
Software Design Document

for

Online Tutor Portal

Version 1.0

By Group 2

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1 Introduction

1.1 Purpose

This project aims to build a tutor portal as a website, accessible to anyone with the internet. It provides an all in one solution to education. Tutors can register and teach; parents can search for suitable tutors for each course and enrol their children. The students can then attend classes, watch theory videos and discuss doubts on the forum.

1.2 Scope

The purpose of the online tutor portal is to ease finding tutors and create a convenient and easy-to-use application for students, parents and tutors.

A tutor can register themselves, and after approval from the portal admins, start hosting courses and tutoring students. The parents can log into the portal and search for tutors for particular courses and subjects. The students can then study the course, attend tuition classes, and discuss doubts with their tutor on the website. Above all, we want to provide a user-friendly interface with the best education.

1.3 Description of Problem

During the pandemic, every industry had to shift to an online medium to survive. One of these industries was the education industry. While shifting to the online medium, a lot of problems became glaringly obvious. To name some of them are no proper platform for teaching, communication gap between teachers and students, etc. Our website creates a platform to target these issues and resolve them as we thought best.

2 Design Overview

2.1 Technology Used

The "Online Tutor Portal" website is built on the MERN Stack, which use the following frameworks. The Software will work on any operating system with a chromium browser. Back-End - NodeJS,ExpressJS Front-End - React, React-Bootstrap. Database - MongoDB Testing - Manual

2.2 System Architecture

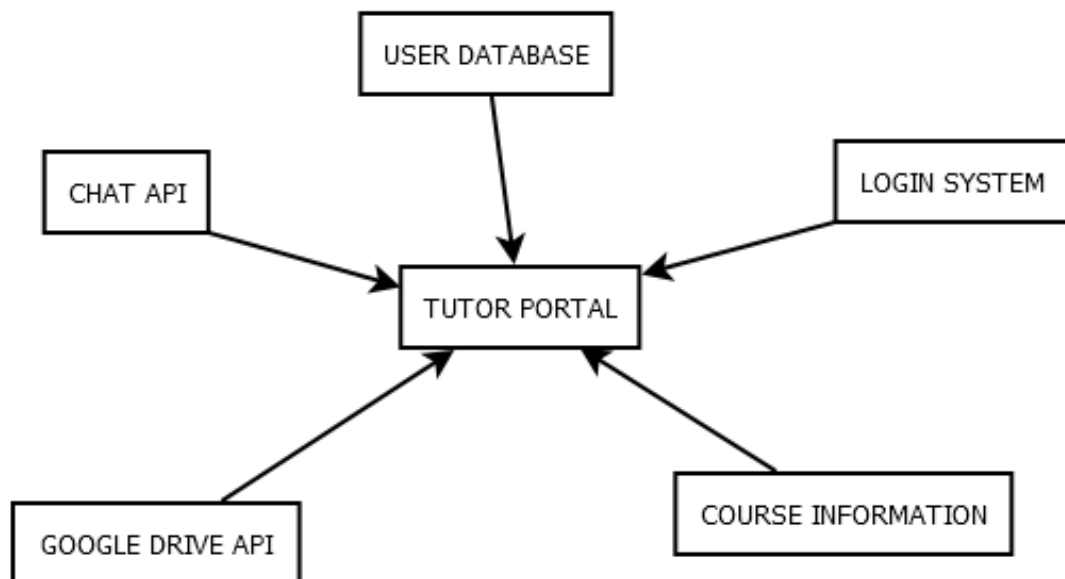


Figure 2.1: Sub-Systems of Software

There are mainly 4 user interfaces in the Portal. They are:

- Courses Interface: Displays All Courses. Parent can search and enroll in any course.
- User Home Interface: Each User(Parent, Student, Tutor) has dedicated UI where they can see their courses.
- Course and Tutor Search Pages: User can browse through courses and tutors.
- Chat Interface: User can create a room and chat with other users.

2.3 Use Case Diagram

The Online Tutor Portal basically has 3 types of users:

- Student
- Parent
- Tutor

Their interactions are shown in the following diagrams:

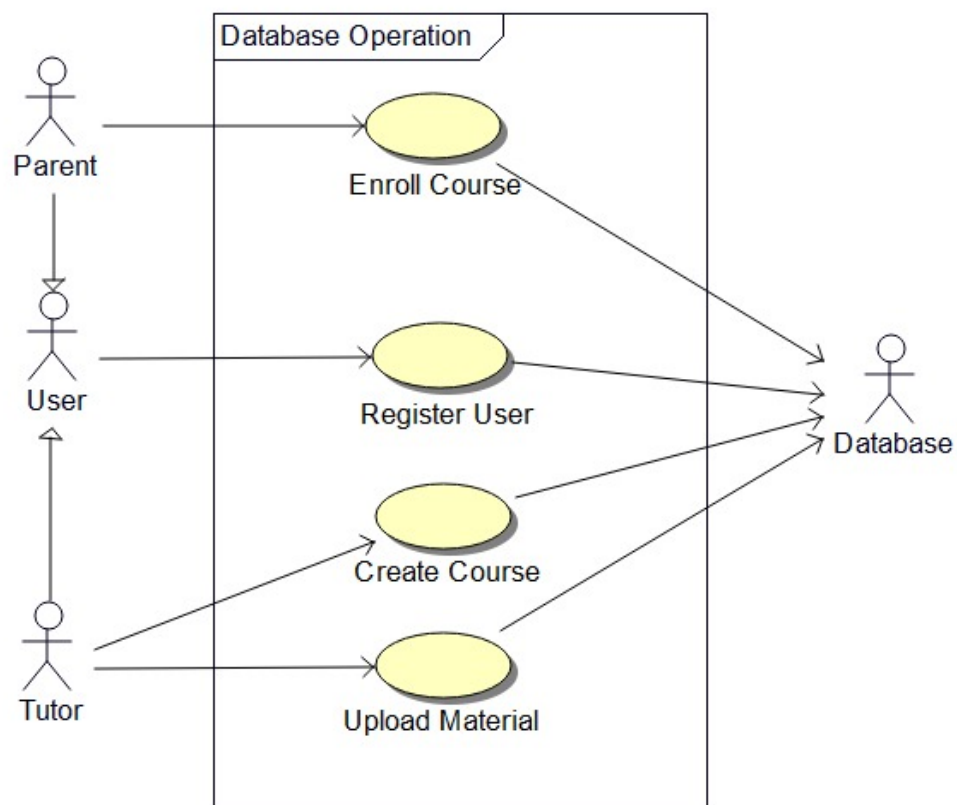


Figure 2.2: Database Operation: Use Case Diagram

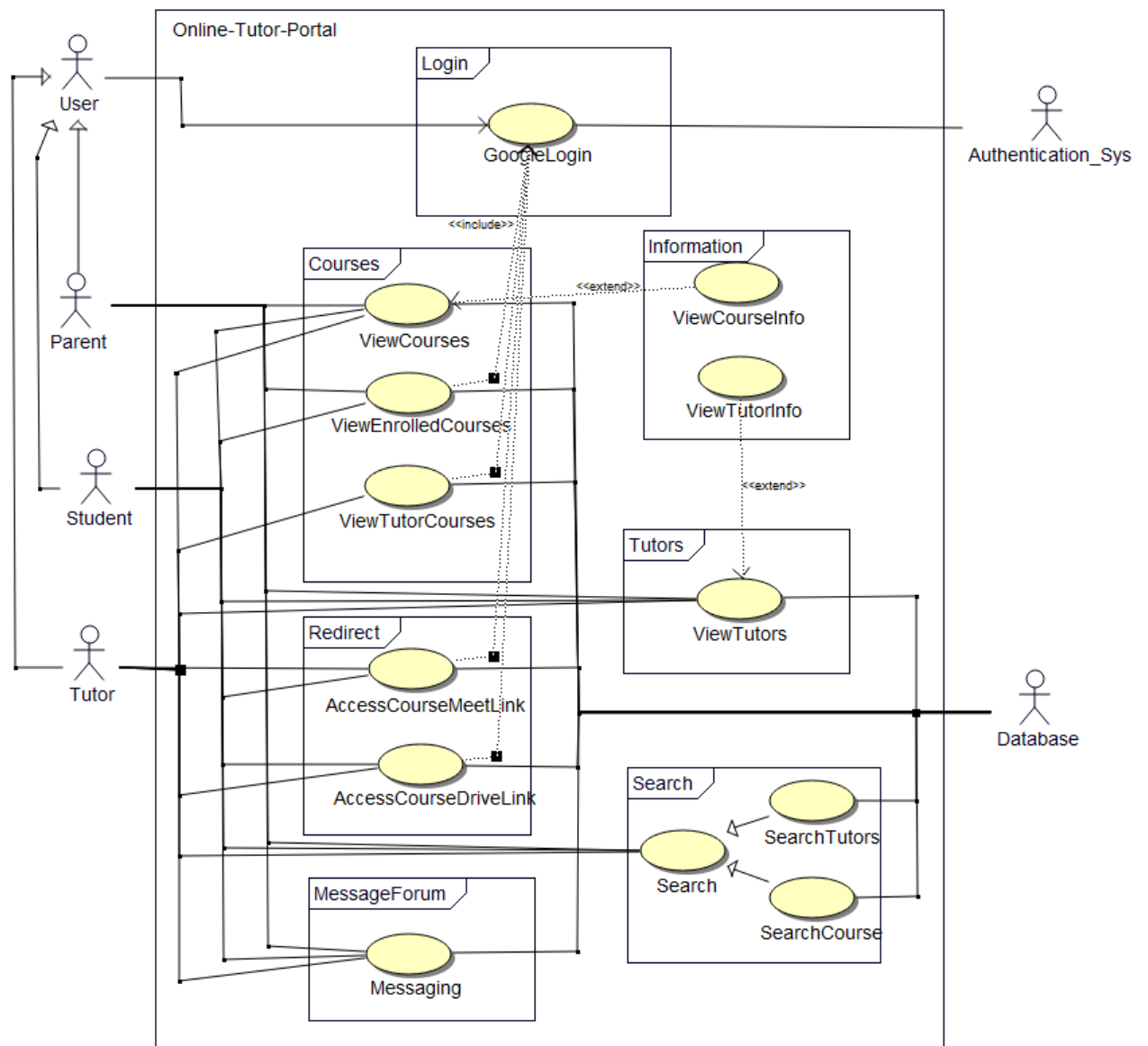


Figure 2.3: Overall Use Case Diagram

2.4 Activity Diagram

Shows a typical sequence of events that takes place involving the user and the app. The user will first login to the app. Then according to user type, the user will perform different activities as illustrated in the diagram.

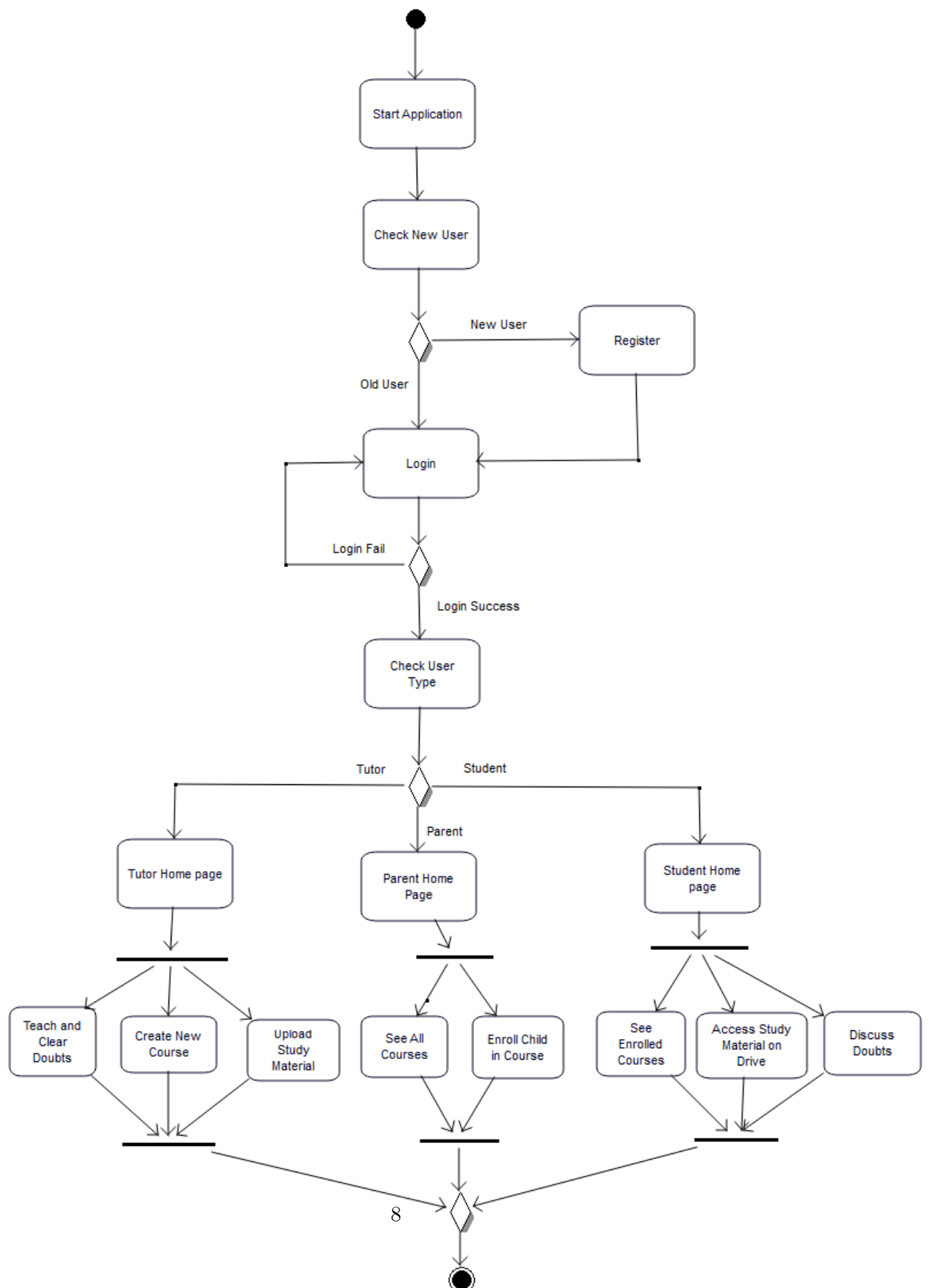


Figure 2.4: Overall Activity Diagram

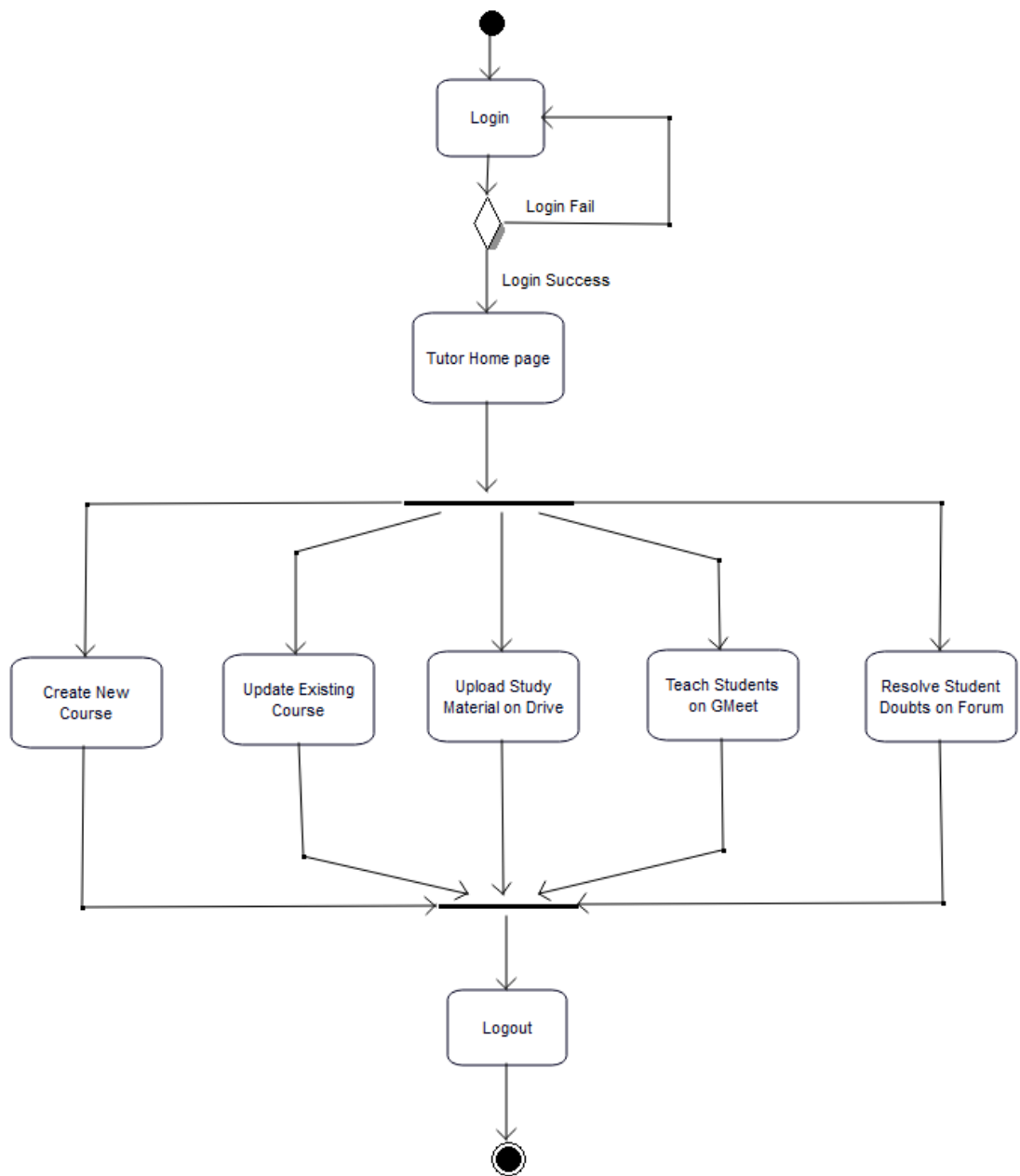


Figure 2.5: Tutor Activity Diagram

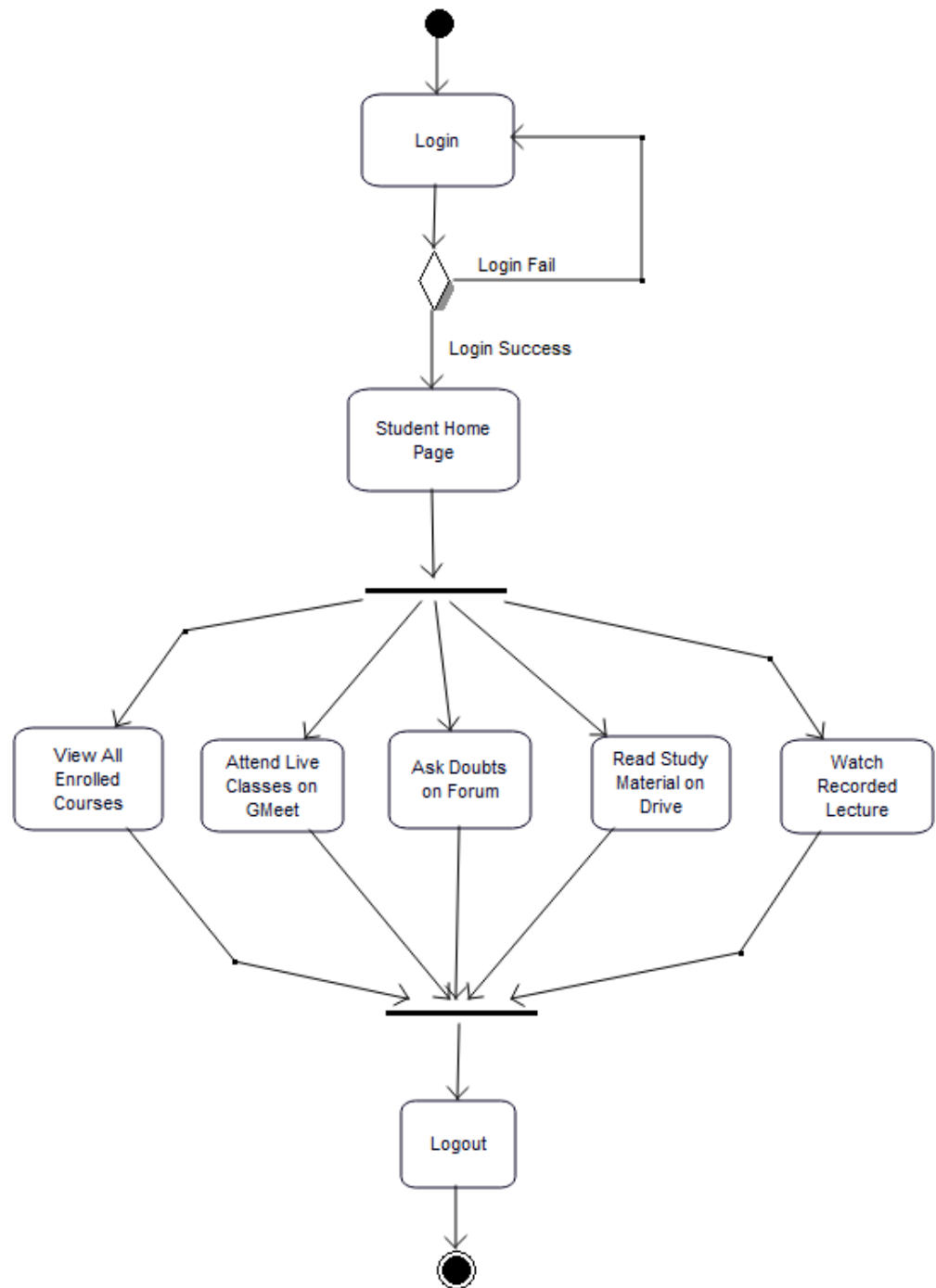


Figure 2.6: Student Activity Diagram

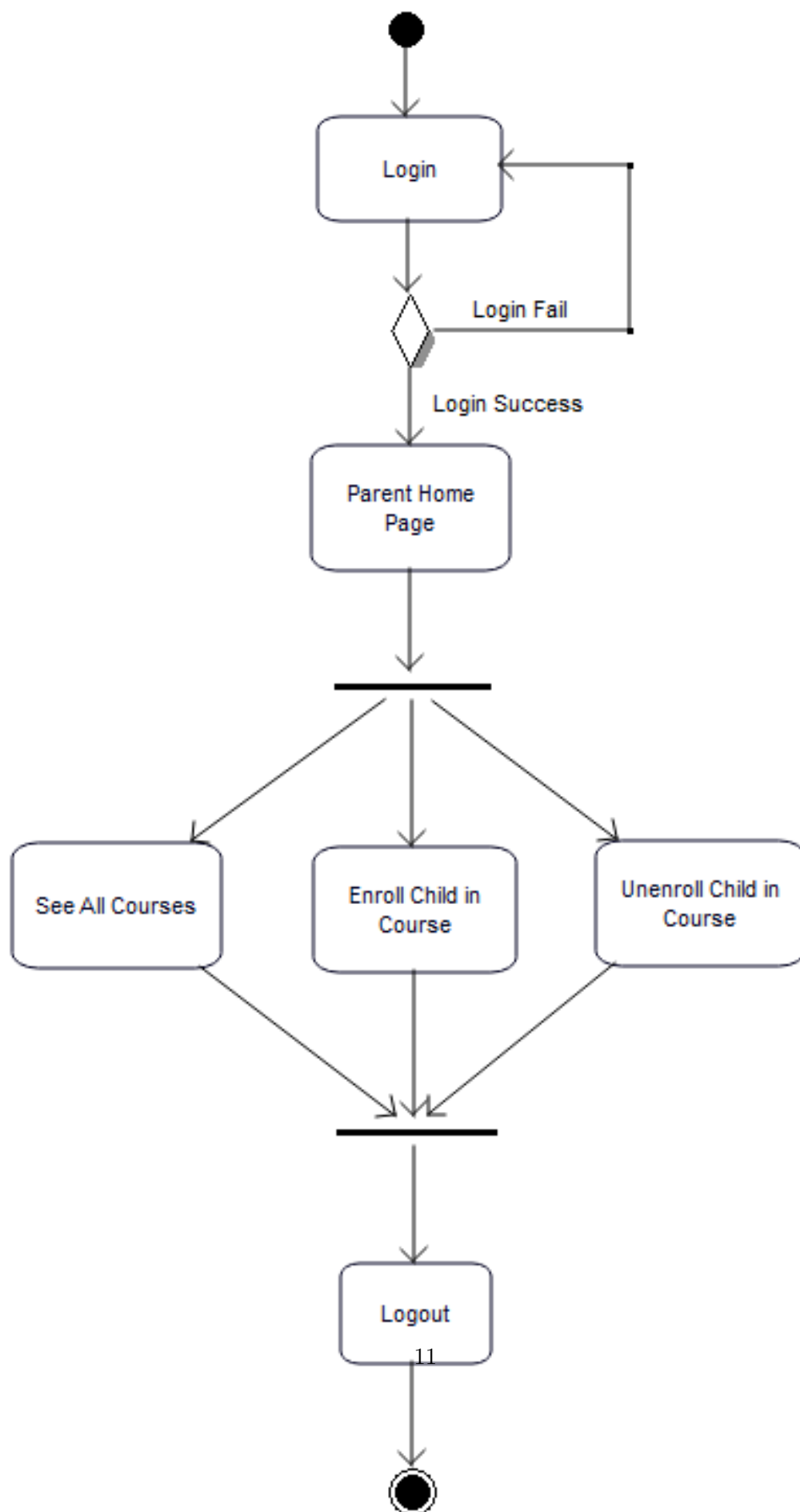


Figure 2.7: Parent Activity Diagram

2.5 Sequence Diagram

The sequence diagram of our project consists of the following actors- student, tutor and parent with the following objects- courses, lecture portal, chatroom, resources portal. The sequence of interactions for student are as follows-The student first logs in to the system, accesses the courses, attend lectures, accesses lecture material and asks doubts. The sequence of interactions for tutor are as follows -The tutor creates a new course, take lecture, upload lecture material on drive and clear the doubts on chat app. The sequence of interactions for parent are as follows -The parent can see all the courses, search for courses and tutors, and enroll their child in a course.

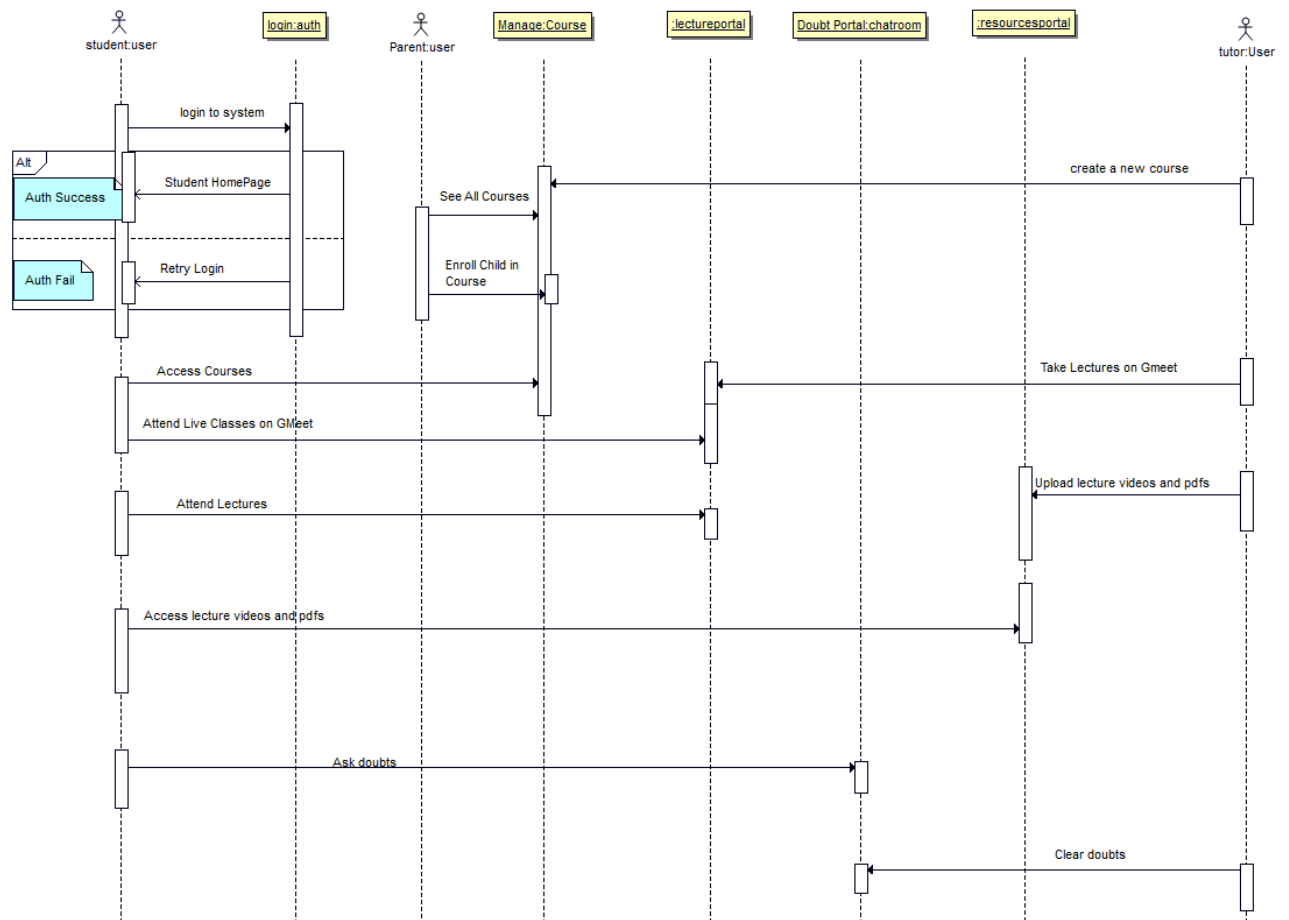


Figure 2.8: Sequence Diagram

2.6 Class Diagram

The classes in our project mainly consist of 8 classes. The classes are user, student, tutor, parent, messages, chatroom, course and resources. The student, parent and tutor classes are inherited from class user. Any user can create a chat room and add multiple users to the room. The Messages class is associated to all 3 user classes, since any of them can create a room and communicate with each other. All messages are associated to chatroom class as every message belongs to some room.

The student, parent and student classes are all association with the course class. This shows the fact that students can get all enrolled courses, parents can get all courses and can enroll/unenroll their child into a course and the tutor can see all the courses he is teaching in, can add/delete a course. The tutor class can manage the resources class while the student class can access all the materials from the resources class.

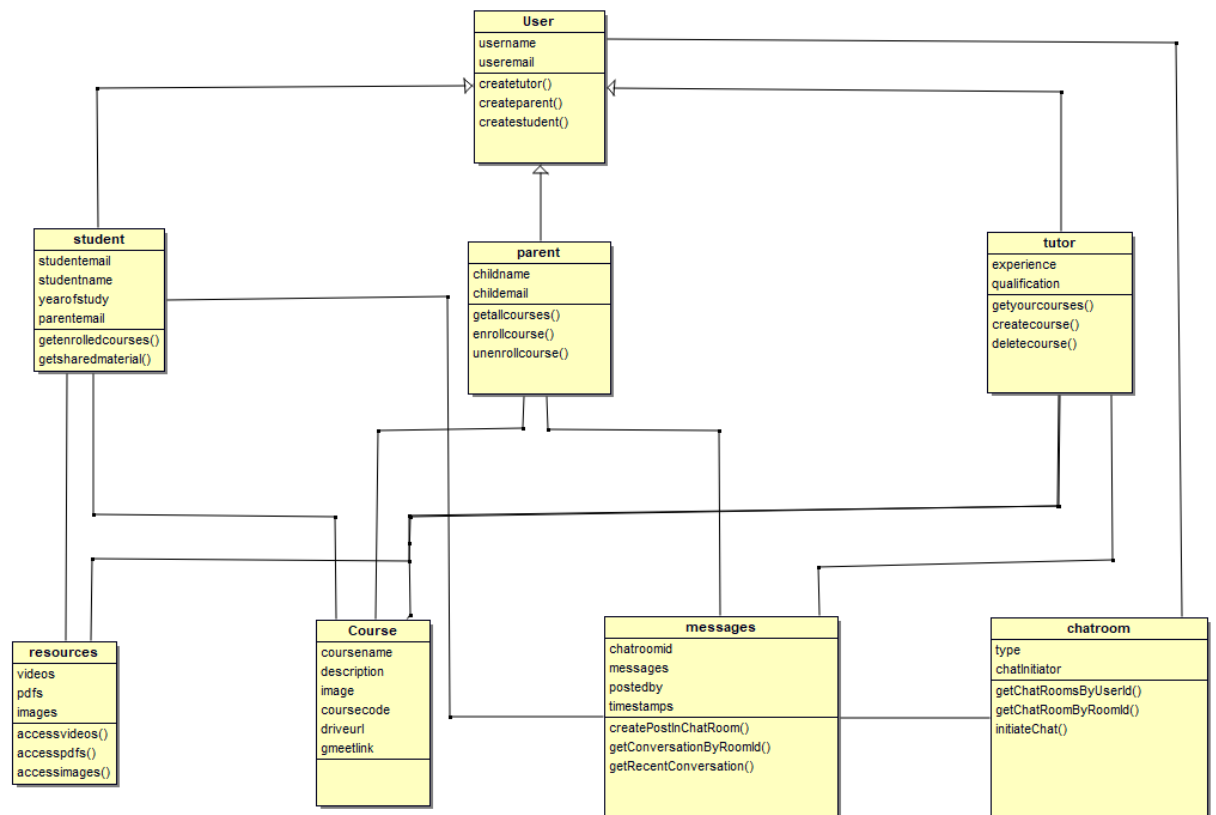


Figure 2.9: Class Diagram

3 ER Model

Most features and functional requirements are described in section 3.3 of the document.

Database Details: Before using the website, users have to be registered. Once registered they can login using their google account. The following are the details of each table:

- The users table contains the list of all registered users i.e. tutors, students and parents. The users table then connects to the 3 separate users' table i.e. Tutors, Parents and Students. Main attributes of users table include email, name and role. Primary key is the google account email and also is the foreign key in many other tables.
- The courses table contains Course Name, Course ID, Course Description, Resource Link, Rating and Reviews
- The enrolled table contains details about enrolled student and the course.
- The messages table contains the chat history of doubt forums, direct messages, etc.
- The students table contains some additional information about the student like email and the year of enrollment
- The parents table will store some additional information about parents like the email.
- The enrolled table will store which student is enrolled in which course and also the date of enrollment.

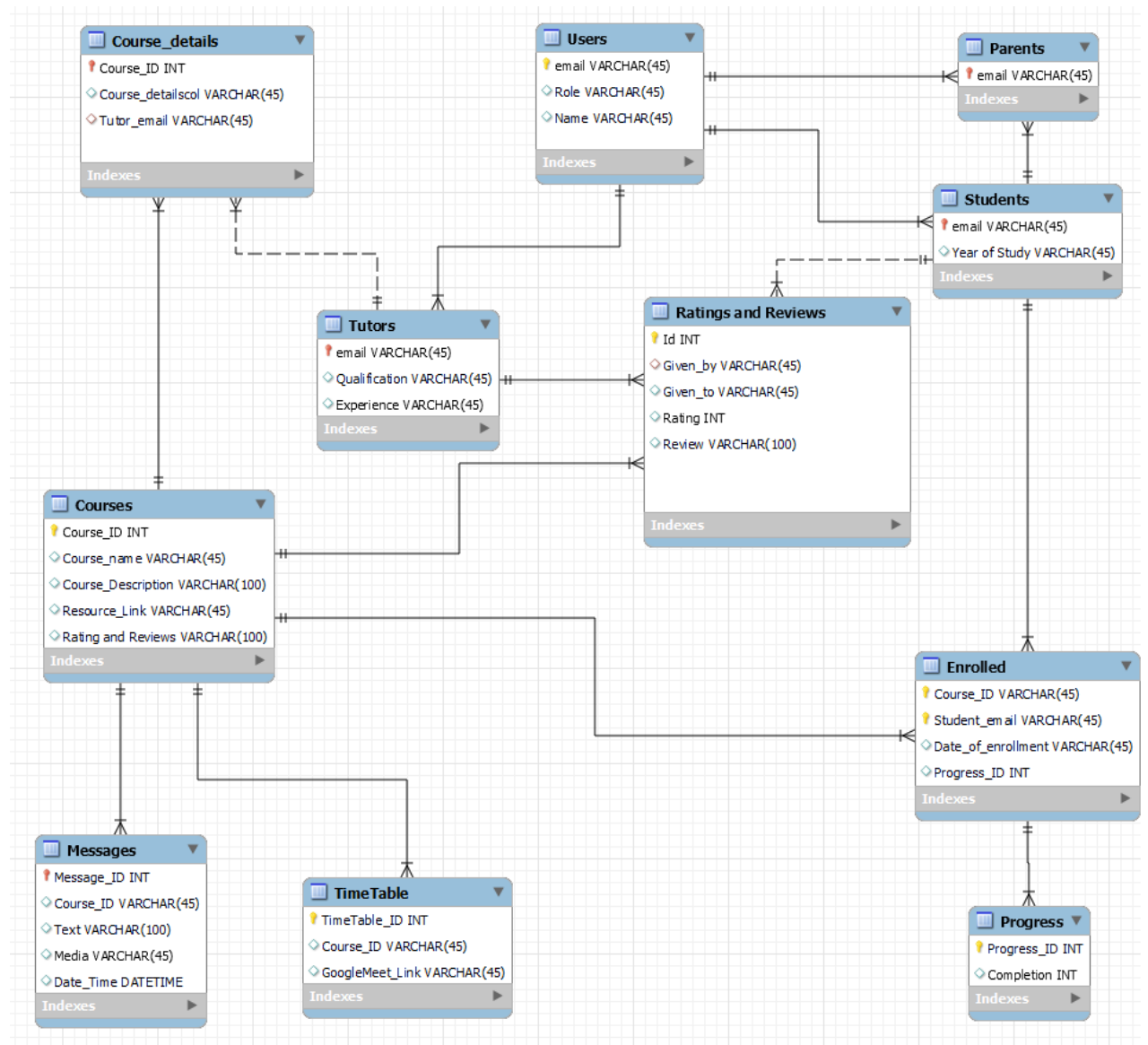


Figure 3.1: ER model

4 Wireframe and Mockups

4.1 Landing Page

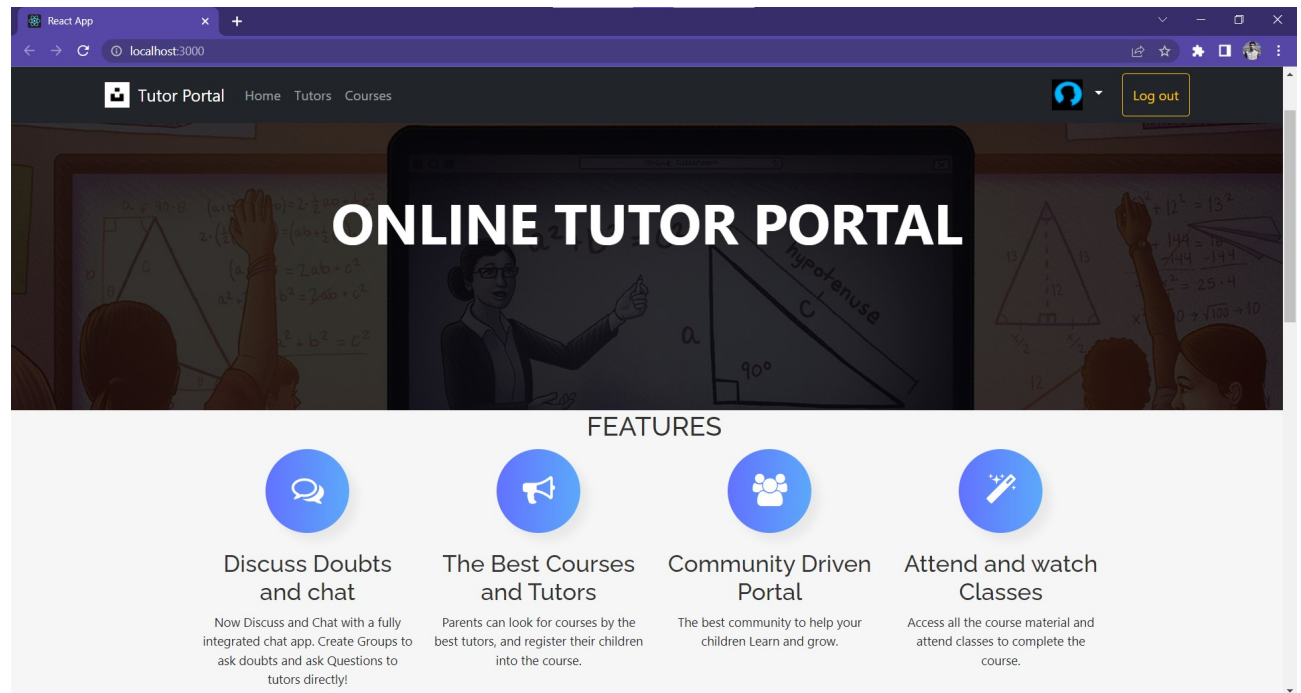


Figure 4.1: Features of our website

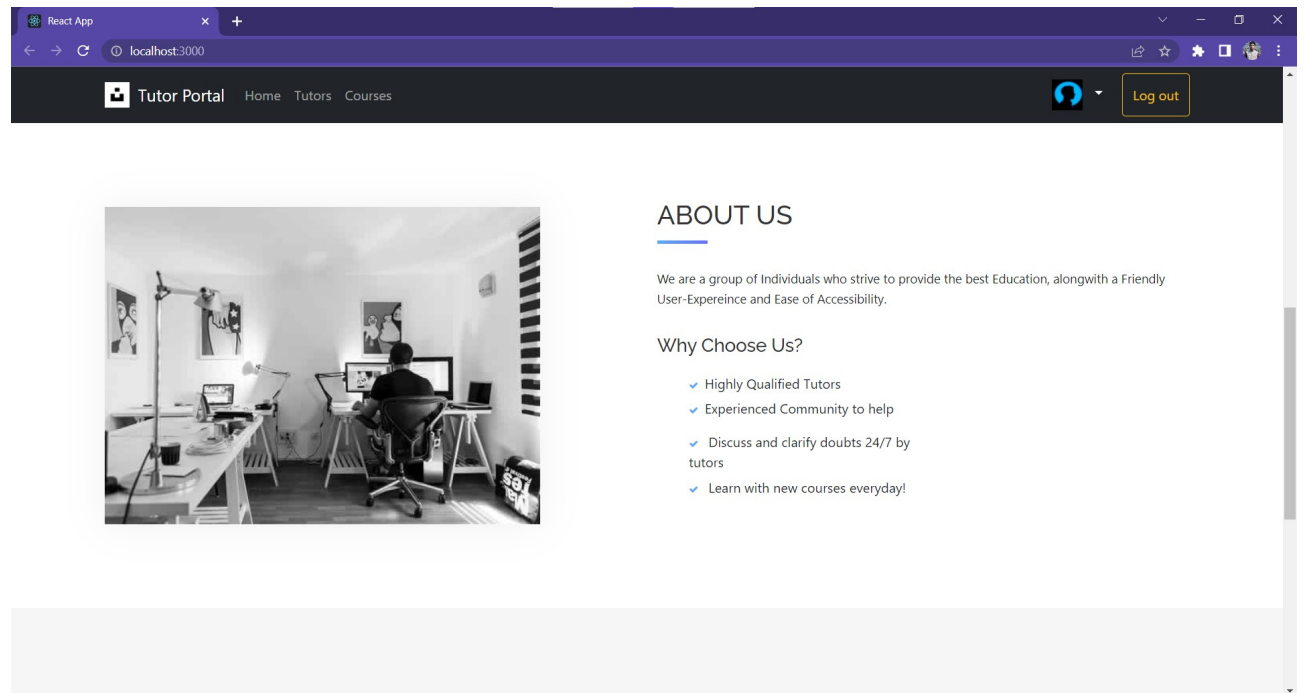


Figure 4.2: About us

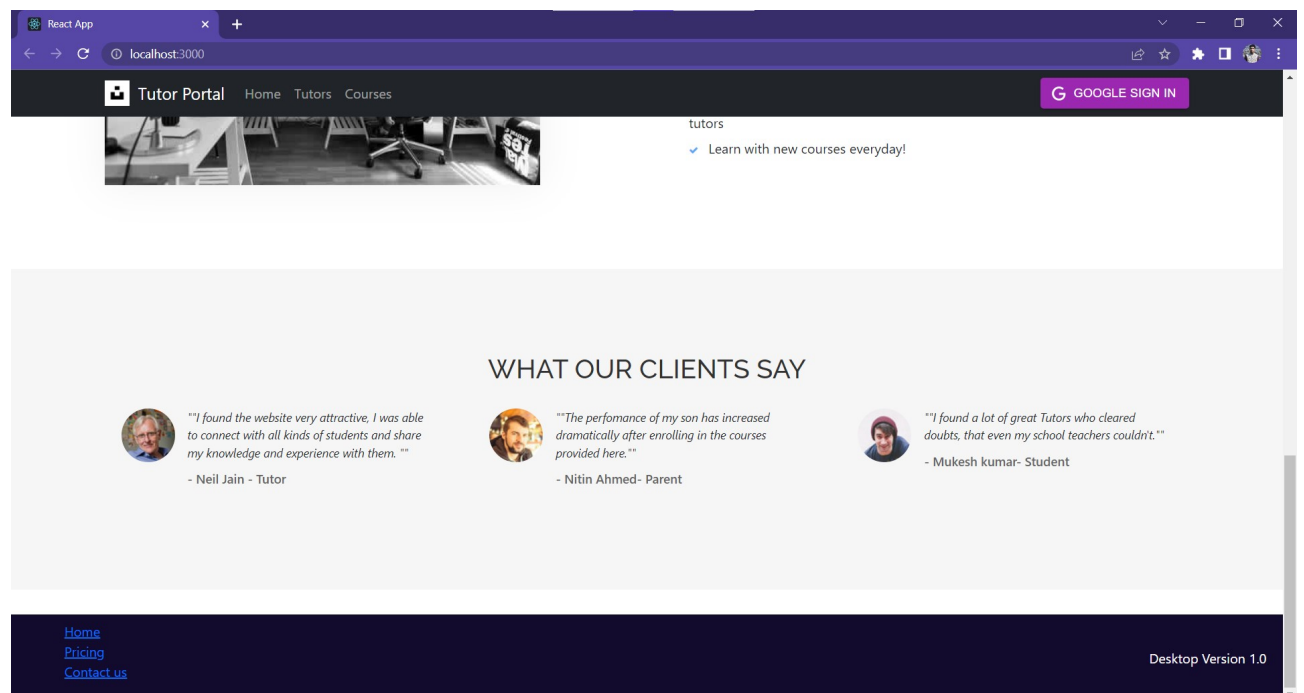


Figure 4.3: Testimonials

4.2 Student Home Page

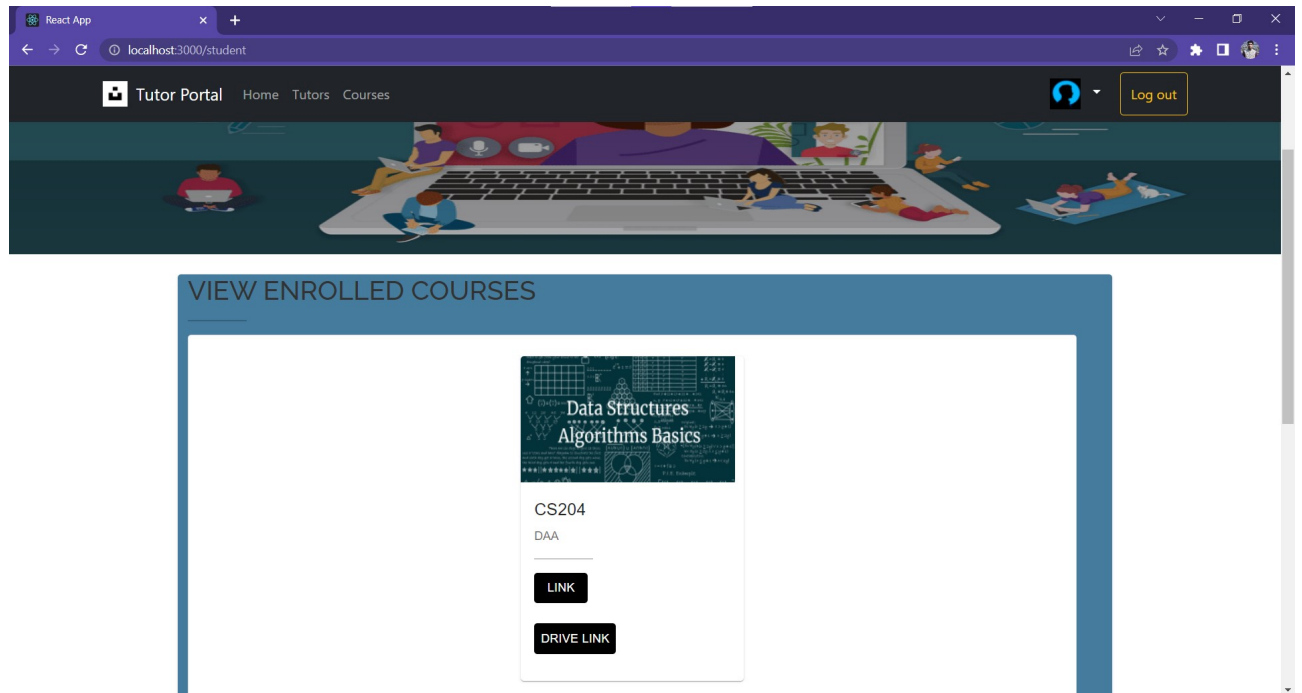


Figure 4.4: View Enrolled courses

4.3 Tutor Home Page

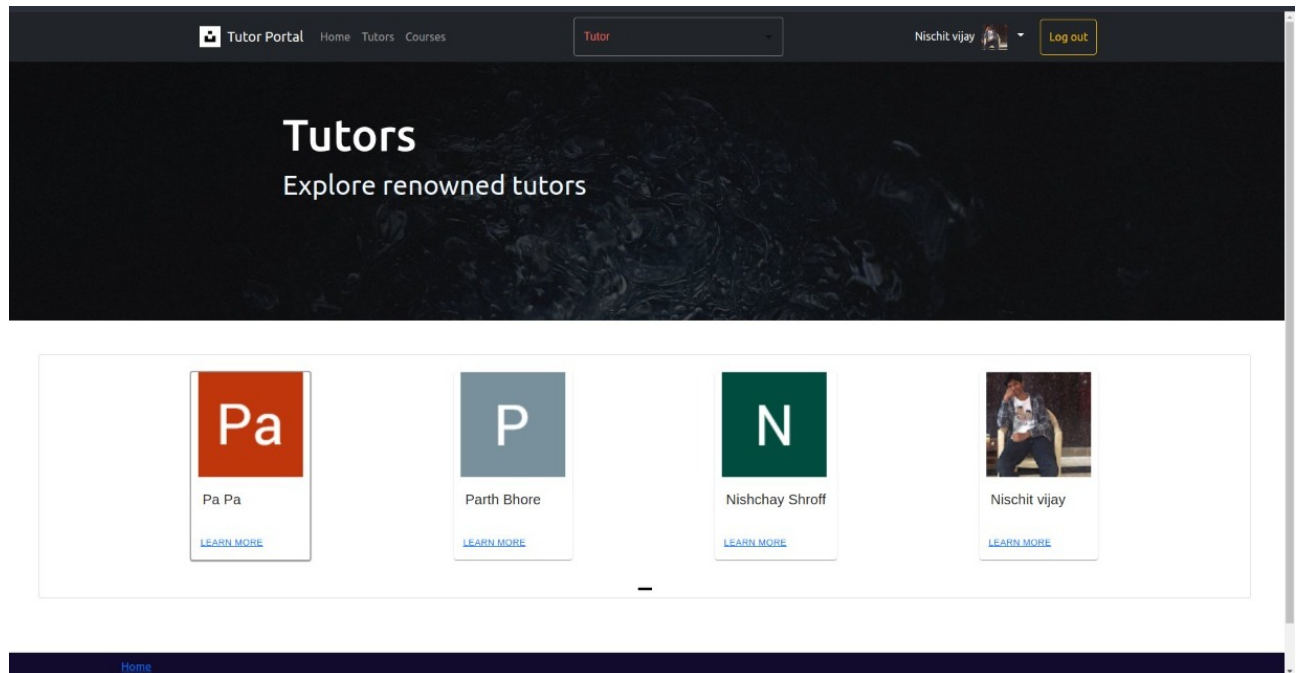


Figure 4.5: View All Tutors

4.4 Parent Home Page

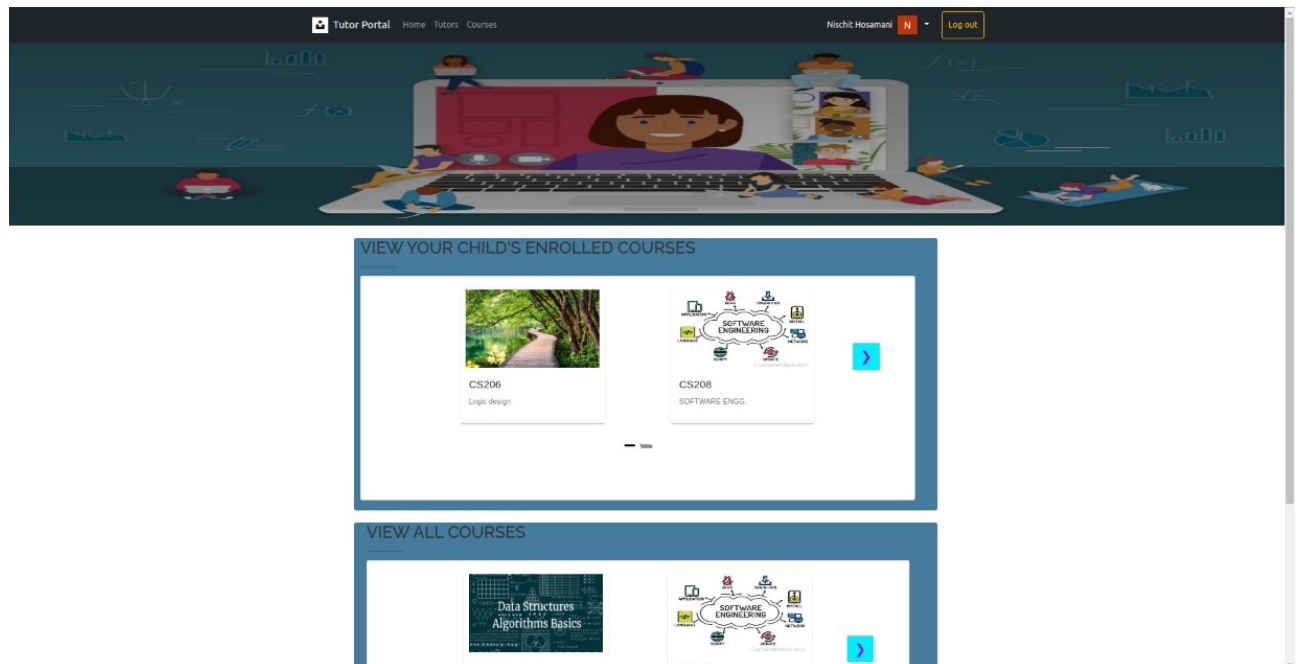


Figure 4.6: Parent Home Page

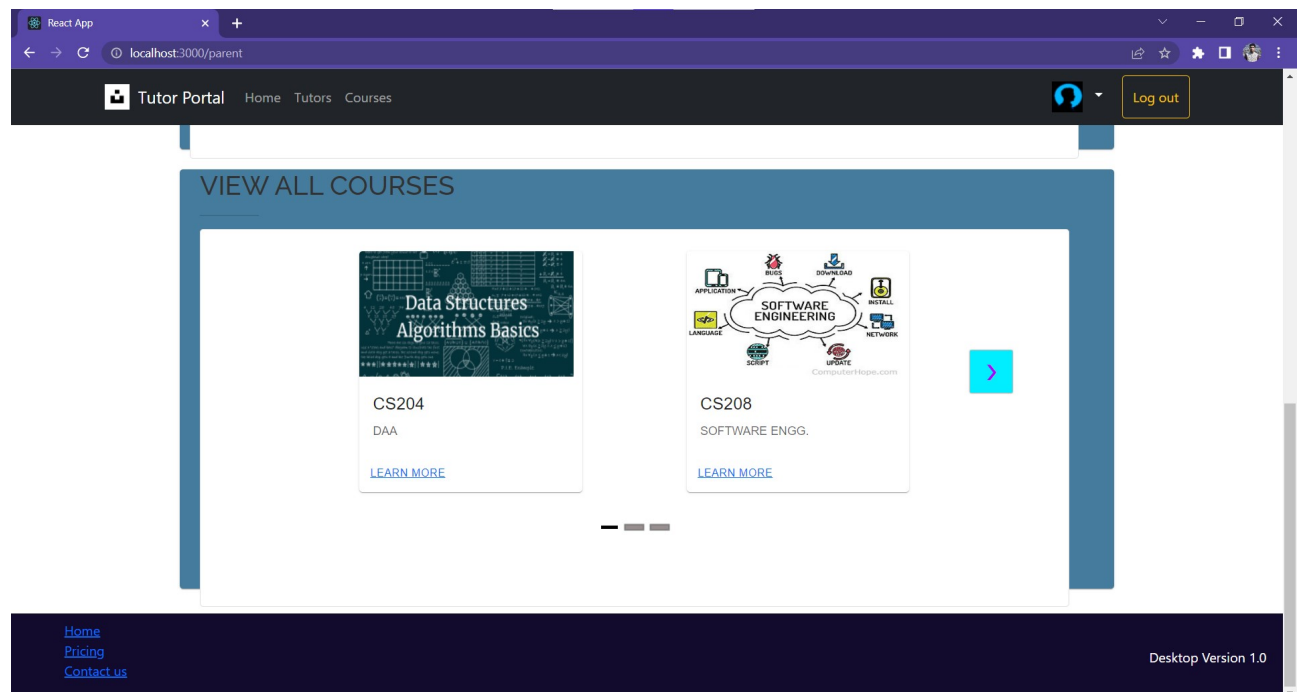


Figure 4.7: View All Courses

4.5 Chat Page

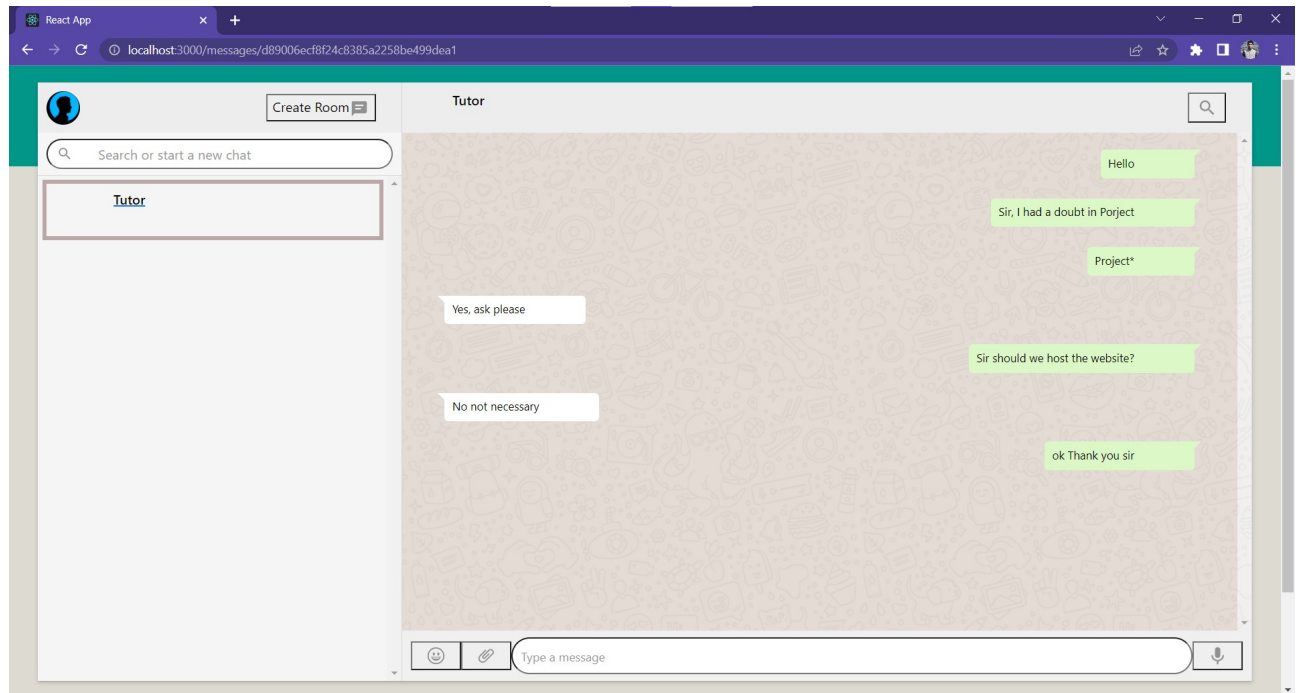


Figure 4.8: Chat App

4.6 Course Info Page

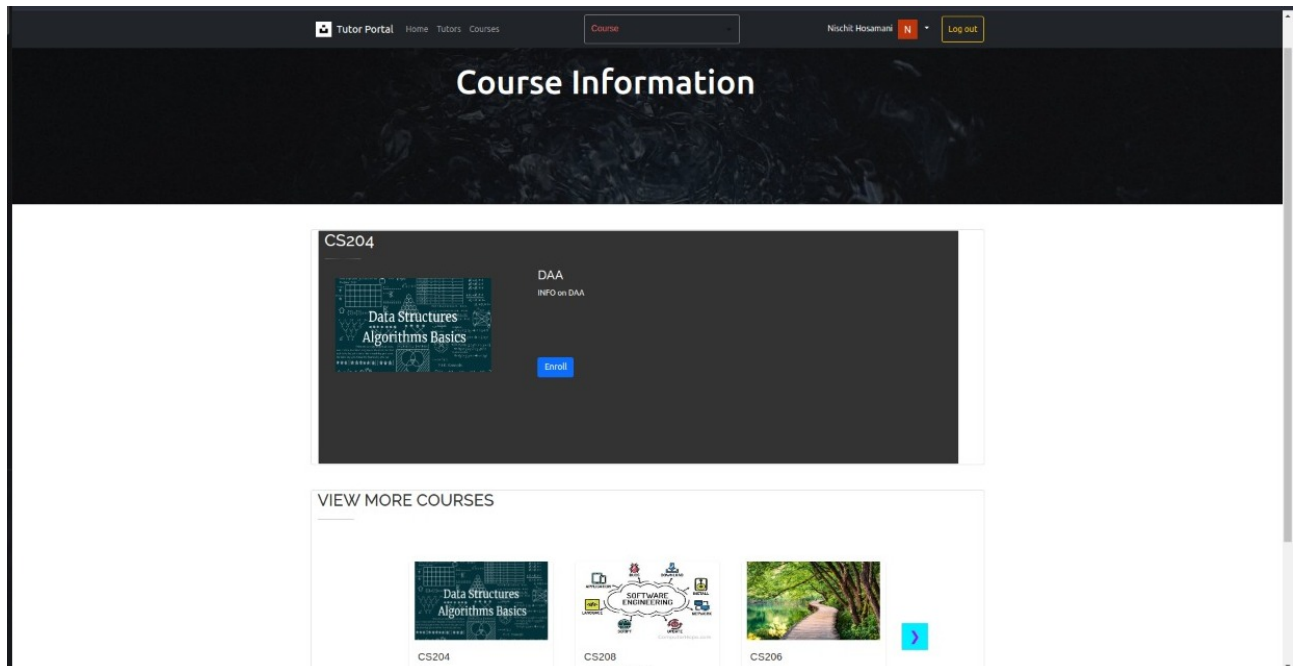


Figure 4.9: Course Info Page