UE20CS352- OOAD PROJECT REPORT

EduGuru-Online E-learning platform

Team Members' details:

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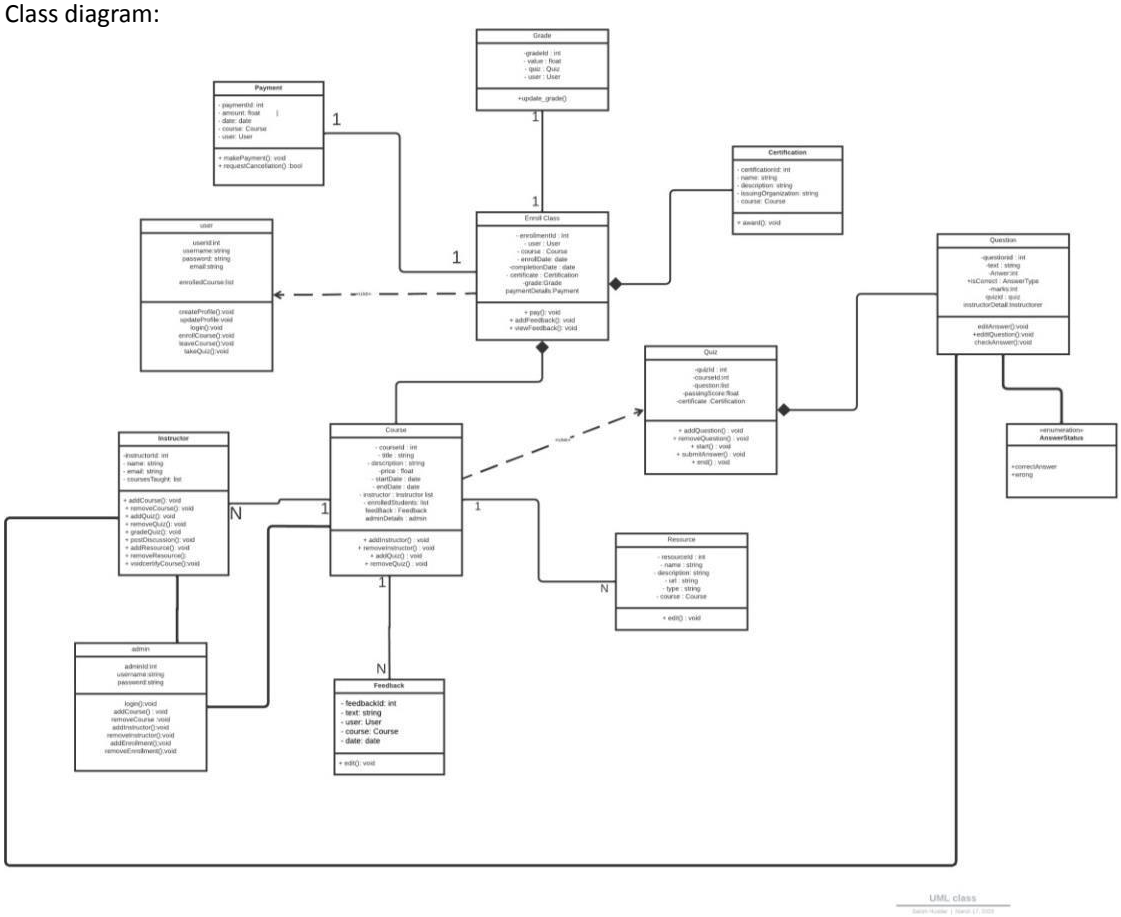
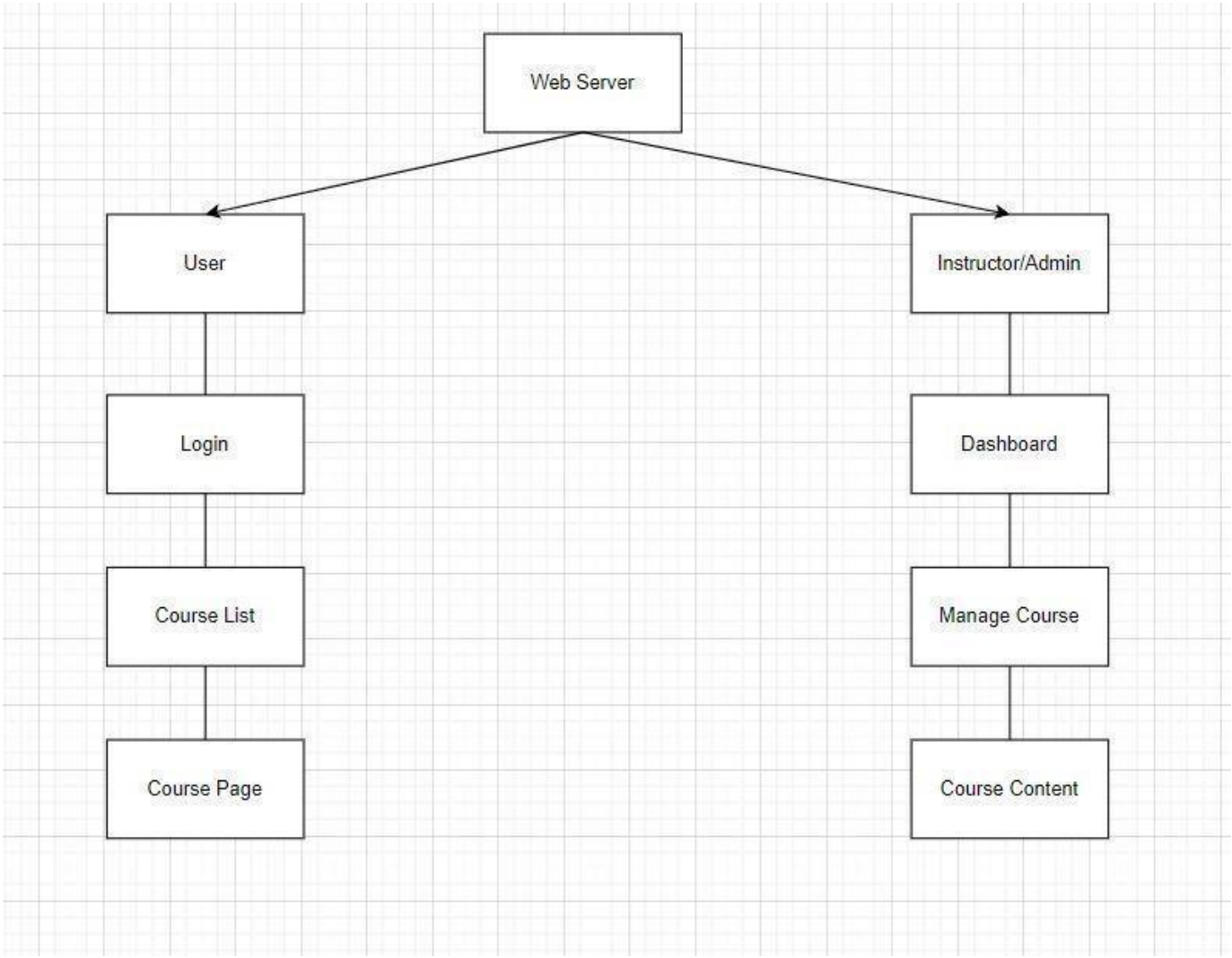
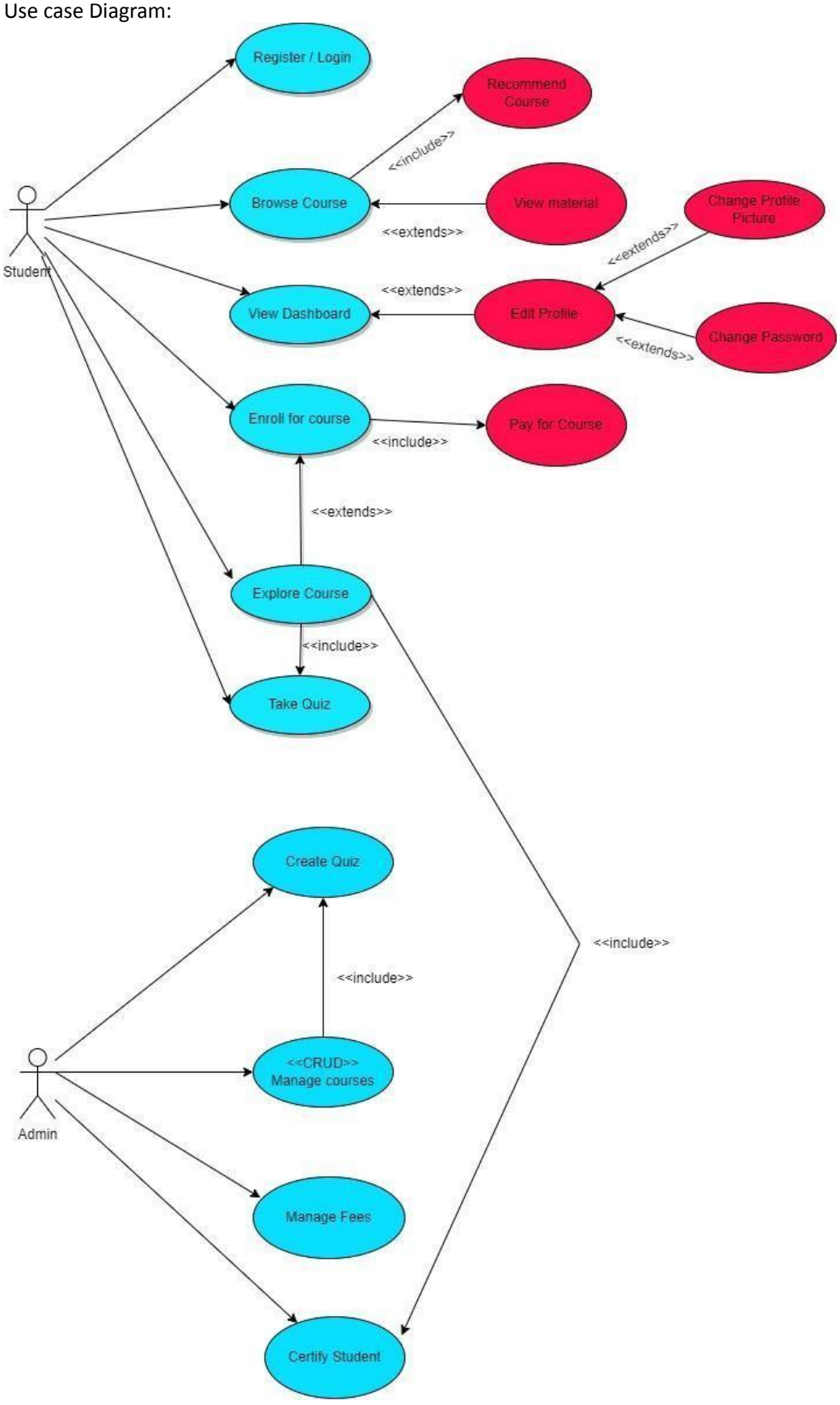
Class diagram:



Block Diagram:



Use case Diagram:



Design Principles used

Single Responsibility Principle (SRP): All classes in the class diagram are designed with this principle in mind

Open/Closed Principle (OCP):All classes in the class diagram are designed with this principle in mind, as new functionality can be added by creating new classes instead of modifying existing ones.

Dependency Inversion Principle (DIP): The classes are designed to depend on abstractions, not concretions.
User depends on the Profile abstraction. Enroll_Class
depends on the Payment abstraction.

Liskov Substitution Principle (LSP): All classes can be substituted with their subclasses without affecting the correctness of the program.
All classes in the class diagram follow this principle.

Interface Segregation Principle (ISP): The classes are designed to have minimal and specific interfaces, avoiding unnecessary dependencies and coupling between classes.
Enroll_Class has a minimal interface with Payment.

ABSTRACT :

EduGuru is an online educational platform which allows the user to register for courses and take examination for the selected courses effortlessly.

INTRODUCTION

An educational learning platform is a digital tool that facilitates the delivery of educational content to students. This platform provides an online environment where students can learn at their own pace, interact with teachers, and collaborate with other students. The platform includes various features such as video lectures, interactive quizzes, discussion forums, and assignments. The main objective of an educational learning platform is to provide students with a flexible and personalized learning experience that suits their learning style and preferences. This abstract highlights the importance of educational learning platforms in modern education and their potential to transform the traditional classroom setting.

MOTIVATION

Education in the modern day has transformed drastically with time as a result of which most of the learning is now being done online as opposed to the old school way where students were required to read through numerous books to find desired information. With advancements in technology, students can now get access to education from anywhere in the world. Online educational platforms offer courses on various subjects and enable students to learn at their own pace. While a transition is being made gradually towards gaining more knowledge using online platforms, there is however a lack of awareness of the quality and standards of courses available for free. This gave us the motivation to create a free online educational platform which provides quality assurance to the user.

WHY THIS PROJECT?

The top online educational courses provided by Coursera, Udemy, etc. have 1 major limitation. Each course costs a fortune and not all users can afford to buy these. Hence, we are creating this application in order to reach out to a larger audience and provide quality courses while charging a nominal amount.

OBJECTIVES AND GOALS

Following are the objectives and goals of our e-learning system:
1) To create a login portal, allow new users to register to the platform.

2) To enable the user to browse available courses in the system, filter courses by category, view course descriptions and other details.

3) To enable students to take exams for the courses taken, view their grades for completed courses and track progress.

4) To create a payment gateway for allowing students to make required payments to take a course.

5) To recommend courses to the user on the basis of course history of user.

BACKGROUND

User management: The system will need to provide user management features, such as registration, login, and user profile management.

Course management: The system will need to provide course management features, such as course creation, course enrollment, and course progress tracking.

Content management: The system will need to provide content management features, such as managing and displaying text, images, videos, and other multimedia content.

Quiz management: The system will need to provide quiz management features, such as creating and managing quizzes, scoring quizzes, and displaying quiz results.

Analytics and reporting: The system may include analytics and reporting features to help administrators track user progress, course completion rates, and other metrics.

TOOLS and PLATFORM

Tools: VSCode, GitHub Hardware

requirements - None

Software platforms

Technology stack:

Java, Spring Framework , MySQL, HTML, CSS, and JavaScript.

Block diagram

Applications

1) Distance Learning: students can access educational content and courses from anywhere in the world. This is especially useful for students who are unable to attend traditional in-person classes due to geographic, financial, or other constraints.

2) Self-paced learning: Students can set the pace at which they desire to complete a course. The number of weeks for course completion and hours per week can be adjusted to suit the needs of the user.

3) Practical learning: Students are required to perform practical assignments to receive the certification for a course and hence get exposure to experiential learning.

Future Scope

1) Virtual Reality: With the advent of virtual reality (VR) technology, e-learning systems can simulate real-world environments and provide immersive learning experiences. This can be particularly useful in fields like healthcare, engineering, and construction where hands-on experience is essential.

2) AI- powered chatbots: Chatbots can be trained to answer simple questions from the users, recommend additional resources and provide feedback to users.

USE CASE DESCRIPTION

The E-learning system (EduGuru) has two main actors: the Admin and the Student. The Admin is responsible for managing the system, while the Student uses the system to access courses and learn.

The following use cases are included in the E-learning system:

Register / login: Both Admin and Student can register and login to the system.

Browse Courses:

Students can browse the courses available in the system, filter courses by category, view course descriptions and other details.

View Dashboard

Students can view their personal dashboard, which includes information about enrolled courses, grades, and progress.

Enrol for Course:

Students can register for courses, subject to availability and payment of fees. Students

can view their grades for courses they have completed.

Manage Courses:

Admin can manage courses, including adding, modifying, and deleting courses.

Create Courses:

Admin can create new courses, including adding course details and uploading course materials.

Manage Fees:

Admin can manage course fees, including setting fees for courses, managing payment transactions and refunds.

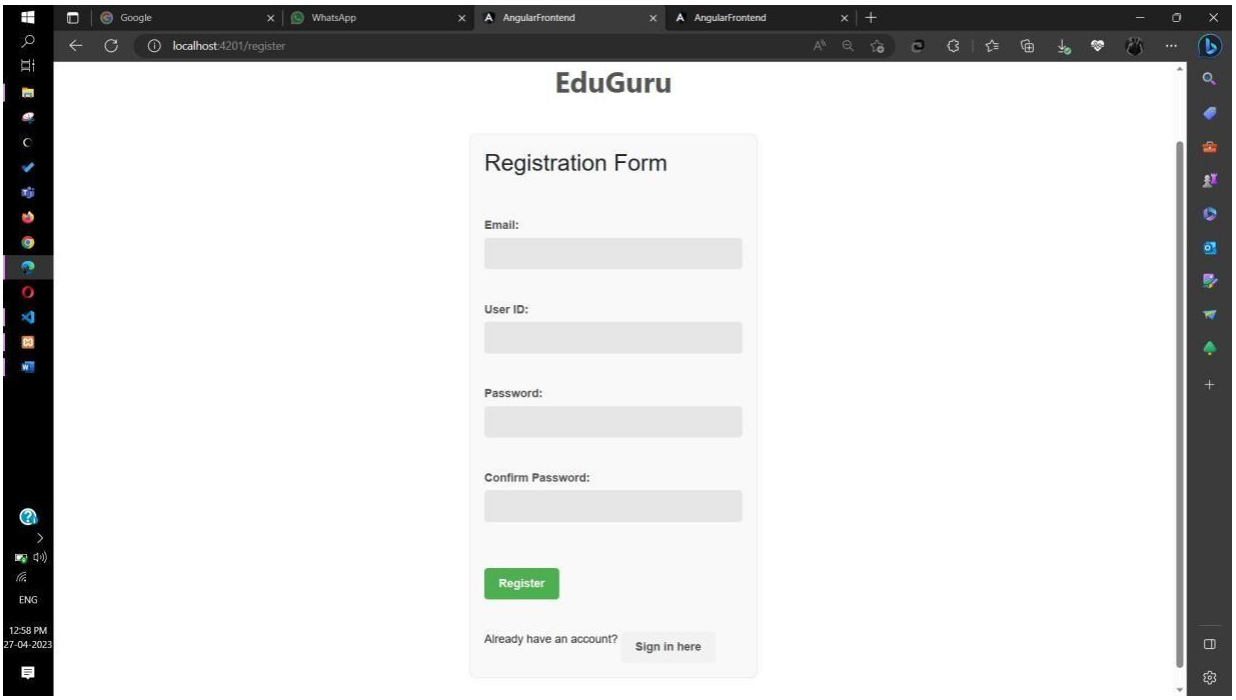
Take Quiz:

Students can take quizzes for the courses they have enrolled in.

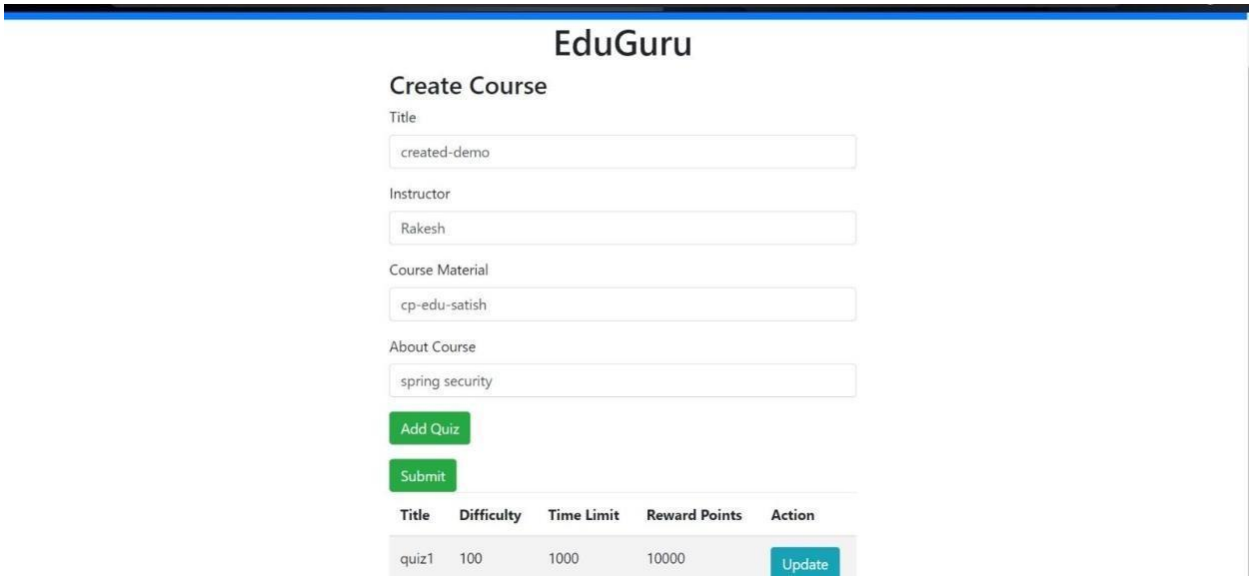
Recommend Courses:

The system recommends courses to students based on their interests and previous course history.

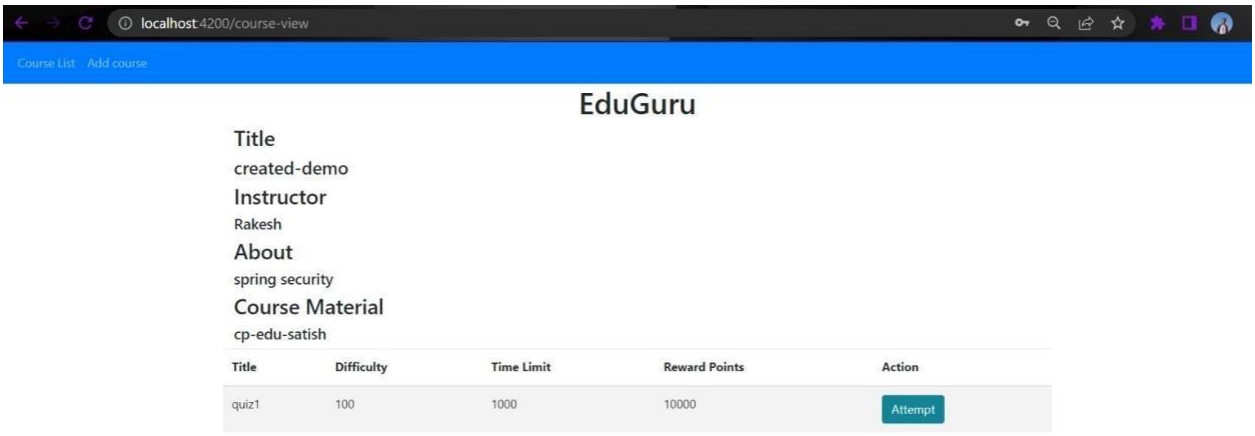
Registration

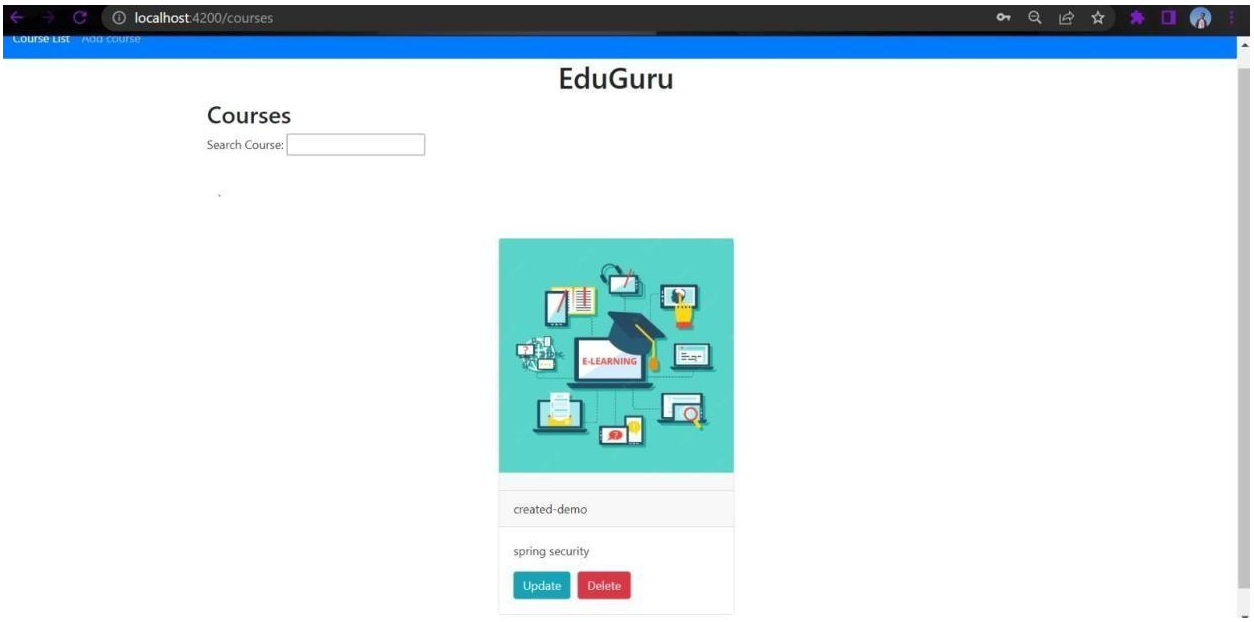


Create course

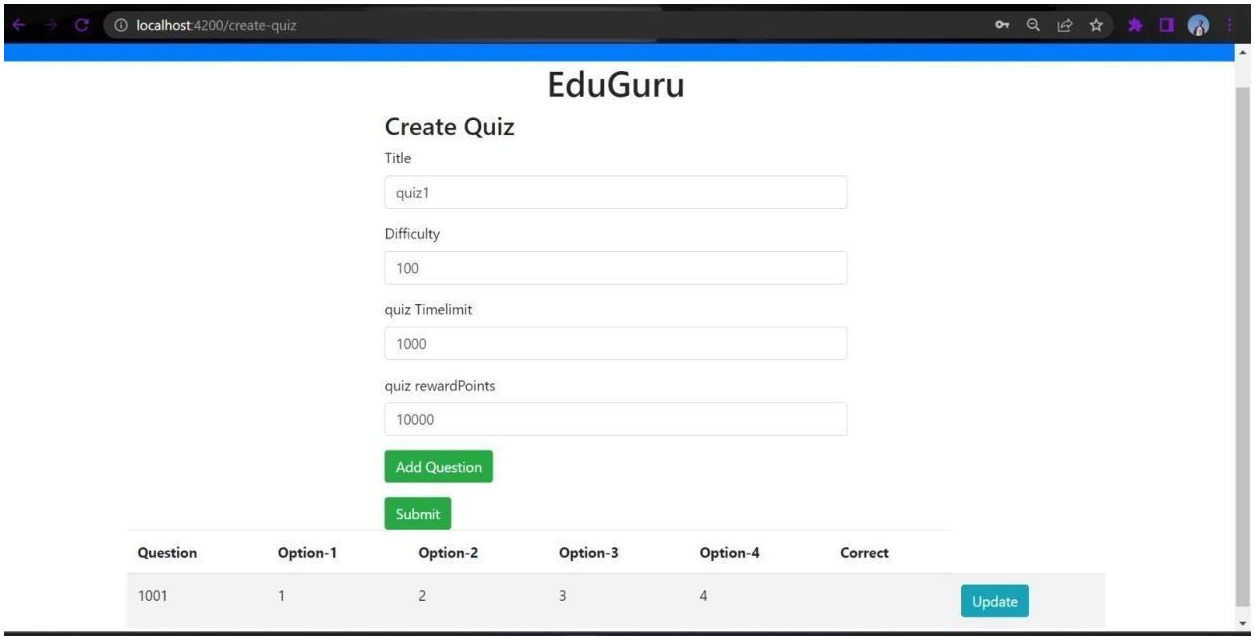

EduGuru
Create Course
Title
created-demo
Instructor
Rakesh
Course Material
cp-edu-satish
About Course
spring security
Add Quiz
Submit
Title
Difficulty
Time Limit
Reward Points
Action
quiz1
100
1000
10000
Update

View course

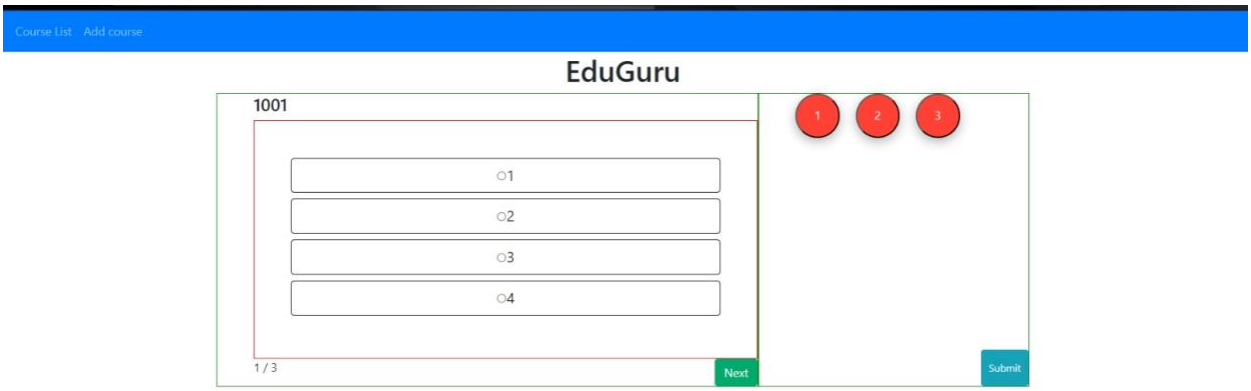




Create quiz



Attempting quiz



Quiz results

EduGuru

Yeah You scored 1 out of 3 points.