived by the users.

## **OBJECTIVE VERSUS SOLUTION**

At this phase the objectives was compared against the actual system to check if the system adheres to the users desires.

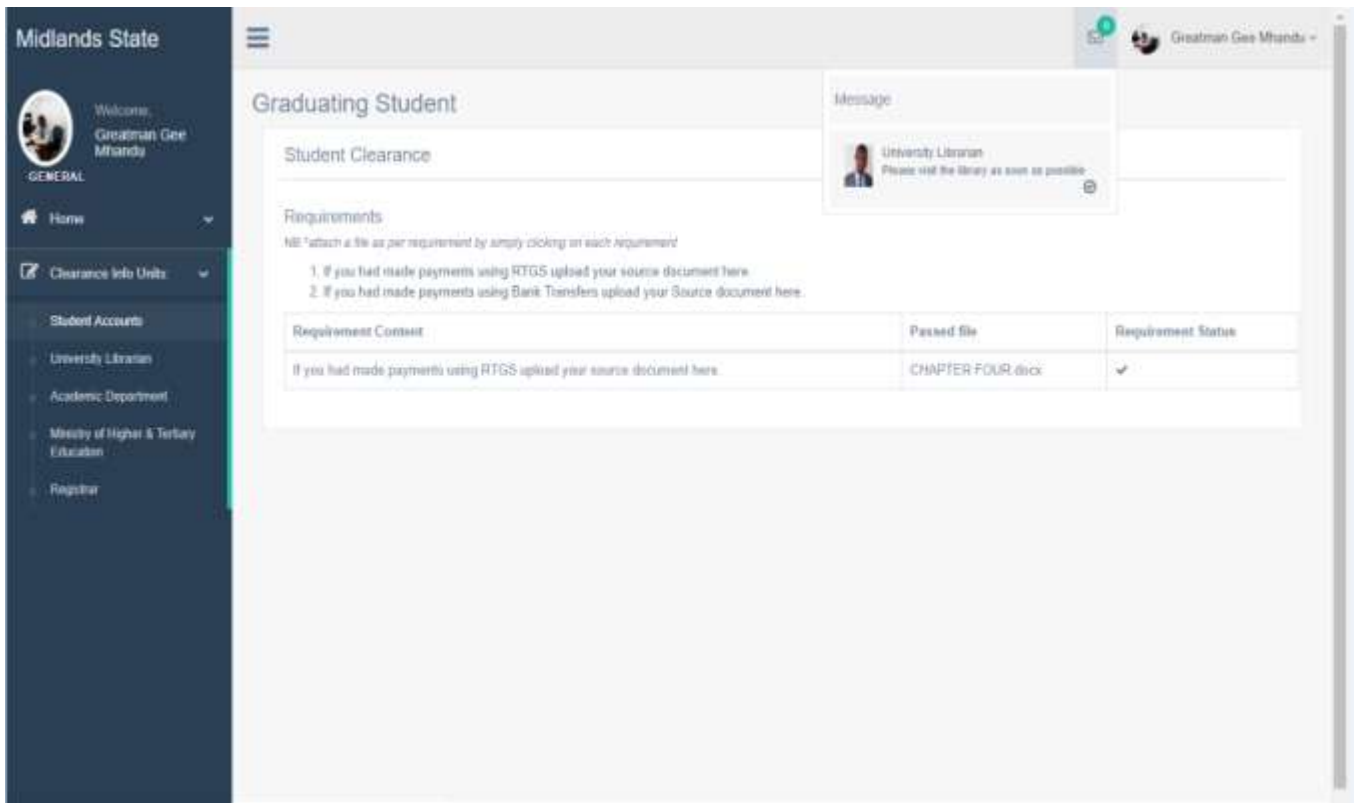
### **Objective 1**

To develop a platform that facilitate information exchange between the clearance information units (the Library, Student Accounts and Departmental) and the graduating student

### **Solution**

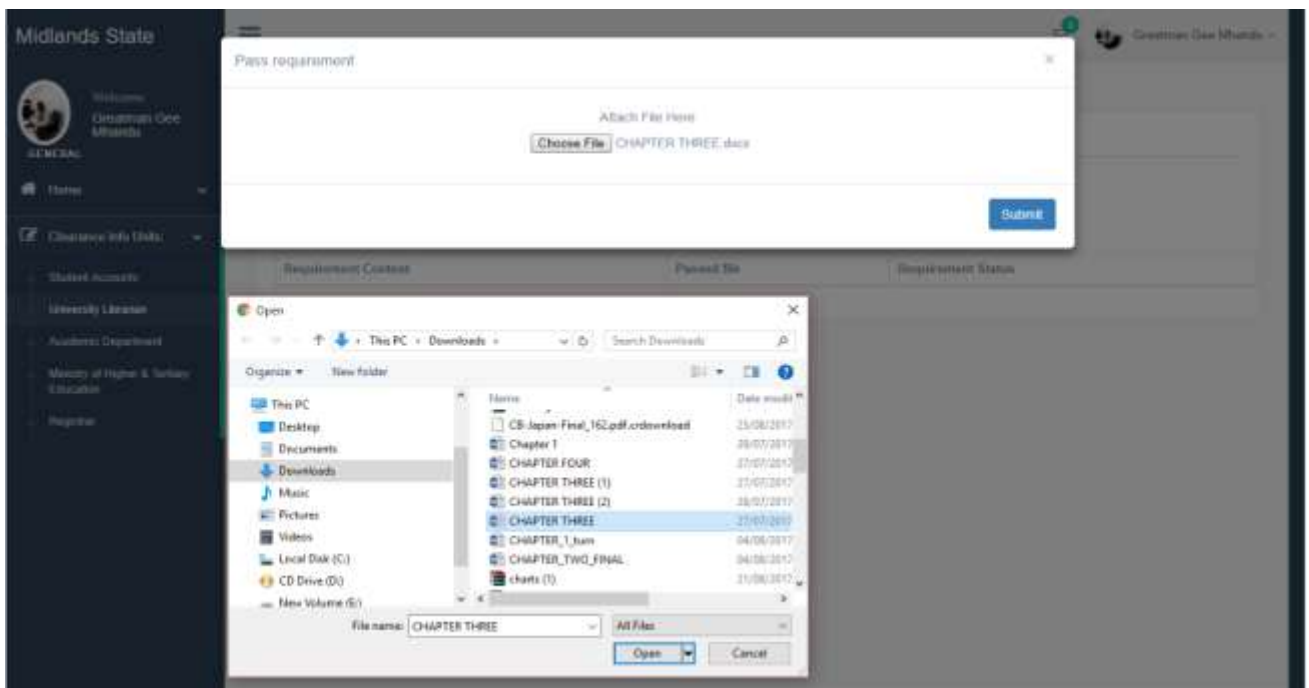
Regarding the fig 5.10 below, the system allows the student to navigate the messages as well as requirements sent by each and every corresponding clearance information unit. The student can be able to communicate with all the clearance sections at point online.





**Fig 5.10 objective one**

Under the same objective, the system enables the student to upload some documents as per the requirement. This is illustrated in fig 5.11 below.



**Fig 5.11 objective one**

## Objective two

To develop a system that allows the graduating student to fill the transcript request form online.

## Solution

Regarding the fig 5.12 below, the system allows the student to fill all the necessary personal information that is required in order to get cleared. This information is entered in the Personal Data Sheet form and stored in the database.

Midlands State

Welcome,  
Greatman Gee  
Mhandu

GENERAL

Home

Clearance Status

My Personal Data Sheet (PDS)

Edit Profile Picture

Clearance Info Units

### Student Clearance

#### Student Personal Data Sheet (PDS)

TR FORM 4543 (Revised 2017)

## PERSONAL DATA SHEET

I. Personal Information | II. Family Background | III. Other Information

### Personal Information

2. Surname	Mhandu
Firstname	Greatman
Middlename	Gee
3. Name Extension (e.g. Dr., Sr.)	Mr
4. Date of Birth	26/06/1992
5. Place of Birth	Gweru
6. Sex	Male: <input checked="" type="radio"/> Female: <input type="radio"/>
7. Status	<input checked="" type="radio"/> Single <input type="radio"/> Widowed <input type="radio"/> Married <input type="radio"/> Separated <input type="radio"/> Annulled <input type="radio"/> Others, specify
8. Citizenship	Zimbabwean
9. Residential Address	Mkoba Gweru
10. Telephone No.	(263) 783-8403
11. Permanent Address	Mkoba Gweru
12. Telephone No.	(263) 783-8403
13. Email Address (if any)	greatmanmhandu@gmail.com
14. Cellphone No. (if any)	783540332

TR FORM 4543 (Revised 2017)

Fig 5.12 objective two

Midlands State

Welcome, Greatman Gee Mhandu

GENERAL

- Home
- Clearance Status
- My Personal Data Sheet (PDS)
- Edit Profile Picture
- Clearance Info Units

Student Clearance

Student Personal Data Sheet (PDS)

TR FORM 4543 (Revised 2017)

PERSONAL DATA SHEET

I Personal Information    **II Family Background**    III Other Information

**II Family Background**

15. Father's Surname	Mhandu(MHNDU)
Firstname	Leonard
Middlename	Tapera
16. Mother's Maiden Name Surname	Agness
Firstname	A
Middlename	Anderson

TR FORM 4543 (Revised 2017)

Fig 5.13 objective two

Midlands State

Welcome, Greatman Gee Mhandu

GENERAL

- Home
- Clearance Status
- My Personal Data Sheet (PDS)
- Edit Profile Picture
- Clearance Info Units

Student Clearance

Student Personal Data Sheet (PDS)

TR FORM 4543 (Revised 2017)

PERSONAL DATA SHEET

I Personal Information    II Family Background    **III Other Information**

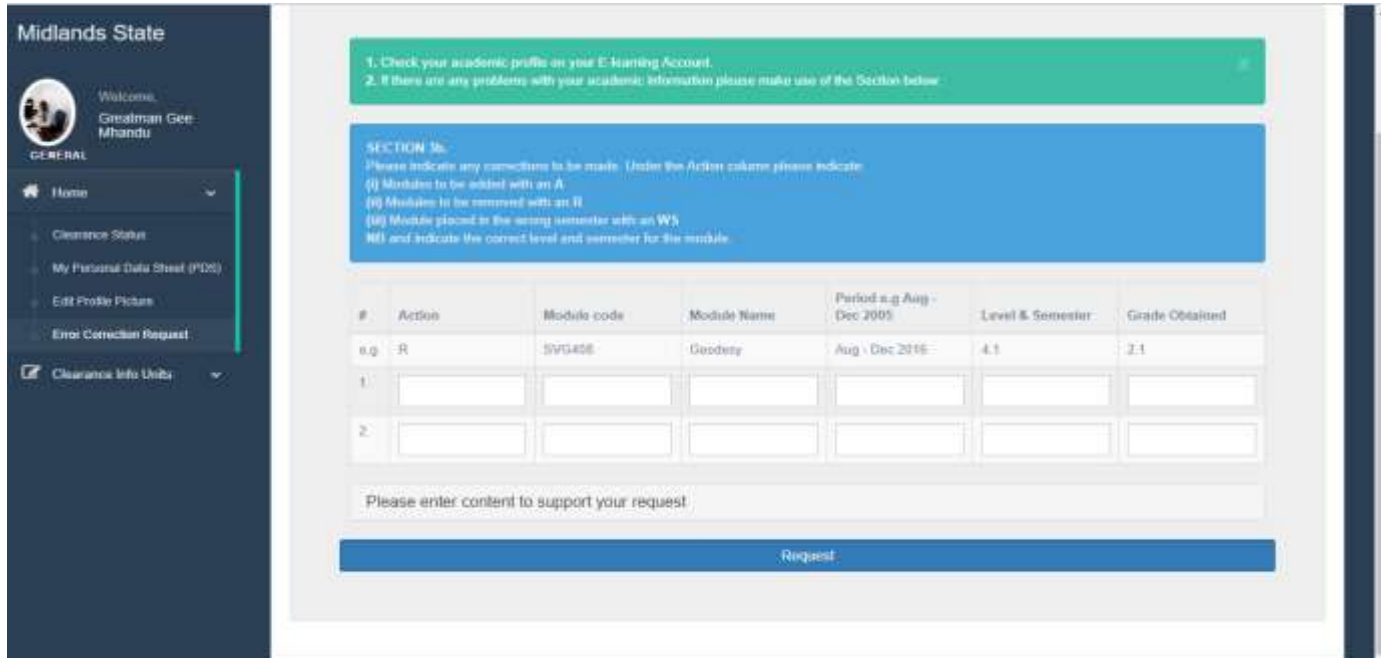
**III Other Information**

16. Special Skills / Hobbies	17. Non-Academic Distinction / Recognition (Write in full)	18. Membership at MSU (Write in full)
Soccer	Artist	N/A
19. Provide details for the following:		
a. Have you been on Cadetship?		<input type="radio"/> YES <input type="radio"/> NO If YES, give details:
b. Have you been covered by the Scholarship?		<input type="radio"/> YES <input type="radio"/> NO If YES, give details:
20. a. Have you ever been formally charged?		<input type="radio"/> YES <input type="radio"/> NO If YES, give details:

Fig 5.14 objective two

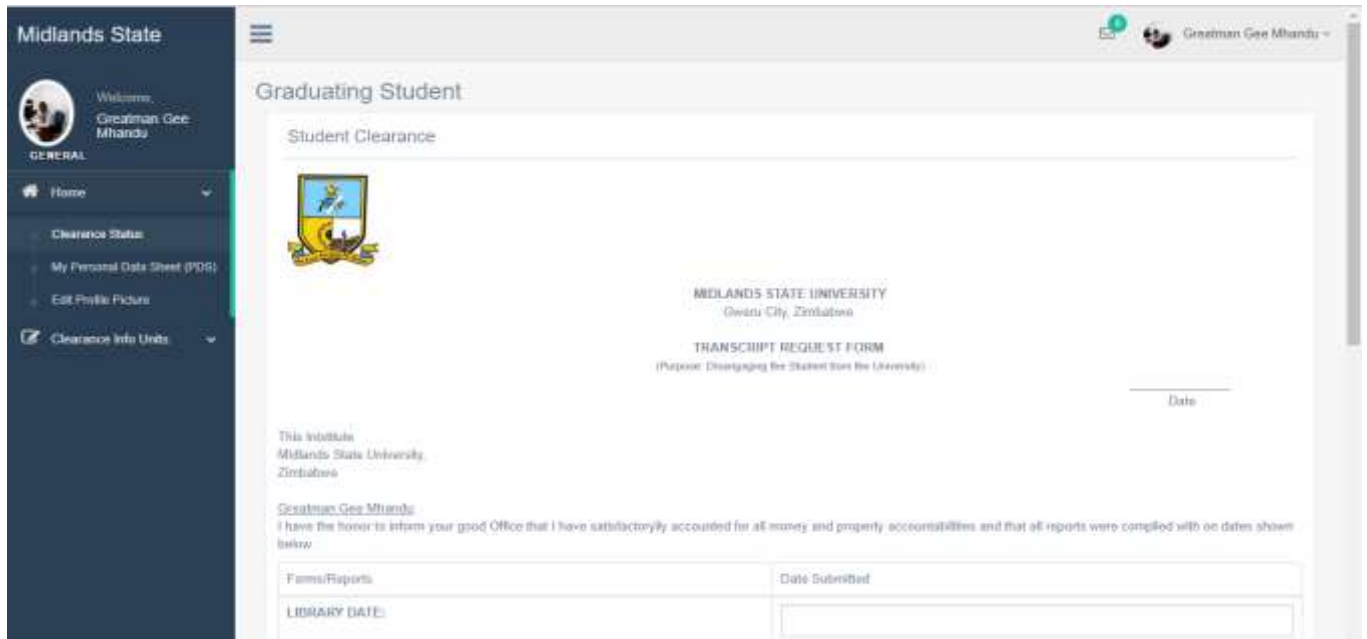
### Objective three

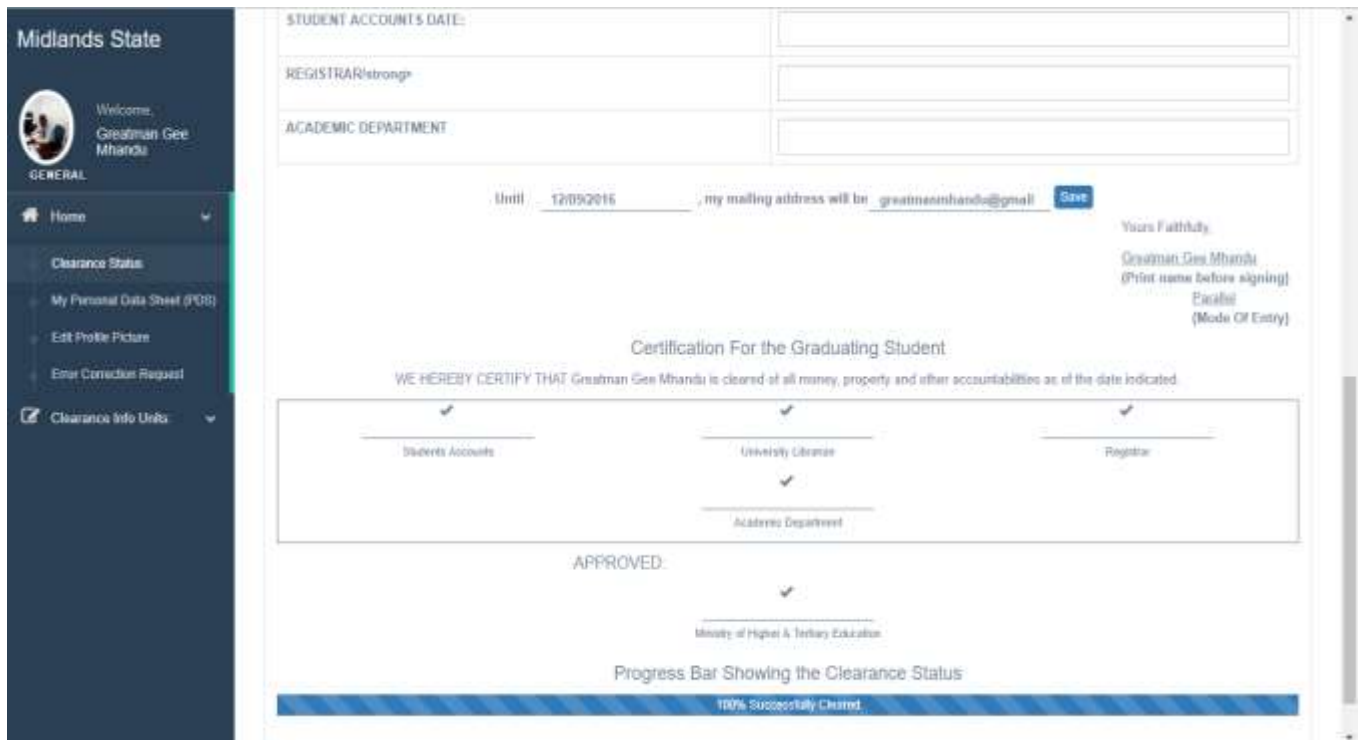
To develop a system that allows the student to send issue requests on the academic fixed information.



### Objective four

To develop a system that enables the student to check the clearance status online.

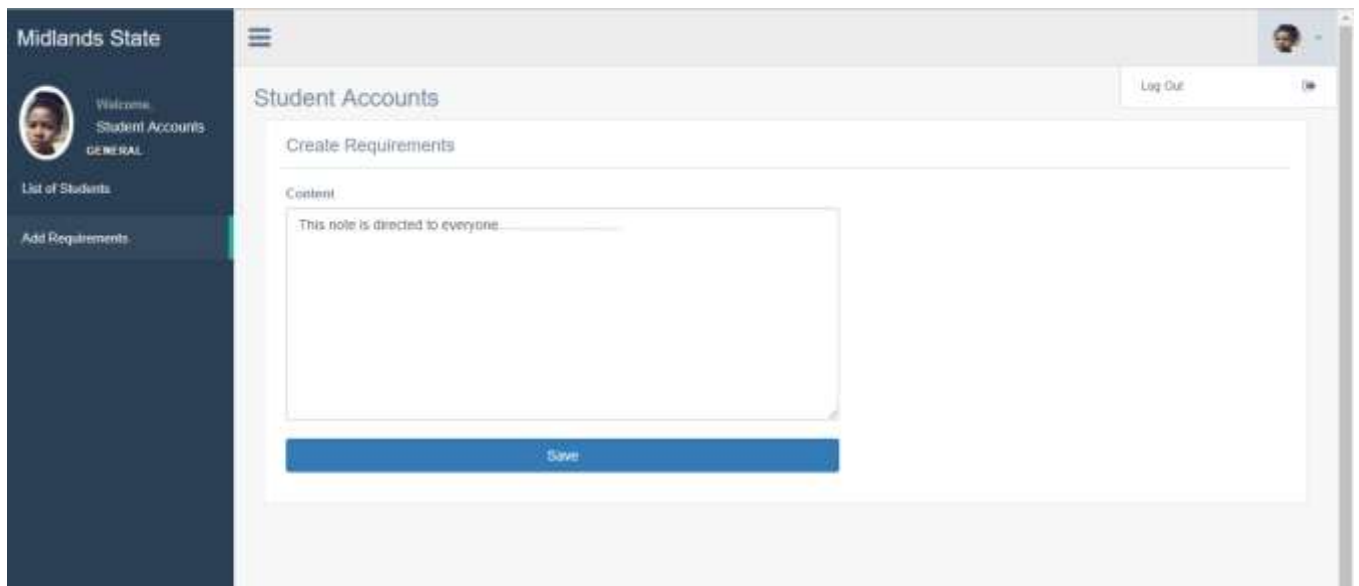




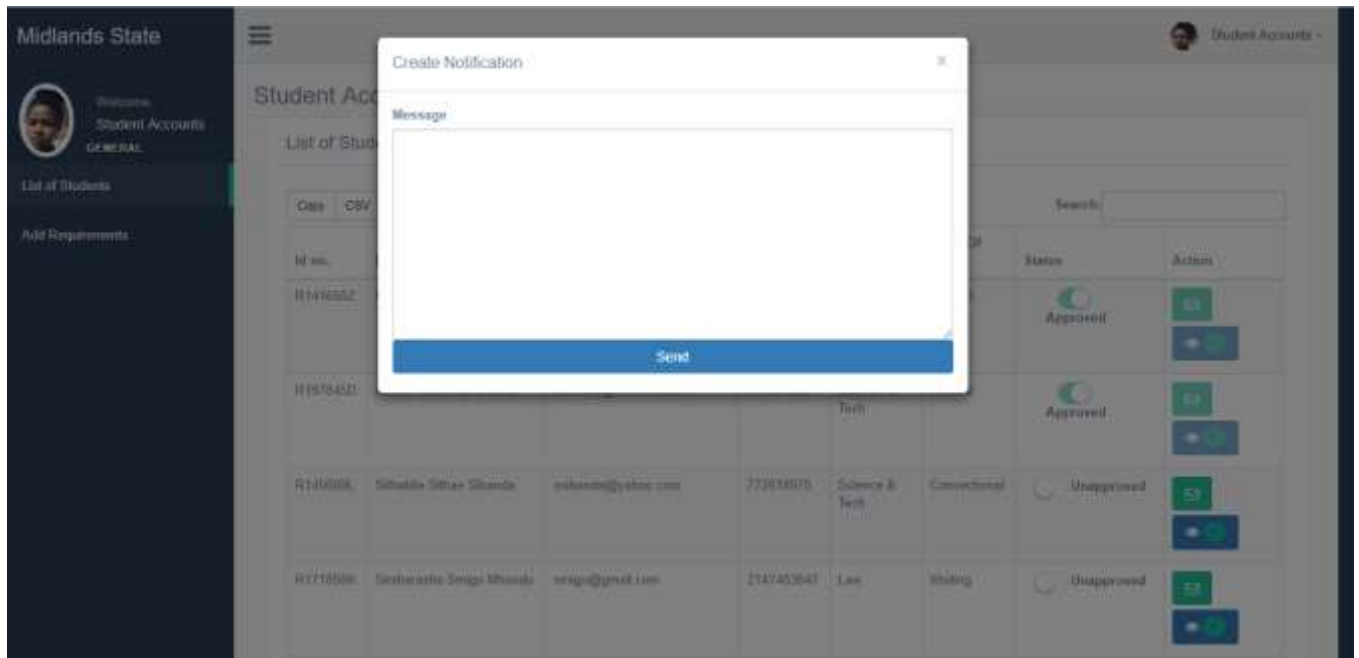
**Fig 5.16 objective four**

**Objective five**

To develop a system that allows the clearance sections to flight requirements as well as sending messages to the student.



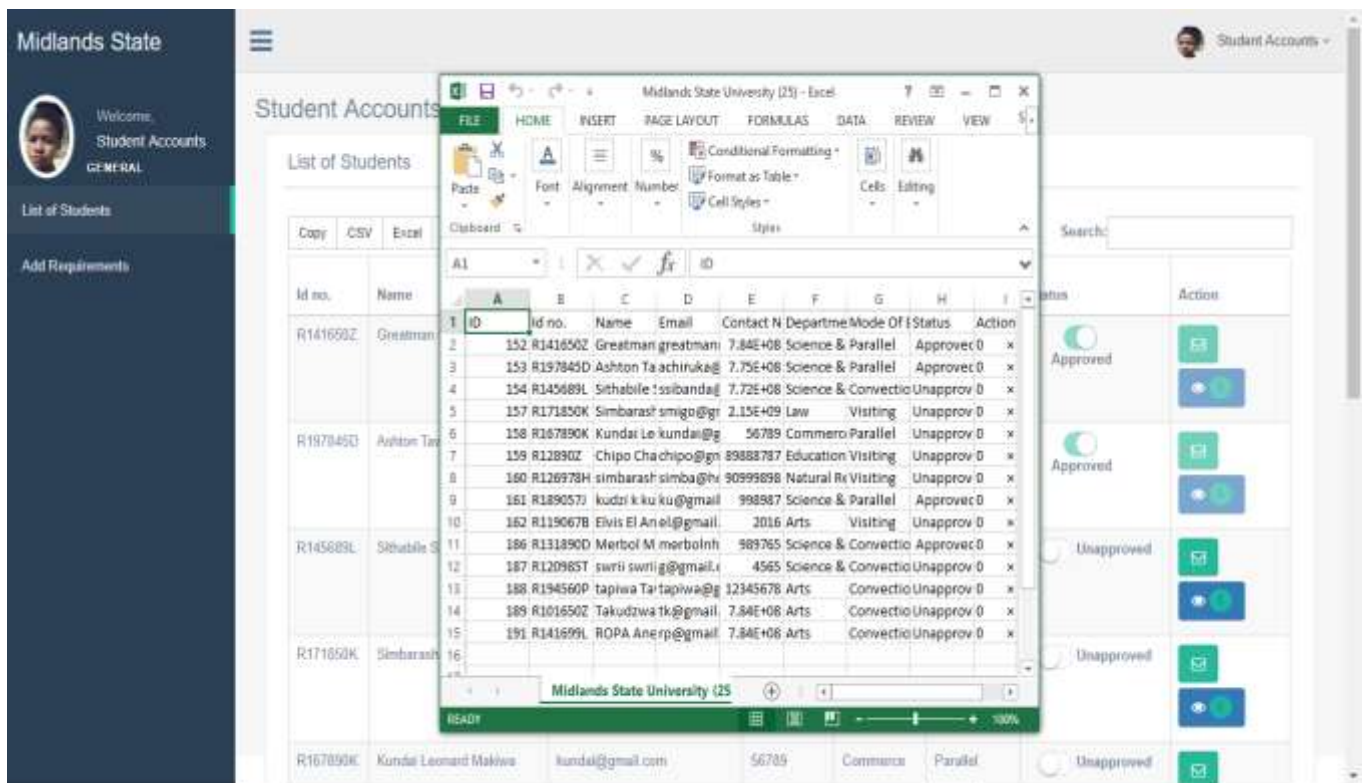
**Fig 5.17 objective five**



**Fig 5.18 objective five**

**Objective six**

To develop a system that provides the graphical reports in Microsoft Excel, Word, PDF and CSV.



**Fig 5.19 objective six**

## **5.6 RECOMMENDATIONS**

- The new system should start its operations immediately
- The old system should be replaced effectively.
- Instructions must be carefully perused in the user manual in order to use the system effectively.
- Each user must keep the password in the safe place at the same time not disclosing confidential information.
- The system administrator must make sure the system users are not violating the system defined rules.
- System auditing must be done regularly as well as vulnerability testing.
- The system backups must be done as well as scanning for viruses so that important data will not be lost.

### **5.6.2 Data migration**

Data migration according to Gilberg et al (2005) is characterised as a process to achieve transition of data from system to another. It is when data is transferred between data formats, storage and as well as computer systems. Data migration was done so as to implement the MSU online clearance system for graduating system as well as to achieve data reallocation from old system to the new system being implemented. In order for the data migration to be effective data from the old system was mapped onto the new system being implemented with the aid of data loading and extraction designs. These designs will relate the data formats of the old system to those of the new system as well as its requirements. During data extraction it is when the data is read from the old system and data loading is when data is written on the new system. After the loading of data, data verification was carried out so as to check and ensure that data was transferred completely, accurately as well check if it supports the new system's processes.

#### **Plan**

- A proper backup must be made first using external hard drive disks.
- Data capturing has to be done in order to in cooperate all the necessary data making use of external storages.
- All the necessary data will be copied in order to avoid skipping important data.

### **5.6.3 CONSTRAINTS**

Constraints are defined as the restrictions to achieve highest performance with the reference to the defined objectives. Some shortfalls were experienced during the system development as well as during the system implementation. This restrictions include time scarcity as well as insufficient resources. As a result, the system was developed and implemented to meet the desires of the institute.

### **5.7 CONCLUSION**

After the study the proposed system was gazetted at Midlands State University and the implementation was very successful. Vulnerability testing was thoroughly conducted so as to keep the system secured. System maintenance will be done regularly so as to keep it up to date as well as alleviating errors. After the achievements of the objectives the user manual appeared in the addendum section.



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## **APPENDIX A: USER MANUAL**

### **Online Clearance System for Graduating Student**

#### **INTRODUCTION**

A User manual has been readied to supplement on both the student and the clearance team as well as to give assistance at whatever point these users are connecting with the system.

#### **GENERAL REQUIREMENTS OF THE SYSTEM**

The system requires each student to experience preparing on the most proficient method to use the system and familiarise with the system before utilising it. Subsequent to preparing and acquainting with the system the student is added into the system by the administrator in order to utilize the system.

This is a web based system that furnish student with the capacity to conduct the clearance process even if they are at home. The student can be able to fill the academic information in the form online as well as to request on academic error correction. In addition, the student can be able to track the clearance process as well as responding to the requirements form each and every clearance section. On the other hand, each clearance team such as the university library or the student accounts can be able to send requirements as well as notifications. A user manual has been readied to create effective communication between all the system entities. .

#### **TECHNOLOGY**

**The system is developed on the following technology platform:**

- PHP server side script language as the application program.
- XAMPP(Apache software) as the Server application
- MYSQL as the relational database management system

**The system allows for:**

#### **System Student module**

- Fill academic information.
- Upload files for each respective departmental requirement.
- Check and track the clearance process.

- Request for academic error corrections.

### System Department module

- Approve clearance.
- Download student files.
- Create notifications as well as requirements.
- Filter the students.

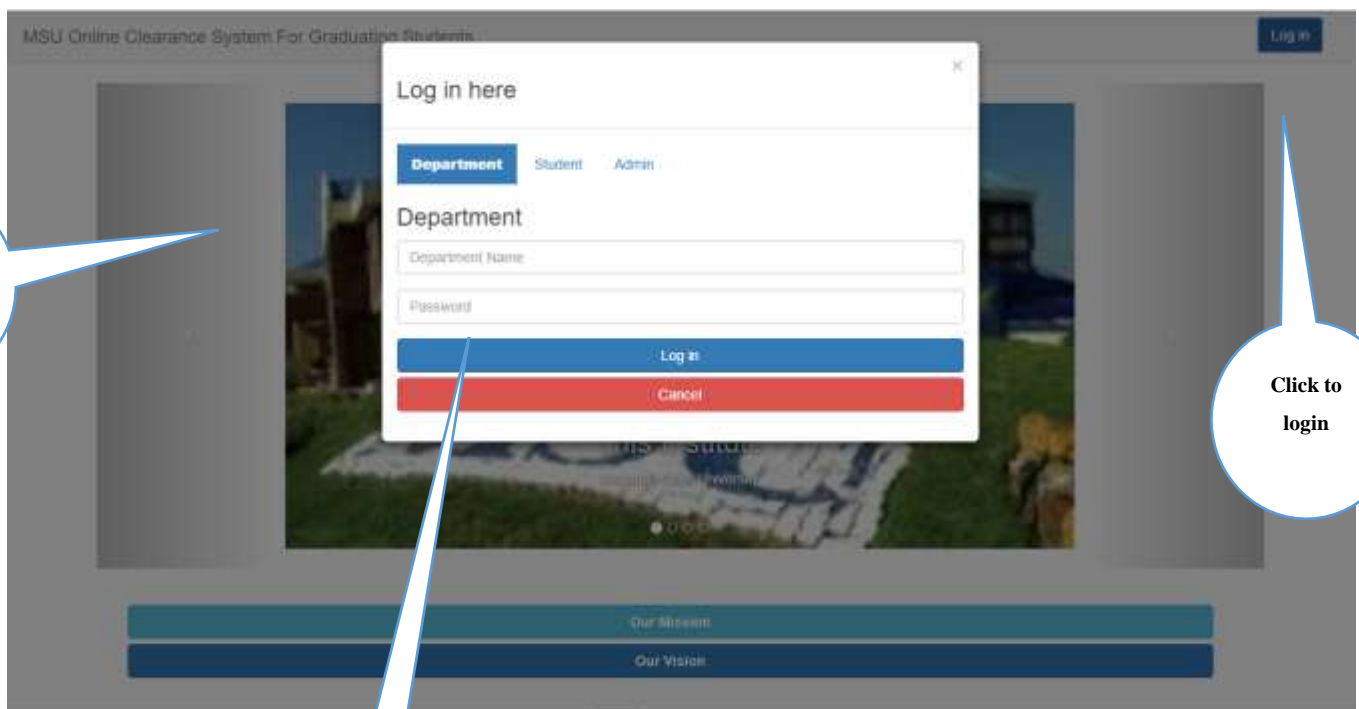
### System Administration module:

- Register system users.
- Filter the students.
- Navigate on the student personal data sheet.
- Run reports.

### HOW TO START

Online clearance system for graduating system is two sided in that there is a student side and the department side, a user will require access to the server which runs on the LAN at Midlands State University in order to use the system. In order for all the system users to use the system, they need to be connected on the internet making use of the internet able access devices. The system begins from the home page.

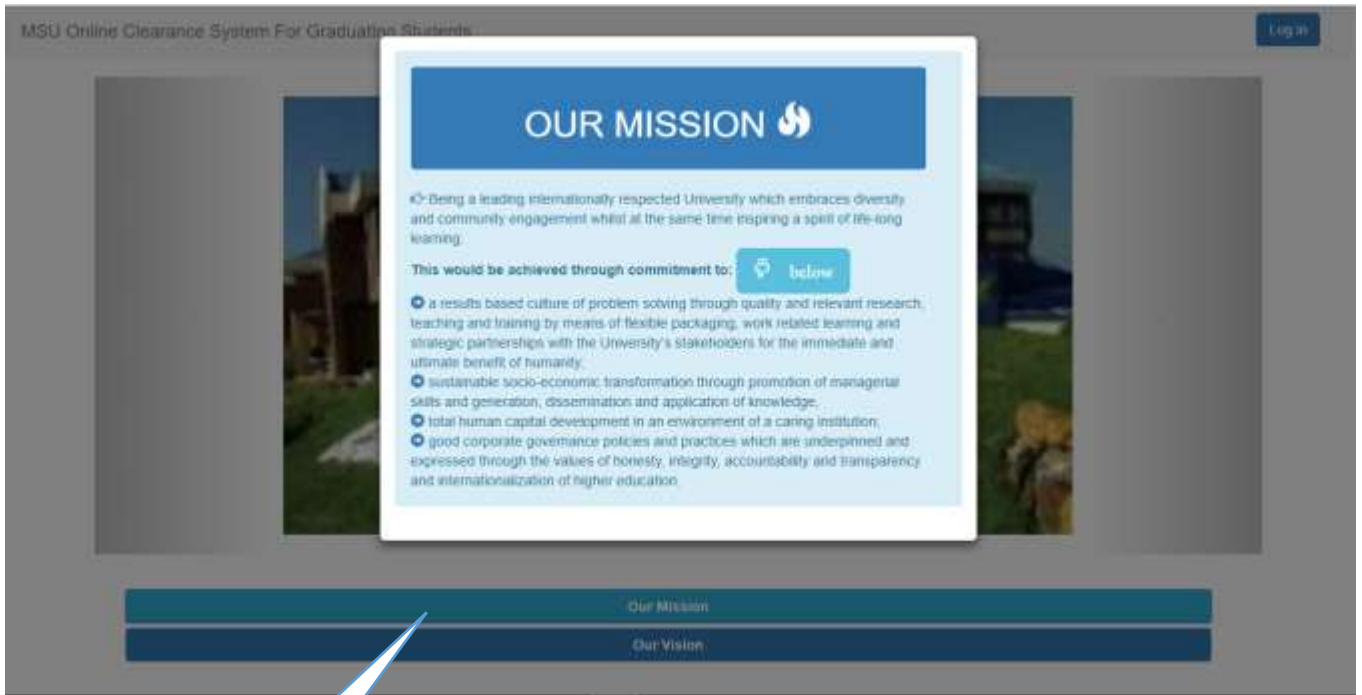
### Screen shots



This the home page

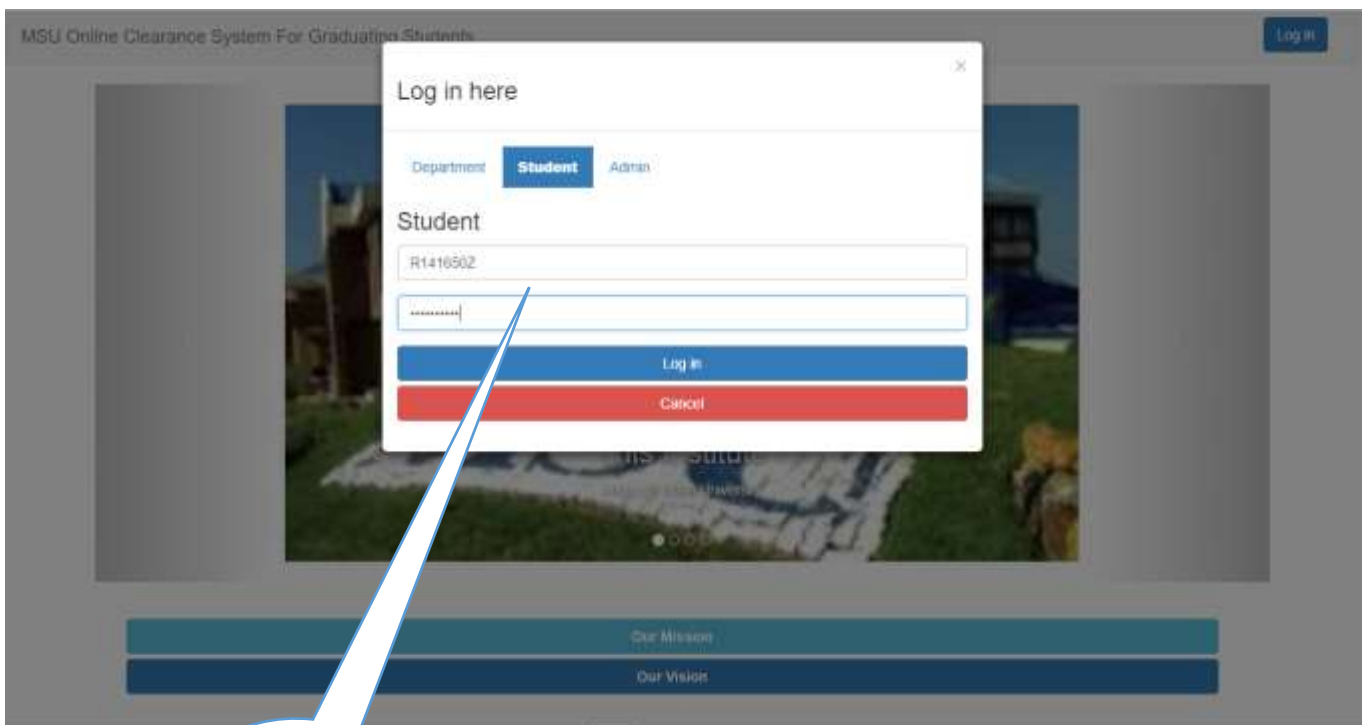
Click to login

This the login form for system

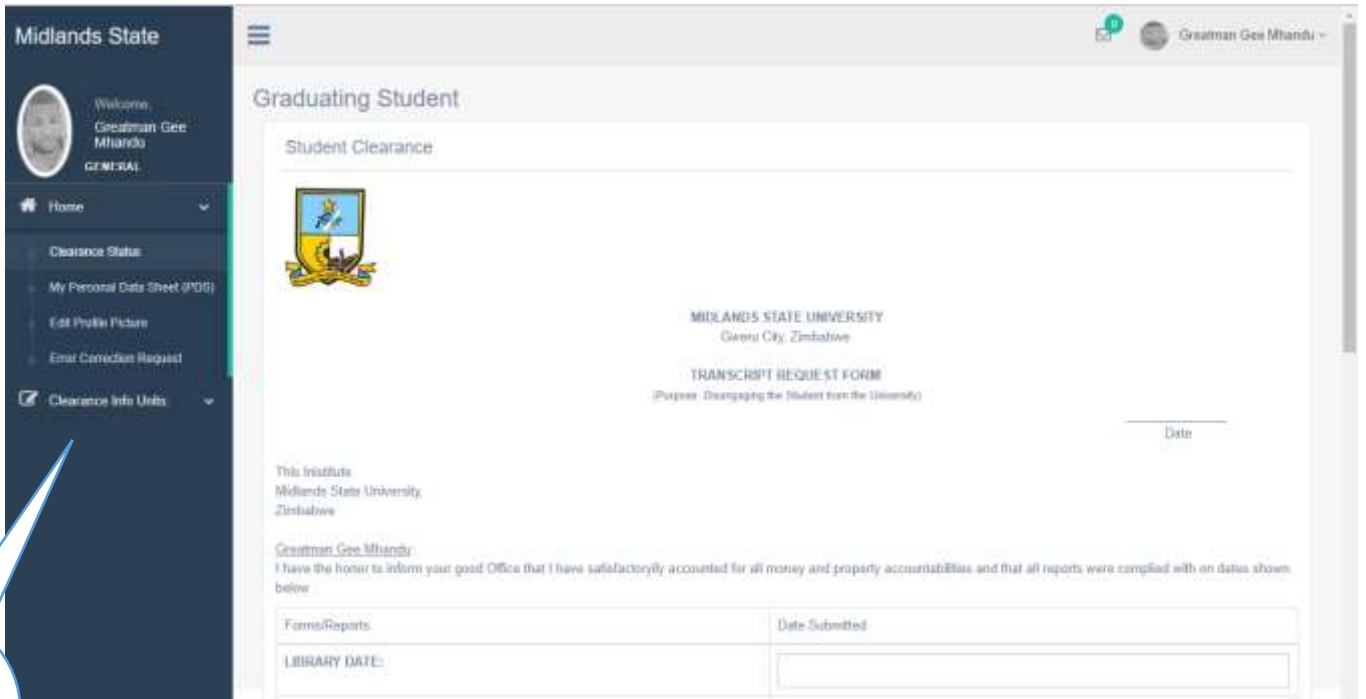


Click to view the mission statement

### Student screen shots



Enter reg number and password to register



This is the clearance status tab



Here student can check or track the clearance progress

The progress bar supplements the tracking

Midlands State

Welcome, Greatman Gee Mhandu

GENERAL

Home

Clearance Status

My Personal Data Sheet (PDS)

Edit Profile Picture

Error Correction Request

Clearance Information

Student Clearance

Message

University Librarian  
Please visit the library as soon as possible

Student Personal Data Sheet (PDS)

TR FORM 4543 (Revised 2017)

PERSONAL DATA SHEET I

I. Personal Information    II. Family Background    III. Other Information

1. Personal Information

2. Surname: Mhandu

Firstname: Greatman

Middlename: -Gee

3. Name Extension (e.g. Dr., Sc.): Mr

4. Date of Birth: 26/06/1992

5. Place of Birth: Gweru

6. Sex: Male:  Female:

7. Status:  Single  Widowed  Married  Separated  Annulled  Others, specify

8. Citizenship: Zimbabwean

9. Residential Address: Mkoba Gweru

10. Telephone No.: (253) 783-8403

11. Permanent Address: Mkoba Gweru

12. Telephone No.: (253) 783-8403

13. Email Address (if any): greatmanmhandu@gmail.com


14. Cellphone No. (if any): 783840332

TR FORM 4543 (Revised 2017)

This is the personal data sheet tab

Student can fill academic information

**Midlands State**



Welcome,  
Greatman Gee  
Mhandu  
GENERAL

- Home
- Clearance Status
- My Personal Data Sheet (PDS)
- Edit Profile Picture
- Error Correction Request
- Clearance Info Units

Greatman Gee Mhandu

## Student Clearance

### Student Personal Data Sheet (PDS)

TR FORM 4543 (Revised 2017) **PERSONAL DATA SHEET**

I. Personal Information
II. Family Background
III. Other Information

III. Other Information

<p>16. Special Skills / Hobbies</p> <input style="width: 95%;" type="text" value="Soccer"/>	<p>17. Non-Academic Distinction / Recognition (Write in full)</p> <input style="width: 95%;" type="text" value="Artist"/>	<p>18. Membership at MSU (Write in full)</p> <input style="width: 95%;" type="text" value="N/A"/>
---	---	---

15. Provide details for the following:

a. Have you been on Cadetship?

YES  NO

If YES, give details:

b. Have you been covered by the Scholarship?

YES  NO

If YES, give details:

<p>20. a. Have you ever been formally charged?</p>	<p style="text-align: right;"><input type="radio"/> YES <input checked="" type="radio"/> NO</p> <p style="text-align: right;">If YES, give details:</p> <input style="width: 95%; height: 20px;" type="text"/>
<p>b. Have you ever been guilty of any administrative offense?</p>	<p style="text-align: right;"><input type="radio"/> YES <input checked="" type="radio"/> NO</p> <p style="text-align: right;">If YES, give details:</p> <input style="width: 95%; height: 20px;" type="text"/>
<p>21. Have you ever been convicted of any crime or violation of any law, decree, ordinance or regulation by any court or tribunal?</p>	<p style="text-align: right;"><input type="radio"/> YES <input checked="" type="radio"/> NO</p> <p style="text-align: right;">If YES, give details:</p> <input style="width: 95%; height: 20px;" type="text"/>

22. References (Person not related by affinity to applicant / applicant)

Name	Address	Tel. No.
<input style="width: 95%;" type="text" value="Tapera"/>	<input style="width: 95%;" type="text" value="Mkoba"/>	<input style="width: 95%;" type="text" value="(078) 789-9909"/>

23. I declare under oath that this Personal Data Sheet has been accomplished by me, and is a true, correct and complete statement pursuant to the provisions of pertinent laws, rules and regulations of This Institute (Midlands State University).

I also authorize the agency head / authorized representative to verify / validate the contents stated herein. I trust that this information shall remain confidential.

<input style="width: 95%; height: 20px;" type="text"/>	<input style="width: 95%; height: 20px;" type="text"/>	
Issued At	Signature (Sign inside the box)	
<input style="width: 95%; height: 20px;" type="text"/>	<input style="width: 95%; height: 20px;" type="text"/>	
Issued On (mm/dd/yyyy)	Date Accomplished	Right Thumbmark
<input style="width: 95%; height: 20px;" type="text"/>	<input style="width: 95%; height: 20px;" type="text"/>	<input style="width: 95%; height: 20px;" type="text"/>

Save

TR FORM 4543 (Revised 2017)

**Midlands State**

Welcome,  
Greatman Gee Mhandu  
GENERAL

Home

Clearance Status

My Personal Data Sheet (PDS)

Edit Profile Picture

**Error Correction Request**

Clearance Info Units

### Create Error Correction Request

1. Check your academic profile on your E-learning Account.  
2. If there are any problems with your academic information please make use of the Section below.

**SECTION 3a:**  
Please indicate any corrections to be made. Under the Action column please indicate:  
(i) Modules to be added with an A  
(ii) Modules to be removed with an R  
(iii) Module placed in the wrong semester with an WS  
NB and indicate the correct level and semester for the module.

#	Action	Module code	Module Name	Period e.g Aug - Dec 2005	Level & Semester	Grade Obtained
e.g. 1	R	BSG408	Geodesy	Aug - Dec 2016	4.1	2.1
2						
3						

Please enter content to support your request

**Request**

**This is the error correction tab**

**Follow the example to send a request**

**Read carefully the following instructions**

**Midlands State**

Welcome,  
Greatman Gee Mhandu  
GENERAL

Home

Clearance Info Units

**Student Accounts**

University Librarian

Academic Department

Ministry of Higher Secondary Education

Registrar

### Graduating Student

Student Clearance

Requirements

**Requirements**

1. If you had made payments using RTGS upload your source document here  
2. If you had made payments using Bank Transfers upload your Source document here.

Requirement Content	Passed file	Requirement Status
If you had made payments using RTGS upload your source document here	CHAPTER FOUR.docx	✓

**Clicking this tab will open the sub tabs for various sections**

**This are the requirements from the student account. Click once and the window to unload a file will be open**

**You can track the requirement status here**



The screenshot shows the 'Student Accounts' page. On the left, a sidebar contains 'List of Students' and 'Add Requirements'. The main area displays a 'List of Students' table with columns for ID, Name, and Status. An Excel window is overlaid on the table, showing a spreadsheet with columns for ID, Name, Email, Contact No, Department, Mode of Study, and Status. To the right, a table shows the status of requirements for a student, with columns for Status and Action. Callout boxes point to the 'List of Students' tab, the 'Excel' export button, the Excel window, and the 'Unapproved' status button.

ID	Name	Status	Action
R141660Z	Greatman	Approved	[Edit] [Refresh]
R1071460	Ashton	Approved	[Edit] [Refresh]
R145699L	Sithabile	Approved	[Edit] [Refresh]
R171850K	Simbarashe	Unapproved	[Edit] [Refresh]
R167898K	Kundal	Unapproved	[Edit] [Refresh]

This is the student list tab

Click to export your data to excel, pdf and word

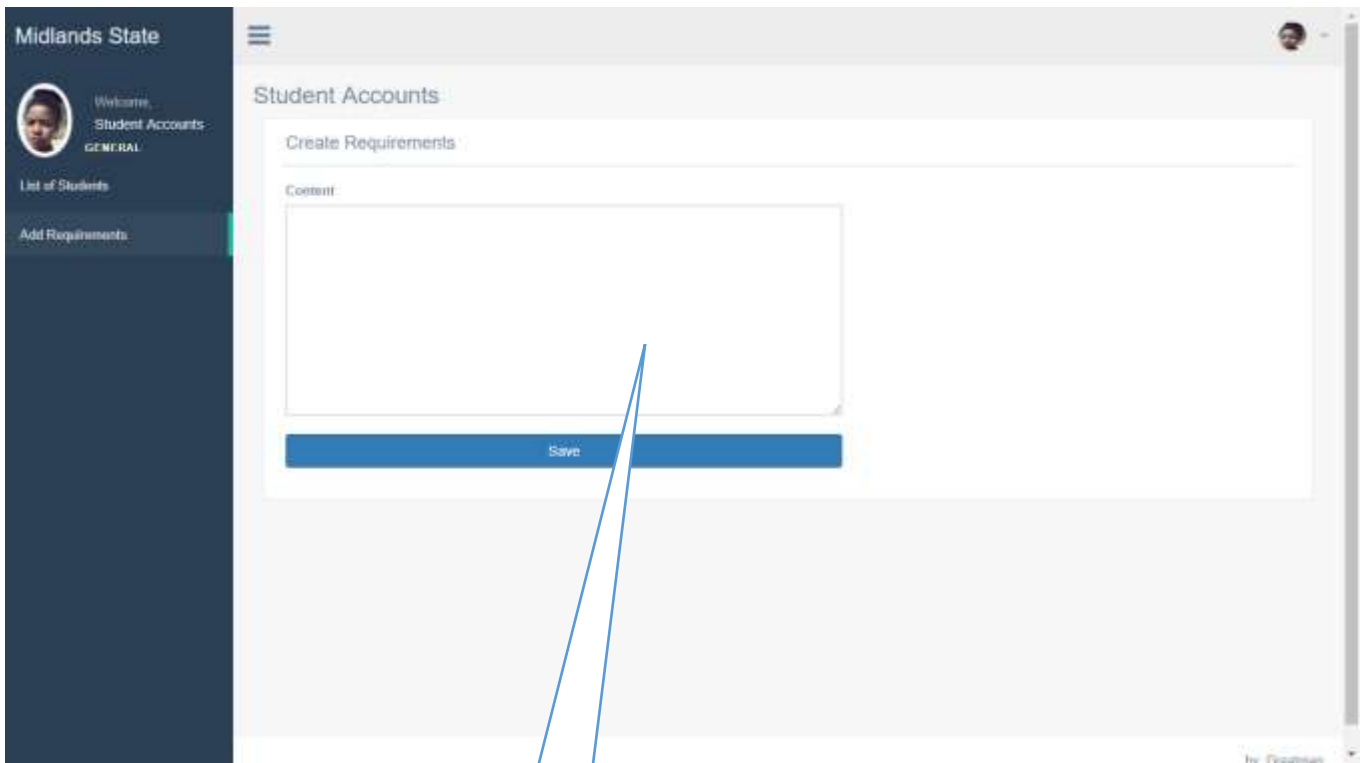
Excel window here

Click here to complete clearance

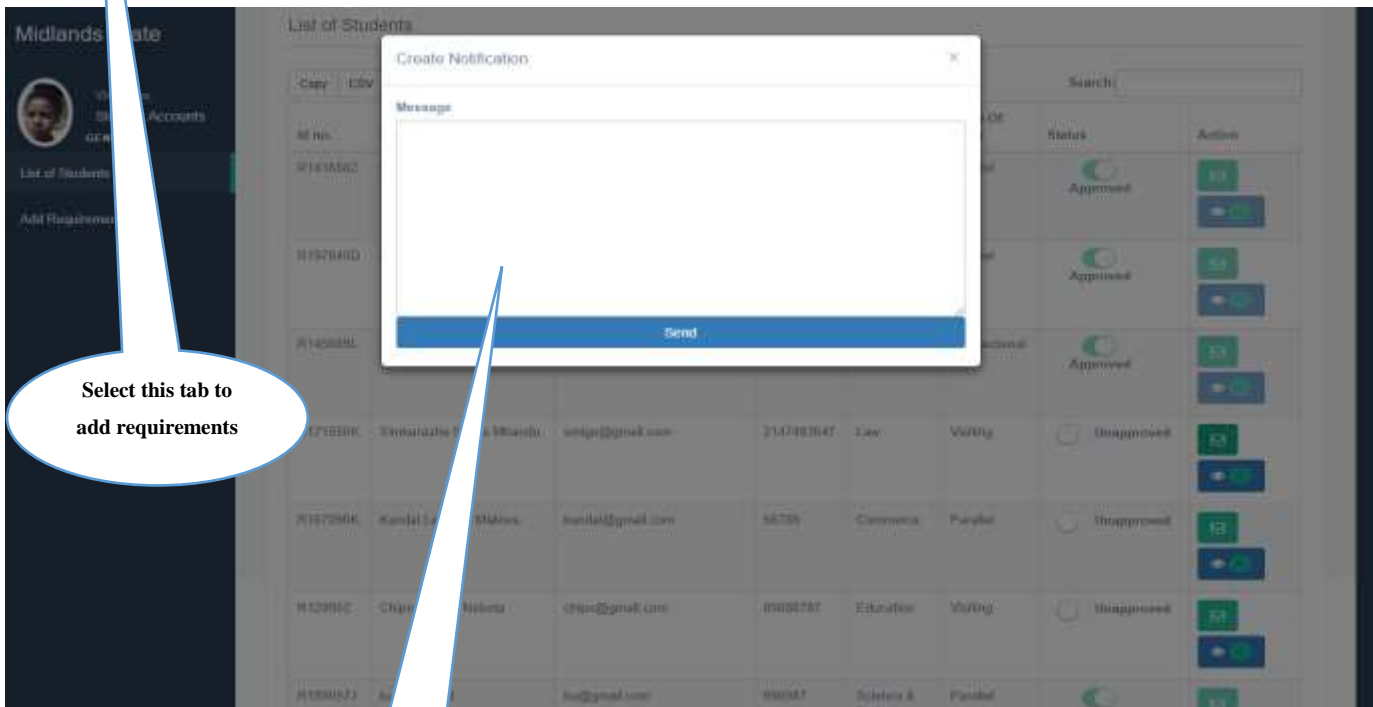
The screenshot shows the 'Passed Requirement' section for a student named Simbarashe Smigo Mhandu. It features a table with columns for Requirement Content, Passed Requirement, Requirement Status, and Action. A callout box points to the 'Passed Requirement' column.

Requirement Content	Passed Requirement	Requirement Status	Action

This area enables to view and download files from the student platform



Enter requirement content here



Select this tab to add requirements

Create message notification here

## Administration screen shots

The screenshot shows the 'Admin Dash Board' for Midlands State. On the left is a navigation menu with options like 'Home', 'Graduates List', 'MSU Main Campus', and 'List of All Cleared Students'. The main area displays a table of students under the 'Main Campus' section. The table has columns for ID no., Name, Email, Contact No., Department, Mode Of Entry, and Action. Each row contains a student's details and three action buttons: 'Edit', 'View', and 'Deactivate'.

ID no.	Name	Email	Contact No.	Department	Mode Of Entry	Action
R141550Z	Growthan Gee Mhanda	gwhmammhanda@gmail.com	783648332	Science & Tech	Paralel	[Edit] [View] [Deactivate]
R197846D	Ashlon Tawanda Chiruka	achiruka@hotmail.com	774897890	Social Science	Paralel	[Edit] [View] [Deactivate]
R145689L	Sihutale Sihwe Sibanda	ssibanda@yahoo.com	772010970	Science & Tech	Correctional	[Edit] [View] [Deactivate]
R180957J	Kudli k kudli	ku@gmail.com	98987	Science & Tech	Paralel	[Edit] [View] [Deactivate]
R118067B	Elvis El Anderson	el@gmail.com	2916	Arts	Visiting	[Edit] [View] [Deactivate]
R111896D	Melbol M Nhamo	melbolnhamo@gmail.com	989765	Science & Tech	Correctional	[Edit] [View] [Deactivate]
R120985T	swil swil bae	sw@gmail.com	456	Science & Tech	Correctional	[Edit] [View] [Deactivate]

Click one of the buttons in the action column to edit view

The screenshot shows the 'Add Student' form. A dropdown menu is open for the 'Student Reg' field, displaying a list of student registration codes. The form includes fields for Student Reg, First Name, Middle Name, Last Name, Contact Number, Email, Mode Of Entry, Department, and Campus. There are 'Close' and 'Save' buttons at the bottom of the form.

List of all graduating students



TR FORM 4543 (REVISED 2017)

PERSONAL DATA SHEET

I. Personal Information

2. Surname	Mhanda		
First Name	Greatman		
Middle Name	Gee	3. Name Extension	Mr
4. Date of Birth	26/06/1992	5. Residential Address	Mwba Gweru
7. Place of Birth	Gweru		
8. Sex	M		
9. Status		10. Telephone No.	(263) 783-8403
11. Citizenship	Zimbabwean	10. Permanent Address	Mwba Gweru
12. Telephone No.	(263) 783-8403		
13. Email Address	greatmanmhanda@gmail.com		
14. Cellphone No.	783848332		

II. Family Background

15. Father's Surname	Mhanda		
Firstname	Leonard		
Middlename	Tapera		
Mother's Surname			



MIDLANDS STATE UNIVERSITY  
Gweru City, Zimbabwe

TRANSCRIPT REQUEST FORM  
(Purpose: Disengaging the Student from the University)

Date \_\_\_\_\_

Student information

Institute  
Midlands State University  
Gweru

Greatman Gee Mhanda

I have the honor to inform your good Office that I have satisfactorily accounted for all money and property accountabilities and that all reports were compiled:

Until \_\_\_\_\_, my mailing address will be: \_\_\_\_\_

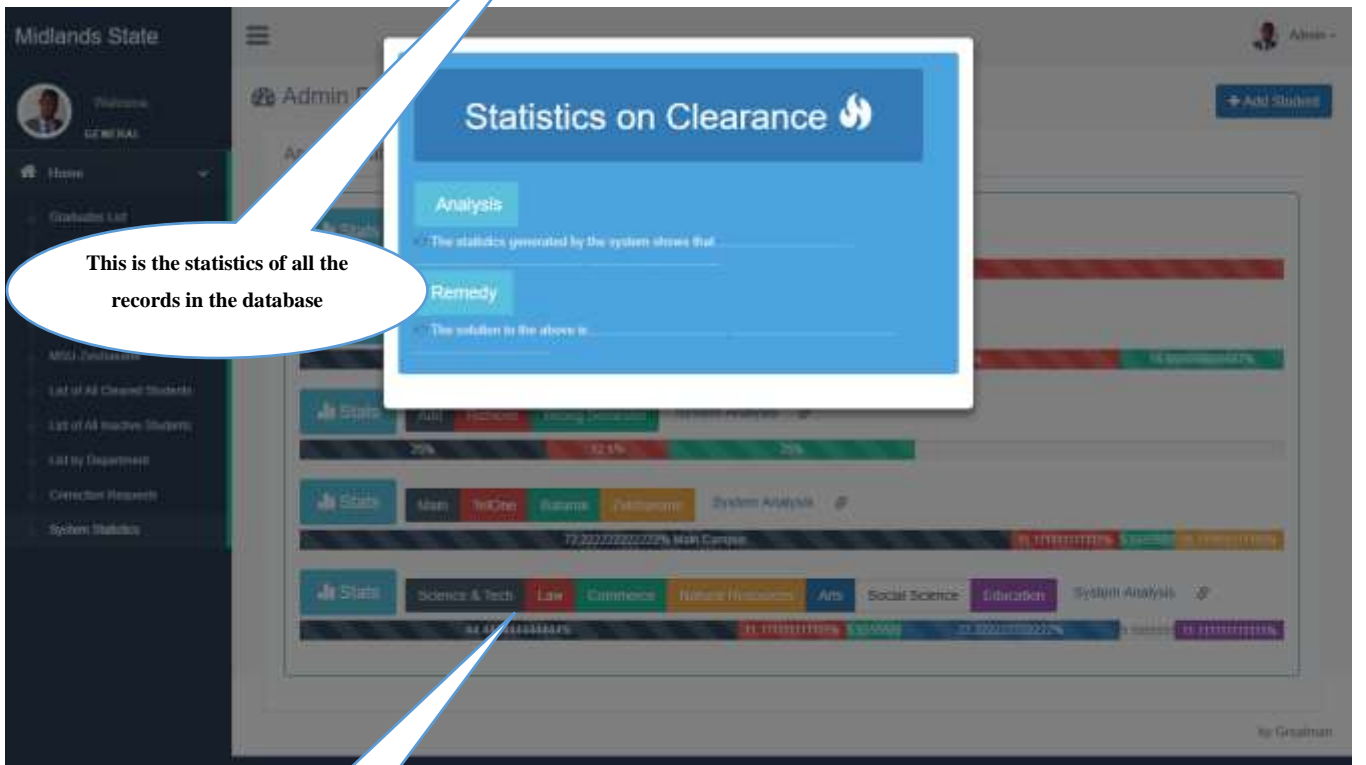
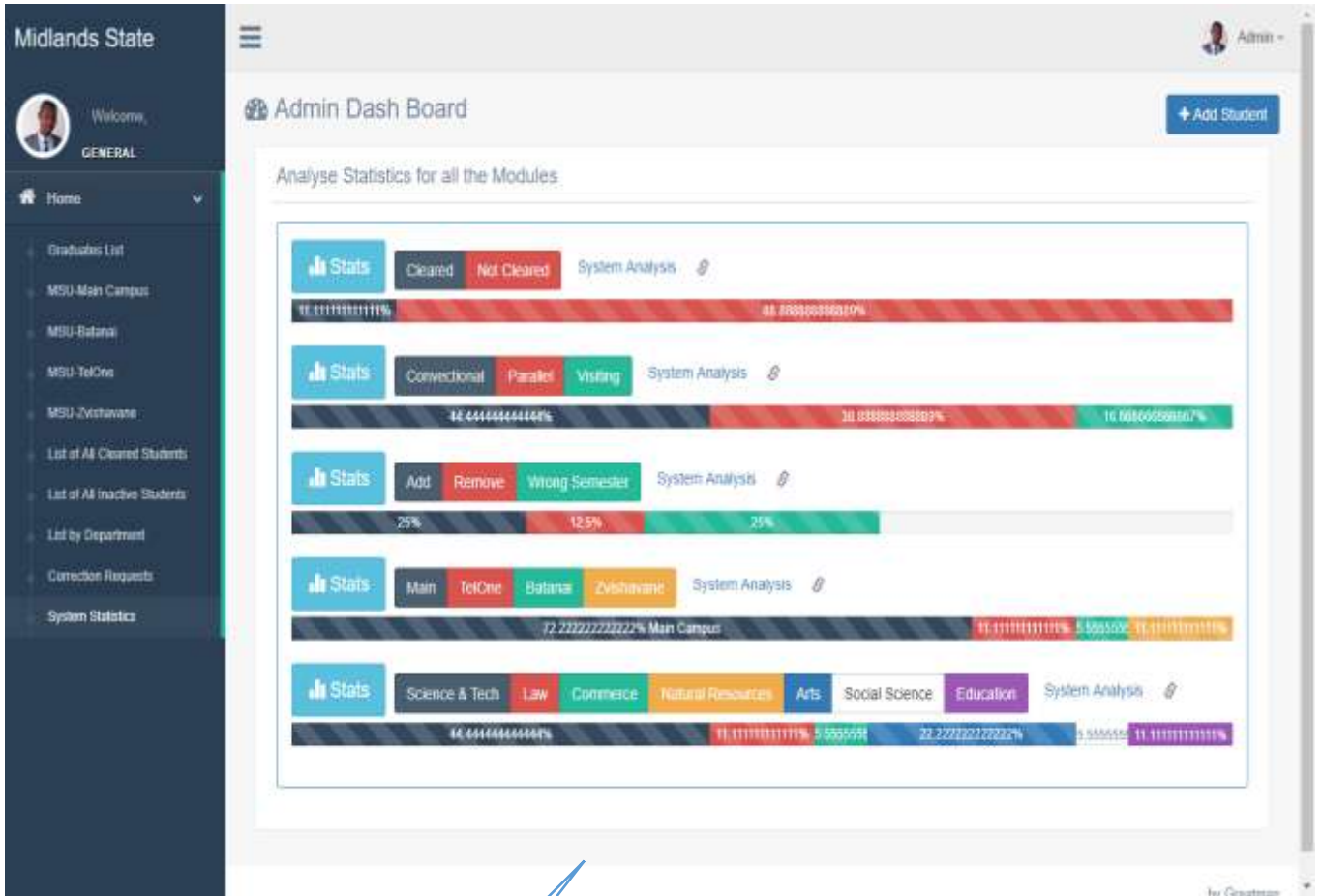
yours Faithfully,

Greatman Gee Mhanda  
(Print name before signing)  
Paraka  
(Mode Of Entry)

Certification

WE HEREBY CERTIFY THAT Greatman Gee Mhanda is cleared of all money, property and other accountabilities as of the date indicated.

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Student Accounts	University Librarian	Registrar
	<input checked="" type="checkbox"/>	
	Academic Department	



This is the statistics of all the records in the database

This is the analysis and remedy

## APPENDIX B: INTERVIEW QUESTIONS

Answer by ticking either YES/NO

### QUESTION

1. Is the proposed system superior to the present system?
2. Over the long haul will the new system be useful to the firm?
3. It is safe to say that you are meeting organization targets with the present system?
4. Is the presentation of this system an aggressive device?
5. Will this new system result in further new programming?

Yes	No

### Inquiries Questions

**The accompanying is a concentrate from an interviews' portion that were directed inside Clearance Staff:**

How best would you be able to portray the operations that happen inside of the organization?

.....  
.....

Can we say that you give fantastic administration?

.....  
.....

What do you believe are the impediments that are in the present system that can frustrate you from giving the best quality administrations to your customers?

.....  
.....

How best do you handle customer inquiries and what are the most posted questions and what do you believe is most ideal route managing it for the last time?

## APPENDIX C: QUESTIONNAIRES

### a) QUESTIONS DIRECTED TO EMPLOYEES

Answer every one of the inquiries.

Give precise points of interest on all answers.

Due date for giving back the Questionnaires is the first of September

(2) Do you figure out how to all conveyances with the present system?

Reaction

.....

(3) What do you think should be possible to enhance the present system?

Reaction

.....

(4). Are there any limitations to get to information in the organization

Reaction

.....

(5). How frequently are the organization documents overhauled?

Reaction

.....

(6).what issues do you experience while setting up the reports?

Reaction

.....

(7). Give proposals on why you would bolster the presentation of the mechanized system at the association?

Reaction

.....  
(8) Do you discover any challenges in hunting down a student on records from the documents?

Reaction

.....

(9) What do you consider as issues of the present system?

Reaction

.....

(10) What do you prescribe as answers for the issues?

Reaction

.....

b) QUESTIONNAIRES DIRECTED TO THE STUDENT

1-What are a fallbacks' portion of the present system you have taken note?

Reaction

.....

2-How successful is the present system in preparing all records?

Reaction

.....

3-Are the solicitation you place managed on time?

Reaction

.....



4-Does the presentation of this new framework agree to e-trade prerequisites?

Reaction.....

5 – What are the foreseen transforms you hope to find in the new online system?

Reaction.....

C) QUESTIONERS DIRECTED TO IT DEPARTMENT

1 – What are your desires of the online system?

Reaction

.....  
...

2 – Is the system being presented guaranteeing business targets of the association will be met?

Reaction

.....

3-Are there any further ICT advancements you would wish to coordinate into the operations of this online request system?

Reaction

.....

## APPENDIX D: CODE SNIPET

```
<body class="nav-md">
  <div class="container body">
    <div class="main_container">
      <div class="col-md-3 left_col menu_fixed">
        <div class="left_col scroll-view">
          <div class="navbar nav_title" style="border: 0;">
            <a href="#" class="site_title"> <span>Midlands
State</span></a>
          </div>
          <div class="clearfix"></div>
          <!-- menu profile quick info -->
          <div class="profile">
            <div class="profile_pic">
              " alt="..." class="img-circle profile_img">
            </div>
            <div class="profile_info">
              <span>Welcome,</span>
              <h2><?php echo $name; ?></h2>
            </div>
          </div>
          <!-- /menu profile quick info -->
          <br />
          <span class="time">3 mins ago</span>
          </span>
          <span class="message">
            Film festivals used to be
do-or-die moments for movie makers. They were where...
          </span>
          <ol>
            <li>foreach ($fetch as $key
              <?php } ?>
            </li>
          </ol>
```

```

    <?php
    if(isset($_POST['files']))
    {
        $req_id =
$_POST['req_id'];
        $designee_id =
$_POST['designee_id'];
        $a =
$_FILES['file']['name'];
        $ab = $_FI
requirement WHERE designee_id = 1 AND id = $userid ";
        $query = $conn-
>prepare($sql);
        $query-
>execute();
        $fetch = $query
    ?></td>
    </tr>
    </tbody>
    <?php } ?>
</table>
<!--/ Personal info tab -->
</div>
</div>
</div>
</div><!-- /x content -->
</div><!-- /x panel -->
</div>
</div>
</div>
</div>
<!-- /page content -->
<!-- footer content -->

```

```
<footer>
  <div class="pull-right">
    by: Greatman
  </div>
  <div class="clearfix"></div>
</footer>
```