

## 21st July 2025 (Monday)

Today was one of the most technically intense sessions. The mentor guided us through sending and displaying messages using Firebase Realtime Database. In the first hour, we implemented the logic to send a message when the user clicks the send button. The app now pushed a new node into Firebase containing the message text, sender ID, receiver ID, and timestamp.

In the second hour, we learned how to listen for real-time updates using Firebase's `addValueEventListener()` method. This listener constantly monitors the database, and whenever a new message is added, it retrieves and displays it instantly in the RecyclerView. I created a `MessageAdapter` class to bind data to each chat bubble, dynamically updating the chat window as messages were sent.

Testing this on two emulator instances gave a rewarding result — sending a message from one instantly appeared on the other. Watching the live data sync between both devices in real-time was the highlight of my day. I felt like I had built the true heart of a chat system.