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E-learning Course Finder

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This Project report has been submitted in fulfillment of the requirements for the
Degree of Bachelor of Science in Software Engineering.

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DECLARATION

I hereby declare that this project was completed by me under the direction of Nayeem Hasan, PhD Researcher (University of Electronic Science & Technology) & Senior Lecturer in the Department of Software Engineering at Daffodil International University. This also declares that neither this project nor any part of it has presented any degree awards anywhere else.



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PROJECT SUMMARY

This project is an E-learning platform. E-learning is the network-assisted transmission of knowledge. And it is the process of learning via the use of electronic applications and systems. Students can gain their knowledge from home. Can also test their knowledge by examination. Some of the courses are free for the students. Some courses are not free. But the cost of the courses is much less. By purchasing the course, students will be able to study for as long as they wish. There is no time limit. Both learning management & course management are included in this system. Students will be able to select the course as per their wishes. Courses will also be suggested based on the student's interest. Without an exam, the student cannot go next chapter. A student will be able to acquire knowledge in any subject as per their desire besides reading. This system will help a student to increase their skills. In the question-answer portal, students can ask the question if he/she wants and the contributor will reply to them. The contributor and the admin can also create questions for students. Students will be able to read at any time. Contributors are the teacher. The contributor & admin can create articles for students. Student can check their course performance.

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CHAPTER 1: INTRODUCTION

Nowadays, students are more inclined towards new technology. They want to be acquainted with the latest technology. The E-learning platform will be a new medium for students to develop their knowledge and skills. It is often assumed that new technology will have a significant impact on education. Students will be able to learn at home according to their taste. E-learning allows the student to learn virtually. This system will not confine students in the classroom.

1.1 Project Overview

Anyone can easily join this system. But they first registrar. If the student wants to join this system, they need to be registered as a student. And if the teacher wants, they have to be registered as a contributor. Students can also browse this system without registration. When the students want to join a course or buy a course they have to be registered. Some courses are fully free for the students and some are not. When a student registration in this system. This system will provide some questions to know the interest of the students. Based on the survey this system will suggest a course. Students can also join or buy a course based on the rating. Courses are well designed and divided by chapter. Without examination, the student cannot go to another chapter. If the contributor wants can post questions in the question-answer portal. After posting teacher will reply to them. The contributor and the admin can also post questions in the question-answer portal for students. In the blog portal, the contributor and the admin can post articles for students. Contributor and admin can create courses. The contributor has control over their course. Admin will manage the overall system.

1.2 Problem Statement

- Due to a lack of resources, students are unable to gain knowledge.
- Student can get help from classroom.
- If the student cannot come to class then they cannot take notes of that day.
- Cannot contact teachers as required.
- Students cannot share quarry properly.

1.3 Goals

E-Learning is a revolutionary development in the field of education. The objective of this system is to provide services to the students to gain knowledge effectively. This system provides online education that may be accessed at any time. Instead of typical classroom resources, provide a virtual resource. For any kind of question, no need to wait for the next day. Students can choose their course. Students can increase their basic knowledge. Some courses are free. Students can buy good courses at low prices. You can read as long as you want. Can read when desired.

1.4 Stakeholders

There are three types of stakeholders. They are-

- **Student**
- **Contributor**
- **Admin**

Student: the student can join free courses or can buy courses of their choice. The student can test their knowledge by examination.

Contributor: In this system, the contributor will be the teacher. The contributor can create courses, quizzes, post articles.

Admin: Admin has full control all over the system.

1.5 Project schedule

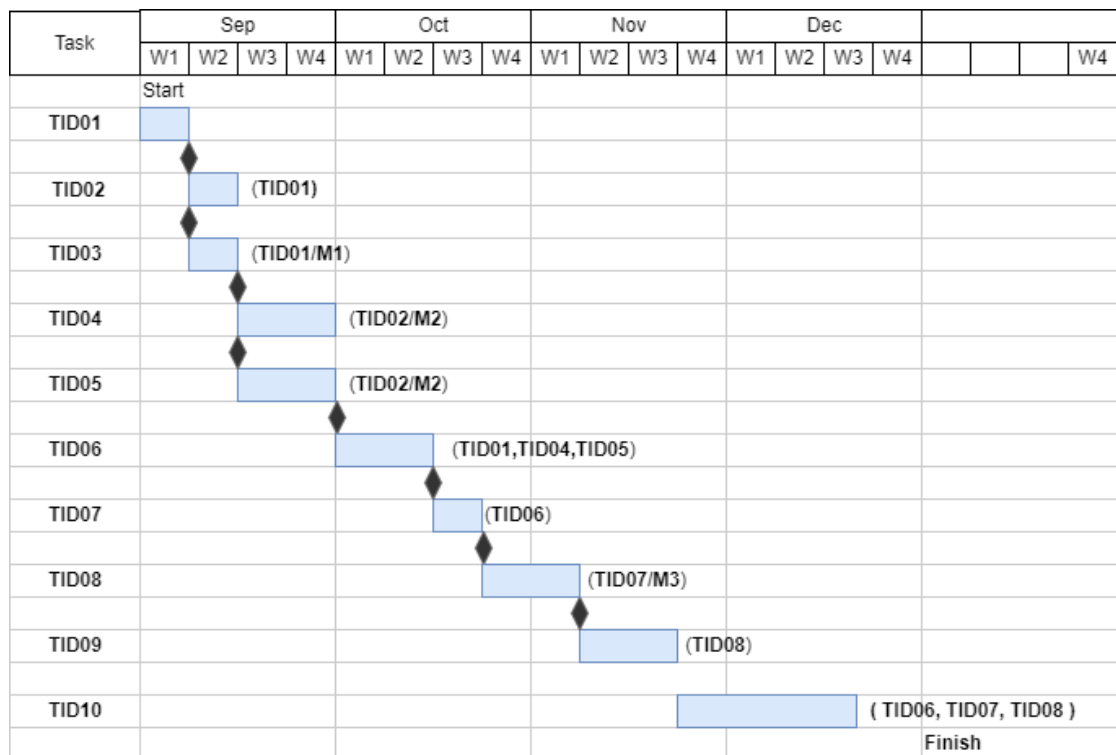
Task Name	Task_ID	Start_date	Duration (day)	End_date	Dependencies & Milestones
Registration	TID01	10/09/2021	7	16/09/2021	
Login	TID02	17/09/2021	3	19/09/2021	TID01
Logout	TID03	17/09/2021	3	19/09/2021	TID01(M1)
Q&A portal	TID04	17/09/2021	14	6/10/2021	TID02(M2)
Blog	TID05	17/09/2021	14	30/09/2021	TID02(M3)
Dashboard	TID06	7/10/2021	14	21/10/2021	TID01, TID04, TID05
Course	TID07	22/10/2021	7	28/10/2021	TID06
Chapter	TID08	29/10/2021	14	11/10/2021	TID07
Question	TID09	12/10/2021	14	24/10/2021	TID08(M3)
Card	TID10	25/10/2021	21	14/11/2021	TID06, TID07, TID08
Rating	TID11	15/11/2021	14	28/11/2021	TID06, TID10

1.6 Release Plan

Here is the release plan-

Version	Feature	Date
V0.1 (Beta)	Meet all requirement	30-12-2021

1.6.1 Gantt Chart



CHAPTER 2: SOFTWARE REQUIREMENT SPECIFICATION

2.1 Requirement Gathering

Requirements are collection from students, teachers through interview. For collecting requirements I have to go many school, college and university.

2.1.1 Row features

- Contributors & students can register in this system
- Contributor can create the course.
- Contributors can upload course content into a different chapter.
- Contributor can make questions.
- Contributor can post articles in blog portal
- Contributor can make questions in the question-answer portal
- Contributor can answer the question in question-answer portal
- Students can join the free course
- Students can join the paid course
- Students can attend the quiz
- Without attending quiz cannot go to the next content
- The student can answer the question in question-answer portal
- Students can make questions in the question-answer portal
- Students can check their result

2.2 Functional Requirement

1. Registration

FR1	Registration
Description	Students & contributor must be registered to join my system
Stakeholders	Student, Contributor

2. Login & logout

FR2	Login &Logout
Description	User can login & logout from this system at any time
Stakeholders	Student, Contributor, Admin

3. Survey

FR3	Survey
Description	Find student interest
Stakeholders	Student

4. Course Recommendation

FR4	Course Recommendation
Description	This system recommended course based on the survey
Stakeholders	Student

5. Create Blog Post

FR5	Create Blog Post
Description	Contributors & admin can post articles in the blog portal.
Stakeholders	Contributor, Admin

6. Create new course

FR6	Create new course
Description	Admin, Contributor can create a new course and upload course content.
Stakeholders	Admin, Contributor

7. View course

FR7	View Course
Description	Before registration student can view course
Stakeholders	Student, Contributor

8. Join Course

FR 7	Join Course
Description	Some course are free and some course are paid
Stakeholders	Student

9. Add Question

FR 8	Add Question
Description	Admin & contributor will add questions for each chapter.
Stakeholders	Admin, Contributor

10. Attend Test

FR10	Attend Test
Description	After finishing the chapter students have to attend the course test.
Stakeholders	Student

11. View Course Result

FR11	View Course Result
Description	After attending the test student can see their result.
Stakeholders	Student, Admin

12. Question-Answer portal

FR12	Question-Answer portal
Description	Students and contributors have the ability to ask and answer questions.
Stakeholders	Contributor, Student

2.3 Non-functional Requirement

➤ Performance

- This system will load quickly
- It can 200 request in 1 second

➤ Dependability

- The system will be real-time
- User can believe this system
- User can easily understand

➤ Maintainability

- This system will keep backup.
- Can maintain easily

➤ Scalability

- Any kind of update can occur.

➤ Security

- Secure any kind of attack
- No access in database

➤ Portability

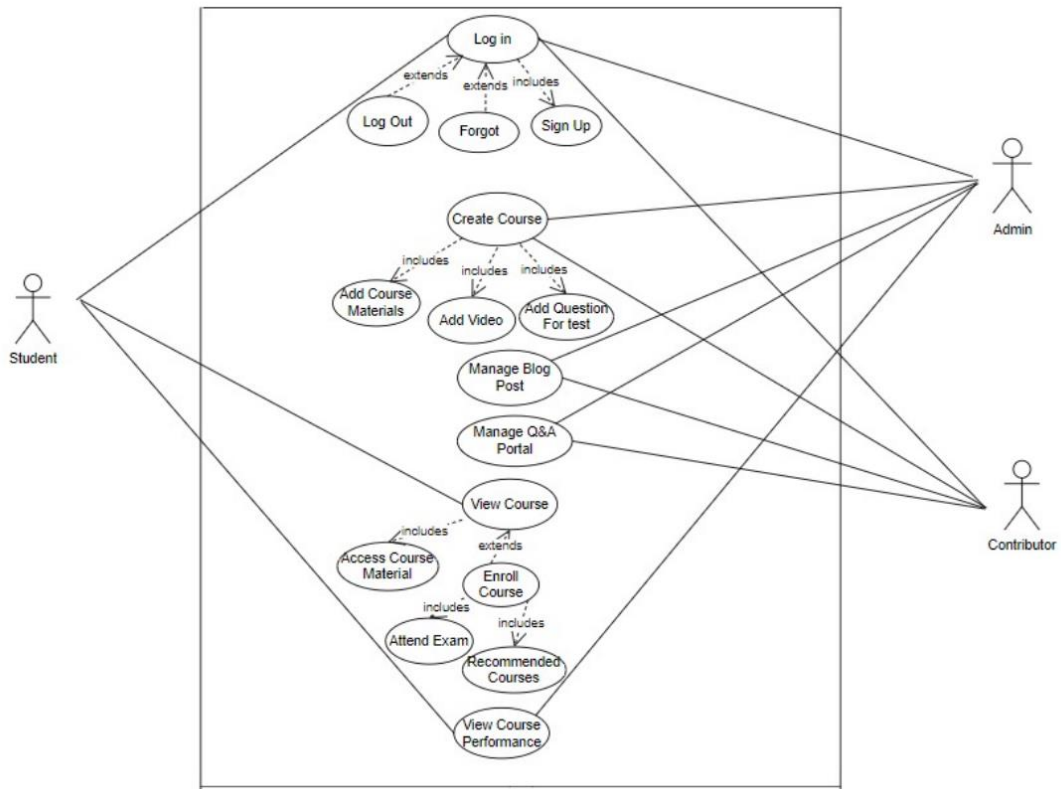
- Can be used in environment

➤ Usability

- If user want they can modify their information

CHAPTER 3: SYSTEM ANALYSIS

3.1 Use Case Diagram



3.2 Use Case Description

Login

Use Case Name	Login
Description	For login authentication required
Actors	Contributor, Student, Admin
Pre-Condition	Fulfill all information
Post-Condition	Redirect to the dashboard
Main Scenarios	Steps
Actors/Users	Enter information
	Verify
	Redirect to Dashboard

Create Course

Use Case Name	Create Course
Description	Contributor & admin will create course and it can be free or paid.
Actors	Contributor, Admin
Pre-Condition	Login
Post-Condition	Contributor & admin can create question
Main Scenarios	Steps
Actors/Users	Enter course information
	Verify information
	Redirect to course

Manage Blog

Name of Use Case	Manage Blog
Description	Admin & Contributor can manage blog portal
Actors	Teacher, Contributor
Pre-Condition	login
Post-Condition	Save blog
Main Scenarios	Steps
Actors/Users	Login
	Edit, delete blog
	Save blog

Manage Q&A portal

Name of Use Case	Manage Q&A portal
Description	Admin & Contributor can manage Q&A portal
Actors	Teacher, Contributor
Pre-Condition	login
Post-Condition	Save answers or questions
Main Scenarios	Steps
Actors/Users	login
	Edit, update questions or answer
	Save

View Course

Name of Use Case	View Course
Description	Student can view course
Actors	Student
Pre-Condition	Login
Post-Condition	Student will buy or join the course
Main Scenarios	Steps
Actors/Users	Login
	Buy/join course

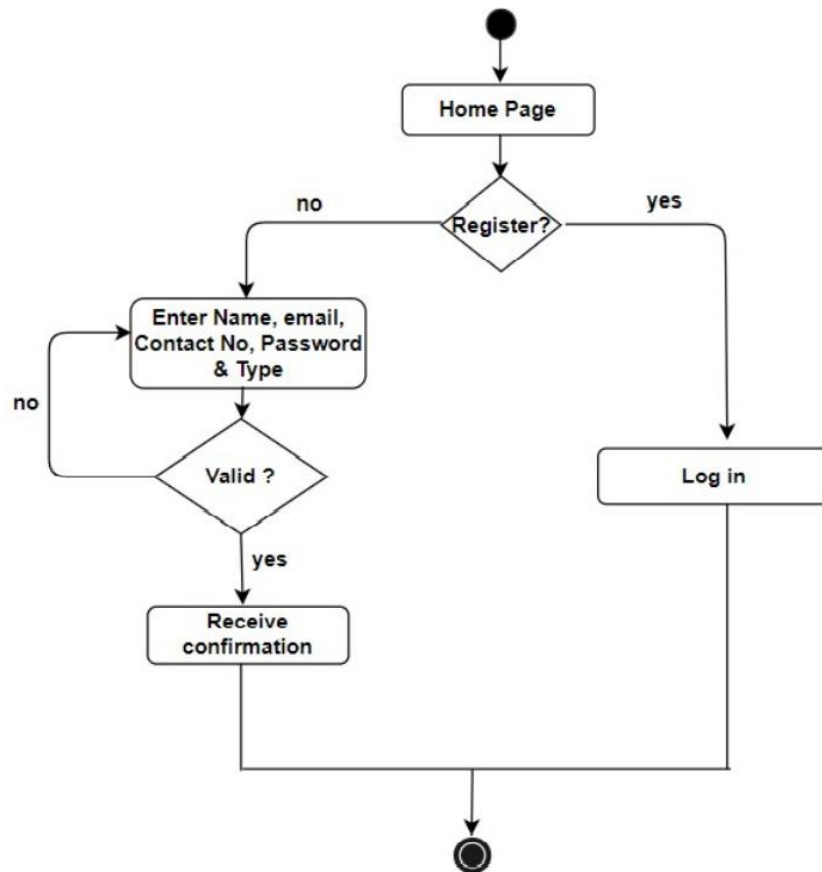
Add Question

Name of Use Case	Add Question
Description	Contributor & admin can add question for each chapter
Actors	Contributor, Admin
Pre-Condition	Create course
Post-Condition	Make questions for every chapter
Main Scenarios	Steps
Actors/Users	Create course
	Add question

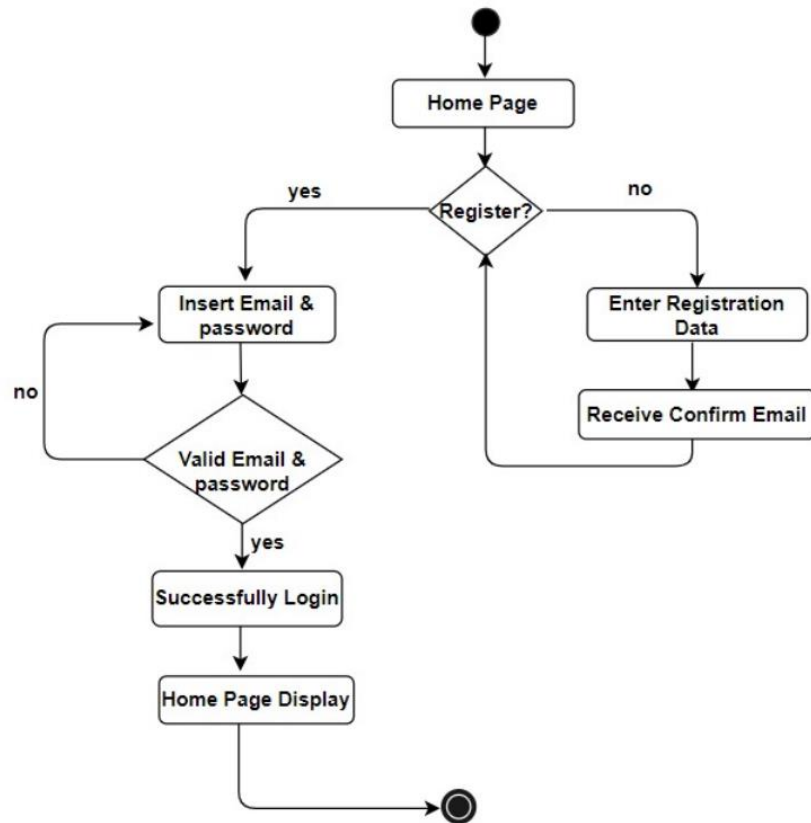
View course performance

Name of Use Case	View course performance
Description	Student can see their performance
Actors	Student, Admin
Pre-Condition	Must attend in quiz
Post-Condition	Can enter next chapter
Main Scenarios	Steps
Actors/Users	Attend examination
	Evaluate result
	Next chapter

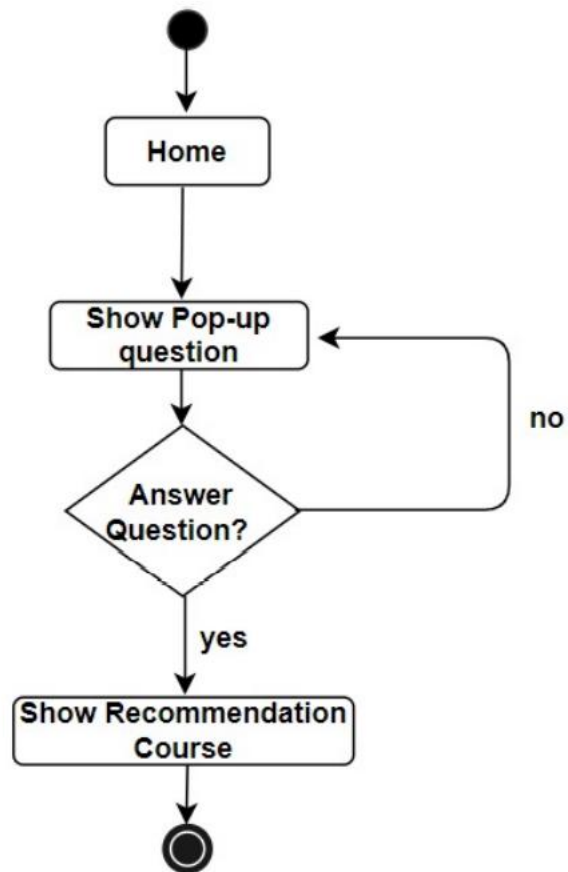
3.3 Activity Diagram (Registration)



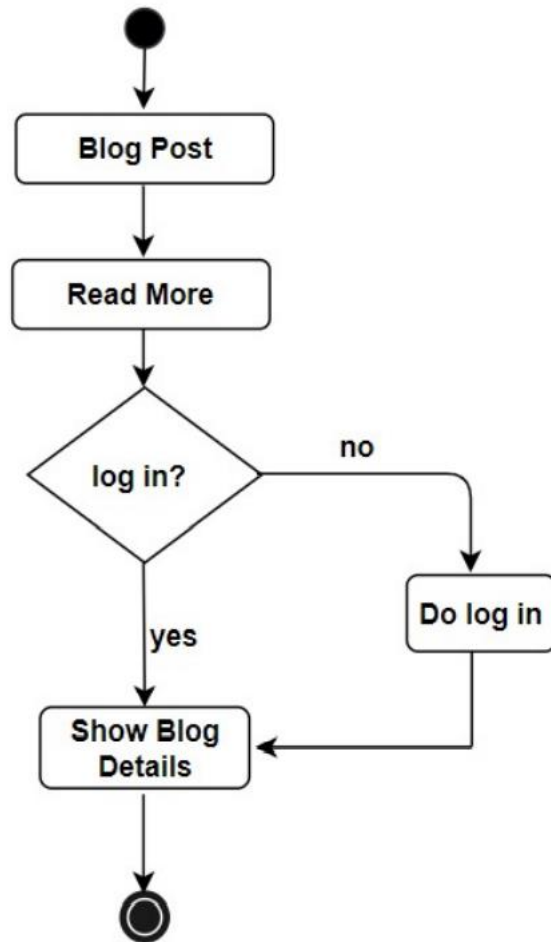
3.3 Activity Diagram (Login)



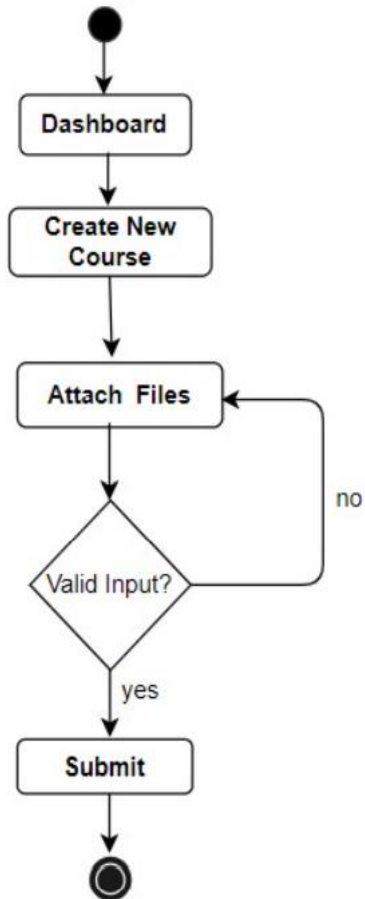
3.3 Activity Diagram (course recommendation)



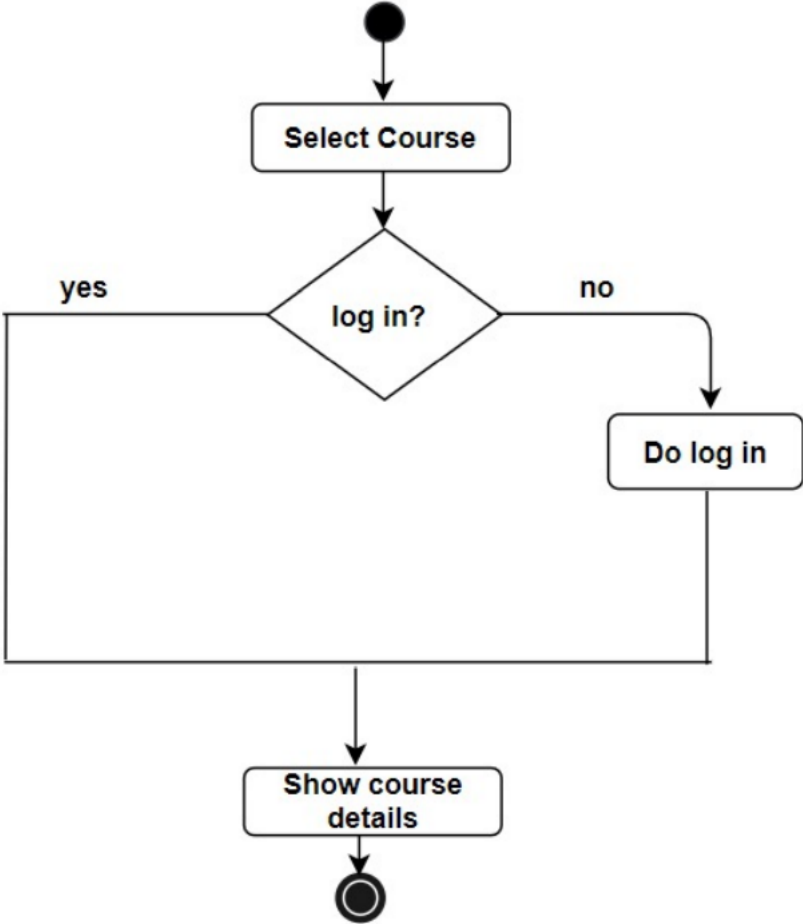
3.3 Activity Diagram (Blog portal)



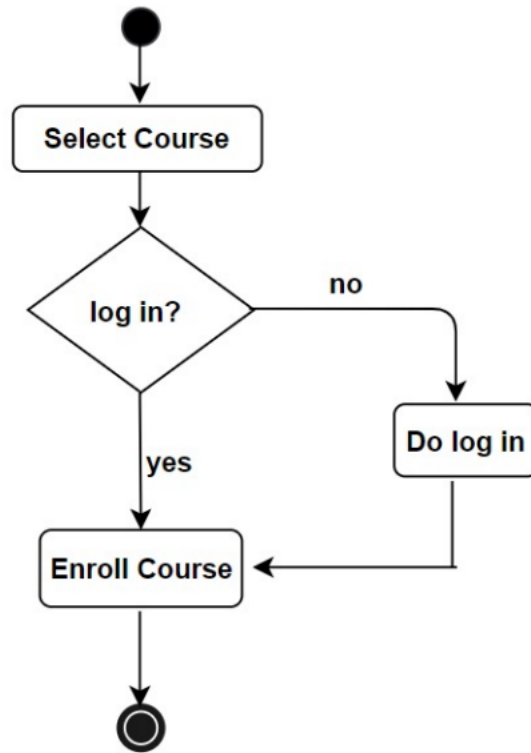
3.3 Activity Diagram (Create course)



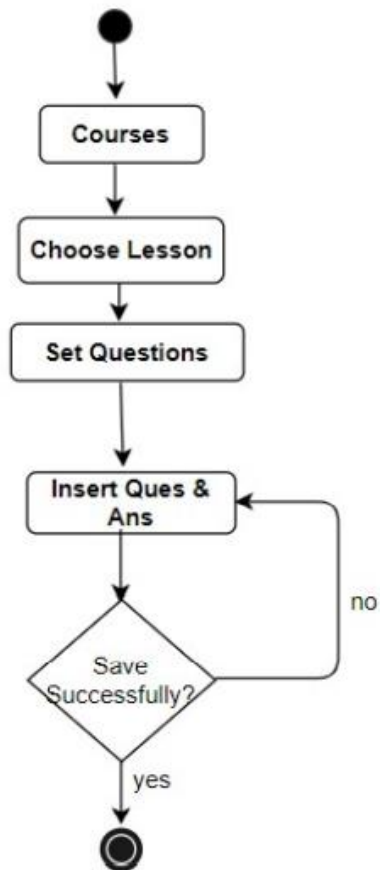
3.3 Activity Diagram (View Course)



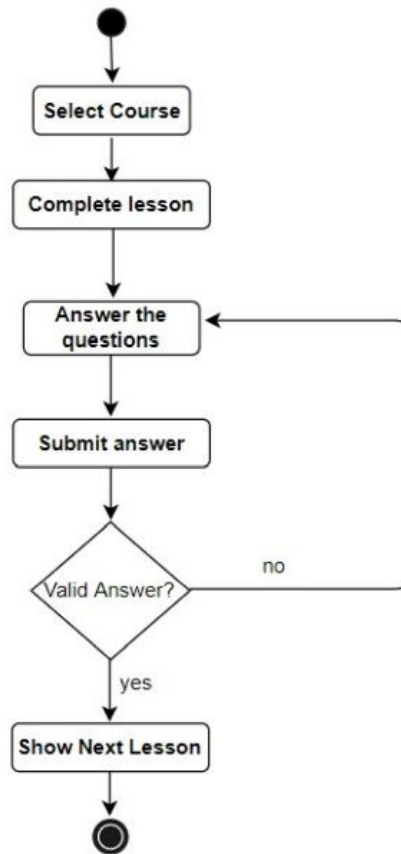
3.3 Activity Diagram (Join Course)



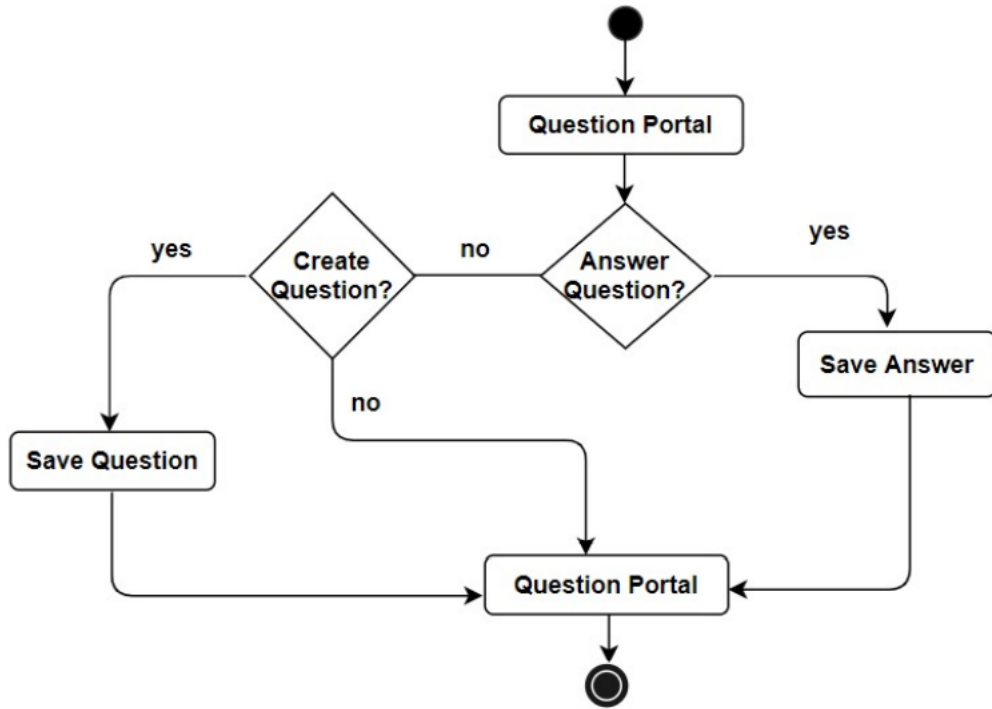
3.3 Activity Diagram (Add Question)



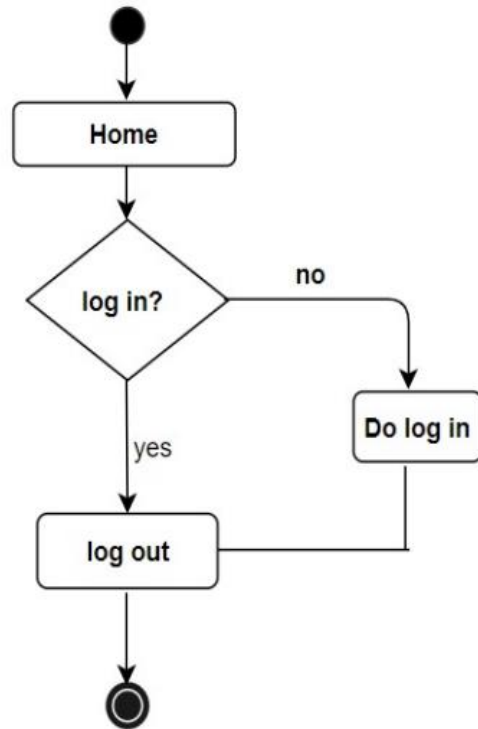
3.3 Activity Diagram (Attend Exam)



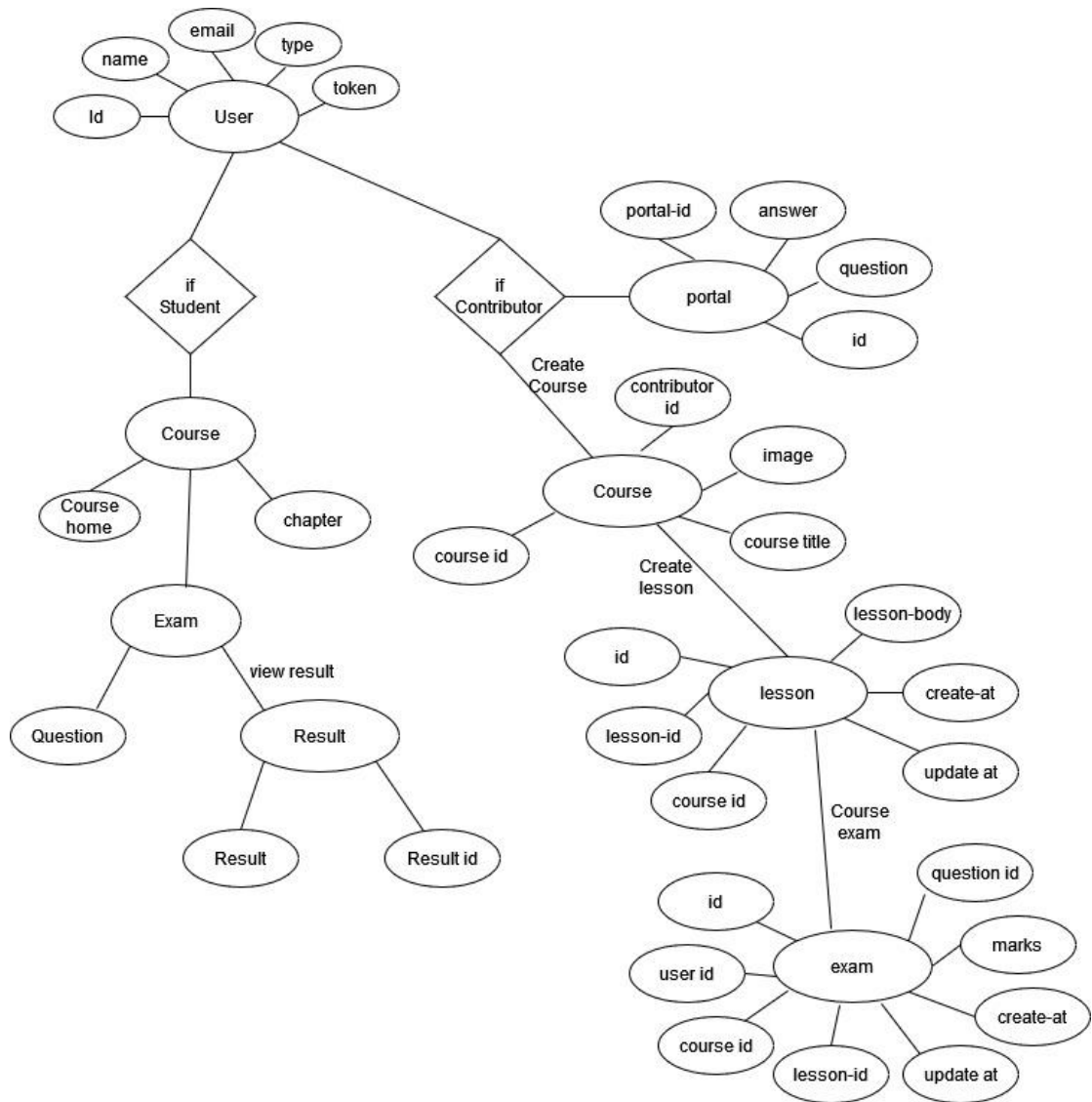
3.3 Activity Diagram (Q&A Portal)



3.3 Activity Diagram (Logout)

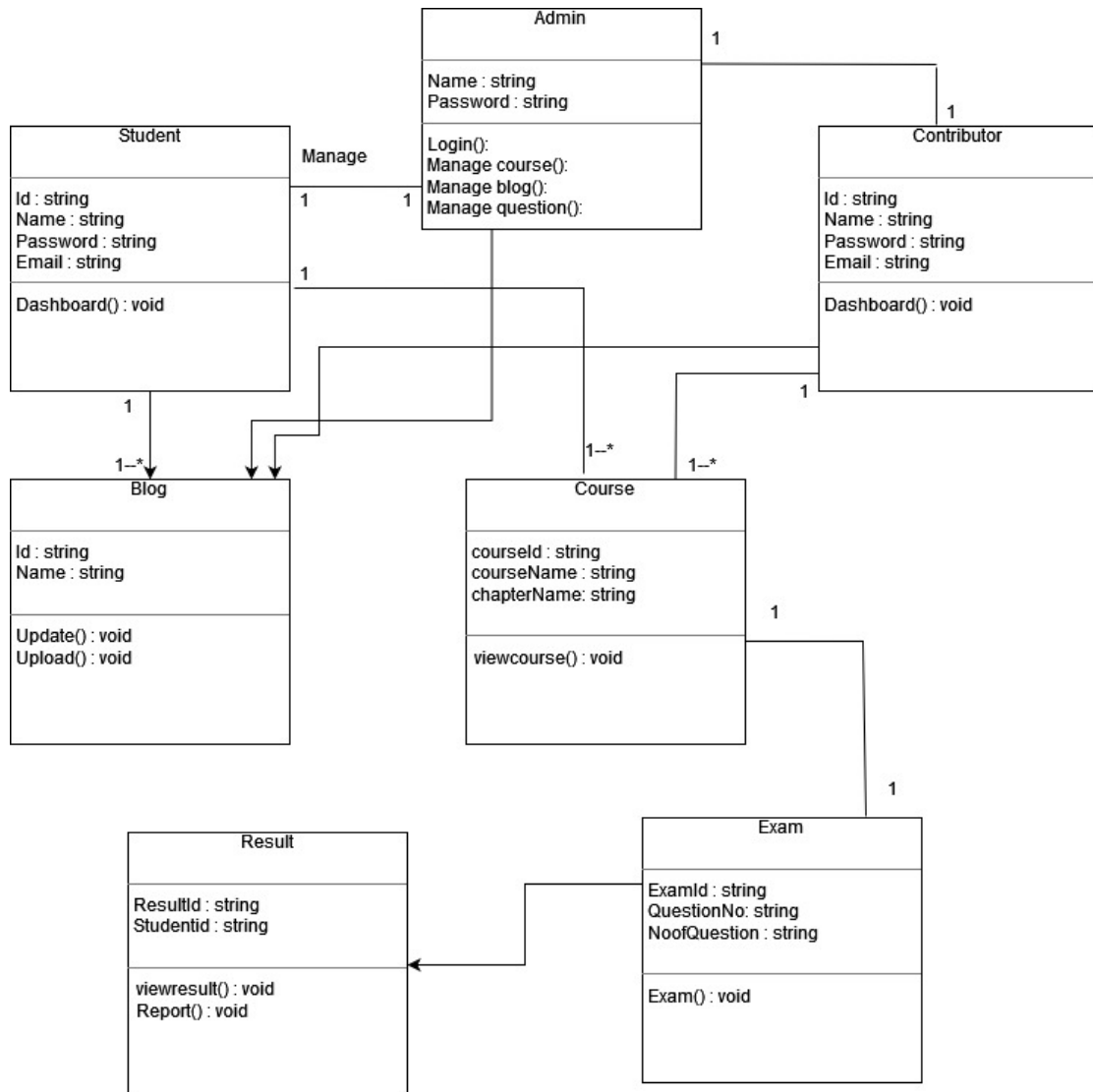


3.4 E-R diagram



Chapter 4: System Design Specification

4.1 Class Diagram



Class Diagram

4.2 Development Tools & Technology

4.2.1 User Interface Technology

- PHP & Laravel
- Bootstrap5

4.2.2 Implementation Tools & Platforms

- vs code
- MySQL
- Apache HTTP Server

CHAPTER 5: SYSTEM TESTING

5.1 Testing Features

5.1.1 Features to be tested

Test case	Test feature	Description	Priority
1	Registration	Students and Contributors have to register in this system	2
2	Login	Students, Admin and Contributors can log in this system	2
3	Create course	Admin and Contributors can create courses. The course is either free or paid.	3
4	Create quiz	Teacher can create quiz	3
5	Q&A portal	Student, Contributor, and admin can post question and answer in the question-answer portal	2
6	Blog portal	Contributor and admin can post articles in the blog portal	2
7	Rating	When students join the course, the rating will auto-updated.	3
8	Result	Show student performance for each chapter	3
9	Card	To buy paid course, the course will add in the card	4

5.1.2. Test-case Table

Test case no: 1		Executed by: Minhazul Islam Tommoy		
Test case name: Registration		Designed by: Minhazul Islam Tommoy		
System: E-learning Course Finder		Designed date: 28/12/2021		
Priority no: 2		Executed date: 30/12/2021		
Description: Students and Contributors have to register in this system				
Pre-Condition: Fulfill all the valid data				
Post-Condition: View dashboard				
Step	Action	Response	Pass/Fail	Comment
1	Check registration for contributor, student	No	fail	Use valid data
2	Check registration for contributor, student	Redirect to the dashboard	Pass	Achieve goal

Test case no: 2		Executed by: Minhazul Islam Tommoy		
Test case name: Login		Designed by: Minhazul Islam Tommoy		
System: E-learning Course Finder		Designed date: 28/12/2021		
Priority no:		Executed date: 30/12/2021		
Description: Students, Admin and Contributors can log in this system				
Pre-Condition: Fulfill all the valid data				
Post-Condition: View dashboard				
Step	Action	Response	Pass/Fail	Comment
1	Check login for contributor, student, admin	No	fail	Use valid data
2	Check login for contributor, student, admin	Redirect to the dashboard	Pass	Achieve goal

Test case no: 3		Executed by: Minhazul Islam Tommoy		
Test case name: Create Course		Designed by: Minhazul Islam Tommoy		
System: E-learning Course Finder		Designed date: 28/12/2021		
Priority no: 3		Executed date: 30/12/2021		
Description: Admin and Contributors can create courses. The course is either free or paid.				
Pre-Condition: Login				
Post-Condition: View Course				
Step	Action	Response	Pass/Fail	Comment
1	Check to create course properly	Redirect to course	pass	Achieve goal
2	Check to upload course content properly	Upload successfuly	Pass	Achieve goal

Test case no: 4		Executed by: Minhazul Islam Tommoy		
Test case name: Create Quiz		Designed by: Minhazul Islam Tommoy		
System: E-learning Course Finder		Designed date: 28/12/2021		
Priority no: 3		Executed date: 30/12/2021		
Description: Admin and Contributors can create courses. The course is either free or paid.				
Pre-Condition: Login				
Post-Condition: View Course				
Step	Action	Response	Pass/Fail	Comment
1	Check to create course properly	Redirect to course	pass	Achieve goal
2	Check to upload course content properly	Upload successfully	Pass	Achieve goal

Test case no: 5		Executed by: Minhazul Islam Tommoy		
Test case name: Q&A Portal		Designed by: Minhazul Islam Tommoy		
System: E-learning Course Finder		Designed date: 28/12/2021		
Priority no: 2		Executed date: 30/12/2021		
Description: Student, Contributor, and admin can post question and answer in the question-answer portal				
Pre-Condition: Login				
Post-Condition: View Q&A portal				
Step	Action	Response	Pass/Fail	Comment
1	Check to upload questions	Redirect to Q&A portal	pass	Achieve goal
2	Check to upload answer	Redirect to Q&A portal	Pass	Achieve goal

Test case no: 6		Executed by: Minhazul Islam Tommoy		
Test case name: Blog portal		Designed by: Minhazul Islam Tommoy		
System: E-learning Course Finder		Designed date: 28/12/2021		
Priority no: 2		Executed date: 30/12/2021		
Description: Contributor and admin can post articles in the blog portal				
Pre-Condition: Login				
Post-Condition: View blog portal				
Step	Action	Response	Pass/Fail	Comment
1	Check to upload article	Redirect to blog portal	pass	Achieve goal
2	Manage blog	Redirect to blog portal	Pass	Achieve goal

Test case no: 7		Executed by: Minhazul Islam Tommoy		
Test case name: Rating		Designed by: Minhazul Islam Tommoy		
System: E-learning Course Finder		Designed date: 28/12/2021		
Priority no: 3		Executed date: 30/12/2021		
Description: When students join the course, the rating will auto-updated.				
Pre-Condition: Join course				
Post-Condition: View rating				
Step	Action	Response	Pass/Fail	Comment
1	Check the rating	Not update	Fail	Achieve goal
2	Check the rating	Update	Pass	Achieve goal

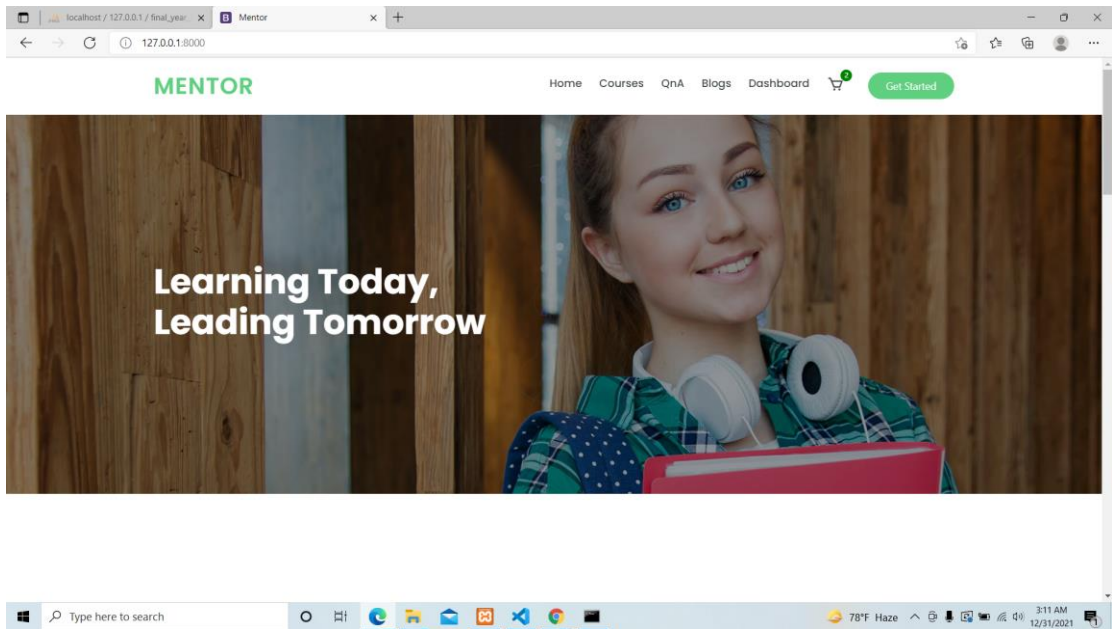
Test case no: 8		Executed by: Minhazul Islam Tommoy		
Test case name: Result		Designed by: Minhazul Islam Tommoy		
System: E-learning Course Finder		Designed date: 28/12/2021		
Priority no: 3		Executed date: 30/12/2021		
Description: Show student performance for each chapter				
Pre-Condition: Attend quiz				
Post-Condition: View result				
Step	Action	Response	Pass/Fail	Comment
1	Check the performance	Cannot see	Fail	Cannot achieve goal
2	Check the performance	Redirect to the result page	Pass	Achieve goal

Test case no: 9		Executed by: Minhazul Islam Tommoy		
Test case name: Card		Designed by: Minhazul Islam Tommoy		
System: E-learning Course Finder		Designed date: 28/12/2021		
Priority no: 3		Executed date: 30/12/2021		
Description: To buy paid course, the course will add in the card				
Pre-Condition: Add to card				
Post-Condition: Make payment				
Step	Action	Response	Pass/Fail	Comment
1	Check card whether it can add course or not	Can add	Pass	Achieve goal
2	Check make payment option	Redirect to the new course	Pass	Achieve goal

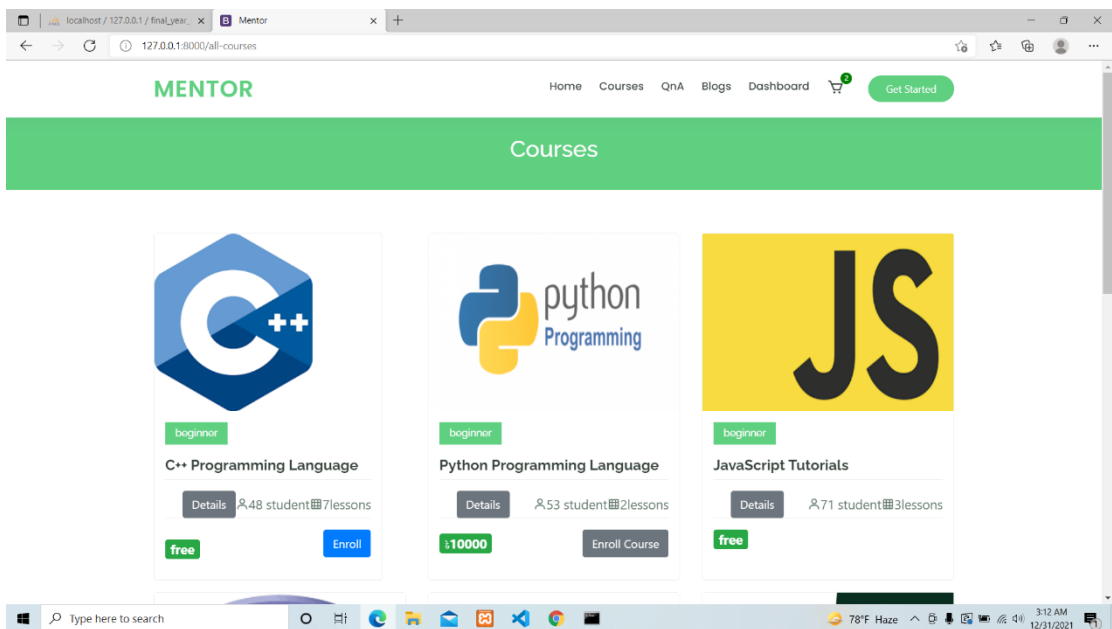
CHAPTER 6: USER MANUAL

(Student)

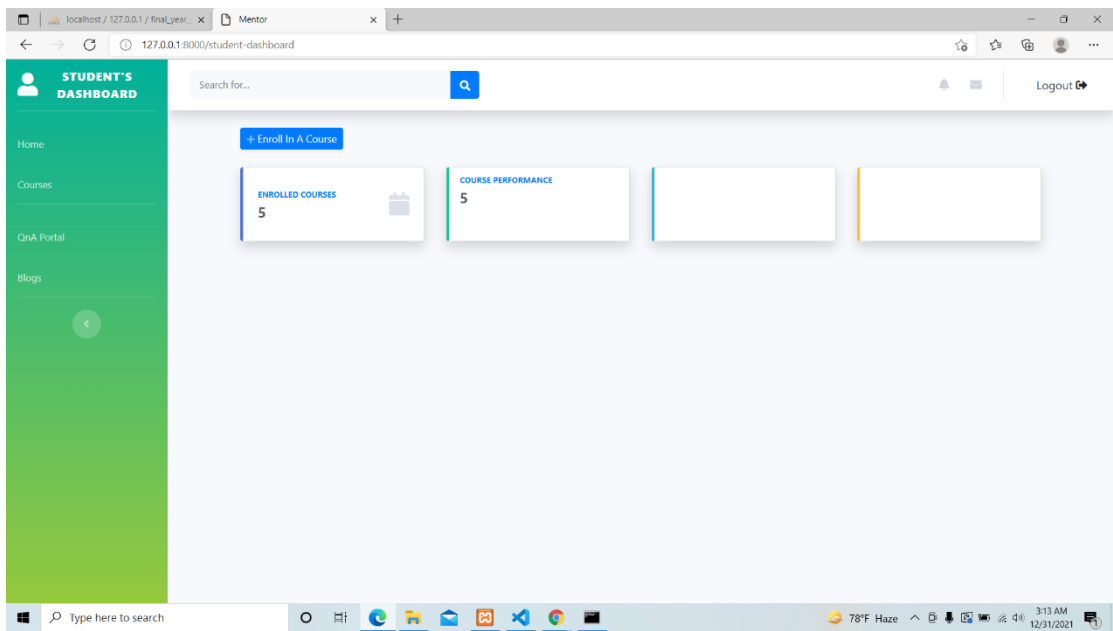
(Home page)



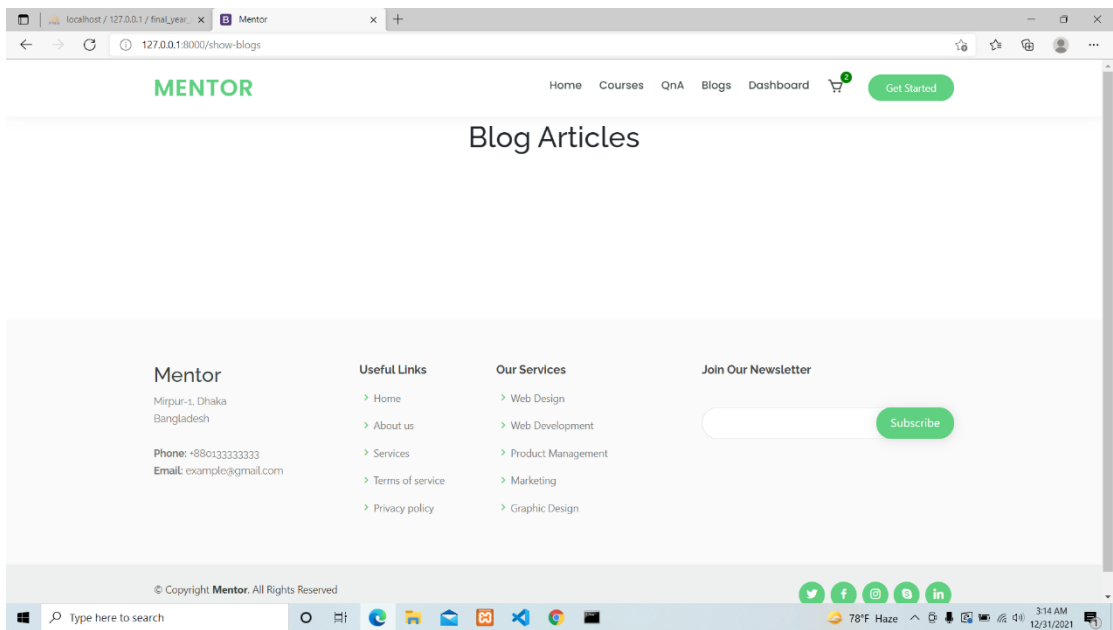
(Course page)



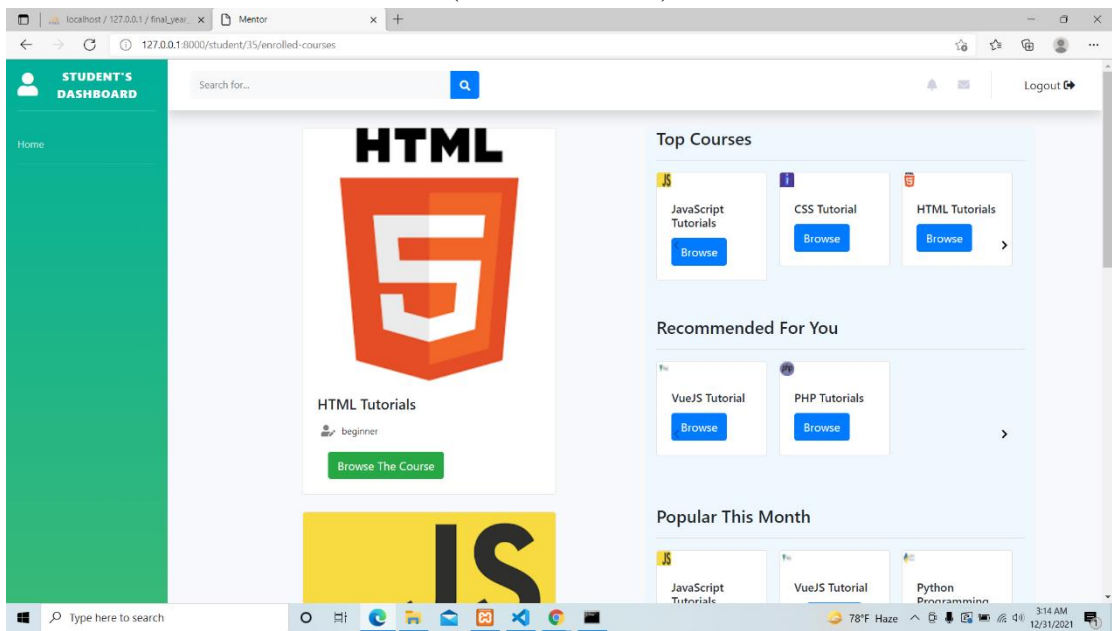
(Student dashboard)



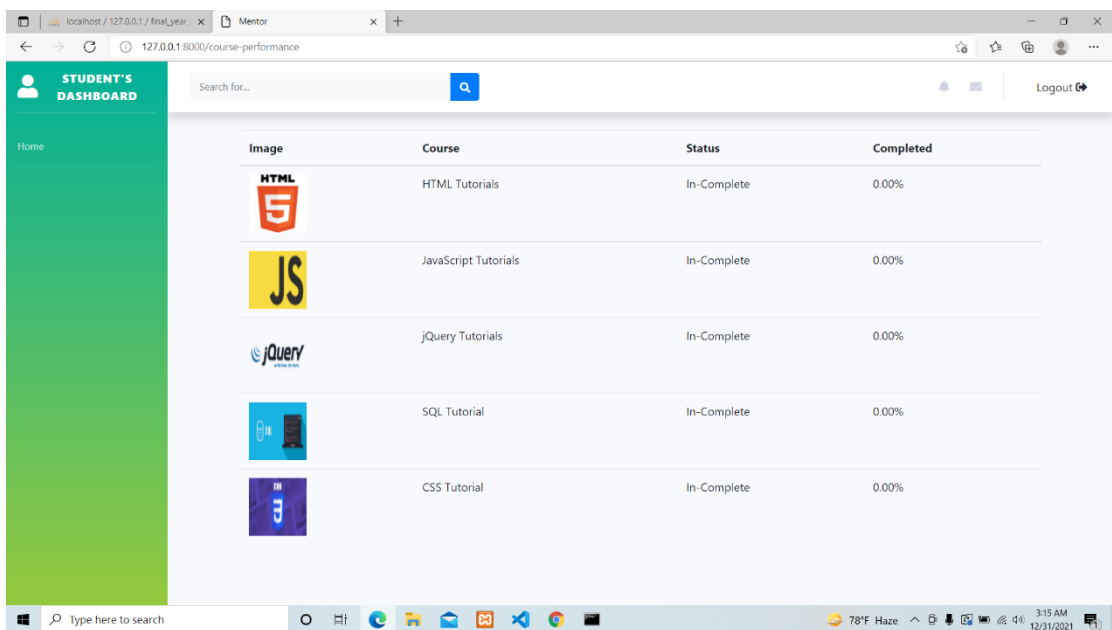
(Blog page)



(Enrolled course)

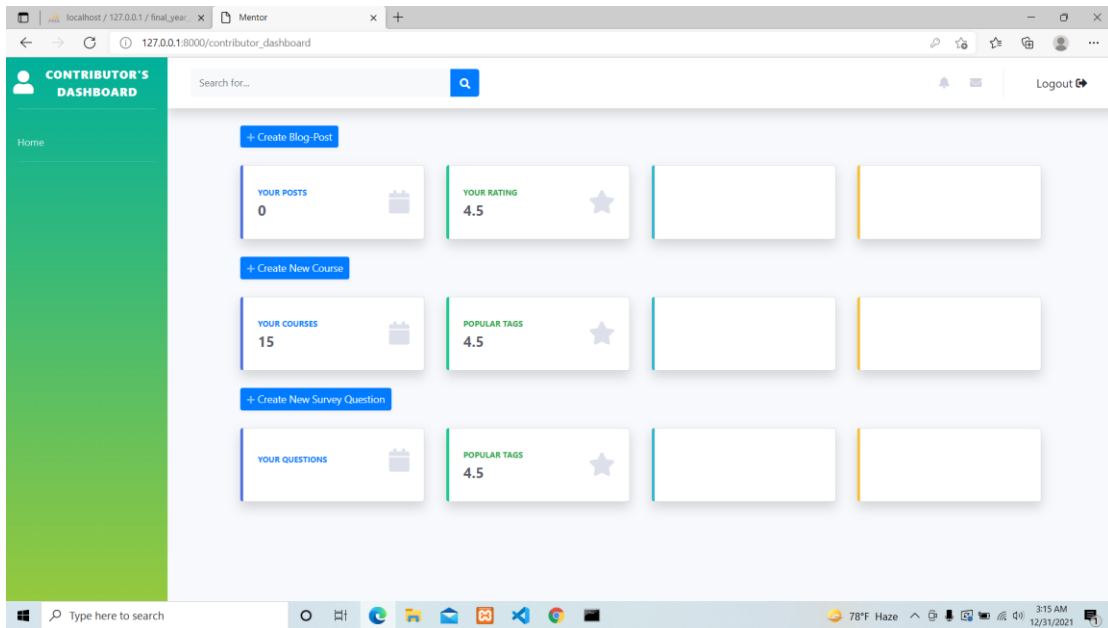


(Progress)

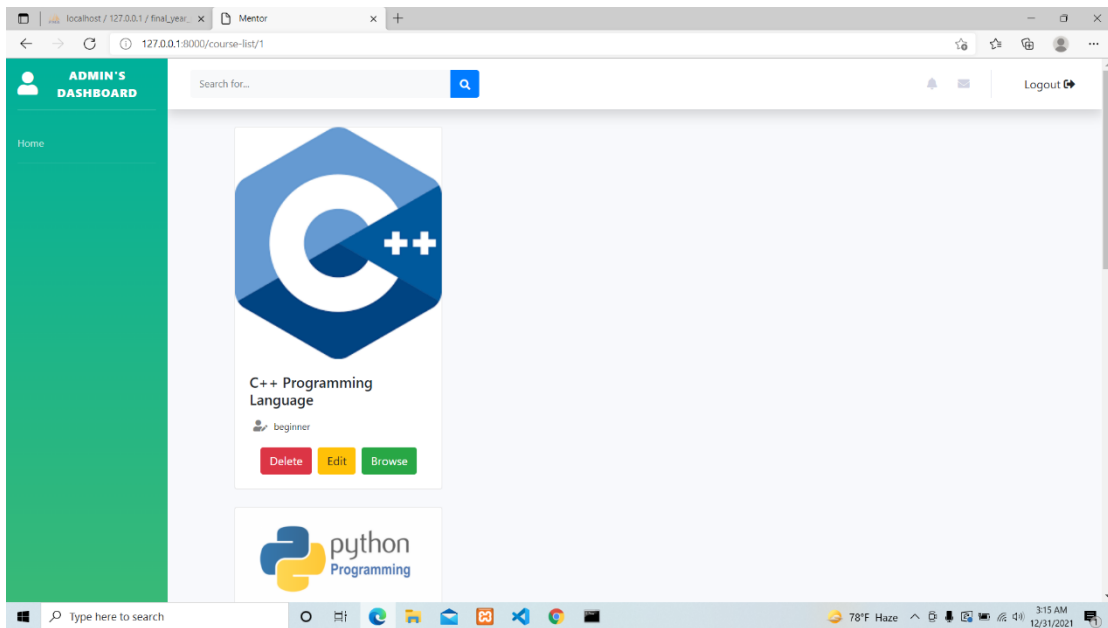


(Contributor)

(Contributor dashboard)



(Contributor Course)



(Create quiz)

The screenshot shows a web browser window with the URL `localhost/127.0.0.1/final_year.../127.0.0.1:8000/create-survey-question`. The page title is "CONTRIBUTOR'S DASHBOARD". The main content area is titled "Create Survey Question" and contains the following fields:

- Question Body:** A large text input area.
- Options For the Question:** A dropdown menu currently showing "--Select--".
- Submit:** A blue button at the bottom of the form.

The browser's taskbar at the bottom shows the system tray with a search bar, task icons, and system information: "78°F Haze" and "3:15 AM 12/31/2021".

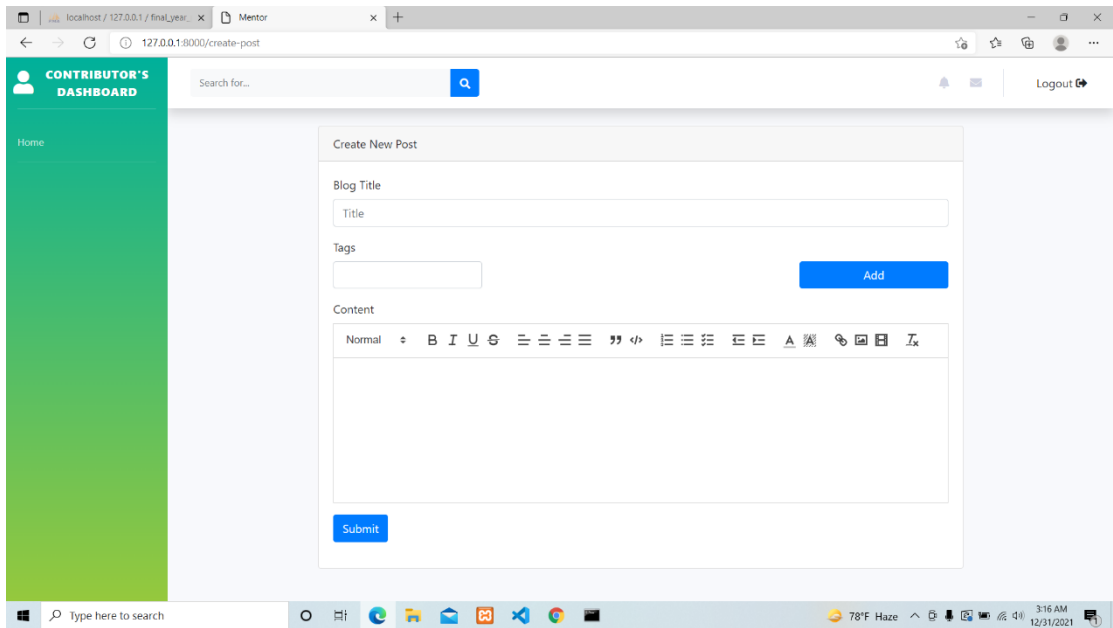
(Create Course)

The screenshot shows a web browser window with the URL `localhost/127.0.0.1/final_year.../127.0.0.1:8000/course-create`. The page title is "CONTRIBUTOR'S DASHBOARD". The main content area is titled "Create New Course" and contains the following fields:

- Course Title:** A text input field with the placeholder "Title".
- Upload Course Banner (Recommended: 13:6 ratio):** A button labeled "Select Image" with a camera icon.
- Course Level:** A dropdown menu with "Select" as the current value.
- Course Category:** A dropdown menu with "Select" as the current value.
- Course Type:** A dropdown menu with "Select" as the current value.
- Tags:** A text input field.
- Submit:** A blue button at the bottom left of the form.
- Add:** A blue button at the bottom right of the form.

The browser's taskbar at the bottom shows the system tray with a search bar, task icons, and system information: "78°F Haze" and "3:16 AM 12/31/2021".

(Upload post)



CHAPTER 7: CONCLUSION

7.1 GitHub Link

<https://github.com/Tommoy1234/E-learning-course-finder.git>

7.2 Summary

This system is for teachers and students. If a student wants to be proficient in any subject besides academic study, then our system is for them. With the help of this system students can become self-learners. Be able to acquire knowledge. Students can buy good courses at a much lower cost.

7.3 Limitations

➤ Search

- Search Suggestion was not built.

➤ View

- Lacking's in design

7.4 Future Scope

In future, I will add student attendance system. Student can also submit assignment. There will be a chat system for students and contributors. Students can talk to their contributor if needed. After collecting huge amount of survey data, I will analysis this data and apply various machine learning method for research.