

CS-4039 Software for Mobile Devices Assignment # 2

Due Date: Sunday 19th October 11:58 PM

No late submissions will be accepted at all!

Instructions:

This is a **two-person group** assignment. Only one group member needs to submit the assignment on behalf of the team. Submissions that do not comply with the specifications given in the document will not be marked, and a zero mark will be assigned.

You are required to export and upload your complete project as a **ZIP file** using **Android Studio → File → Export → Export to ZIP File**.

The folder name should follow this format:
rollnumber1-rollnumber2_Assignment2 (e.g., 21I-0001-21I-0002_Assignment2).

The project name should also follow the same format (e.g., 21I-0001-21I-0002), the package name should be: **com.groupname.rollnumber1_rollnumber2** (for example, com.teamalpha.21i0001_21i0002).

Each team must use a **private GitHub repository**. This is to prevent others from viewing and copying your code. You must add the TA (<https://github.com/mahadrehmann>) as a collaborator to your private repo. **Commits from both team members are mandatory**; your commit history should clearly reflect contributions from each person.

Tasks:

In this assignment, you will expand on your Socially app, integrating **Firebase** for backend functionality and introducing new features to enhance user engagement. Your application must include the following:

GitHub Version Control (10 Marks)

- Create a repository and push your code to GitHub.
- Each implemented feature must have a corresponding commit with a meaningful message.
- **Note:** Commits from both group members are mandatory. The repository history must clearly reflect contributions from **both members**.

Splash Screen (5 Marks)

- A splash screen should be implemented, automatically navigating to the next screen after 5 seconds.

User Authentication (5 Marks)

- Implement user signup, login, and logout using **Firebase Authentication**.
- First-time users should be directed to the Profile Setup screen.
- Logged-in users should be taken directly from the splash screen to the home screen

Stories Feature (10 Marks)

- Users can upload temporary images/videos that disappear after 24 hours.
- The stories should be displayed at the top of the home screen in a horizontal scroll view.
- **Firebase Realtime Database** should be used to store and manage stories.

Photo & Media Uploads (10 Marks)

- Users can upload images in posts.
- Posts should support likes and comments.

Messaging System (10 Marks)

- **Media Sharing:** Users can send text, images, posts in chats.
- **Message Editings & Deletion:** Users can edit or delete messages within 5 minutes of sending it.

Voice & Video Calls (10 Marks)

- Implement real-time audio and video calls using the **Agora API**.
- Calls should work seamlessly within the chat system.

Follow System & User Interactions (10 Marks)

- Users can send and accept/reject follow requests.
- Users can view who they follow and who follows them.
- Profile picture can be updated.

Push Notifications (10 Marks)

- Implement push notifications using **Firebase Cloud Messaging (FCM)**.
- Notify users about new messages, follow requests, and chat screenshot alerts.

Search & Filters (5 Marks)

- Implement search functionality to find users based on their username.
- Users should be able to filter by followers/following.

Online/Offline Status (5 Marks)

- Display whether users are online or offline in real-time.

Security & Privacy Features (5 Marks)

- Users will receive a notification if someone takes a screenshot of their chat.

Test Cases (5 Marks)

- Write two Espresso test cases to test any two critical user workflows.

Live Demo

- You must present a live demo of your app, no recorded videos allowed.
- Be prepared to explain your implementation and make real-time modifications if needed.

"Socially" relies on **Firestore** as its backend, utilizing **Firestore Realtime Database** for storing messages (text, calls, and images). The integration of **Firestore Cloud Messaging** ensures timely push notifications, alerting users to new messages and chat screenshots. The search filter functionality is also implemented using Firestore Realtime Database, allowing users to efficiently find friends. Additionally, Firestore is used to maintain user online/offline status, providing real-time visibility into availability.

Your application must contain all the screens in the **attached PDF**. You are required to make a pixel-perfect design. In case you think some of the screens are missing for the required functionality, you should create that screen in order to complete its functionality.

AI Policy

1. Allowed Tool: You are only permitted to use the free version of Copilot or ChatGPT for assistance.

2. Single Chat Restriction: You must use only one chat session. Opening multiple chats is strictly prohibited.

3. Chat Link Submission: You must share the link of the ChatGPT conversation you used for this assignment along with your submission.

4. Limited Usage: ChatGPT can only be used for extra information or clarifications.

- You are not allowed to generate entire app screens, layouts, or code directly through ChatGPT.

5. Other Chatbots: The use of any other external AI/chatbot tools apart from Copilot or ChatGPT's free version will be treated as plagiarism if detected.

6. Prompt Submission: You must also submit the prompt(s) you used in ChatGPT.

- If it is discovered in your code that you used AI assistance without submitting the prompt, this will be treated as plagiarism.

7. Component Usage:

- You must only use simple screen navigation as taught in class.
- Do not implement any advanced or external navigation methods beyond what is required in the assignment.

8. Respecting the Policy: Failure to comply with any part of this AI policy will be considered a violation of academic integrity and will be treated as plagiarism.

9. Self-Learning Requirement:

If a specific feature or functionality required for the assignment has not been covered in class, you are expected to **independently learn and implement it**. For example, if you are unfamiliar with how to open the camera app or handle image uploads, you must research and explore reliable resources to complete that requirement.

GOOD LUCK!