E-LEARNING WEB BASED APPLICATION

BY

MD. MASUD ALAM

ID: 152-15-5916

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

Supervised By

Mr. Aniruddha Rakshit

Senior Lecture

Department of CSE

Daffodil International University

DAFFODIL INTERNATIONAL UNIVERSITY

DHAKA, BANGLADESH

DECEMBER, 2019

DECLARATION

I hereby declare that, this project has been done by me under the supervision of Mr. Aniruddha Rakshit, **Senior Lecturer of CSE Department,** Daffodil International University. I also declare that neither this project nor any part of this project has been submitted elsewhere for award of any degree or diploma.

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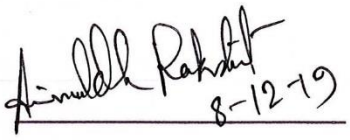
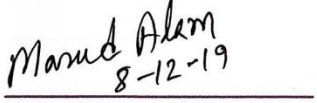


Mr. Aniruddha Rakshit
Senior Lecturer
Department of CSE
Daffodil International University

Submitted by:



Md. Masud Alam
ID: 152 – 15 – 5916
Department of CSE
Daffodil International University

APPROVAL

This Project titled **"E-LEARNING WEB BASED APPLICATION"**, submitted by Md. Masud Alam, ID No: 152-15-5916 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 06-12-2019.

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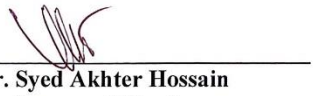

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Faculty of Science & Information Technology
Daffodil International University

Md. Sadekur Rahman — **Internal Examiner**
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Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Abdus Sattar — **Internal Examiner**
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Department of Computer Science and Engineering
Faculty of Science & Information Technology
Daffodil International University

Dr. Md. Saddam Hossain — **External Examiner**
Assistant Professor
Department of Computer Science and Engineering
United International University

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ABSTRACT

When I needed particular course, a lot of problems had to be faced for collecting them. Then I decided that this problem needs to have a solution. For that I took the initiative to create a website where teachers can upload any course, and students can find them out easily. This website is totally free for teachers, but has a condition for students because if teachers upload the course as free then all students can download free otherwise they have to buy course. This website is useful for students as well as the university faculty members. Through our website, students can search their topics, ideas, and courses information. On the other hand, faculty members can easily upload any courses on the website. Students can enroll on their suitable courses as a script to setup online school to offer courses with articles, videos, and quizzes. The bundle includes attractive Website with four designs, full-fledge Blog to publish articles, Complete Forum to help users to communicate among themselves, and learn as a group. The main LMS is built on Laravel 5.7 and coded with best practices and human readable format to easily extend. The system has all the basic requirements such as Login, Register, Social Login, Forgot Password, User Management, and Role Management. Admin can manage every aspect of the system while Teachers can create multiple courses with Lessons and Tests. Users can browse through the courses and can enroll as students by paying for the courses and educate them anywhere and anytime. All these functionalities are built with utter care and have a detailed legible documentation to make the job easy.

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CHAPTER 1
INTRODUCTION

1.1 Introduction

Since Information Technology and Internet is getting more popular day by day to all ages and everywhere around the world even the remote areas of Bangladesh, we can easily think about making an online teaching and learning platform for distributing the proper knowledge around the country simultaneously. The primary objective of this website is to provide an effective and a convenient platform for the teachers to upload their specific courses and the students to have the course materials from home. Besides, e-learning is getting more popular around the world nowadays. If want to share about my work, I have to say that It is kind of an web based application which is a program that keeps going on any device with a web server, whereas its users correspond with it over an internet browser or similar users expert. Moreover, task zone applications go entirely on any device that they are being continuing. Website then once more works among three users such as admin, teacher, and student. E-Learning is kind of a web based Applications. With this application, students can effortlessly enroll to any course over here. Students can find their suitable course in this website. It would be a wonderful teaching and learning platform for the students and teachers especially for university level.

1.2 Motivation

When I take course from our university, I have to face a lot of problems. I cannot find full course. If I can get full course, then it will be better for us. That is why I am thinking of a project E-Learning. Where teachers can upload courses and students can get the uploaded course. Students can enroll to any course.

1.3 Objectives

- This website has been planned to carry out the total Info to manage all data.
- The objective and scope of my project E-Learning is to `record the details various activities of user.
- This app is user friendly for all students and teachers.
- It provides details about any course for the students.

1.4 Expected Outcome

- E-Learning is a web based application, and any user has easy entry over here.
- Here, access rights will be given based on the users so that we can ensure web security properly.
- Everything will be managed with a secure server to through a device and Network connection to enter the website.
- The primary objective of the web is to help the students so that they can easily enroll to any course.

The project is E-Learning that provides different opportunities of the users. It is a very convenient mode of collecting info about any course of the university. This application will save a lot of time of the users and meet up their ever asking demands from the teachers. Thus, this project is a combination of various effective, contemporary, and practical applications that will be very helpful for the users in line with the global emerging online teaching and learning platform.

1.5 Report Layout

Overall, the report has been segmented into three sections:

- Primary Issues
- Tests
- Backend Issues

The Primary Issues are the title page, approval, abstract, acknowledgements, declaration, table of contents, list of tables, and figures. Now I am giving the kind of details of how I have made the report as follow:

Chapter 2: It is all about the background, related work, scope of problems, and challenges.

Chapter 3: Here, I have tried to cover, use case modeling and description, data-flow diagram, requirement collection analysis, design requirements, and features.

Chapter 4: It also important part of the report, here I have shared design specification like contents for admin panel and front-end design.

Chapter 5: It is very crucial part of the report because I have discussed about implementation and testing.

Chapter 6: Finally, I have shared the conclusion and future scopes.

CHAPTER 2
BACKGROUND

2.1 Introduction

Online teaching and learning is an emerging platform all over the world, and it is getting very popular among the students, teachers, and various organizations. We know very well, Information Technology has already solved our many obstacles, and has made our life much more convenient than before. Most importantly, the students suffer a lot for getting the proper guidelines for their study, and if they get the online platform with a lot of contemporary topics and course, and I think they will be highly benefited. Besides, they could save some time to for practical activities beside study. My web application has been made very simple so that teachers can easily upload their valuable materials and students can get them right away. However, students might pay some bucks, but that will very reasonable.

2.2 Related Works

Through internet, there are many websites for online education like Lynda.com, Udemy, Udacity, Iversity, Bloc, and Khan Academy. They are doing great job nowadays around the world.

This website is maintained by 3 levels of users:-

- Admin
- Teacher
- Student

Admin: Admin is one who is permitted to upload the course. The admin can Create, read, update, delete the data that is stored.

Teacher: They can upload the course

Student: They can enroll, buy and download the data.

Students need an email for enrolling to a course. Students will have access to all courses that are provided by the teachers.

- Can search any course.
- Can enroll.

2.3 Reasons

We know very well that the world is advancing very fast and the academic sectors too. We need a proper communication tool for the teachers and students. For this reason, the students and teachers struggle a lot. Internet problem is a big issue in our country. For internet, sometimes website will not open properly and upload data properly. Another problem is responsive website. For this reasons, data will not fixed in proper place and cannot use in mobile, tab etc.

2.4 Challenges

Our country is still a development country because we do not have sufficient resources and support like other development countries. Research and Development and Innovation are not that much supportive over here. Besides, internet connection is still not smooth, and available everywhere and it is also because of mismanagement. I had to work very hard by myself because I did not get that much support from someone who knows very expert. I had to make several demo websites at first and tried to execute in different angles, and got bugs and went for finding out a better solution. Moreover, our teachers and students are not very online friendly yet in terms of getting education. I had to face a lot of queries while I tried to get better opinions among students and teachers. Overall, as I was planning to do a new project, I had to cope up with some unexpected challenges too.

System needs very low resource. It works in all devices. These are:

- Data Security
- Data accuracy
- Admin dashboard control
- Login and registration
- Success of work
- Lowest time essential
- Use flexibly
- Active

CHAPTER 3

REQUIREMENT SPECIFICATION

3.1 Use Case Modeling and Description

Use case Model contains the all info about use case shown in above. Here, without login admin, teacher, student can't go to next process. To login teacher and student have to register. After login teacher can add course, student can buy course and after create course need permission from admin. Student can enroll. Admin, teacher, student can change the profile. This use case model is the easy way to understand the whole process of project. This use case model defines the each and every step.

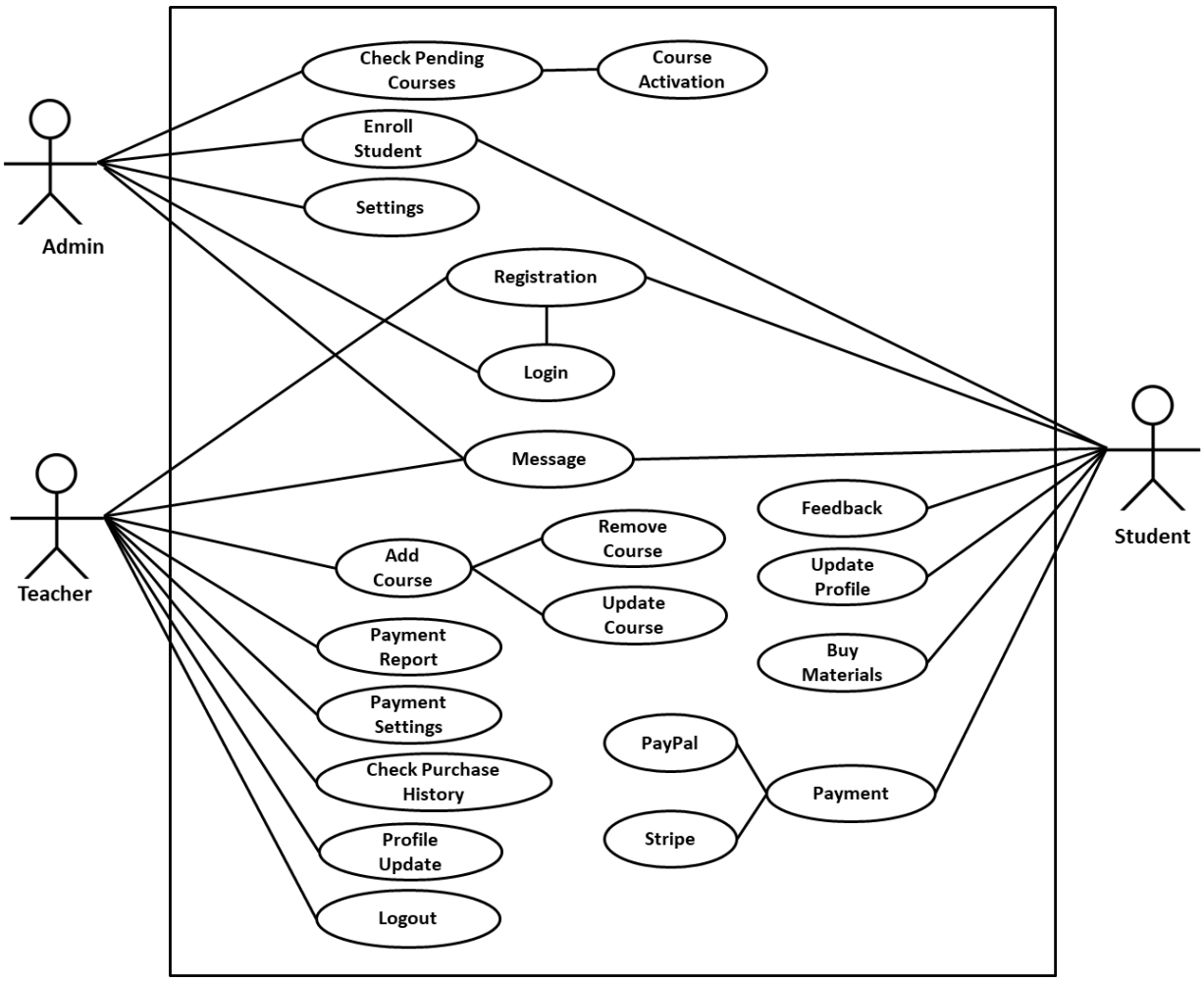

Figure 1: Use case model

3.2 Data-flow Diagram

Data-flow diagram signifies flowing of data among entire structure. By this, anyone can understand which process is connected to the others process and their flow to full system. In this DFD we can easily find the way of errors and way for the solution of that error.

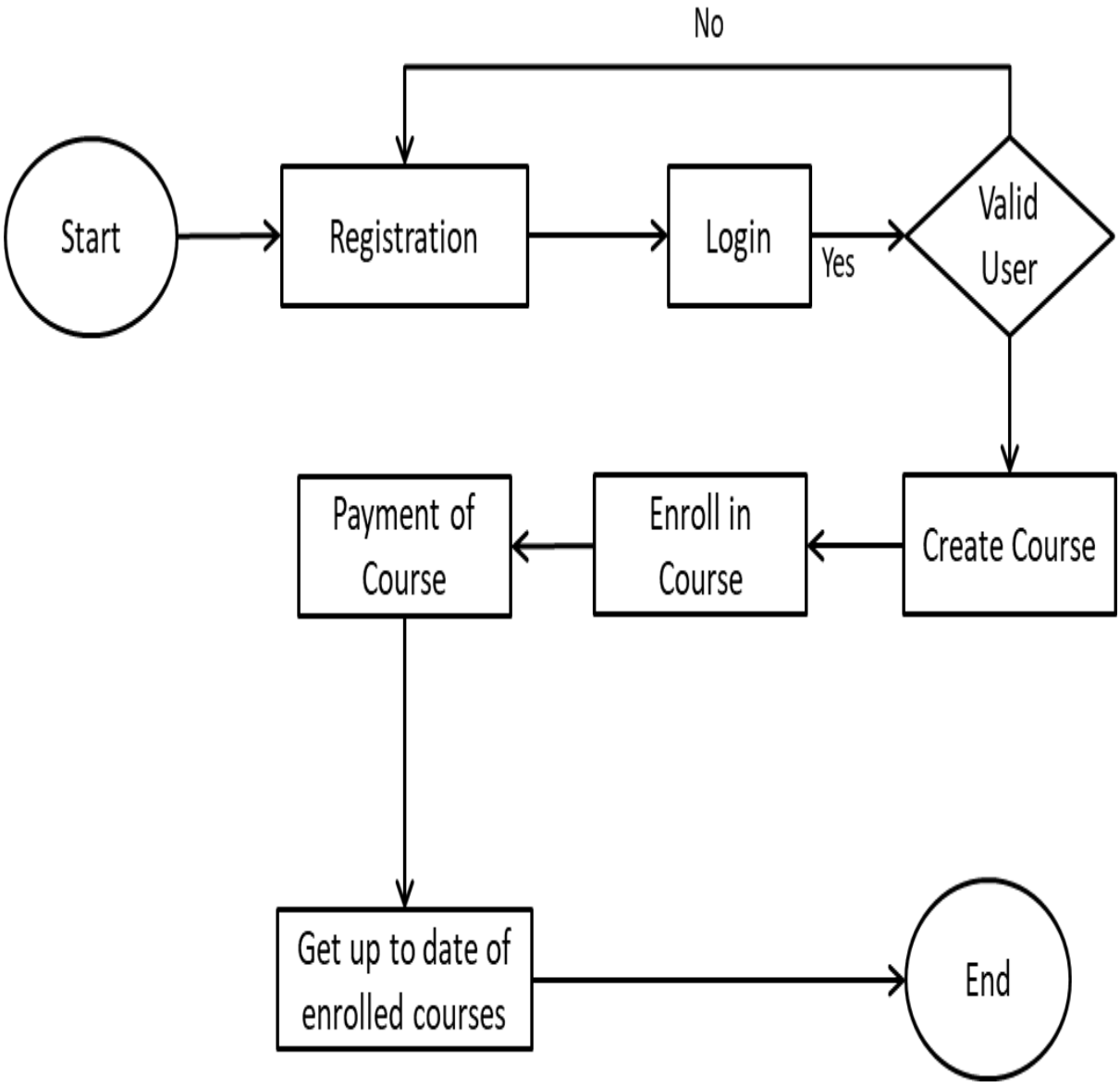

Figure 2: Data Flow Diagram

3.3 Requirement Collection and Analysis

This website can be employed simply. It needs very little properties and can work any devices.

Hardware required:

- Processor: core 2 duo, above.
- Memory: 180 GB, above.
- HDD: 80 GB, above.
- I/O device: Keyboard, Mouse, Monitor.

Software required:

- OS: Windows XP, 7, 8, 10, above.
- Server: Localhost.

Confirm following requirements required:

- Data correctness
- Dashboard control
- Productivity of working
- Use flexibly
- Active

3.4 Design Requirements

- Login and Registration
- Dashboard
- Student option
- Admin Option
- Teachers Option
- Courses.

3.5 Features

This system has many features. The main features are.

- Responsive Website with CMS
- Multiple Layouts
- SEO friendly Blog
- Complete Forum
- Teach Dashboard
- User Dashboard
- Internal Messaging
- Payment
- localization/ Translation Management
- Newsletter Subscription
- Search system.

CHAPTER 4

DESIGN SPECIFICATION

Here, I try to cover the design of our system. I also disclose the execution of all the tools and technology to make this application. Here, I have demonstrated that how I have tested the applications just after making it in demonstration.

4.1 Contents for Admin Panel

Dashboard:

Systems summary are shown in the homepage. Total numbers of courses, Total number of lessons, Total number of Enrolments, and Total number of Students are being shown in the dashboard.

Categories:

Create Category:

From the Admin panel navigation menu, go to the Categories. The admin will be able to see a list of categories that admin has created. On the top of the list there is a button named "+Add Category". On clicking that button admin will see a form for creating categories.

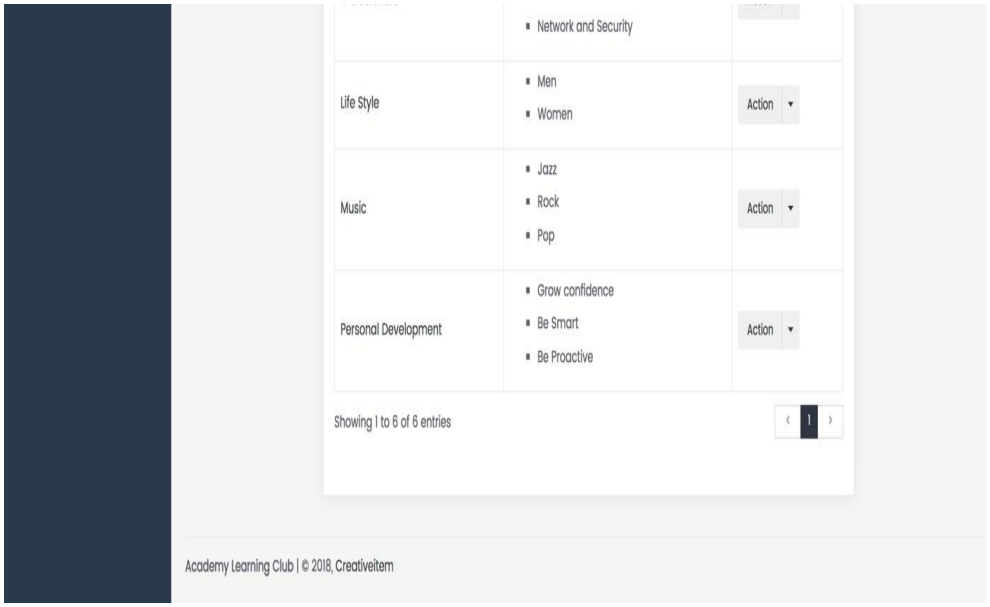

Figure 4.1.1: Category

Courses:

a. Courses b. Manage Section c. Manage Lessons

Create courses:

For creating a course, Admin has to create a Category and a Sub-category first. Admin will be able to see all the courses on Course page. Go to the Courses option from the admin left navigation menu, it will show a list of all created Courses. By selecting desired category and sub category admin can filter the course list. A form will be appeared after clicking on the "+Add course" button on the top. Admin can create new courses by giving all the necessary data.

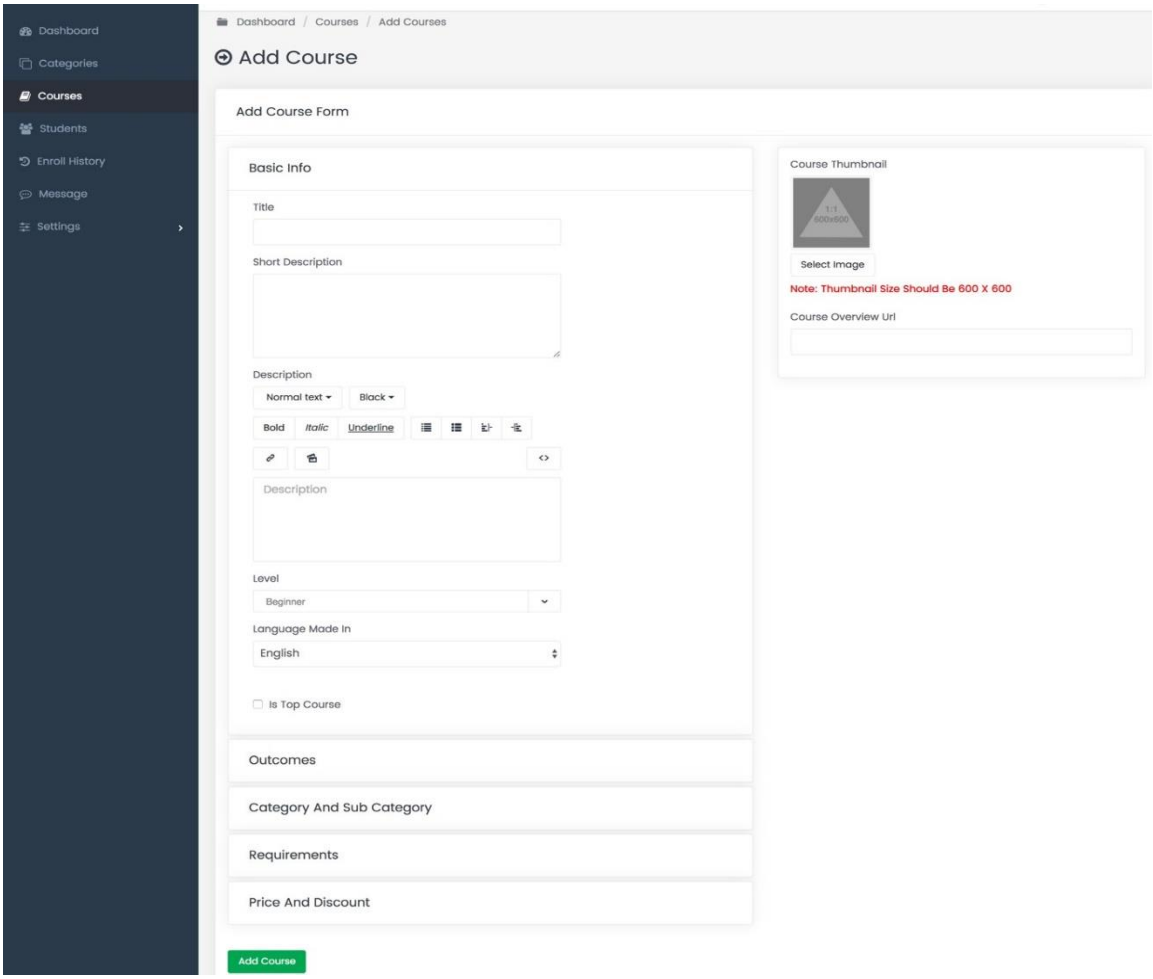

Figure 4.1.2: Courses

Manage Sections:

Every course should have at least one section. Admin can select a course for managing sections of it. Just go to the Course page from admin navigation menu, select a course, click on the Action dropdown menu, and choose Manage Sections. A list of created sections for that specific course will appear. Admin can create new sections by simply clicking on "+Add Section" button. Admin can Edit, Delete and Serialize those sections by choosing the options from Action dropdown menu.

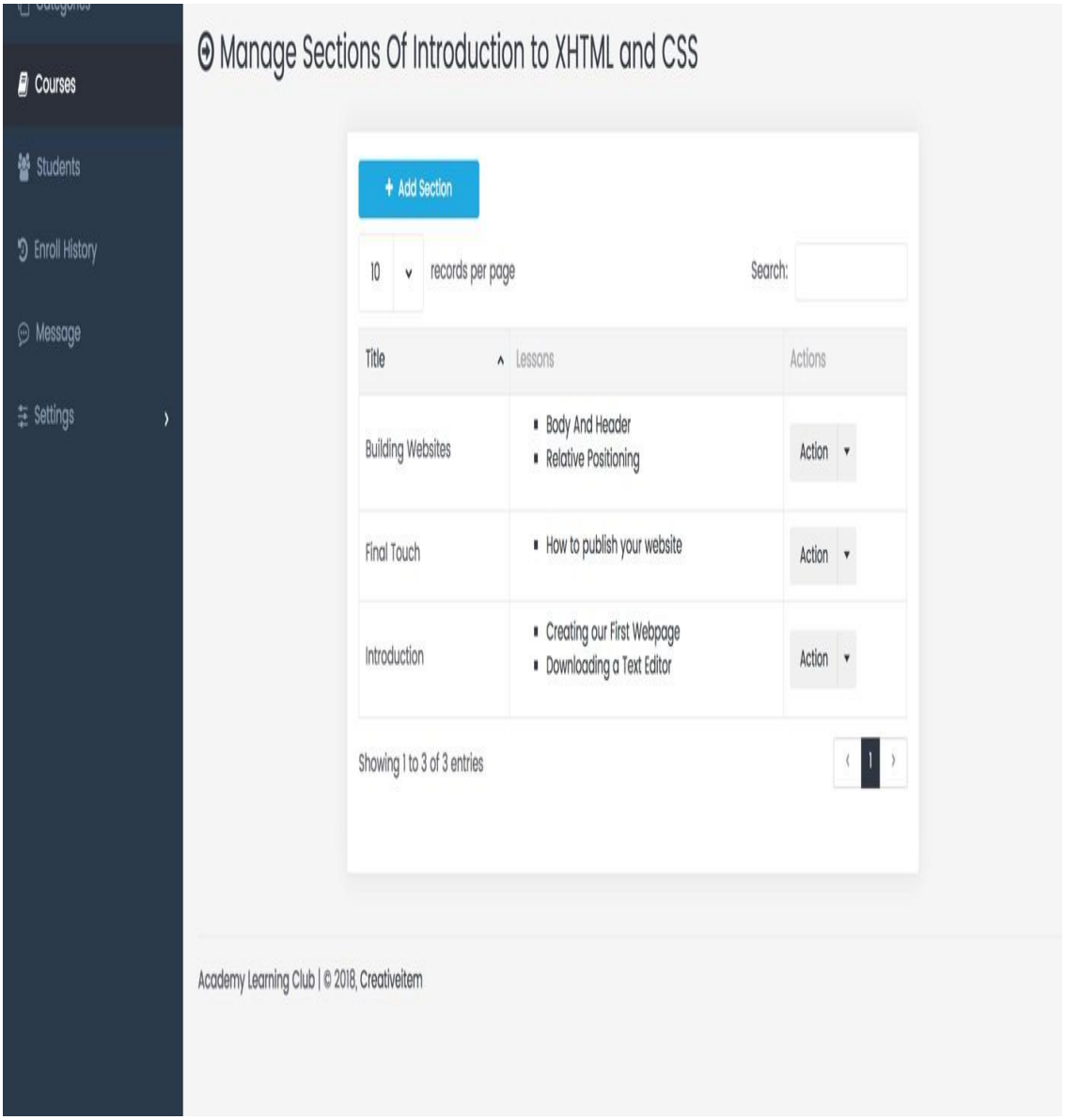

Figure 4.1.3: Manage Section

Manage Lessons:

Admin can select a course for managing lessons of it. Just go to Courses from admin navigation menu, select a course, click on the Action dropdown menu, choose Manage Lesson. A list of created lessons for that specific course will appear. Admin can create new lessons by simply.

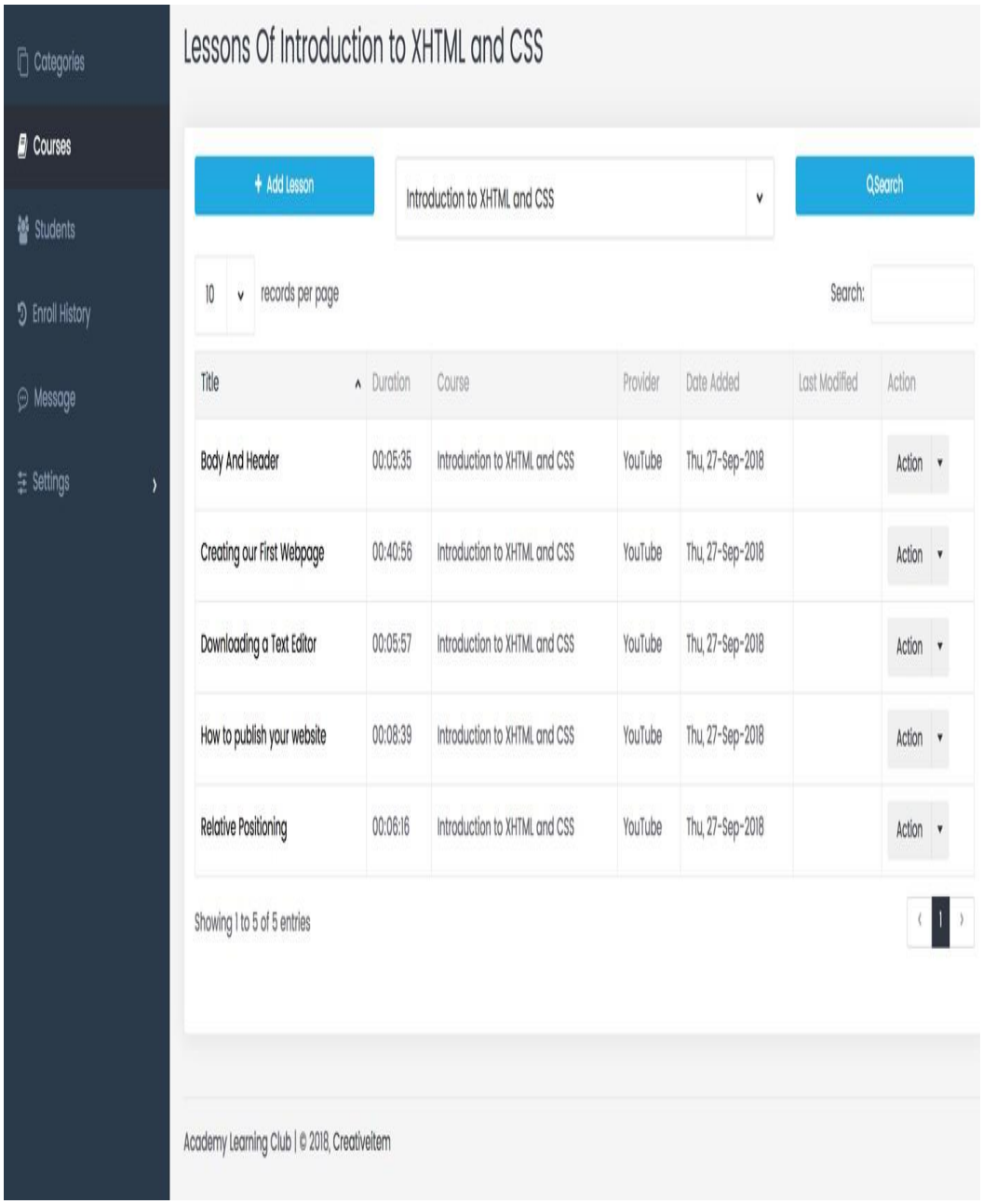

Figure 4.1.4: Manage Lesson

Enroll History:

A list of the entire enrolled student will appear on Enroll history page. Admin can find this from admin navigation menu.

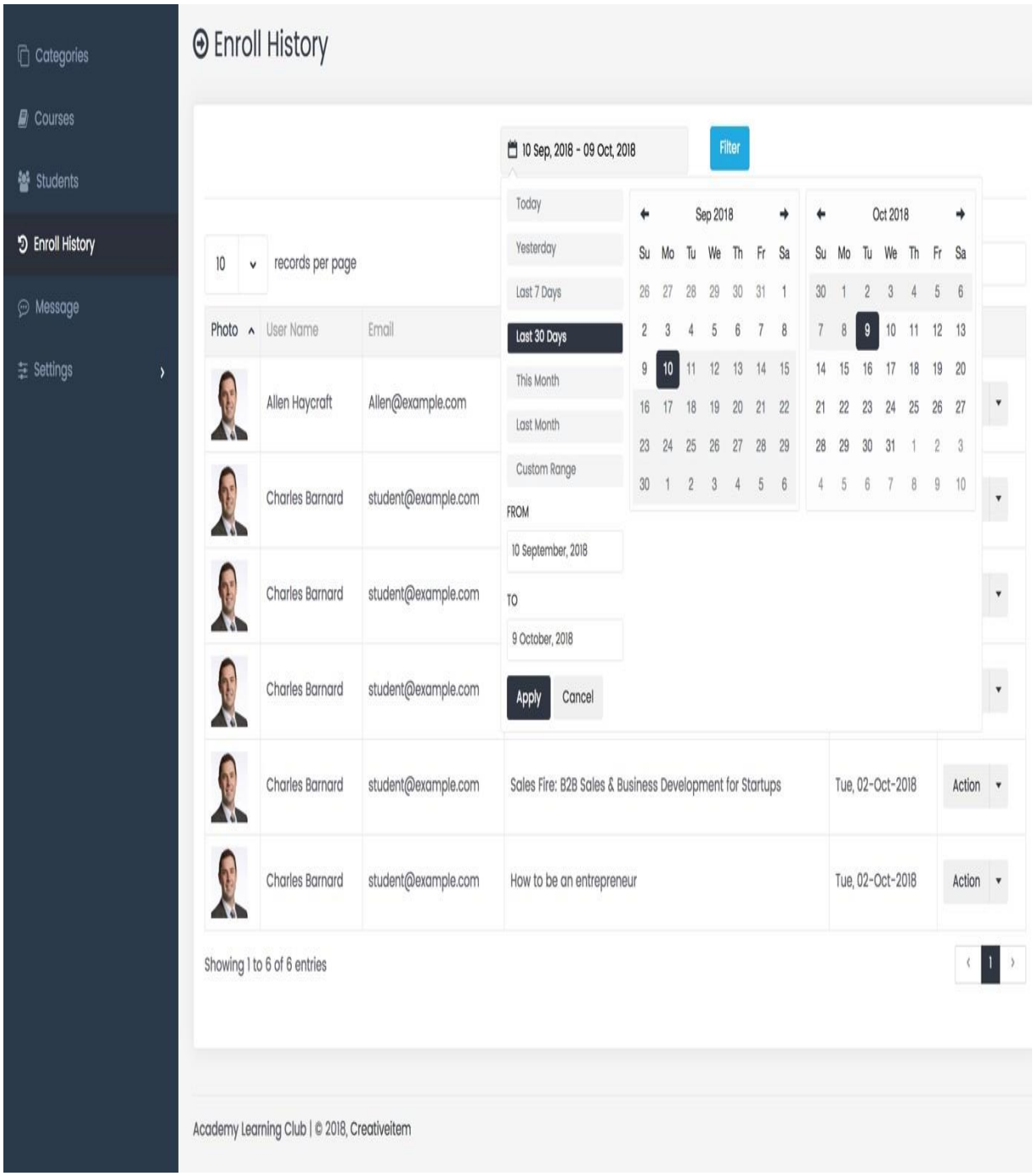

Figure 4.1.5: Enroll History

Payment Settings:

The "Payment Settings" will let the Admin to change the payment settings like Client ids, Secret keys, and public keys of different types of payment gateways. Also it gives a feasibility to change the Test mode.

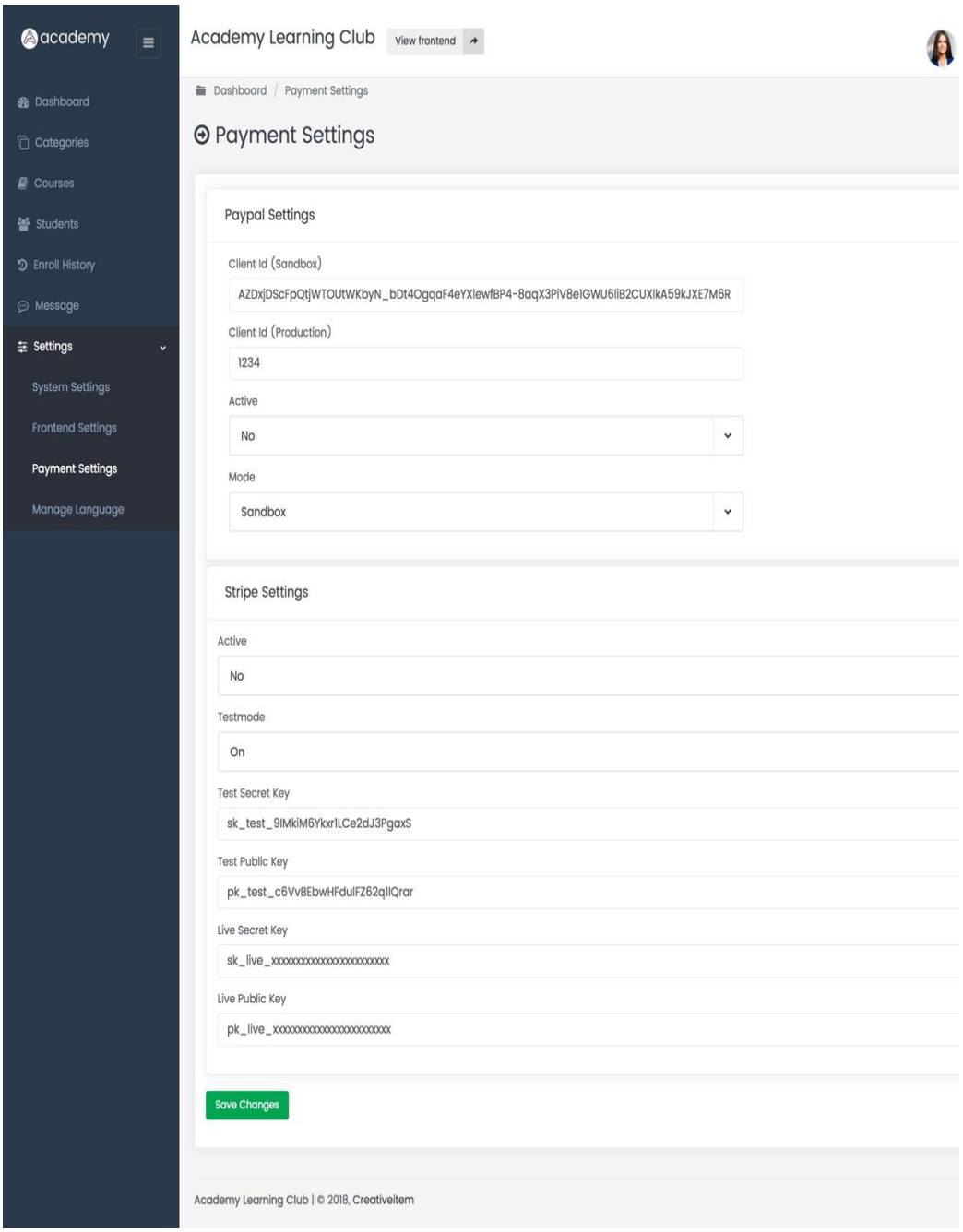

Figure 4.1.6: Payment Settings

Manage Profile:

The profile information can be edited by clicking at “Admin Profile image” from the Header. The information can be edited and saved using this “Update Profile”.

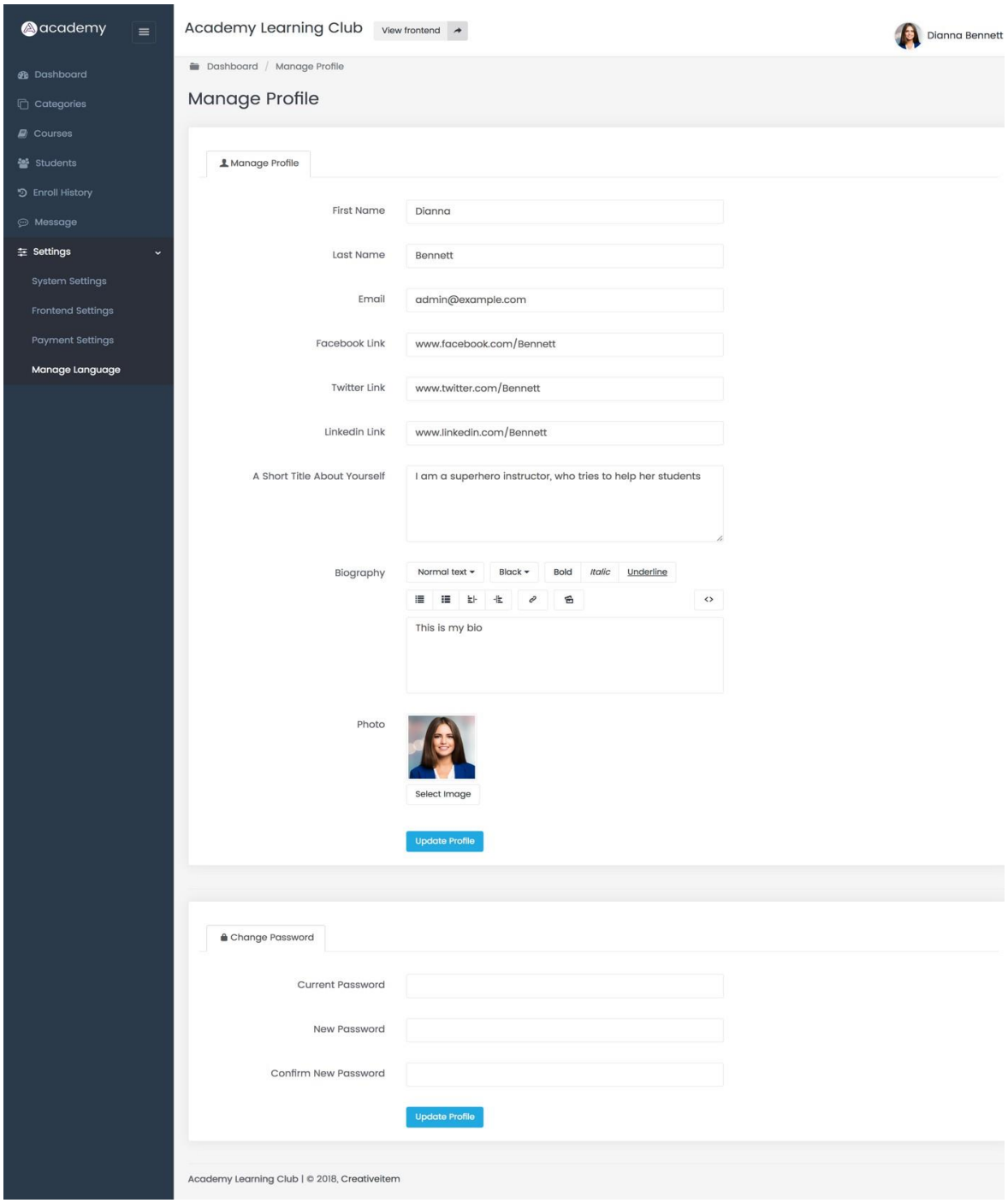

Figure 4.1.7: Manage Profile

4.2 Front-end Design

User interface is denoted by the front-end design of any application that's the relate way between to the user and the server of the application. Front-end design is develop for client sided. Front-end design must be user friendly and attractive to all. Here is the home page.

Figure 4.1.8: Home pages

CHAPTER 5
IMPLEMENTATION AND TESTING

5.1 Testing Implementation

Table 5.1: Enroll

In below table, discuss about testing implement. You have to maintain some steps to gets the expected outcome and they are Test Cases, Test Input, Expected Outcome, Obtained Outcome, Passed/Failed and Testing Period.

Test Cases	Test Input	Expected Outcome	Obtained Outcome	Passed/failed	Testing period
1.Registration	Registered by valid info	Re-enter warning for failure	Successfully Registered	Passed	01-8-19
2.Registration	Registered by invalid name or email	Re-enter warning for failure	Registration denied	Passed	01-8-19
3.Registration	Registered with empty field	Re-enter warning for failure	Registration denied	Passed	01-8-19
4.login	Login with phone, laptop etc.	Task successful	Task successful	Passed	02-8-19
6. Logged out button	Return to homepage	Task successful	Task successful	Passed	03-8-19

CHAPTER 6

CONCLUSION AND FUTURE SCOPE

6.1 Discussion and Conclusion.

To sum up, we can easily say as the internet facilities is available to everywhere around our country especially most popular for the educated people, my e-learning project is more viable nowadays. It could contribute a lot in our educational system because teachers can upload their materials easily at their convenient time, and enjoy the materials from anywhere. Here, teacher can get payment by selling there course. That's who teacher will get there proper value of their hard work. Also, they have to be more secure for their work. Also, it is better for students because they easily get there accepted course. Buying the course, they can easily enroll on this particular course I think it is kind of a beginning; it could be with more applications in the near future. The application has been made much handy for the users so that they can easily grab the things just after seeing it. But, still we need a proper platform for executing the project in full swing.

6.2 Future work and Further Development

Primarily, I have thought about only for our university students, but it will be more popular among the students and teachers around country too. I have made some future projection already for adding a lot of contemporary features to my website. I website is responsive. I have payment system but only two, one is Paypal and another one is Stripe. I'll add Bikash, Rocket, Nogod in future. Also, my project now in localhost but I will buy domain and host for live website. Then I will add comment section where student can easily give there feedback to the particular course. Also, I will add QR code scanner for payment system. Through all this, I only want to build my project to user friendly to everyone. Where students and teacher can easily access to the website and do there valuable work. That will be easier for smartphone user. But, our internet facilities have to be smooth for executing the project properly. Though our government has given smooth internet connection, we are not getting it for the mismanagement of the internet providing companies. I think this matter should be taken care of by the government. After all, it's a sublime website for all. Moreover, if I get any problem suggesting by the website user then I will be always prepare for to solve the problem.

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