Android Dev - Project Proposal - Final

Title: StudySphere

Core Concept

StudySphere is a collaborative study platform that enables students to create course-specific study spaces where they can organize notes, plan study sessions, and communicate with classmates in real time via group chat.

Major Functionality

1. Course Collaboration Space

- Users can create a dedicated space for a course.
- The user who creates the space becomes the admin.
- Anyone can join a space via a shared link.
- Users can join multiple course spaces.

2. Organization System

- Folder-based organization.
- Supports storing PDFs, images, and text files.

3. Study Session Planning & Calendar Integration

- Any user can create study sessions with details such as location, time, and description.
- RSVP system to track attendance.
- Google Calendar integration with custom reminders:
    - If a user accepts, they can add the event to their Google Calendar.

4. Group Chat & Communication

- Course-wide group chat for general discussions.
- Supports sharing images and PDFs.

Technical Implementation

Backend

- Firebase Authentication for user management.
- Firestore for storing course data, notes structure, and metadata.
- Firebase Realtime Database for group chats.
- Cloud Functions for integration with the Google Calendar API.

User Interface (UI)

Home Page

- Displays course cards with course names.

Course Page

- Contains three sections with clickable buttons:
  - **Chat**
  - **Notes/Files**
  - **Study Sessions**

Chat

- Android/iOS-style chat interface.
- Supports image and PDF uploads.

Notes/Files

- Android-style folder navigation system.

Study Sessions

- A list of upcoming study sessions displayed in a recycler view.
- Includes date, time, RSVP button, and description.

Development Schedule

Week 1: Setup and Authentication

- Set up the project.
- Implement Firebase authentication.
- Develop basic UI with navigation:
    - **Dashboard/Home Activity**
        - **Course Activity**
            - **Chat**
            - **Notes**
            - **Study Sessions**

Week 2: Course Spaces and Database

- Implement course space creation functionality.
- Design and structure the database for course spaces.
- Develop the dashboard UI.

Week 3: Notes Foldering System

- Implement a folder-based note organization system.
- Enable file uploads.
- Develop a note-viewing interface.
- Implement basic search functionality.

Week 4: Study Session and Calendar Integration

- Build the study session creation interface.
- Develop the study session viewing interface.

- Integrate with the Google Calendar API.

Week 5: Chat Implementation

- Implement real-time chat functionality.
- Add support for images and PDFs in chat.

Week 6: Feature Enhancements and Refinements

- Refine UI/UX design.
- Optimize database queries for performance.

Week 7: Testing

- Create demo data.
- Conduct end-to-end testing.
- Fix any identified bugs.

Week 8: Final Details and Documentation

- Final UI refinements.
- Prepare a demo for presentation.
- Complete project documentation.

Inspiration

Canvas Mobile App

- Replicating the dashboard UI to resemble the Canvas mobile interface.

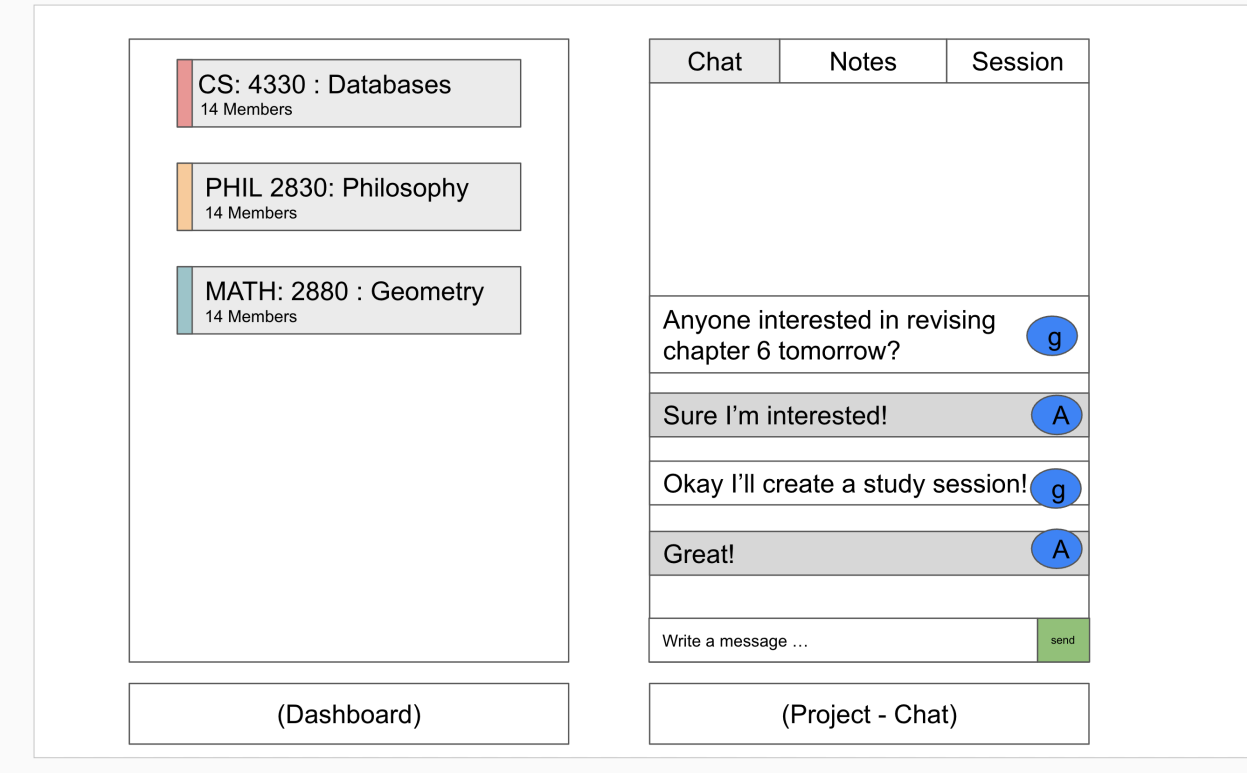
Discord

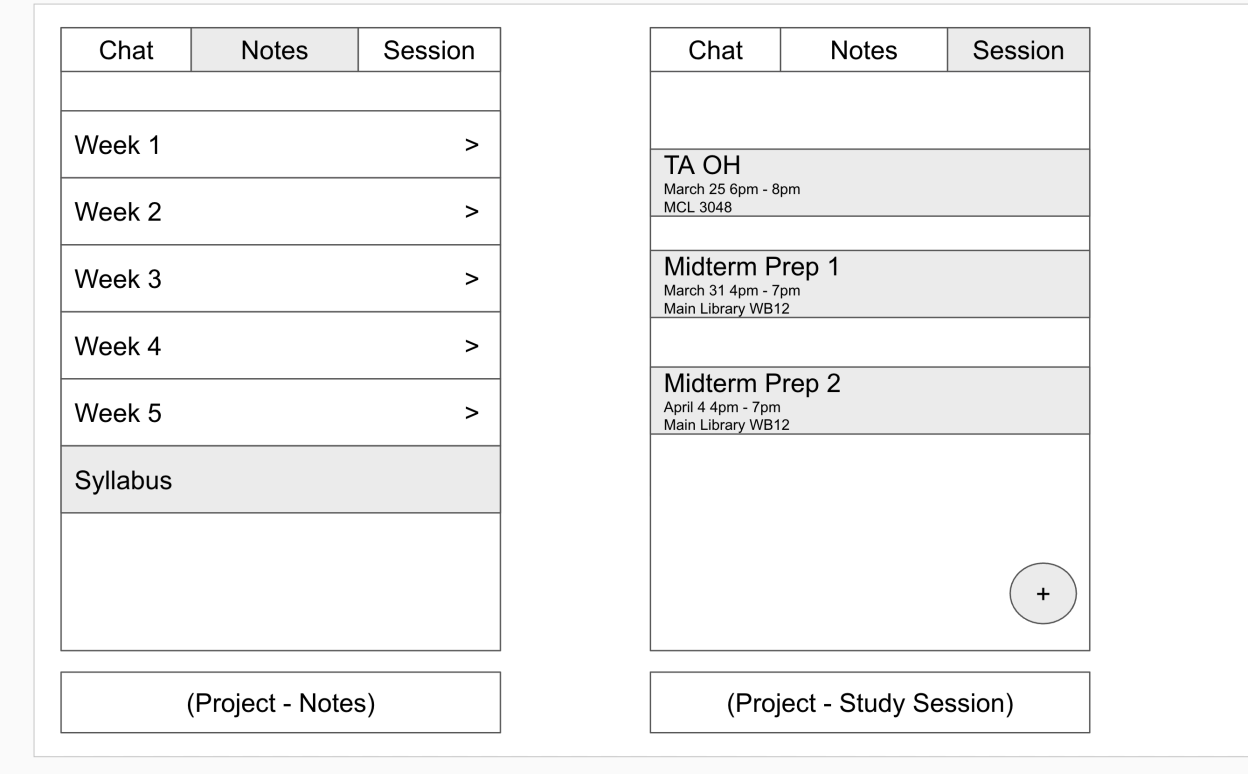
- Real-time group chat communication.
- Course spaces structured similarly to Discord servers.

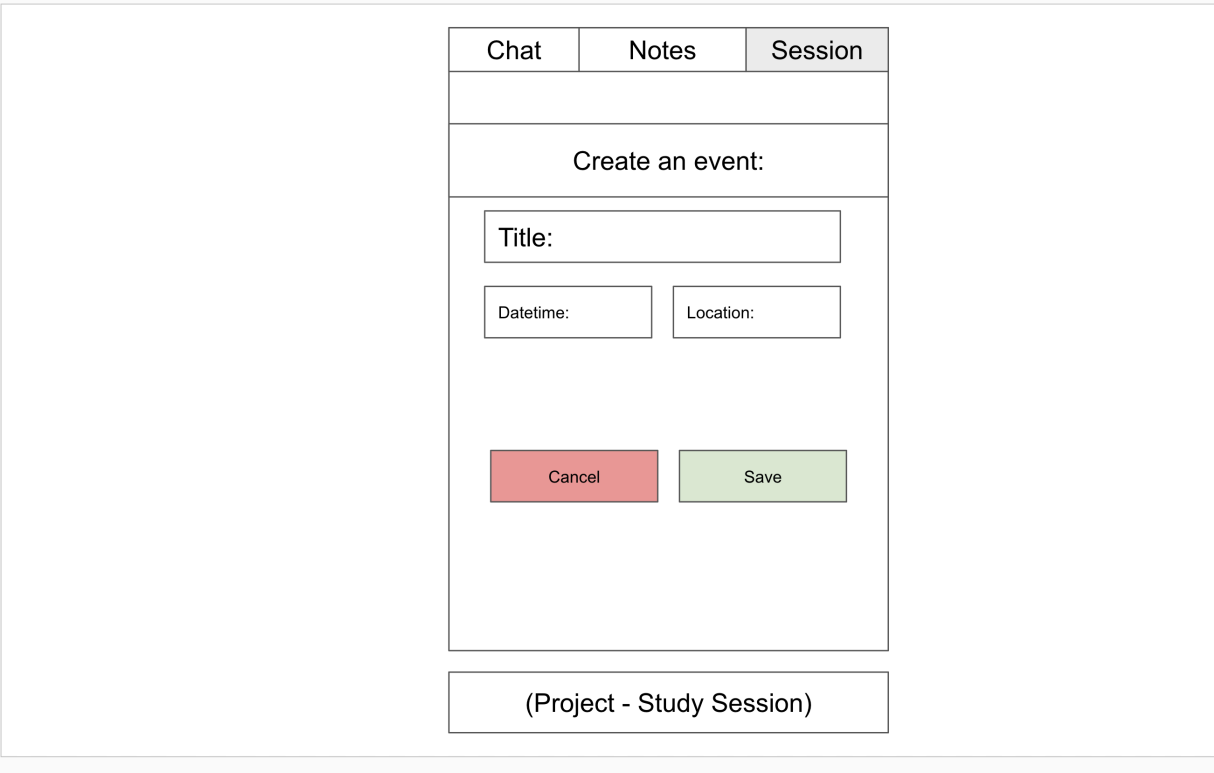
Notion

- Hierarchical folder-based organization for notes.

UI


CS: 4330 : Databases
14 Members
PHIL 2830: Philosophy
14 Members
MATH: 2880 : Geometry
14 Members
(Dashboard)
Chat
Notes
Session
Anyone interested in revising chapter 6 tomorrow?
g
Sure I'm interested!
A
Okay I'll create a study session!
g
Great!
A
Write a message …
send
(Project - Chat)


Chat
Notes
Session
Week 1 >
Week 2 >
Week 3 >
Week 4 >
Week 5 >
Syllabus
(Project - Notes)
Chat
Notes
Session
TA OH
March 25 6pm - 8pm
MCL 3048
Midterm Prep 1
March 31 4pm - 7pm
Main Library WB12
Midterm Prep 2
April 4 4pm - 7pm
Main Library WB12
+
(Project - Study Session)



These mockups illustrate the proposed UI design. While created in Google Slides as preliminary sketches, they demonstrate the core layout, components, and navigation flow of the application. The final implementation will be refined further.