INTRANET-BASED WIKI WITH INSTANT MESSAGING PROTOCOL

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An Intranet-Based Wiki with Instant Messaging Protocol

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Being an MSc project report submitted in partial fulfillment of the requirements for the award of a Masterôs Degree in Computer Science of the University of Nigeria.

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Certification

I hereby declare that the work presented herein was done by me, and not by a third party. Should I be convicted of having cheated in this work, I shall accept the verdict of the University.

Ugwu Chimezie Fredrick, PG/MSC/13/66341

Approval

This project is approved for submission.

Dr. G.A.M Ikekeonwu

Dedication

I humbly wish to dedicate the success of this research work to God Almighty for His infinite goodness upon my life from the inception of this work to its completion. I equally dedicate it to my ever loving, caring and supportive family, the family of Mr. and Mrs. Ugwu F.M. for their encouragement and support throughout the period of this research. Supportive friends like Okolo Chibuzo and Orji Elvis cannot be left out for have dedicated their intellectuals to the success of the development of the system produced in this. And finally, I dedicate the entire work to the Department of Computer Science, UNN.

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Abstract

This project developed an Intranet-Based Wiki with Instant Messaging Protocol (IBWIMP) for the Staff of the Department of Computer Science, University of Nigeria, Nsukka to enable them collaborate on tasks; like writing of documents like, memo, project guidelines, proposal/grants, and circulars with online security consideration. The essence of this work is to improve on the contributions staff make during work, in carrying out tasks with their colleagues irrespective of the personôs location at that point in time. The existing system on ground would always require the presence of the staff within the department before they can carry out the tasks meant for them or respond to the available mails within their mail boxes located within the general office of the department. In regard to such situation, there is always delay in the processing of such mails or documents that could require urgent attention of the supposed staff therefore could cause serious damages. This project established a better internet connection for the security of the system and the documents therein by the use of virtual private server (VPS) hosting on virtual private network (VPN). This system allows the collaboration between the staff of the department and external persons or partners classified as external staff user on documents like circulars that normally come from outside the department. This system automatically sends emails to the supposed users whenever the admin posts a document via the Short Message Transfer Protocol (SMTP). The system is accessed online by the users from any location once there is internet connection available and users can collaborate on the development of any posted document at the same time. This application was designed using Object Oriented Analysis and Design Methodology (OOADM) and implemented using Hypertext Markup Language (HTML), JavaScript, Cascading Style Sheet (CSS), CkEditor, Hypertext Pre-Processor (PHP) and MySQL database management system.

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Chapter 1: Introduction

1.1 Introduction

With the growing activities in both the academic and business world comes a growing amount of information: manuals, procedures, best practices, ideas, important documents, sales leads, expenses etc. Organizing all this information and processing all these documents increasingly becomes more work. It might be a small academic department or a small business organization, but simply using notes and paper documents is less convenient for the staff, and spending all this time on sharing information by the use of manual mail boxes known as ñpigeon holesò and finding back information in file repository in the file cabinets is a huge waste of time and energy.

The absence of administrative staff in the office puts a hold on the workflow, in the sense that some documents to be moved from a location in the office to another, in the name of information dissemination, remain unmoved. As a result of that, there could be damages depending on the need for which the information is meant to meet at that moment.

Therefore, the introduction of the use of a Wiki that is Intranet-Based with an Instant Messaging Protocol will enhance the throughput of the performance of the staff in such an environment, thereby increasing their throughput on the delivery of quality services to their clients.

A wiki is an application, typically a web application, which allows the collaborative modification, extension, or deletion of content and structure. This application will enable the staff to easily disseminate information. The application will equally grant the staff of the organization the enablement of collaborating with themselves during work from any given location. This means that, when a staff is not present in the organization, he or she stands the chances of contributing to the work going on within the organization from wherever he or she may be. This application will be designed to run on an intranet network. An intranet is a computer network that uses internet protocol technology to share information, operational systems, or computing services within an organization.

1.2 Statement of the problem

Below are the problem statements that necessitated this research work:

1. Indiscriminate movement of physical documents and files by the staff, and that could lead to loss of important information.
2. Inability of the staff to receive vital information especially when not on seat.
3. Lack of collaboration among the staff due to lack of the medium to enhance it, thereby leading to poor teamwork and poor service delivery.
4. Poor or no security of documents and files during information dissemination, which is caused by such information document being in wrong hands, which could mar the integrity of the organization when used against the organization.
5. Lack of instant messaging system which could be used to notify staff when there is an urgent need to respond to ongoing work or project within the department.

1.3 Aim and objectives of the study

The aim and objectives of this work are:

1. To develop a system with platform that enables collaborative writing of documents like: project guidelines for students, grants for project funding, memos or meeting circulars for the department staff.
2. To enable proper and adequate dissemination of information among the concerned staff of the department.
3. To provide a highly secured system to the staff which could be accessed from any given location without losing the integrity of the information and knowledge it contains. That is why the intranet is preferable.
4. To provide a system with an instant messaging capacity or protocol which will notify the users whenever there is information or document posted for their consumption.

1.4 Scope of the study

This research work is specifically developed for the Staff of the Department of Computer Science, University of Nigeria, Nsukka. It could still be implored for use in any other organization with little adjustment or modification.

1.5 Significance of the study

The following below are the significance of this project:

1. This work will eliminate stress and tendency of losing important information due to indiscriminate movement of documents and files manually by the clerks (staff).
2. It will enable the staff to contribute to what is going on in the department by collaborating on the development of ongoing document writing.
3. It will enable the students of the department to access the project guidelines whenever there is adjustment and ask necessary question by the use of the comment text field.
4. It facilitates collaboration among the staff of the department and those of other departments or offices of interest on the development of a decision making processes. For example, the office of the vice chancellor or the school post graduate studies can collaborate with the staff of the department on any issue of interest.
5. It will employ the staff to respond to work immediately a document or information is posted on the system which eliminates damages cause by delay in response.

Chapter 2: Literature Review

2.0 Introduction

This chapter presents the concepts that make up the Intranet-Based Wiki with Instant Messaging Protocol (IBWIMP). The chapter also explains the technologies implored in the development of the system. Finally, it reviews literature related to the topic.

2.1 Theoretical Background

The theoretical background consists of the breakdown of the technological approach used in the development of this work. The two major concepts that makeup this work are *the wiki* and *the intranet*.

2.1.1 The Technological Approach

The choice of technologies for the development of this research work is the web technologies, which comprise of HTML, CSS and PHP, JavaScript, CKEditor and MySQL (a relational database technology). Below are some illustrations on how the above listed web technologies were used in the development of this project:

2.1.1.1 HTML (HyperText Markup Language): this is the standard markup language used in creating web pages. It is written in form of elements consisting of tags enclosed in angle brackets (for example, <html>). Below are few examples of HTML codes used in the development of this project:

```
<html>
<head>
	<title>
		DOC-STAFF WIKI ADMIN LOGIN
	</title>
	<link type="text/css" rel="stylesheet" href="wikihome.css"/>
	<table border='0' width="100%">
		<tr align="center" bgcolor="#ffccff" width="1200" height="200">
			<td>
			<h1> <font color='#6699ff'> DOC-STAFF @ WIKI @ UNN</font>
</h1>
			</td>
		</tr>
	</table>
</head>
```

Above are few HTML that render the header part of the admin login page (figure 2.1, page [8]) when the system is run on a web browser. All the HTML codes are within the HTML element which starts with the HTML opening tag <html>. Inside the header element tags is the title element tags which render the information with it on the title bar of the browser. The tag following the title element closing tag help to connect the styling effect of the CSS file (wikihome.css) used. The table element is the element that helps in structuring the appearance of the header part of the page. The table element has attributes (border and width) defined and it contains the table row (tr) and table data (td) elements that position the header part of the page properly.

2.1.1.2 CSS (Cascading Style Sheet): this is a style sheet language used for describing the look and formatting of a document written in a markup language. Most often, it is used to change the style of web pages and user interfaces written in HTML and XHTML. Below is an example of some CSS codes used in the development of this system;

```
body{
        background-color:#FFFFFF;
        font-family:Arial;
        font-size:13
}
a:link {
                color:#6699ff;
                text-decoration:none;
          }
a:visited {color:#66ffff;
                        text-decoration:none;
                 }
a:hover{
                color:#ff00cc;
     }
#button{color:#ffffcc; background-color:#330066; border:0px;padding:3px;font-weight:bold
                }
#button:hover{color:#ff00cc}
```

The CSS codes above is known as ñdocument level styleò, because they are contain in a separate script (wikihome.css) that is linked to the HTML code via the link element. The selector (body) points to the HTML body element and impact the following styling on it: background color, font family and font size, with their respective values. The same thing is applicable to other selectors like; a:link, a:visited, a:hover, #button, and #button:hover.

2.1.1.3 PHP (Hypertext Preprocessor): this is a server-side scripting language created and designed for web development but also used as a general-purpose programming language. Below are few PHP codes used in the development of the admin login page of this project:

```
<?php
        if($_POST['submit'] == "send")
        {
            require("wikidb_con.php");
            $result = mysql_query("SELECT * FROM wikiadmin
where username = '{$_POST['uname']}' AND password = '".md5($_POST['ps'])."'")
                or die(mysql_error());
            if (mysql_num_rows($result) > 0) {
                $_SESSION['wikiadmin'] = true;
    header("Location:http://localhost/mastersproject/wikiadmin.php");
                exit;
            } else   echo "<div style='color:red'><h1> ACCESS
DENIED!<br/>WRONG USERNAME OR PASSWORD</h1></div>";
        }
    ?>
```

For a PHP code to run, it must be in the tag denote as follows; <?php é ?>. Before the PHP codes above were some HTML form codes that collect username and password of the admin on the admin login page. When the submit button is clicked, the forth line of the PHP codes above would establish a connection between the PHP script (as which the file contain the codes is saved with .php extention) and the MySQL database via the connection script (wikidb_con.php). The codes on the 5th line retrieve the username and password of the admin from the wikiadmin table in the database. If the result of what is retrieved is the same with what the admin typed in the form (in figure 2.1, admin login page) before clicking the submit button, the system renders another page (wikiadmin.php page). This show that the admin entered the right username and password else, the information on ódenial of accessô in 13th line of the code will be displayed, without rendering any new page.

Figure 2.1: Illustration of the admin login page at its testing phase.

2.1.1.4 JavaScript: This is a HTML programming language which is equally embedded in HTML codes by the introduction of the script tags (<script> and </script>). It is used to add extra features to HTML web pages. Like in the project, it is the JavaScript code that is used to integrate the CKEditor in the wiki system. It is also used in the fading in and out of the form structures in the system.

2.1.1.5 CKEDITOR: This is an open source WYSIWYG (What You See Is what You Get) text editor from CKSource (an I.T company) designed to bring common word processor features directly to web pages, simplifying their content creation. It aims to be lightweight and requires no client- side installation. Before the writing of the code that implements the used of the editor, there is a CKEDITOR folder containing the file ckeditor.js must have been downloaded and save in the root folder containing documents for the development of this system. The code makes reference to the ckeditor file (ckeditor.js) to be integrated into the system. In the form tag above, the textarea tag has it ñidò attribute with the value ñwikicontentò which is what the editor replaces when a script element is introduced. Further illustration on the implementation of the used of the CKEDITOR will be made in chapter 4 of this work.

2.1.1.6 MySQL: This is a system used to create structure based data repository. In this sense, the structures are tables in which related data are stored. MySQL is one of most widely used

open-source relational database management systems. Detailed illustration of the design of the database will be given in the following chapter.

2.2 Review of related literature

A wiki is a website with database developed for collaborative use by a community of users, allowing any user to add and edit content. It is also defined as ña freely expandable collection of interlinked Web pages, a hypertext system for storing and modifying information ï a database where each page is easily editable by any user with a forms-capable web browser client.ò The term is based on the Hawaiian word ñ*wikiwiki,*ò which means ñfast, speedy; to hurry, hasten; quick, fast, swift,ò as defined by Bo Leuf and Ward Cunningham in their work titled ñ*The Wiki Way: Quick Collaboration*ò on the web [1], whereas intranet is the generic term for a collection of private computer networks within an organization. An intranet uses network technologies as a tool to facilitate communication between people or work groups to improve the data sharing capability and overall knowledge base of an organization's employees [2].

According to the author in [3], the era of the web 2.0 was what created the enabling environment for the development of the dynamic and collaboration-conducive websites or web applications. By Web 2.0 we mean the second generation of the World Wide Web that focused on the ability for people to collaborate online (see the advantages and disadvantages of wiki to any organization in [3]). The author in [4] attempts to investigate how Web 2.0 technologies influence workplace learning with keen interest on using Wiki as a tool for corporate exchange of knowledge. In [5], it was reviewed that Wiki pages demonstrate a conversational knowledge management solution. Conversational knowledge management has surfaced as a method for organizational knowledge creation, particularly in a virtual team environment. The prospect of several key benefits make these solutions a favorable business option since they are not economically or technologically demanding, are quick to create knowledge and are well suited for decentralized environments. According to the authors in [6] and [7], ñSocial software (wiki) has proven valuable in enterprises for collaborative knowledge management.ò In order to introduce a wiki in the enterprise, a solution that combines Web 2.0 and Semantic Web technologies was proposed. The author described how the solution could be implored using a concrete enterprise scenario on proposal writing.

The authors in [8], [9] and [10], strongly believe that the process of knowledge sharing can be greatly facilitated by the use of information technology. They pointed that successful

knowledge management depends on the contributions from all the organizational members, and for the intranet-based wiki to serve as a knowledge sharing environment, high participation is important. In [11] it is learnt from the author that many of the knowledge management projects that commenced in the past were primarily driven by the adoption of technologies. Technologies include tools such as search engines, retrieval and classification tools, e-collaboration tools, portals and content management systems. One of the lessons learnt from these failures is that technology alone should not be the primary driver for any Knowledge Management projects/initiatives and that an appropriate balance of technology, process, people and content is instrumental to the continued success of any knowledge management deployment. In [8], the author asserts that ña fundamental knowledge sharing is the ability to share and/ or transfer knowledge within an organization and amongst its members.ò It was made clear that there are indeed many different collaboration and communication technologies that let users contribute information over the web, but they all enforce structure of some sort. The IBWIMP is being developed as a server-side technology with a functional database management system that will be based on the ideas of its users and presupposes the users themselves to agree upon and maintain a working structure. Some other existing wiki frameworks like ñdokuwiki,ò has no server side technology used during its development, it architecture is just of the presentation tier. This is why the ñdokuwikiò is open to anybody and prone to the risk of having its contents edited with wrong information.

According to [12], ñthe rapid development of the intra-webs was as a result of the realization of the internal use of the web technology by some business organizations.ò The author in that paper presented what is known as the *wiki concept*, focusing its uses on the intranet, in both the academic and business organizations. From that paper, it is learnt that at about the year 2000, intranet-based wiki was developed and installed in the Computer Science Department of the University of Nice, France. It is used by all the teachers, students, industrial partners, etc. Before then, at about 1999, ILOG Company had developed a very impressive *wiki-centered intranet*. At about the same period of time, other companies like Google, Motorola, and New York Times Digital started making publicly the ways they use wiki in their organizations which depicted the general acceptance of the technology [11]. In the 2013, the study in [13] was carried out in the Department of Computer Science, University of Nigeria, Nsukka. The author presented the work as an online system that could be used by the staff to receive information on decision making processes within the department. This is basically achieved by the staff

responding to memo posted on the system by the head of the department. Other characteristics featured in the system are; the system could be used to assign project topics to students, it presented the staff mail box online to enable them access their mails from different locations. In its downsides or limitations according to the author, users (staff) are to go online and check for posts or mails posted on the system from time to time, the head of the department happens to be the one acting as the admin and there was little or no emphasis on the security of the information contained in the system. But in the proposed system (IBWIMP), it is presented as online system basically meant for knowledge sharing, that is to be hosted in a virtual private server (VPS) which must be on a virtual private network (VPN), in order to prevent the intrusion of hackers, which makes it an intranet-based system. The system has four categories of users with different levels of privileges; the admin category- and must not be the head of the department, the staff category, the external staff category- partners from other departments or offices outside, and the student category- student within the department. The proposed system allows the staff to collaborate on the writing of many important documents like memo, circulars, proposal/grant and project guideline, thereby constituting the four classes of information documents that can be collaboratively written on it. The proposed system improves the cited work above by its ability to send email alert or notifications to the supposed users whenever information or a document is posted on the system via a short message transfer protocol (SMTP), irrespective of the usersô location and this makes the system less personnel intensive and less time consuming. The proposed system enables users to collaborate on the manipulation of images and texts, and this makes the system similar to the ñvisual wikiò in [14] by the use of CkEditor that allows the attachment of pictures on the web pages or web documents. And it provides the users with comment text fields to prevent the loss of the originality or authenticity contents by continuous modification of contents by users.

The study in [15] found several benefits of the use of intranet-based wiki. The author concluded that it improved the work conditions in some projects and even made some projects possible. It enabled people to participate in internal communication and collaborative projects, share information, ask other people to share information, and manage work in a meaningful way. It had become a vital part of the daily work for many. According to the authors in [3], ñWikis have been revolutionary in a wide variety of institutional contexts, including educational institutions, research centers, security agencies, and business corporationsò. It was mentioned in [3] that, ñEnterprises that rely heavily on employees with high intelligence and hands-on

experience ï NASA (National Aeronautics and Space Administration), Northrop Grumman (Security Agency), the CIA (Central Intelligence Agency), etc ï have also benefited from the increasing use of wikis.ò The case of the National Broadcasting Company (NBC in America) was illustrated in [3], which showed how the companyôs SED (Software Engineering and Delivery) team moved from the use of a system known as *support central* that was designed for workflow and collaboration management, which enhanced business processes and knowledge sharing to what was initially known as *confluence wiki* that provided the team with the communication platform they needed among its programmers in dispersed location. Other company operating alongside the NBC like the Peacock production (a media firm in America) also went into developing wiki for use in carrying out their daily operations especially among a specified group of persons.

In this review, the lesson learnt is that the reasons behind the development of an intranet-based wiki, in most of the already published works, are almost the same. The authors sited in this review presented the driving force for the development of an intranet-based wiki as it being ña tool for collaborationò during work or while carrying out tasks or assignments. The limitations of other systems existing before the development of the intranet-based wiki (like the Support Central System used NBC in [3] and the wiki system in [13]) were the inability of those systems to reach out to their users who could be in dispersed geographic locations when there is need for a collaborative task to be carried out and its inability to send notifications to users whenever information is posted by the admin. These are the reasons why the development of IBWIMP became necessary in this research to help build a collaborative team work spirit, and in addition, to facilitate knowledge sharing among the Academic Staff of the Department of Computer Science, UNN, which do not disagree with the aim and objectives of this project. The intranet-based nature of the proposed system makes it completely different from other wikis already in use, like the dokuwiki framework in the sense that according to the scope of this work, its users are mainly the staff of the computer science department, UNN, while the other wiki frameworks have no limit to the number of users. The dokuwiki and some other wiki frameworks were developed without database, while in the development of this project, database is considered very indispensible. Authorization of users via user registration by the system administrator enables the system to check usersô access, and this feature is not found in most of the wiki frameworks in use today. The successful planning of this project is based on the Nexus model of an intranet application in [16].

Chapter 3: System Analysis and Design

3.0 Introduction

This chapter presents a detailed analysis of the IBWIMP and Object Oriented Analysis and Design Methodology (OOADM) as the design methodology used in the development of this project. The OOADM is preferable to other system analysis and design methodologies that can be used in the field of software engineering. The object oriented analysis and design is a technical approach for analyzing and designing an application or system by applying the object oriented paradigm and visual modeling throughout the development of a system. The object oriented paradigm is based on the concept of ñobjectsò (data structures) which contain data in the form of fields, often known as attributes. The methods are the operations the can be performed by the objects, and these operations are attributed to a given class to which a set of objects belong. The visual modeling used in this work is unified modeling language (UML), which is a standard language for visualizing, specifying constructing and documenting the components of a software system during it development [17]. Among the various modeling styles that UML consists of, the following will be used in the design of the proposed system:

1. The use case diagram
2. The class diagram

3.1 Description of the Existing System

The existing system of information sharing among the staff in the department of computer science, UNN, is a manual-based system. In this system, documents or files (for example, memo or circular) are manually transferred from one staff to another by a clerk on duty. When a staff is not on seat, such documents or file meant for the staff is drop in his or her manual mail box (pigeon holes), usually placed in the general office within the department. Most times, such documents could need an urgent attention, but when the staff is not on seat, the process gets delayed pending when the staff returns. This delay being encountered among the members of the staff leads to a slow mode of operation in carrying out some very important tasks that could be dependent of time.

Not only the delay, the confidentiality of the information on such documents or files could be compromised, in the sense that the manual mail boxes in which the documents are

dropped are always open and it could be accessed by anybody within the reach. At such, the documents could be mutilated, stolen, duplicated without the consent of its owner and therefore could lack integrity or even have its content delete or destroyed depending on individual interests among fellow staff. ñTimeò they say ñis money.ò When an organization lags on meeting up with deadlines in a decision making process or execution of tasks by its employees as a result of communication gaps or inadequate means of communication, it could lead to a serious backdrop in its level of productivity.

After carefully analyzing the existing system, the following problems were identified;

i. Manual system of information sharing is very stressful.
ii. It is risky because when such important document is dropped in the manual mail box, it could be tampered with.
iii. The system gives no room for collaboration among staff in carrying out task.
iv. The whole process is time consuming due to the delay being encountered when a staff whose attention could be needed on an ongoing process is not on seat.
v. Important information could be lost at the long run due lack of a database management system from which it could be retrieved if need be.

3.2 Analysis of the proposed System

The proposed system is to be designed to solve all the problems identified in the existing system by adhering to use of the Nexus model of an intranet in [16]. The following are the features of the proposed system:

1. The proposed system has an administrator whose job is to extensively manage, maintain and regulate the functioning of the system. The admin could be a non academic staff but from within the department.
2. It allows for only but three categories of users that must be duly registered by the admin. The categories are: the staff user (academic staff within the department), the external staff user (academic or none academic staff from outside the department) and the student (selected few among the students in the department, for example, P.G Class Reps or Final year Class Rep, or the President of the departmental student association

like NACOSS). After registration, users can log in with their email and password. And a user must have a profile.

3. The contents to be posted on the system are of four categories; the memo (from within the department), student project guideline (from within), proposal/grant (from within) and circular (from outside the department).
4. All post is to be made by the administrator as well as deletion of contents.
5. The memo contents can be viewed and edited by any user of the staff user category.
6. The project guideline contents can only be viewed by user of the student category, but such contents can be viewed and edited by any user of the staff user category.
7. The proposal/grant contents can be viewed and edited by any user of the staff user category.
8. The circular contents can be viewed and edited by any user of staff user category and external staff user category.
9. When a post is made, the system automatically sends email notifications to users in the user category that is supposed to access such content category. This is achieved via SMTP (short message transfer protocol).
10. Users can equally make contributions or suggestions on any post that they can view via the comment text field.

Having analyzed the features of the proposed system, it is quite obvious that the system will provide an enabling platform for it target users to collaborate.

3.2.1 System Requirement Specification

The design tool used in this work is UML which help the developer to properly visualize, specify, construct and document all the components that make up the system, during the design stage. The UML tools used are: the use case diagram and the class diagram. Below are the diagrams:

Use Case Diagram of the Intranet-Based Wiki: this presents a picture of the interactions among the actors (users) of the proposed system and the actions (operations) that those actors can perform on the system.

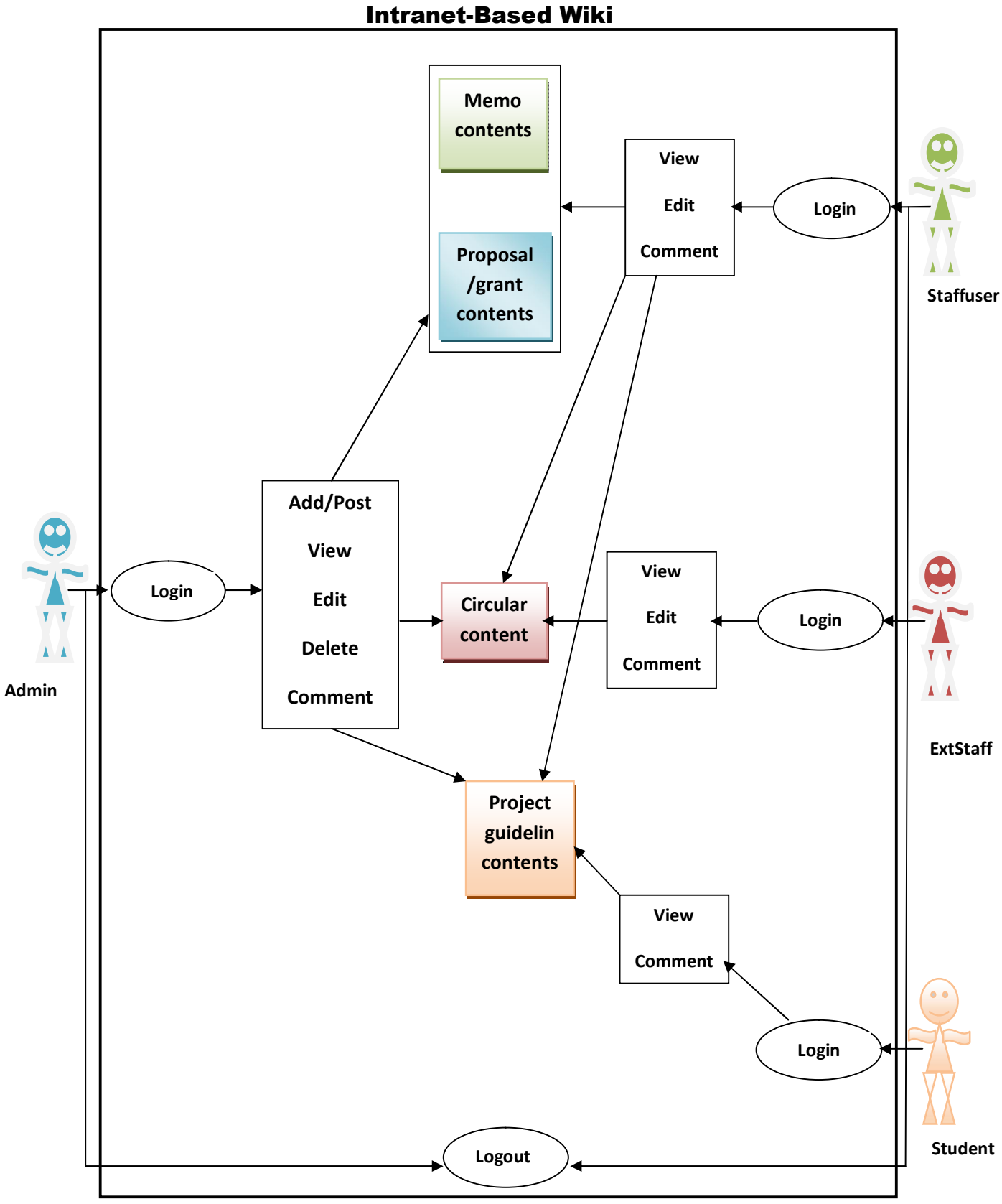

Figure 3.1: The use Case Diagram

Class Diagram of the Intranet-Based Wiki: this present an overview of the proposed system by describing the object classes, their attributes, operations (methods) that can be perform on them, and the relationships between them within the system.

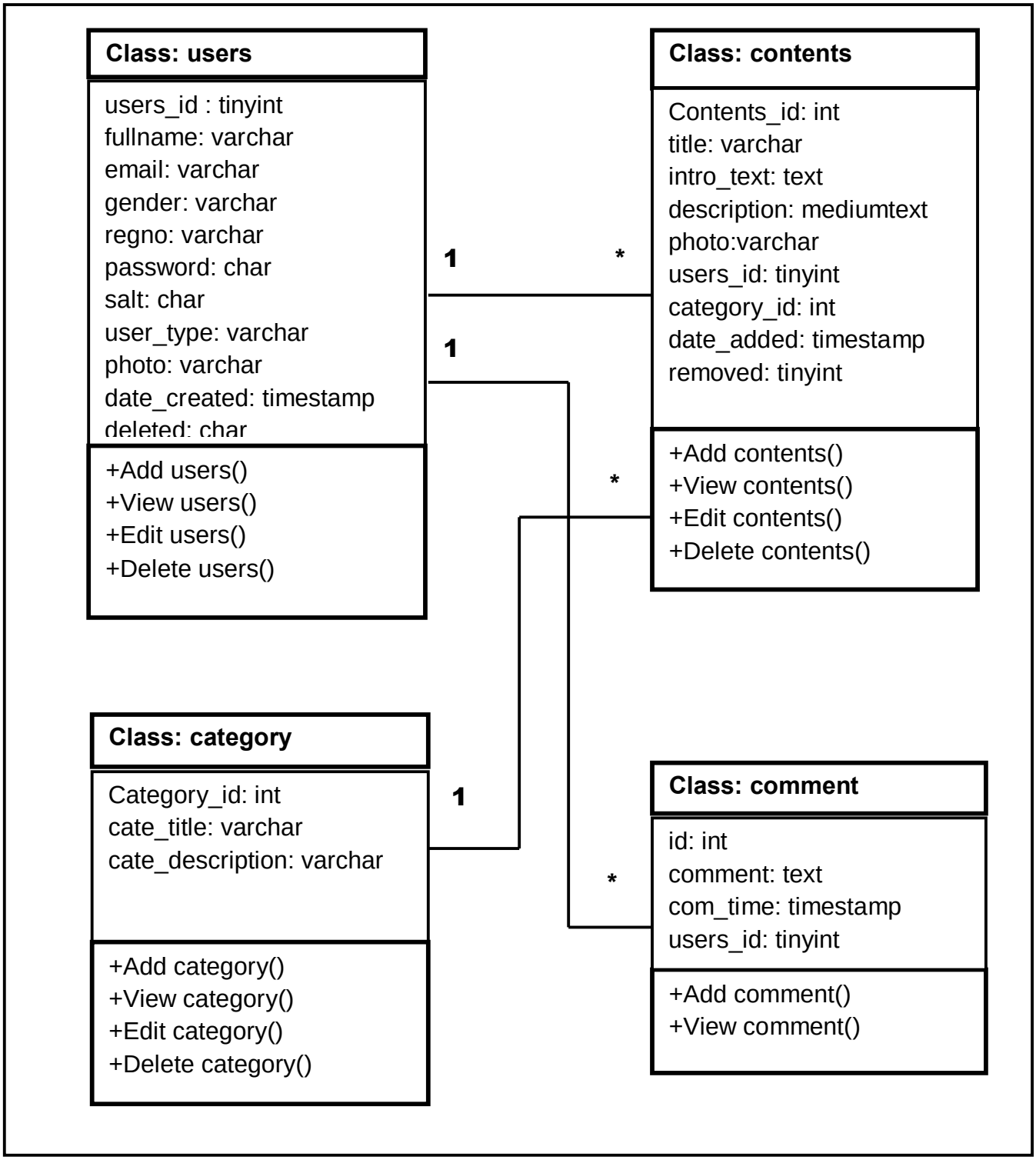

Figure 3.2: The Class Diagram

3.3 Design of the Proposed System

This section presents the necessary designs used in the development of the proposed system.

3.3.1 Database Design

The database management system used in this work is MYSQL. And the name of the database created for this work is ñwikidb,ò which contains the following tables: users table, contents table, categories table and comment table. Tables 3.1 to 3.4 are the representations of the table structures used in developing the database.

Table 3.1: users table structure with details

Field Name	Field Type	Field Size	Null	Description	Action	Extra
Users_Id	Tinyint	4	No	Unique id	Primary key	Auto_increment
Fullname	Varchar	70	No			
Email	Varchar	100	No	Unique		
Gender	Varchar	10	No			
Regno	Varchar	20	No			
Password	Char	64	No			
Salt	Char	32	No			
User_type	Varchar	50	No			
Photo	Varchar	200	No			
Date_created	Timestamp					Current_timestamp
Delete	Char	1				

Table 3.2: contents table structure with details

Field Name	Field Type	Field Size	Null	Description	Action	Extra
Contents_Id	Int	11	No	Unique id	Primary key	Auto_increment
Title	Varchar	80	No			
Intro_text	Text		No			
Description	Mediumtext		No			
Photo	Varchar	200	No			
Users_id	Tinyint	4	No	Unique id	Foreign key	
Category_id	Int	11	No	Unique id	Foreign key	
Date_added	Timestamp		No			Current_timestamp
removed	Char	1	No			

Table 3.3: categories table structure with details

Field Name	Field Type	Field Size	Null	Description	Action	Extra
Cate_Id	Int	11	No	Unique id	Primary key	Auto_increment
Cate_title	Varchar	40	No			
Cate_description	Varchar	200	No			

Table 3.4: comment table structure with details

Field Name	Field Type	Field Size	Null	Description	Action	Extra
comment_Id	Int	11	No	Unique id	Primary key	Auto_increment
Users_id	Int	11	No	Unique id	Foreign key	
Content_id		11				
Comment	Text		No	Unique id	Foreign key	
Com_time	Timestamp		No			Current_timestamp

3.3.2 Input Design

This refers to the design of the medium through which all the data that the system needs can be supplied to the system, with an explicit declaration of their data types. This design is basically ñform designò which contains the usersô data that could be needed for the system to carryout specified operations or tasks. Figure 3.3 is the illustration of the input design of the user registration form.

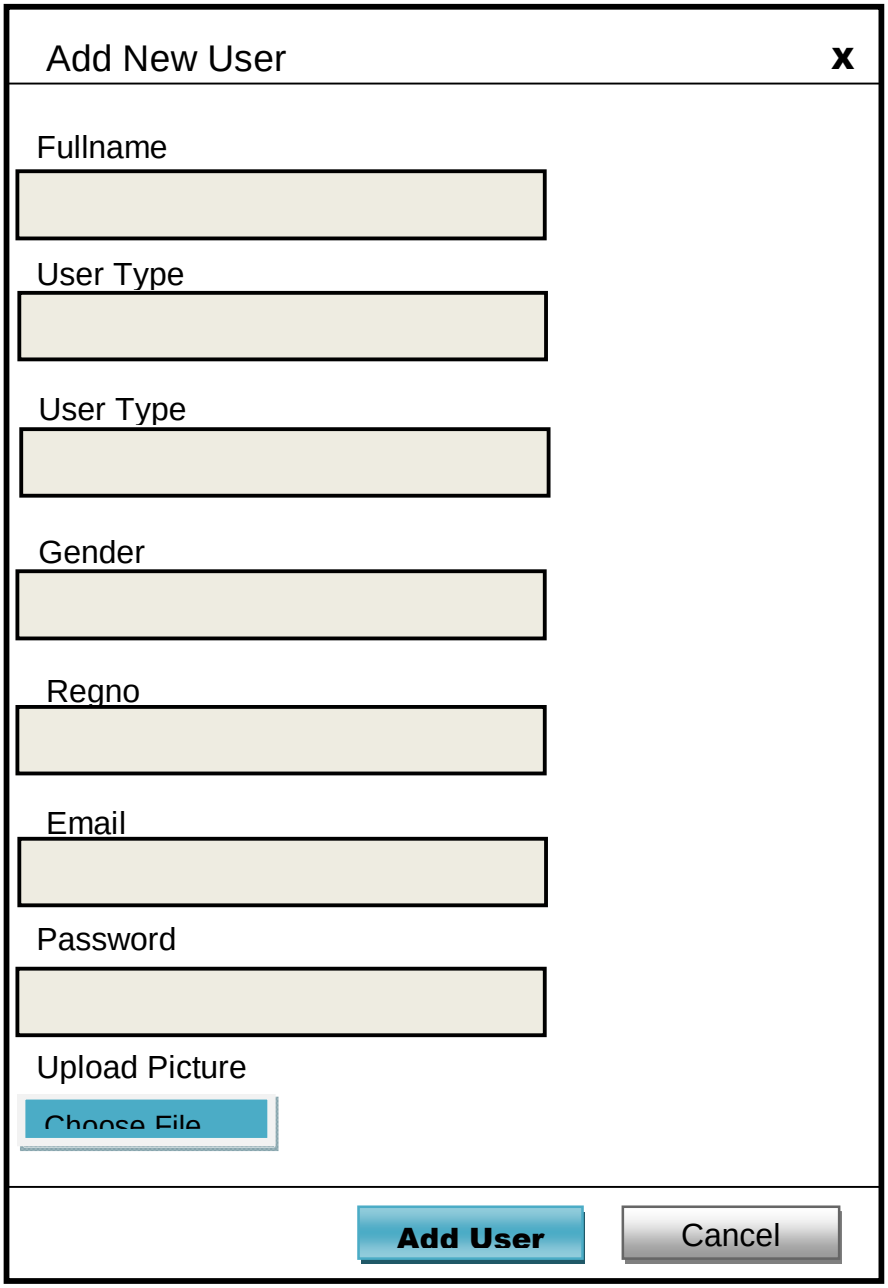

Figure 3.3: Illustration of User Registration Input Design

3.3.3 Output design

The output design determines how the processed data is to be displayed. The design presented in figure 3.4 shows exactly how the user information will be display in the user profile page after each user registration.

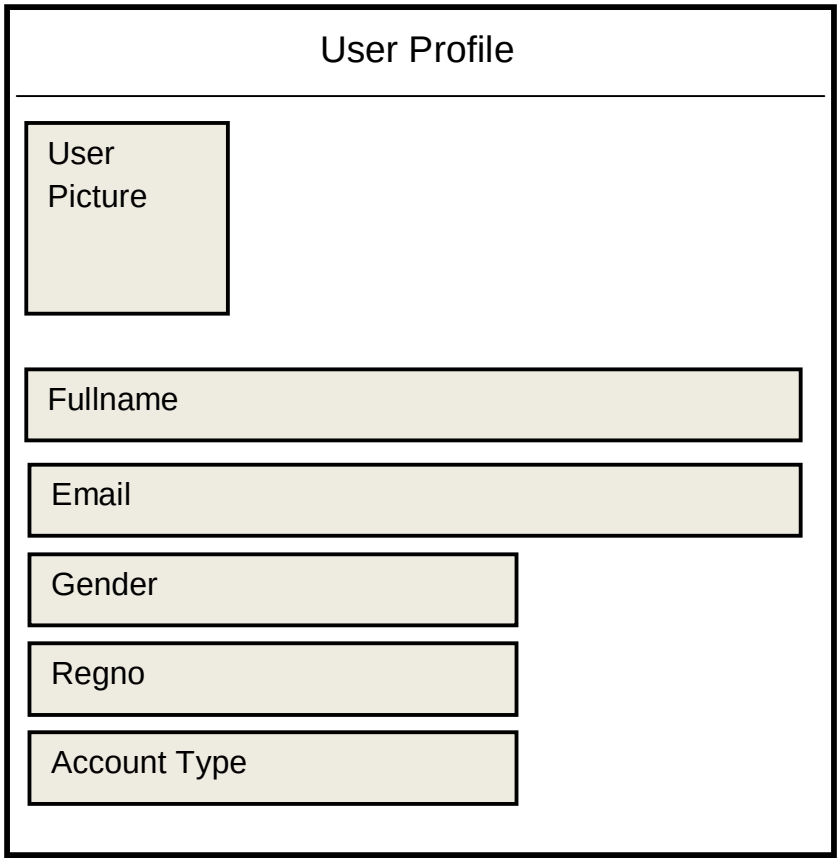

Figure 3.4: illustration of the Output Design of the user profile

3.3.4 The Algorithm/Flowchart of the System

This is the graphical representation of the flow of activities within the intranet-based wiki.

It show the processes involved in operating the system by the different categories of users that are allowed to work with the system.

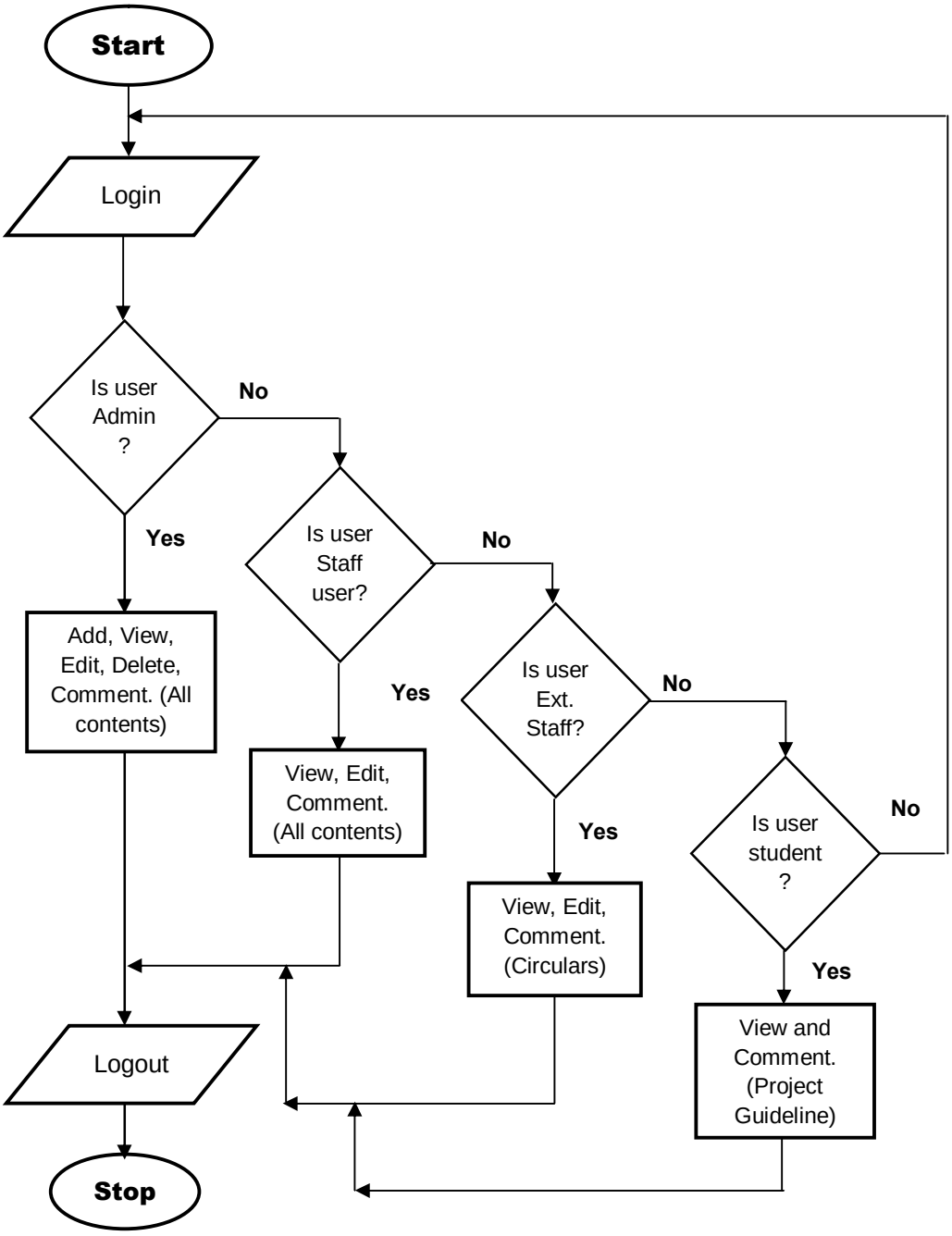

Figure 3.5: The Algorithm/Flowchart design of the system.

3.3.5 The System Architecture

The architectural design of the intranet-based wiki is of 3 (three) tiers as shown in figure 3.6. The tiers are the presentation, middle and data. The presentation tier is made up of the HTML, CSS and JavaScript. They are used for the front end designs which include document structuring and styling. The middle tier comprises of the PHP code, which connects the presentation tier and the data tier. It is also in this middle tier that the firewall of the intranet, on which this wiki is based,

is established for proper security of user data. The third, the data tier is for the database design, which serves as data repository which is needed by the system for processing of information. The database management system used for the design of this tier is MySQL. The middle and data tiers reside and function within the system server.

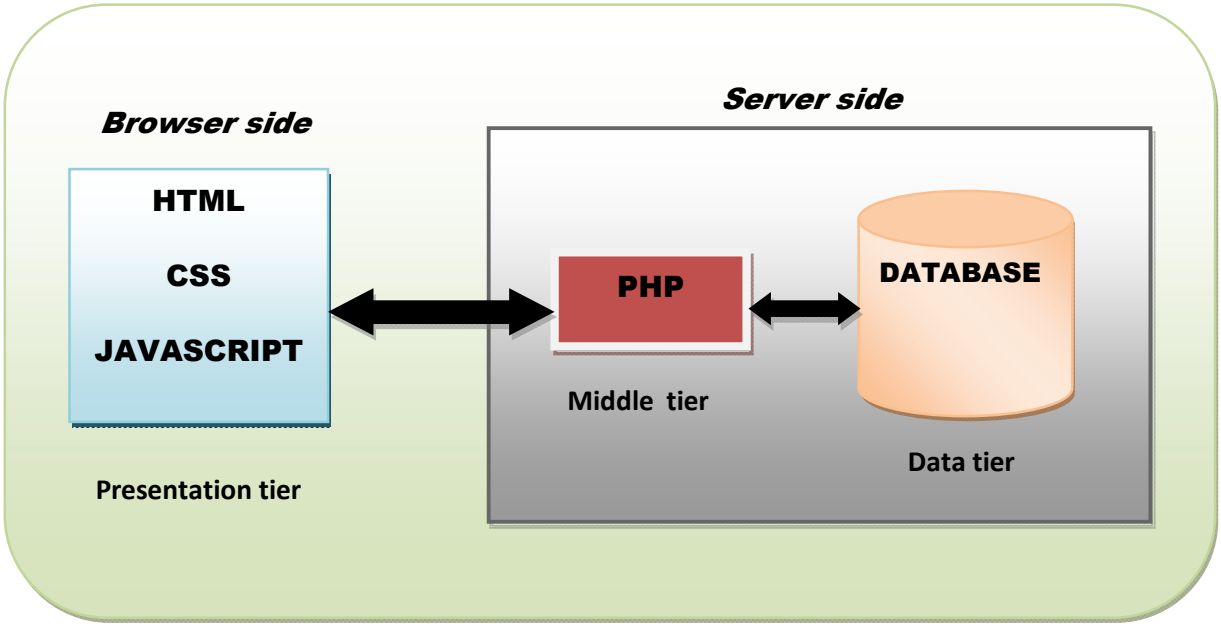

Figure 3.6: The System Architecture of the Intranet-based Wiki

3.3.6 The Network Architecture

In this project, the network connection for the implementation of the intranet on which the wiki is based is a VPN (Virtual Private Network) connection. The VPN is a type of network used to connect components to network by using another network like the internet. This is done by tunneling through the internet or another public network in a manner that provides the same security and features as a private network. In figure 3.7, the users are given authorization by the admin, by configuring the I.P (internet protocol) addresses of the usersô systems or devices to enable access to the VPN server. The VPN server secures the wiki from being accessed by any user who is not authorized by tunneling all the configured usersô connection to it secured route. This completely prevents hackersô attack on the system. Below is the Network architecture for connecting to the server in which the Wiki resides.

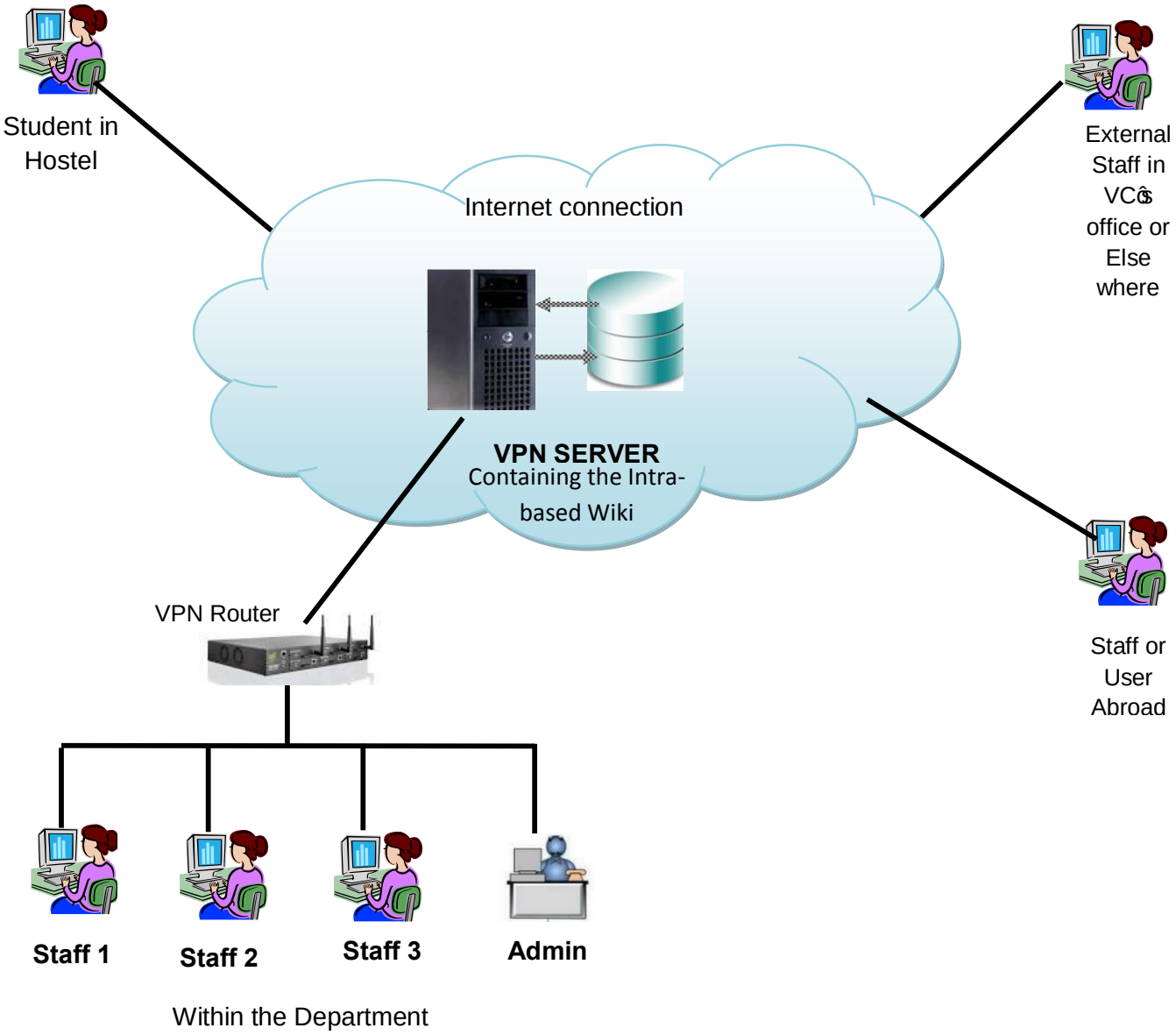

Figure 3.7: The Network Architecture of the Intranet-based Wiki

Chapter 4: System Implementation

4.0 Introduction

This chapter presents in detail, the implementation of the system developed for this project. The details of the system implementation include the choice of development environment, the implementation architecture, software testing, and system documentation.

4.1 Choice of development Environment

The integrated development environment (IDE) used in the development of this project is the komodo editor 6.0, on which the source codes are written and tested on the xamp server which is used as local host server on the Microsoft windows 7 platform. Chrome, Firefox or Torch are the browser which were used for running the intranet-based wiki. The programming languages employed in this project are HTML, CSS, JavaScript and PHP, while MySQL database management system was used. And CKEditor is used for the input and editing of data in the system.

4.2 Implementation Architecture

The implementation architecture of the wiki is represented in figure 4.1 below. It is made up of the various components of the software modules and their linkages.

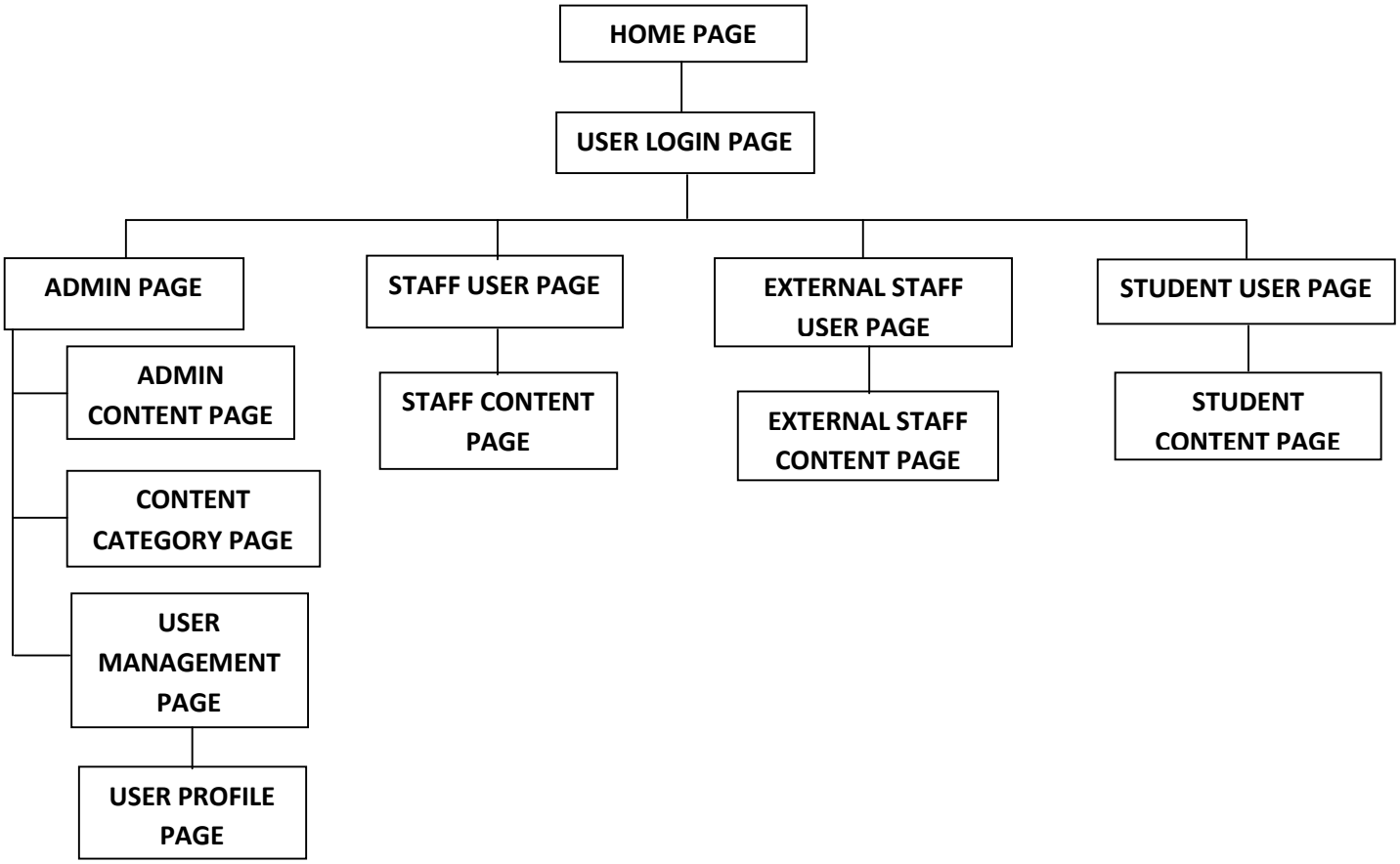

Figure 4.1: The Implementation Architecture

4.3 Software Testing

This system has undergone series of test during the development stage in order to detect compilation errors and have them removed. The testing is of two phases:

- Firstly, testing done during the development phases in order to remove runtime errors or bugs.
- Secondly, testing done by running the wiki on the local host sever of the computer. This is done by browsing the wiki using any of the available browsers to know if it meets the requirements of the targeted users before hosting it online, on the intranet.

Figures 4.2 to 4.9 are the screen shots captured during the second phase testing of the system:

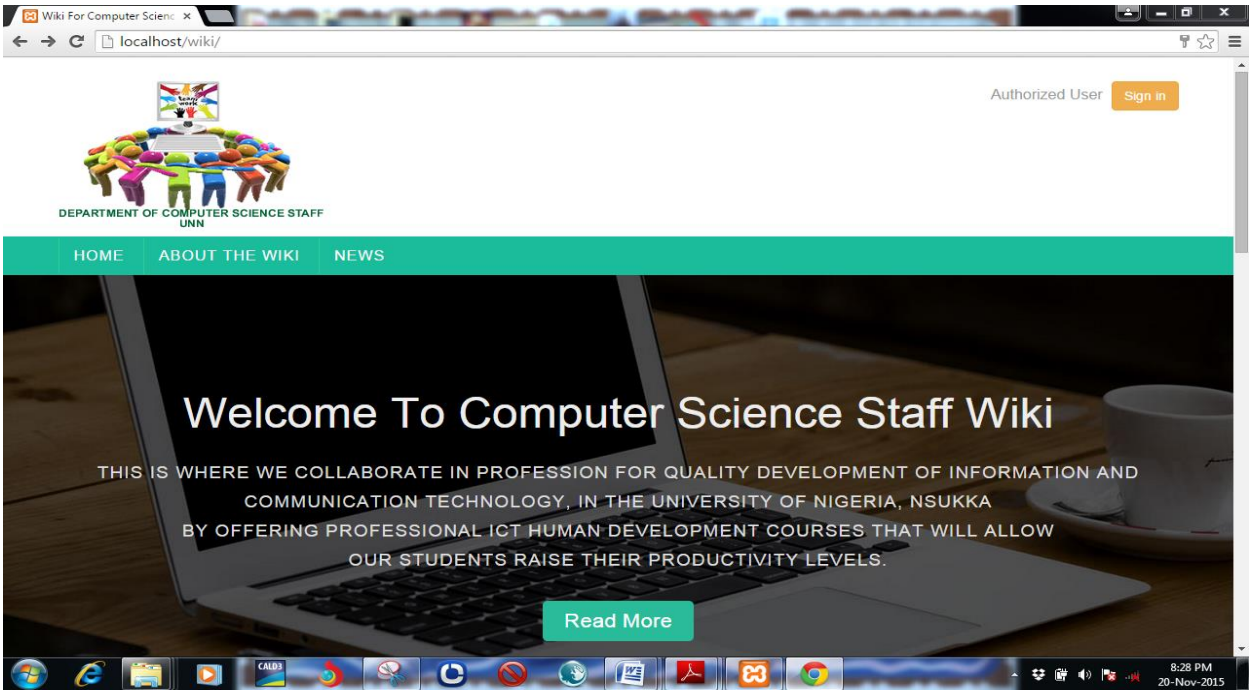

Figure 4.2: The screen shot of the Home page

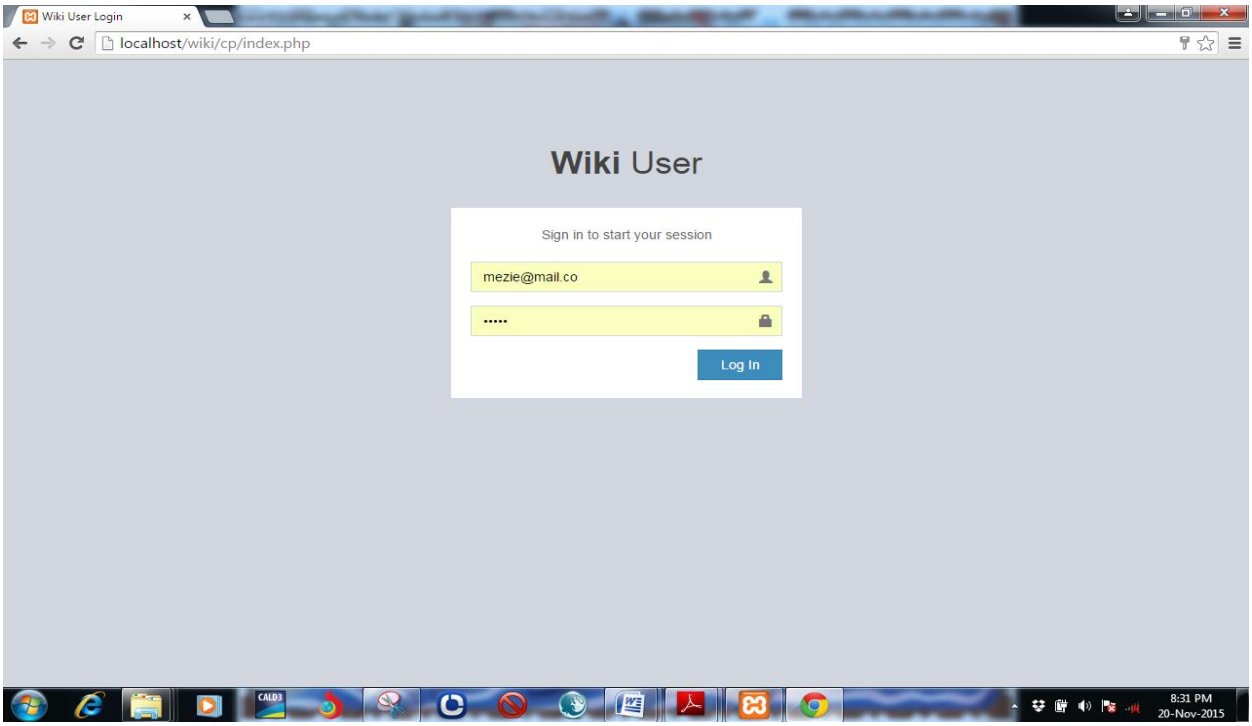

Figure 4.3: The screen shot of the user Login panel.

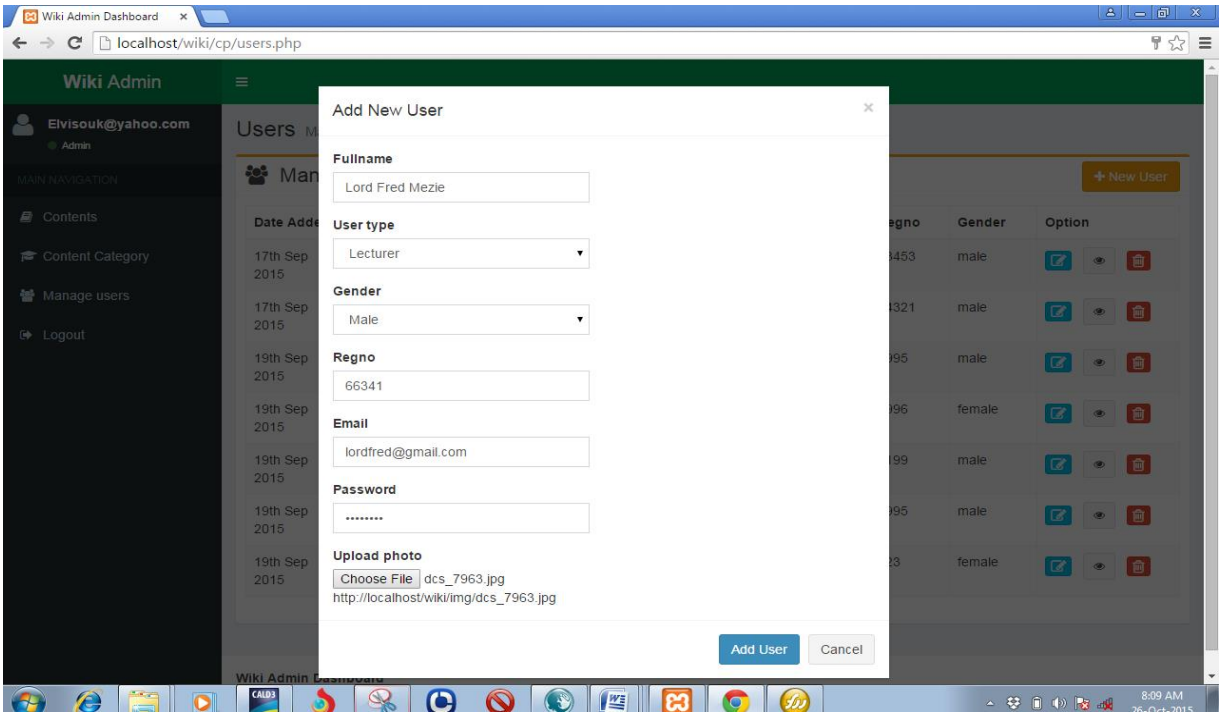

Figure 4.4: The screen shot of the user registration panel. (data input)

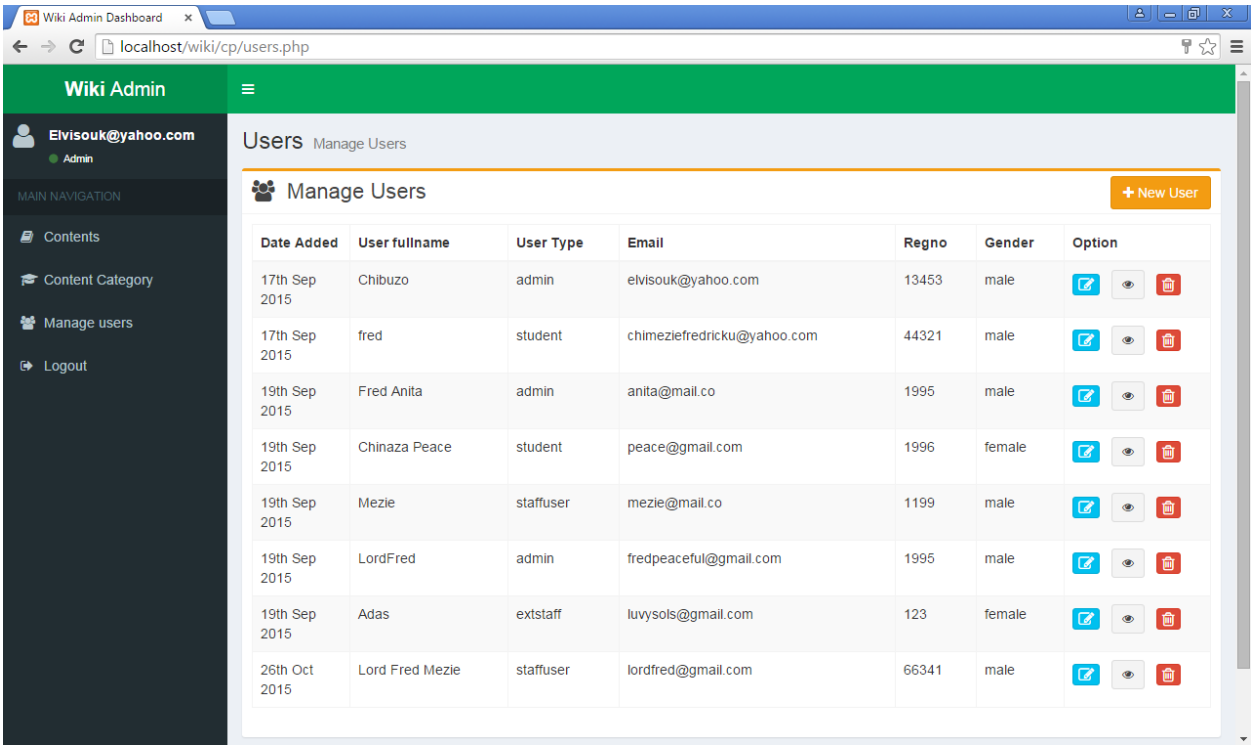

Figure 4.5: The screen shot of the registered users panel for user management. (data output)

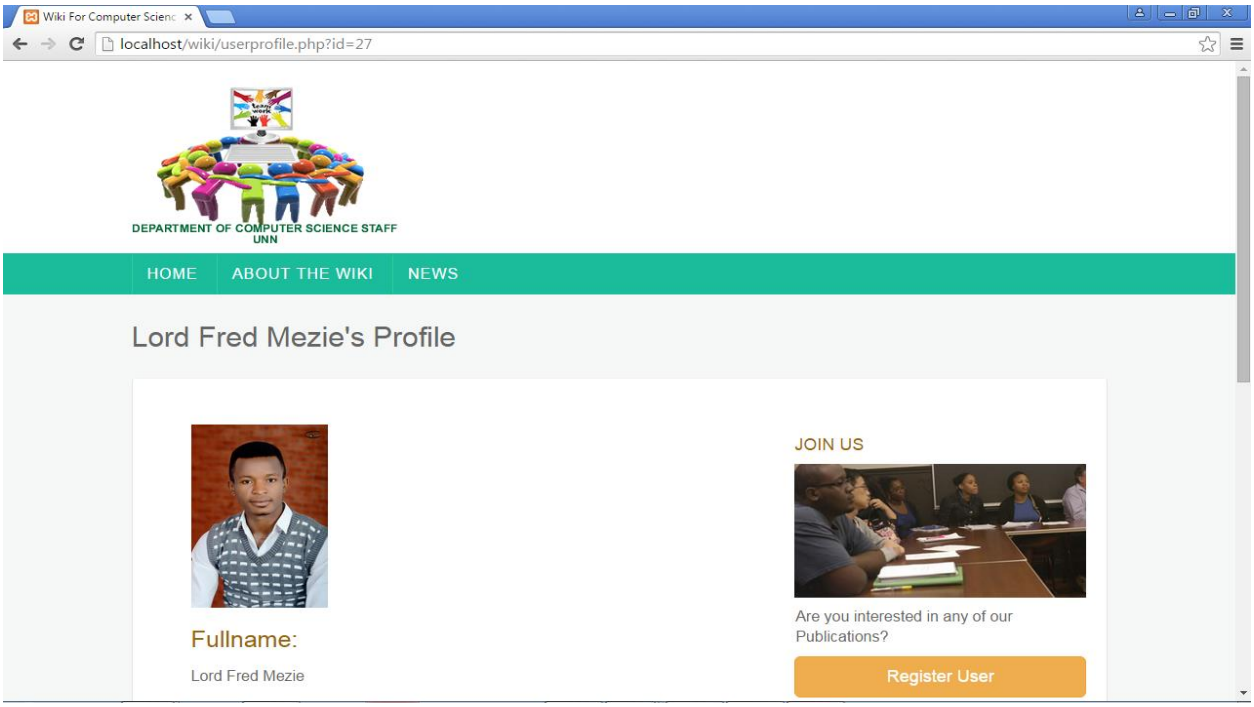

Figure 4.6: The screen shot of the user's profile page of the last user registered (data output)

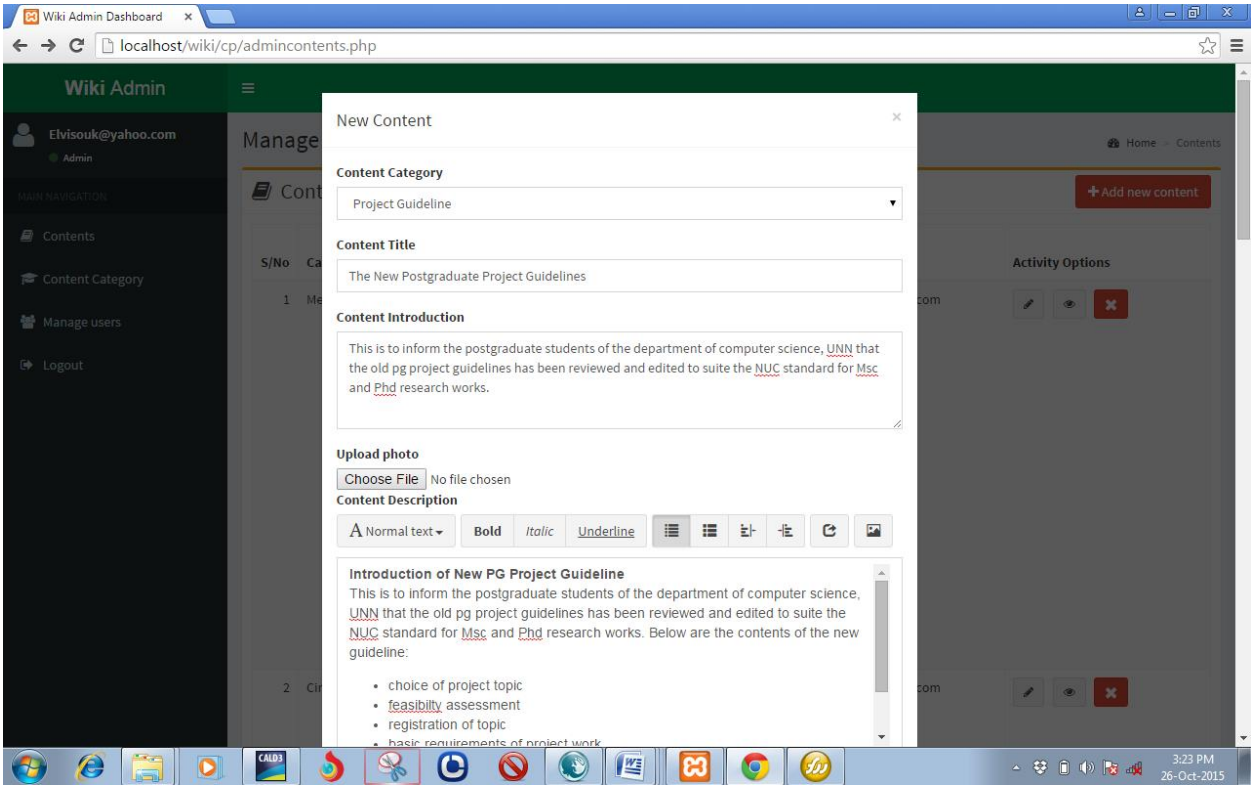

Figure 4.7: The screen shot of a content post (data input)

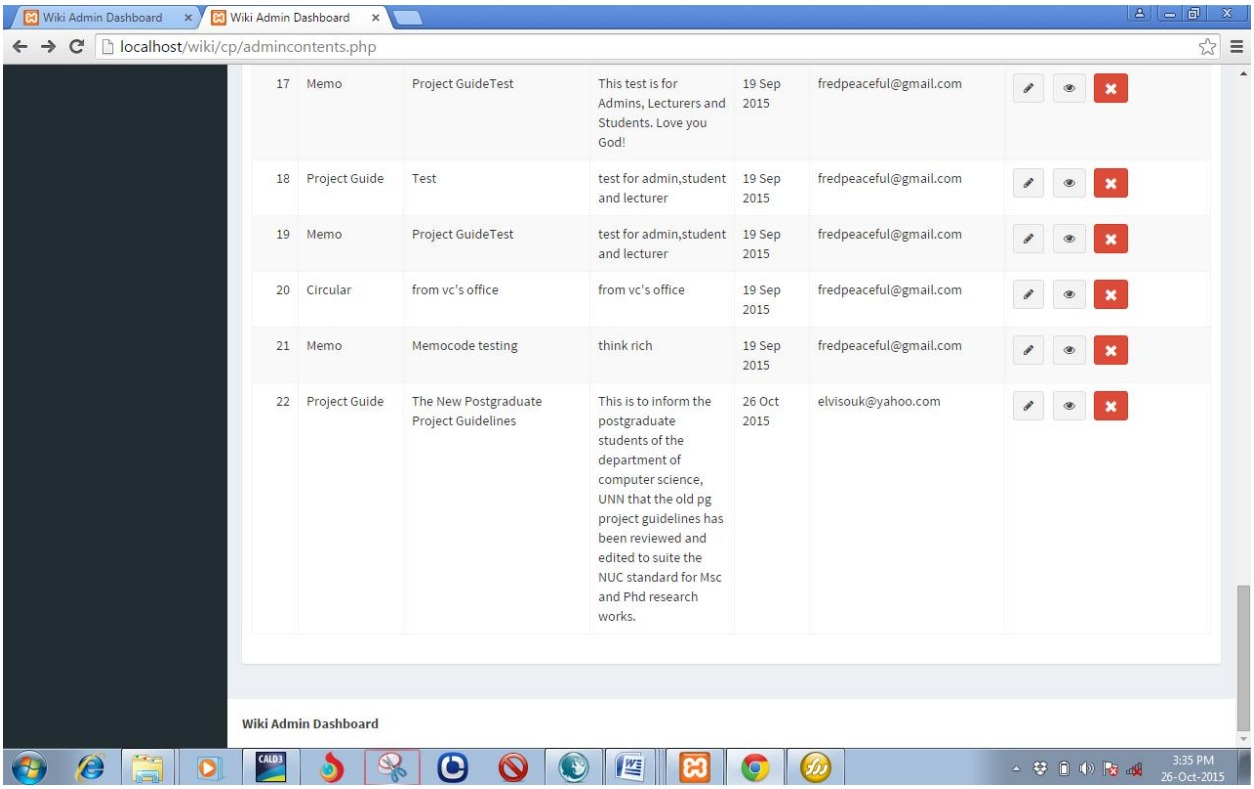

Figure 4.8: The screen shot of output of the content posted, in brief. (data output)

Figure 4.9: The screen shot of output of the content posted, in detail. (data output)

4.4 Documentation

This section presents the user manual and the source code of this project for easy understand of how to make use of the system and how to go about adjusting or modifying the code if need be.

4.4.1 User Manual

Every user is enjoined to stick to the steps below for smooth running of this application:

1. Ensure that the device in use is duly or properly configured by the admin with the VPN (remember that this is what makes it intranet-based for security purpose).
2. Connect to the VPN connection in your network connection panel on the right of the task bar.

Figure 4.10: user manual shot indicating the point for network connection

3. After the connection, open a functional web browser on your system and type the domain name of the system on the URL (uniform resource locator) of the browser and press the enter key on your keyboard.

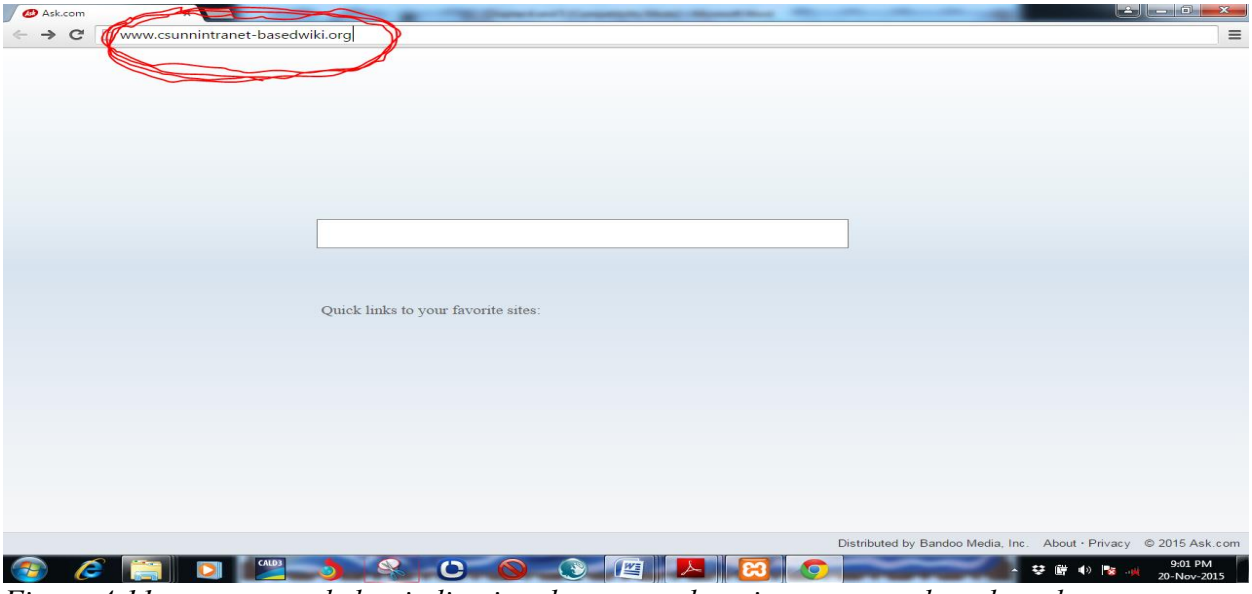

Figure 4.11: user manual shot indicating the system domain name typed on the url

4. After the above step, you then have the home page (*fig. 4.2 above*) on which you will find the authorized user *sign in* button by the top right of the screen, when clicked, takes you to the login page.

5. On the login page (*fig. 4.3 above*), it is expected that the user accessing the page has been properly registered by the system administrator and has obtain an email address which is to be used as the username and a password key from the admin. And when the correct email address and password key are entered, the user is taken to his or her supposed user page, on which the user can enjoy the facilities the system provides therein.

6. User can exit the system by clicking on the logout link on the left panel of the page and will be returned to the user login page.

4.4.2 Source Code Listing

See Appendices for the source code listing is as shown in Appendix A.

Chapter 5: Summary and Conclusion

5.0 Summary

For better throughput and quality service delivery which are expected from the staff of the Department of Computer Science UNN, the Intranet-Based Wiki with Instant Messaging Protocol has been developed. This is to inducing high level of collaboration and cooperation among the staff of the Department. The system developed in this project helps the staff to respond to their jobs when urgent responses are needed on such work to avoid damages that could be caused by delays. This was achieved by the employment of the Short Message Transfer Protocol (SMTP) via which the system sends instant email messages to the supposed users whenever the admin(s) post(s) a content or document on the system. The developed system has been designated to be hosted in a Virtual Private Server (VPS) on a Virtual Private Network. This is to prevent hackers from attacking the system and it is by this that the system is made Intranet-based

5.1 Conclusion

In conclusion, the Intranet-Based Wiki with Instant Messaging Protocol has been developed and tested, and it is functioning in its full capacity which meets the aim and objectives of this research work. Several work on ñwikiò and ñintranetò have been reviewed which served the researcher on achieving the aims and objectives of this work after qualitative analysis of the existing systems. The Object Oriented Analysis and Design methodology (OOADM) was employed during the system analysis and design phase of this work. The programming languages and tools used for the implementation of this work after the design are; HTML, JavaScript, CSS, CKEditor, PHP, and MySQL database management system.

5.2 Recommendations

The achievement made in the development of this project could benefit a lot of organizations. The system is recommended for use in any organization with higher dependency on intelligent staffs with just but a little adjustment or modification.

5.3 Suggested areas for further works

Other areas that could be needing research attention as regards the ñintranetò and ñwikiò are; ñthe employment of wiki in lecturing students on a distant learning programmeò, ñthe use of a collaboration conducive system in administering medical services to patients in hospitals by medical doctorsò, ñthe importance of a collaboration system for policy development in Governmentò, etc. And all of which must include an instant messaging system to help increase the level of user participation.

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Appendices

Appendix A: Source code for the Home Page

```
<?php
require_once "includes/header.php";
?>
<div class="banner text-center">
  <div class="container">
    <div class="banner-info">
      <h1>Welcome To Computer Science Staff Wiki</h1>
      <p>This is where we collaborate in profession for quality development of Information and Communication Technology, in the University of Nigeria, Nsukka<br>
            by offering professional ICT Human development courses that will allow<br> our Students raise their productivity levels.</p>
      <a class="banner_btn" href="about.php">Read More</a> </div>
  </div>
</div>
<div class="main" style="background: #fff">
<div class="content_white">
  <h2>Featured Contents</h2>
  <p>Our programmes include but not limited to the following...</p>
</div>
<div class="featuredcontent" id="feature">
  <div class="container">
    <div class="row text-center">
                <div class="col-md-4 col-xs-4 feature_grid1">
                        <div class="feature-div">
                                <div class="feature-wrap"><i class="fa fa-graduation-cap fa-fw"></i></div>
                                <!--<img src="img/child.gif" class="feature-img" />-->
                                <h3 class="">Academic Learning </h3>
                                <p class="f-text">This Student development programme is for the individual who have chosen to improve their competence in the area of Computer Science. By improving their competence, they stand to impress ICT Employers seeking competent ICT personnels to entrust the care of their Business.</p>
                                <br><a href="about2.php" class="btn btn-default btn-lg">Read More</a>
                        </div>
                </div>

                <div class="col-md-4 col-xs-4 feature_grid1">
                        <div class="feature-div">
                                <div class="feature-wrap"><i class="fa fa-child fa-fw"></i></div>
                                <!--<img src="img/blackteacher.jpg" class="feature-img" />-->
                                <h3 class="">The competent teacher series</h3>
```

```
                        <p class="f-text">Teaching is popularly called a gift, a passion and a calling. But above and beyond all these apt descriptions, it requires competence, skill and a know how. It is an ever evolving art, one that requires teachers to be abreast with the current norms.</p>
                        <br><a href="about2.php" class="featurebtn btn btn-default btn-lg">Read More</a>
                    </div>
                </div>

                <div class="col-md-4 col-xs-4 feature_grid1">
                    <div class="feature-div">
                        <div class="feature-wrap"><i class="fa fa-random fa-fw"></i></div>
                        <h3 class="">Our services to our Partners on Business and Research</h3>
                        <p class="f-text">All business success is now hinged on undeniable doctrine- "Outstanding Service". Being able to deliver poignant service is the reason businesses thrive or die. Therefore, this brings the nuances of service delivery to<br> the fore.</p>
                        <br><a href="about2.php" class="btn btn-default btn-lg">Read More</a>
                    </div>
                </div>
    </div>
  </div>
</div>

<div class="highlight-info">
  <div class="overlay spacer">
    <div class="container">
      <div class="row text-center">
        <div class="col-sm-4 col-xs-4"> <i class="fa fa-smile-o fa-5x"></i>
          <h4>12+ Happy Staff</h4>
        </div>
        <div class="col-sm-4 col-xs-4"> <i class="fa fa-book fa-5x"></i>
          <h4>3+ To Achieve </h4>
        </div>
        <div class="col-sm-4 col-xs-4"> <i class="fa fa-map-marker fa-5x"></i>
          <h4>1 HOD Desk</h4>
        </div>
      </div>
    </div>
  </div>
</div>
<div class="testimonial-area">
  <div class="testimonial-solid">
    <div class="container">
```

```
    <h2 style="margin-bottom: 5px">Call us now</h2>
    We are always available and happy to take your calls during office hours.<br><br>
        <h3 >+234 703 376 7201</h3>
   </div>
  </div>
</div>
<?php include "includes/footer.php"; ?>
```

Appendix B: Source code for the Users login Page

```
<?php
session_start();
require "../classes/user.class.php";

if (isset($_POST['login'])) {
        $user = new User();
        extract($_POST);
        $status = $user->login($email, $password);
        if ($status === true) {
                if ($_SESSION['user_type'] == 'admin'){
                  header("Location: wikiadmin.php");
                }
                elseif ($_SESSION['user_type'] == 'staffuser'){
                  header("Location: wikistaff.php");
                }
                elseif ($_SESSION['user_type'] == 'student'){
                  header("Location: wikistudent.php");
                }
                elseif ($_SESSION['user_type'] == 'extstaff'){
                  header("Location: wikiextstaff.php");
                }
                exit;
        } else {
                echo $status;
        }
}

?>
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>Wiki User Login</title>
    <meta content='width=device-width, initial-scale=1, maximum-scale=1, user-scalable=no'
name='viewport'>
    <!-- Bootstrap 3.3.2 -->
    <link href="bootstrap/css/bootstrap.min.css" rel="stylesheet" type="text/css" />
```

```
    <!-- Font Awesome Icons -->
    <link href="https://maxcdn.bootstrapcdn.com/font-awesome/4.3.0/css/font-awesome.min.css"
rel="stylesheet" type="text/css" />
    <!-- Theme style -->
    <link href="dist/css/AdminLTE.min.css" rel="stylesheet" type="text/css" />
    <!-- iCheck -->
    <link href="plugins/iCheck/square/blue.css" rel="stylesheet" type="text/css" />

    <!-- HTML5 Shim and Respond.js IE8 support of HTML5 elements and media queries -->
    <!-- WARNING: Respond.js doesn't work if you view the page via file:// -->
    <!--[if lt IE 9]-->
          <script src="https://oss.maxcdn.com/libs/html5shiv/3.7.0/html5shiv.js"></script>
          <script src="https://oss.maxcdn.com/libs/respond.js/1.3.0/respond.min.js"></script>

  <body class="login-page">
    <div class="login-box">
      <div class="login-logo">
        <a href=""><b>Wiki</b> User</a>
      </div><!-- /.login-logo -->
      <div class="login-box-body">
        <p class="login-box-msg">Sign in to start your session</p>
        <form action="" method="post">
          <div class="form-group has-feedback">
            <input type="text" name="email" class="form-control" placeholder="Email"/>
            <span class="glyphicon glyphicon-user form-control-feedback"></span>
          </div>
          <div class="form-group has-feedback">
            <input type="password" name="password" class="form-control"
placeholder="Password"/>
            <span class="glyphicon glyphicon-lock form-control-feedback"></span>
          </div>
          <div class="row">
            <div class="col-xs-8">
              <div class="">

              </div>
            </div><!-- /.col -->
            <div class="col-xs-4">
              <button type="submit" name="login" class="btn btn-primary btn-block btn-flat">Log
In</button>
            </div><!-- /.col -->
          </div>
        </form>

        <!--<a href="#">I forgot my password</a><br>
        <a href="register.html" class="text-center">Register a new membership</a>-->
```

```
    </div><!-- /.login-box-body -->
  </div><!-- /.login-box -->
 </body>
</html>
```

Appendix C: Source code for the User Registration Page

```
<!--already in head.php-->
<?php/*
session_start();
if (!isset($_SESSION['email'])) {
        header("Location: index.php");
        exit;
}
*/?>
<?php
require "includes/head.php";
require "includes/side-bar.php";
require_once "../classes/user.class.php";

$user = new User();
?>
<div class="content-wrapper">
        <section class="content-header">
                <h1>
                        Users
                        <small>Manage Users</small>
                </h1>
        </section>

        <!-- Main content -->
        <section class="content">
                <div class="row">
                        <div id='main_bus_search' class="col-md-12">
                                <div class="box box-warning">
                                        <div class="box-header with-border">
                                                <h2 style='font-size: 22px' class="box-title"><i
class="fa fa-group"></i>  Manage Users</h2>
                                                <div class="box-tools pull-right">
                                                        <button class="btn btn-warning pull-right"
data-toggle="modal" data-target="#userModal"><i class="fa fa-plus"></i> New User</button>
                                                </div>
                                        </div>
                                        <div class="box-body">
                                                <div>
                                                        <table class="table table-striped table-
bordered">
```

```
                                                    <thead>
                                                        <tr>
                                                            <th
style="width:100px">Date Added</th>
                                                            <th>User
fullname</th>
                                                            <th>User Type</th>
                                                            <th>Email</th>
                                                            <th>Regno</th>
                                                            <th>Gender</th>
                                                            <th
style="width:150px">Option</th>
                                                        </tr>
                                                    </thead>
                                                    <tbody>
                                                        <?php
                                                            $users = $user-
>getAllUsers();
                                                            foreach ($users AS
$_user) {
                                                                echo "<tr
id='{$_user->id}'>
        <td>" . date('jS M Y', strtotime($_user->date_created)) . "</td>
        <td>{$_user->fullname}</td>
        <td>{$_user->user_type}</td>
        <td>{$_user->email}</td>
        <td>{$_user->regno}</td>
        <td>{$_user->gender}</td>
        <td>
        <a data-toggle='modal' href='#edit-userModal' class='btn btn-xs btn-info edit' title='Edit
user'><i class='fa fa-edit fa-lg'></i></a>  
        <a href='../userprofile.php?id={$_user->id}' class='btn btn-sm btn-default' title='View
profile' data-toggle='tooltip'><i class='fa fa-eye'></i></a>  
        <a href='#' title='Remove user' class='delete btn btn-xs btn-danger'><i class='fa fa-trash-o
fa-lg'></i></a>
        </td>
```

```
                                                                    </tr>";
                                                                }
                                                            ?>
                                                        </tbody>
                                                    </table>
                                                </div>
                                            </div>
                                        </div>
                                    </div>
                                </div>
                            </section>
                        </div>


                        <div class="modal fade" id="userModal" tabindex="-1" role="dialog" aria-
                        labelledby="myModalLabel" aria-hidden="true">
                            <div class="modal-dialog">
                                <div class="modal-content">
                                    <div class="modal-header">
                                        <button type="button" class="close" data-dismiss="modal" aria-
                                        hidden="true">
                                            &times;
                                        </button>
                                        <h4 class="modal-title">Add New User</h4>
                                    </div>
                                    <form action="" id="add-user-form" enctype="multipart/form-data">
                                        <div class="modal-body">
                                            <div class="row form-group">
                                                <section class="col-md-6">
                                                    <label>Fullname</label>
                                                    <input type="text" name="fullname"
                                                    id="fullname" placeholder="Name" class="form-control">
                                                </section>
                                            </div>
                                            <div class="row form-group">
                                                <section class="col-md-6">
                                                    <label>User type</label>
                                                    <select name="user_level" id="level"
                                                    class="form-control">
                                                        <option
                                                        value="staffuser">Lecturer</option>
                                                        <option
                                                        value="student">Student</option>
                                                        <option
                                                        value="extstaff">Extstaff</option>
                                                        <option
                                                        value="admin">Administrator</option>
```

```
                                        </select>
                                    </section>
                                </div>
                                <div class="row form-group">
                                    <section class="col-md-6">
                                        <label>Gender</label>
                                        <select name="gender" id="level"
class="form-control">
                                            <option
value="male">Male</option>
                                            <option
value="female">Female</option>
                                        </select>
                                    </section>
                                </div>

                                <div class="row form-group">
                                    <section class="col-md-6">
                                        <label>Regno</label>
                                        <input type="text" name="regno"
id="regno" placeholder="Regno" class="form-control">
                                    </section>
                                </div>
                                <div class="row form-group">
                                    <section class="col-md-6">
                                        <label>Email</label>
                                        <input type="text" name="email"
id="email" placeholder="Email" class="form-control">
                                    </section>
                                </div>
                                <div class="row form-group">
                                    <section class="col-md-6">
                                        <label>Password</label>
                                        <input type="password" name="password"
id="password" placeholder="Password" class="form-control">
                                    </section>
                                </div>
                                <div class="form-group">
                                    <div class="pull-left">
                                        <label>Upload photo</label>
                                        <input type="file" name="photo"
class="photo-upload" alt="add" />
                                        <input type="hidden" name="userPhoto"
value="" id="photo-name"/>
                                    </div>
                                    <i class="fa fa-cog fa-spin fa-lg hidden"
style="position: relative; top: 25px"></i>
```

```
                                        </div> <div id="progress" class="pull-left hidden"></div>

                                        <div class="clearfix" style="padding-top: 20px
!important"></div>
                                        <div id="photo-msg"></div>
                                </div>

                                <div class="modal-footer">
                                        <button type="submit" class="btn btn-primary"
id="adduser"> Add User </button>
                                        <button type="button" class="btn btn-default" id="canreq"
data-dismiss="modal">          Cancel </button>
                                        </div>
                        </form>
                </div>
        </div>
</div>


<div class="modal fade" id="edit-userModal" tabindex="-1" role="dialog" aria-
labelledby="myModalLabel" aria-hidden="true">
        <div class="modal-dialog">
                <div class="modal-content">
                        <div class="modal-header">
                                <button type="button" class="close" data-dismiss="modal" aria-
hidden="true">
                                        &times;
                                </button>
                                <h4 class="modal-title">Edit User</h4>
                        </div>
                        <form action="" id="edit-user-form">
                                <div class="modal-body">
                                        <div class="row form-group">
                                                <section class="col-md-12">
                                                        <label>Fullname</label>
                                                        <input type="text" name="fullname"
id="_fullname" placeholder="Name" class="form-control">
                                                </section>
                                        </div>

                                        <div class="row form-group">
                                                <section class="col-md-6">
                                                        <label>Email</label>
                                                        <input type="text" name="email"
id="_email" placeholder="Email" class="form-control">
                                                </section>
```

```
                                        <section class="col-md-6">
                                                <label>User type</label>
                                                <select name="user_level" id="_level"
class="form-control">
                                                        <option
value="staffuser">Lecturer</option>
                                                        <option
value="student">Student</option>
                                                        <option
value="extstaff">Extstaff</option>
                                                        <option
value="admin">Administrator</option>
                                                </select>
                                        </section>
                                </div>

                                <div class="row form-group">
                                        <section class="col-md-6">
                                                <label>Regno</label>
                                                <input type="text" name="regno"
id="_regno" placeholder="Regno" class="form-control">
                                        </section>

                                        <section class="col-md-6">
                                                <label>Gender</label>
                                                <select name="gender" id="_gender"
class="form-control">
                                                        <option
value="male">Male</option>
                                                        <option
value="female">Female</option>
                                                </select>
                                        </section>
                                </div>
                        </div>
                        <input type="hidden" name="id" id="user-id" />

                        <div class="form-group">
                                <div class="pull-left">
                                        <label>Upload photo</label>
                                        <input type="file" name="photo" class="photo-
upload" alt="edit" />
                                        <input type="hidden" name="userPhoto" value=""
id="photo-name2"/>
                                </div>
                                <i class="fa fa-cog fa-spin fa-lg hidden" style="position:
relative; top: 25px"></i>
```

```
                                </div> <div id="progress" class="pull-left hidden"></div>

                                <div class="clearfix" style="padding-top: 20px
!important"></div>
                                <div id="photo-msg2"></div>

                                <div class="modal-footer">
                                        <button type="submit" class="btn btn-primary"
id="adduser"> Update User </button>
                                        <button type="button" class="btn btn-default" id="canreq"
data-dismiss="modal">   Cancel </button>
                                </div>
                        </form>
                </div>
        </div>
</div>


<?php include_once "includes/footer.html"; ?>

<!--<script src="/js/plugin/jquery-form/jquery-form.min.js"></script>-->
<script type="text/javascript">

        // handle picture upload
        $(".photo-upload").change(function(e) {
                e.preventDefault();
                $(".fa-cog").removeClass("hidden");
                        var formData;
                        var obj = $(this);
                        if(obj.attr("alt") == "edit") {
                                formData = new FormData($("#edit-user-form")[0]);
                        } else {
                                formData = new FormData($("#add-user-form")[0]);
                        }

                        formData.append('op', 'photo-upload');
                        $.ajax({
                                url: 'ajax/misc_fns.php',
                                type: 'POST',
                                dataType: 'json',
                                success: function(result)
                                {
                                        //console.log($.ajaxSettings.xhr().upload);
                                        if (result.status.trim() == "Done") {
                                                if(obj.attr("alt") == "edit") {
                                                        $("#photo-
msg2").prepend("http://localhost/wiki/img/" + result.filename + "<br>").show();
```

```
                                                $("#photo-
name2").val("http://localhost/wiki/img/" + result.filename);
                                        } else {
                                                $("#photo-
msg").prepend("http://localhost/wiki/img/" + result.filename + "<br>").show();
                                                $("#photo-
name").val("http://localhost/wiki/img/" + result.filename);
                                        }

                                } else {
                                        $("#photo-msg").text(result.msg).show();
                                        $("#photo-msg2").text(result.msg).show();
                                }
                                $(".fa-cog").addClass("hidden");
                        },
                        error: function(e) {
                                alert(e);
                                console.log(e);
                        },
                        // Form data
                        data: formData,
                        //Options to tell JQuery not to process data or worry about content-
type
                        cache: false,
                        contentType: false,
                        processData: false
                });
        });

        // add user
        $("#add-user-form").submit(function(e) {
                e.preventDefault();
                //alert($(this).serialize()); return;
                $.post("ajax/user_form.php", $(this).serialize() + "&op=add-user", function(d) {
                        //if (d.trim() == "Done") {
                                location.reload(true);
                        //}
                });
        });


        // update user info
        $("#edit-user-form").submit(function(e) {
                e.preventDefault();
                //alert($(this).serialize()); return;
                $.post("ajax/user_form.php", $(this).serialize() + "&op=edit-user", function(d) {
                        if (d.trim() == "Done") {
```

```
                        location.reload(true);
                    }
                });
        });


        $(".edit").click(function(e) {
                e.preventDefault();
    var $parentTr = $(this).parents("tr");
                $("#_fullname").val($parentTr.find("td:nth-child(2)").text());
                $("#_email").val($parentTr.find("td:nth-child(4)").text());
                $("#_level").find("option").filter(function(index) {
        return $parentTr.find("td:nth-child(3)").text() == $(this).val();
    }).attr("selected", "selected");
                $("#_regno").val($parentTr.find("td:nth-child(5)").text());
                $("#_gender").find("option").filter(function(index) {
        return $parentTr.find("td:nth-child(6)").text() == $(this).val();
    }).attr("selected", "selected");
                $("#user-id").val($parentTr.attr("id"));
                //$("#photo-name2").val($parentTr.attr("id"));
                //console.log("The value of photo name = " + $("#photo-name").val())
        });


        $(".delete").click(function(e) {
                e.preventDefault();
                var $parentTr = $(this).parents("tr");
                var id = $parentTr.attr("id");

                if (confirm("Are you sure you want to remove this user?")) {
                        $.post("ajax/user_form.php", {"op": "delete-user", "id": id}, function(d) {
                                if (d.trim() == "Done") {
                                        $parentTr.fadeOut();
                                }
                        });
                }
        });


        $('#myModal').on('hidden.bs.modal', function(){
                $(this).find('form')[0].reset();
                $('#add-user-form footer').html('<button type="submit" class="btn btn-primary"
id="adduser"> Add User </button><button type="button" class="btn btn-primary" id="canreq"
data-dismiss="modal"> Cancel </button>');
                $("#add-user-form").removeClass('submited');
                //vcal.resetForm();
        });
```

```
</script>
```

Appendix D: Source code for the User Profile Page

```
<?php
session_start();
if (!isset($_SESSION['email'])) {
	header("Location: index.php");
	exit;
}
?>
<?php
require_once "includes/header.php";
require_once "classes/user.class.php";
$user = new User();

$id = $_GET['id'];
$_user = $user->getUserById($id);
?>
<style>
#course-content {
	padding: 10px 40px;
	/*width: 60%;*/
}

#course-content h3 {
	font: 300 25px 'Lato', sans-serif;
	color: #996600;
	margin-bottom: 15px;
}

.side-bar {
	margin-top: 20px;
}

.courses {
	list-style-type: none;
}

.courses li {
	margin-left: -35px;
	padding: 3px 0;
}

.courses li a {
	color: #16a085;
```

```
}

p img {
	width: 140px;
	height: 200px;
	margin: 20px auto;
}
</style>
<div class="container"><h2 style="margin-top: 30px"><?php echo $_user->fullname; ?>'s
Profile</h2></div>
<div class="container content" style="margin-bottom: 50px; margin-top: 18px">
	<div class="row">
		<div class="col-md-8">
		<?php
			echo "<div id='course-content'>
				<!--<h3>Content Description</h3><hr style='margin-top:
8px; margin-bottom: 30px' />-->
				<p><img src='{$_user->photo}' alt='User_Pic'></p>
				<h3>Fullname: </h3>{$_user->fullname}
				<hr>
				<h3>Email: </h3>{$_user->email}
				<hr>
				<h3>Gender: </h3>{$_user->gender}
				<hr>
				<h3>Registration No.: </h3>{$_user->regno}
				<hr>
				<h3>Account Type: </h3>{$_user->user_type}
				<hr>
			</div>"
		?>
		</div>
	<!--the right side div-->
		<div class="col-md-4">

			<div class="side-bar"><br>
				<h4 style="font: 400 18px 'Lato', sans-serif; color:
#996600;">JOIN US</h4>
				<img src="img/course.jpg" style="width: 100%" />
				<div style="padding: 10px 1px">Are you interested in any of our
Publications?</div>
				<a href="#" class="btn btn-warning btn-block btn-lg">Register
User</a>
			</div>
		</div>
	</div>
</div>
<?php include "includes/footer.php"; ?>
```

```
<script>
$(document).ready(function() {
	$("#course-content img").wrap("<p></p>");
});
</script>
```