

## **INTEGRATED PROJECT PROPOSAL**

**On**  
**Chat-App**

Submitted in partial fulfilment of the requirement for the  
Course Integrated Project (CS 203) of

**COMPUTER SCIENCE AND ENGINEERING**  
**B.E. Batch-2022**



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## **Annexure I (For Project development)**

### **1. Project Statement:**

With the increasing demand for seamless communication, many existing messaging platforms struggle to provide real-time interactions, secure user authentication, and user-friendly interfaces. Additionally, some platforms lack features like multimedia sharing, efficient message storage, and group chat management. This project aims to develop an efficient, scalable, and user-friendly **Chat-App** that offers real-time messaging, secure authentication, group interactions, multimedia sharing, and an intuitive interface. The goal is to create a comprehensive communication platform that is both accessible and reliable for personal and professional use.

### **2. Approximate duration (in hours) to complete the project:**

The estimated duration to complete the **Chat-App** is approximately **180 hours**. This timeline includes all stages of development, from planning and designing the UI to implementing real-time messaging, security features, and deployment. The project will also include thorough testing and documentation before final deployment.

### **3. Proposed Project In charge:** Dr. Lekha Rani

### **4. Team Members along with roll no's:**

- a. Prabhat Kumar (2210992048)
- b. Prince Kumar (2210992090)
- c. Prince (2210992088)
- d. Pratham Midha (2210992076)

### **5. Check Points:**

- a. **Does the project statement result in a product? If yes, what type of product?**  
Yes, the project results in a product. The product is a **real-time messaging application** that allows users to securely communicate, share multimedia, and participate in group chats.
- b. **If it is a product, can a prototype be made, if not, what is it, which we can produce that our teachers can evaluate.**  
Yes, a prototype can be made. The prototype will be a basic **web application** showcasing the core features like secure login, real-time messaging, group chat functionality, and multimedia sharing.
- c. **Does the project statement use multiple concepts to achieve the outcome?**  
(yes/no)  
Yes, the project statement uses multiple concepts to achieve the outcome, including real-time communication, security protocols (JWT, encryption), multimedia sharing, and cloud deployment.

- d. **Does it have enough for our team members to do a sufficient amount of work?**

(yes/no)

Yes, the project has enough work for each team member.

## 6. Technical Nodes

Subject / Area / Topic	Technical Nodes
Frontend Development	React
Backend Development	Node.js, Express.js
Database Management	MongoDB, Mongoose
Version Control	Git, GitHub

## 7. Prerequisites (in terms of knowledge, concepts, and material) for doing the Project:

To successfully complete the **Chat-App**, the following knowledge and concepts are required:

- **Frontend Development:** Proficiency in **React.js** for building the user interface.
- **Backend Development:** Understanding of **Node.js** and **Express.js** for server-side programming and API handling.
- **Databases:** Basic knowledge of **MongoDB** or **PostgreSQL** for efficient data management.
- **Authentication & Security:** Familiarity with user authentication mechanisms, such as **JWT** (JSON Web Tokens), and data encryption to ensure secure communication.

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## 8. Material that may be required to make the project and where it might be available:

### a) Development Environment:

- Web development tools, such as **Node.js** and **npm**, will be used to set up the development environment.

### b) Code Editor:

- A reliable code editor like **VS Code** will be essential for writing and debugging code.

### c) Backend Libraries & Frameworks:

- **Express.js** and **Socket.io** for handling backend logic and real-time communication.

### d) Frontend Libraries & Frameworks:

- **React.js** for building the frontend and creating interactive UI components.

### e) Database Software:

- **MongoDB** or **MongoDB Atlas** for cloud database management to store user data and messages.

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## 9. What could the total cost of the project?

Since the project utilizes **free resources** for the majority of its components, such as **Node.js**, **React.js**, and **MongoDB Atlas (free tier)**, the cost will be **minimal**. Any additional costs would depend on cloud hosting or premium API services.

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#### **10. Resources available to us:**

##### **a) Educational Content Libraries:**

- Access to online tutorials, courses, and documentation for **React.js**, **Node.js**, **Express.js**, and **MongoDB**.

##### **b) Instructional Design Tools:**

- Online tools for designing user interfaces and prototyping, such as **Figma** or **Adobe XD**.

##### **c) Online Tutorials:**

- Websites like **MDN**, **W3Schools**, **GeeksforGeeks**, and **Stack Overflow** for reference and troubleshooting.

##### **d) Web Development Frameworks:**

- **React.js** and **Express.js** as the primary frameworks for frontend and backend development.