

School of Computing and Engineering: University of Missouri – Kansas City

Course Name: CS 5525 Cloud Computing

Group Name: Group 13

Title: Cloud talk

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Introduction:

The Cloud Talk project aims to create a collaborative chat application that fosters real-time communication and group discussions. This report highlights the technical details, accomplished features, and the progress made during the intermediate phase of the project.

Below are the main tasks need to be performed to achieve the final outcome:

1. User Registration and Account Creation
2. Chat Group Creation
3. Real-Time Messaging
4. Firebase Database Integration

In the above 4 main tasks we have completed the first two parts.

To create the Web Application, we have used the React JS.

Tasks accomplished :

Task A : User Registration and Account creation:

In this task we have created two different screens by using React JS.

1.Register Screen :

- A web page was crafted with React JS, prompting users to input their username, email, and password.
- Upon clicking the sign-up (register) button, the provided values are securely stored in the Firebase Database, creating a new user profile.

2.Login Screen :

- Once users complete the account registration, they can utilize this screen to log in to the web application.
- To log in, users must provide their email and password, which undergo validation against the Firebase database.
- If the validation is successful, users are redirected to the home screen.

Task B: Chat Group Creation :

- Implementation: The home screen has been created, showcasing a list of public group names for sending and receiving messages.
- Additional Features: This screen also offers functionality of logging out of user accounts.

To be Performed:

Task C: Real-Time Messaging & Communication:

In the upcoming phase of our project, our focus will be on implementing a real-time messaging system, introducing a dedicated chat screen. This screen will empower users to engage in live conversations, sending and receiving messages in real-time. As users log into the web application, they will gain access to existing messages within the group, facilitating seamless communication. Users will also have the capability to contribute by sending their own messages, fostering an interactive and dynamic user experience.

Task D: Firebase Database Integration:

This phase represents a pivotal step in our project as it involves integrating our web application with Firebase Database. To initiate this integration, we are required to create a Firebase account and configure the settings to establish a connection. Subsequently, we will execute CRUD operations, starting with user account registration (create) and progressing to user account validation (read). The crux of this step involves storing all messages and chat group data within the Firebase database, creating a foundation for real-time communication and data storage.

Challenges:

While the initial stages of our project, involving the creation of static web pages with React JS, were relatively smooth, the integration of these static pages with the Firebase database for real-time communication and storage poses a potential challenge. This phase requires a careful synchronization of frontend and backend components, and unforeseen complexities may arise during this integration process.

Comments:

Our proficiency in mastering React basics has proven instrumental in constructing the user interface for our web pages. This foundational knowledge not only facilitated the creation of static pages but also lays the groundwork for future UI projects. The integration of React with Firebase for real-time communication and data storage exemplifies the practical application of our acquired skills, showcasing the versatility of React in building dynamic and interactive user interfaces. This experience serves as a valuable asset for us in future endeavors in UI development projects.