# StudyRoom Project Report

## 1. Introduction

The StudyRoom project is an interactive web-based platform designed to facilitate online study discussions and collaboration among students. The application enables users to create and join virtual study rooms, engage in real-time discussions, and customize their profiles. The platform is built using HTML, CSS, and JavaScript for the frontend, while the backend is powered by Django and an SQL database. It ensures a dynamic and responsive user experience with real-time updates and seamless data management.

## 2. Problem Statement

Students often face challenges in organizing study groups and finding peers to discuss academic topics. Existing university websites lack interactive study forums, and students rely on scattered resources like messaging apps or social media groups, which are not optimized for structured discussions. Our project aims to bridge this gap by providing a dedicated platform where students can join or create study rooms based on their subjects or interests, fostering a collaborative learning environment.

## 3. Motivation

The project was inspired by the need for a more effective and user-friendly study collaboration tool, especially for university students. Many students struggle to find the right study partners or discussions relevant to their courses. With the increasing demand for online learning solutions, we wanted to create a system that enhances academic interaction in a structured and accessible way. Our goal was to integrate all necessary features within a single application to make studying more efficient and engaging.

## 4. Features

**User Authentication:** Users must sign up and log in to access the platform.

**Profile Management:** Users can edit their profiles, update personal details, and upload a profile picture.

**Study Room Creation & Management:** Users can create new study rooms with a topic, room name, and description.

**Joining & Messaging:** Users can join existing study rooms by sending messages.

**Message Management:** Users can delete their own messages, and room creators can manage the room settings.

**Search Functionality:** Users can search for study rooms by topic or name.

**Theme Customization:** Light and dark mode options for a personalized experience.

**Recent Activities Tracking:** Displays the last five activities/messages of a user.

**Admin Panel:** Admins can manage the database tables (restricted access to general users).

**Real-time Updates:** Dynamic changes in study room data, user messages, and authentication details.

## 5. User Manual

### Setup Instructions:

Install necessary dependencies: Django framework and SQL database.

Configure database settings in Django.

Run the server and access the application via a browser.

Create an account or log in to use the platform.

### Usage Guidelines:

Use the navigation bar to search for study rooms.

Create or join a study room to participate in discussions.

Customize profile details from the user profile section.

Manage messages, delete unnecessary content, and track recent activities.

Switch between light and dark mode as needed.

## 6. Future Development

**Video & Voice Communication:** Integrate real-time video and voice chat features.

**File Sharing:** Allow users to upload and share study materials.

**Enhanced Search Filters:** Advanced search and categorization of study rooms.

**Mobile App Version:** Develop a mobile-friendly application.

**AI-Powered Suggestions:** Implement AI-based recommendations for study groups based on user activity.

**Event Scheduling:** A feature to schedule study sessions with reminders.

## 7. Conclusion

The StudyRoom project successfully provides an interactive and structured platform for students to collaborate on academic topics. It addresses the gaps in university websites by offering a real-time, user-friendly study environment. With potential future developments, the application can evolve into a more comprehensive educational tool, further enhancing the academic experience for students worldwide.