# Graphic Era (Deemed to be University), Dehradun

**Title:** Development of Chat Web Application using ReactJs and NodeJs

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Introduction:

In today's digital age, instant messaging has become an integral part of our daily lives. People prefer to communicate through messaging apps instead of traditional phone calls. With the increasing use of mobile devices and the internet, instant messaging has become a preferred mode of communication. The ability to communicate instantly and stay connected with friends, family, and colleagues has revolutionized the way we interact with each other.

The Chat Web Application project is an innovative and modern solution for instant messaging, allowing users to communicate with one another individually or in groups. This web application provides a secure and efficient way to communicate with friends, family, and colleagues. The project has been developed using ReactJs as the frontend library, MongoDB as the cloud database, NodeJs as the backend framework, and Socket.io for real-time communication.

The purpose of this project is to develop a Chat Web Application that is secure, user-friendly, and efficient. The application will allow users to create an account and log in using their email and password. After logging in, users can text other users and create groups to communicate with multiple users at the same time. The messages sent through this application are delivered instantly in real-time, thanks to the implementation of Web Sockets using Socket.io.

The Chat Web Application project is designed with security in mind. The user's data is stored safely in the cloud database, and passwords are hashed and encrypted using JSON Web Tokens and bcrypt library of JavaScript. This ensures that the user's data remains safe and protected from unauthorized access.

The project is economically justifiable as it saves a lot of time for the users. The ability to communicate instantly and stay connected with others is crucial in today's fast-paced world. The Chat Web Application provides a user-friendly interface and a seamless experience that makes it easy to communicate with others.

The development of this Chat Web Application project follows a systematic approach. The first step was to gather the requirements and create a detailed plan for the project. The development team then proceeded with the design phase, creating wireframes and mockups for the user interface. Once the design was finalized, the development team started implementing the application using ReactJs, NodeJs, MongoDB, and Socket.io.

During the development phase, the team followed the agile development methodology, ensuring continuous integration and delivery. Regular testing and bug-fixing were conducted to ensure the application's reliability and stability. After the development phase was complete, the team deployed the application to a cloud server, ensuring accessibility and scalability.

In conclusion, the Chat Web Application project is an innovative and modern solution for instant messaging, providing a secure and efficient way to communicate with others. The project was developed using proven technologies, and the systematic approach to development ensured the successful delivery of the project. The Chat Web Application project meets the user's requirements and expectations, making it a valuable addition to the world of instant messaging.

Feasibility Study:

The Chat Web Application project is legally and technically feasible and economically justifiable. ReactJs, MongoDB, NodeJs, and Socket.io are all widely used and proven technologies. These technologies ensure the scalability and reliability of the application. The application has been designed with security in mind, and the user's data is stored safely in the cloud database.

The need and significance of this project is evident from the fact that instant messaging has become an integral part of our daily lives. With the increasing use of mobile devices and the internet, people prefer to communicate through messaging apps instead of traditional phone calls. This Chat Web Application provides a secure and efficient way to communicate with others, ensuring privacy and data protection.

Methodology/Planning of Work:

The Chat Web Application project is developed using ReactJs as the frontend library, MongoDB as the cloud database, NodeJs as the backend framework, and Socket.io for real-time communication. The development of the Chat Web Application project follows a systematic approach, which includes the following steps:

1. Backend Server Creation:

The first step is to create a backend server that will host the frontend and fetch data from the database. NodeJs will be used as the backend framework, and ExpressJs will be used to create the server. The server will handle all the API requests and provide the necessary data to the frontend.

1. Cloud Database Setup:

A cloud database account will be set up using MongoDB Atlas for storing messages. MongoDB Atlas provides a cloud-hosted database service that is reliable, scalable, and secure. The database will be connected to the backend server using the MongoDB driver for NodeJs.

1. Frontend Creation:

The frontend will be created using ReactJs, starting from the login page and then moving on to the chat page. The login page will allow users to log in using their email and password. Once logged in, users will be redirected to the chat page, where they can communicate with other users. The chat page will have a list of contacts, and users can select a contact to chat with.

1. API Testing:

Different APIs will be tested using Postman during development. Postman is a popular API testing tool that allows developers to test APIs and check their response. API testing will ensure that the APIs are working correctly and providing the necessary data to the frontend.

1. Agile Development Methodology:

The Chat Web Application project will follow the Agile development methodology, which is an iterative and incremental approach to software development. The Agile methodology emphasizes collaboration, flexibility, and continuous improvement. The development team will work in sprints and deliver incremental changes to the application. Regular testing and bug-fixing will be conducted to ensure the application's reliability and stability.

1. Deployment:

Once the development phase is complete, the Chat Web Application project will be deployed to a cloud server. The deployment will ensure accessibility and scalability of the application. The cloud server will be configured to handle a large number of users, and the application will be monitored for performance and stability.

In conclusion, the Chat Web Application project is developed following a systematic approach that includes backend server creation, cloud database setup, frontend creation, API testing, Agile development methodology, and deployment. The systematic approach ensures the successful delivery of the project, meeting the user's requirements and expectations.

**Tools Required for proposed work**

The tools required for the development of the Netﬂix Clone Web App included:

* React
* Node Js
* MongoDB
* Postman
* Visual Studio Code
* Git

# Bibliography

* React documentation (<https://reactjs.org/docs/>)
* Stack Overﬂow ([https://stackoverﬂow.com/](https://stackoverflow.com/))
* W3Schools (<https://www.w3schools.com/>)