# MIZAN–TEPI UNIVERSITY, TEPI CAMPUS

# COLLEGE OF ENGINEERING AND TECHNOLOGY

# DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

# COMPUTER STREAM

**PROJECT TITLE: VIRTUAL CLASS ROOM MANAGEMENT SYSTEM**

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**Mizan Tepi, Ethiopia**

## Declaration and approval

We declare that the project comprises our own work. We have acknowledged and refereed all materials used in this work. We understand that non-adherence to the principles of academic honestly and integrity. Misrepresentation of any idea will constitute sufficient ground for disciplinary action by the institute and can also evoke penal action from the sources which have not been properly cited or acknowledged.

In doing so, we assure that we agree with all written above with our signature as follows.

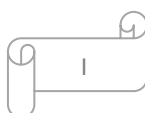| Name | ID.NO | sign |
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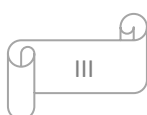Signature_____
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## Acknowledgment

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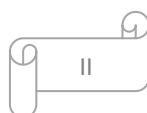
# Abstract

In the last few decades, education has witnessed some advances in technologies involving computer aided learning that promises to drastically change the methods of teaching and learning. The World Wide Web has played a major role in information storage and dissemination in the educational community. Conventional classroom-based teaching involves the delivery of course materials by the lecturer in a particular place at a defined time. Hence it imposes a constraint of time and place on both the instructor and the student. Due to human factor arising from the traditional classroom method, the lecturer may not always be able to put in optimum effort towards preparing and delivering course materials. There may also be inconsistencies in the pedagogy and learning style due to repetitive nature of teaching/ learning. With this consideration, in this project, we are developed a virtual class room management system.
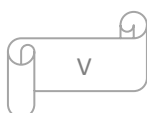
Our project on Virtual Classroom is the online platform brings together the learners either local or distant and the teachers within one class through the help of web-based system. It is referred as a web-based system as it requires computer and internet connection. Our work virtual Classroom had the features of uploading of different file contents, comment section, FAQ reports as well as chatting between the instructors and the students. The participants can have the flair of raising hands if they have any questions or for ending the sessions. As virtual classroom is the representation of real classroom virtually, participants are fully benefited as per in the real classroom. They can share their ideas, knowledge, and subject matters with the tutors and among the participants. The system was developed and hosted on the web using CSS, XAMPP Server, java Script, MySQL, PHP and Visual Studio. The results obtained from the demonstration exhibit the suitability and adequacy of the virtual classroom system. The evaluation of the system based on selected indices also shows its level of performance and ratings.

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# List of Acronyms

**ADMIN: -** Administrator

**CAI: - C**omputer Aided Instruction

**CAL: - C**omputer Aided Learning

**CMS: - C**ourse Management System

**DB: -** Data Base

**EIS: -** Enterprise Information System

**HTML: -** Hyper Text Markup Language (Markup language used to develop web pages)

**HTTP: -** Hyper Text Transfer Protocol

**ID: -** Identification

**LMS: -** Learning Management System

**LP: -** Learning Platform

**MTU:** - Mizan Tepi University

**MySQL: -** Open-Source relational Data Base management system

**OS: -** Operating System

**PHP: -** Hypertext Processor (programming language used to develop web pages)

**TCP/IP: -** Transmission Control Protocol /Internet protocol

**TCR: -** Traditional Class Room

**URL: -** Uniform Resource Locator

**VCR: -** Virtual Class Room

**VES: -** Virtual Education System

**XAMPP: -** Cross-platform Apache, MySQL, PHP and Perl

# CHAPTER ONE

## Introduction

Internet is an imperative need of the modern world. Even in the developing countries people can realize and utilize this competence of technology. Almost every house in the developed zones is using the facility of internet. From this usage, there comes the concept of virtual classroom. Virtual classrooms are online environments that enable students and instructor to communicate synchronously using audio, video, text chat, interactive whiteboard, application sharing, instant polling etc. These features enable faculty and students to interact as if they were face to face in a classroom. Participants can talk to each other; view each other through a webcam, etc. Virtual classrooms are being created for sharing notes, slides related to subject matters. A virtual classroom allows learners and teachers to attend an online environment from any place in the world through Internet connection. Technology such as virtual classroom is being increasingly popular worldwide as it is one of the efficient ways of e-learning which includes teacher as a server and learners (students) as the client. In most of the developed countries, virtual classroom is being used by schools, colleges, universities and other technological fields.

Education has become the crucial oblige for today's world still numerous peoples are unable to acquire it due to more than a few reasons such as no time for going to schools or colleges or distance problem and so on. In order to solve tribulations, we try to bring such peoples together with the similar ones by a scheme which is referred to the Virtual Classroom. Virtual Classroom allows the learners and their teachers to attend the classes from any part of the world. It not only provides lectures and answers the queries but if any learner has missed the class, they can even review their lectures from the recorded sessions. Virtual classrooms are being formed by the developers for learners of all fields. They are even being implemented at other parts of the world but in context of our country it has not been taken into effort. Virtual classroom can be a very useful dexterity for distant learners and for peoples who cannot meet face to face because of lack of time. In this project, we designed a web-based application that both the staffs and students participate without any complexity. It is very convenient. The user can participate from anywhere in this world using this platform. The Staff and the Student have to register in the website to use this website. The staff logs in and posts his lecture.

The student logs in and views all the classes. If he has any doubt/query, he can post it and the staff give answers of those queries. The student can chat with staff for clarifying his doubts online.

The aim of this project is to provide a web enabled interactive model of e-learning in which the course material is presented using the advantages of multimedia and Hypermedia.

## 1.1 Background of the study

The current class is physical class in which both the teacher and student must have to be in the class. This way of teaching and learning process is somewhat difficult. As we see to have additional class the school environments and the universities invest in millions for building. So, to overcome such problems we need the virtual class which student can attend being anywhere in the globe in the presence of computing device and access to the internet. Virtual class room management system is a web-based application which aimed to change the manual system of the learning and teaching process to automated system. That means not physically existing as such but made by software to appear to do so.

A virtual class room is an online learning environment. The environment can be web based and accessed through a portal or software based and requires a downloadable executable file. Many schools and businesses have rolled out virtual class rooms to provide synchronous distance education.

Our project is not to merely duplicate the characteristics and effectiveness of the face-to-face class. Rather, we can use the power of computers to actually do better in addition to what normally occur in the face-to-face class.

## 1.2 Motivation

Usually, a learning process needs some good atmosphere, but this atmosphere can be troublesome. As we know the world had been hit by the Covid-19. According to WHO, Covid-19 had been declared as a global pandemic. This resulted in many casualties, so the government urged them to self-quarantine at home. Besides, the impact of COVID 19 was on the education sectors. Ethiopia was one of the countries that experiencing the impact of the COVID 19 pandemic which has an impact on various sectors, one of which is the education sector, so the government has imposed restrictions on learning

activities in schools and universities. What if either lack of peace or unknown pandemic like COVID-19 or endemic disease happen to the word? an E-learning is better, but what if you want to raise your hand to ask some questions regard to the given course and send instant feedback to your staff members. So, we are trying to build a virtual class room that gives users the convenient alternative of using the phone and computers they already carry to perform these web-based applications. It also makes it possible to have text chatting online with instructors. These platforms would also store and update the user's profile whoever register on these systems.

## 1.3 Problem Statement

In our virtual classroom we try to solve the limitation of traditional class room. Here we provide some disadvantages of traditional classrooms and how our system solved them.

• Scheduling a lecture using traditional system will need a physical location with special equipment like chairs, whiteboard, whiteboard pens, and projector. This equipment has a very high cost. But in our system to schedule a class all what you have to do to tell the administrator to add a new class with a specific time.

• In traditional system students must travel, may long distance, to attend their lectures, which increasing the learning cost on students. But in our system, all what you need is an internet connection, and personal computer to attend your lecture.

• In traditional system it's difficult to provide one-to-one communication between instructor and student that may decrease the understanding level for the student. But in our system, you can provide one-to-one communication with any student and explain unclear ideas.

• In traditional system the understanding level for the student may decrease by many factors such as the place where the student sits in the class and how much the instructor voice is audible. But in our system each student has its own virtual class on his screen and can hear instructor without any noise

• Traditional system may suffer from the noise in the environment of class such as the transportation noise and noise from the students outside the class.

### 1.4 Objectives

### 1.4.1 General Objectives of the project

This project aims to design and develop a virtual class room management web-based application system that includes features such as chat room, comment section and upload materials of different contents to the platform.

### 1.4.2 Specific Objectives

To achieve the general objective, the following specific objectives are identified

- ❖ To study and analyze the limitations of the existing system
- ❖ Collecting data required to develop the system
- ❖ Identify functional and non-functional requirement for new proposed system
- ❖ To design a virtual class room management system using PHP and MYSQL
- ❖ To develop a web application through which teachers can appear in front of a webcam in their desk, and students can view the teacher and listen to his/her voice through a web page, at real time.
- ❖ To facilitate the learners or viewers with multiple options like raising hands, lettering in comment section as well chat room.
- ❖ Implement the virtual class room system
- ❖ Test the proposed system

### 1.5 Significance of the Project

This project will bring some significance such as: -

- • Help the student to follow the course being anywhere.
- • This system provides full and fast organized service for the user.
- • Helps to the user to save their time.
- • Helps to properties from wastage.
- • The result of the project may initiate other officials to carry out large scale investigation in this area.
- • The system enables to control and manage a large number of students following the same course in a good way.

## 1.6 Limitation of the Project

Following are some of the limitations of Virtual classroom:

• Teachers and students need to become familiar with the tools. Teachers and students are familiar with the workings of a traditional classroom, that is, they should have to understand the concepts of hand raising, send feedback's, assignments, and so forth. With a virtual classroom, all attendees must become familiar with the way the virtual classroom works before virtual classroom- based training starts.

• Infrastructure for the participants PC needs to be prepared.

• Technical Limitations, Technical issues such as bandwidth speed of the connection or power failure may create problem while presentation is going on.

## 1.7 Scope of the Project

The main intention of this project is to get good insight on existing education portal, which has a great future scope. Hence also, to see what else can be enhance in this domain in the mere future. Virtual classroom can be used to hold the classes by chatting each other. There is no need for the presence of both instructor and student at same time. More than one student can clear their doubts by messaging their teacher. Virtual classroom allows instructors to deliver web-based training to geographically dispersed student. Employees, business partners and customers can also use if they needed. Each subject includes a synchronous chat room for students. Besides being user friendly, good virtual class room have built in collaboration tools that engage the students in active learning.

## 1.8 Methodology and Tools

### 1.8.1 Methodology

The architecture of the proposed system is presented with four interrelated modules, namely, Web tiers, Web objects, Data processing and Course.

### The web-tier

The Web-tier holds data model of the data and presents it to the client through HTML/PHP pages, accepts and analyzes the user's inputs, passes the user's request to the Enterprise tier for processing, and forward response back to the client. The Web-tier handles the logic and data as well as communicates with the Enterprise Information

System (EIS) tier through appropriate protocols. MySQL (a relational database) and PHP were used to build the EIS tier application.

**Data Processing Architecture**

The proposed system is designed for multi-tier web-based applications and offers a lot of flexibility on the selection of the method for distributing platforms functionality across the tiers. There is a client tier, which is the browser that communicates with the web tier. There is also the Enterprise Information System (EIS) or the database tier, which holds persistent web-based data.

**Logical Design**

This platform models a web-based student course delivery system and it is presented to the students through a web site where students interact with these platforms using a web browser. The platform presents the student a catalog of courses for selection and registration. New students are required to register using administrator assigned username and password.

**Data Collection Methodology**

In order to explore our key research questions, we will observe a variety of courses, students, and implementation environments. The primary research design was based on matching but "non-equivalent" sections of the same course taught in the Virtual Classroom (VCR) and in the Traditional physical Classroom (TCR). Though the same teacher, text and other printed materials, and midterm and final exams were used, the classes were "non-equivalent" because the students were able to select the delivery mode. The project includes some data collection on courses offer online to distance education students by different institutions. Most of the data that we used in the study would collect through pre and post-course questionnaires. However, we will also be gathered behavioral data (including grades, when appropriate or available, and amount and type of online activity) and qualitative observations and interviews.

### 1.8.2 Tools

**Software tools**

Different software's we have used to develop our project are as follows:

- WPS: -It takes less time to write and format the text, communicative effectively smart diagram and chart tools, quickly assemble documents. By using its useful properties, we have used WPS to type and present our project work.

- SQL server: -Web server we used

- Window 10 operating system

- Wondershare Edrawmax and Star for UML: -A software that used to develop a UML diagram.

**Hardware tools**

Different hardware we are going to use to develop our project are listed below:

- Computer: -We used to install software that are necessary for our work.

- Network Cable: -WE used twisted pair cable to get the internet access which is used us to get many information which concerns our projects.

- Flash disk and CD: -We used for the movement of data from one computing device to other.

- Printer: -We used it for printing the documents.

- RAM

**System development Environments**

- MYSQL server: -We selected MYSQL DBMS because it is fast, free to use and is compatible with PHP platforms.

- HTML: -We selected HTML because it is platform independent language that is predominantly used the web and web-based application.

- PHP: -We selected PHP because it can work on a variety of platforms.

- JAVASCRIPT: -We selected JAVASCRIPT because it is browser independent.

- Source code editor

- Visual studio code

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

Education is the process of bringing about a relatively permanent change in human behavior. It is the main instrument used to preserve, maintain and upgrade people's culture, norms and values. In any society, education is a veritable tool for determining technological advancement and passing on to the new generations, the existing knowledge of the physical environment. Education also serves as platform for introducing individuals to any organization, giving skills for performing daily jobs, leisure as well as inculcating sound morals in the people for their own benefit and that of the society. In summary, education is the platform on which younger generation understand the past heritage as well as participate and contribute meaningfully to the growth and development of the society. Conventionally, education has been practiced across the world in segregated buildings by carefully regimented and standardized classes of students and teachers. This has a consequential effect on both the teacher and the learner. For example, education is implicitly restricted only to those who could be in the classroom and follow the teacher rigidly with the pace by which he/she presents his/her lectures. Population explosion and mass educational system in every region of the world brought greater challenges to this method of education. For instance, there is problem of inadequate number of human and material resources to cater for the education of the large population. The population of school age citizen in most places has grown tremendously to the extent that only a small percentage can be offered admission. The student – lecturer and student-classroom ratios have grown to the extent that teaching and learning in the classroom have been less effective. The field of education therefore provides the most fascinating application of computing system, which has consequently attracted considerable attention from educationists and policy makers since the late 1960s when computers were introduced into classrooms. Various information technologies have been applied in learning and teaching, such as Computer Aided Instruction, (CAI), Computer Aided Learning (CAL), Research Packages, Project Monitoring, Computerized Libraries and so on.

As a result of technological advancement in multimedia technology, computer networks and the Internet, computers are now being applied in distance learning premised on on-line and real time teaching and instruction. A distance learning system

brings education closer to the people and removes the stress and constraints, which characterize the traditional classroom learning system. The hallmarks of distance learning are the separation of teacher and learner in space and/or time, the control of learning by the student rather than the distant instructor, and non-contiguous communication between student and teacher, mediated by print or some form of technology. At its most basic level, distance education is a process in which significant number of teachings is conducted by remotely located lecturers.

Two categories of distance learning systems exist; namely On-line and Off-line distance learning. On-line distance learning, also known as virtual classroom is a type of learning system in which students work on their own at home or at the office and communicate with faculty and other students via e-mail, electronic forums, videoconferencing and other forms of computer-based communication. Off-line distance learning on its own is a multi-campus system where a university or Polytechnic establishes many campuses and each of these campuses may be centrally controlled or decentralized. There is little or no difference between the off-line distance learning and traditional learning in that the off-line distance learning system is still characterized by the features of the traditional system. The earliest form of virtual classroom learning took place through correspondence courses in Europe. Many institutions, both public and private, offer university courses for self-motivated individuals through independent study programs. Students work on their own, with supplied course materials, print-based media and postal communication, some form of teleconferencing and/or electronic networking, and learner support from tutors and mentors via telephone or E-mail. Virtual classroom platforms provide collaborative learning facility, which is an integral component of teaching and learning system as well as instant feedback with facilities like e-mail, wikis and bulletin board at the disposal of teacher and the students. Virtual classroom also provides two-way communication with faculties to incorporate many interactive features, for both on-line and off-line use thereby alleviating the lack of sense of belonging of remote students.

## 2.2 Related Concept

According to Kaufman *et al.,* (2001) distance education means the delivery of useful learning opportunities at convenient place and time for learners, irrespective of the institution providing the learning opportunity. The author identifies four major characteristics of distance education. These are institutional accreditation where learning is certified by an institution or agency, use of variety of media for instructional delivery, provision of two-way communication to ensure tutor learner, and learner-learner interaction, and possibility of face-to-face meetings for tutorials for leaner-learner interaction, laboratory or practice session or library study. The author emphasis the importance of asynchronous and synchronous communication mode in distance education. [1]

In Mudasiru, (2006), Problems and Prospects of Open and Distance Education in Nigeria is presented: Every nation invests in education because it can produce unquantifiable benefits for individuals, organizations and the society as a whole. Education is provided through formal and informal means. In formal settings the conventional (face-to-face school instruction) and distance education (offered with separation in terms of physical location of instructors and students) have been used to provide educational opportunities to recipients. Open education though not new in Nigeria has been given much prominence of recent. Many Nigerians benefited through the open education (correspondence) of Rapid Result College, and Exam Success Correspondence College, among others. In fact, like the Universal Basic Education (UBE), distance education is one of the major pivots, on which the present Federal administration in Nigeria hopes to improve the quantity and quality of instruction in Nigerian schools. It is also a means of providing access to basic and tertiary education for Nigerians. [2]

In Anu and Riitta, (2004), E-Learning Service offering is presented: The motivation for the research work is that in Finland, both public and private organizations are actively applying Information and Communication Technology (ICT) in adult education. Providing ICT-supported education (e-learning) requires focus on the virtual setting, but also on physical and human factors. Studying the e-learning phenomenon from a service perspective gives new insights into how to provide better learner satisfaction. The research objectives are to create better understanding of e-learning as a service and

develop innovations in business models for Finnish e-learning networks both in the private and public sectors [3].

In Peter, (2004), Knowledge Tree distributed architecture for adaptive e-learning is presented: The goal of the Knowledge Tree is to bridge the gap between the currently popular approach to Web-based education, which is centered on learning management systems and the powerful but underused technologies in intelligent tutoring and adaptive hypermedia. [4]

In Akinyokun, (2003), a Prototype of Multimedia System for Nigeria Universities Collaborative Teaching and Learning is presented: The motivations for the research are inadequacy of infra-structural facilities in Nigeria Universities; the poor performance of public utilities such as postal service and telecommunication system to support distance learning through prints; lack of uniformity in mode of teaching and instructional materials in Nigeria universities; and high ratio of students to lecturers in Nigeria Universities. The objectives of the research are to develop a multimedia system for sharing the expert knowledge of lecturers in Nigeria Universities and provide standardization for the measurement and evaluation of students' academic performance in Nigeria Universities. [5]

## 2.3 Related works

In (2014, IOSR Journal of Research and Method in Education (IOSRJRME)), the primary steps towards building and implementing a successful concept of a virtual classroom are presented. Information on the assessment, planning, design, implementation, and maintenance of a virtual classroom in ten easy steps was explicitly divulged with a summary that failure to follow these steps can ultimately lead to poor,incomplete, inadequate and ineffective solutions to Internet based distance education.[6]

Obasa, (2010), presents the Development of an Integrated Virtual Classroom System: According to the author, the population of school age citizen in Nigeria and other parts of the world keep increasing at a geometric rate compared to the number of existing institution and their infrastructure. These issues have adversely affected the quality of educational system in recent times. The existing knowledge divide between teachers and students have been clearly identified as one of the major challenges currently facing the educational system in Nigeria and other parts of the world.[7]

The TCP-based protocol developed by (Macromedia (Adobe) in 2002) presented a virtual classroom by using Real-Time Messaging Protocol (RTMP) which is a sophisticated TCP-based real-time networking protocol that supports the efficient exchange of messages, synchronized data, audio, and video. The system enables teachers and students to publish streaming audio, video and other data messages to present streaming media with interaction or navigation. On the Internet, the system allows students immediate interaction with teachers with a real classroom impression. A web-based collaborative system that serves as an add-on feature to the learning system for a post class sharing of resources by the teacher and student is also proposed. [8]

The authors In (Wheeler, 2000), designed a web-based virtual online classroom system based on learning theories and streaming media technologies. The major components of the system are instructional communicating environment (ICE) and collaborative learning environment (CLE). ICE provides learners with learning materials, lecture videos, interactive environment among others. CLE supports active learning by providing the environment with learning tools and materials and contextual discussion for learners. The environments were designed with event-based synchronous strategies and e-learning technologies standards [9]

# CHAPTER THREE

## Requirement Analysis and System Design

### 3.1. Introduction

System design is the process and focuses on decomposing the system into manageable parts. During requirements analysis we concentrated on the purpose and the functionality of the system design. During system design we focus on the processes data structures, and software and hardware components necessary to implement it. The challenge of system design is that many conflicting criteria and constraints need to be met when decomposing the system. The analysis model describes the system completely from the actors' point of view and serves as the basis of communication between the clients and the developers. The analysis model however, does not contain information about the internal structure of the logical, its hardware configuration or more generally how the system should be realized. System design results in the following products:

✧ List of design goals, describing the qualities of the system that developers should optimize.

✧ Web page architecture, describing the subsystem decomposition in terms of subsystem responsibilities dependencies among subsystem mapping to hardware and major policy decisions such as control flow access control, and data storage. In this project, which is to develop a web-based property administration system, the object-oriented approach will be chosen.
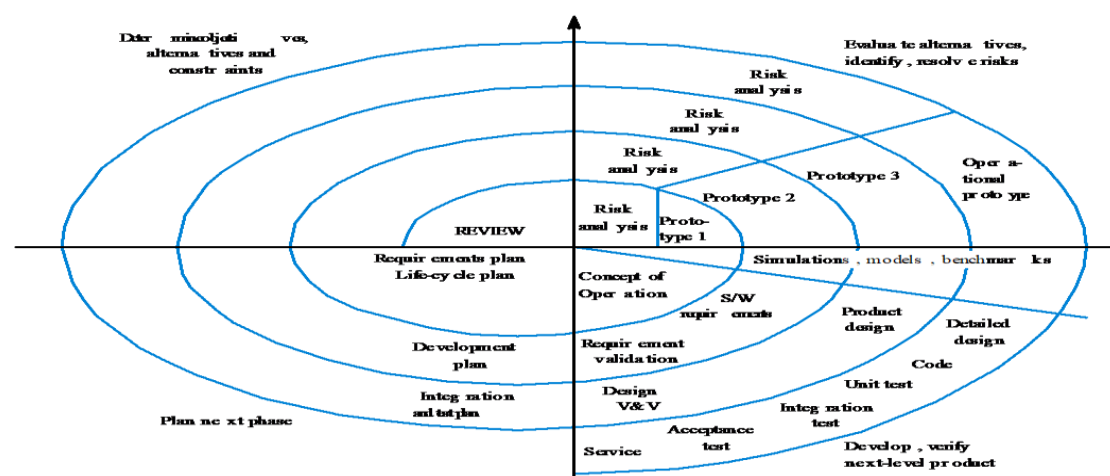


Figure 3.1: Spiral model diagram

Risk handling is one of important advantages of the spiral model, it is best development model to follow due to the risk analysis and risk handling at every phase. We can involve users in the development of products at early phase of the website development. Also, software is produced early in the software life cycle.

## 3.2. Systems Requirement Specifications

A structured document setting out detailed descriptions of the system's functions, services and operational constraints. These requirements define what should be implemented so may be part of a contract between client and contractor.

## 3.3. Functional Requirements

A functional requirement is a requirement that satisfied the users to perform some kinds of functions. It is directly related to the system, means it answer the question what the system can do and how the system perform each activity or describes the interaction between the system and the environment, the environment includes the system user and and any other external system with which the system interacts.

The functional requirements that we are going to analyze as below:

- Sends assignment for the user via user account and then post exam or assignment result

- Chat between users

- Register student: the system will allow us registering the student who satisfy the requirements

- Create user account: the system administrator shall create users account due to security of the system.

- Manage account: the system will allow system administrator shall manage accounts

- View comments: the system will allow as to view comments for those comment sent from users.

The major functionalities of the system are the following:

➢ Login into the system: -Only authorized user can access the web-based platform

➢ Manage user's account: -including creating, deleting activate and deactivating user accounts

➢ Uploading modules and assignment: -Enable instructors to upload module and assignment questions as well as download assignment answers submitted by students

➢ Downloading modules and assignments: -Enable students to download module and assignment questions.

➢ Post Updated information: -For students such information like, assignment submission date, changed policies etc.

➢ Meeting: -Enable students and instructors to meet each other through text chatting.

## 3.4 Design and Steps

### 3.4.1 Use-case Diagrams

**Use case**: - is a description of set of interaction sequence that system perform to provide a result of observable or measurable value to one or more actors. Our project is capable of use cases that are listed below that describe exactly.

- User goal
- Capture system requirement
- The user view of system
- Test the system
- Set of task related activities
- Communication with end user domain experts
- Use Case represents interaction between a user (human or machine) and the system.

**Use case components**:

• **Actor**: is a person, or external system that plays a role in one or more interaction with the system. And represented with:
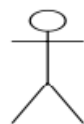
- **Use case**: describes a sequence of actions that provides something of measurable value to an actor and is drawn as a horizontal ellipse.

- **System boundary**: indicates the scope of the system project. Anything within the box represent functionalities in side in scope.

**Actor Specification**

**Actor:** is a person, organization, service or other system that play a role in one or more interaction with our system. Actor has a goal in using the system. And this goal is what the actor wants to achieve by interacting with the system.

There are some actors in our project which initiate or trigger and perform the system. So, the following are the actors that found in our project.

**1. Student**: The one who interacts directly with the instructor, and he is responsible for the learning process through Virtual Class Room.

.**2. Instructor**: the one who interacts directly with the student through Virtual Class Room, and he is responsible for teaching process through the Virtual Class Room

**3.Administrator**: the one who responsible for the overall system management like adding new Class or User

**Use case**: have been identified from the system specification

- ♣ Student Registration
- ♣ Instructor Registration
- ♣ post assignments
- ♣ manage FAQ Report
- ♣ assessment forum
- ♣ Cancelation of users
- ♣ Manage Instructors
- ♣ post assessments
- ♣ Manage account
- ♣ Discussion forum
- ♣ View comment

### 3.4.2 Use case scenario / Description

Use case description explains in details the general flow of use case diagrams. Each table contains the use case name, use case ID, the actors that initiates and interacts with the use case, and flow of events that show the interaction between the actor and the use case which enable the user to easily understand the function of the proposed system.

**Login Use Case Description**

| Use case name | login |
|---|---|
| Use case identifier | Uc01 |
| Actor(s) | Administrator, Faculty and Students |
| Description | It allows the user to use and interact with the system |
| Pre-condition | The user must have a valid email address and password |
| Basic course of action | 1. The user sends the requests to the server using web browser<br>2. The system displays the login page<br>3. The user enters his/her email address and password and press login button<br>4. The system validates the user account<br>5. The user is valid then the system displays home page<br>6. The user accesses the system<br>7. Use case end |
| Alternative course of action | The user is not found in the system<br>-system displays an error message "incorrect email and password" |
| Post condition | The user accesses the system |

Table 3.1: Login use case description

**Manage assessment Use case Description**

| Use case name | Upload assessment |
|---|---|
| Use case Identifier | UC02 |
| Actor(s) | Faculty |

| Description | Allow the instructor to manage the overall assessment evaluation of students |
|---|---|
| Precondition | The instructor must have a valid user account |
| Basic course of action | 1. The instructor Login to his account<br><br>2. The system displays the instructors account page<br><br>3. The instructor clicks on the manage assessment button on the homepage inside his/her user account<br><br>4. The system displays the Assessment page<br><br>5. The instructors upload Assessment for his students<br><br>6. Use case ends |
| Alternative course of action | A! Instructor have invalid account<br><br>A2. If the instructor does not have a valid account<br><br>A3. The system displays error message<br><br>A4. use case end |
| post condition | User will be evaluated using the assessment successfully |

Table 3.2: Upload assessment use case description

**Chatting Use case Description**

| Use case name | Chatting |
|---|---|
| Use case identifier | Uc03 |
| Actor(s) | Administrator, Faculty and student |
| Description | Allow the user to communicate with each other |
| Precondition | The user must have a valid account |
| Basic course of action | 1. The user login into account<br><br>2. The system displays the user's page<br><br>3. The user clicks on chatroom button<br><br>4. The system displays the chat page<br><br>5. The system provides all the message that has been sent before and display message area to send message to other user<br><br>6. Use case end |
| Alternative course of action | A! User have invalid account<br><br>A2. If the User does not have a valid account |

| | A3. The system displays error message |
|---|---|
| | A4. use case end |
| Post condition | User will chat with each other successfully |

Table 3.3: Chatting use case Description

**Send Report Use Case Description**

| Use case name | Send Report |
|---|---|
| Use case identifier | UC04 |
| Actor(s) | Student |
| Description | Allow the students to send reports to the instructor and administrator |
| Precondition | The student must have a valid user account |
| Basic course of action | 1. The student opens the home page |
| | 2. The system displays the page |
| | 3. The student clicks on post query button on the home page |
| | 4. The system asked the user to login into account |
| | 5. The student fills all information about his report |
| | 6. The student clicks on send button after filling the report |
| | 7. The system validates the report format |
| | 8. Use case ends |
| Alternative course of action | A! User have invalid account |
| | A2. If the User does not have a valid account |
| | A3. The system displays error message |
| | A4. use case end |
| Post-condition | Report will be sent to the faculty and administrator |

Table 3.4 : Send report use case description
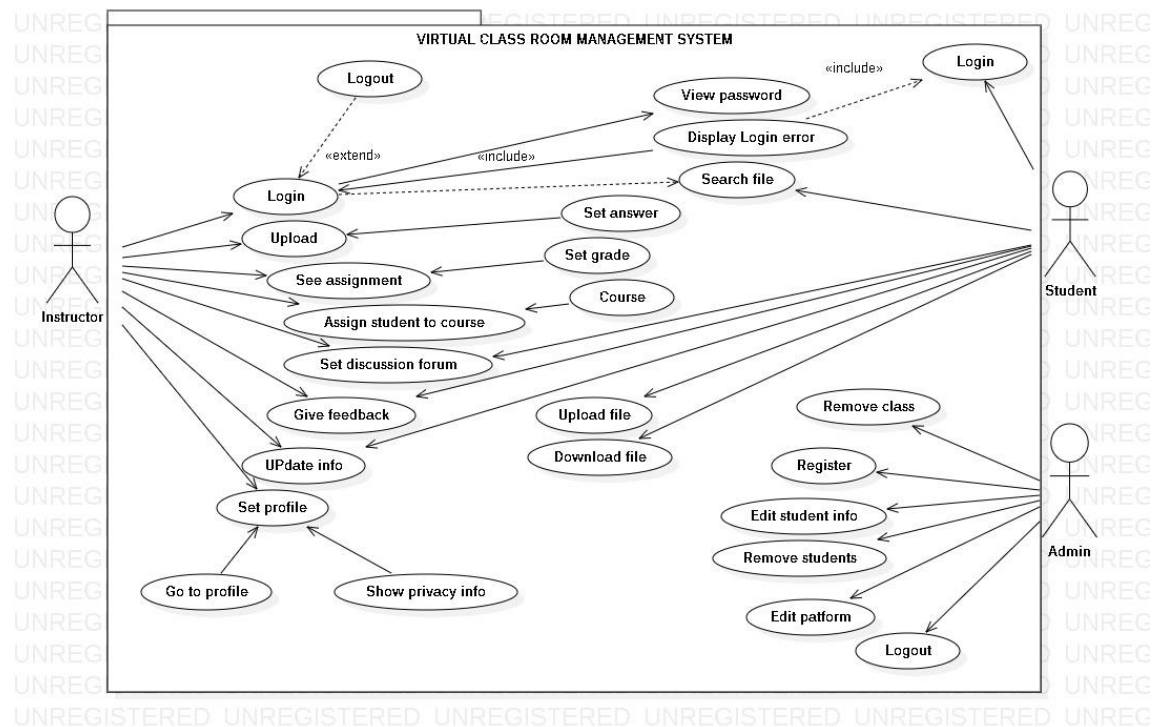
Figure 3.2: Use-case diagram of virtual class room management system

As we see in the above figure the activities of the administrator are:

➢ Login to the system by providing a user name and password

➢ Adding users of any type (Administrators, Instructors, and students) to the system

➢ manage guests to the system and specify the name of guests, the lecturer for this class, days,

➢ Removing Users from the system

➢ Modifying system users

➢ Removing guests from the system

➢ Modifying system classes

➢ Logout from the system

As we see in the figure the instructor activities are:

➢ Login to the system by providing user name and password

➢ Display information about his own classes like personal profile, assessment to be uploaded, and registered students

➢ Set question time to determine when the student can ask questions, and open a discussion

➢  chatting with the students in public or private chat

➢ Logout from the system

➢   Set discussion forum with students

➢   Upload modules and assignments for the students

➢   See assignments

As we see from the above figure the activities of the student are:

➢   Login to the system by providing email address and password

➢   Display information about his lectures and the instructor of each lecture

➢   Join classes that have been registered by the instructor

➢   Upload and Download files

➢   Participate in discussion forum

➢   Update information

➢   chatting on public chat or on private chat with the instructor

➢   Logout from the system


## 3.4.2 Sequence Diagrams

  A sequence diagram depicts the sequence of actions that occur in system, the invocation of methods in each object, and the order in which the invocation occurred is captured by the sequence diagram. This makes the sequence diagram a very useful tool to easily represent the dynamic behavior of the system. A sequence diagram is two-dimensional in nature. On the horizontal axis it shows the life of the object that it represents, while on the vertical axis it shows the sequence of the creation or invocations of these objects.

Elements of sequence diagrams:

✓   Object which represented by a named rectangle

✓   Message which shows the interactions between objects

### i.   login sequence diagram:
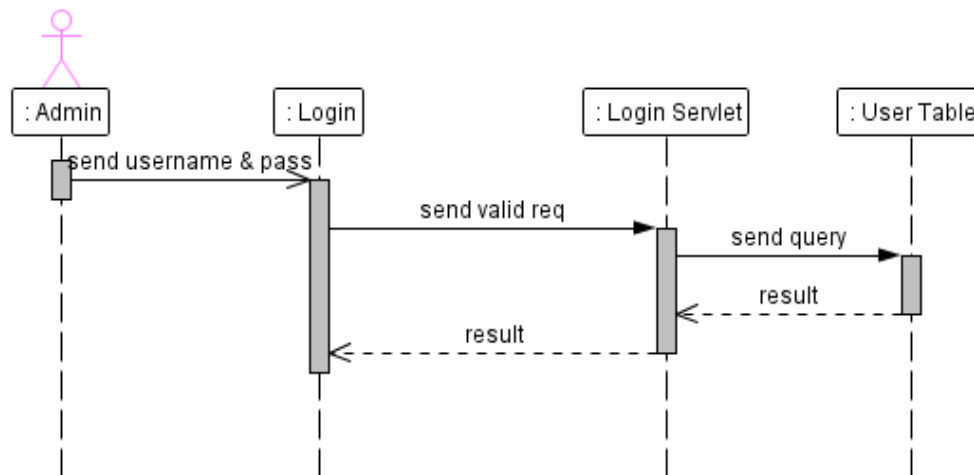


Figure 3.3: login sequence diagram

The figure above describes the sequence of the login process, the user enters the system by providing a username and password to the login page, then login page sends HTTP request for the login Servlet to validate information, then login Servlet get users from the User table in the database and check if username and password are correct, if they are correct login Servlet opens a session for the user and sends response to the login page.

### ii.  **Add User sequence diagram:**
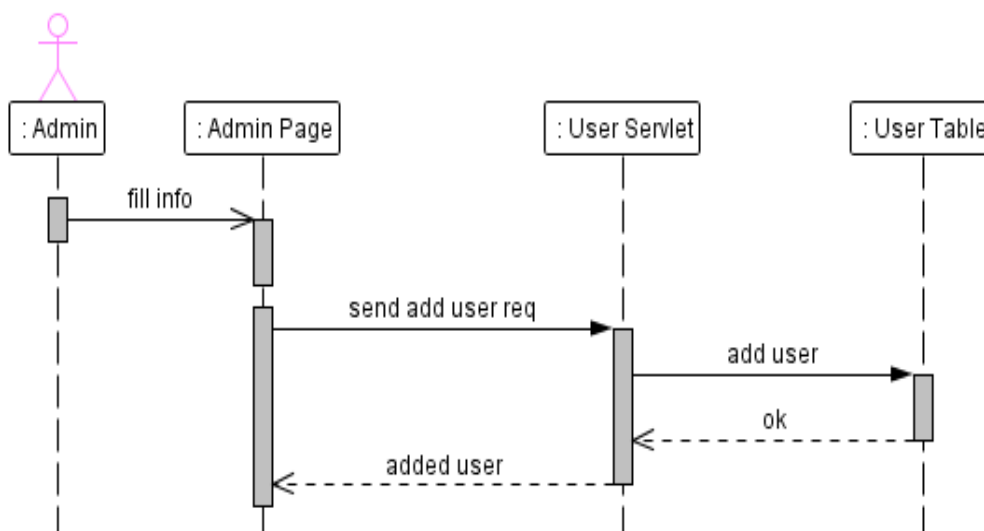


Figure 3.4: insert user sequence diagram

This sequence diagram shows us the process of add user performed by the Admin, the Admin fill information of student in Add User form, and click add then the admin page sends HTTP request for the User Servlet, user Servlet get information and validate if the username is already existing, if not it adds the new user to the database, else send a response to the admin page says that username is already exists in the System

### iii. Add Class sequence diagram:
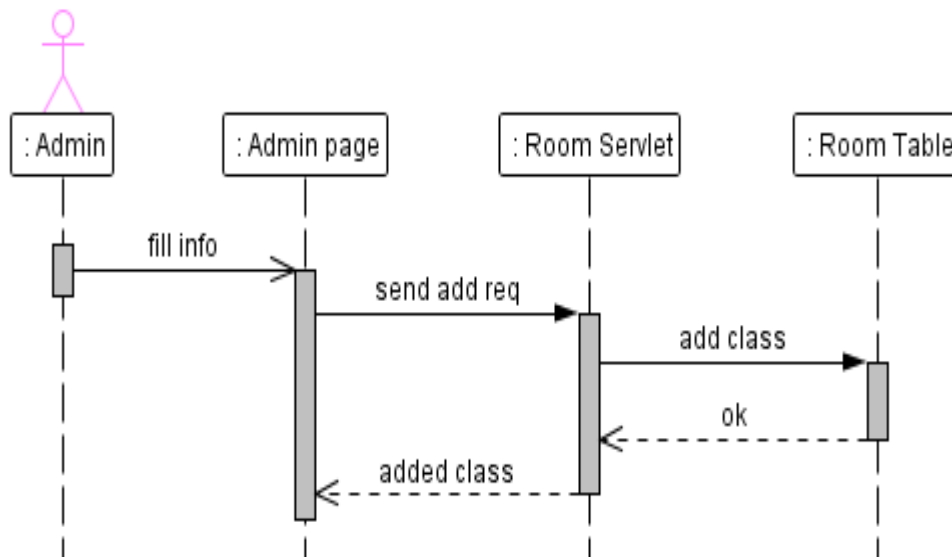


Figure 3.5: add classroom sequence diagram

The adding class process is similar to adding user process, that the information of class filled by the Administrator, and sends HTTP request to the Room Servlet, then the room Servlet validate information, and ensure that the time of class doesn't conflict with other classes for the same instructor, if a conflict occurs, it sends a response to the Admin page to tell that the Instructor has a lecture in this time.

iv. **Public Chat Sequence Diagram:**
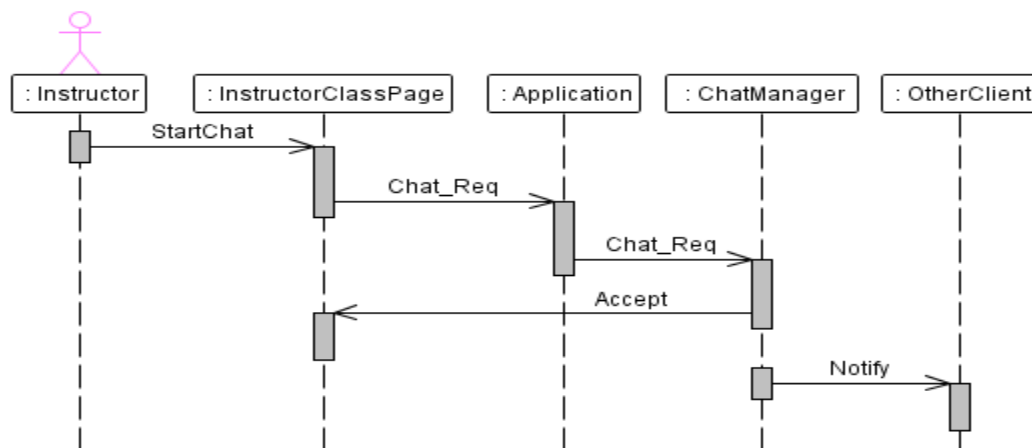


Figure 3.6: chat sequence diagram

This figure describes the process when the instructor writes on public chat, the Instructor Class Page call a method from Application and the Application sends data to the Chat Manager which is responsible to publish data to other clients in the same Class

v. **Logout from the system sequence diagram:**
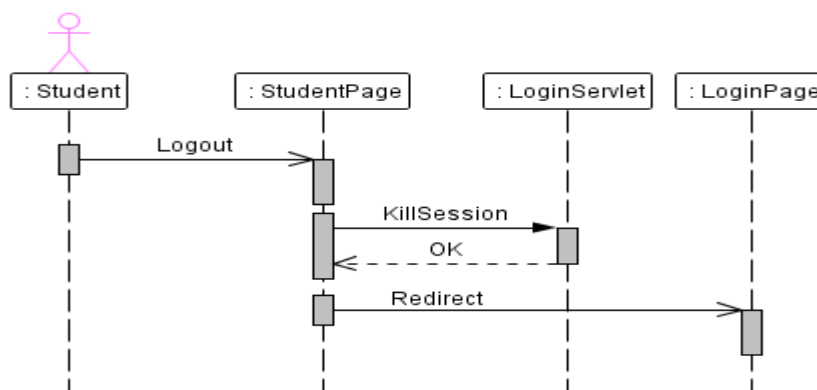


Figure 3.7: student system logout sequence diagram

After the student logout from the system, the Login Servlet kills the current session for the student, and sends acknowledgments to the student page to redirect the student to the Login page.

### 3.4.3 Activity Diagram

An activity diagram focuses on the flow of activities involved in a single process. The activity diagram shows how these single-process activities depend on one another.

### I.    Activity Diagram For registration
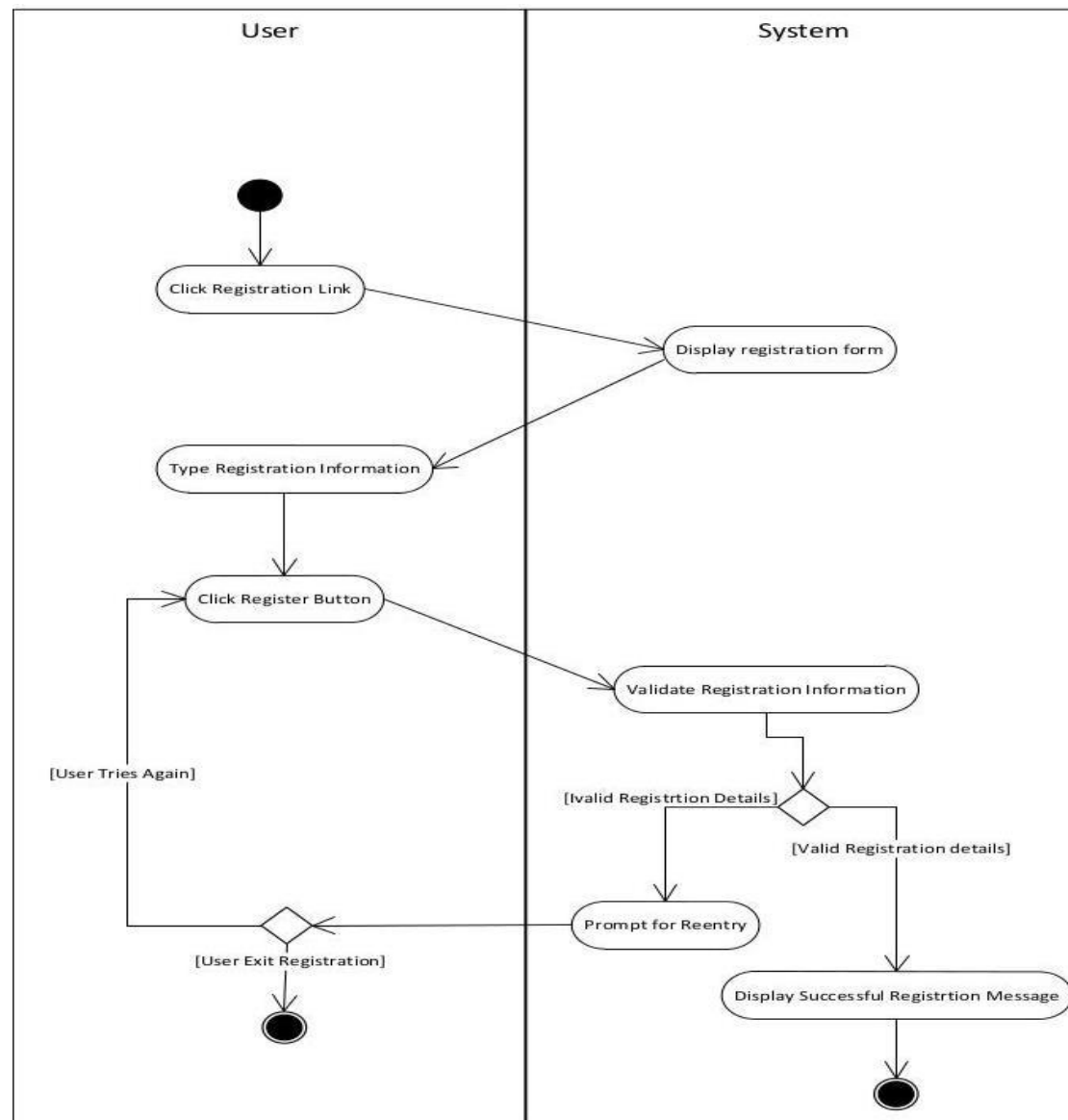


Figure 3.8: Activity diagram for registration

## II.  Activity Diagram for Login
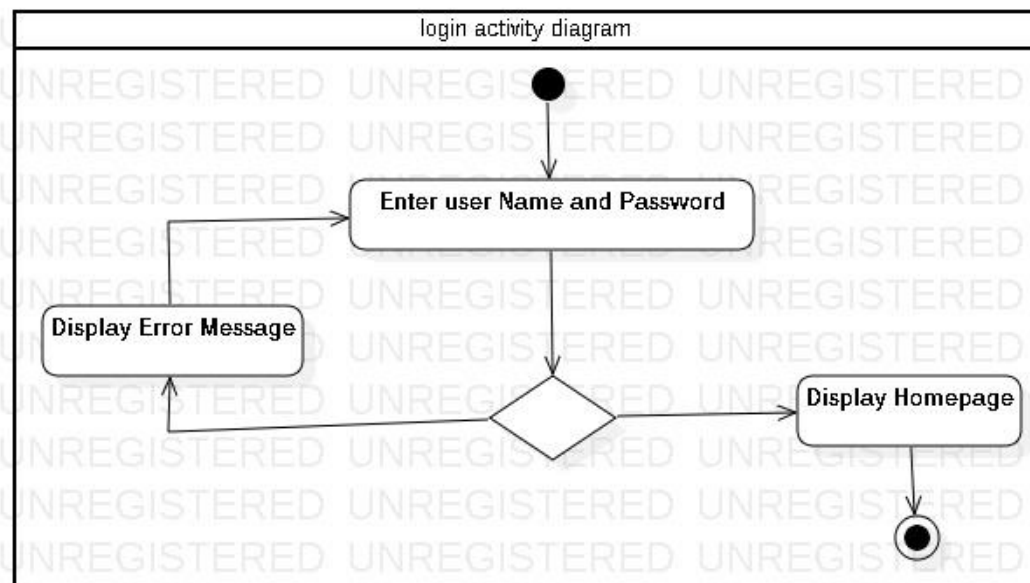


Figure 3.9: Activity diagram for login

## III. Add course Activity diagram
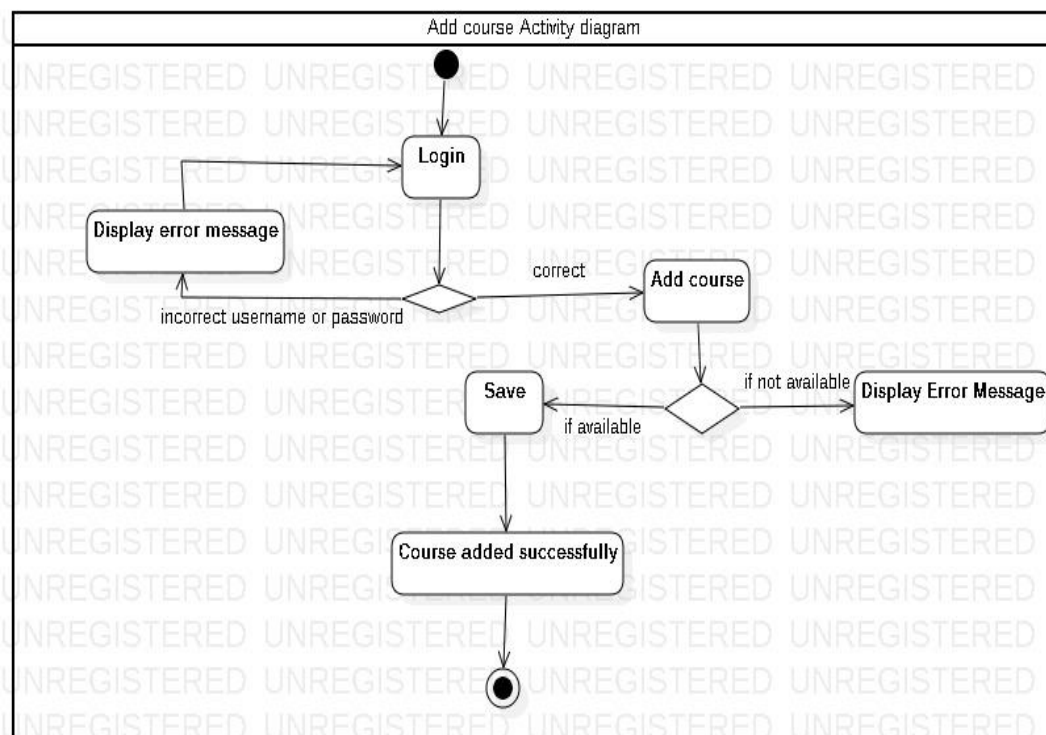


Figure 3.10: Add course records Activity diagram

## IV. Activity diagram for uploading assignment
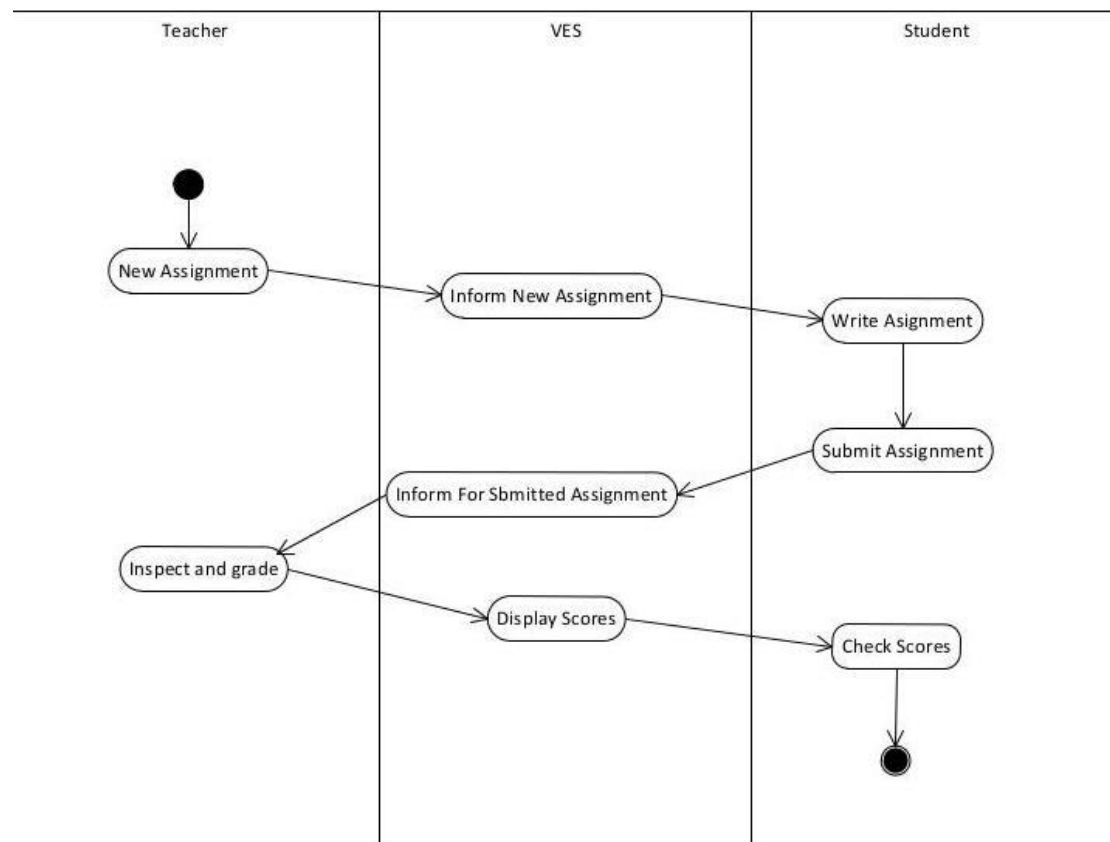


Figure 3.11: Uploading Assignment Activity diagram

## V. Activity diagram for download materials
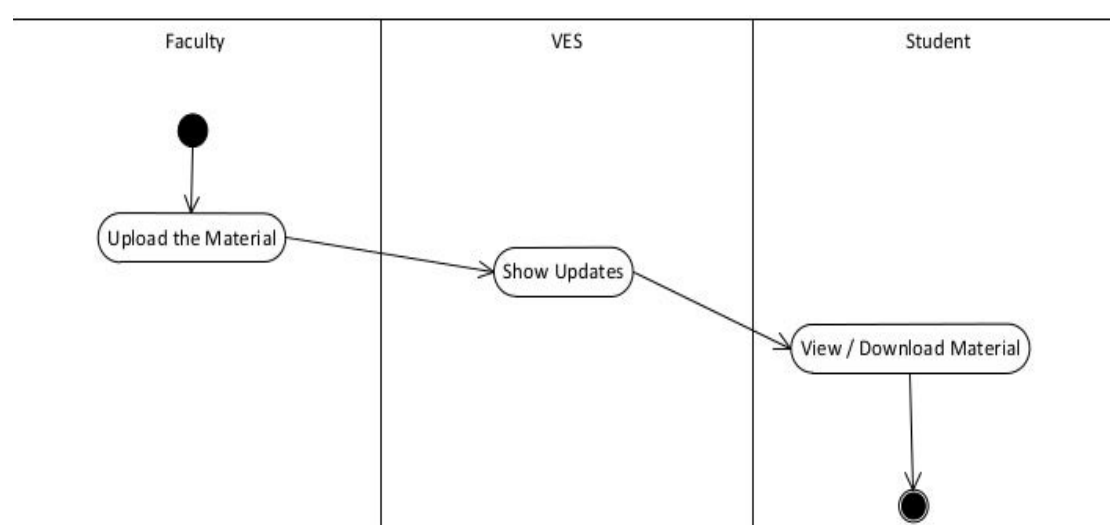


Figure 3.12: Activity diagram for downloading materials

### 3.4.4 Class Diagram or Class Mapping

A class diagram in Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classess,there attribute operation(methods),and the relationships among objects. The class diagram is a main building block of object-oriented modeling. It is used both for general conceptual modeling of the systematic of the application, and for detailed modeling translating the models into programming codes. Class diagram can also be used for data modeling. The class in diagram represents both the main objects, interaction in the application and the classes to be programmed.

➢ In the diagram, classes are represented the top part contains the name of the class

➢ The middle part contains the attributes of the class

➢ The bottom part gives the methods or operations the class can take or undertake with boxes, which contains three parts:
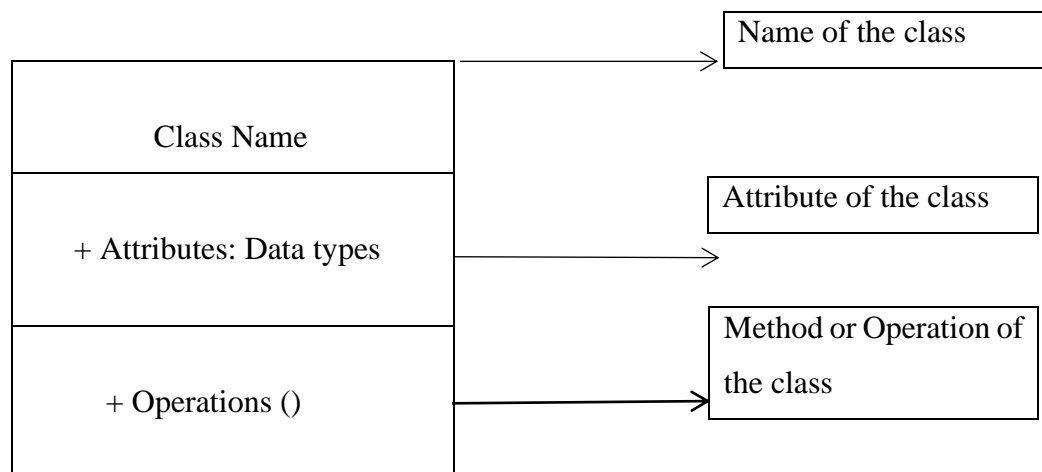


In the design of a system, a number of classes are identified and grouped together in a class diagram, which helps to determine the static relation between those objects. With detailed modeling, the classes of conceptual design are often split into a number of sub classes.
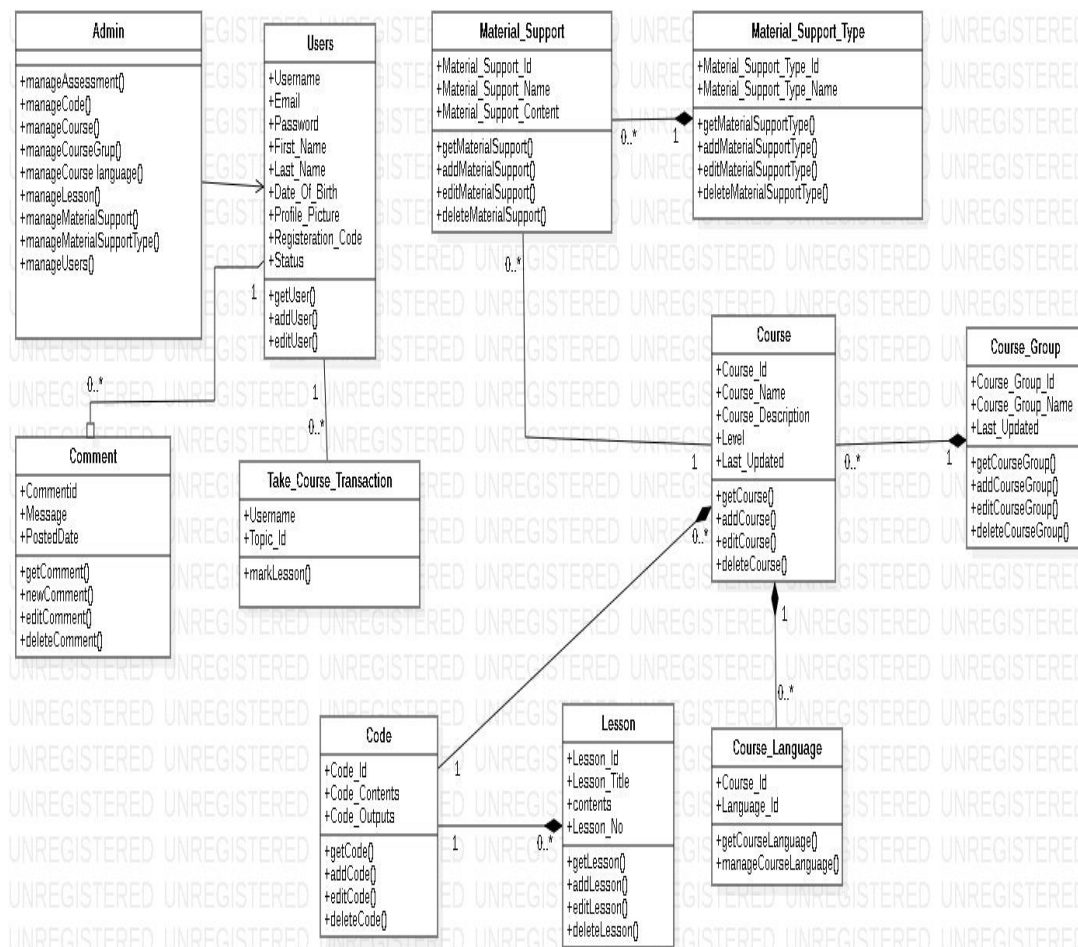
Figure 3.13: Class diagram of virtual class room management system

### 3.4.5 Deployment diagram

diagrams are used for describing the hardware components where software components are deployed. Component diagrams and deployment diagrams are closely related. Component diagrams are used to describe the components and deployment diagrams shows how they are deployed in hardware. UML is mainly designed to focus on software artifacts of a system. But these two diagrams are special diagrams used to focus on software components and hardware components. So most of the UML diagrams are used to handle logical components but deployment diagrams are made to focus on hardware topology of a system. Deployment diagrams are used by the system engineers. The purpose of deployment diagrams can be described as:

• Visualize hardware topology of a system.

• Describe the hardware components used to deploy software components.

- Describe runtime processing node
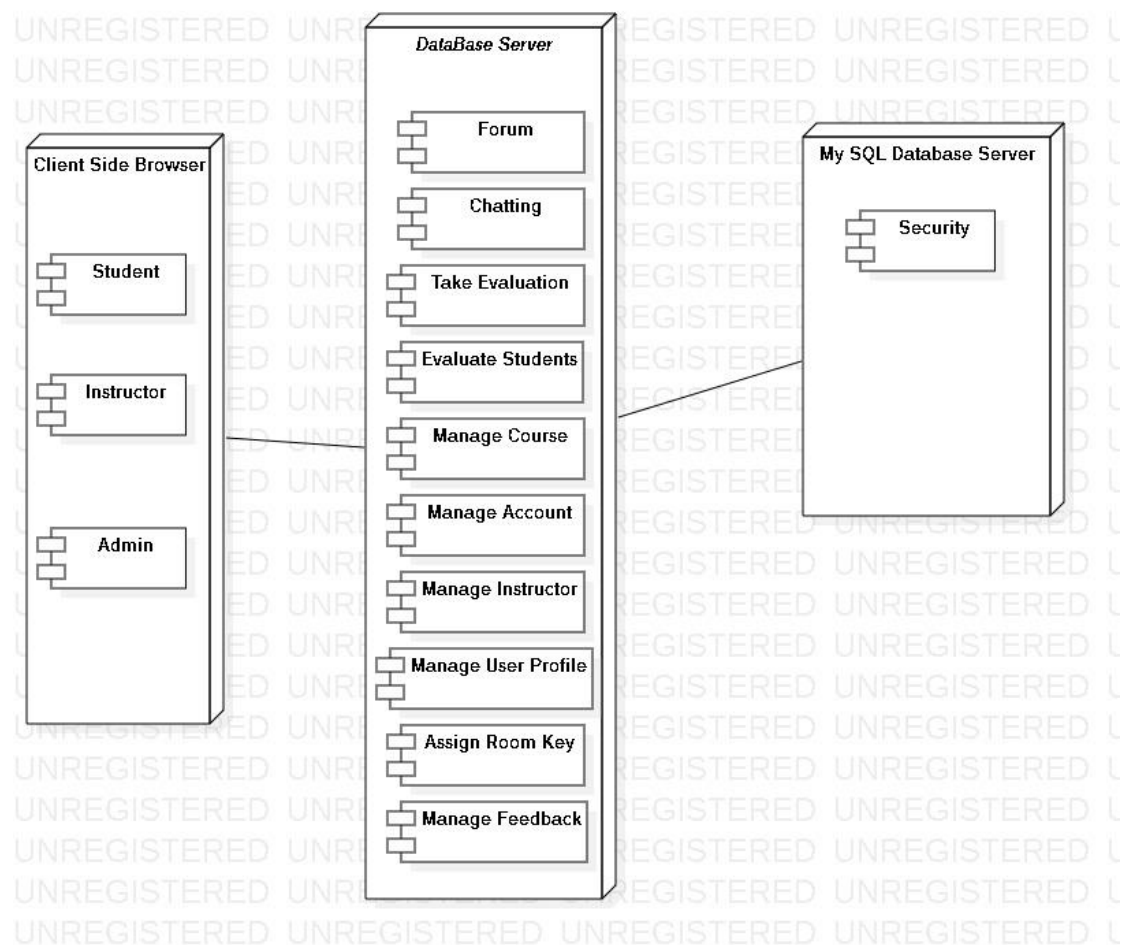


Figure 3.14: deployment diagram of virtual class room

<div align="center">

**CHAPTER FOUR**

</div>

**IMPLEMENTATION**

## 4.1 Introduction

Implementation is the phase where objectives of physical operations of the application turned into realities i.e., real working model. The crucial phase in the system development life cycle is the successful implementation of the new application design. The process of converting as new system into an operational one is known as system implementation. This includes all those activities that take place to convert from a previous system to a new system.

The focus of our test strategy was simply prototyping testing on our system. The system developers are in a position of converting all documents gathered and designed into the code so that the system will be implemented for the user to be used for the purpose it developed. Implementation refers to the coding of the all documents gathered starting from requirement analysis to design phase. For the implementation of these system, the user must have a computer and browser on it and search the link of the server where the virtual class room is deployed.

## 4.2 Environment Setup

The environmental setup section is about the configuration of hardware and software platform for the purpose of software development.

**The development tools used are:**

❖ **MS-Word:** for documentation writing

❖ **Star:** for designing UML diagrams

**The development environment used:**

❖ **XAMPP server**: for database storing

❖ **MYSQL**: server

❖ **Notepad++:**to write the code

**The programming language used:**

❖ **JavaScript** for validation

❖ **PHP** for server-side programming

❖ **SQL** for database programming

❖ **CSS and html**

❖ **Bootstrap** for simple accessing of different buttons and to design user interface

## 4.3 Sample code

Coding is the process whereby the programmer turns in the physical design specification created by the designer to working computer code.

✓ **Student Registration page:**

```php
        <?php include('allhead.php'); ?>
<script>
    //javascript validation for various fildss
    function validateForm() {
        var fname = document.forms[ "register" ][ "fname" ].value;
        var lname = document.forms[ "register" ][ "lname" ].value;
        var faname = document.forms[ "register" ][ "faname" ].value;
        var course = document.forms[ "register" ][ "course" ].value;
        var dob = document.forms[ "register" ][ "dob" ].value;
        var addrs = document.forms[ "register" ][ "addrs" ].value;
        var gender = document.forms[ "register" ][ "gender" ].value;
        var phno = document.forms[ "register" ][ "phno" ].value;
        var x = document.forms[ "register" ][ "email" ].value;
        var atpos = x.indexOf( "@" );
        var dotpos = x.lastIndexOf( "." );
        var pass = document.forms[ "register" ][ "pass" ].value;
        if ( fname == null || fname == "" ) {
            alert( "First Name must be filled out" );
            return false;
        }
        if ( lname == null || lname == "" ) {
            alert( "Last Name must be filled out" );
            return false;
        }
        if ( faname == null || faname == "" ) {
            alert( "Father Name must be filled out" );
            return false;
        }
        if ( course == null || course == "" ) {
            alert( "Course must be filled out" );
            return false;
        }
        if ( dob == null || dob == "" ) {
```

```
            alert( "Date of birth must be filled out" );
            return false;
        }
        if ( addrs == null || addrs == "" ) {
            alert( "Address must be filled out" );
            return false;
        }
        if ( gender == null || gender == "" ) {
            alert( "Gender must be filled out" );
            return false;
        }
        if ( phno == null || phno == "" ) {
            alert( "Phone Number must be filled out" );
            return false;
        }
        if ( atpos < 1 || dotpos < atpos + 2 || dotpos + 2 >= x.length )
{
            alert( "Not a valid e-mail address" );
            return false;
        }
        if ( pass == null || pass == "" ) {
            alert( "Password must be filled out" );
            return false;
        }
    }
</script>

<div class="container" style="max-width: 1200px;">
    <div class="row">
        <?PHP
        include( "database.php" );
        if ( isset( $_POST[ 'submit' ] ) ) {
            $fname = $_POST[ 'fname' ];
            $lname = $_POST[ 'lname' ];
            $faname = $_POST[ 'faname' ];
            $course = $_POST[ 'course' ];
            $dob = $_POST[ 'dob' ];
            $addrs = $_POST[ 'addrs' ];
```

```php
            $gender = $_POST[ 'gender' ];
            $phno = $_POST[ 'phno' ];
            $email = $_POST[ 'email' ];
            $pass = $_POST[ 'pass' ];
             $done = "
            <center>
              <div class='alert alert-success fade in __web-inspector-
hide-shortcut__'' style='margin-top:10px;'>
                    <a href='#' class='close' data-dismiss='alert' aria-
label='close' title='close'>&times;</a>
            <strong><h3 style='margin-top: 10px;
             margin-bottom: 10px;'> Register Successfully Complete. Now
You Can Login With Your Email & Password</h3>
            </strong>
            </div>
            </center>
            ";
              $sql = "INSERT INTO `studenttable` (`FName`, `LName`,
`FaName`, `DOB`, `Addrs`, `Gender`, `PhNo`, `Eid`, `Pass`,`Course`)
VALUES
('$fname','$lname','$faname','$dob','$addrs','$gender','$phno','$email'
,'$pass','$course')";
            //close the connection
            mysqli_query( $connect, $sql );
            echo $done;
        }
        ?>
    </div>
    <div class="row">
        <div class="col-md-3"></div>
        <div class="col-md-6">
                <form name="register" action="" method="POST"
onsubmit="return validateForm()">
                <fieldset>
                    <legend>
                        <h3 style="padding-top: 25px;"> Registration
Form </h3>
                    </legend>
```

```
                    <div class="control-group form-group">
                          <div class="controls">
                                  <label>First Name: <span style="color:
#ff0000;">*</span></label>
                                  <input type="text" class="form-control"
name="fname" id="fname" maxlength="30">
                            <p class="help-block"></p>
                          </div>
                    </div>
                    <div class="control-group form-group">
                          <div class="controls">
                                  <label>Last Name: <span style="color:
#ff0000;">*</span></label>
                                  <input type="text" class="form-control"
name="lname" id="lname" maxlength="30">
                            <p class="help-block"></p>
                          </div>
                    </div>
                    <div class="control-group form-group">
                          <div class="controls">
                                  <label>Father Name: <span style="color:
#ff0000;">*</span></label>
                                  <input type="text" class="form-control"
name="faname" id="faname" maxlength="30">
                            <p class="help-block"></p>
                          </div>
                    </div>
                    <div class="control-group form-group">
                          <div class="controls">
                                  <label>Course: <span style="color:
#ff0000;">*</span></label>
                                  <input type="text" class="form-control"
name="course" id="course" maxlength="10">
                            <p class="help-block"></p>
                          </div>
                    </div>
                    <div class="control-group form-group">
                          <div class="controls">
```

```
                        <label>Date of Birth: <span style="color:
#ff0000;">*</span></label>
                            <input type="Date" class="form-control"
name="dob" id="dob">
                        <p class="help-block"></p>
                </div>
        </div>
        <div class="control-group form-group">
            <div class="controls">
                        <label>Address:  <span  style="color:
#ff0000;">*</span></label>
                    <textarea class="form-control" name="addrs"
id="addrs"></textarea>
                    <p class="help-block"></p>
            </div>
        </div>
        <div class="control-group form-group">
            <div class="controls">
                        <label>Gender:  <span  style="color:
#ff0000;">*</span></label>
                    <p>
                        <label>
                            <input  type="radio"  name="gender"
value="Male" id="Gender_0" checked>
                            Male</label>

                        <label>
                            <input  type="radio"  name="gender"
value="Female" id="Gender_1">
                            Female</label>

                        <br>
                    </p>
                    <p class="help-block"></p>
            </div>
        </div>
        <div class="control-group form-group">
            <div class="controls">
```

```
                            <label>Contact (format: without code only 10
digits): <span style="color: #ff0000;">*</span></label>
                                <input type="tel" pattern="^\d{10}$"
required class="form-control" name="phno" id="phno" maxlength="10">
                            <p class="help-block"></p>
                        </div>
                    </div>
                    <div class="control-group form-group">
                        <div class="controls">
                                <label>Email Id: <span style="color:
#ff0000;">*</span></label>
                                <input type="text" class="form-control"
name="email" id="email" maxlength="50">
                            <p class="help-block"></p>
                        </div>
                    </div>
                    <div class="control-group form-group">
                        <div class="controls">
                                <label>Password: <span style="color:
#ff0000;">*</span></label>
                                <input type="password" class="form-control"
name="pass" id="pass" maxlength="30"> <span style="color: #ff0000;">*Max
Length 30</span>
                            <p class="help-block"></p>
                        </div>
                    </div>
                     <button type="submit" name="submit" class="btn btn-
primary">Register</button>
                      <button type="reset" name="reset" class="btn btn-
danger">Clear</button>
                </fieldset>
            </form>
        </div>
        <div class="col-md-3"></div>
    </div>
</div>
<?php include('allfoot.php'); ?>
```

✓   **Database connection with server:**

```php
<?php
   $server = "localhost";
    $user = "root";
    $passdb = "";
    $db = "onlclassroom";
      $connect = mysqli_connect( $server, $user, $passdb, $db )or
die( "Connection Error" );
?>
```

**4.4 Graphical user interface (GUI) design**

A graphics-based operating system interface that uses icons, menus and a mouse (to click on the icon or pull down the menus) to manage interaction with the system. The graphical user interface (GUI; sometimes pronounced "gooey") is used by most commercially popular computer operating systems and software programs today. It's the kind of interface that allows users to manipulate elements on the screen using a mouse, a stylus, or even a finger
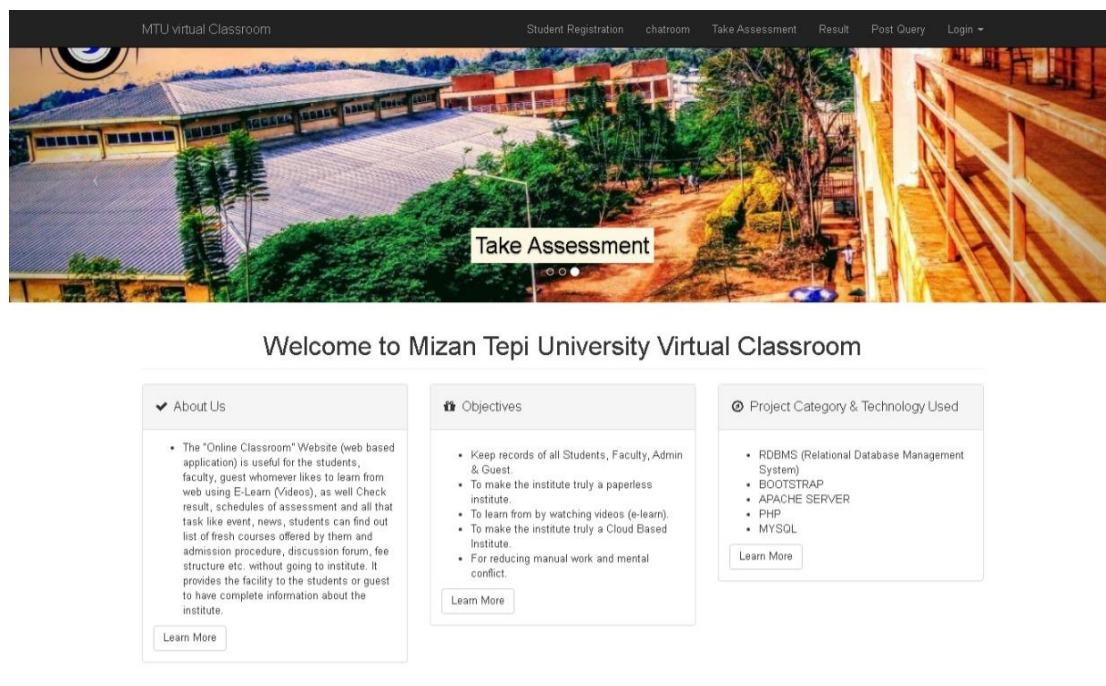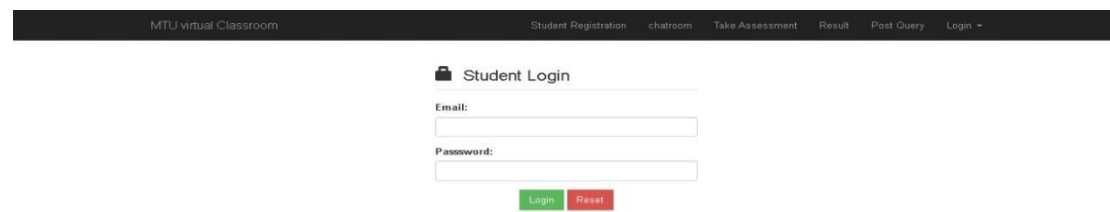
❖ **Home page:**



Figure 4.1: Home page

❖ **Student registration page:**



Figure 4.2: Student registration form
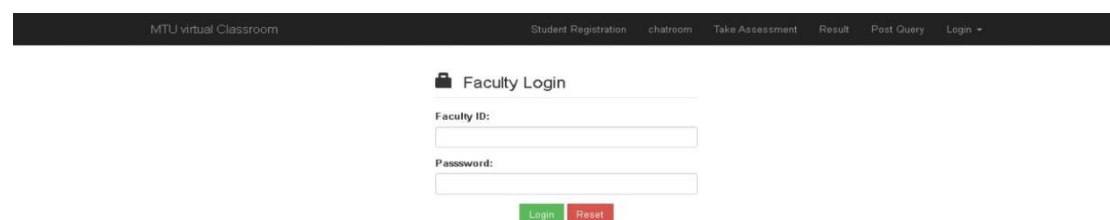
❖ **Student login page:**



Figure 4.3: Student login form
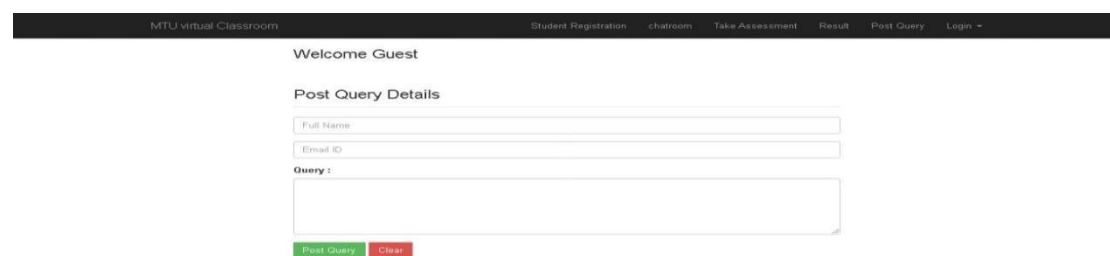
❖ **Faculty login page:**



Figure 4.4: Faculty login form
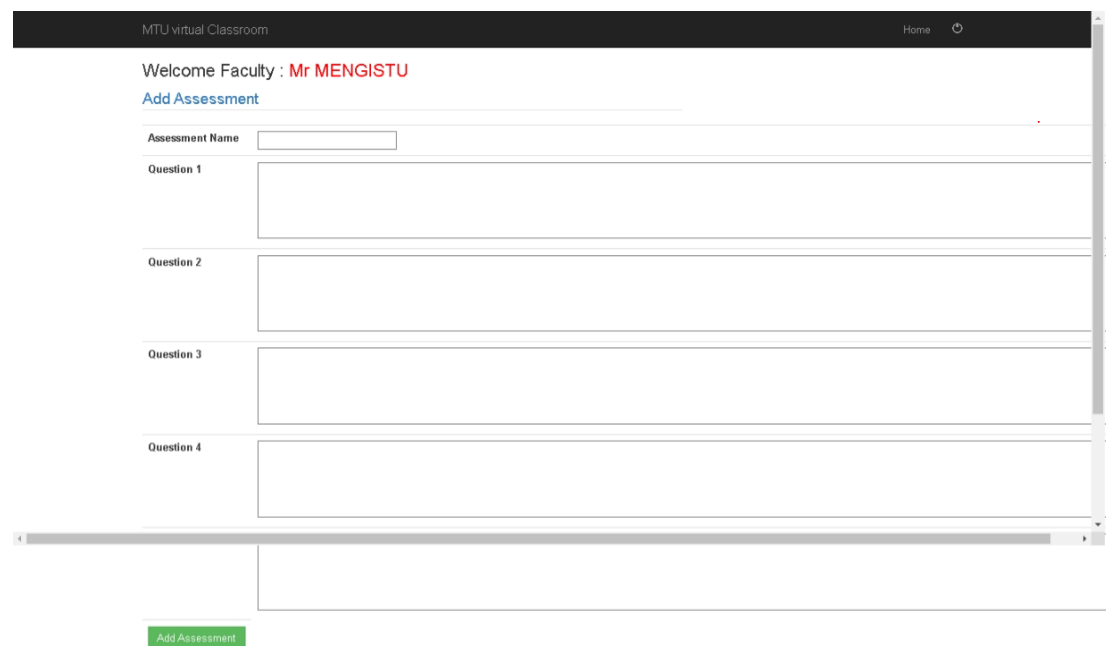
❖ **Feedback / Report:**



Figure 4.5: FAQ report page

❖    **Assessment Session:**



Figure 4.6: Assessment session

## 4.5 System Testing

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product. It provides a way to check the functionality of components, assemblies and/or a finished product It is the process of exercising software with the intent of ensuring that the Software system meets its requirements and user expectations and does not fail in an unacceptable manner. There are various types of tests. Each test type addresses a specific testing requirement.

**Unit testing**

  Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program inputs produce valid outputs. All decision branches and internal code flow should be validated. It is the testing of individual software units of the application .it is done after the completion of an individual unit before integration. This is a structural testing, that relies on knowledge of its construction and is invasive.

**Integration testing**

Integration tests are designed to test integrated software components to determine if they actually run as one program.    Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at     exposing the problems that arise from.

**Functional test**

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals. Functional testing is centered on the following items:

Valid Input      :    identified classes of valid input must be accepted.

Invalid Inputs      : identified classes of invalid input must be rejected.

Functions           : identified functions must be exercised.

Output           : identified classes of application outputs must be exercised.

Systems/Procedures: interfacing systems or procedures must be invoked

**System Test**

System testing ensures that the entire integrated software system meets requirements. It tests a configuration to ensure known and predictable results. An example of system testing is the configuration-oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points.

**White Box Testing**

White Box Testing is a testing in which in which the software tester has knowledge of the inner workings, structure and language of the software, or at least its purpose. It is purpose. It is used to test areas that cannot be reached from a black box level.

**Black Box Testing**

Black Box Testing is testing the software without any knowledge of the inner workings, structure or language of the module being tested. Black box tests, as most other kinds of tests, must be written from a definitive source document, such as specification or requirements document, such as specification or requirements document. It is a testing in which the software under test is treated, as a black box. you cannot "see" into it. The test provides inputs and responds to outputs without considering how the software works.

## 4.6 User Manual Preparation

Since the system is web-based system everything we expect important for the user will be explained using help menu in some basic activity of the system and implemented while preparation of short training document when the system is deployed.

## 4.7 Training

Training manual serve the important purpose of providing a consistent way to communicate instructions to users about how to perform essential functions of their action by using the system. The administrative office is responsible to give training for the EACMS users. And the project developer gives full training to the administrative of the system.

To be effective, training manuals is based on functionalities and instructional objectives. Information should be provided about the process and procedure users are required to follow as well as tasks that form the basis of the jobs, they are charged with performing.

## 4.8 Installation process and Startup Strategy

The project is now completed and ready for use. It cannot be installed to the desired destination and it provides all the functionalities.it is intended for because it is web based. This is done by creating all the databases and tables that helps to store the purpose of reuse the data and to validate the new data with the old data.

Required items to request an agent installation:

TO request a web-based installation, we need to provide the following information:

- Name of organization requesting the installation
- IP addresses of the server being protected
- Host name of the servers
- URL being protected
- Operating system of the web application server being protected. Give the specific version of windows, Linux, Unix, specify whether 32 or 64 bits.
- Type of web application server (Apache)

**The startup strategy** will be: buying a domain name, hosting a system and finally, available internet connection

# CHAPTER FIVE

## Conclusions and Recommendations

### 5.1 Conclusions

At the end of this project, we can say that we solve the most problems of traditional classroom that described before, so we have an online simple registration system, and virtual classroom that any instructor and student can access it from anywhere. In this paper, a virtual learning system has been developed. The new system is expected to serve as a remedy to the problems and weakness observed in the old system. It will combine open learning techniques based on new technologies (in this case, the world wide web) with conventional classroom teaching, the main intention is to make the learning experience more flexible, stimulating and available around the clock and at any place with Internet facilities. The students will be able to navigate freely within the virtual classroom environment and enhance information resources used by the students.

### 5.2 Recommendations

Facility for online examination can be added in future. Students can apply for special courses and online payment facilities Are also available for them. Group Discussion module will add for Students, so that Student can Discuss their doubts. Top scorer of that exam will be display of that web site they will be rewarded. Solution of this examination also be available, along with explanation. Also, we will try to add audio and video conferencing in order to have better communication between the instructor and the student. As well whiteboard is our great future scope.

# References

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**Appendix's (**Some sample codes**)**

**Student login:**

```php
<?php include('allhead.php'); ?>
<div class="container">
    <div class="row">
        <div class="col-md-4"></div>


        <div class="col-md-4">
            <!-- Stdeunt login page -->
            <fieldset>
                <legend>
                                <h3  style="padding-top:  25px;"><span
class="glyphicon glyphicon-lock"></span>   Student Login</h3>
                </legend>
                    <form name="studentlogin" action="loginlinkstudent"
method="POST">
                    <div class="control-group form-group">
                        <div class="controls">
                            <label>Email:</label>
                                <input type="text" class="form-control"
name="sid" required>
                            <p class="help-block"></p>
                        </div>
                    </div>
                    <div class="control-group form-group">
                        <div class="controls">
                            <label>Passsword:</label>
                             <input type="password" class="form-control"
name="pass" required>
                            <p class="help-block"></p>
                        </div>
                    </div>
                    <center>
                        <button type="submit" name="login" class="btn
btn-success" style="border-radius:0%">Login</button>
                        <button type="reset" class="btn btn-danger"
style="border-radius:0%;">Reset</button>
```

```
                        </center>
                </fieldset>
                </form>
        </div>
        <div class="col-md-4"></div>
    </div>
    <?php include('allfoot.php'); ?>
```

**Take assessments:**

```php
<?php
session_start();

if ( $_SESSION[ "sidx" ] == "" || $_SESSION[ "sidx" ] == NULL ) {
    header( 'Location:studentlogin' );
}
$userid = $_SESSION[ "sidx" ];
$userfname = $_SESSION[ "fname" ];
$userlname = $_SESSION[ "lname" ];
?>
<?php include('studenthead.php'); ?>
<div class="container">
    <div class="row">
        <div class="col-md-2"></div>
        <div class="col-md-8">
            <h3> Welcome <a href="welcomestudent.php" <?php echo "<span
style='color:red'>".$userfname." ".$userlname."</span>";?> </a></h3>
            <?php
                include('database.php');

                //below  query  will  print  the  existing  record  of
Assessment
                $sql="SELECT * FROM examdetails";
                $rs=mysqli_query($connect,$sql);
                echo "<h2 class='page-header'>Take Assessment</h2>";
```

```php
                echo "<table class='table table-striped table-hover'
style='width:100%'>
                <tr>
                <th>#</th>
                <th>Asses. Name</th>
                <th>Action</th>
                </tr>";
                $count=1;
                while($row=mysqli_fetch_array($rs))
                {
        ?>
        <tr>
                <td>
                    <?PHP echo $count;?>
                </td>
                <td>
                    <?PHP echo $row['ExamName'];?>
                </td>
                <td>
                        <a href="takeassessment2.php?exid=<?php echo
$row['ExamID']; ?>"> <button type="submit" class="btn btn-success"
style="border-radius:0%">Start</button></a>
                </td>
        </tr>
        <?php
    $count++;   }
        ?>
        </table>


    </div>
    <div class="col-md-2"></div>
  </div>
  <?php include('allfoot.php'); ?>
```

**User lists:**

```html
<div class="col-lg-12">
    <div class="panel panel-default" style="height:50px;">
```

```html
        <span style="font-size:18px; margin-left:10px; position:relative;
top:13px;"><strong><span class="glyphicon glyphicon-user"></span> User
List</strong></span>
            <div class="pull-right" style="margin-right:10px; margin-
top:7px;">
                <a href="#add_user" data-toggle="modal" class="btn btn-
primary"><span class="glyphicon glyphicon-plus"></span> Add</a>
        </div>
    </div>
    <table width="100%" class="table table-striped table-bordered table-
hover" id="userList">
        <thead>
            <tr>
                <th>Name</th>
                <th>Username</th>
                <th>Password</th>
                <th>Photo</th>
                <th>Access</th>
                <th>Action</th>
            </tr>
        </thead>
        <tbody>
        <?php
            $query=mysqli_query($conn,"select * from `user` order by
uname asc");
            while($row=mysqli_fetch_array($query)){
            ?>
            <tr>
                    <td><input type="hidden" id="ename<?php echo
$row['userid']; ?>" value="<?php echo $row['uname']; ?>"><?php echo
$row['uname']; ?></td>
                    <td><input type="hidden" id="eusername<?php echo
$row['userid']; ?>" value="<?php echo $row['username']; ?>"><?php echo
$row['username']; ?></td>
                    <td><input type="hidden" id="epassword<?php echo
$row['userid']; ?>" value="<?php echo $row['password']; ?>"><?php echo
$row['password']; ?></td>
```

```php
            <td><img  src="../<?php  if(empty($row['photo'])){echo
"upload/profile.jpg";}else{echo    $row['photo'];}   ?>"    height="30px;"
width="30px;"></td>
                <td>
                    <?php
                        if ($row['access']==1){
                            echo "Admin";
                        }
                        else{
                            echo "User";
                        }
                    ?>
                </td>
                <td>
                        <button  type="button"  class="btn  btn-warning
edituser" value="<?php echo $row['userid']; ?>"><span class="glyphicon
glyphicon-pencil"></span> Edit</button> ||
                         <button  type="button"  class="btn  btn-danger
deleteuser" value="<?php echo $row['userid']; ?>"><span class="glyphicon
glyphicon-trash"></span> Delete</button>
                </td>
            </tr>
            <?php
            }
        ?>
        </tbody>
    </table>
</div>
```