

INF2007 - Mobile Application Development - Project Design

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Chapter 1

Project Proposal

1.1 Problem Statement

The challenge at hand involves new students at SIT facing a **significant academic leap** from their previous educational experiences. The transition to university life brings forth various obstacles, including *adapting to a different teaching style* and *managing a more demanding workload*. This situation is a common struggle among **freshmen**, impacting their overall learning experience. The goal is to understand and address these challenges effectively by designing supportive educational systems and strategies that aid students in *navigating the complexities of university life*, fostering a *smoother transition*, and enhancing their learning journey.

1.2 Implications

Without proactive measures to support students in their transition to university life, there is a risk of **increased academic stress**, *reduced satisfaction with the learning experience*, and potentially *higher dropout rates*. Recognizing and addressing these challenges is crucial for the overall success and well-being of students, emphasizing the need for institutions to invest in *tailored support systems*, *mentorship programs*, and *teaching methodologies* that facilitate a more seamless adaptation to the demands of higher education.

1.3 Persona

Name	Alex
Age	19
Gender	Male
Program	Computing Science
Location	Singapore Institute of Technology (SIT), Singapore
Background	Alex is the first in his family to step into the realm of higher education. He is enthusiastic about the opportunities that university life offers but is equally apprehensive about the academic hurdles that may come his way.
Goals	Alex aspires to attain a quality education that opens doors to promising career prospects. Additionally, he seeks to establish new connections, make friends, and engage in extracurricular activities for a well-rounded university experience.
Pain points	Alex is concerned about the rigorous academic workload in college, unsure of how to strike a balance between studies and social life. The prospect of making friends and fitting into the university environment adds to his worries.

Other important information	A diligent worker, Alex is determined to succeed in his academic journey. While slightly reserved, he is keen on overcoming shyness to build meaningful connections with his peers.
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1.4 Proposed Solution

To address the challenges outlined in the problem statement, we present a comprehensive solution that integrates diverse functionalities designed to elevate the overall university experience.

Our proposed application adopts a forum-like structure, drawing inspiration from platforms such as Reddit and Instagram. This platform empowers students like Alex to pose questions and seek answers from peers. A sophisticated voting system will be incorporated to assess and prioritize responses. The application will embrace an Instagram-style interface, presenting users with a curated list of questions. Additional features include a "following" function for subscribing to specific tags, an "explore" page showcasing a collection of questions, and a user profile for efficient user management.

The key features include:

1.4.1 Networking

By leveraging APIs from Firebase and Google AI, we aim to establish a robust networking system, promoting seamless communication and information exchange among students, enhancing collaboration and community building.

1.4.2 Database Management

Our solution incorporates both SQLite and Firebase databases, ensuring a secure and efficient storage and retrieval system for essential information.

1.4.3 Camera Functionality

Recognizing the value of visual content, our app integrates video and picture capabilities. This empowers students to capture and share significant moments, enriching the documentation of experiences and creating a more engaging learning environment.

1.4.4 Optical Character Recognition (OCR)

To aid in academic workload management, we propose integrating OCR technology. This feature efficiently converts printed or handwritten text into digital content, facilitating the organization and accessibility of study materials.

These proposed functions collectively form a comprehensive and technologically advanced solution, addressing identified challenges and enhancing the overall university journey for students like Alex.

1.5 Motivation

The driving force behind this project lies in our dedication to improving the academic transition for students entering higher education. Understanding the common challenges freshmen encounter when adapting to the demands of university life, our aim is to facilitate a smooth transition by creating a platform where students can learn from each other online. Through the development of this application, we strive to provide a space for introverted students to express their queries and enable a collaborative environment where students can support each other in this transitional phase.

Chapter 2

User Stories

2.1 User Story 1: Assistance in Learning

Title: Efficient Assistance for Challenging Concepts

Description: As Alex, I seek a platform to efficiently connect with peers or tutors for assistance in understanding challenging study concepts. The ability to post specific questions, receive timely responses, and engage in meaningful discussions is crucial for overcoming academic hurdles.

2.2 User Story 2: Effective Learning Resources

Title: Comprehensive Learning Resources

Description: In the pursuit of effective learning, I, as Alex, look for a platform with accessible and comprehensive learning resources. A system recognizing diverse learning styles and offering personalized educational tools ensures a more efficient and rewarding academic experience.

2.3 User Story 3: Peer Support Platform

Title: Collaborative Peer Support

Description: As a student like Alex, I value a peer support platform for academic discussions. A space for engaging in meaningful conversations, sharing insights, and collectively tackling challenging topics fosters a sense of community, providing valuable academic assistance and building connections.

2.4 User Story 4: Seamless Collaboration

Title: Effortless Topic Following

Description: Recognizing the significance of collaboration in successful learning, I, as Alex, envision a platform that effortlessly connects me with peers. A streamlined system allowing me to follow topics created by other users, engage in discussions, and collaboratively explore diverse subjects ensures a collective learning journey and establishes connections with fellow students.

2.5 User Story 5: Time Management Tool

Title: Effective Time Management

Description: Recognizing the challenges of managing time effectively, I, as Alex, require a dedicated time management tool. This tool, featuring task tracking, study logs, and personalized study plans, significantly contributes to balancing academic responsibilities, extracurricular activities, and personal time.

Chapter 3

UI Prototypes

3.1 Prototype 1

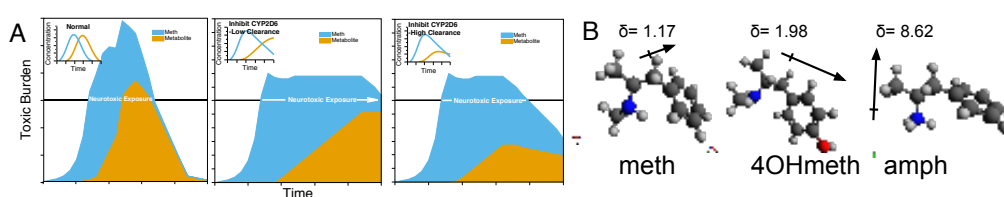


Figure 3.1: Big Figure legend Big Figure legend Big Figure legend Big Figure legend Big Figure legend Big Figure legend Big Figure legend Big Figure legend Big Figure legend.

Chapter 4

Backlogs

4.1 Product Backlog

4.2 Sprint Backlog

Product Backlog

ID	User Story	Priority
1	Efficient Assistance for Challenging Concepts: Users can post questions and receive timely responses, facilitating efficient learning support.	High
2	Comprehensive Learning Resources: The platform provides accessible and personalized learning resources, catering to diverse learning styles.	High
3	Collaborative Peer Support: A space for meaningful academic discussions and peer support, fostering a sense of community.	Medium
4	Seamless Collaborative Learning: Users can effortlessly form study groups, participate in discussions, and collaborate on academic tasks.	Medium
5	Effective Time Management: Integration of a dedicated time management tool with features like task tracking, study logs, and personalized study plans.	Low
6	Sign-in Functionality: Users should be able to sign in to the platform securely.	High
7	Account Creation Feature: A user-friendly process for creating new accounts.	Medium
8	Password Reset Capability: Users should have the option to reset their passwords.	Low
9	User Profile Management: Users can edit and manage their profiles, enhancing personalization.	Medium
10	Notification System: Implement a notification system to alert users about responses, updates, and relevant information.	Medium
11	Voting Mechanism: Introduce a sophisticated voting system for assessing and prioritizing responses.	High
12	Tag Subscription (Following): Users can subscribe to specific tags for a personalized feed of questions.	Medium
13	Explore Page: A curated page showcasing a collection of questions for users to explore.	Low
14	Camera Functionality: Integration of video and picture capabilities for visual content sharing.	Medium
15	OCR Integration: Implement Optical Character Recognition (OCR) for efficient conversion of printed or handwritten text into digital content.	Low

Sprint Backlog - Sprint 1

ID	Task	Estimate (hours)
1	Implement sign-in functionality	8
2	Design user registration form	5
3	Set up password reset functionality	3
6	Sign-in Functionality: Users should be able to sign in to the platform securely.	8
7	Account Creation Feature: A user-friendly process for creating new accounts.	6

Sprint Backlog - Sprint 2

ID	Task	Estimate (hours)
4	User Profile Management: Implement user profile editing and management features	10
5	Notification System: Develop a system to alert users about responses and updates	8
11	Voting Mechanism: Integrate a sophisticated voting system for assessing and prioritizing responses	12
12	Tag Subscription (Following): Implement the feature allowing users to subscribe to specific tags	9

Sprint Backlog - Sprint 3

ID	Task	Estimate (hours)
8	Explore Page: Develop a curated page showcasing a collection of questions for users to explore	6
9	Camera Functionality: Integrate video and picture capabilities for visual content sharing	8
10	OCR Integration: Implement Optical Character Recognition (OCR) for efficient text conversion	10
13	Explore Page: A curated page showcasing a collection of questions for users to explore.	6
14	Camera Functionality: Integration of video and picture capabilities for visual content sharing.	8
15	OCR Integration: Implement Optical Character Recognition (OCR) for efficient conversion of printed or handwritten text into digital content.	10

Chapter 5

Software Architecture

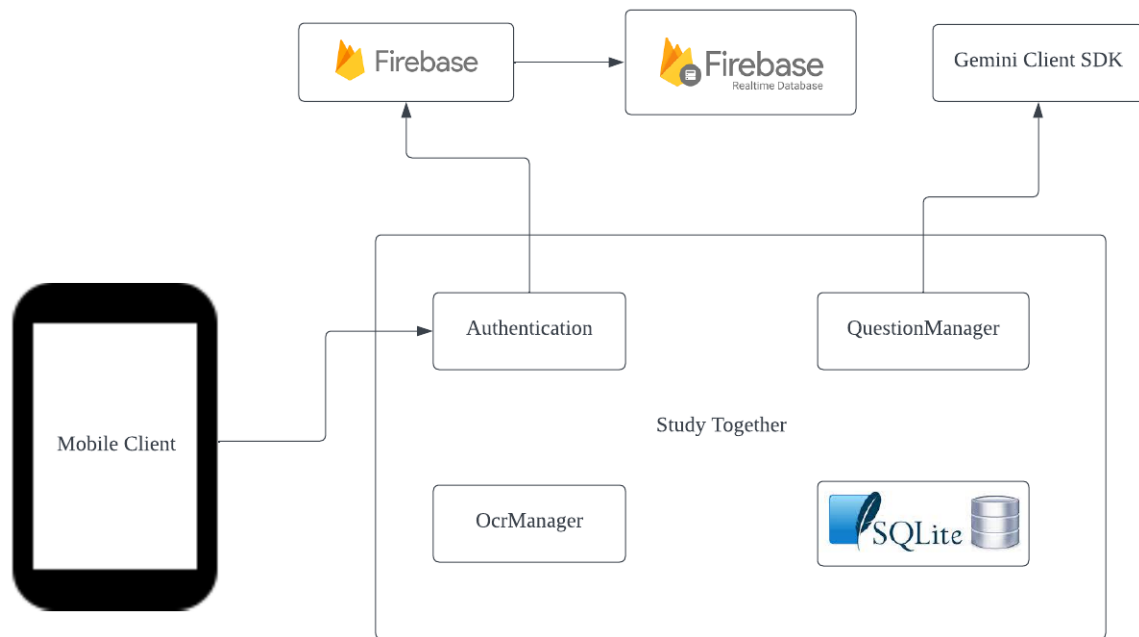


Figure 5.1: Initial Software Architecture

Appendix A

Appendix

A.1 Appendix Section

Hello :)