E-Learning Management System

A PROJECT REPORT

Submitted by

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A report for the phase-I of the projectsubmitted to the Faculty of

INFORMATION SCIENCE AND TECHNOLOGY

in partial fulfillment for the award of the degree

of

MASTER OF COMPUTER APPLICATIONS

DEPARTMENT OF INFORMATION SCIENCE AND TECHNOLOGY

COLLEGE OF ENGINEERING, GUINDY

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DECEMBER 2021

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CHENNAI - 600 025

BONA FIDE CERTIFICATE

Certified that this project report titled **E-Learning Management System** is the bona fide work of Shubham Kumar who carried out project work under my supervision. Certified further that to the best of my knowledge and belief, the work reported herein does not form part of anyother thesis or dissertation on the basis of which a degree or an award was conferred on an earlier occasion on this or any other candidate.

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ABSTRACT

A Learning Management Systems (LMS) is a platform where students and people learn and attend the class through online without human-to-human interaction. LMS is a software application that is used to deliver training programs and education courses. Colleges and universities are adopting LMS programs to enable online and distance learning. Through LMS platforms, educational institutions can manage and deliver online courses to off-site students. In 2020, the number of LMS users is estimated at 73.8 million. Nearly 87% of active users have web-based LMS programs. About 49% of students have taken at least one form of online course.

In this cost-effective project front-end is designed using HTML, CSS, JavaScript; server-side is PHP and Database is MySQL.

In future, huge market is there for this LMS. It will support all the functionality like other online meet and student get a lot of education with minimum cost

ACKNOWLEDGEMENT

I express my deepest sense of gratitude to my supervisor Dr. L Sai Ramesh, Faculty of Department of Information Science and Technology, College of Engineering, Guindyfor his valuable guidance, inspiration and constructive suggestions throughout the periodof project work.

Moreover, his optimistic attitude, guidance and appreciation was such as to give impact us to our own thoughts and understandings, making us believe that all that accomplish was my own efforts for which I will ever remain obliged to him.

My family has been of great help and inspiration all along. I thank my family members for bearing me and putting up with my numerous tantrums during my creative pursuit.

I would like to thank my friends and staff members for their help and constructive criticism during development of this work.

Thank you all for your support.

Shubham Kumar (2019202053)

MCA (Regular)

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CHAPTER 1

INTRODUCTION

1.1 OVERVIEW

Instruction pioneers are always searching for the most ideal ways and intends to create instructive organizations keeping in mind the end goal to give an intuitive learning condition that pulls to understudies' advantage and urges them to trade sees. The Internet is a standout amongst other approaches to give an instructive domain.

Understudies utilize the Internet every now and again, get to valuable data, and encourage the making of an instructive stage where all understudy need clarifications and data about his or her investigation, use however much data as could be expected, and help different understudies.

In our chance, there has been enormous advance in different fields, including training, where ICT has opened another and compelling wellspring of instructing and learning for all people and segments. Instruction through this innovation has turned out to be a standout amongst the most essential mainstays of the age. To the degree that numerous ideas, phrasing, connections and ways of life have changed, is not any more an alternative that can be neglected as much as is important to keep pace with worldwide patterns towards a learning economy, which thusly looks for logical and logical research. Psychological advance and out of scholarly stalemate in view of keeping up the essentialness of learning-based learning and additionally research and investigation.

1.2 PROBLEM DEFINATION

1.2.1 Goals

The overall goal is to help students develop relationships with other students and help them facilitate communication between students and exchange ideas and allow students to recover what they are studying at any time.

1.2.2 Objectives

- Facilitating students' access to threatening forms of questions and tests
- Help students to exchange ideas, which help to think creatively.
- Accessibility of educational materials.
- Encourages students to participate.

1.2.3 Critical Success Factor

- Increase interaction between students and help each other understand the content of the material they are studying.
- Share appropriate educational content for students.
- Provide various forms of questions, exams and tests to be a bank of questions
- A community that combines all disciplines at all levels
- Allows all students at all levels to take advantage of the content of the learning platform.

CHAPTER 2

FLOW DIAGRAM

2.1 DESCRIPTION OF DATA FLOW DIAGRAM (DFD)

2.1.1 Context diagram

E-learning platform Data flow diagram is often used as a preliminary step to create a summary of the E-learning without going into great detail, which can later be elaborated.it normally, consists of overall application dataflow and processes of the E-learning process. It contains all of the user flow and their entities such all the flow of Student, Activity Log, Assignment, Tests, Subject, levels, specialties. All of the below diagrams have been used for the visualization of data processing and structured design of the E-learning process and working stream

2.1.2 Overview diagram (level 0)

This is the Zero Level DFD of E-learning Platform, where we have elaborated the high-level process of E-learning. It's a basic overview of the full E-learning platform or process being analyzed or modeled. It is really designed to be an at-a-glance view of specialties and Student showing the system as a single high-level process, with its relationship to external entities of Student, Activity Log and Assignment, Test, levels. That should be easily realized by a wide audience, including Student, Assignment and specialties in zero level DFD of E-learning Platform

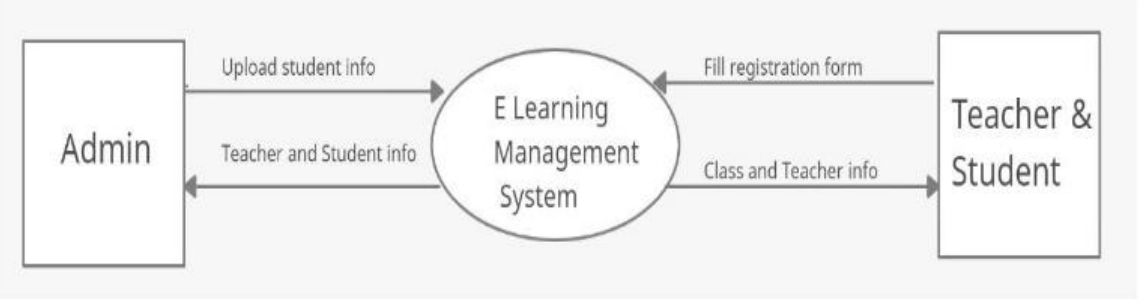

Figure (2.1) Zero level DFD e-learning platform

2.2 DETAILED DATA FLOWS

First level data flow diagram (1st level DFD):

First of all, levels DFD (1st level) of e-learning platform shows how the system is consisted sub- systems (processes), each of which works with one or more of the data flows to or from another agent, and which together provide all of the features of the e-learning system as an entire. It also identifies inside data stores of college student, subject, test, specialties, task that must be present in order for the e-learning platform to do its job, and shows the flow of information between the various parts of student, assignment, check, specialty of the system. DFD level 1 provides a more detailed large of pieces of the 1st level DFD. You will highlight the primary features of e-learning.

Main entities and output of |first of all level DFD (1st level DFD):

1. processing student data and generate report of most students
2. processing assignment records and generate report of all assignment
3. processing files data and generate report of all tests
4. processing specialties records and generate survey of all specialties

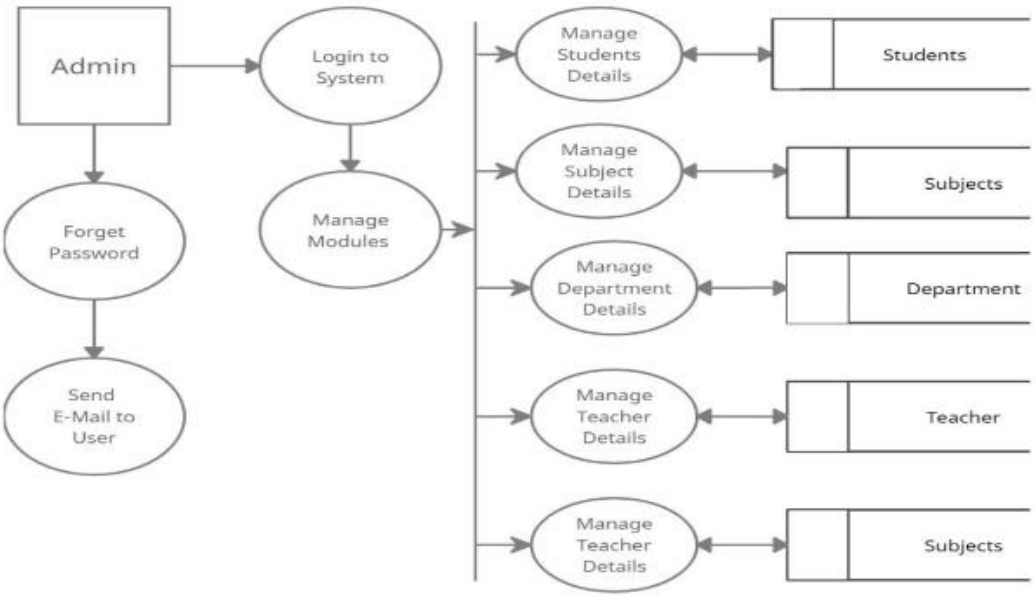

Figure (2.2.1) for admin first level DFD e-learning platform

Figure (2.2.2) For Student first level DFD e-learning platform

Second level data flow diagram (2nd level DFD):

DFD level 2 then goes one step deeper into parts of level 1 of e-learning. It may require more functionalities of e-learning to reach the necessary level of detail about the e-learning functioning. First level DFD (1st level) of e-learning platform shows how the system is divided into sub- systems (processes). The 2nd level DFD contains more details of students, tests, specialties, assignment, and activity log.

Low level functionalities of e-learning platform

- Administrator logins to the system and manage all the functionalities of e-learning platform
- Administrator can add, edit, delete and view the records of student, assignment, test, specialty
- Administrator can manage all the details of tests, specialties
- Administrator can also generate reports of student, assignment, tests, specialties
- Administrator can search the details of students, tests subjects
- Administrator can tracks the detailed information of assignment, tests , specialties.

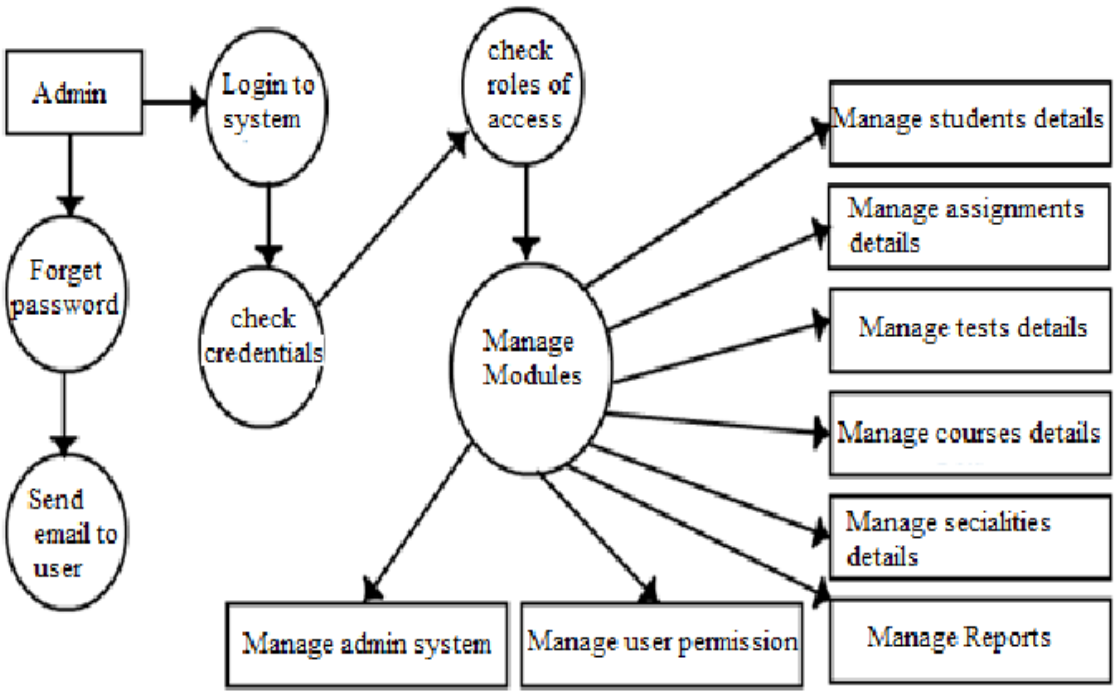

Figure (2.3) Second Level DFD e-learning platform

2.2 E-learning platform ER diagram

This kind of ER (entity relationship) diagram shows the model of e-learning platform entity. The entity-relationship diagram of e-learning platform represents all the visual instrument of database tables and the relations between students, tests, specialties and assignment. It used structure data also to define the relationships between structured data sets of e-learning platform functionalities. The main entities of the e-learning platform are students, courses, tests, specialties, assignment

2.2.1 E-learning platform entities and their attributes:

1. Student entity: attributes of students are student_id,student_college_id, student_name,student_mobile,student_email,student_password,student_username, student_password, student_address,student_level.
2. Course entity: attributes of courses are course_id, course_name, course_description.
3. Specialties entity: attributes of specialty are specialty_id, specialty_name, specialty_description.
4. Test entity: attributes of test are test_id, test_name, test_file, test_description, course_id.

5. Assignment entity: attributes of assignments are assignment_id, assignment_name,assignment_file, assignment_description, course_id, student_id.

2.2.2 Description of E-learning platform database:

- The details of courses are store into the course tables respective with all tables
- The details of students are store into the students' tables respective with all tables
- The details of specialties are store into the specialty's tables respective with all tables
- Each entity (courses, students, assignments, tests, specialties) contains primary key.
- The entity tests, assignment has related with course, student's entities with foreign key
- There are one-to-one and one-to-many relationships available.

ER Diagram

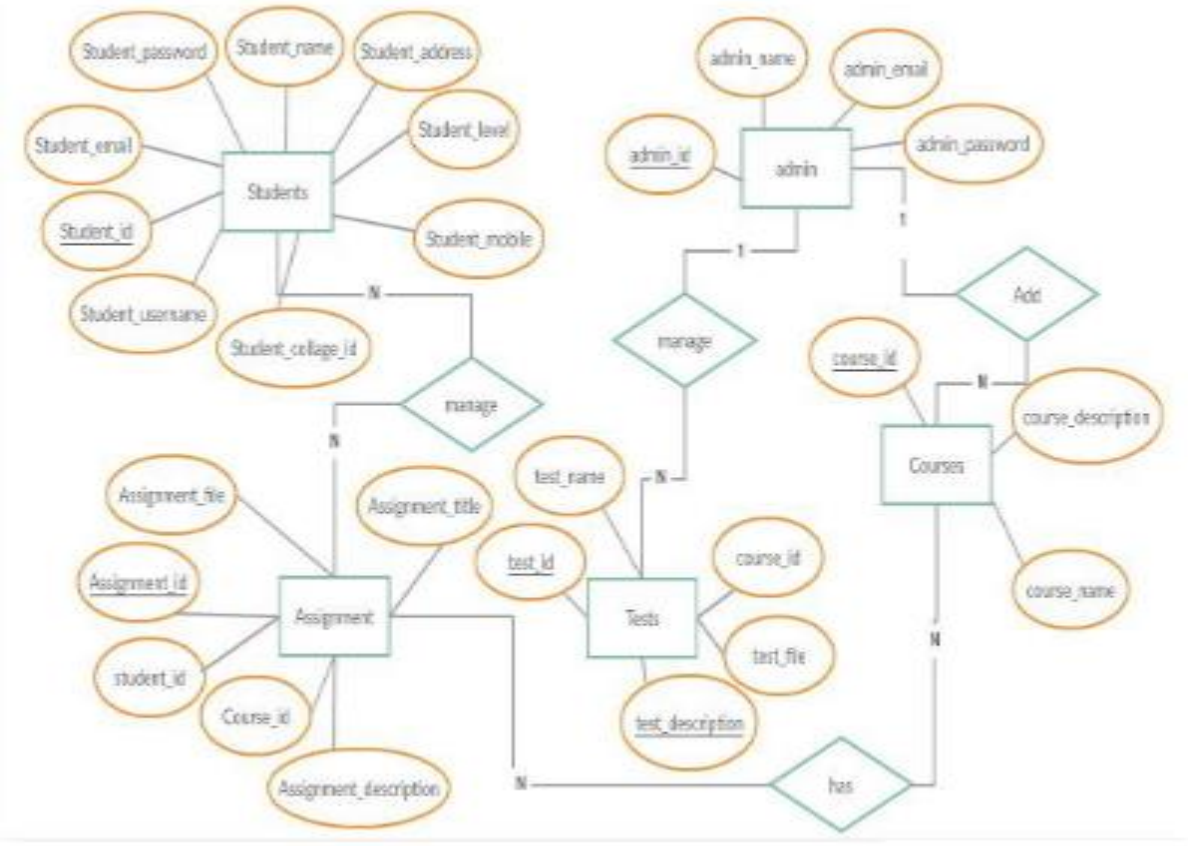

Figure (2.4) ER diagram for E-learning platform

2.3 UML DIAGRAM

2.3.1 Use Case Diagram

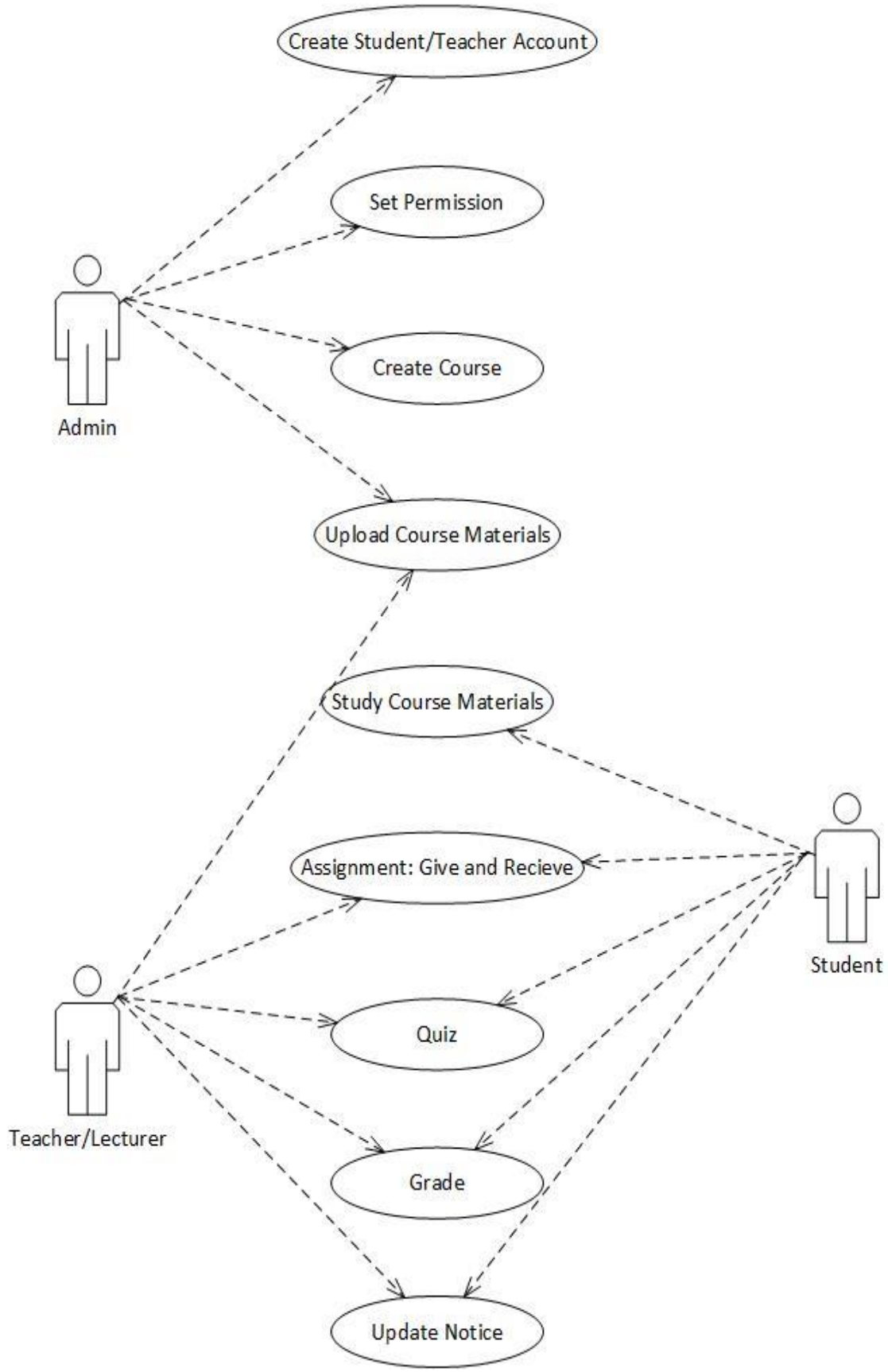

Figure (2.3.1) Use case diagram for E-learning platform

2.3.2 Class Diagram

E-learning platform Class Diagram describes the structure of a E-learning platform classes, their attributes, operations (or methods), and the relationships among objects.

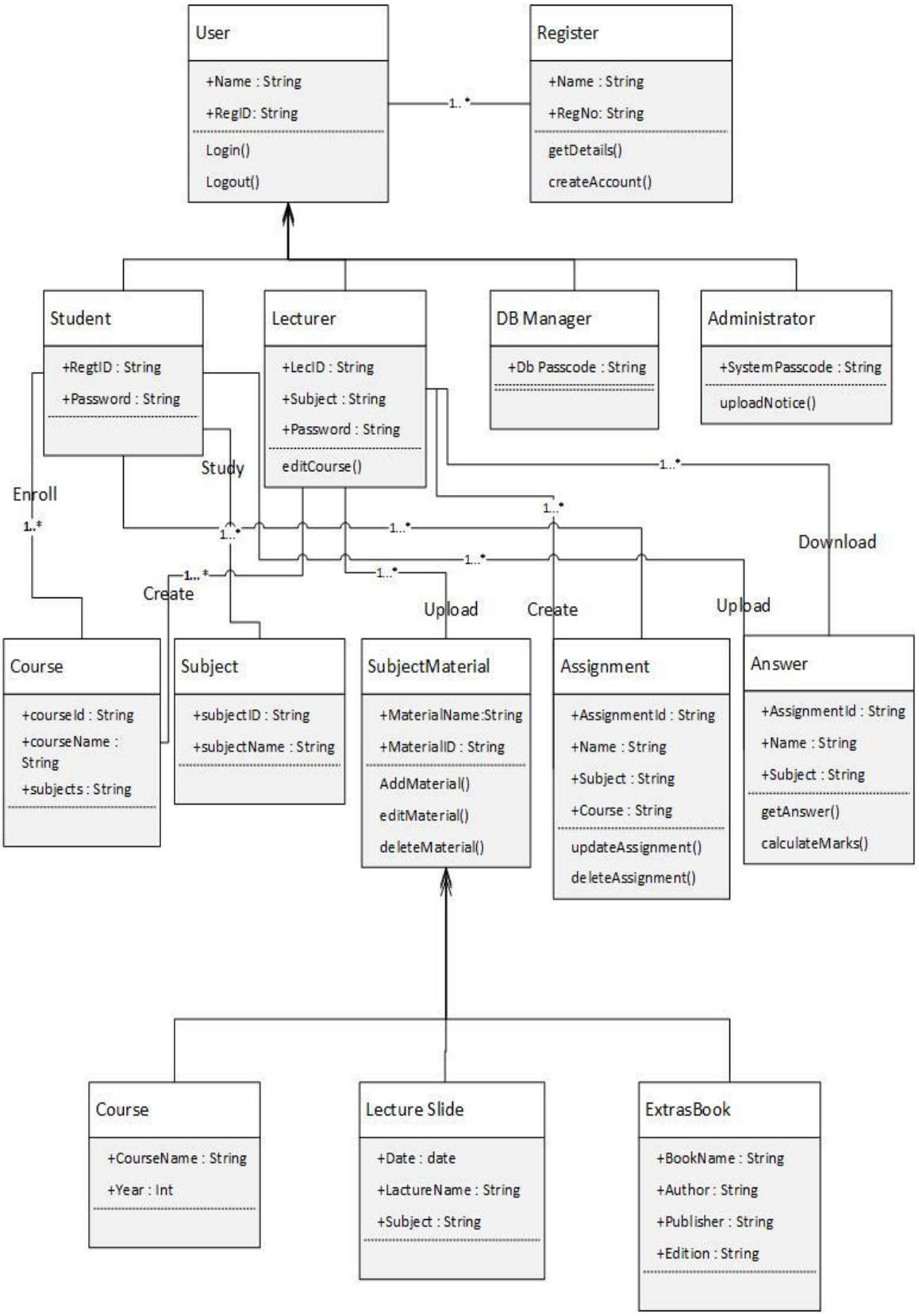

Figure (2.3.2) Class diagram for E-learning platform

2.3.3 Activity Diagram

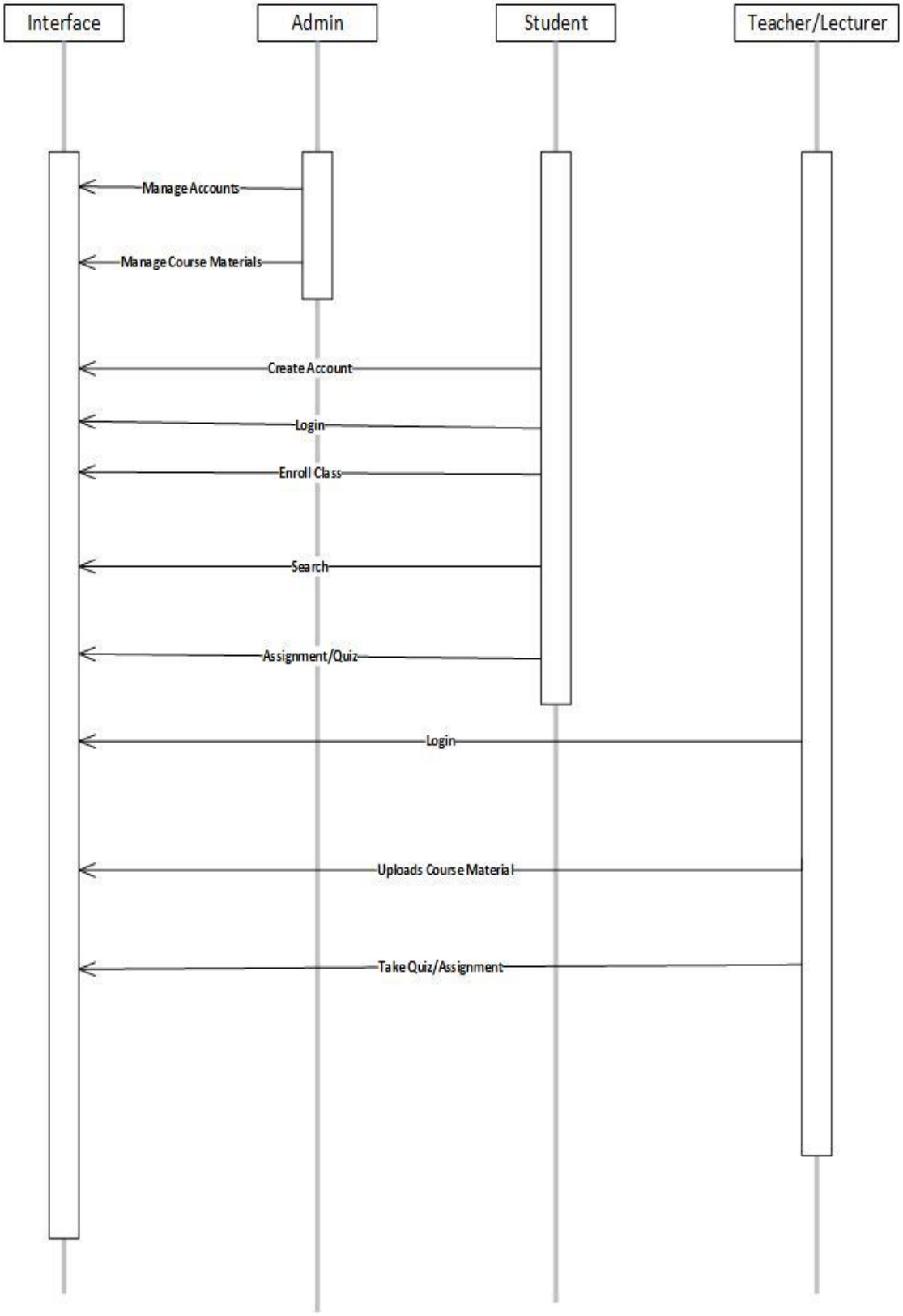

Figure (2.3.3) Activity diagram for E-learning platform

2.3.4 Sequence Diagram

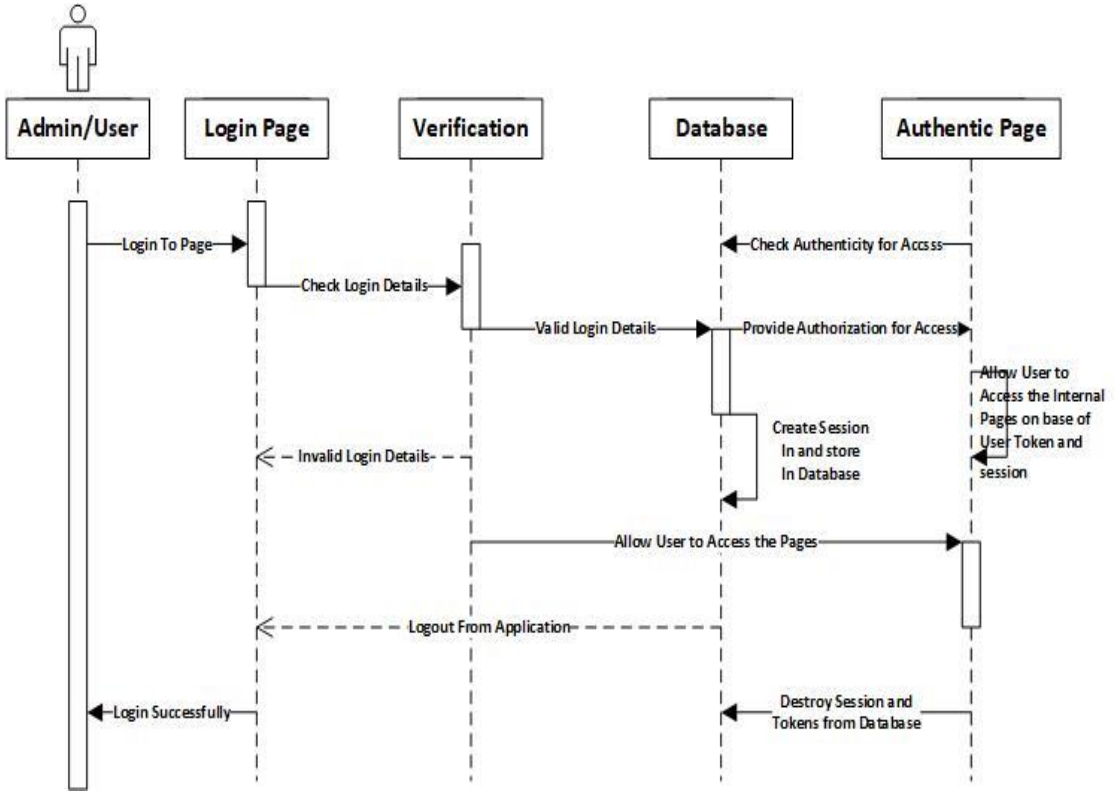

Figure (2.3.4.1) Sequence diagram for E-learning platform

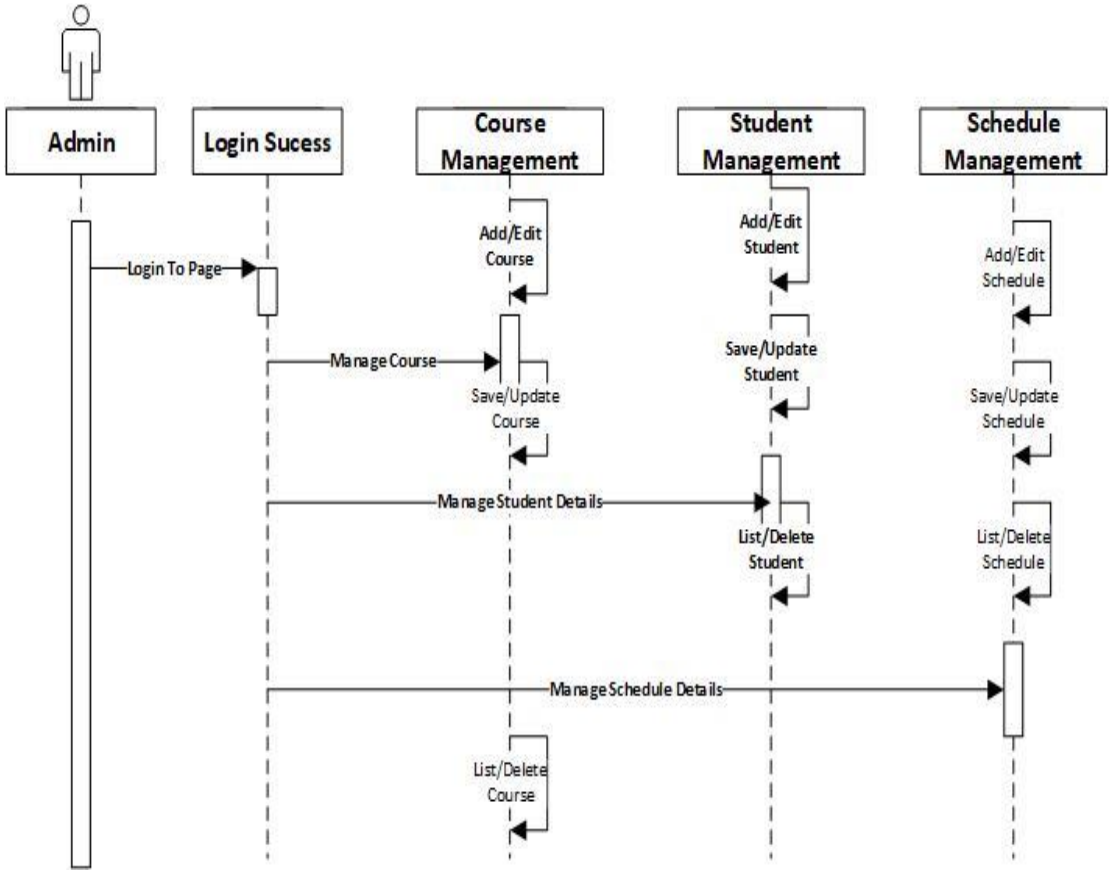

Figure (2.3.4.2) Sequence diagram for E-learning platform

CHAPTER 3

SOFTWARE REQUIREMENT SPECIFICATION

3.1 Hardware Requirement

- Disk space: 160MB free (min) plus as much as you need to store materials. 5GB is probably a realistic minimum.
- Backups: at least the same again (at a remote location preferably) as above to keep backups of the site.
- Memory: 256MB (min), 1GB or more is strongly recommended. The general rule of thumb is that e-learning platform can support 10 to 20 concurrent users for every 1GB of RAM. 'Concurrent' really means web server processes in memory at the same time (i.e., users interacting with the system within a window of a few seconds). It does NOT mean people 'logged in'.

3.2 Software Requirement

The last phase of the lifecycle, which comprises all activities associated with the application of the application form. These attempts include programming, testing, training and installing of the system in a creation setting and transition of ownership of the software from the Project Group| to the performing customer

XAMPP is a completely free, easy-to-install Apache division containing MySQL, PHP, and Perl. The XAMPP wide open-source package has recently been set up to be incredibly easy to set up also to use.

XAMPP allows website designers and developers to test their work on their own computer systemswithout Internet connection. In practice, yet, XAMPP is often used to help web pages on the web. A special built-in tool is provided to password-protect the main parts of the package. XAMPP is a perfect solution for web-developers, programmers or admins as it provides all the tools essential for their work.

XAMPP includes the following tools:

- Apache is the world's most widely-used Web server software. Indian is developed and managed by an open community of developers under the auspices of the Indian Software Foundation. This software is designed for an extensive variety of operating systems, including Unix, FreeBSD, Apache, Solaris, Novel, NetWare, OS 10, Microsoft Windows, OS/2, TPF, OpenVMS and eCom Station. Produced under the Apache Certificate, Apache is open-source software.

- PHP is a server-side scripting language suitable for web development but also used as a general- purpose development language. It means PHP: Hypertext Preprocessor, the industry recursive backroom. PHP code can be simply combined with HTML code, or it can be used in blend with various tempting engines and web frames. PHP code is usually processed by a PHP interpreter, which is usually implemented as a web server's native module or a Common Gateway User interface (CGI) executable. After the PHP code is translated and executed, the web server sends resulting result to its client, usually in form of a part of the made website - for example, PHP code can create a web page's HTML CODE, an image, or some other data. PHP has also evolved to include a command-line user interface (CLI) capability and can be employed in standalone graphic applications.

Features:

- In PHP there is no need to specify data type for variable declaration.
- PHP provides cross platform suitability, unlike some other hardware side scripting language.
- Predefined error reporting constants are available to create a warning or problem notice.
- My SQL is a popular choice of database use with web applications, and is a central component of the {traditionally used XAMPP. MySQL is also used in many high-profile, large-scale websites, including Google.

CHAPTER 4

SYSTEM DESIGN

4.1 Overview

Development of software systems requires analyzing of the process to be digitized in order to enable a correct system, a system that functions as required and also to assist the potential users of the system understand the general functionality of the system. The target specifies the system's objectives and constraints to which designers have to confirm. The objective of doing analysis is to remodel the anatomy's major inputs into organized specification.

- **Functional Requirements**

  In this section we will discuss different functional requirement of different user.

4.1.1 Admin

- **FR1:** Create usernames and passwords.
- **FR2:** Manage student's account.
- **FR3:** Ability to login and update profile.
- **FR4:** Ability to logout after the completion of process.
- **FR5:** Ability to create, edit or delete courses.
- **FR6:** Ability to create, edit or delete test
- **FR7:** Ability to create, edit or delete assignments.
- **FR8:** Ability to create, edit or delete specialties.

4.1.2 Students

- **FR1:** ability to download tests
- **FR2:** Ability to view assignments.
- **FR3:** Ability to share solutions of assignments.
- **FR4:** Register data.

4.1.3 Non – Functional Requirements

- Consistency.
- Convenience.
- Availability.
- Usability.
- Security.
- Reliability

4.2 Database Design

This section describes the six tables that are linked to our project. These six tables are described in the following point

- Admin.
- Students.
- Specialties.
- Courses
- Assignments.
- Tests.

4.2.1 Admin

The admin table stores the information about Admin profile. All the Admins who will manage the system will be saved in this table.

Table 4.1 Admin

Field Name	Data Type	Size	Key	Default
Admin_Id	Int	11	Primary Key	None
Admin_Name	VARCHAR	150		
Admin_Password	VARCHAR	100		

4.2.2 Specialties

The table specialty stores all specialties requested through the platform will issue. All of these specialties data will be in this table.

Table 4.2 Specialties

Field Name	Data Type	Size	Key	Default
Specialty_ID	Int	11	Primary Key	None
Specialty_Title	VARCHAR	20		

4.2.3 Courses

The table course stores all courses belong to specialty through the platform. All of these courses will be in this table.

Table 4.3 Courses

Field Name	Data Type	Size	Key	Default
Course_ID	INT	11	Primary Key	None
Course_Name	VARCHAR	20		None
Course_Des	TEXT			None

4.2.4 Assignment

The table Assignment stores all Assignments which added by students through the platform. All these Assignments data will be in this table.

Table 4.4 Assignments

Field Name	Data Type	Size	Key	Default
Assignment_ID	INT	11	Primary Key	None
Assignment_Title	VARCHAR	50		None
Assignment_Desc	TEXT			None
Assignment_File	VARCHAR	50		None
Course_Id	INT	FOREIGN KEY		None

4.2.5 Quiz

The table quiz store all tests belong to courses through the platform added by admin. All of these course's data will be in this table.

Table 4.5 Quiz

Field Name	Data Type	Size	Key	Default
Quiz_ID	**INT**	**11**	**Primary Key**	**None**
Quiz_Title	**VARCHAR**	**20**		**None**
Quiz_Desc	**TEXT**			**None**
Quiz_que	**TEXT**			**None**
Course_ID	**INT**	**11**	**Foreign Key**	**None**

CHAPTER 5

SCREENSHOT

5.1 Admin Dashboard

The main page contains the start button where registered users can enter through the entrance gate, there is also the menu contains whole pages links which students can enter to find tests, courses assignments, about page and frequently asked questions that help students to find answers for questions about the system use.

There is a search button that helps students to search for anything related to any course

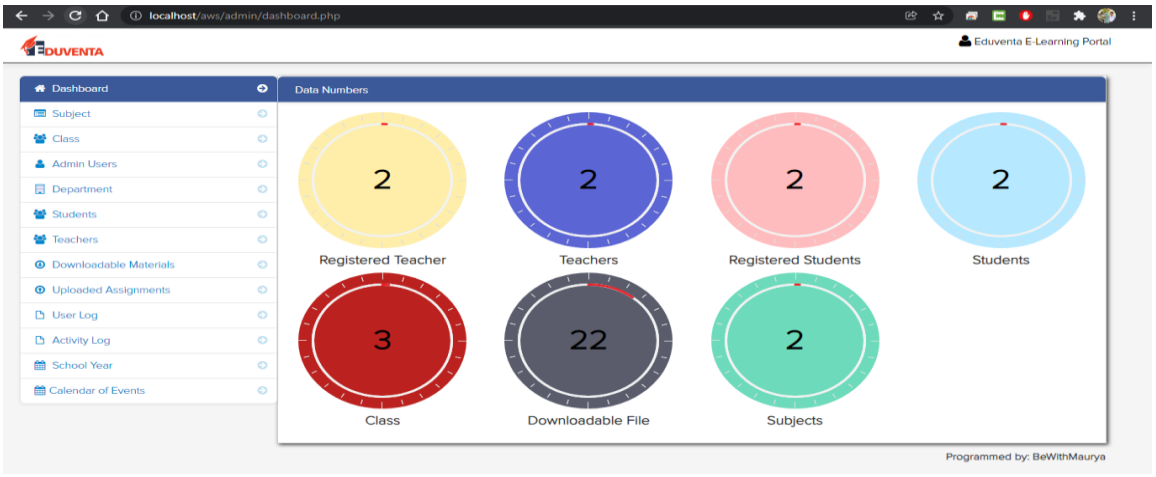

Figure (5.1) Admin Dashboard Page

5.1.1 Register Page

Students can create account on eLearning platform to get permissions for add new assignment, downloading tests or updating his/her own profile.

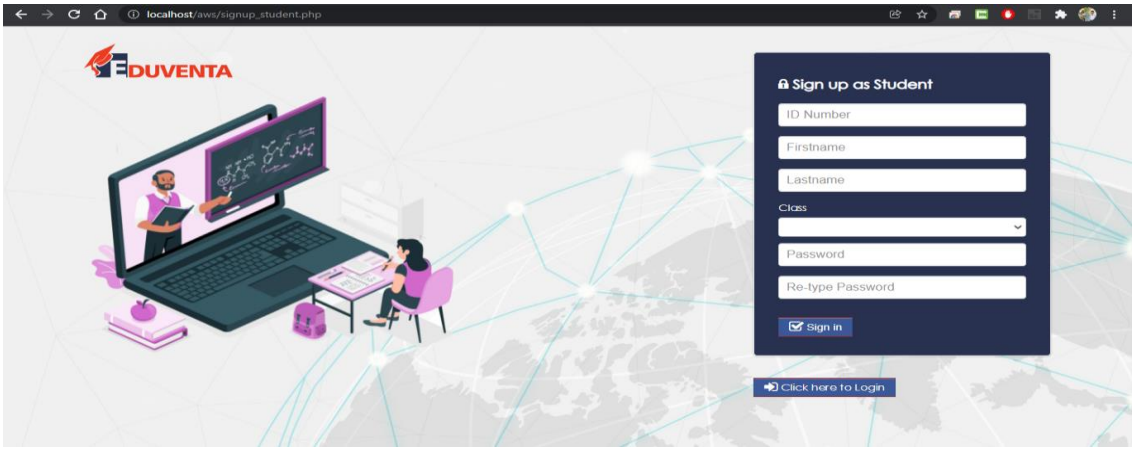

Figure (5.2) Student Register Page

5.1.2 Login Page

This page can students enter the system by filling the form with correct credentials to access the pages.

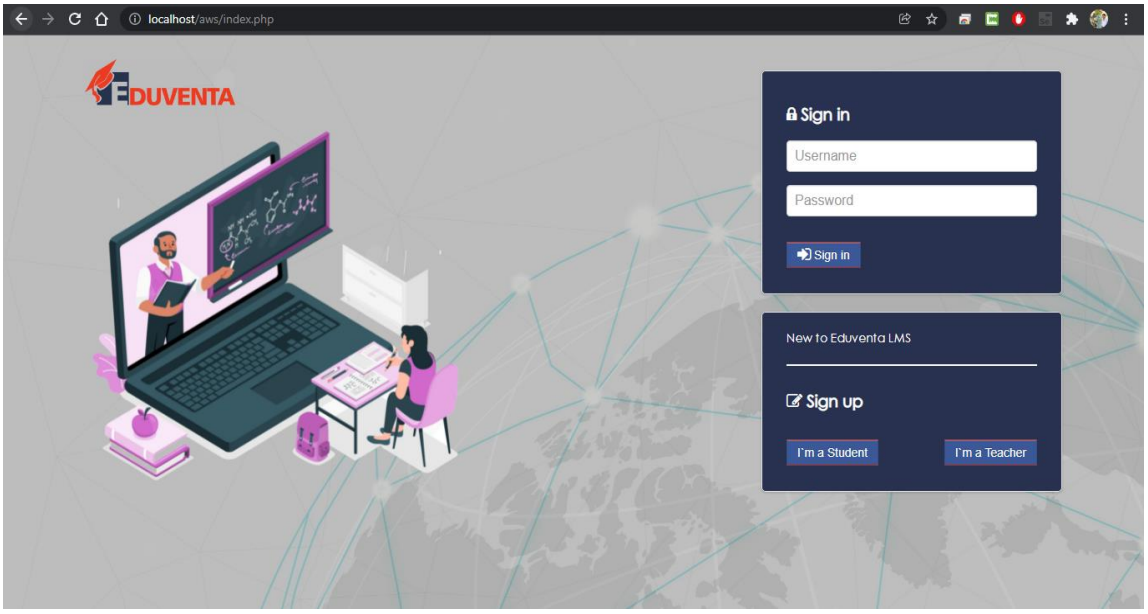

Figure (5.3) Student Login Page

5.1.3 Course Page

This page shows lists of existing courses with related total tests and assignments. Through pressing the buttons, students can enter to the assignments.

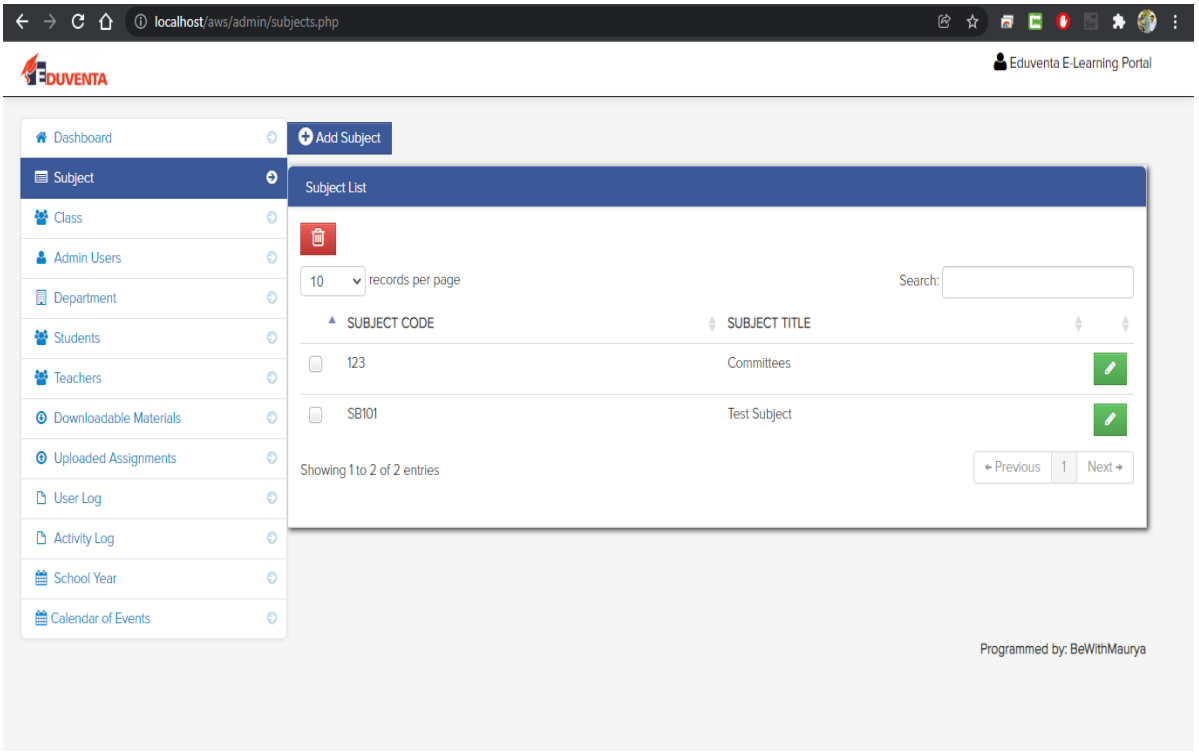

Figure (5.4) Course Page

5.5.4 Course Assignments Page

This page shows lists of assignments of specific courses. Through pressing the image, students can enter to the assignment details to show it and its comments which were added by students.

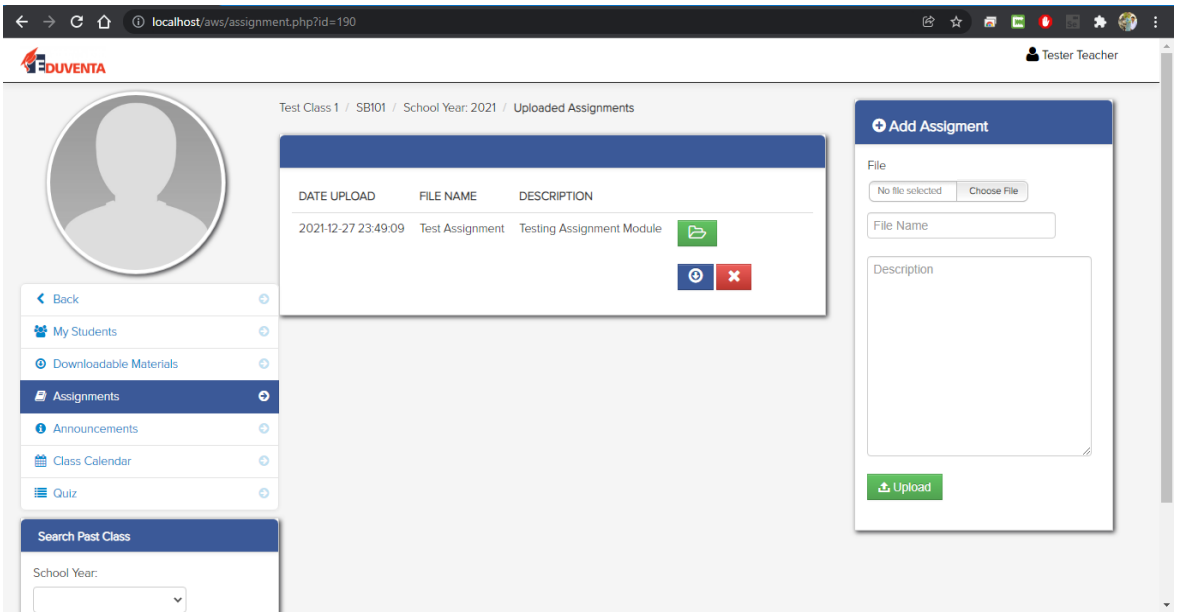

Figure (5.5) Course assignments page

5.5.5 Course Tests Page

This page shows lists of tests of specific courses. Through pressing the download button, students can get the test file which is added by admin.

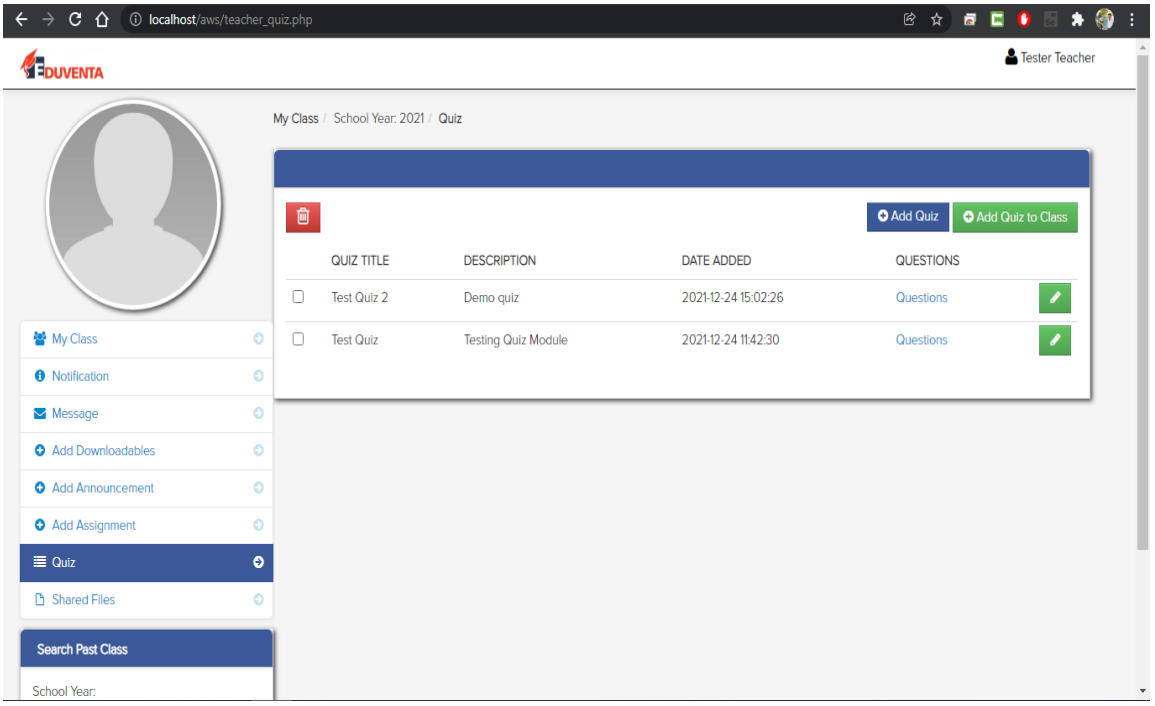

Figure (5.6) Course Tests Page

5.2 STUDENTS INTERFACES

5.2.1 Student Dashboard

This is the home page can let students recognize the website which contains menu, registration button and some hints explain the idea of the website.

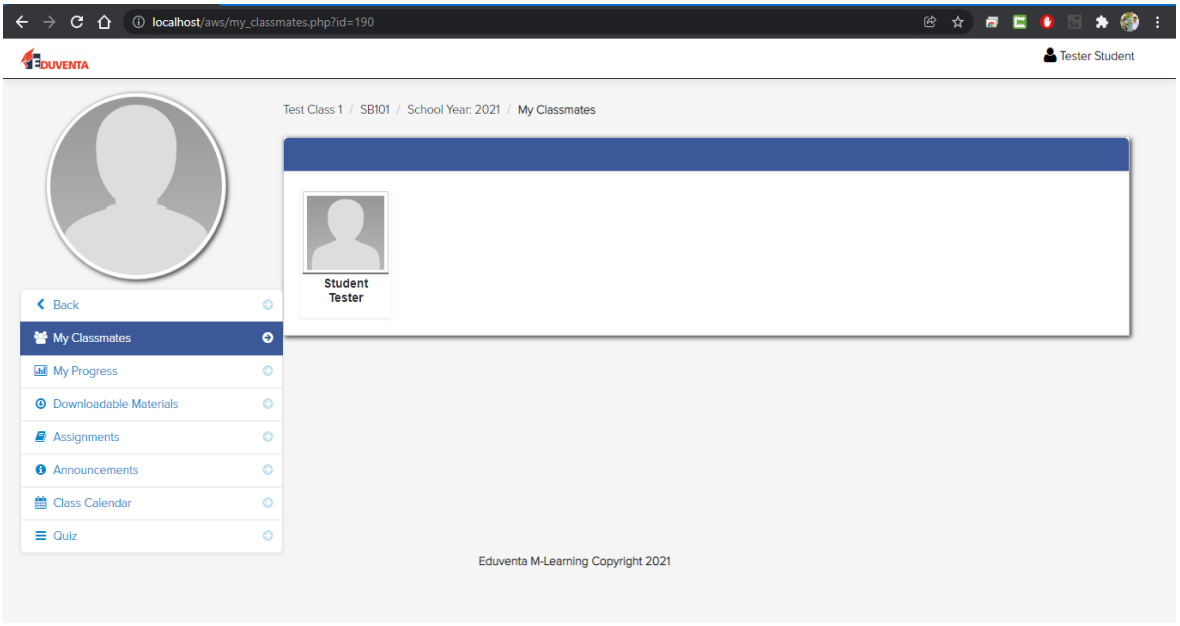

Figure (5.7) Student's homepage

5.2.2 Courses page

This is the courses page can let students recognize the whole courses that supported by our website.

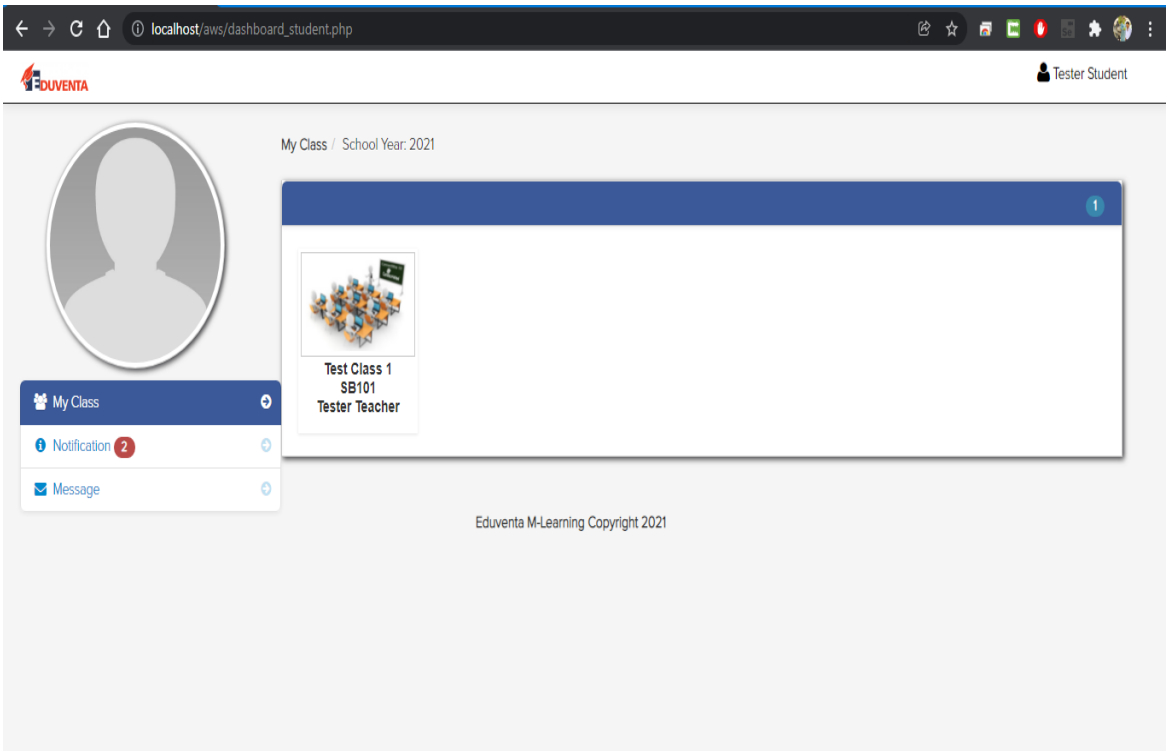

Figure (5.8) Student's course page

5.2.3 Class Page

This is the class page creation in which only admin can create or add new class page based on their requirement.

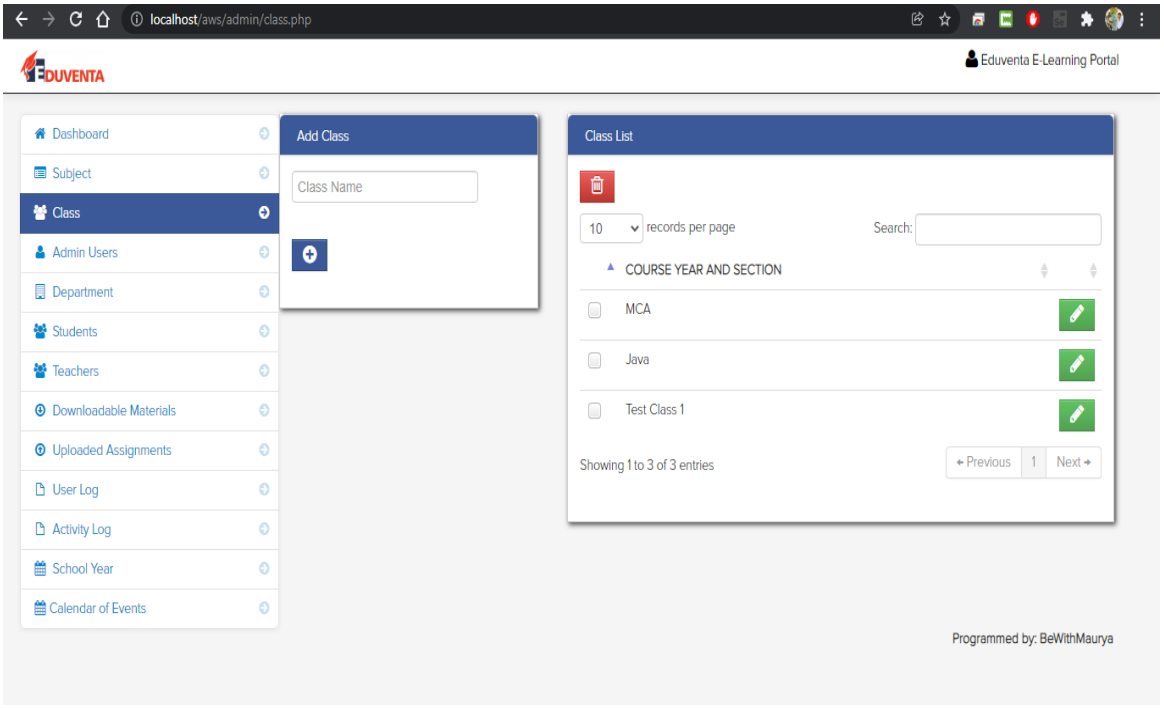

Figure (5.9) Student's Class Page

5.2.4 Comments Window

This is a form of comment that student need to fill to answer or ask or share ideas. Students can share their ideas every assignment or test page

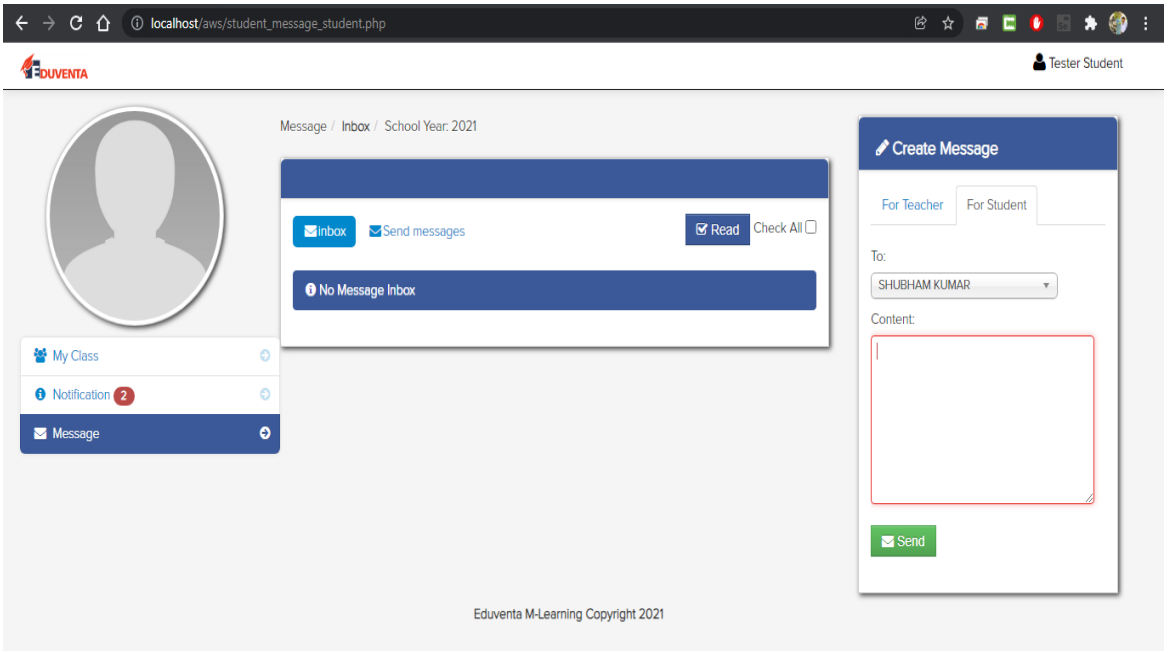

Figure (3.10) Student's Comment Page

5.3 ADMIN USERS

In this page, admin can create another admin type user. In case if admin will absent, then other admin user can access the account.

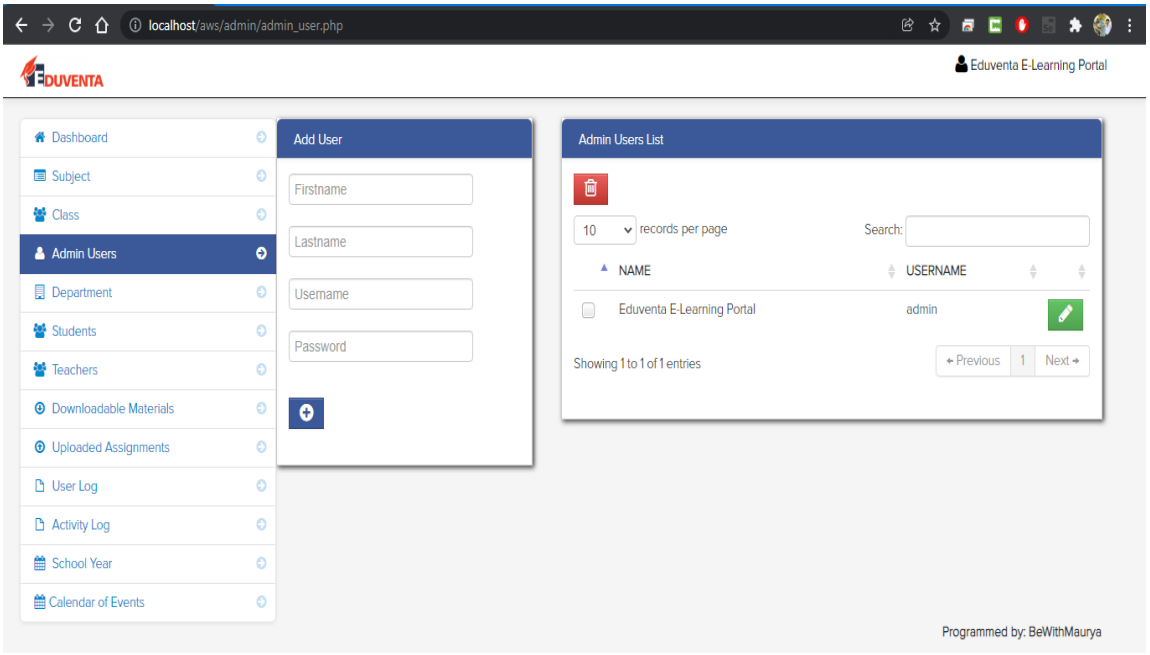

Figure (5.12) Admin's create page

5.3.1 Department

In this page, only admin can create new department. For eg:- MCA Department, BCA Department

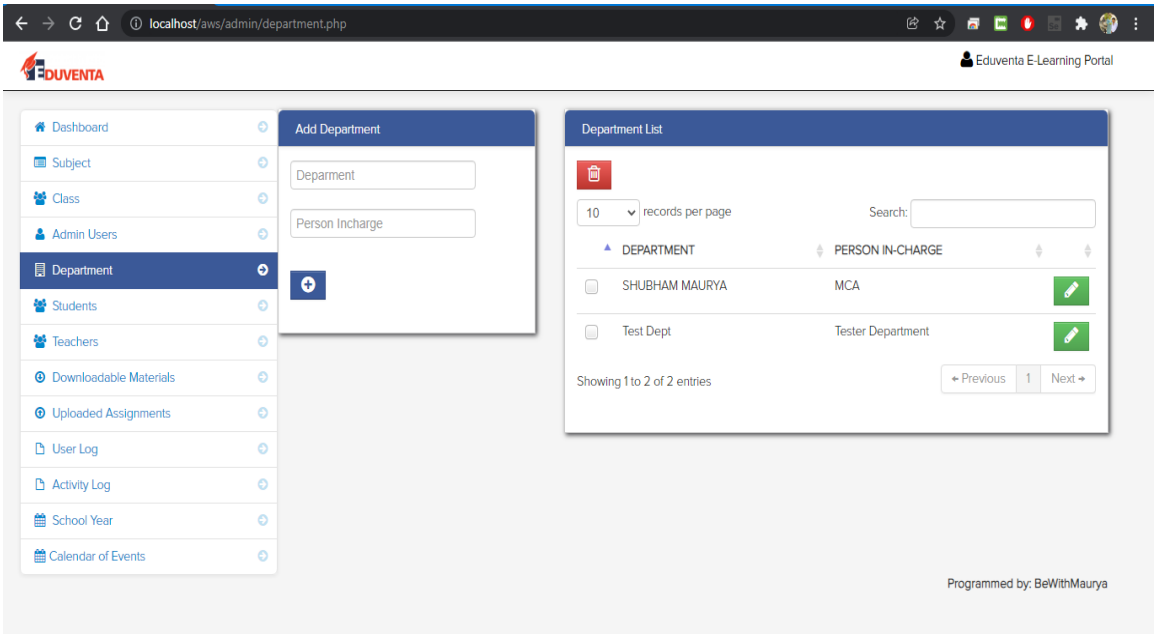

Figure (5.13) Admin's department page

5.3.2 Students

In this page, admin can create new student by assigning the new id number. In this id number is equal to roll no of student. After getting id number, then student can register the account.

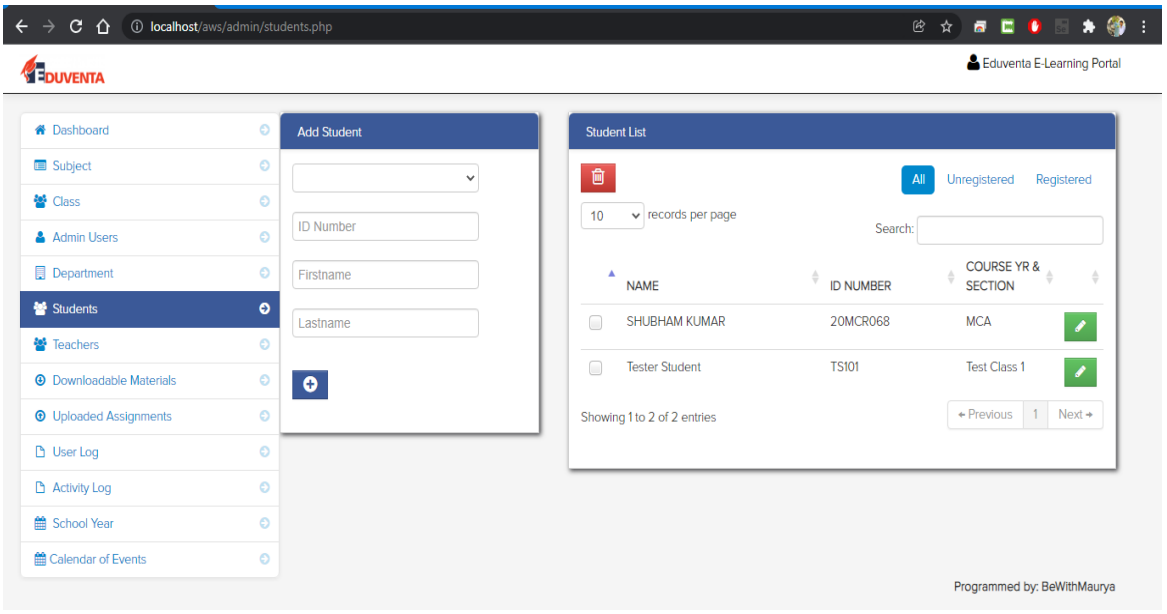

Figure (5.14) Admin's Student Page

5.3.3 Teachers

In this page, admin can create multiple teachers at a time. After creating the department, then here it will show all list of departments.

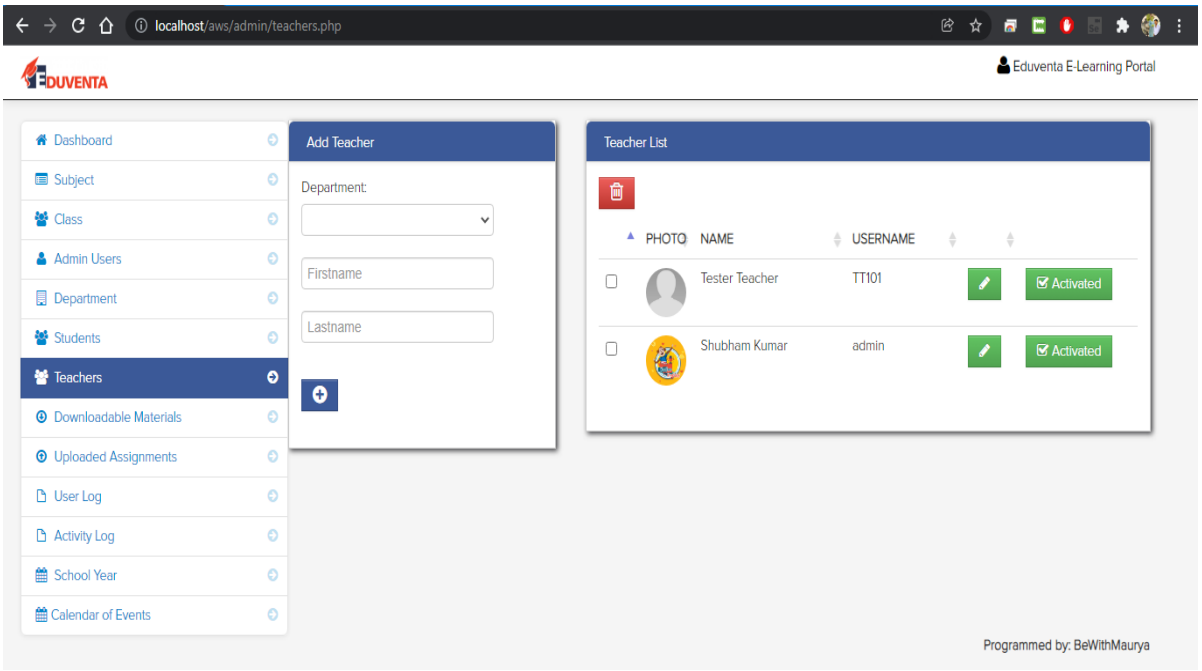

Figure (5.15) Admin's Teacher Page

5.3.4 Downloadable Materials

In this page, it will show all the material which is uploaded by teachers and students can download the material.

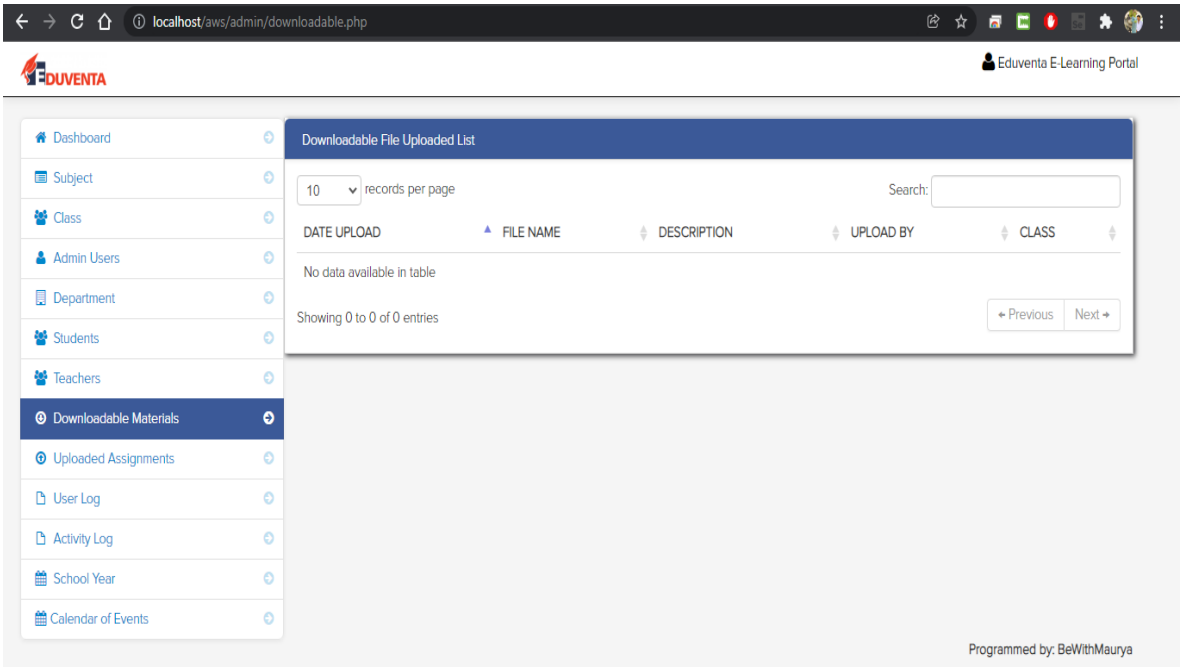

Figure (5.16) Admin's Download Material Page

5.3.5 Uploaded Assignments

In this page, it will show all the material uploaded by students and downloadable by students.

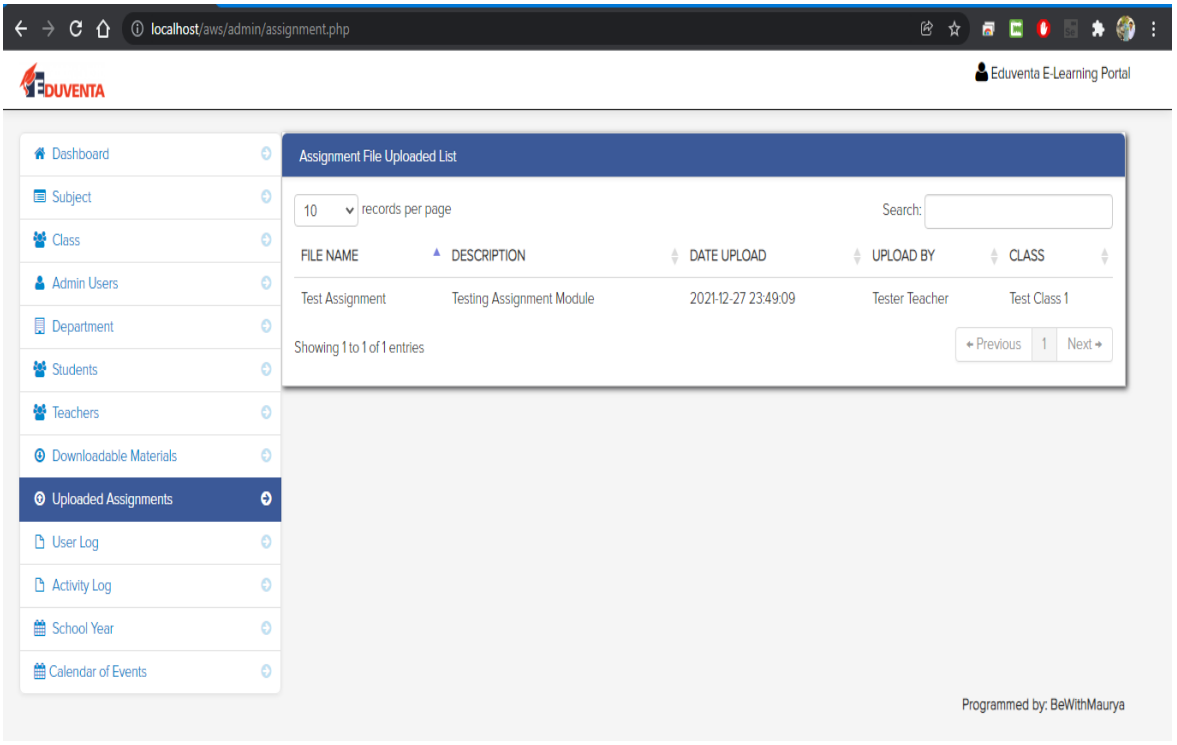

Figure (5.17) Admin's upload material page

5.3.6 User Log

In this page, admin can get the information about all admin log in timing

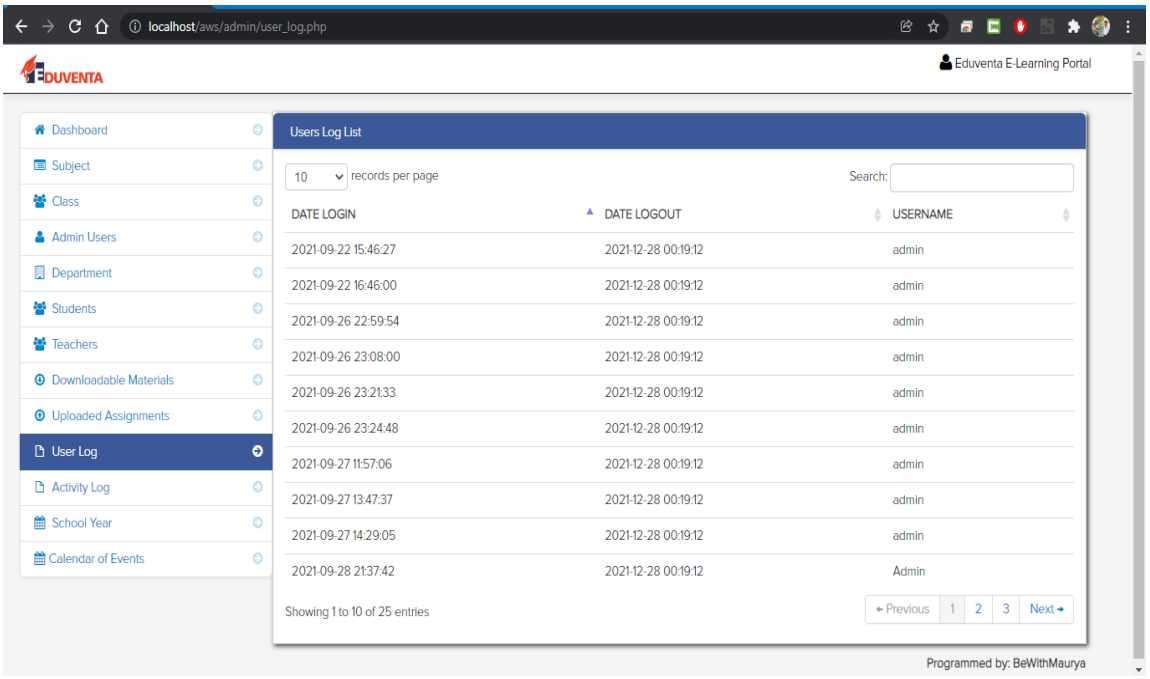

Figure (5.18) Admin's User Log Page

5.3.7 Calendar of Events

In this page, admin can get and send the information through this page. It will also show details the holiday, events, seminar.

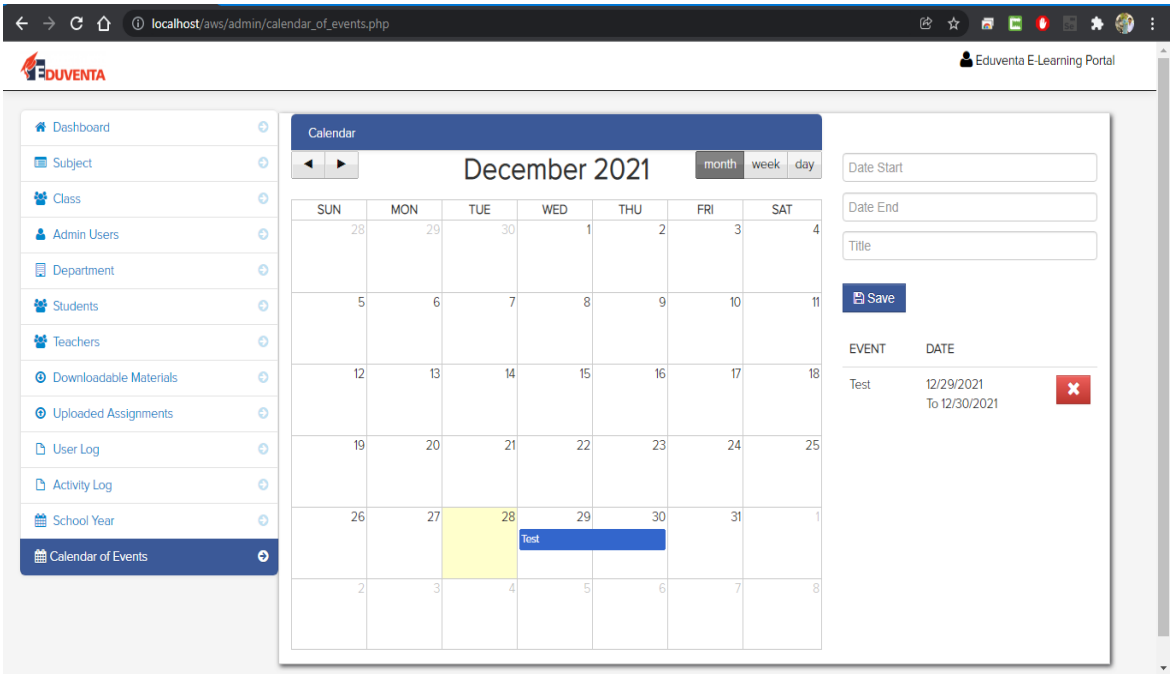

Figure (5.19) Admin's Calendar's Events Page

5.3 MY PROGRESS PAGE

5.3.1 My Progress

In this page, student can see the assignment grade and practice quiz progress.

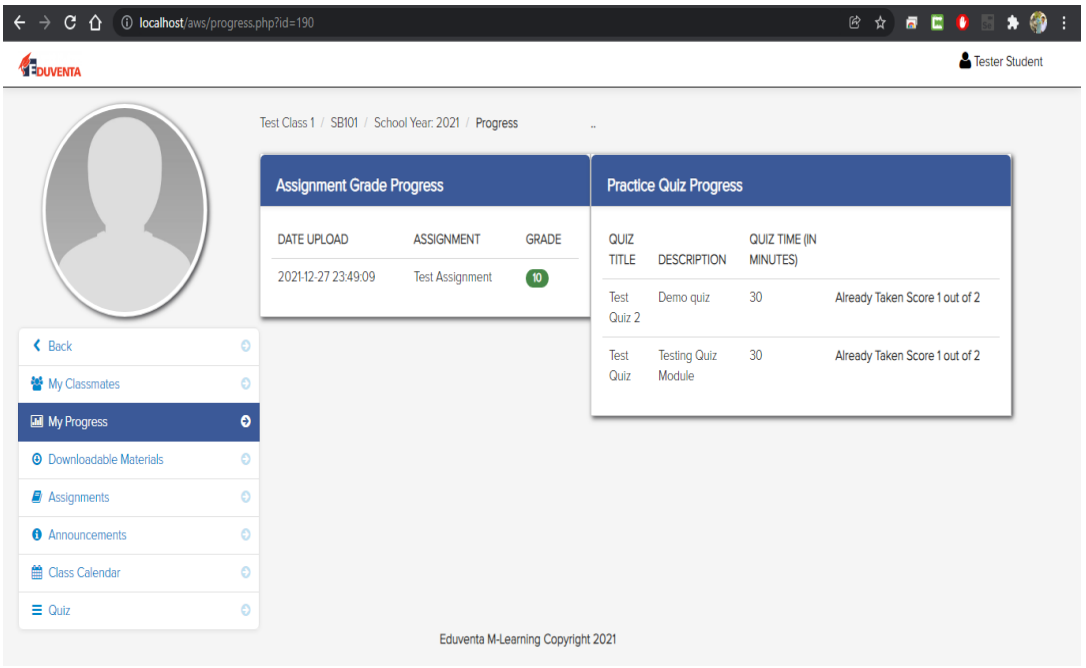

Figure (5.19) Student My Progress Page

5.3.2 Student Assignments Page

In this page, student can see the assignment given by teacher

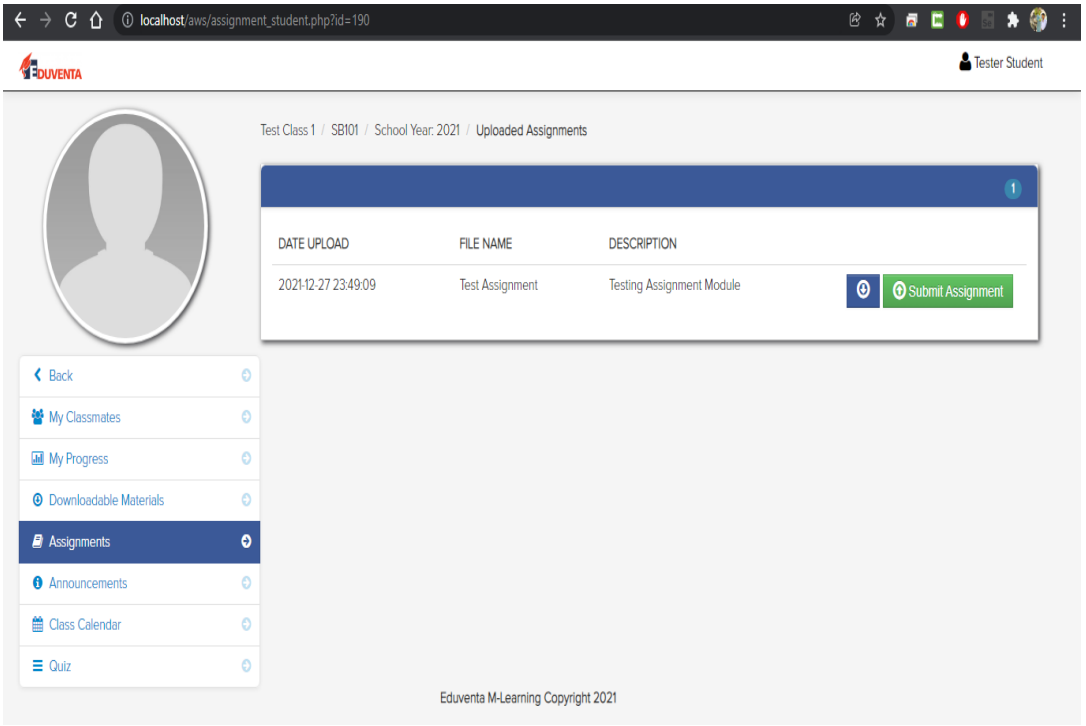

Figure (5.20) Student ‘s Assignment Page

5.3.3 Notification

In this page, teacher can see the notification given admin and also see the message uploaded by students.

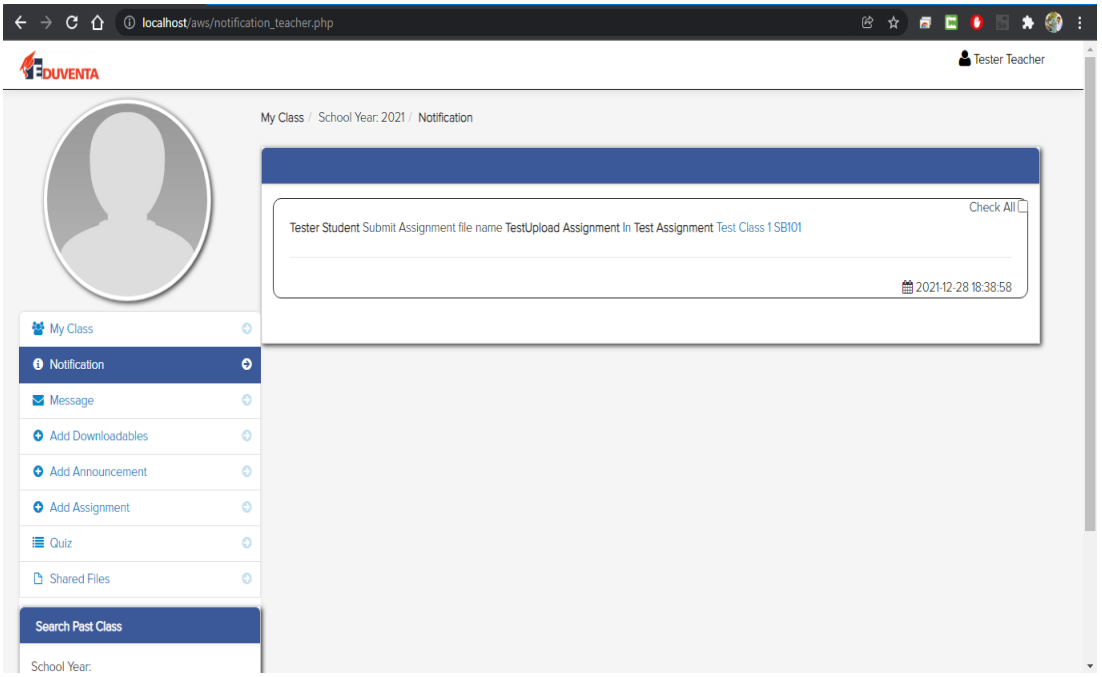

Figure (5.20) Teacher ‘s Notification Page

5.4 TEACHER ENROLLMENT COURSE

This is home page of teacher where they can see the number of subject assigned by admin.

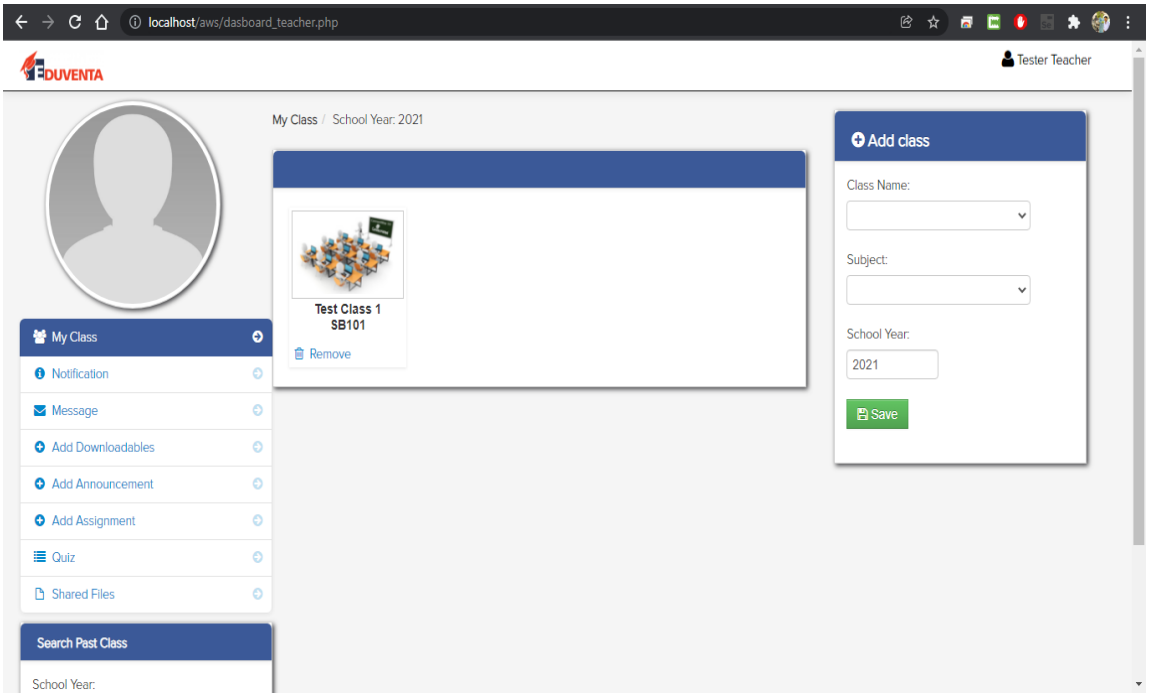

Figure (5.21) Teacher ‘s Enrollment Page

5.4.1 Add Assignment

In this page, teacher gives the assignment and some tasks for students.

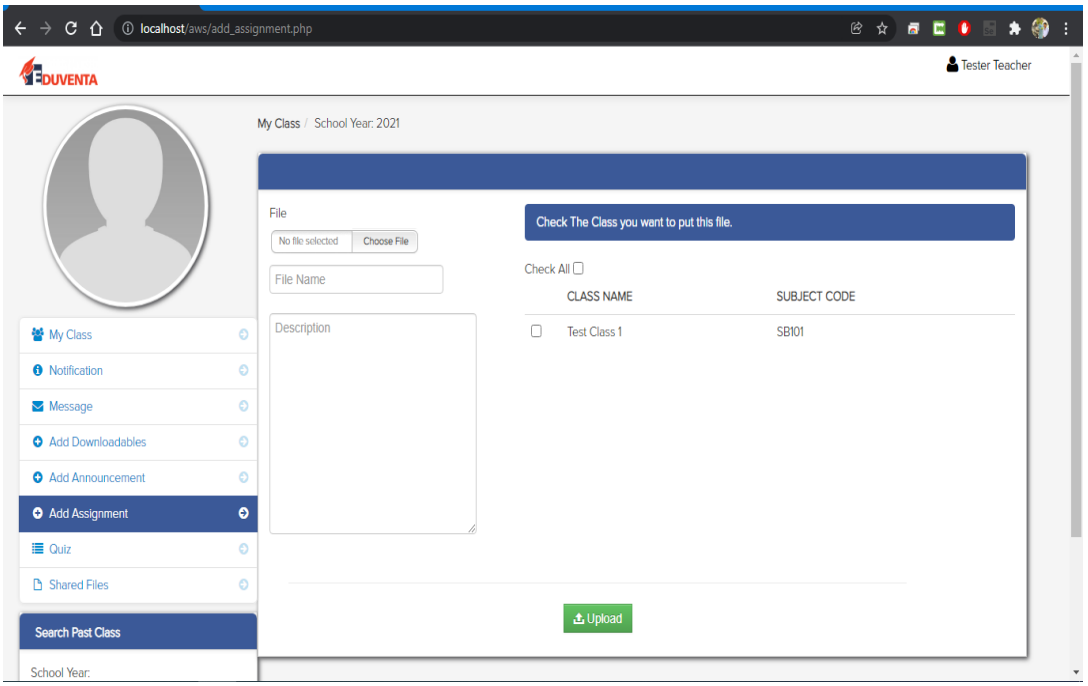

Figure (5.22) Teacher ‘s Assignment Page

5.4.2 Quiz

In this page, teacher gives the quiz for the students

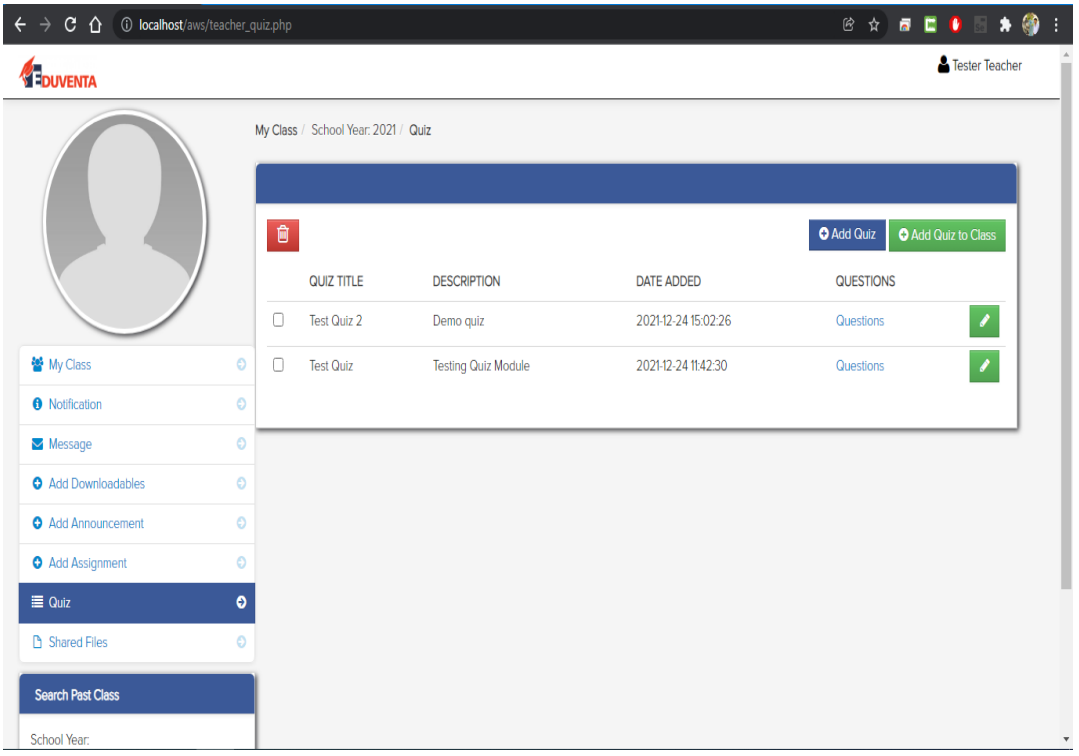

Figure (3.23) Teacher’s Quiz Page

5.4.3 Shared Files

In this page, teacher share the link to students.

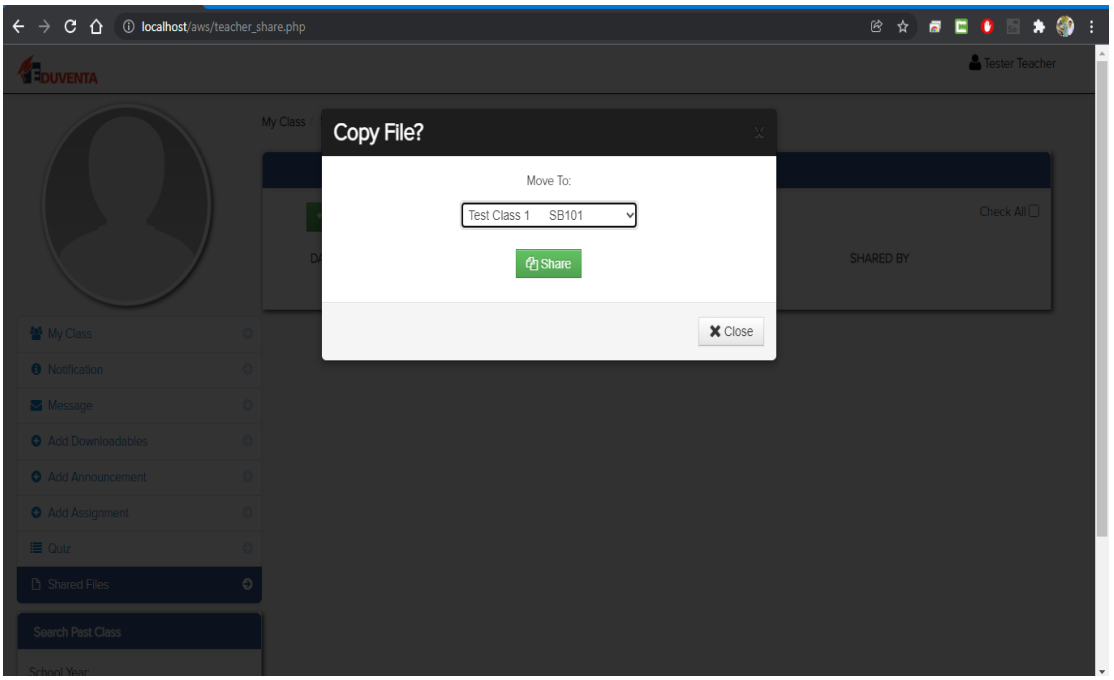

Figure (3.24) Teacher's Shared File Page

CHAPTER 6

TESTING

6.1 Admin Module Testing

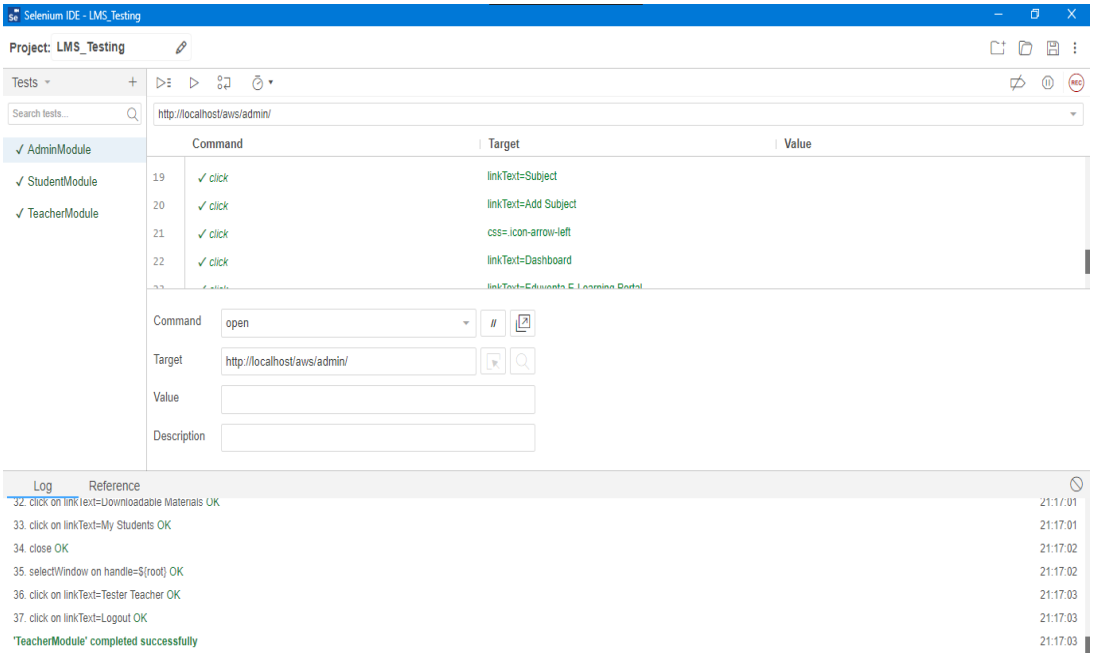

Figure (6.1): Admin Module Testing

6.2 Teacher Module Testing

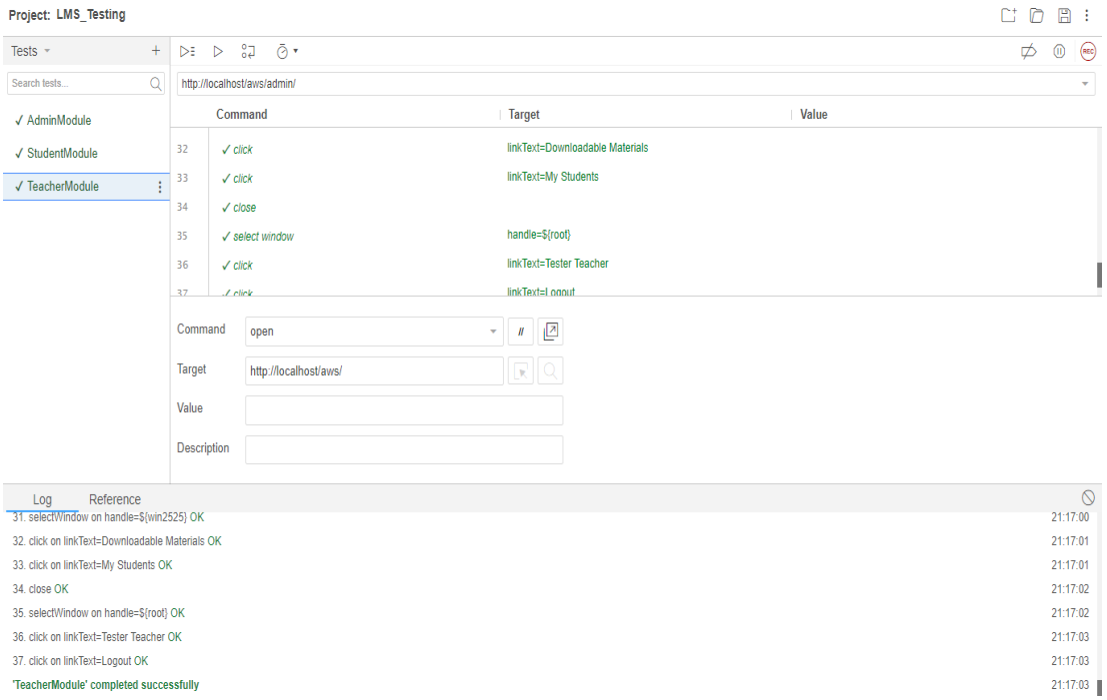

Figure (6.2): Teacher Module Testing

6.3 Student Module Testing

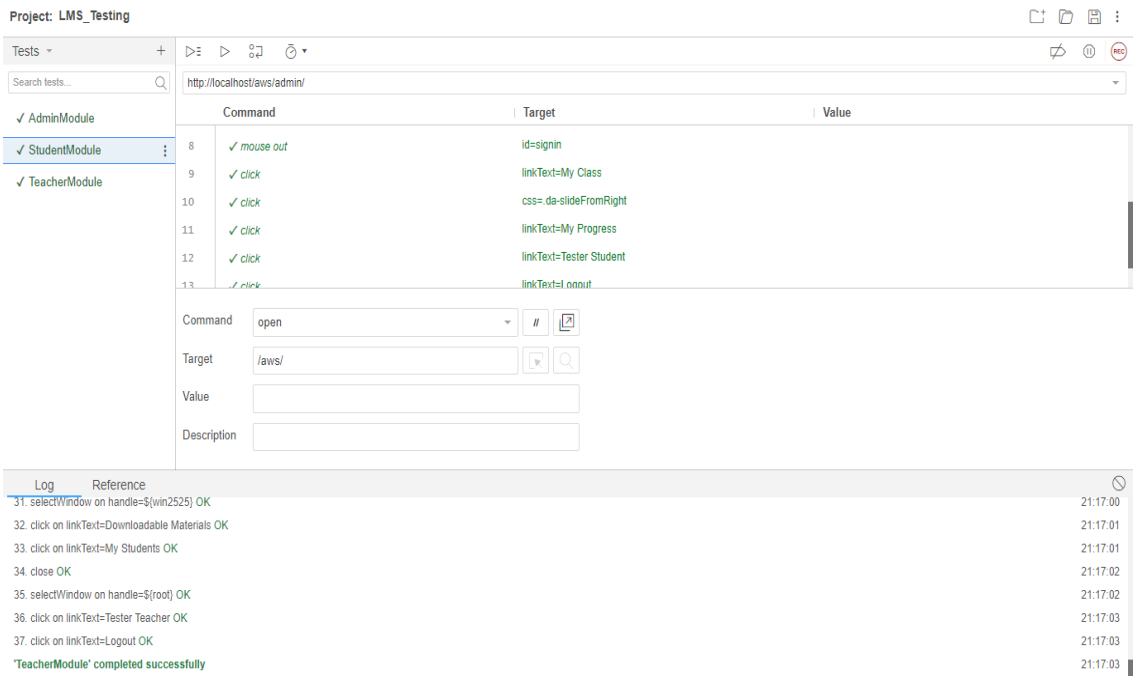

Figure (6.3): Student Module Testing

CHAPTER 7

CONCLUSION AND RECOMMENDATION

7.1 Conclusion

The eLearning system is one of the most important systems that help students to obtain and share the forms of assignments and tests among students and allow them to share their opinions and discuss these duties, which facilitates their learning process and increases their understanding of the subjects. The eLearning system is designed to accommodate future upgrading and development without the need for building a new system to fit with the growing needs and demands of the system. Having this system hosted online means the ability of both technicians and administrator to track and respond to demands of students at any time beyond the boundaries and walls of college which add one more advantage to replacing the paper-based style.

7.2 Future Work

7.2.1 Implementation

Implementation is the completing, execution, or routine with regards to an arrangement, a technique, or any outline, thought, display, particular, standard or strategy for accomplishing something. All things considered, execution is the activity that must take after any preparatory reasoning with the end goal for a remark happen.

7.2.2 Testing Stages

With the exception of little projects, frameworks ought not to be tried as a solitary, solid unit. Vast frameworks are worked out of sub-frameworks that are worked out of modules, which are made out of techniques and capacities. The testing procedure ought to thusly continue in stages where testing is done incrementally in conjunction with framework execution. The most generally utilized process comprises of five phases:

1. **Unit Testing:** Individual segments are tried to guarantee that they work accurately. Every part is tried autonomously without other framework segments.

2. **Module Testing:** This includes the testing of autonomous segments, for example, systems and capacities. A module epitomizes related parts so it can be tried without other framework modules.

3. **Subsystem Testing:** This stage includes testing accumulations of modules which have been incorporated into sub-frameworks. Sub-frameworks might be freely planned. The most widely recognized issues which emerge in vast programming frameworks are sub- framework interface confounds. The sub-framework test process ought to consequently focus on the recognition of interface blunders by thoroughly practicing the interfaces.

4. **System Testing:** Sub frameworks are coordinated to make up the whole framework. The testing procedure is worried about discovering mistakes that outcome from unexpected cooperation's between sub-frameworks and framework parts. It is likewise worried about approving that the framework meets its utilitarian and non-useful prerequisites.

5. **Acceptance Testing:** This is the last stage in the testing procedure before the framework is acknowledged for operational utilize. The framework is tried with information provided by the framework procurer as opposed to reproduced test information. Acknowledgment testing may uncover blunders and exclusions in the framework necessities definition on the grounds that the genuine information practices the framework in various routes from the test information. It might likewise uncover prerequisites issues where the framework's offices don't generally address the client's issues or the framework's execution isn't worthy.

7.3 Recommendation

Regardless of the fact that the basic objectives of the work have been met, there is still room for further improvement better and easier e-learning system. The solutions proffer by this application can be extended to other forms of e-learning platform. It is therefore recommended that further research be carried out on this work to improve it functionality and increase its features

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