16th July 2025 (Wednesday)

The session began with an in-depth introduction to Firebase Realtime Database, which serves as the backbone of our Android Chat Application. During the first hour, our mentor explained what Firebase is — a Backend-as-a-Service (BaaS) platform by Google that enables real-time synchronization and storage without requiring a separate server. We discussed the differences between relational databases and Firebase's JSON tree structure.

In the second hour, we performed practical integration by connecting our Android Studio project with Firebase. This involved adding the Firebase dependencies in Gradle files, syncing the project, and authenticating it through the Firebase console. I created a simple data node, "messages," and successfully wrote and retrieved a few text strings to understand how real-time updates work. Seeing instant updates reflect in the Firebase Console without refreshing the screen fascinated me. The trainer explained how this characteristic is what enables apps like WhatsApp or Messenger to work in real-time.

Before wrapping up, I experimented by inserting different child nodes, such as sender names and timestamps, and visualized the hierarchical data structure. This hands-on activity helped me clearly grasp how data flows from the Android frontend to the Firebase backend. It was the first step toward making the chat app's data system functional.