

# **E-Learning Portal**

**BY**

**MD. AKIB IBNE SAMIR**

**ID: 172-15-10226**

**AND**

**MD. OMOR FARUK**

**ID: 172-15-10247**

This Report Presented in Partial Fulfillment of the Requirements for the Degree of Bachelor of Science in Computer Science and Engineering.

Supervised By

**Dr. Syed Akhter Hossain**

Professor & Head

Department of CSE

Daffodil International University



**DAFFODIL INTERNATIONAL UNIVERSITY**

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## APPROVAL

This Project titled “**E-Learning Portal**”, submitted by \*Md. Akib Ibne Samir\* and \*Md. Omor Faruk\* to the Department of Computer Science and Engineering, Daffodil International University, has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of B.Sc. in Computer Science and Engineering and approved as to its style and contents. The presentation has been held on \*07-10-2020\*

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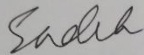
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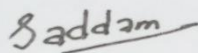
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United International University

## DECLARATION

We hereby declare that, this project has been done by us under the supervision of **Dr. Syed Akhter Hossain Professor & Head, Department of CSE** Daffodil International University. We also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

### Supervised by:



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**Dr. Syed Akhter Hossain**  
**Professor & Head**  
Department of CSE  
Daffodil International University

### Submitted by:



---

**Md. Omor Faruk**  
172-15-10247  
Department of CSE  
Daffodil International University



---

**Md. Akib Ibne Samir**  
172-15-10247  
Department of CSE  
Daffodil International University

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We would like to express our heartiest gratitude to Dr. Syed Akhter Hossain, Professor, and Head, Department of CSE, for his kind help to finish our project and also to other faculty members and the staff of CSE department of Daffodil International University.

We would like to thank our entire course mates in Daffodil International University, who took part in this discussion while completing the course work.

Finally, we must acknowledge with due respect the constant support and patients of our parents.

## ABSTRACT

E-Learning is changing the usual learning experience. It has become the new standard way of learning and is highly beneficial to students due to its flexibility, low cost, and user experience. Today's worlds changing day-by-day by the touch of technology. In the case of the education sector is one of them. In the previous day for any kind of teach or learn purpose that is mandatory to attend physically. But now-a-days this is changed. Now we can do this by sitting at our home by the use of the E-Learning portal. The previous day that is essential to carry a lot of books to go to school college or university but now-a-days that idea is changed. Maximum off institutes teach students from slide, PDF or e-book so that's why they need not Carry books physically. In our country still maximum education or skill development certificate is institute dependent. This is costly and also difficult but if we use the e-learning portal, that is cost-effective and also much more is easier. The best thing of e-learning portal is many of our students are lives in the rural site. They don't get the best teacher and other materials. But by the use of the e-Learning portal they can get world any teacher or books any other material just on their hand.

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# **CHAPTER 1**

## **Introduction**

## **1.1 Purpose**

The main purpose of developed this website to help the student who lived at a rural site in Bangladesh. They can't get the right education instruments sort a good teacher, books, experiment lab etc. This project will help them to get proper education resource. And also all of us, we know the world now in a serious crisis for COVID-19. We can't go out for any purpose. In that case the institute depended on education completely stop. So if students use to in this type of e-learning based education system, they can continue their education. And also it is cost-effective, which is the main cause that many of our students stop there education or learning.

## **1.2 Scope**

The system can be used by any student from any where become a good student for free of cost. It also helps to share teacher skills for the students.

## **1.3 Tools and Technology Used**

This project will be a website based project developed in HTML5, CSS, JavaScript having PostgreSQL and Django as backend.

HTML: All page layout has been designed in HTML.

CSS: CSS has been used for all the designing part.

JavaScript: All the validation task and animations has been developed by JavaScript.

Python: All the business logic has been implemented in Python.

PostgreSQL: PostgreSQL database has been used as database for the project.

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Django: Project has been developed over the Django Framework.

## 1.4 Overview

The project maintains by two type of user. They are-

- Students
- Teachers

Main opportunities available in this projects are-

- Student will get education guideline
- Free of cost
- Easy to use
- Premium system education

In this project students get chance to test the premium system education. They can complete any course from anywhere with free of cost. They also can discuss about any problem. Teachers can also share their educational skills with the students. Both student and teacher share their skills in blog section.

## **CHAPTER 2**

### **Requirement Analysis**

## **2.1 Introduction**

E-Learning is changing the usual experience. It has become the new standard way of learning and is highly beneficial to students due to its flexibility, low cost, and user experience. The main goal of the project is to produce a premium quality education for all of the students whatever adult or young. To achieve this goal we have to through with some specific course of action. First of all we need to define all requirements to develop the premium education system in replace of the conventional system.

## **2.2 Stakeholder Identification**

The e-learning system is for the betterment of the conventional education providing system. There are two types of people involved in the system.

Students: They are main beneficial of the system.

Teachers: Actually they are main operator of the system.

## **2.3 Stakeholder Interview**

I have met and discussed with the related stakeholders before developing the system. Have collected date and have decided before design the system. Actually the stakeholders motives are the vital issue for a candidate system. Even after designing the system I have met with a high official of the Government's education sector to take his suggestion about the system.

## **2.4 Use Cases**

A use case diagram describes the functional requirements for the candidate system. According to the my system the related use case diagram describes the overall process of the system. This is the formal definition of the use case diagram. A person can easily understand all of the program flow by seeing the use cases diagram. All of us know that a use case diagram is so much important for a project. Because if you want to start making a project you just need to follow some instructions and some most important step. use case diagram is one of must need a step that we can't skip. So to make a project by following standard rules and regulations you must draw a use case diagram. I have also drawn a use case diagram for my project and I attach this use case diagram in this report. this diagram have the main basic two-part. The first one is the student and the second one is the teacher. I will describe the part in the next session.

### **2.4.1 Use Case Diagram of Students**

Figure 2.1 shows the use case of students. so now I will tell you what can do a student on this site and how do they do it. an actor can do lots of things. like a can sign up, log in, blog, enroll course, view course, sign out, etc. When a students visit the website they can visit the all courses. But if they want to complete the course they should follow the enrollment system. If they want to enroll any course, at first they should complete the sign up process. Then they login with valid username and password. After login they can enroll any course and complete it. They can also write blog post to share their knowledge with each other. After all of works done they can log out from website just clicking the sign out button.



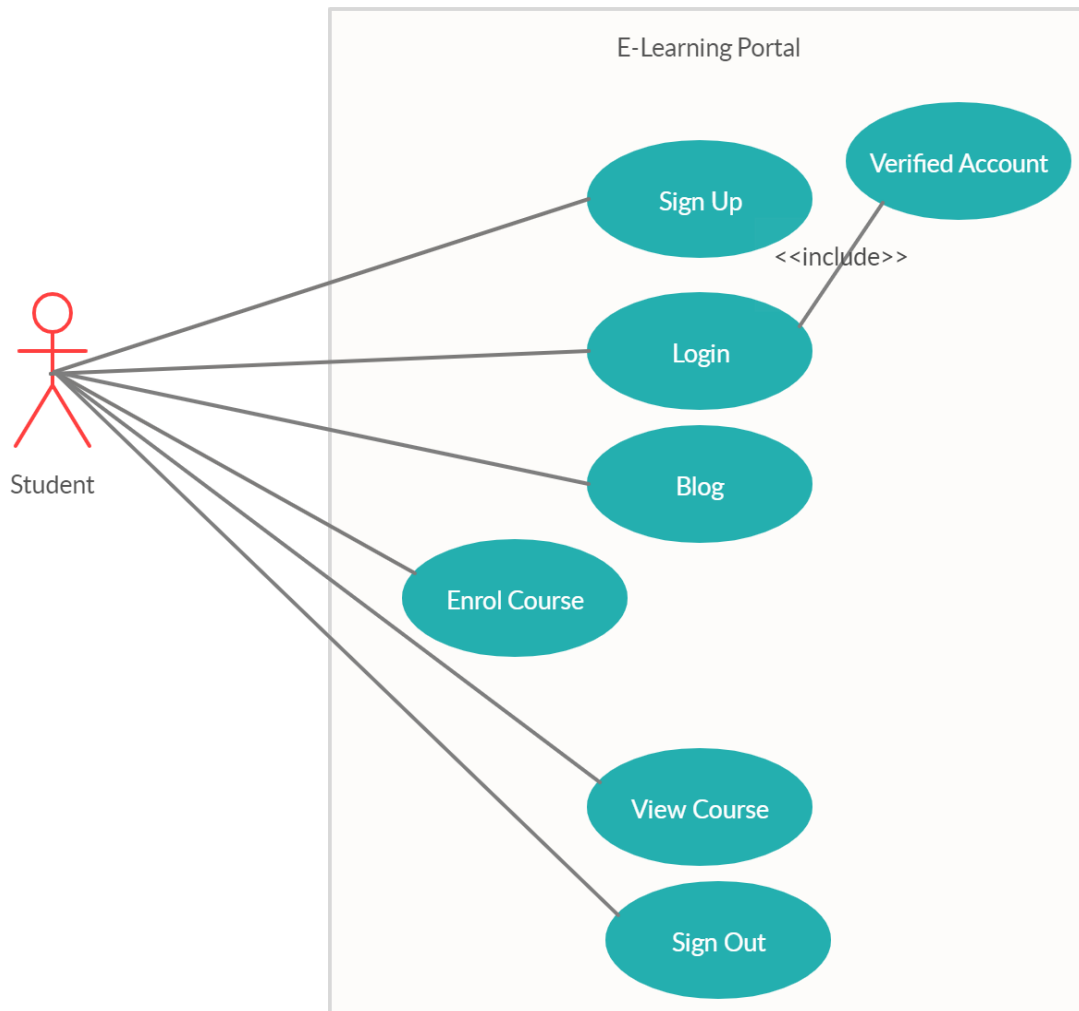


Figure 2.1: Use Case diagram for students

## 2.4.2 Use Case Diagram of Teachers

Figure 2.2 shows the use case diagram of Teachers. so now I will tell you what can do a teachers on this site and how do they do it. an actor can do lots of things. like a can sign

up, log in, blog, add course, view course, sign out, etc. Actually teachers are the main operator in this website. They can add course, delete course, add blog post, delete blog post in the website. If they want to all of work done they must be log in first in the website. Before login they should have a account in this website and for create a account they should the complete the sign up process. When they sign up the admin will verify his account. When his account will be verified then he can do all these things Like can sign up, log in, blog, add course, view course, sign out, etc.

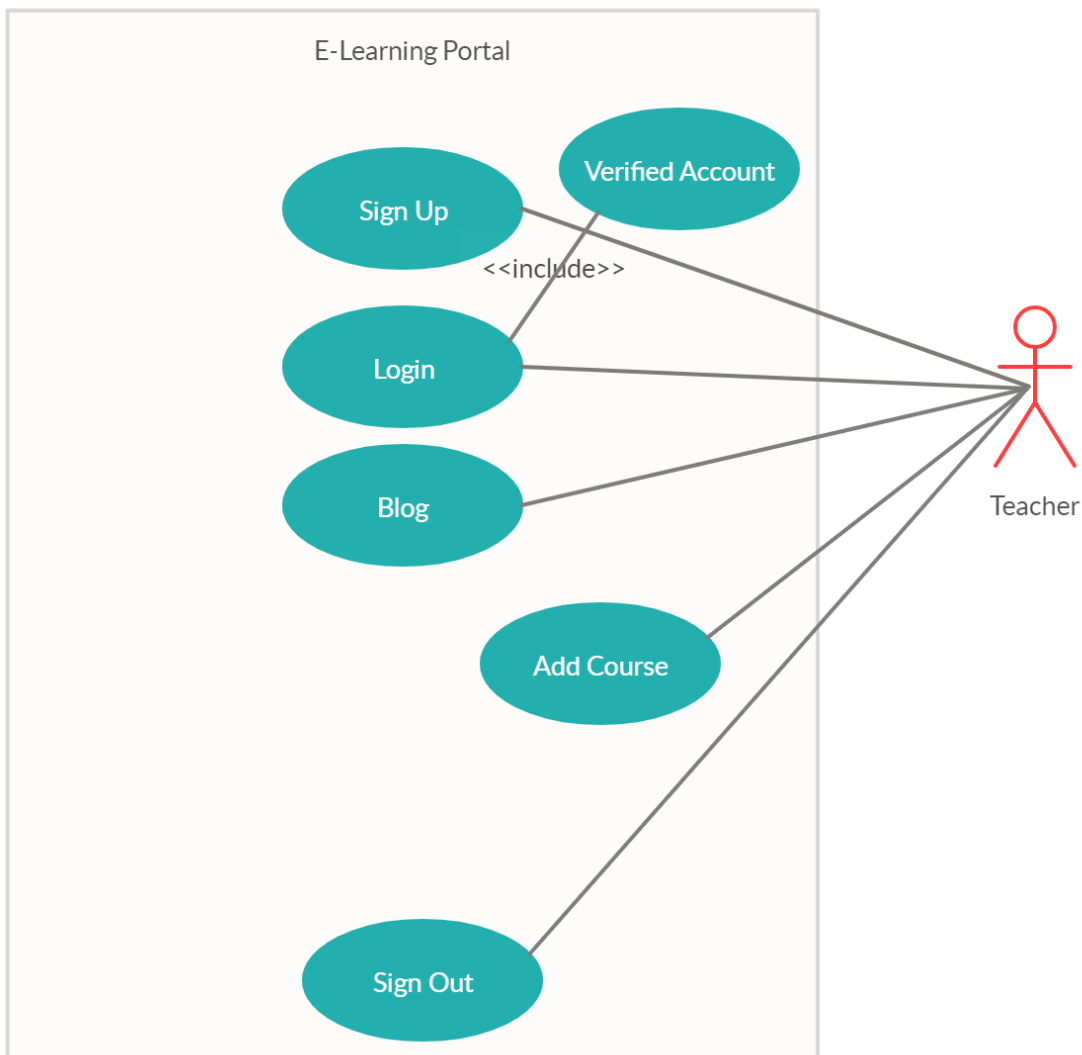


Figure 2.2: Use Case diagram for Teacher

## 2.5 Entity-Relationship Diagram

An Entity-Relationship Diagram (ERD) is a visual presentation of entities and relationships. That type of diagrams is often uses in the semi-structured or unstructured data in databases and information systems. At first glance ERD is similar to flow chart This is the formal definition of the Entity-Relationship Diagram (ERD). A person can easily understand all of the program flow by seeing the Entity-Relationship Diagram (ERD). All of us know that a use case diagram is so much important for a project. Because if you want to start making a project you just need to follow some instructions and some most important step. Entity-Relationship Diagram (ERD) is one of must need a step that we can't skip. So to make a project by following standard rules and regulations you must draw a use Entity-Relationship Diagram (ERD). I have also drawn Entity-Relationship Diagram (ERD) for my project and I attach this Entity-Relationship Diagram (ERD) in this report sowing figure: 2.3 Entity-Relationship Diagram.

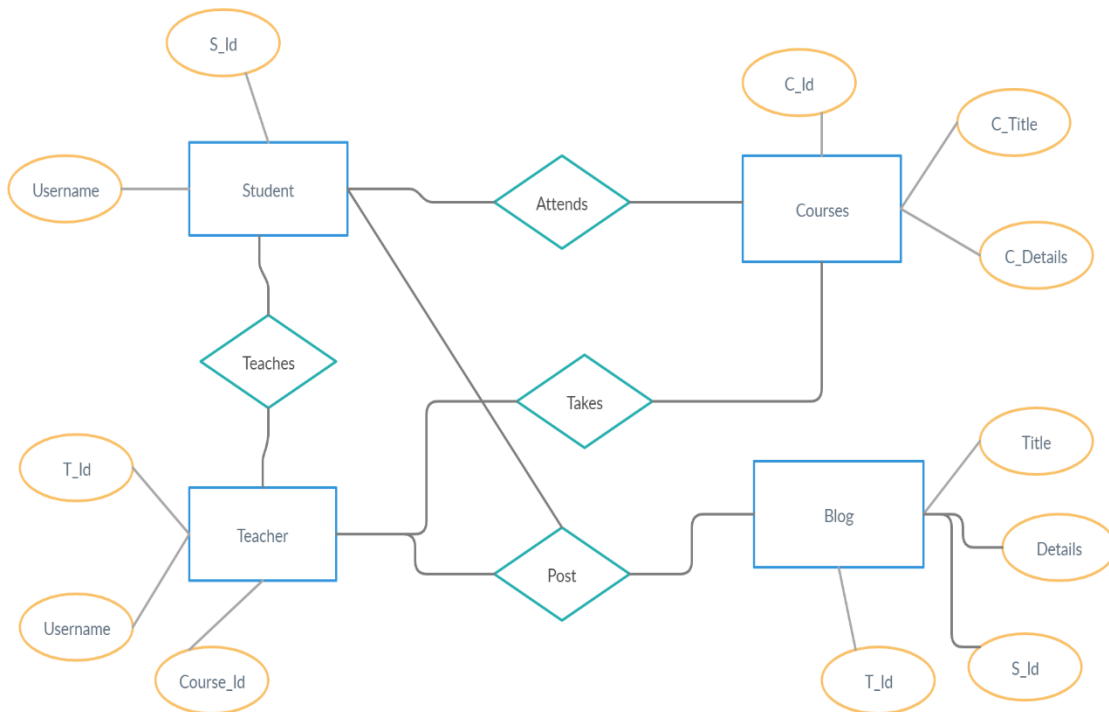


Figure: 2.3 Entity-Relationship Diagram

**CHAPTER 3**  
**Requirement Specification**

### **3.1 Introduction**

Here is a basic definition of SRS. Software Requirement Specification (SRS) is the requirements specification for the software system that's the overall description of the system being developed. It also a document that is describe behavior of it's software, Functional, Non-Functional requirements in Software Requirement Specification (SRS) there have some part like, user of SRS, developer team, client., and the technical team.

### **3.2 System Interface**

The website and mobile app are connected with PostgreSQL based database server. All students and teachers can connect this website via the internet. Communication is the most important part of the project. Because this is the online platform where no one Is physically attend here, all of the users are virtually present on this site or app. That is the main intension of making this project. That we can virtually continue our study or learning by seating in our wone comfort zone.

### **3.3 User Interface**

This is a web based application. The website has been design very simply and user friendly. because nowadays user interface is one of the most important parts of a software app or website. every day we are using so many things online. so if the UI design is not easy or attractive then the user will lose their interest in stray this website. so that's why day by day people are taking extra care of UI design and also as well as we try to make the system as far as possible best. There have less losts of difficulty. There have just some menu. When a user click on the menu they will get all similar things on that menu. So that it will not be complicate to the user. We try to make this UI clean or simple. Any user can login the

website after completed very easy sign up process After login they can easily complete any course from the effective website.

### **3.4 Hardware Interfaces**

There won't need any special types of hardware interface in the system. They can easily operate from desktop, tablet and any kind of mobile device via the internet. it's just like plug and play. people can use it like some other online base portal. People of any age or qualification can easily adopt this system. We already make a blog part. If anyone having a problem with anything they can easily share there facing problems on that blog site. So the admin or anyone who knows about the solution to his problem they can help that person who is facing this problem to solve it out and we also take it on our mind when we creating this system that it have to run any kind of device. Whatever it can be low cost or high cost hardware. Because people of our country all are not same. They are different types of system so they can use it very easily. They don't need to worry about the hardware system what are they using.

### **3.5 Software Interfaces**

HTML: Page layout has been designed in HTML

CSS: CSS has been used for all the designing part

JavaScript: All the validation task and animations has been developed by JavaScript

Python: All the business logic has been implemented in Python

PostgreSQL: PostgreSQL database has been used as database for the project

Django: Project has been developed over the Django Framework

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### **3.6 User Characteristics**

Any kind of user who knows read and write. Also knows operate any mobile or computer and little knowledge about surfing any browser. people can use it like some other online base portal. People of any age or qualification can easily adopt this system. We already make a blog part. If anyone having a problem with anything they can easily share there facing problems on that blog site. So the admin or anyone who knows about the solution to his problem they can help that person who is facing this problem to solve it out.

**CHAPTER 4**  
**Methodology of the Proposed System**



## 4.1 Introduction

The primary objective of any project is to identify the problems in the existing system. Software Development Life Cycle (SDLC) is a process who deliver a high quality product which is as per the customers requirement.

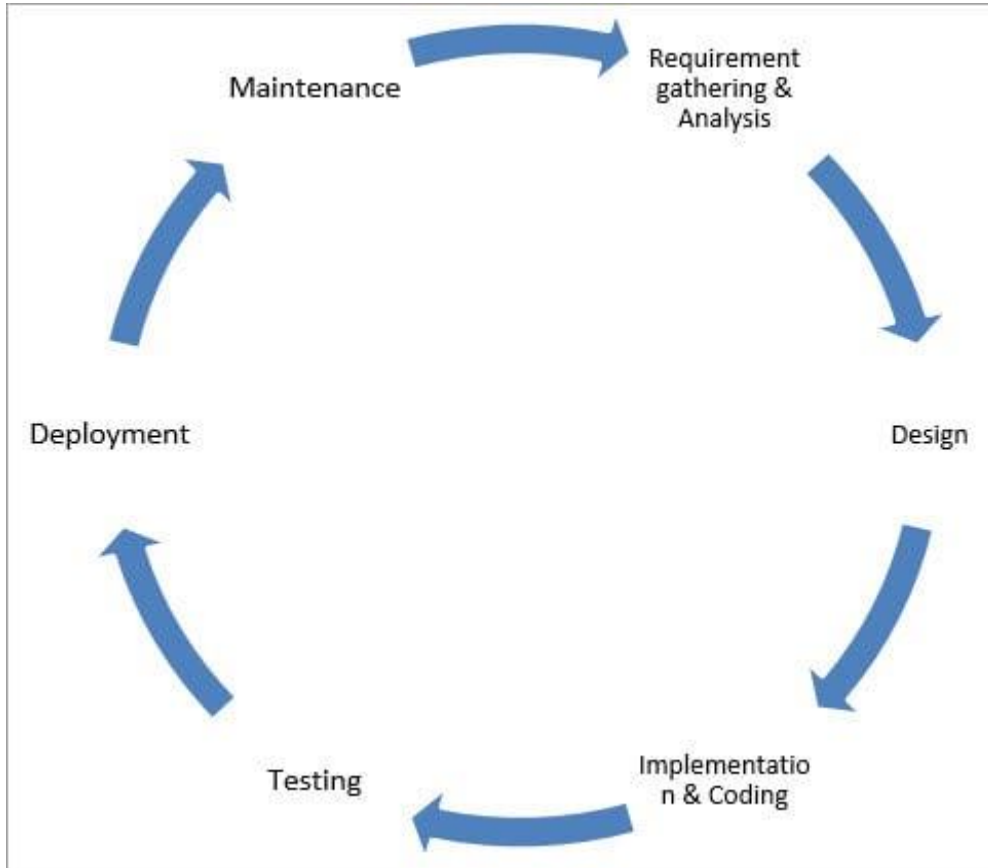


Figure 4.1: Software Development Life Cycle

### 4.1 Requirement Gathering and Analysis

All the relevant information is collected from the customer to develop this project as per their expectation. Visited many more school, college and university to collect data and studied their expectation very carefully.

## **4.2 Design**

Design phase describes desired features and operations in detail, including database design, website design, screen layouts and other documentation.

## **4.3 Implementation and Coding**

Implementation the software design into the code and form design is the most significant part of the software. All the components of the software are implemented in this phase.

## **4.4 Testing**

After completed all coding the modules released for testing. In this phase the developed software tested more and more for found any types of error or bugs. If any bugs or error are found then to get fixed.

## **4.5 Deployment**

After done all of the testing process, the software ready for deployment. After deployment complete to any live server, then visualized the software correctly.

**CHAPTER 5**  
**Development the Proposed System**

## 5.1 Introduction

In this section we create database, design the webpages and coding.

## 5.2 Database Table

There are basically four tables used in the software.

### 5.2.1 Student Table

In this table contains all of the student information who can sign in the website. Every student should give the require information for login the website. The demo table is showing in figure: Table 5.1 Database table of student. Here you can a clear idea about student table and beside that it's data.

Table 5.1 Database table of student

| <b>Student_Id(PK)</b> | <b>UserName</b> | <b>Email</b>         | <b>Password</b> |
|-----------------------|-----------------|----------------------|-----------------|
| 1001                  | Akib99          | akibsamir@gamil.com  | *****           |
| 1002                  | Omor15          | Omorfaruk@gmail.com  | *****           |
| 1003                  | Rakib20         | rakibullah@gmail.com | *****           |
| 1004                  | Maruf35         | maruf@gmail.com      | *****           |
| 1005                  | Abir00          | abirhassan@gmail.com | *****           |

## 5.2.2 Teacher Table

Teacher table contains all of the teachers information. When a sign up in the website all of require information collect by teacher table database. the demo table is showing in figure Tabel5.2 Database table of Teacher. Where you can a better idea about Teacher Table and also as well as it's data. There are giving some sample data or the data will be how much look like.

Table 5.2 Database table for Teacher

| <b>Teacher_Id(PK)</b> | <b>UserName</b> | <b>Email</b>     | <b>Password</b> |
|-----------------------|-----------------|------------------|-----------------|
| T001                  | Jafor Iqbal     | jafor@gmail.com  | *****           |
| T002                  | Farid Uddin     | farid@gmail.com  | *****           |
| T003                  | Tanvir Siddique | tanvir@gmail.com | *****           |
| T004                  | Jamal Sheque    | jamal@gmail.com  | *****           |
| T005                  | Rifat Hassan    | rifat@gmail.com  | *****           |

## **5.3 Webpage Design**

### **5.3.1 Home page design**

The home page is known as the start page. The formal definition of a home page is “a home page is a page or webpage that serves as the beginning point of a website” the location of the homepage in the root directory of a website. It consists of various kinds of menu and picture. The picture is also functional. If you click on a picture that will take your next page. It should be attractive to look at. Because when a visitor came to the place they should not be bored or difficult to find their needed menu or file. We try to make the header and footer menu so clean to better understand this site. There is a demo picture on figure 5.1 webpage design for the home page.

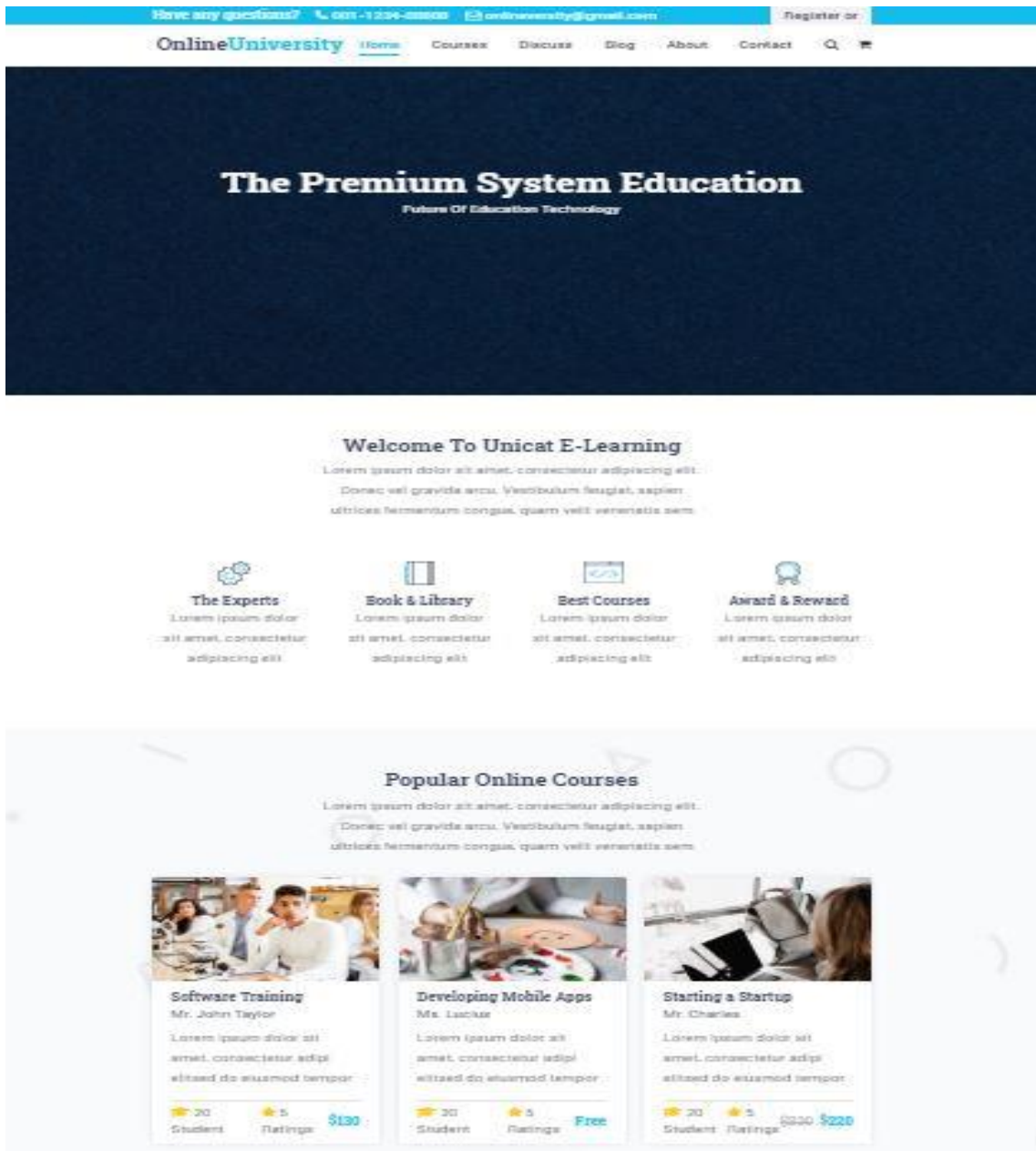


Figure 5.1: Webpage design for home

### 5.3.2 Sign up page design

Sign up page is also important page in our website. Because without sign up a user can't have all the facility. This is mandatory to sign up for using all the function or menu. So here is a demo picture of sign up page which is showing in Figure 5.2 webpage design for sign up. You can better understand from this picture. If you want to sign up you should give user name, email. And a password. Then the admin will verified the account.

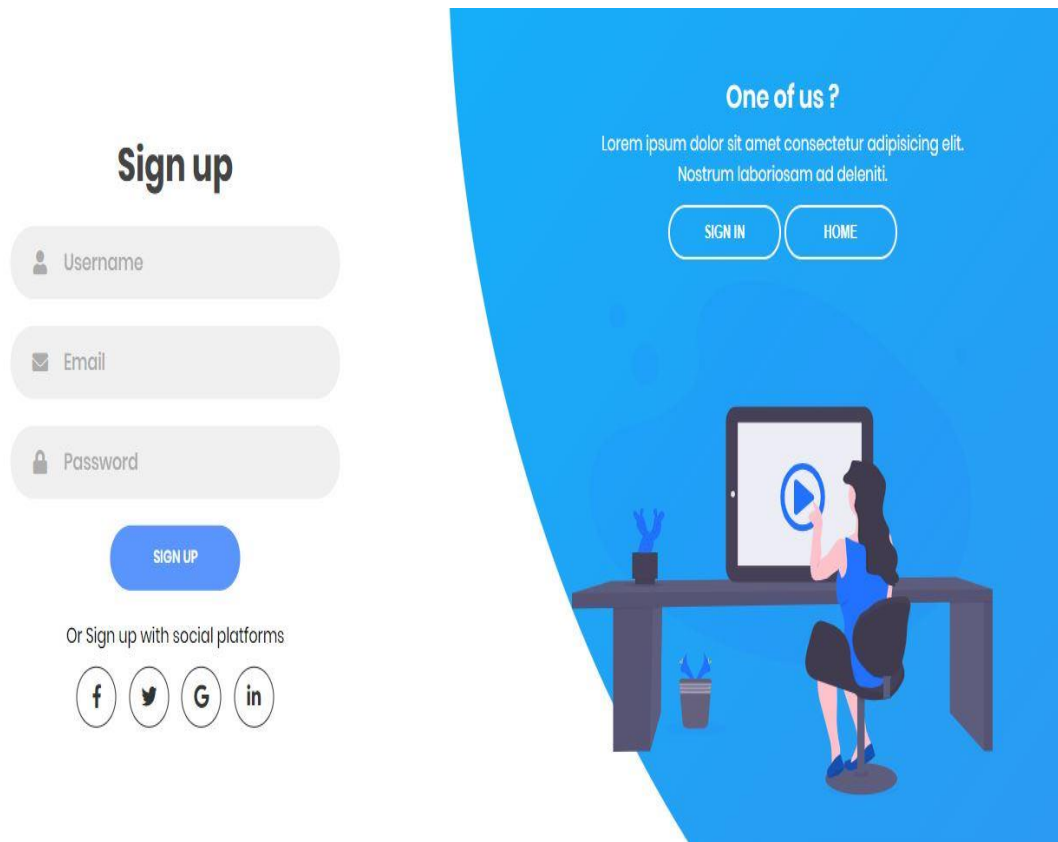


Figure 5.2: Webpage design for Sign Up



### 5.3.3 Sign in page design

Sign in page is also important page in our website. Because without sign in a user can't have all the facility. This is mandatory to sign up for using all the function or menu. So here is a demo picture of sign up page which is showing in Figure 5.3 webpage design for sign in. You can better understand from this picture. If you want to sign up you should give user name And password. Then the admin will verified the account. Then you can sign in.

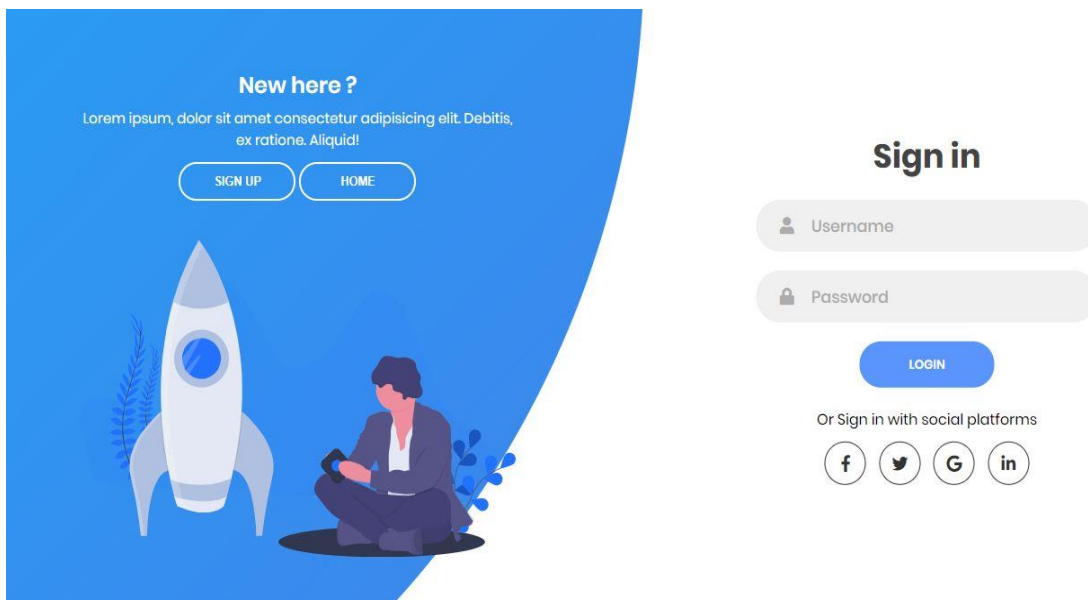


Figure 5.3: Webpage design for sign in

### 5.3.4 Courses page design

Courses page is also important page in our website. Because the main purpose to make this project learning. In learning there have different courses. The all courses will be here. User can find all the courses here and can use it. There have some different between teacher user and student user. The main different is student can just read and download this on the other hand teacher user can upload, read, edit, etc. there have so many categories. All courses are divided into several categories. A user can chose his needed courses for the different

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categories. That will be more helpful to find courses. That the main intention to make courses page and it's categories. For better understand figure showing in figure 5.4: webpage design for courses



Figure 5.4: Webpage design for courses

### 5.3.5 Blog post design

Any kind of user who knows read and write. Also knows operate any mobile or computer and little knowledge about surfing any browser. people can use it like some other online base portal. People of any age or qualification can easily adopt this system. We already make a blog part. If anyone having a problem with anything they can easily share there facing problems on that blog site. So the admin or anyone who knows about the solution to his problem they can help that person who is facing this problem to solve it out. For better understand there is a picture showing in figure 5.5: webpage design for blog.

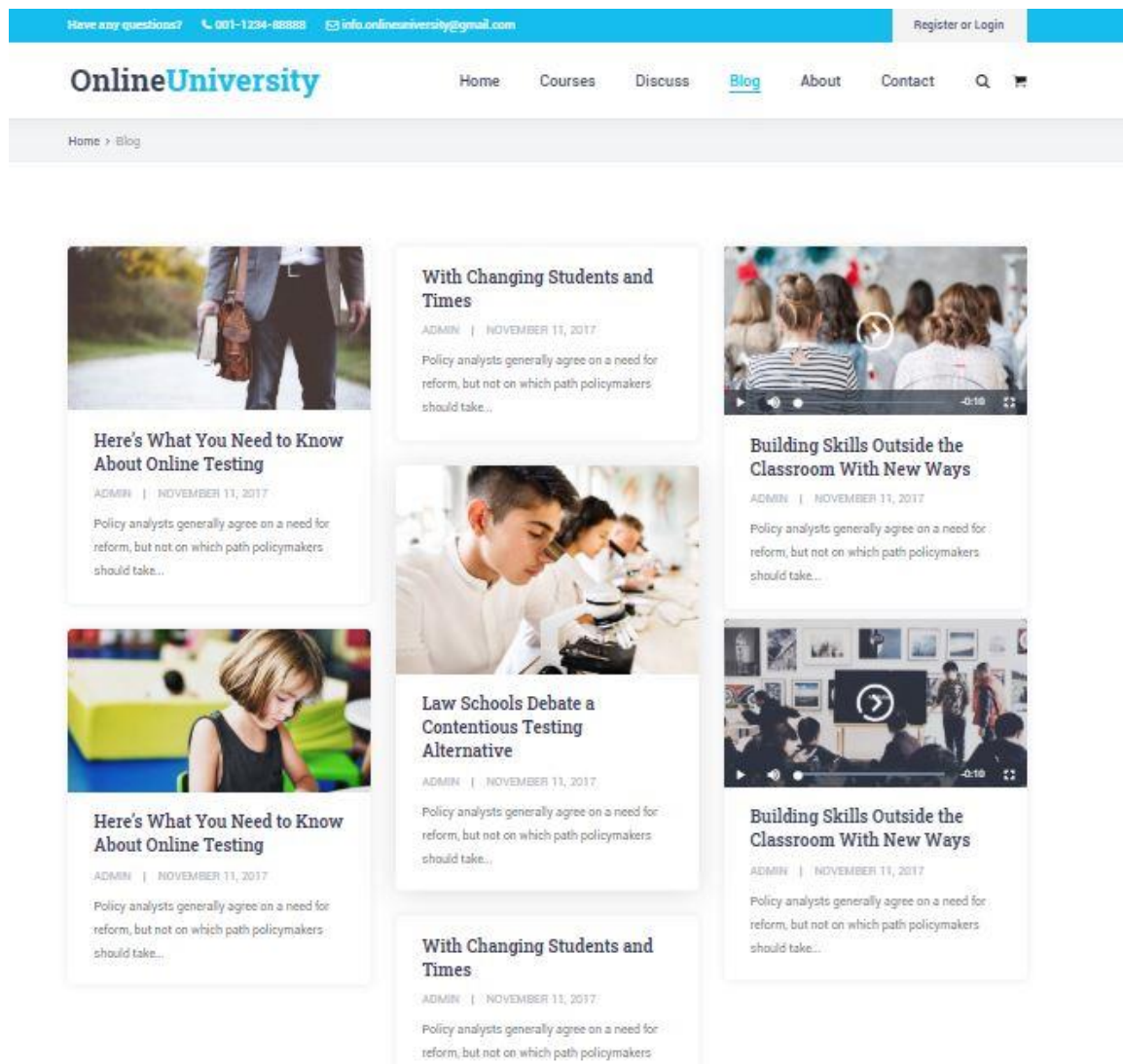


Figure 5.5: Webpage design for Blog

**CHAPTER 6:  
CONCLUSION**

## 6.1 CONCLUSION

In this particular part, I would like to start giving thanks from my bottom of my heart to our honorable advisor Dr. Akther Hossain. Because of his help to complete this project and also as well as our friends and some teachers and education officer whose help me to give real data and so much special advice. actually, nowadays it's very important to stay at home. Because of this COVID-19. So that's why we can't go out for education purposes or any other learning. So if we still now depend on our analog or live base educational method. That will be impacted very badly in our educational life. So that's why we need an online base or virtual learning portal. I admit that already we have so many online platforms. But I think that is not enough. We need a more quality full online platform. So from that idea, we try to make this project. I believe that it will help our education sector so much. We also take apart to develop the system because if in future this project got some problem we can update this project on people's need.

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## Final-Project-Report\_Omor Faruk

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