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# ProDev E-learning Platform

In partial fulfilment of the requirements for the degree of

**Bachelor of Science in Information Technology**

Supervisor: Mr. Dawood Akram

Department of Computer Sciences

Bahria University, Lahore Campus

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# C e r t i f i c a t e

We accept the work contained in the report titled

"PRODEV E-LEARNING PLATFORM",

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_____ (Signature)

June $4^{th}$, 2018

# DECLARATION

We hereby declare that this project report is based on our original work except for citations and quotations which have been duly acknowledged. We also declare that it has not been previously and concurrently submitted for any other degree or award at Bahria University or other institutions.

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# DEDICATION

This current report is dedicated to our parents who taught us that even the largest task can be accomplished if it is done one step at a time. It is also dedicated to our teachers who taught us to explore the knowledge of information and digital technologies.

(Zainab Jalil, Saman Pervaiz, Ammara Ashfaq)

## ACKNOWLEDGEMENTS

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Zainab Jalil
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Ammara Ashfaq

**PRODEV E-LEARNING PLATFORM**

## ABSTRACT

The objective of this project is to develop an innovative independent e-learning platform. The current global scenarios strongly suggest that the educational processes must change, if for no other reason than to keep up with a rapidly developing information-based society and global competition in the domain of digital technology. The advancement of eLearning technologies allows interactive knowledge opportunities and provide innovative learning environments, the methods which have now gained global acceptance. This research with an informative approach indicated the progress, contemporary position and expected future developments of e-Learning among education systems across developed and developing countries. This study indicates that eLearning is now a global phenomenon and if the possibilities are turned into reality, then eLearning is here to stay. e-Learning can transform the educational infrastructure and could be the solution to coming educational requirements. Increase in the economy of developed countries can be seen after the implementation of digital technologies into their education systems. Developed countries has gained huge attention by adopting and accepting the e-learning system. But there is still need for developing countries to indulge digital technologies in their educational platforms to become globally competitive.

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# CHAPTER 1

## INTRODUCTION

Education is a significant aspect for progress. Education by means of technology has become a global phenomenon. It is usually suggested that online technologies can aid to resolve the problems of educational impartiality and dig out independent and reachable educational opportunities. This study presents an outline of the educational developments especially the progress of e-learning or electronic learning in Pakistan. It discusses the challenges that the people face in developing countries particularly in Pakistan when they try to gain knowledge using already available educational platforms. The question is whether technology-based education lead a nation towards a more progressive and bright future? In the Article 26 of the 1948 UN universal declaration of human rights, it has been stated that education is the basic right of every human being and hence its access should be given to all. (Www.un.org, 2018) The use of digital technologies has increased the quality of existing teaching system and learning methods. There has been an educational change in the direction of e-learning which allows the use digital technology. E-learning improves the education methods by offering a different mode of delivering education i.e. more flexible and easy to use. E-learning permits to change the method of instruction, increase progress and offers Innovative programs. Institutes and independent organizations all over the world are 10 now creating e-learning systems for the sake of refining the quality and efficiency level of education process.

## 1.1 Background

UNESCOs' education strategy 2014-2021 (Unesco.org, 2018), indicates towards the strategy that stresses upon the accessibility of good quality education as it has become one of the most important factors of the welfare of people and the development of nations. The report states that Technology provisions cost-efficient distribution of both education, increases the and quality. It can play an essential part in the development of skills which are required in the future.

E-learning system is a progressive mode for analytical and interactive learning and provides the environment for 24/7 availability which makes it more flexible and user friendly. The opportunities for knowledge access are different in developing and developed countries meaning content quality and cost-effective measures are different for both. The amount of knowledge and material available from infinite sources makes critical analysis a necessity for education, accompanied by moral and responsive conduct. In order to avoid any fiasco in technology-based education systems, the above-mentioned requirements should be addressed carefully.

E-learning system facilitates students in a way that they can interact anytime from anywhere with different educational material i.e. articles, audio, images, videos etc. through Internet. Also, it supports healthy communication and discussions among students and instructors. (Al-Ammari & Hamad, 2008)

## 1.2 Problem Statements

"To design a web-based platform that addresses the problem of Synchronous and asynchronous learning on one platform."

This report discusses the challenges faced by the government, educational institutions, teachers, and students, for the access of education in developing countries like Pakistan. The analysis of distance learning developments in Pakistan shows that although the country is working towards the impartial distribution of educational opportunities for

everybody, the absence of educational and technology infrastructures, negative attitudes towards the concept of electronic learning, social and cultural limitations imposed on women etc. all these factors are contributing in increasing the gap between all parties i.e. urban-rural , wealthy-deprived, rural and urban and without the consideration of gender of an individual. (Gulati, February – 2008)

The Economic Survey of Pakistan (2016-2017) indicates a decline in the literacy rate from 60 % to 58 %. According to the survey report the literacy rate in urban areas is higher i.e. 74 % than rural areas which is 49 %. Also, a significant difference among male and female literacy rate in urban areas has been observed i.e. 81% and 68% for male and females respectively. (Finance.gov.pk, 2017)

Our primary purpose is to enhance the concept of education through E-learning and for that we will be developing E-learning platform as education is the basic human right. It is unfortunate that many people, more commonly women, have been deprived of this fundamental right. According to the data collected by UNESCO recently, an estimated 781 million illiterate adults resides in the world and 64% of the total are women

## 1.3 Aims and Objectives

The aim of this research is to enlighten the significance of e-learning, how e-learning can shape the future of a developing nation like Pakistan, what are the technological developments and what drifts can be expected in the future.

To demonstrate the purpose specifically, our main objective is;

- To motivate the students and teachers to adopt e-Learning.
- Identification of hurdles that are affecting the execution e-Learning platforms in Pakistan.
- Identification of issues that are affecting the adoption of e-Learning in Pakistan
- To introduce an independent technology-based e-learning platform in Pakistan

At present, our priority is to reach the goal of integration of the education system of Pakistan and Technical Society along with establishment of world-wide identity of the country in the domain of e-learning. In order to achieve technical stability and collaboration plans with top Universities around the World, combined scientific researches, workshops, discussions etc. are necessary.

To reach these goals one has to use advanced technologies and teaching methods. At the current time there are very few e-learning platforms in Pakistan that keep up with the modern technique. The Universities of developed countries have always been interested in the concept of e-learning and their main purpose is to develop and assess the modern techniques and technologies. That is also one of the main reasons why Pakistan has to develop highly interactive online educational platforms.

In order to attain a competitive position globally, a nation has to focus on the equal distribution of educational opportunities among its people which means that e-learning can be used as a platform to increase the female literacy rate and access of education can be made possible in rural and deprived areas of Pakistan.

### 1.4 Scope of Project

The scope of our project revolves around the implementation of e-Learning system in the higher education system in Pakistan.

The main members of this research are instructors and learners and the study is made from the developing countries perspective Pakistan in particular. We hence limit our theoretical research to education sector of Pakistan and Information and Communication Technology.

The entire world is now linked with Information and Communication Technology (ICT) which has brought a substantial modification in education and communication.

Via internet. To compete with other nations around the globe almost all developing countries are bending towards e-Learning. Pakistan is not entirely behind of this stage. But, there are few major issues like national strategy, connectivity, certification, adequacy, quality of the learning materials etc.

In developing countries e-Learning is still a new phase for the learner groups. Due to some economic and social circumstances of developed countries, countries like Pakistan could not yet create an independent e-learning platform. There are initiatives like Allama Iqbal Open University and virtual University which are trying to improve the e-Learning process. These are proper institutes in which a person has to get enrolled and pay for the course or program. But there is no professional and independent online platform in Pakistan for technology-based education and this is the main objective of our study i.e.

- To introduce a ProDev innovative e-learning platform that will provide "Freemium" services (Free + Premium = Freemium)

We expect our research result to produce an understanding of how learning through digital technologies can help a nation progress. We also expect that the general perception about e-learning changes slightly if not entirely and students and teachers understand the effective learning process of e-Learning.

# CHAPTER 2

# LITERATURE REVIEW

## 2.1 Introduction

This chapter reviews various studies which have shown the progress made in the domain of electronic learning in developing nations like Pakistan. The study and literature review were completed between 2017 and 2018. Through our research we have gained knowledge within communication and information technology and learning via digital technology. This background study will be beneficial while estimating the factors influencing e-learning.

### 2.1.1 What is E-learning?

According to different scholars E-learning can be defined as a mean used to make the system of education more advanced by the use of digital technologies and electronic media like internet etc. By using digital technology, time and space limitations are eliminated providing a flexible platform to the user. (Cheng, 2011)

E-Learning allows the learners to acquire knowledge anytime and anyplace. E-learning indicates that the use of digital technologies allow the access to online educational resources. The domain of e-learning is quite diverse hence it is difficult to define it with one specific definition.

## 2.2 Categories of E-learning

The two basic types of e-learning are Synchronous and Asynchronous learning.

### 1. Synchronous e-learning:

Synchronous eLearning can be described as face-to-face learning. In synchronous learning, the students and instructor should come online together. They can interact with one another at the same time from separate places. They distribute and obtain the educational resources through digital technologies like smartphones, electronic class, chat etc. Students can discuss their thoughts during interactive session and can share their concepts with the instructor or classmates. Synchronous eLearning is gaining popularity because of the advancement in the field of digital technology and enhanced Internet bandwidth capabilities.

Examples of synchronous e-learning includes e-classrooms, audio or video discussions, instant chat groups etc.

### 2. Asynchronous e-learning:

Asynchronous eLearning can also be simplified as a self-paced mode of learning which means that in this type of eLearning the student and the teacher are not required to be present online simultaneously.

Examples of asynchronous e-learning includes Self-paced online courses, Discussion forums & groups etc. (Commlabindia.com, 2014)

After analysing different categories of electronic learning system, we have concluded that the combination of synchronous and asynchronous e-learning would provide the best results hence this is the strategy we have used in our project.

Through synchronous learning, a virtual environment will be provided i.e. face-to-face or real time learning process. Interactive video in an e-learning system allows practical 17 access to video content. Students learn through interactive videos much better than through asynchronous learning. (Zhang et al, 2006)

And through asynchronous learning, e-Learning overcomes the barriers related with time zones as the content will be available “wherever” and “whenever” needed. Through e-Learning, participants can store, revise, refer and learn at their own pace and when needed.

## 2.3 Status of E-learning in Pakistan

Government of Pakistan and the Ministry of Information and Technology both are working together for the development of the e-learning and evaluation system. Various suggestions have been made by HEC one of the main being the incorporation of electronic learning like blackboard in the educational system of Pakistan.

The cultural, societal, contextual, demographics, government and organizational policies of developing countries like Pakistan are different from that of developed countries. For the implementation of modern digital technologies in the learning systems, the maintenance of software, hardware and technology support, teachers and students' attitudes towards e-learning, all of these factors should be addresses with great care. (Nawaz 2012).

Development of ICT into Educational systems and business organizations is becoming more and more common. Execution of E-learning in higher education (HE) provides cost efficient solutions for developed countries. But the main issue is the behaviour of the people towards e-learning i.e. low adoption and acceptance of information and communication technologies in developing countries.

Developing nations are trying to adopt and combine the method of E-learning into their educational systems. The behaviour of people towards e-learning need to be changed and the advantages of e-learning should be considered rather than focusing on the critical factors of the e-learning adoption. The need is to provide people with flexible and user-friendly models of e-learning platforms. (Kanwal & Rehman, 2014)

### 2.3.1 Allama Iqbal Open University

The vision of Allama Iqbal Open University is “education for all”. It is the Initial Distance Education University in South Asia which provides educational services to millions of students’. Students are allowed to study at their own place, at their own pace 19 and at their own suitability. Irrespective of age, gender or any other social cultural difference, this university offers its services to everybody as they consider education a life-long and continuous process.

AIOU encourages female education and the services the university offers help the women residing rural or deprived areas of the country where they do not have educational institutions close to their homes. (Aiouedu.pk, 2018)

### 2.3.2 Virtual University

The vision of virtual university is to become globally competitive in the field of technology while maintaining the highest quality standards. The university also look forward in delivering high quality education to everyone without any discrimination by using digital technology Their aim is to develop analytical skills among students to grow in their professional lives. (Vuedu.pk, 2018)

### 2.3.3 E-learn Punjab

Government of the Punjab initiated a project when they realized the shifting trends of the digital technologies. This project i.e. e-learn Punjab is dedicated to deliver quality education to everyone without any discrimination. e-Learn. Punjab, the first government e-Learning initiative in Pakistan, has tried to transform the education policy of the country

This project without a doubt is a very beneficial step towards ‘digital learning but it has limitations too as it only provides services regarding basic education and also it does not provide synchronous e-learning.

There are institutes working in the domain of electronic learning like virtual university. Allama Iqbal open university etc. Also, Punjab government has also initiated the concept of e-learning through a website. These are all good opportunities provided to the people of the country but there are not many independent online e-learning platforms which could provide cost-efficient educational services. this is where the objective of our project comes in i.e. an independent ProDev E-learning platform with freemium services (free + premium = freemium).

## 2.4 Benefits of Learning

The implementation of E-learning in educational institutes especially in higher educational institutions provides numerous benefits and the study of its advantages concludes that the method of learning via technology, is one of the best methods of learning. Some advantages obtained through previous researches regarding the adoption of e-learning in education system includes the following: Flexibility, Accessibility, synchronous & asynchronous, Cost-efficient, increases the level of satisfaction hence decreasing stress etc. (Codone, 2001; Amer, 2007; Agathon, 2011; Marc, 2002; Klein and Ware, 2003)

E-learning uses digital technologies for instruction and knowledge process. With the help of technical gears, e-learning provides a student with 24/7 availability of educational resources. It promotes the communication and analytical skills among students.

Every new technology comes with both advantages and disadvantages or one can say challenges that people sooner or later get comfortable with. According to the prior researches of scholars, there are no doubt some challenging factors when it comes to the implementation of e-learning in developing nations. But the benefits it provides are more than its' disadvantages or challenges. E-learning is shifting the mode of education around the globe hence its now necessary for countries like Pakistan to

adapt it. E-learning facilitates all the parties involved in the process and so it can do more good to a nation than causing any trouble (Ark orful & Abaidoo, 2014)

## 2.5 Adoption and Acceptance of E-learning in Pakistan

E-learning system allows digital modes of instruction which provides the chance to beat the problems of the conventional learning system. The adaptation of E-learning is in the early stages of its development in Pakistan. previous researches on this subject shows that Pakistan is facing some challenges while trying to implement e-learning in its education system. Factors like Statistic, social variables, resistance with the framework, foundation, and absence of experienced staff, internet access, social and political concerns are the main obstacles of execution of e-learning in Pakistan.

The development and implementation of electronic learning in Pakistan is facing several challenges. The financial circumstances, technical awareness and different characteristics of people can be observed as the major obstacles in e-learning acceptance.

It is concluded that in order to successfully implement technology-based system in higher education systems it is critical that factors affecting the process are analysed thoroughly.

In addition, the e-learning systems should be designed by keeping in mind the perspective of students as it can solve some of the cultural and social issues making it a successful system. Experts and scholars should concentrate on more research about factors which improves the adoption of e-learning in Pakistan. (Kanwal et al, 2017)

## 2.6 Future of E-learning

The study of developed countries in the domain of learning via digital technologies clearly demonstrates that the eLearning process involves various actors which include institutes, organizations, public organizations, private firms etc.

The phenomenon of 24/7 availability of e-learning i.e. anytime, anywhere, it has been gradually becoming a global phenomenon. By discussing the advantages of implementation of e-Learning, it can be concluded that e-Learning saves a lot of time, travel cost and the challenges of being away from home with the anytime anywhere feature.

The cost effectiveness and the ease of delivery of e-Learning programs through the World Wide Web appear to be drawing more and more independent organizations and the universities to accept e-Learning.

With constant improvement in digital technology, e-Learning appears to be reaching its global acceptance and adoption. In conclusion, almost all the literature reviewed indicates towards the fact that e-Learning is faster, cheaper and has the global reach. Increasingly, organizations see e-Learning as an effective medium for learning and development, knowledge sharing and knowledge transfer. Particularly with the internet technologies and the World Wide Web, the reach and speed at which the programs could be accessed and delivered barring regional and international boundaries, there is an increased level of adoption of eLearning by corporations, governments and the academic institutions alike.

This research provides a detailed review of previously conducted researches. Also, it generates a general yet valued vision into the status of e-learning regarding Pakistan. In the case of Pakistan, the executive provision, behaviours of students and teachers, customs, communal impact, financial apprehensions and practical aspects like structure, availability of resources, software, hardware and internet access are the

major issues for adoption and acceptance of e-learning in Pakistan. This report indicates the existence of a substantial hole in the quantifiable study in Pakistan. In order to become globally competitive in the field of e-learning, more research is required.

# CHAPTER 3

# DESIGN AND METHODOLOGY

## 3.1 Introduction:

This part of the paper discusses about the nature of the research and what type of methodology we have used in our project. The goal of this discussion is to explain the whole framework of the project

## 3.2 Research methodology:

There are two methods of research, namely quantitative and qualitative. Quantitative research is to compute the problem of generating information and that information which are easily be transformed into suitable statistics (Snapsurveys.com, 2011). Quantitative research is basically used to identify attitudes and behaviors and generate result from a large no of peoples and also used in measurable data and uncover design in research methodology. The method of quantitative research data collection is more organized than a qualitative research methodology. We are easily cover the data collection of quantitative method with a form of surveys and online surveys, interviews, online polls etc.

While qualitative research is primary investigating research. It is used to understand primary reasons and motivations. Qualitative methods include group discussions, interviews, and observations. The sample size of this method is small and participant

easily fill the given surveys. There are no statistical tests in qualitative method. Qualitative research can be reliable and valid.

### 3.3 Research strategy:

The research strategy is based on the survey i.e.; collecting data from people in the form of questionnaire, interviews etc. The survey regarding the e-learning platform aims to answer various questions in both manners i.e.; quantitative and qualitative analysis.

### 3.4 Methodological Approach:

This research is based on a quantitative and qualitative research methods. We filled out the survey form from students and teachers of different institutes. The data has be gathered from different sources; such as interviews, questionnaire, documentations and different research papers.

### 3.5 Methodology:

We will be using incremental model for our project so that the project could be developed and maintained simultaneously. The reason for using this method was that this approach suits our project the best.

The main Phases involved in this model are;

- Analysis
- Design
- Development
- Testing

This methodology helps us to generate a working software in less time and early during the software life cycle. Moreover, this model is very flexible and less costly to change scope and requirements. It is easier to test and easier to manage risks. In our project, we are aiming to create an interactive environment for learners with providing them the detailed guidance so they can learn in best possible way.

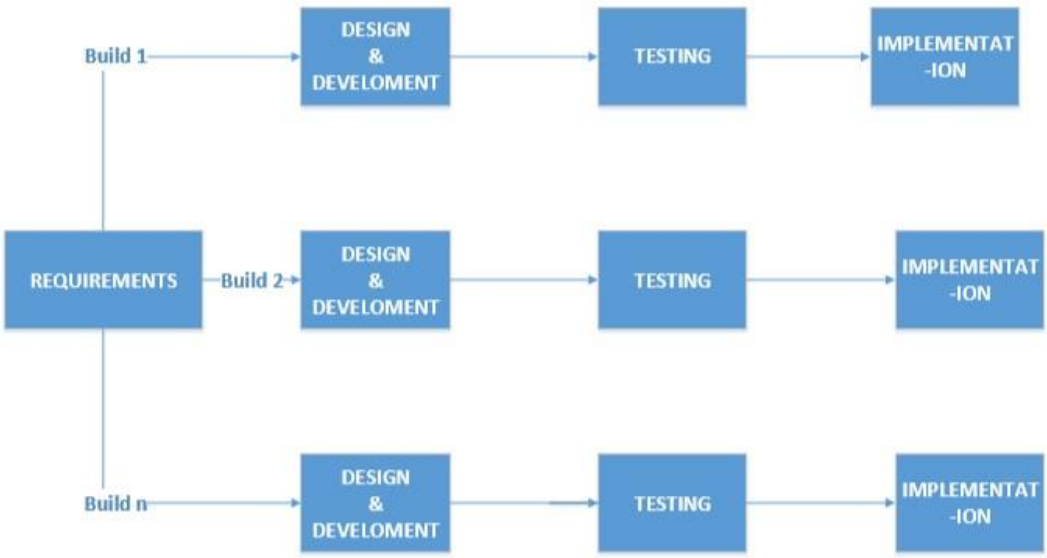


Figure 3.1: Incremental Life Cycle Model (Istqbexamcertificationc.om (2018))

In our project, we are aiming to create an interactive environment for learners with detailed guidance so they can learn in best possible way. Our system will provide the students with Learning based on assessments, content design, development and programming, technical and systems integration, site management and hosting, maintenance and online mentoring. Hiring of qualified faculty, authoring tools, course management systems, collaborative software and electronic classrooms.

Demands for e-learning is increasing day by day and this growing demand requires a combination of methodologies, tools, and technologies to indulge effective learning in

learners by e-learning development throughout the organization. The tools that are supporting our whole system includes HTML, CSS, Code Igniter, Php, and My SQL.

# CHAPTER 4

# DATA AND EXPERIMENTS (IMPLMENTATION)

## 4.1 Data Analysis:

This chapter is about the data analysis and provide us with the result of research questions. Two main parts of the research document are: quantitative and qualitative collection of data and research methodology which is used to explain the overall result percentage (Bizfluent.com, 2018).

According to a current survey the literacy rate of Pakistan is 58 percent and overall it is 81 percent and 68 percent for males and females respectively. Our primary focus is to enhance the concept of education through E-learning and for that we will be developing an E-learning platform for the people of Pakistan as education is the basic human right. The beneficiaries of this platform are those who wants to have some technical background but can't afford to go to a university or a college. The overall questionnaire is taken by some teachers and students.

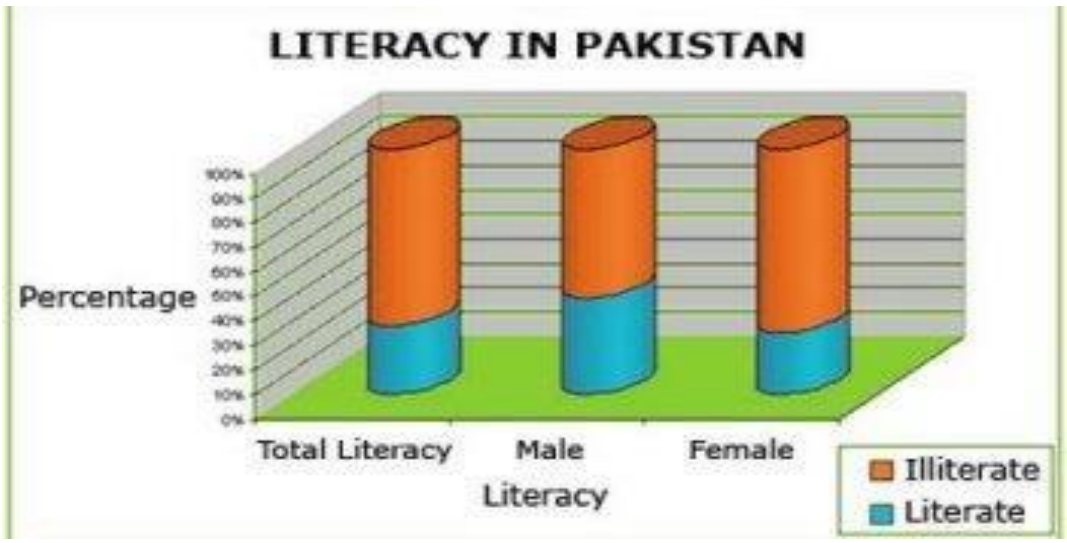

Figure 4.1: Graphical Representation of Literacy rate of Pakistan (Talib.pk. (2016))

Technology provide the main advances in e-learning that allowed to improved learner interaction. Web-based learning system provide the two types of interaction: teacher to-student and student-to-teacher interactions. There are many new advance features which are present in our platform that are very interactive to their users.

## 4.2 Students Attitude:

This survey discovered that students' attitudes is positive toward e-learning. E-learning rises the ability in everyone to interact with the learning sites with the help of e-class or a virtual class and the lots of different features like forums, quizzes and assignments. This is the best way to enhance the majority of people attitudes towards e-learning. In this research methodology; Students main characteristics consist of three factors i.e.; students' skills and attitudes and behaviors. So, the result of this survey, is that students also motivate with these type of learning platforms.

## 4.3 Teachers' Attitudes:

Teachers also gave us a positive result toward distance learning. Teacher who want part time job can be easily interact with e-learning platform because in e-learning system teachers can easily manage their time and pace. In every e-learning platform teachers is the important part of the platform who manages the overall content and environment of the learning system. So, the teachers who start their career online can be easily interact our platform

## 4.4 Summary:

We asked students and teachers to fill out the questionnaire which provided us with the basic analysis about the requirements of people. The attitude of most students and teachers and also general public, was positive towards e-learning which helped us to extract out the factors that should be taken in consideration while developing an e-learning platform.

# CHAPTER 5

# RESULTS AND DISCUSSIONS (or USER MANUAL)

## 5.1 Decreasing literacy rate of Pakistan

The literacy rate of Pakistan is much lower as compared to other countries. The literacy rate has been decayed from 60 percent to 58 percent (2016-2017).

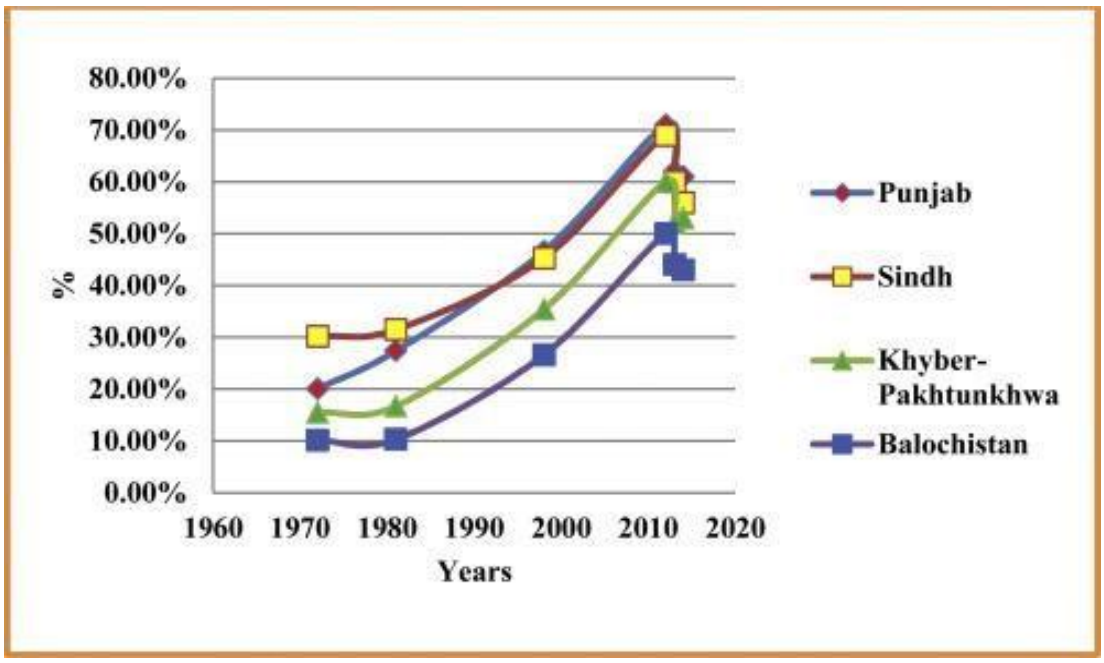


Figure 5.1: Literacy rate of Pakistan (Rehman, A, Jingdong, L & Hussain, I. (2015))

The above graph shows the decreasing literacy rate of Pakistan. There are many reasons behind this such as Poverty, gender discrimination, expenses of education, lack of schools in rural area etc. Also, those who are job-holders and support their families, they cannot go to attend university due to time and cost issues.

Most of the peoples cannot afford the expenses of education. Education is the key element in the development of a nation. But, unfortunately, in Pakistan, particularly in rural areas, there are very few educational institutes. Even if students move from rural to urban, if they don't get admission in government institutes, due to high merits, they would have to pay big amounts in order to get admission in private institutes which everybody cannot afford. Hence, even if a person wants to pursue his/her education they cannot due to less resources.

## 5.2 Gender inequality

Gender inequality is also one of the main reasons of low literacy rate. Many barriers to education are faced by millions of girls and young women. In Pakistan, most females are not allowed to get higher education. Especially in rural area and in small cities they are not allowed to go for higher education. For women, education is very necessary. Being educated they will be more good at decision-making and will avoid domestic violence at every level. Education enables women to access better economic opportunities, empowers them and set their lives to influence society in better way.

Barriers to female education:

- lack of security
- poverty
- early marriages
- lack of awareness

So, our e-learning platform would benefit the women living in urban and rural areas would have access to online courses in order to gain knowledge.

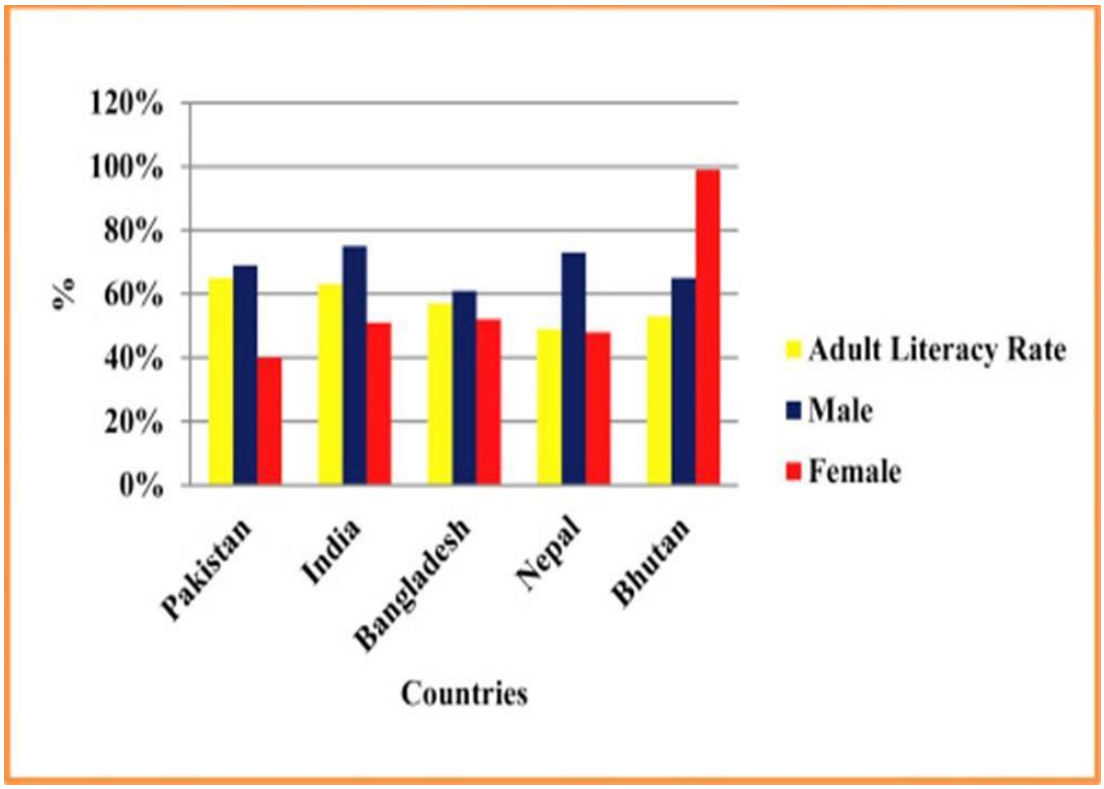


Figure 5.2: Literacy rate (Webmaster, 2017)

### 5.3 Aim of objective

As we know technology and knowledge is rapidly increasing day by day and so education is very important. Illiteracy affects a society in various ways. The more illiterate people there are in a country, the harder it will be for the country to develop. The main aim of our project is to make access of education easy for everyone and enhance the significance education. Students who couldn't afford the expenses of their education they will get free courses online. Hence our aim is to create a user friendly and interactive e-learning platform for people of Pakistan.

## 5.4 Benefits

E-learning or distance learning has multiple benefits for the users. When we talk about distance education, it is called as online education away from your home. The advantage of distance learning is that it provides the keen learners an instant access of data and information. E-Learning provides benefit to women who don't get the chance to gain education further due to cultural and social barriers. It also benefits the jobholders as it is learner centered. The workload of a full-time student can of course be very different compared to the workload of a part time student. So proper time management is very important. If all learning materials can be accessed online, working students can study at anytime, anywhere (Elearningindustry.com, 2017)

Why mostly students prefer online studies?

- Self-paced
- Cost effective
- Quick delivery of lessons  Anywhere, anytime

## 5.5 User Manual:

### 5.5.1 Use case diagram:

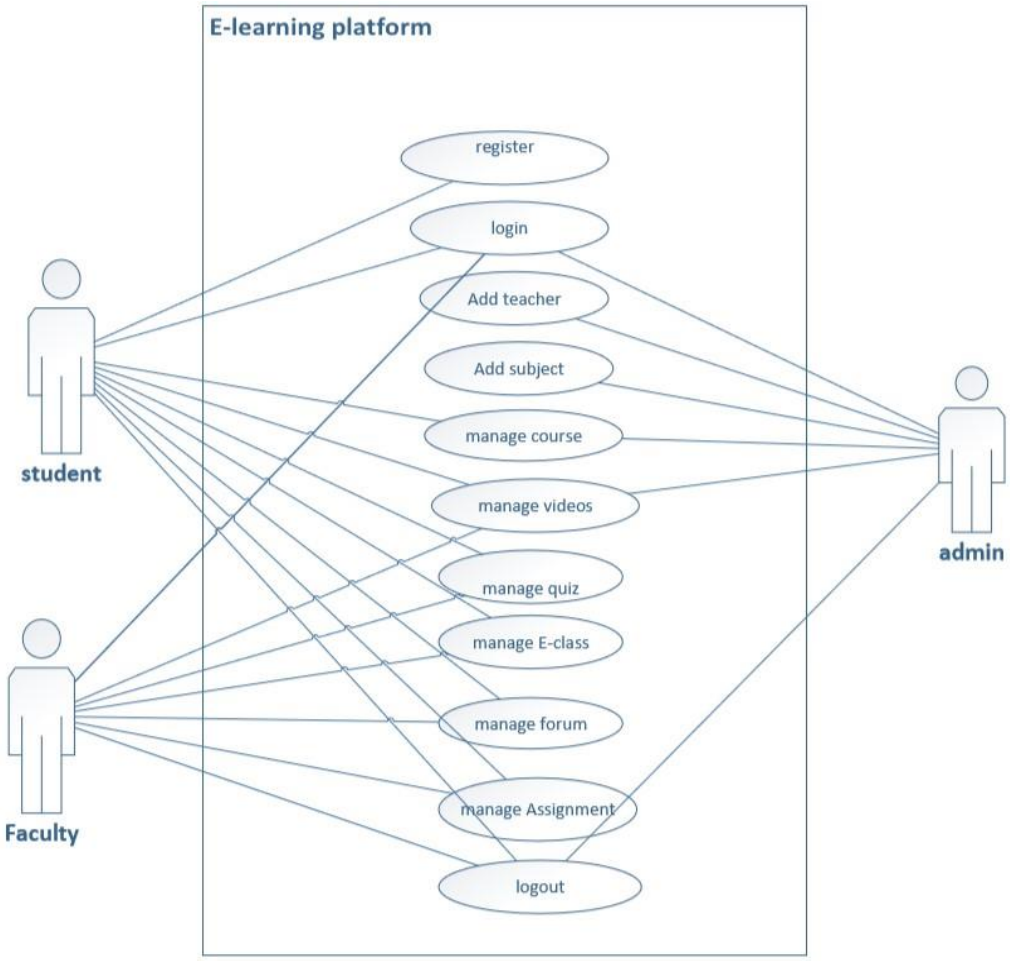


Figure 5.3: Use case diagram of e-learning platform

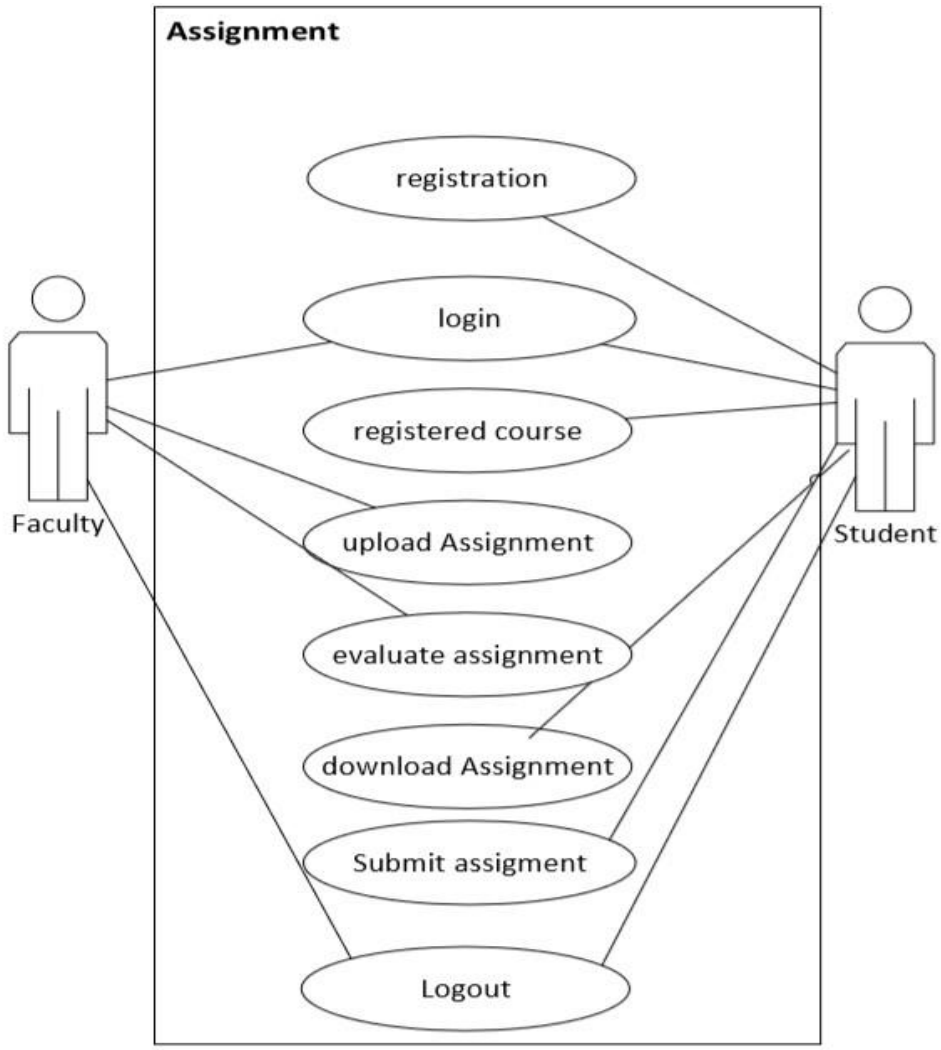


Figure 5.4: Use case –Assignment

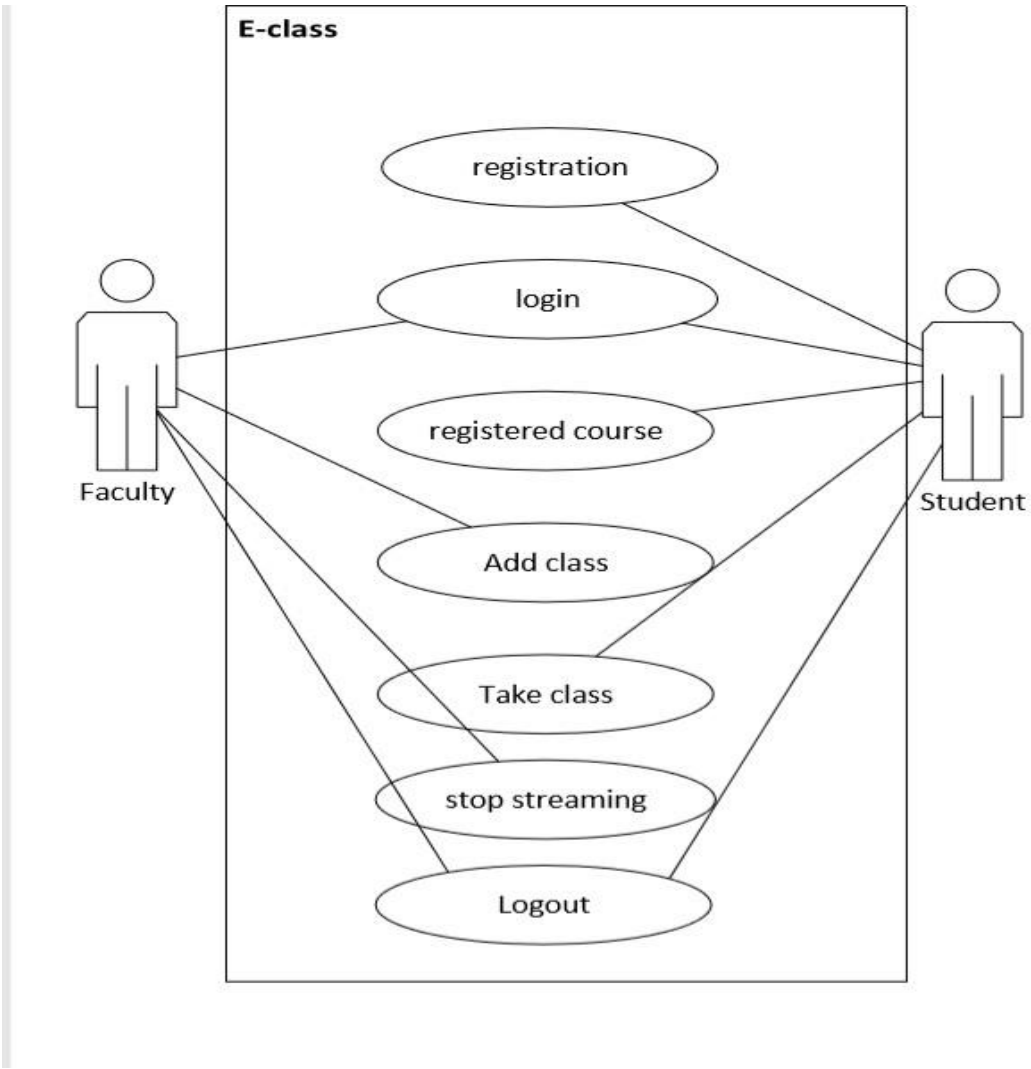


Figure 5.5: Use case – E-class

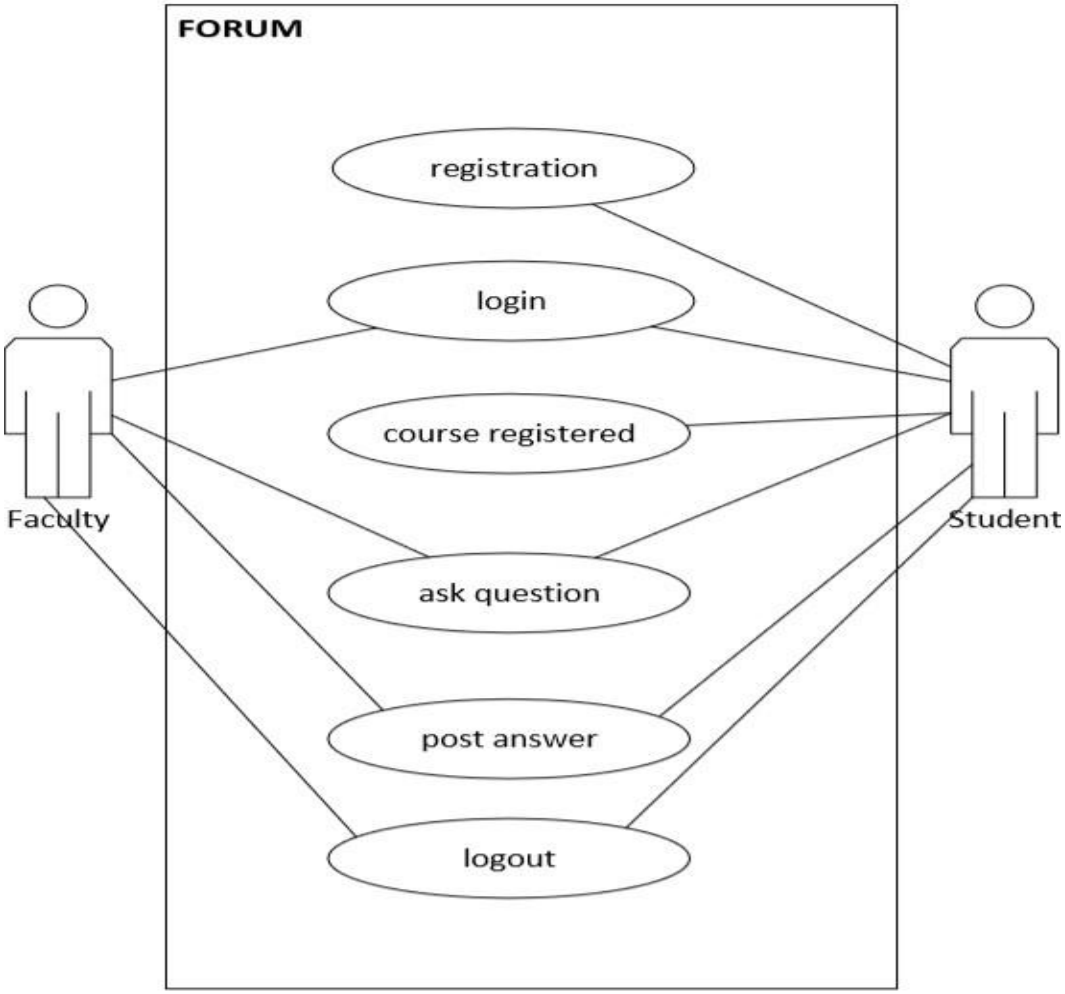


Figure 5.6: Use case – Forum

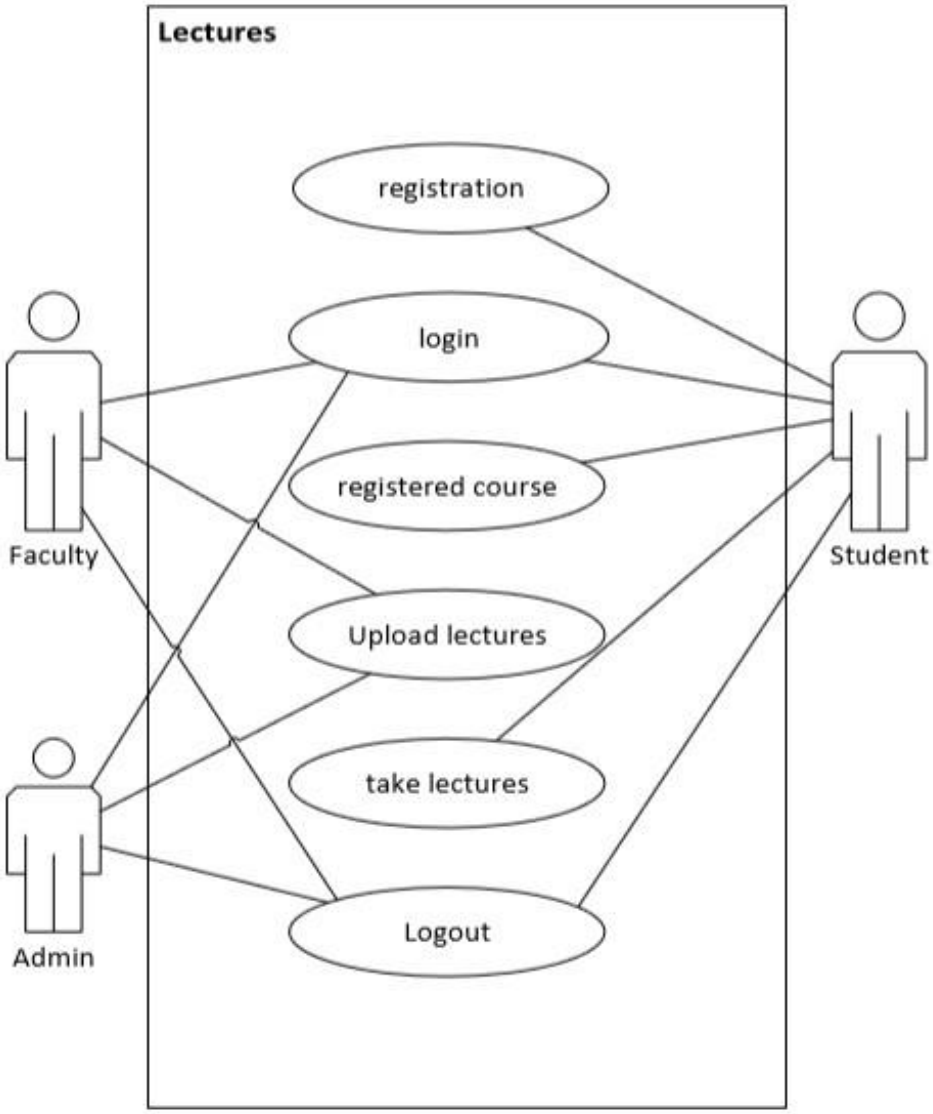


Figure 5.7: Use case – Lectures

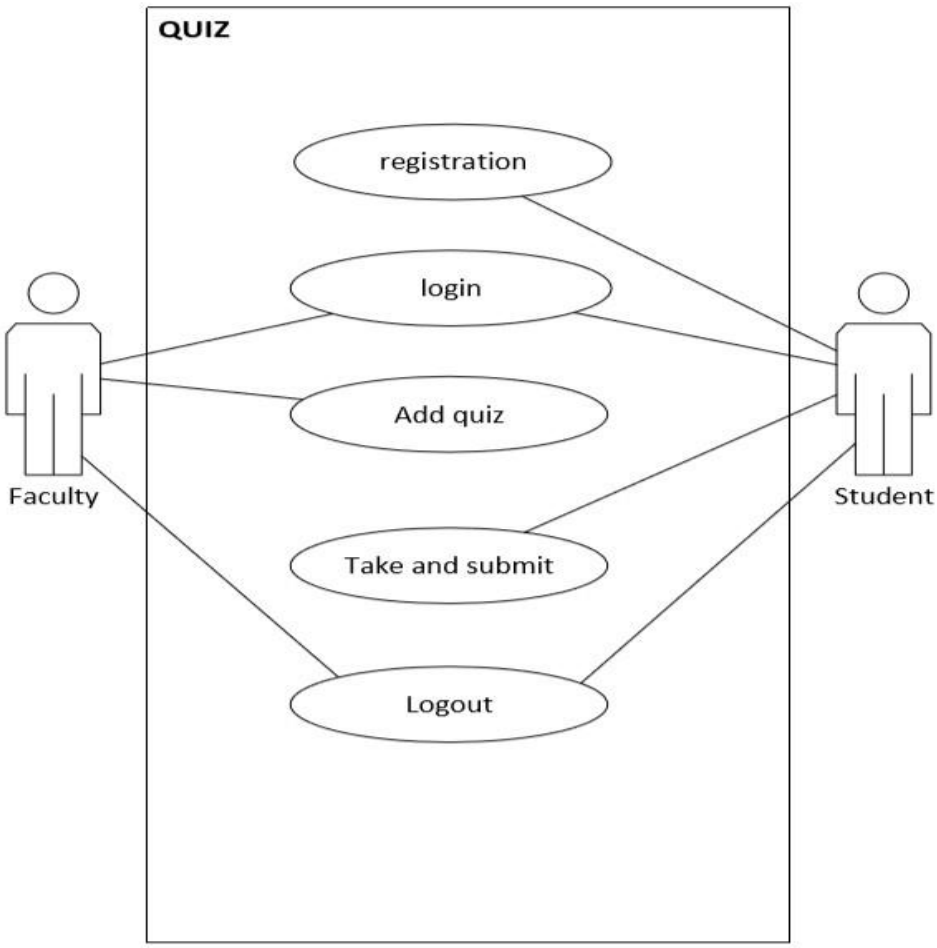


Figure 5.8: Use case – Quiz

### 5.5.2 Sequence Diagram:

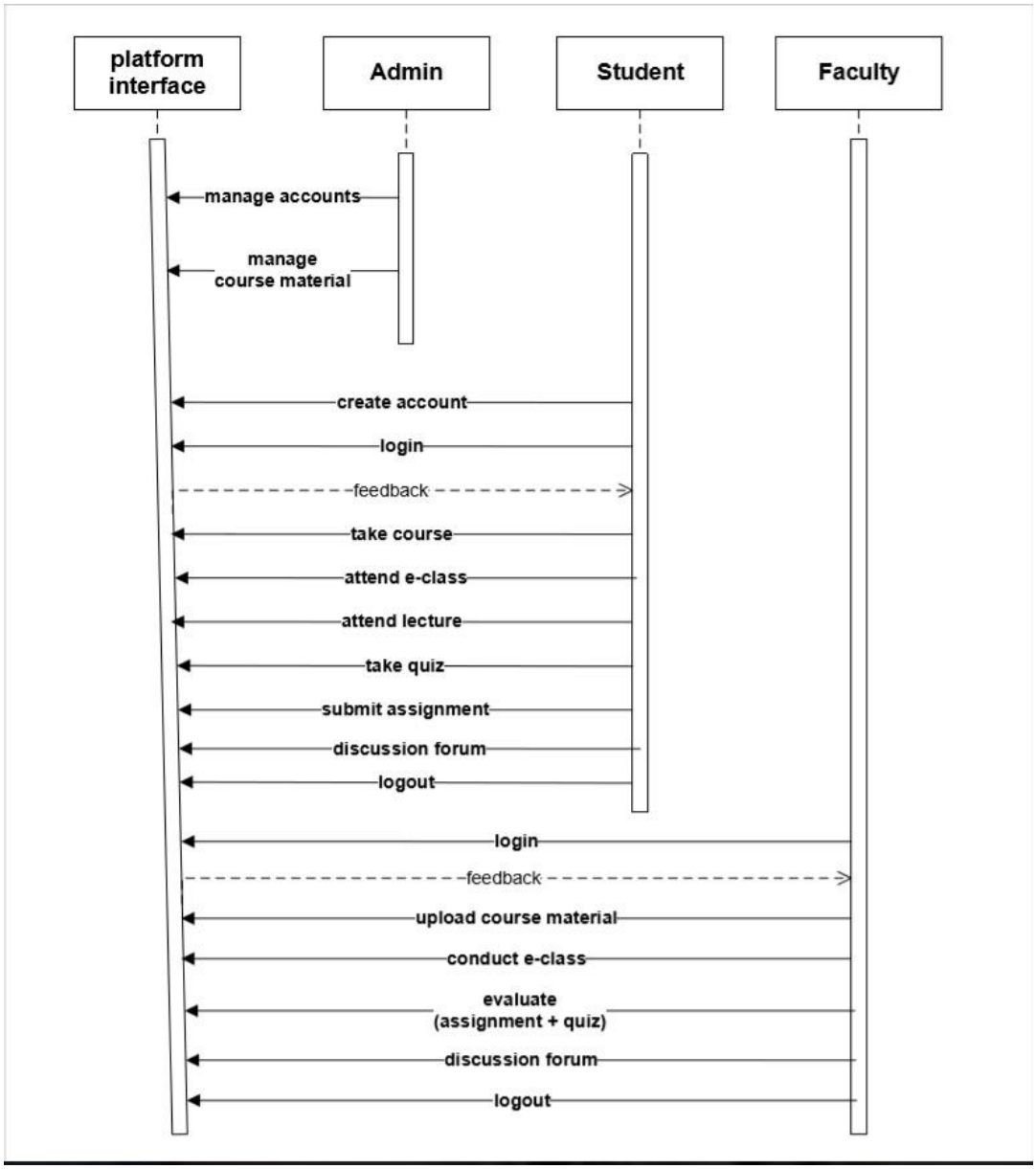


Figure 5.9: project sequence diagram

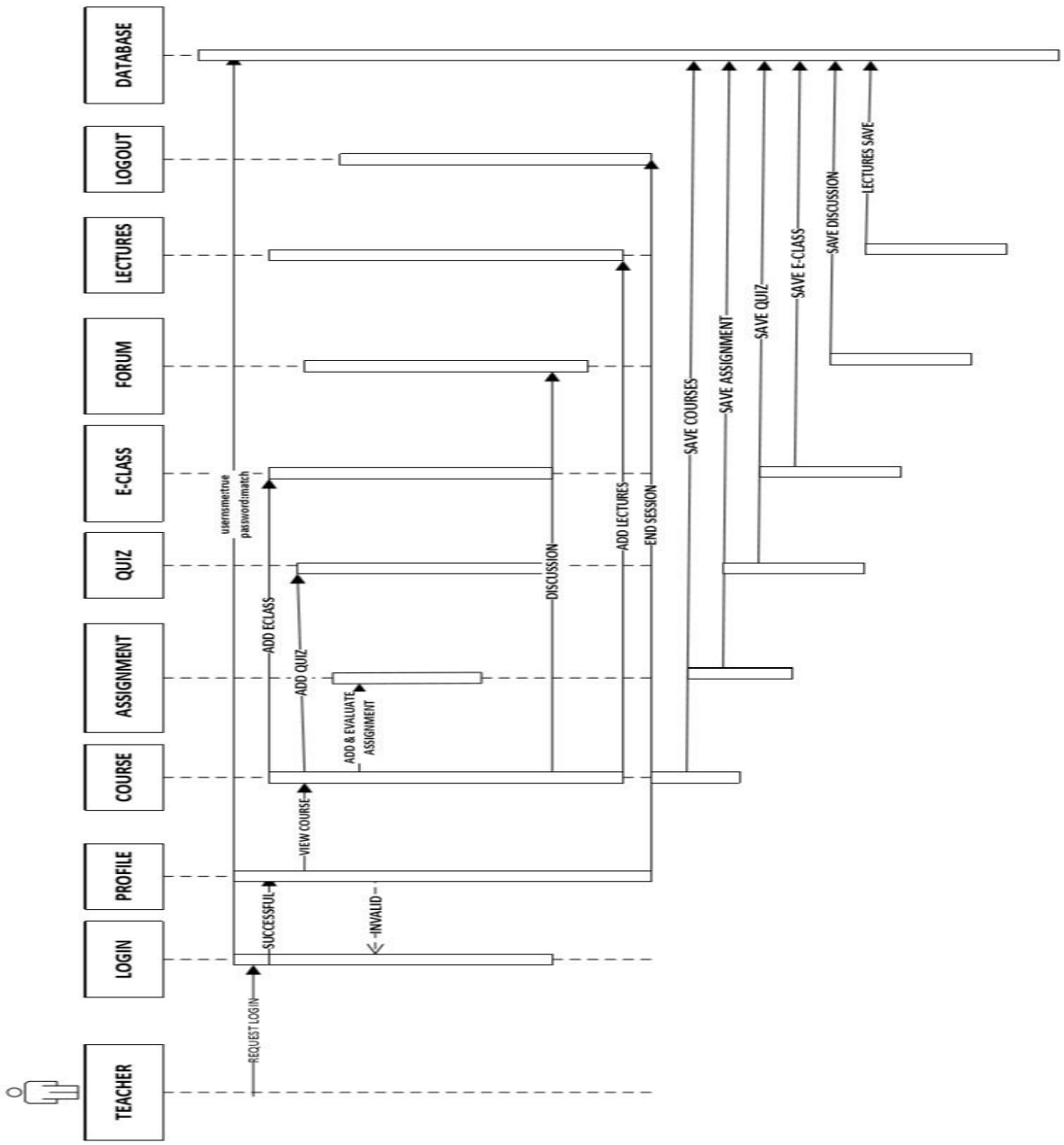


Figure 5.10: sequence diagram of faculty

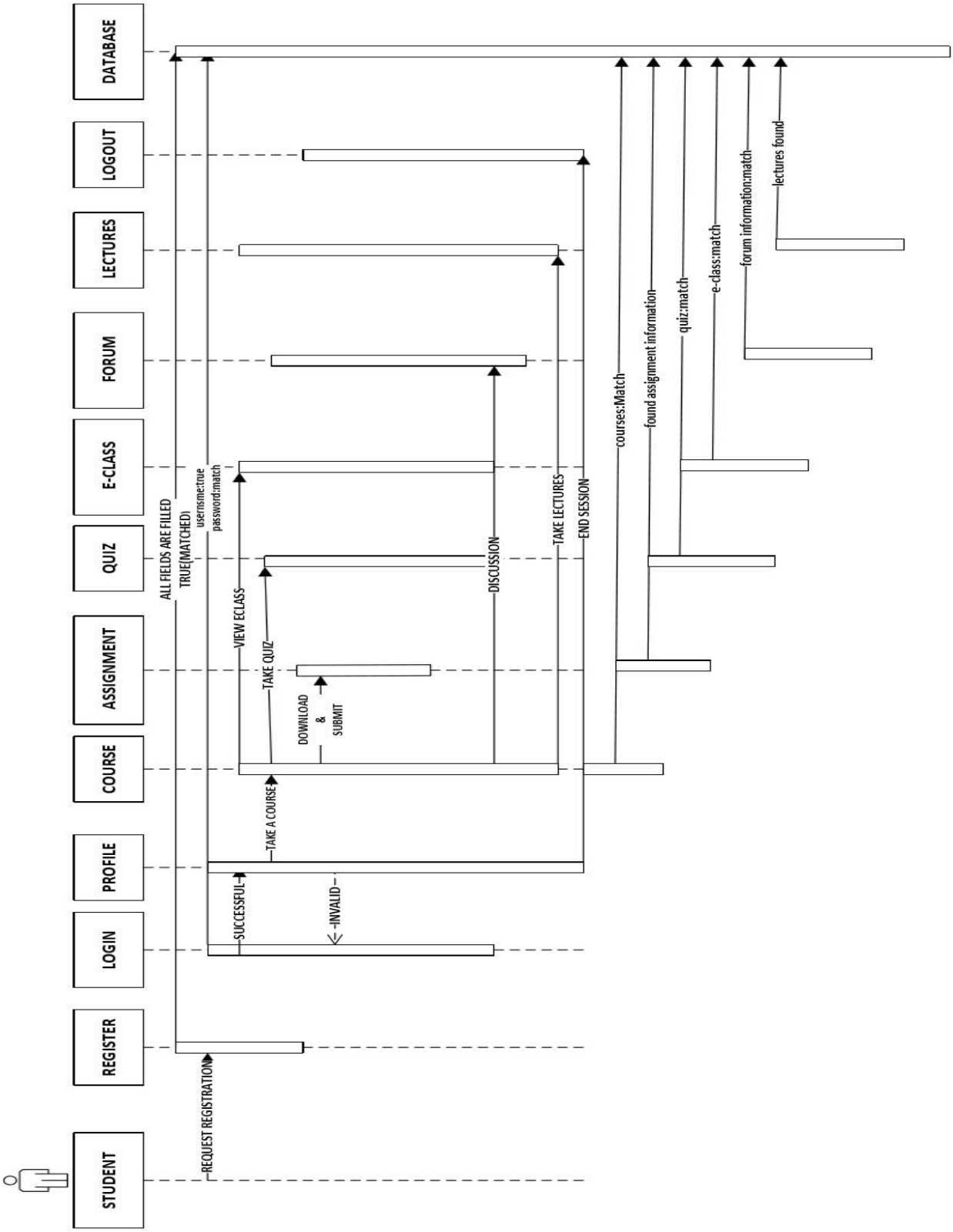


Figure 5.11: sequence diagram of student

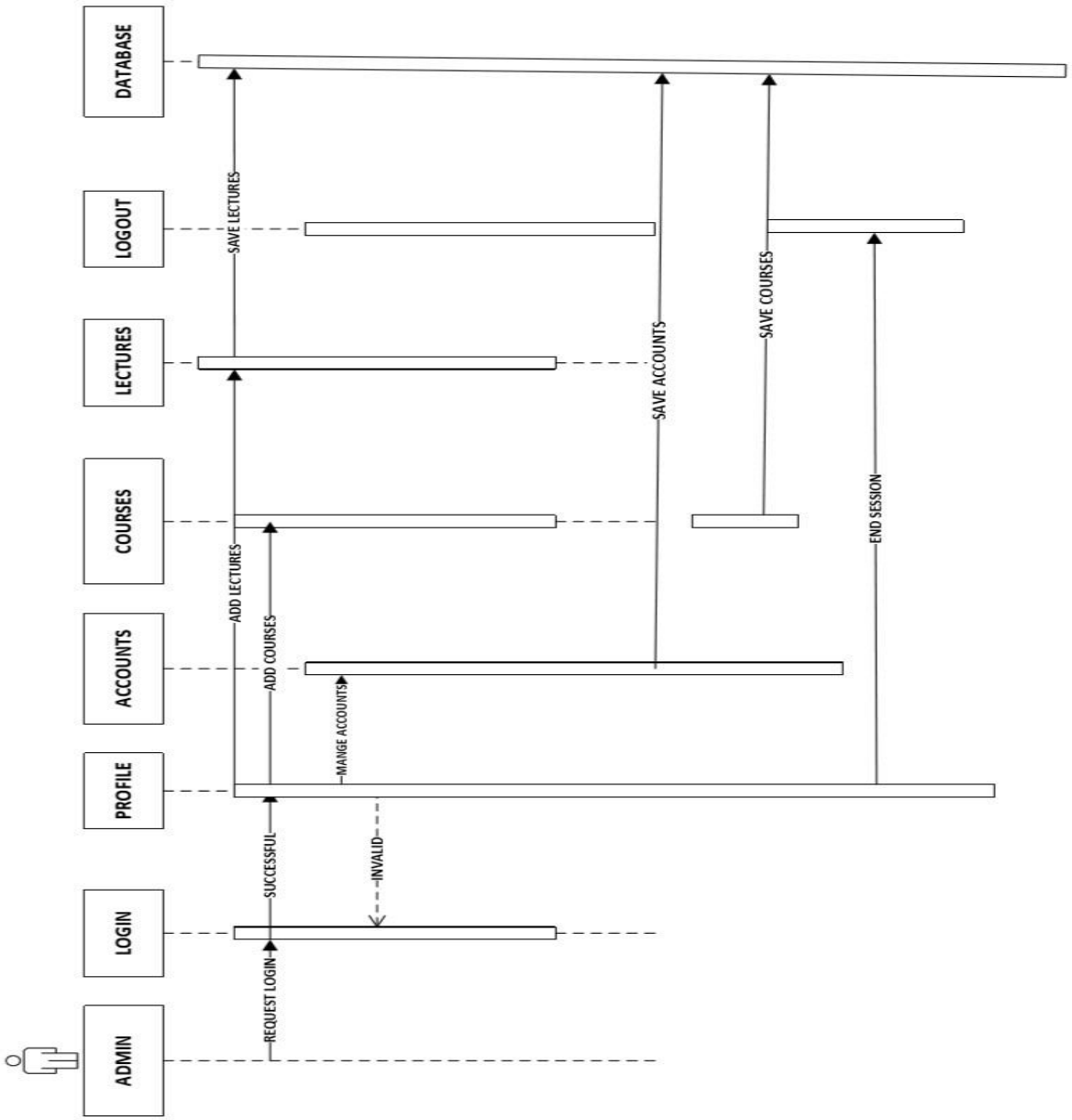


Figure 5.12: sequence diagram of admin

### 5.5.3 Graphical user interface:

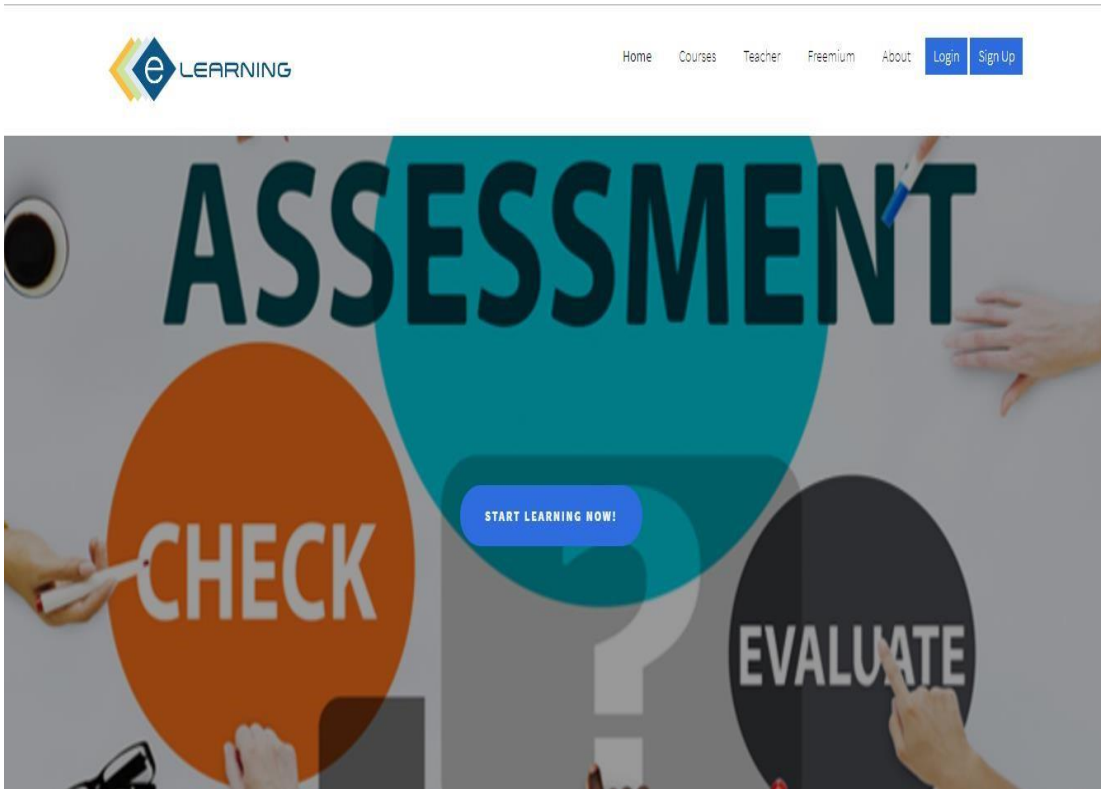


Figure 5.13: home view

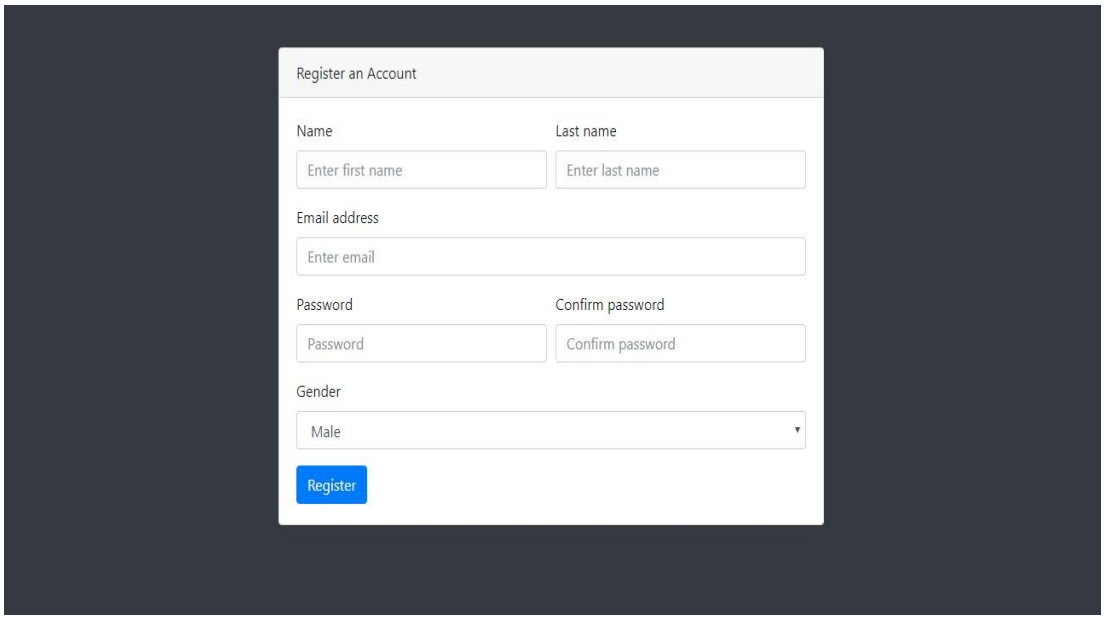


Figure 5.14: student registration form

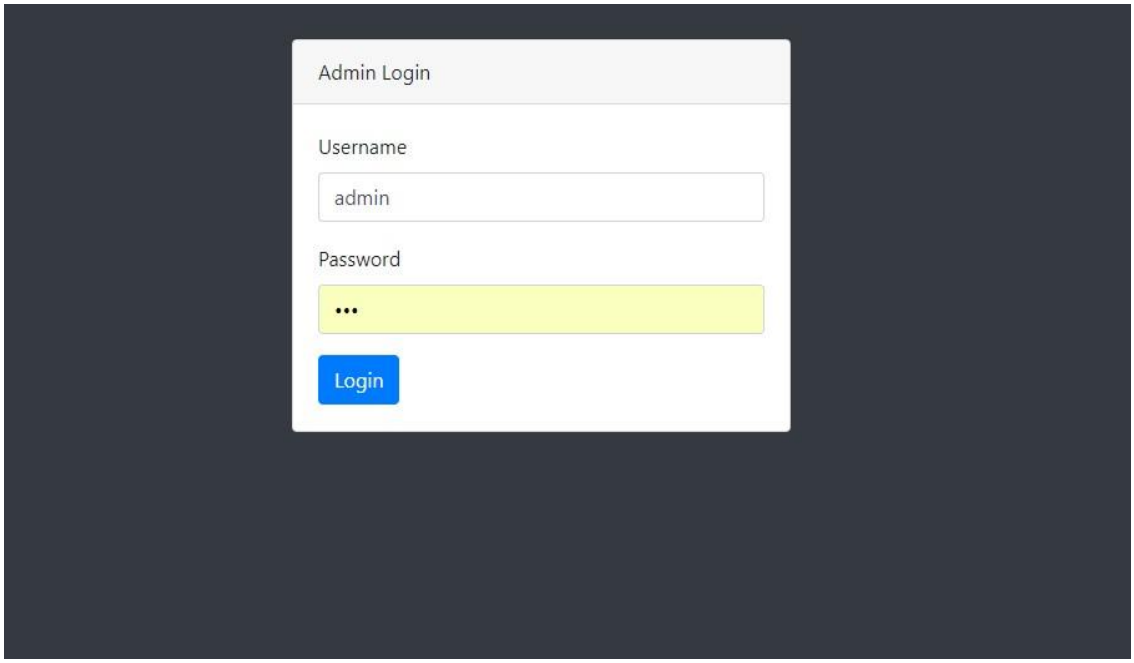


Figure 5.15: admin login form

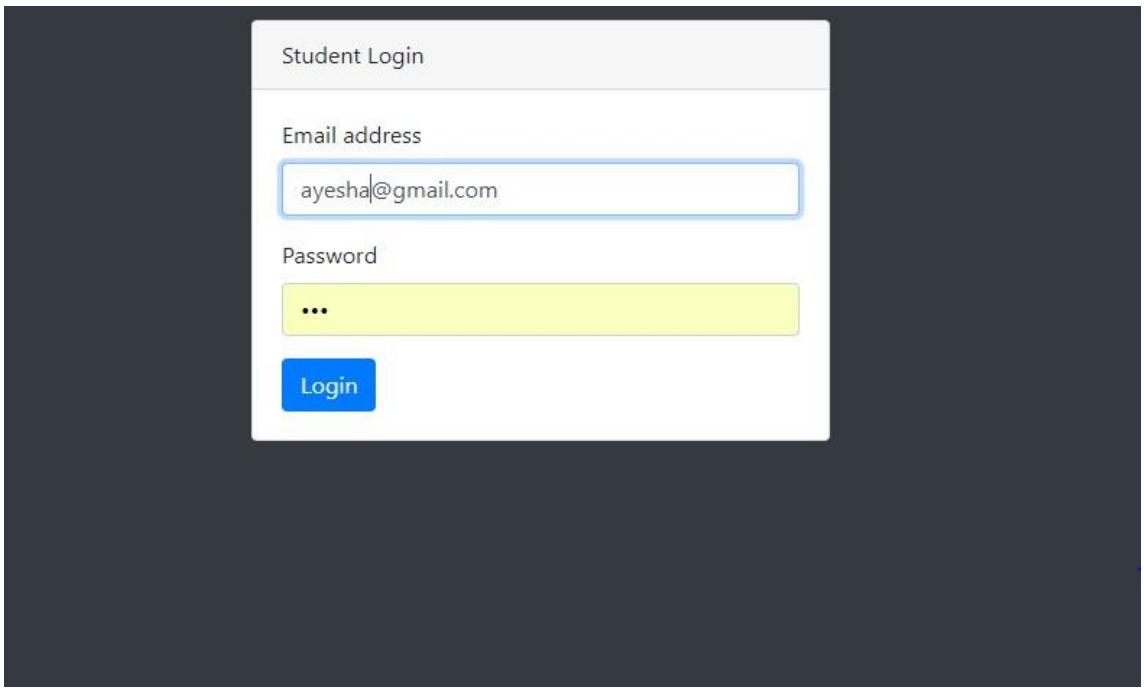


Figure 5.16: student login form

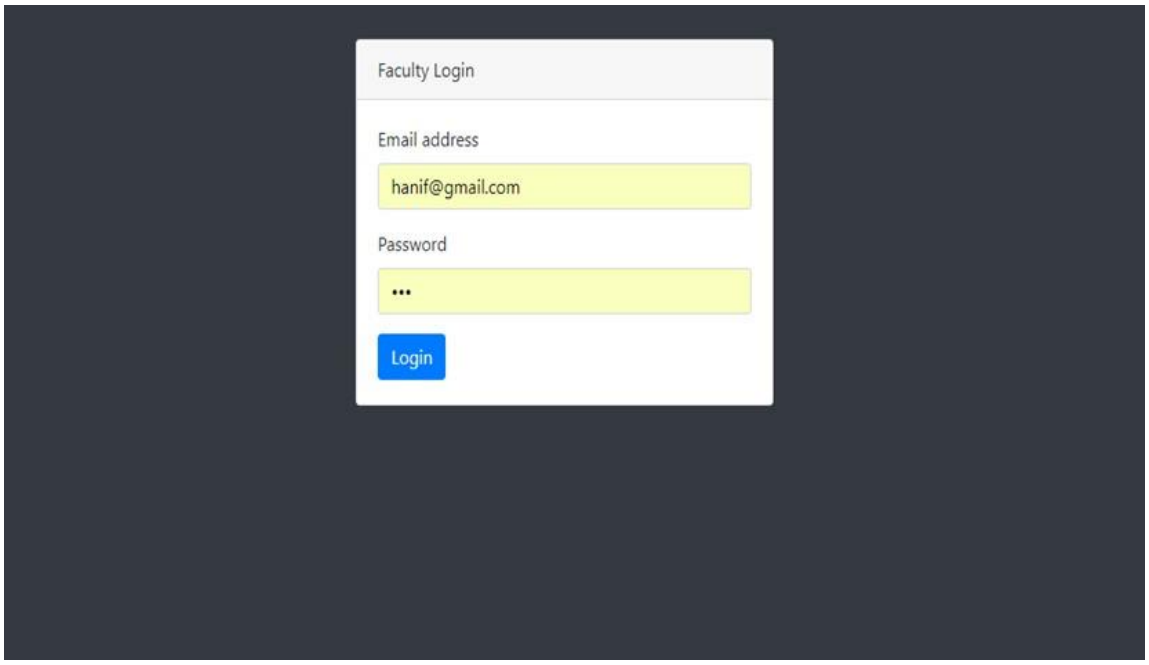


Figure 5.17: faculty login form

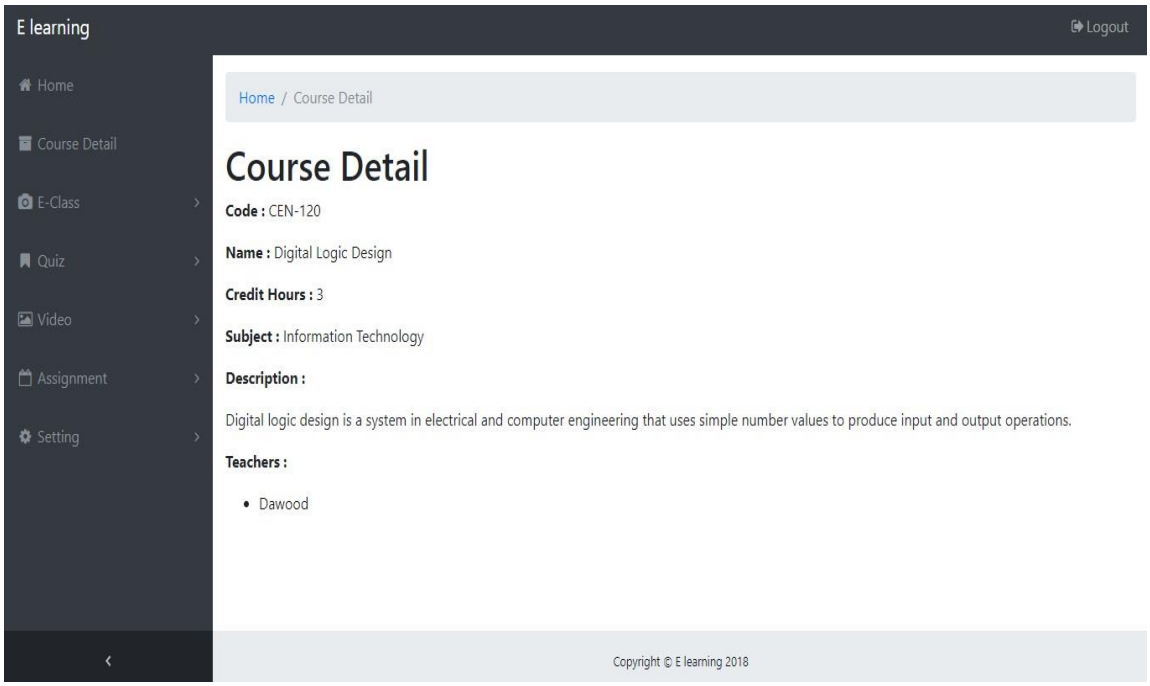


Figure 5.18: faculty view- course detail

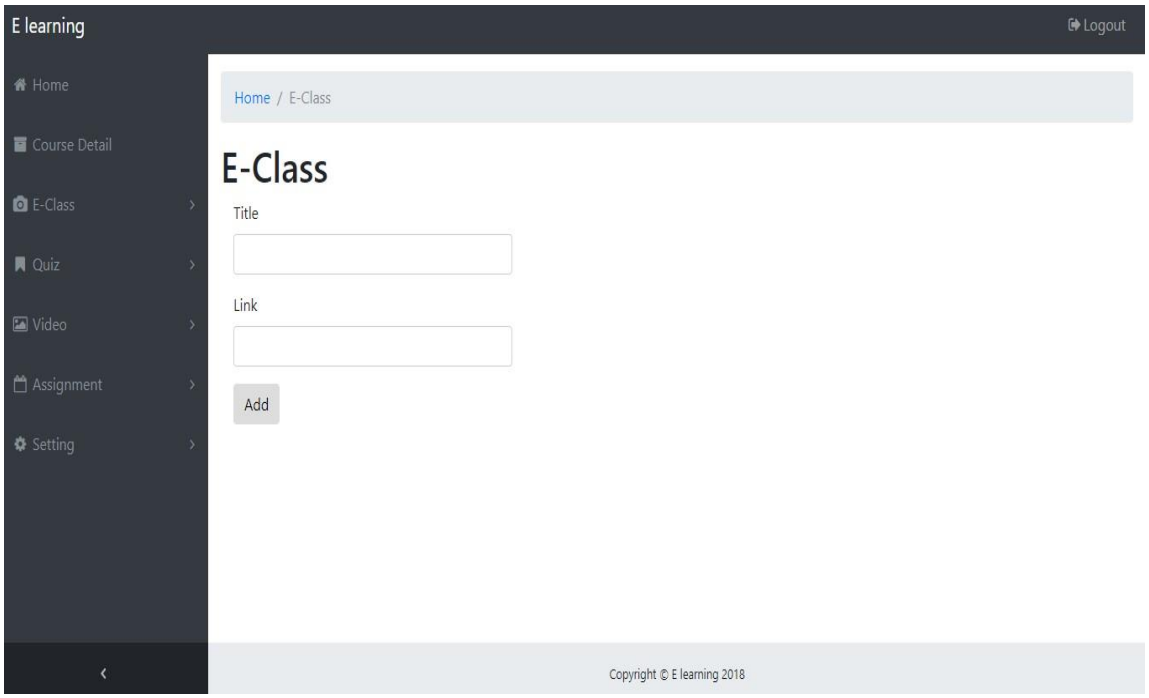


Figure 5.19: faculty view- E-class

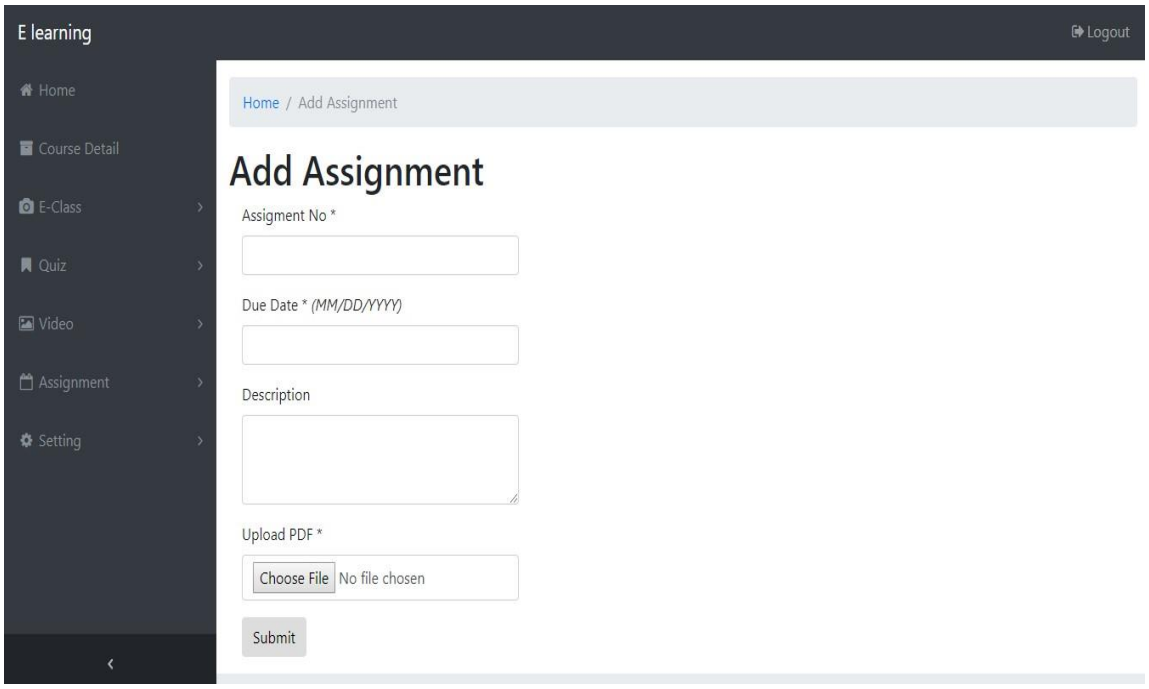


Figure 5.20: faculty view- assignment

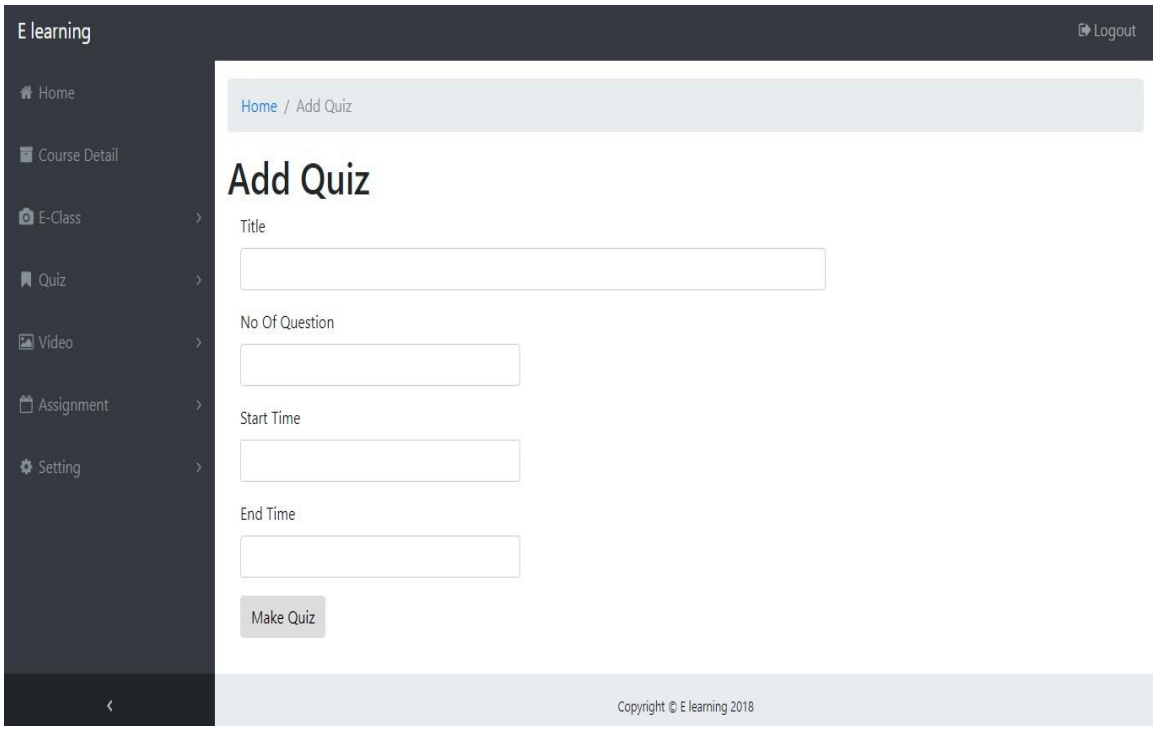


Figure 5.21: faculty view- quiz

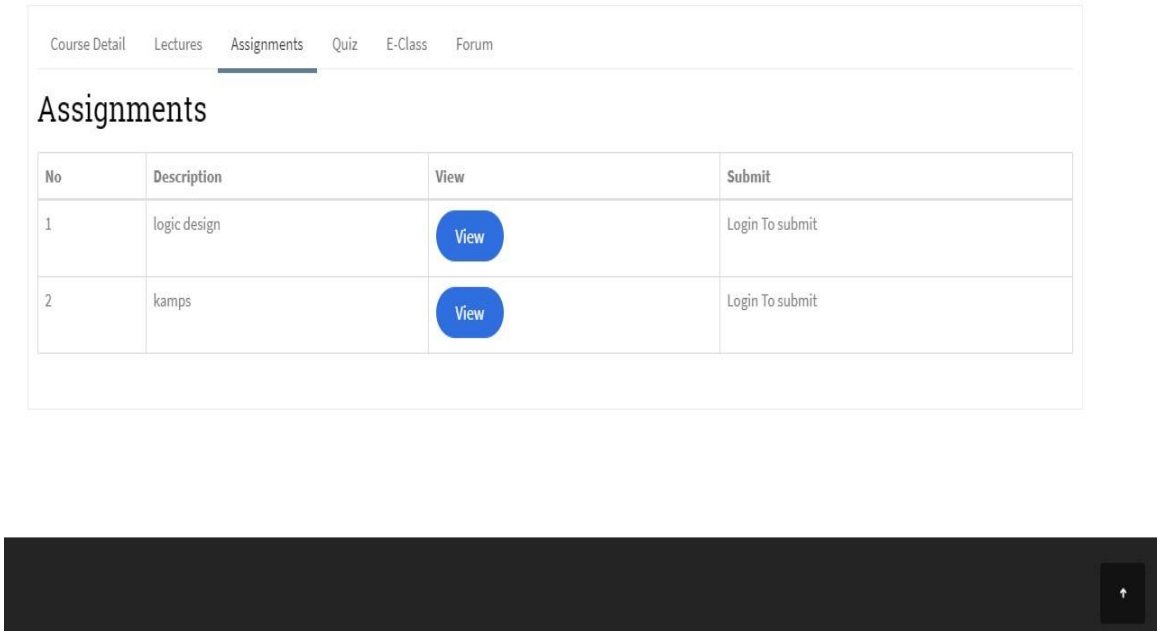


Figure 5.22: student view- assignment

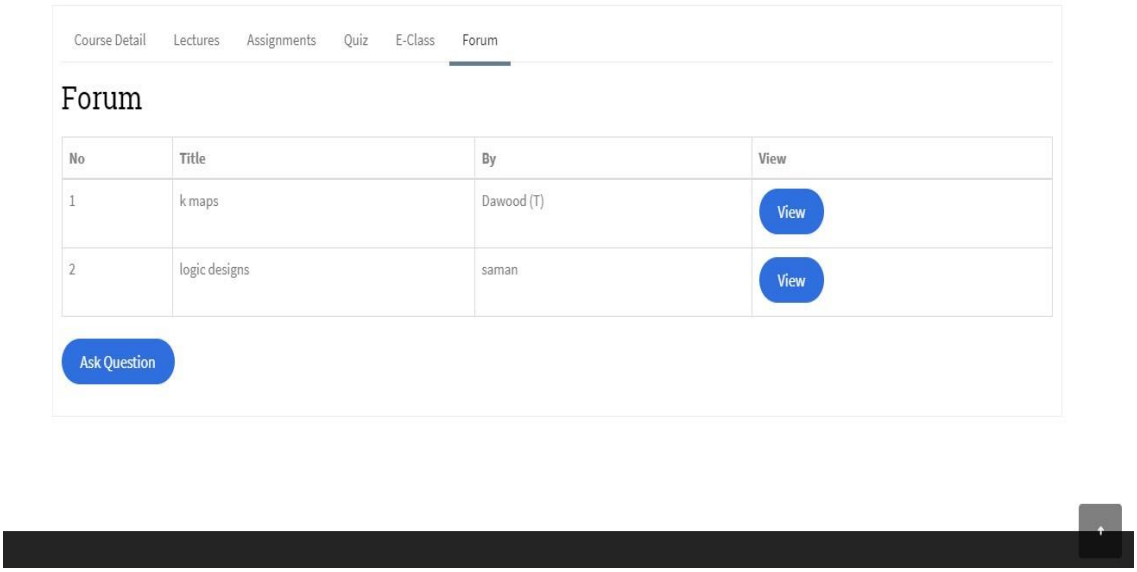


Figure 5.23: student view- forum

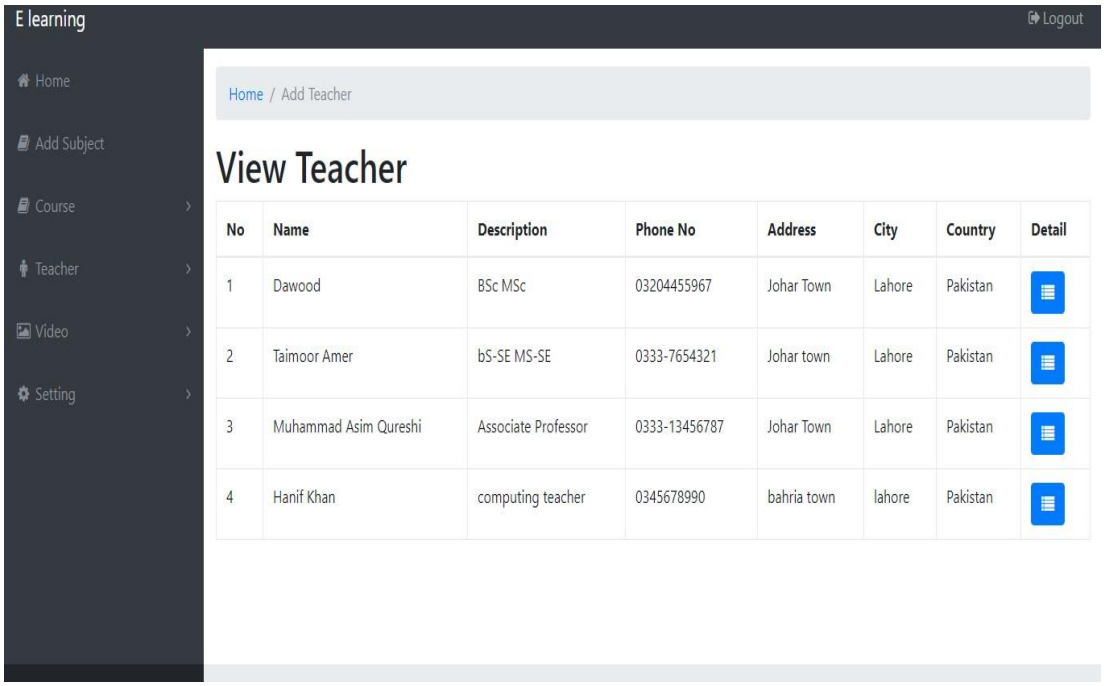


Figure 5.24: admin view- teacher detail

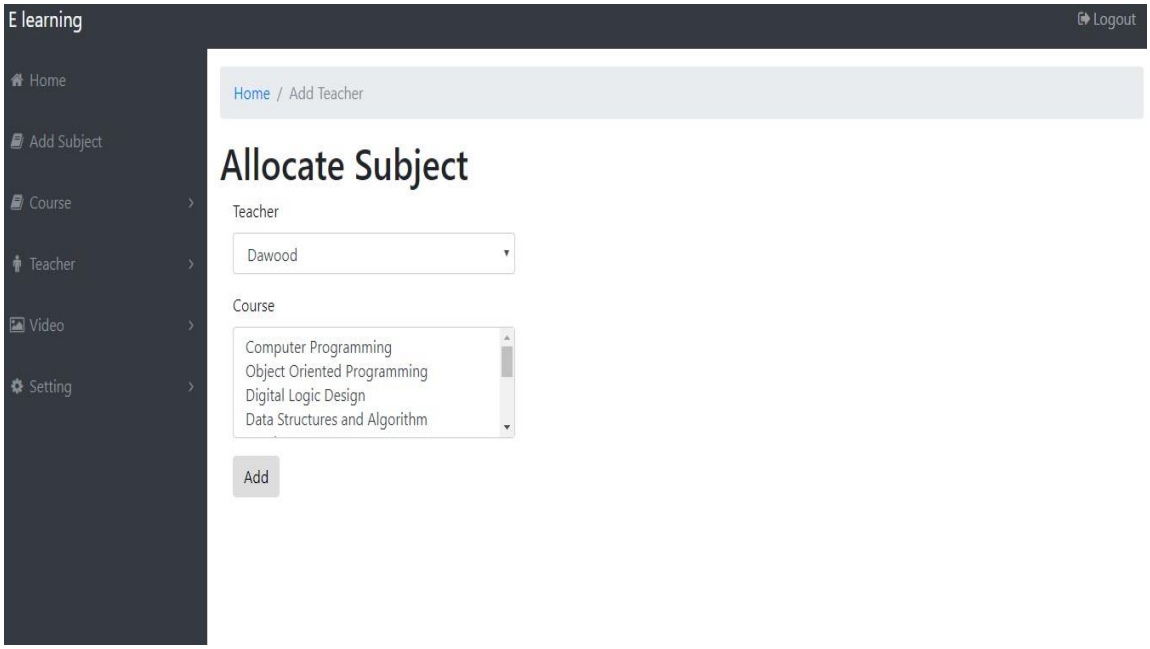


Figure 5.25: admin view- subject allocation

# CHAPTER 6

# CONCLUSION AND RECOMMENDATIONS

## 6.1 Survey analysis:

In order to observe the public point of view about e-learning we conducted a survey. Almost half of the public opinions inclined towards e-learning as compared to traditional classrooms because they thought that e-learning saves time and is cost-effective. Also it plays a vital role for job holders who can't go to class. So, they can manage their studies and time easily but still some people thought traditional learning is better than online studies. Reason behind this was that e-learning is not common in Pakistan and people were hesitant in considering this an authentic source of learning. Although current trends indicate that e-learning will be very common and that it is going to be a very significant part of education infrastructure in the future. The demand of e-learning is increasing day by day. People now prefer online studies because if gives full flexibility to students.

**Future trends of learning system**

**Increase in the use of technology:**

The use of computers and digital devices is quite common now. People are now moving towards e-learning as they thought that e-learning saves time and is cost-effective.

**Increase MOOCs:**

With the increase MOOCs (massive open online course's), students don't have any difficulty in learning. Students can learn advance courses online. They can spend less time in learning and it is less costly

## REFERENCES


1. Unesco.org. (2018). *Unesco.org*. Retrieved 17 March, 2018, from http://unesdoc.unesco.org/images/0023/002312/231288e.pdf [PDF file]
2. Www.un.org. (2018). *Www.un.org*. Retrieved 24 March, 2018, from http://www.un.org/en/udhrbook/pdf/udhr_booklet_en_web.pdf [pdf]
3. Al-ammari, J & Hamad, S. (2008). FACTORS INFLUENCING THE ADOPTION OF E-LEARNING AT UOB. Conference Paper · January 2008
4. Finance.gov.pk. (2017). *Finance.gov.pk*. Retrieved 24 March, 2018, from http://www.finance.gov.pk/survey/chapters_17/10-Education.pdf [pdf]
5. Gulati, S. (February – 2008). Technology-Enhanced Learning in Developing Nations: A review. *Special Issue - Role of Distance Learning in the Right to Education*, 9(1)
6. Cheng,.Y.-.M. (2011). Antecedents and consequences of e-learning acceptance. *Information System Journal*, 21(1),
7. Commlabindia.com. (2014, 3rd June). Synchronous and Asynchronous Types of E-learning. [Weblog]. Retrieved 11 March 2018, from https://blog.commlabindia.com/elearning-design/types-of-elearning
8. Algahtani, A.F. (2011). Evaluating the Effectiveness of the E-learning Experience in Some Universities in Saudi Arabia from Male Students' Perceptions, Durham theses, Durham University.
9. Hrastinski, S. (2008). *Educause.edu*. Retrieved 15 March, 2018, from https://er.educause.edu/articles/2008/11/asynchronous-and-synchronouselearning
10. Zhang et al (2006). Instructional video in e-learning: Assessing the impact of interactive video on learning effectiveness. *Information & Management*, 43(1), 15-27.

11. Nawaz, A., 2012. E-Learning experiences of HEIs in advanced states, developing countries and Pakistan. Universal Journal of Education and General Studies, 1(3), pp. 72-83

12. Kanwal, F & Rehman, M. (2014). E-learning adoption model: A case study of Pakistan. *Life Science Journal*, 11(4), 78-86.

13. Aiou.edu.pk. (2018). *Aiou.edu.pk.* Retrieved 19March, 2018, from http://www.aiou.edu.pk/vc_message.asp

14. Vu.edu.pk. (2018). *Vu.edu.pk*. Retrieved 19 March, 2018, from http://www.vu.edu.pk/AboutUs/VisionAndMission.aspx

15. Codone, S. (2001) An E-Learning Primer, Raytheon Interactive. Available from: http://faculty.mercer.edu

16. Amer, T. (2007). E-learning and Education, Cairo: Dar AL Shehab publication.

17. Algahtani, A.F. (2011). Evaluating the Effectiveness of the E-learning Experience in Some Universities in Saudi Arabia from Male Students' Perceptions, Durham theses, Durham University

18. Marc, J. R. (2002). Book review: e-learning strategies for delivering knowledge in the digital age. Internet and Higher Education, 5, 185-188.

19. Klein, D. & Ware, M. (2003). E-learning: new opportunities in continuing professional development. Learned publishing, 16 (1) 34-46.

20. Collins, J., Hammond, M. & Wellington, J. (1997). Teaching and Learning with Multimedia, London: Routledge.

21. Hameed, S. Badii, A. & Cullen, A. J. (2008). Effective e-learning integration with traditional learning in a blended learning environment. European and Mediterranean conference on information system, (25-26).

22. Akkoyuklu, B. & Soylu, M. Y. (2006). A study on students‟ views on blended learning environment. Turkish Online Journal of Distance Education, 7(3), ISSN 1302-6488.

23. Almosa, A. (2002). Use of Computer in Education, (2nd ed), Riyadh: Future Education Library.

24. Lewis, N. J. (2000). The Five Attributes of Innovative E-Learning, Training and Development, Vol. 54, No. 6, 47 51.

25. Scott B., Ken C. H. & Edwin M. G. (1999). The Effects of Internet-Based Instruction on Student Learning, Journal of Asynchronous Learning Network, Vol. 3, No. 2, .98-106

26. Arkorful, V & Abaidoo, N. (2014). The role of e-learning, the advantages and disadvantages of its adoption in Higher Education. *International Journal of Education and Research*, 2(12), 14.

27. Kanwal et al. (2017). Critical Factors of E-Learning Adoption and Acceptance in Pakistan: A Literature Review. *Engineering, Technology & Applied Science Research*, 7(4), 1888-1893.

28. Elearningindustry.com. (2014). eLearning Industry. Retrieved 26 March, 2018, from https://elearningindustry.com/elearning-future-what-will-elearning-looklike-2075

29. Elearningindustry.com. (2017). eLearning Industry. Retrieved 26 March, 2018, from https://elearningindustry.com/9-benefits-of-elearning-for-students

30. Webmaster. (2017). Pak Observer. Retrieved 26 March, 2018, from https://pakobserver.net/barriers-female-education/

31. Prospects.com.pk. (2018). Prospects.com.pk. Retrieved 27 March, 2018, from http://www.prospects.com.pk/e-learning-in-pakistan/

32. Rehman, A, Jingdong, L & Hussain, I. (2015). The province-wise literacy rate in Pakistan and its impact on the economy. Pacific Science Review B: Humanities and Social Sciences, 1(3), 140-144.

33. Talib.pk. (2016). Talib.pk. Retrieved 9 May, 2018, from https://talib.pk/article/ current-literacy-rate-pakistan

34. Istqbexamcertification.com. (2018). Istqbexamcertification.com. Retrieved 1 0 May, 2018, from http://istqbexamcertification.com/what-is-incrementalmodel-advantages-disadvantages-and-when-to-use-it/