**PROJECT SYNOPSIS REPORT**

**ON**

**COLLABORATIVE STUDY ROOM**

**SUBMITTED**

**TO**

**DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING FOR**

**Back End Engineering(22CS026)**

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**Semester: 5th**

**Index**

**Sr. no Topic Page No**

1. Problem Statement 2
2. Title of project 2
3. Objective & Key Learning’s 2
4. Options available to execute the project 2
5. Advantages/ Disadvantages 2
6. References 2

# Problem Statement

In today's remote learning environment, students often face challenges in finding effective ways to collaborate and communicate with peers. Our project addresses this issue by providing a virtual study room that facilitates real-time interaction, resource sharing, and collaborative learning through an integrated web application.

# Title of project:

**Collaborative Study Hub: A Real-Time Virtual Learning Platform**

**Objectives:**

1. **Enable Real-Time Collaboration: Integrate chat and video features for live group study.**
2. **Build a Cohesive App: Utilize MongoDB, Express.js, React.js, and Node.js for a unified application.**
3. **Enhance UI/UX: Implement Tailwind CSS for a sleek interface and use Redux/Zustand for efficient state management.**

**Key Learnings:**

1. **Full-Stack Skills:** Experience in building and connecting frontend and backend systems.
2. **Real-Time Tech:** Implement WebRTC and Socket.io for live communication.
3. **State Management:** Manage application state using Redux/Zustand.

**REFERENCES**

1. **MongoDB:**

[MongoDB Official Documentation](https://www.mongodb.com/docs/)

[MongoDB University Courses](https://university.mongodb.com/)

1. **Express.js:**

[Express.js Official Documentation](https://expressjs.com/)

[MDN Web Docs on Express](https://developer.mozilla.org/en-US/docs/Learn/Server-side/Express_Nodejs/Introduction)

1. **React.js:**

[React Official Documentation](https://react.dev/learn)

1. **Node.js:**

[Node.js Official Documentation](https://nodejs.org/docs/latest/api/)

1. **Socket.io:**

[Socket.io Official Documentation](https://socket.io/docs/v4/)

1. **Redux/Zu stand:**

[Redux Official Documentation](https://redux.js.org/)

1. **Tailwind CSS:**

[Tailwind CSS Official Documentation](https://tailwindcss.com/docs)

[Tailwind CSS Play](https://play.tailwindcss.com/)

1. **WebRTC:**

[MDN Web Docs on WebRTC](https://developer.mozilla.org/en-US/docs/Web/API/WebRTC_API)

This is the reference website - <https://www.studytogether.com/>