Design an Online Payment Acknowledgement System

(A Case Study of Kampala International University, Main Campus)

Muhammad Yakubu, Abdulhamid Sani and Muhammad Mujahid Sulaiman

Dept Computer sciences and Information Technology, School of Computer Sciences, Kampala International University

Abstract- The researcher's has study the student payment process (a case study of kampala International University).

The purpose of this study is to develop an online system that provides an electronic means of payment of fees to make the system easy then the current manual system of payent.

The problems of the current manual sytstem can be solved by developing an online payment system which bridged the gap left by the past researchers. This system will be developed using PHP, CSS, Notepad, Dreamweaver and Excel.

Index Terms- Kampala international University KIU

I. BACKGROUND OF THE STUDY

University education system is growing in Africa and technology is improving the access of candidate to the education all over the world. However there is a challenge in accessing the education in Africa include cumbersome admission process, problem associated with payment of admission fee, acceptance fee and tuitions fee.

Kampala international university (KIU) is a private International University that admit student from all east African countries and beyond. Therefore it's difficult to depend on face to face contact for admission process and payment. A number of student from Uganda and outside have problems accessing admission and payment of acceptances fee in Kampala International University (KIU) because the payment is not automated, for example the person that is living in Iganga district has to travel to Kampala or send they relatives to pay the fee just like any other student of (KIU). The problems justified the need for an online payment system for university like (KIU).

The online payment also called an electronic payment, web payment or an internet payment. Online payment method is increasingly become popular in many universities of the world. It's defined as electronic payment made via a web Brower for goods and services using credit card or debit card "(Bitpipe, 2006).

Online payment has been implemented in many universities of the developed country like International Islamic University Malaysia has implemented an online payment system for students' 2009 in order to support the activities of the university.

The exact current practice in (KIU) that the students have to go to the bank physically and fill in the deposit slip, makes the deposit including the bank charges and then take the copy (s) of the deposit slip back to the university finance department for clearance thus the process is tedious and inefficient. The setbacks of this manual approach includes: Delay in the process of registration, it is expensive approach since it includes bank charges, it is limited to the designated banks and wastage of time before the students are cleared during examination period, this result into missing examinations.

II. THE CONTACT OBJECTIVE OF THE STUDY

To develop an online payment acknowledgement system that eases the payment process new of and satellite student of (KIU).

Specific objectives
1. To investigate the problem that associated with current payment system
2. To design an online payment system for the institution to help students in the payment process.

Scope of the study

This study covered the department of finance Kampala International University (Main Campus).

The technology scope is limited to the notepad++, Dreamweaver, PHP, CSS.

III. RESEARCH POPULATION

According to Bush, R. F. (2010) ," A **Population** as the concept that refers to as the all elements, individuals, or units that meet the selection criteria for a group to be studied, and from which a representative sample is taken for detailed examination. This research is limited only to the Department of finance Kampala international university community as the target population studied.

Research Methodology
Introduction

Data collection

The researcher's interacted with the staffs in the finance department of (KIU), to access information on the procedure of the payment system in the school. The research also attended the payment process through which the challenges were evaluated.

Current Registration Process

The system for semester registration payment has been in existence at (KIU) since 2001. The system is capable of receiving the student's detail of payment from the designated banks of which the students are mandated to carry out the transaction as specified by the KIU (Equity Bank and UBA Bank). When the notification of the payment is received by the finance department from their system sent to them by the above specified banks then they issue ledgers to the students which stipulate the summary of the students' transaction. Also this system helps the finance department to able to track the number of students who have done the part payment, who completed the payment and whom late payment has applied to. The developed system has bridged the gap left by the past developers.

This system provides the direct interactivity between the finance department and the students by bridging the gap between both of them. The student gets access to make payment directly to the university electronically without being physically in the bank.

The system ensured more security by denying the unauthorized users to access the students' financial statement through providing username and password to the students. Also it provides the confirmation email to the users who are in the registration mode. Roles of the developed system includes; registration payment, issuance of the financial statement and examination number.

The system enables the students to carry out their payment electronically by providing an interface for them. This is done when the students has login to the system, then the students is required to enter the login credentials in case of the registered users. Upon the authenticity of the user account, the student get access in to the system and then click on the Registration button, when the form appeared, the students fills in the blank spaces which includes First name, Last name, Faculty/School, program, year of study and semester of study. When the students completed filling the blank spaces, the notification email is sent to their accounts confirming their payment which consist of the examination number. On the same session, the students can enter their registration number to fetch the record of their financial statement.

Research design

The researchers have used **both quantitative and qualitative** approach but majorly focused on quantitative design.

Quantitative research is basically used to quantify the problem by way of generating numerical data or data that can be transformed into useable statistics. It is used to quantify attitudes, opinions, behaviors, and other defined variables and generalize results from a larger sample population. Quantitative Research uses measurable data to formulate facts and uncover patterns in research methods. Quantitative da ta collection methods include various forms of surveys –online surveys, paper surveys, mobile surveys and kiosk surveys, face-to-face interviews, telephone interviews, longitudinal studies, website interceptors, online polls, and systematic observations.

Qualitative Research It is used to gain an understanding of underlying reasons, opinions, and motivations. It provides insights into the problem or helps to develop ideas or hypotheses for potential quantitative research. Qualitative Research is also used to uncover trends in thought and opinions, and dive deeper into the problem. Some common methods include focus groups (group discussions), individual interviews, and participation/observations. The sample size is typically small, and respondents are selected to fulfill a given quota.

Data collection instruments

The researchers used the questionnaires, interviews and observation as the data collection instrument to gather the data from the respondents.

Respondents

The table below shows the number of individuals targeted for collecting data and the actual number of individuals involved in the data collection. Sample population interviewed.

Table 1 : Respondents involved

Target population used in the questionnaire and interview process	Number of individuals targeted.	Number of individuals involved.	Percentage (%)
Staffs	15	11	73%
Students	1000	520	92%
Total	1015	531	92%

IV. RESULT

Evaluation of the current system

The finance are using the current system since 2001 for student payment and the system may course delay in the process, in the process a student will need at least 3 to 5 hours from bank up to the completing to the bank by bring the bank taller to the school finance for the confirmation of the payment and get exam card if is exam time, if is a end of semester the time need for the student is beyond 5 hours be course the student a many during exam period and finance computers are very slow be course the

Memory 512MB Processor speed 2.0 GHZ and in sometimes finance computers get crash.

Requirements for the proposed system

Functional Requirements	Description
Student Registration	Students register with the system by entering their details
Making Payment	After successful registration, students log into the system by giving out their details so that they can proceed to make payment.
View Confirmation	This requirement includes processing of payment and processing the results to the student.
View guide menu	This requirement allows the students to view the guide menu about the functionality of the system.

Hardware Requirements

The hardware required need to install the new developed system includes:

1. Memory 512MB
2. Processor speed 4.0 GHZ
3. Pentium IV and above processor
4. Hard disk capacity of 40 GB to above.
5. Scanner and printer
6. Fast Ethernet network of High speed

System development tools

The system has been developed using open source software and tools which includes Wamp server, Notepad++, PHP and CSS.

System development tools are the programs that help the system developers to write the programs, test and implement the system to an organization.

Wampserver

Wampserver is the web server application that comprises of many programs which enables the client to send the request for the process of the dynamic web pages.

Notepad++

Notepad++ is the advanced version of Notepad. Notepad allow the web site developers to write the HTML tags in order to populate the website. Documents written using Notepad++ can be saved using TEXT, PHP and CSS file extensions.

PHP

PHP is the server side scripting language that helps the web programmer to develop the dynamic web pages. It is the language that integrate the front-end and back-end of the system.

CSS

CSS is the cascading sheet style that helps the web programmers to style the HTML document and avoid the duplication of the codes by creating one CSS file that will be called in every page to serve the desired needs.

Programming Languages

The system was developed using the PHP as the web integration language, JavaScript as the client side server language in order to add interactivity to the webpages and the cascading sheet styles in order to add styles to the webpages.

Data base Management system

The system has been developed using Mysql as a data base management system which is used to keep the record of the students about their transactions.

The Water Fall Model

The system has been developed using waterfall model as the model for software system development.

The Waterfall Model was first Process Model to be introduced. It is also referred to as a linear-sequential life cycle model. It is very simple to understand and use. In a waterfall model, each phase must be completed before the next phase can begin and there is no overlapping in the phases.

Waterfall model is the earliest SDLC approach that was used for software development.

The waterfall Model illustrates the software development process in a linear sequential flow; hence it is also referred to as a linear-sequential life cycle model. This means that any phase in the development process begins only if the previous phase is complete. In waterfall model phases do not overlap.
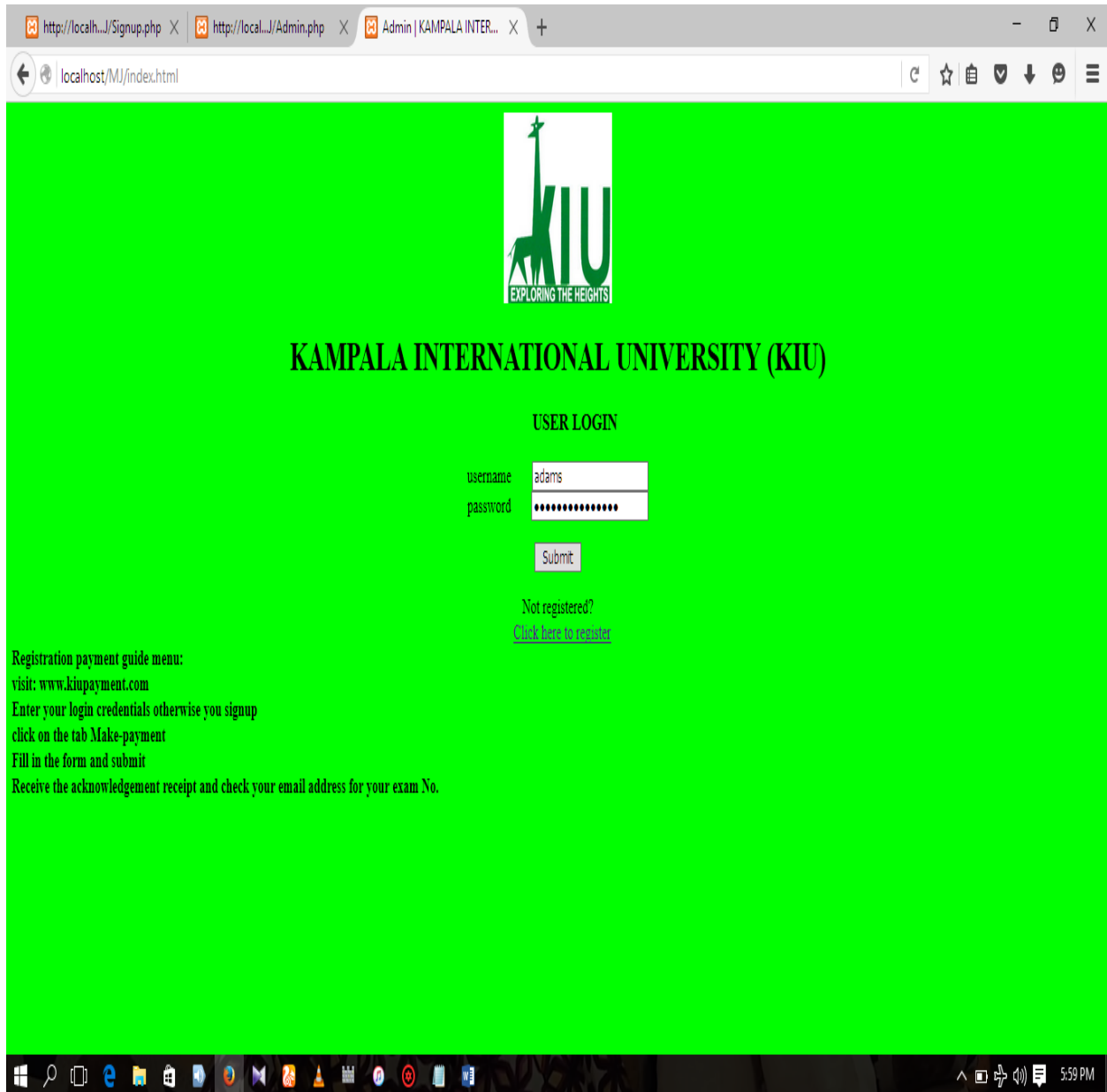
V.   USE CASE DIAGRAM
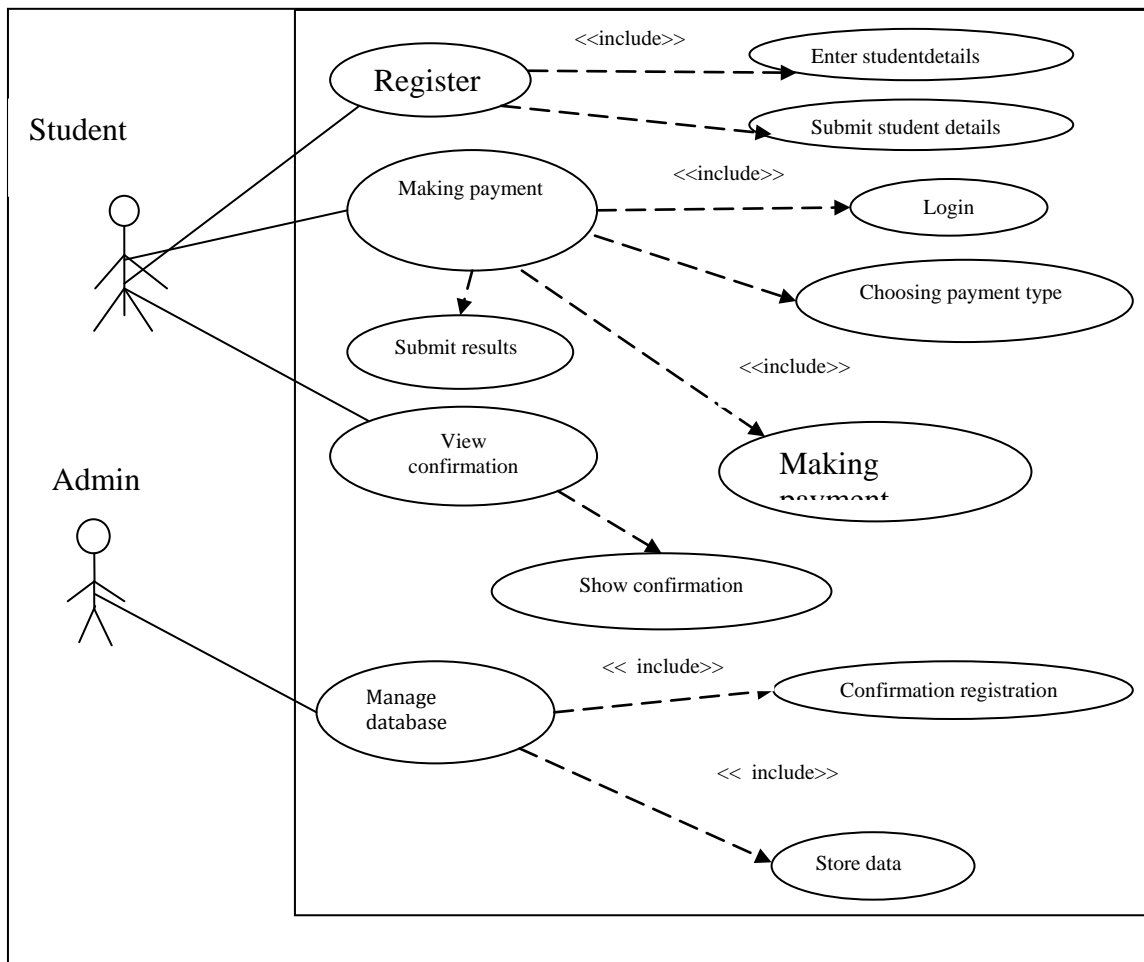
The use case diagram below represents the two main actors of an online payment acknowledgement system and how they interact with system to complete some specific tasks.
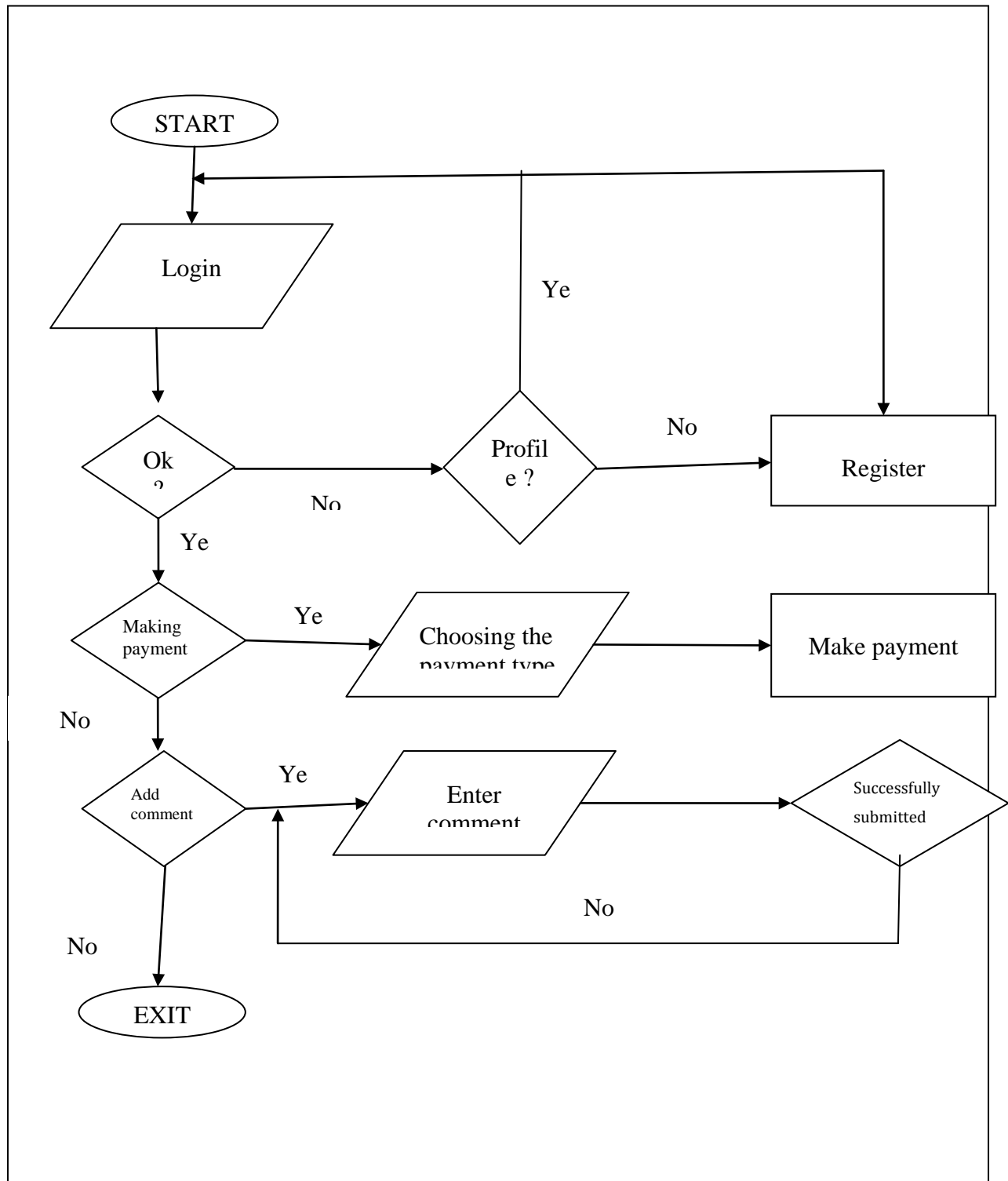
Login Screen

This screen enables users to easily login. And to register if a user is not registered, to the system, so that he can view the system.

The above figure represents the login page whereby users are required to login to the system by providing both username and password. If a user is not registered in the system then he/she will click on the link Click here to register. Upon the successful login, a user will be taken to the

Home page.**Figure 2: Admin page**
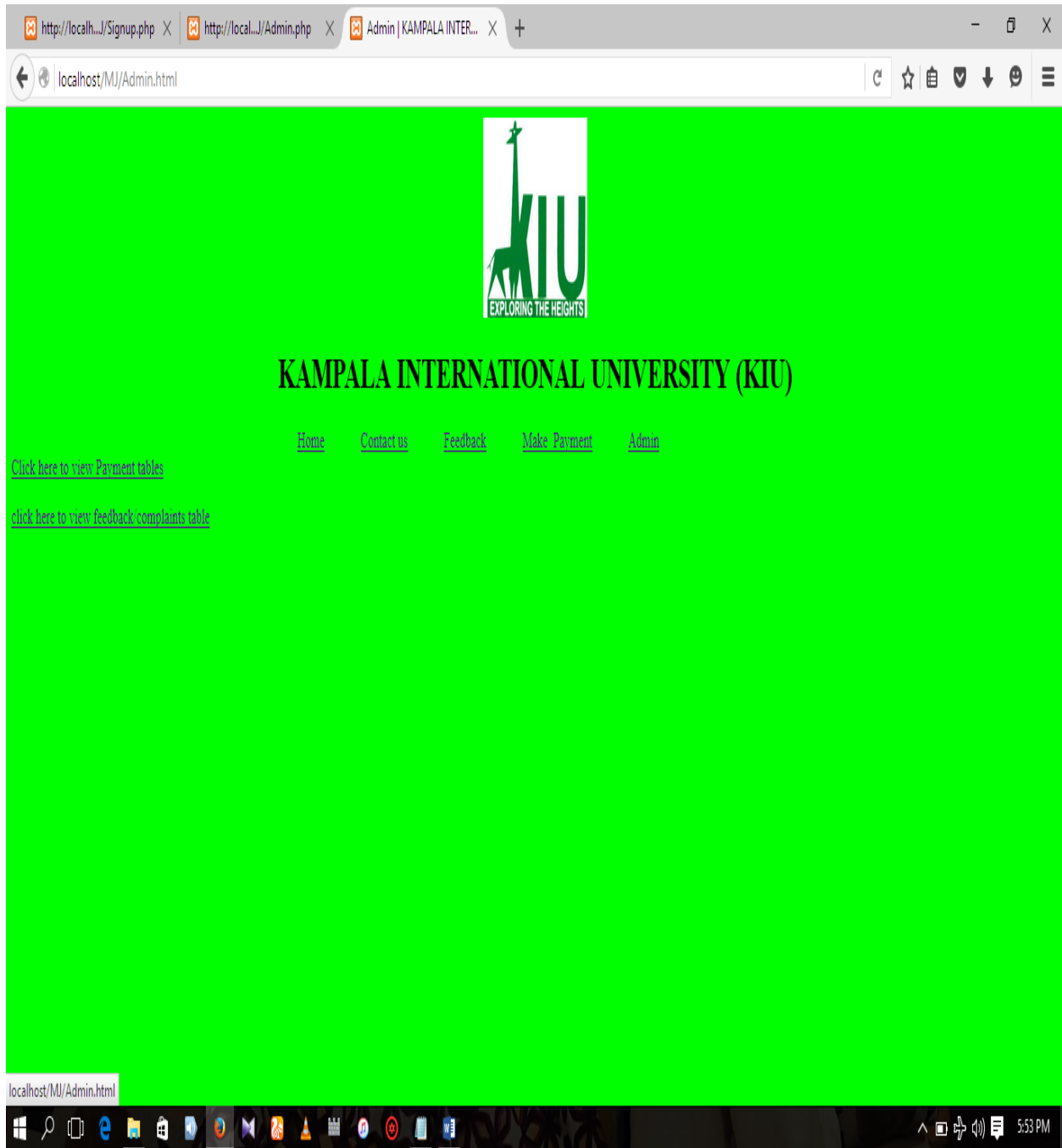
This page helps the system Administrator to view the list of students who made a payment contained in the link (click here to view Payment Table) and feedback sent by the students in the link(Click here to view feedback/compalint table).

Figure 3:Payment page
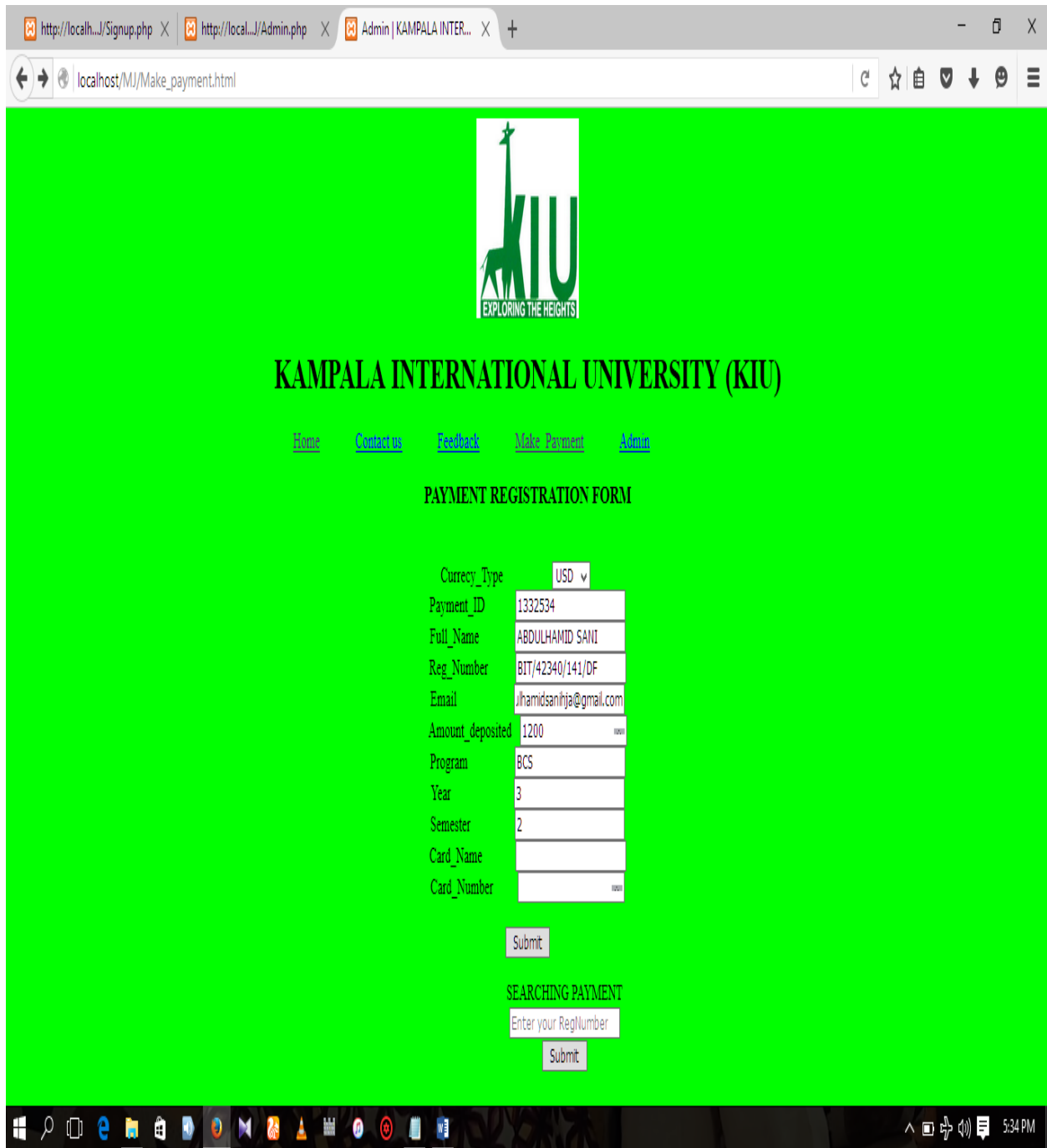
This page helps the user to make payment by filling all the detail required and then submit. If the required information is filled then the alert box will appear to remind the user that such informationis required.

Figure 4: Acknowledgement page
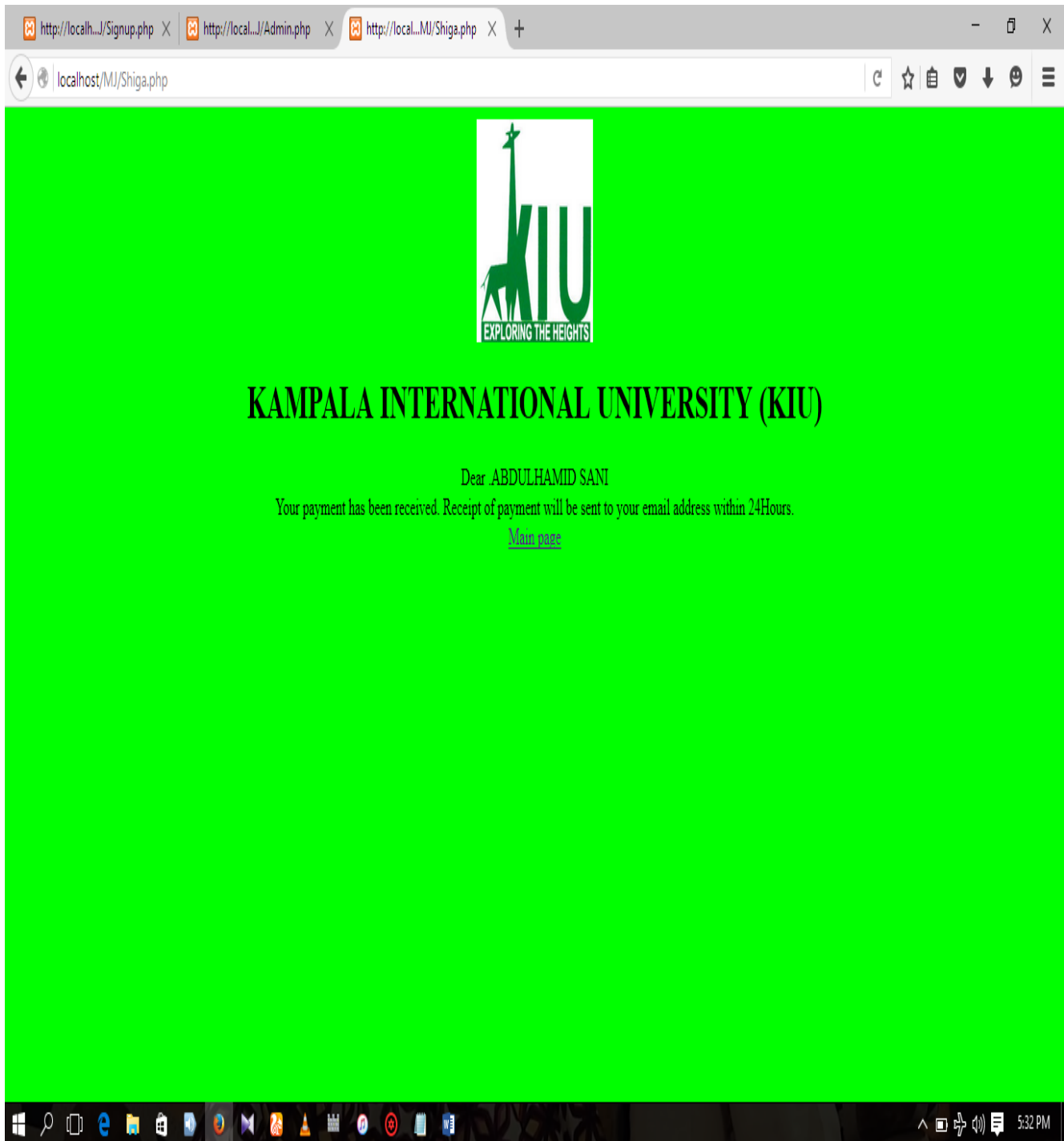
This page provides the acknowledgement to the student after he/she has successfully filled in and submit the form.

Need for further study

We hope in future to include bar coding technology. So as our future work is hoping to have an advanced bar code included. Bar coding have numerous advantages such as: reduction in errors, saves time, improved operating efficiency, overall cost savings; to mention but a few. Capturing students finger print as an access control measure. Currently the system cannot capture user's finger print but in the future this could be changed such that the system would record physiological sample of users for easy identification. Capturing user photo. Currently the system cannot capture user's photo but in the future this could be changed.

VI. CONCLUSION

The study project developed a babush system for student payment that can be implemented by any university. It has been a challenging one since most of the organizations have different approaches of carrying out their transactions standalone i.e. not integrated as a wholly system. We had to develop it as a single hoping in future to integrate it with existing systems such as Online Information Management System (OIMS) to save on the system resources.

Theoretical Evaluation

The online payment acknowledgement system has been designed and developed to overcome the challenges of making tuition fees payment at Kampala International University using technology via web-based system. The system will ease and expedite the processes of payment and managing it, it will curb the amount of time consumed by the old system, eliminate resource expenditure of acquiring papers and other infrastructures used in the system, it enables students of Kampala International University to make payment from anywhere they are in as long as they can access network.

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AUTHORS

First Author – Muhammad Yakubu, Dept Computer sciences and Information Technology, School of Computer Sciences, Kampala International University

Second Author – Abdulhamid Sani, Dept Computer sciences and Information Technology, School of Computer Sciences, Kampala International University

Third Author – Muhammad Mujahid Sulaiman, Dept Computer sciences and Information Technology, School of Computer Sciences, Kampala International University

Appendixes. 1

Admin

Sign up

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe

mysql> desc sign_up;
+------------------+-------------+------+-----+---------+-------+
| Field            | Type        | Null | Key | Default | Extra |
+------------------+-------------+------+-----+---------+-------+
| First_Name       | varchar(20) | YES  |     | NULL    |       |
| Last_Name        | varchar(20) | YES  |     | NULL    |       |
| Reg_Number       | varchar(20) | YES  |     | NULL    |       |
| Gender           | varchar(30) | YES  |     | NULL    |       |
| Country          | varchar(20) | YES  |     | NULL    |       |
| Username         | varchar(30) | YES  |     | NULL    |       |
| Password         | varchar(30) | YES  |     | NULL    |       |
| Confirm_password | varchar(30) | YES  |     | NULL    |       |
| Question         | varchar(30) | YES  |     | NULL    |       |
| Answer           | varchar(30) | YES  |     | NULL    |       |
+------------------+-------------+------+-----+---------+-------+
10 rows in set (0.06 sec)

mysql>
```

Payment

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe

mysql> desc payment;
+------------------+-------------+------+-----+---------+-------+
| Field            | Type        | Null | Key | Default | Extra |
+------------------+-------------+------+-----+---------+-------+
| Payment_ID       | varchar(20) | YES  |     | NULL    |       |
| Full_Name        | varchar(20) | YES  |     | NULL    |       |
| Reg_Number       | varchar(20) | YES  |     | NULL    |       |
| Amount_deposited | varchar(30) | YES  |     | NULL    |       |
| Program          | varchar(20) | YES  |     | NULL    |       |
| Year             | varchar(20) | YES  |     | NULL    |       |
| Semester         | varchar(20) | YES  |     | NULL    |       |
| Card_Name        | varchar(30) | YES  |     | NULL    |       |
| Card_Number      | varchar(20) | YES  |     | NULL    |       |
+------------------+-------------+------+-----+---------+-------+
9 rows in set (0.03 sec)

mysql>
```

Feedback

```
c:\wamp\bin\mysql\mysql5.6.12\bin\mysql.exe

mysql> desc feedback;
+------------+-------------+------+-----+---------+-------+
| Field      | Type        | Null | Key | Default | Extra |
+------------+-------------+------+-----+---------+-------+
| Full_Name  | varchar(20) | YES  |     | NULL    |       |
| Reg_Number | varchar(20) | YES  |     | NULL    |       |
| Program    | varchar(20) | YES  |     | NULL    |       |
| Email      | varchar(50) | YES  |     | NULL    |       |
| Subject    | varchar(30) | YES  |     | NULL    |       |
| About      | varchar(90) | YES  |     | NULL    |       |
+------------+-------------+------+-----+---------+-------+
6 rows in set (0.03 sec)

mysql>
```