



SECP1513- 01 TECHNOLOGY AND INFORMATION SYSTEM

Design Thinking Project Report

Product Name: Real-Time Travelmate

Group Name: Group 5

Group Members:

NAME	MATRIX NUMBER
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1.0 Introduction

This project, titled “**Real-Time Travelmate**,” is developed as part of the SECP1513 – Technology and Information System course under the Design Thinking approach. Our motive in creating this app is to solve common problems faced by travelers, such as in finding routes, managing plans, and accessing real-time information. Today more than ever, mobile technology is essential in everyday life especially while traveling. Our project focuses on creating a smart travel mobile application that provides users with essential features like account login, real-time maps with AI recommendations, personalized profiles, feedback systems, and help and support options. The idea was inspired by observing the struggles of frequent travelers and students who often lack reliable, easy-to-use travel apps. Using the Design Thinking process, this project involves understanding the user’s problems, defining the core issues, brainstorming ideas, creating a prototype, and testing the solution. The final aim is to deliver a user-friendly, interactive, and visually appealing mobile app that supports travelers throughout their journey, ensuring convenience, safety, and real-time guidance. This introduction sets the foundation for further research, analysis, design, and development in the later stages of the project.

2.0 Detail Steps and Description In Design Thinking And Evidence

PHASE	DESCRIPTION	EVIDENCE
EMPATHIZE	Conducted interviews and surveys to understand traveler pain points like difficulty in finding routes, accessing real-time info, and managing trips.	<ul style="list-style-type: none"> Interview with Mr. Haqkhi (https://www.youtube.com/watch?v=SA6k5z3t_lk) Google Form questionnaire screenshots List of questions used in the interview
DEFINE	Analyzed interview and survey results to define the core problem: Lack of a centralized, real-time travel assistant app.	<ul style="list-style-type: none"> Summary of survey responses (figure shown) Identified key pain points and user needs from collected data
IDEATE	Brainstormed and discussed various possible solutions. Final idea: a smart travel assistant mobile app using AI and big data to give real-time info, suggestions, and personalized features.	<ul style="list-style-type: none"> Group discussion via Microsoft Teams and (screenshot) Idea: Real-Time Travelmate with integrated features like maps, alerts, and support.
PROTOTYPE	Developed sketches and wireframes for each page of the app and designed a working prototype using Figma.	<ul style="list-style-type: none"> Sketches of wireframes with interaction lines Screenshots of Figma design process Completed prototype screens (Login, Map, Profile, etc.)
TEST	User testing with Mr. Leavinesh. Feedback: App is modern, clean, and user-friendly with smooth flow, clear screens, matching colors, and understandable icons.	<ul style="list-style-type: none"> Screenshots of user testing and creator explaining Written feedback from Mr. Leavinesh

3.0 Detailed Description

3.1 Problem

Traveler offers a fun experience, but it also comes with some challenges, especially for solo travelers and those who want to visit new places. One of the main problems that a traveler often faces is finding a reliable and more accurate route to their destination to avoid getting lost. Furthermore, most applications that work separately will cause them to be confused and waste time finding their main destination. Furthermore, travelers often lack access to real-time information about changes in transportation, weather, and nearby events that can impact comfort and safety. To address these issues, we want to create a simple application that will help travelers feel more comfortable and secure during their journey.

3.2 Solution

After encountering several problems while traveling, we recommend the Real-Time Travelmate, a smart mobile application specifically designed to support travelers' journeys. By integrating essential features into one platform, this application offers convenience and real-time assistance to users. Real-Time Travelmate provides live navigation with route suggestions and updates that allow users to adapt to the surrounding area. In addition, this application also offers integrated itinerary management, covering accommodation and interesting activities in the nearby attractions. Furthermore, the application will send notifications about weather conditions, traffic, and local events. It allows travelers to stay informed, make quick decisions, and adjust plans according to needs. Features such as profiles, feedback options, and help sections are also available to ensure a smooth user experience.

3.3 Team Working

Our group works exceptionally well as a team, from idea generation to task completion. Each of the team members plays a key role based on their strengths in research, design, writing, and presentation, while also remaining flexible enough to support each other. During the empathy phase, several members conducted various user and online surveys, including Izwan Malek, who interviewed Mr. Haqhi, an experienced traveler. To understand the challenges of travel. Another team member will analyze the findings to identify key problems. In the Ideation and Prototyping stages, we brainstormed, prioritized useful features, created wireframes using Figma, and refined the design based on feedback. We kept in regular contact via group WhatsApp, online meetings via Microsoft Teams, and face-to-face conversations when we met at UTM. Our collaborative teamwork, focused on respectful feedback, enables efficient project delivery and user-centered solutions through the Design Thinking project.

4.0 Design Thinking Assessment Points

“Real-Time Travelmate” project, based on the theme Big Data and Artificial Intelligence New Innovation, assesses solutions for efficient itinerary planning using big data for destination suggestions and Artificial Intelligence for improved personalization. Assessment conducted at the end of the project and during the design thinking phases to ensure the solutions aligned with the needs of the users and design thinking’s principles.

4.1 During the end of the project demonstration.

The final demonstration evaluates the effectiveness of solutions in handling the challenges in planning a trip schedule/itinerary. The assessor will assess whether the big data, like location-based suggestions and AI, like personalized paths, have been effectively integrated while ensuring user-friendly features such as a clear layout or a preferences filter. Team presentation must explain the following process backed with visual materials like diagrams as examples, that show continuous improvements based on users’ feedback. Creativity, practicality, and suitability of the problems and solutions are the main criteria.

4.2 During the transition between design thinking phases.

Transitions assessment ensures every phase (empathize, define, ideate, prototype, and test) builds on the previous phase. From the empathy and definition, the assessor evaluates the user’s insights, like a summary of interviews, to make sure a clear problem statement is defined. From define to ideate, the assessment focused on whether the ideate sessions are aligned with the needs, like suggestions powered by AI. From ideate to prototype, the assessment will focus on the conversion of the idea to real real-life output. From the prototype to the test, the assessment will check the user’s feedback integration, and from test to final demonstration, the assessor will make sure improvements are still on track with the original problems, keeping the focus on big data and AI usage.

5.0 Design thinking evidence

5.1 Empathy Phase

In order to get valuable insights and inputs, an interview session has been conducted with Mr. Haqkhi, an avid domestic and international traveler. We also conducted surveys through Google Forms to get a better and broader understanding of creating an exceptional user experience with plenty of useful and helpful features.

5.1.1 Interview

https://www.youtube.com/watch?v=SA6k5z3t_lk





Figure 1: Interview with Encik Haqkhi

- Q1 : What's the hardest part about planning a trip, like picking places to visit or figuring out when to go?
- Q2 : How much do you care about quick info, like how far a place is, its opening hours, or if it's available when you're planning?
- Q3 : What kind of suggestions would you love from a travel app?
- Q4 : When choosing places to visit, what matters more to you: how close it is, how much it costs, or how crowded it might be?
- Q5 : What would make a travel app really awesome for you, especially if it uses smart tech to give you great ideas?

Figure 2: List of questions during the interview

5.1.2 Questionnaires for Google Survey Form

What is your age? *

18-24
 25-34
 35-44
 45-54
 55-64
 More than 65

What is your current occupation? *

Student
 Employed
 Self Employment
 Retired
 Unemployed
 Other: _____

How do you usually find places to visit when traveling? *

Online search
 Friends or family suggestions
 Books or travel guides
 Social media

Would you like an app to suggest places based on your location? *

Definitely yes
 Probably yes
 Neutral
 Probably not
 Definitely not

What info about a place would you want from a travel app? *

- Distance from my current location
- Favorite list
- Alerts of incidents happen
- Reviews from others
- Recommodation of places that might interest
- Other: _____

What kind of place would you most want an app to recommend? *

- Local food spots
- Nature or parks
- Museums or art galleries
- Events or festivals
- Hidden local spots

How far are you willing to travel from your stay location? *

- Just nearby (walking distance)
- Within 15–30 minutes
- Anywhere, as long as it's interesting

Do you prefer a fixed plan or choose places during the trip? *

- Fixed plan before the trip
- Choose during the trip

Do you check if a place is open or crowded before going? *

- Yes
- No

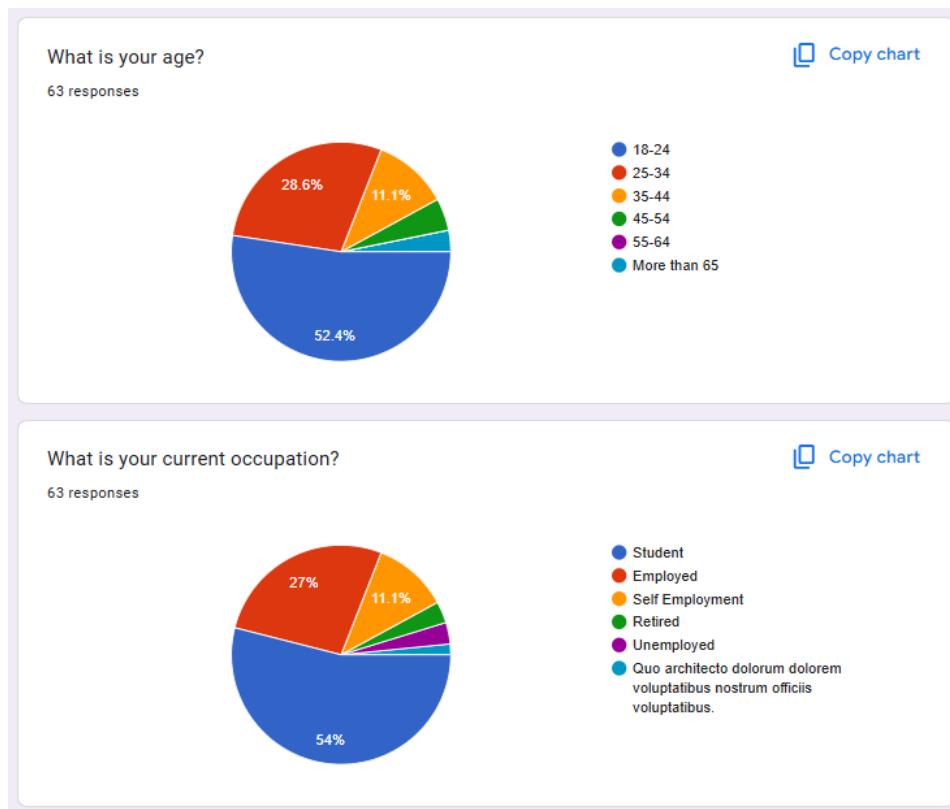
Should the app suggest new places if your plan changes? *

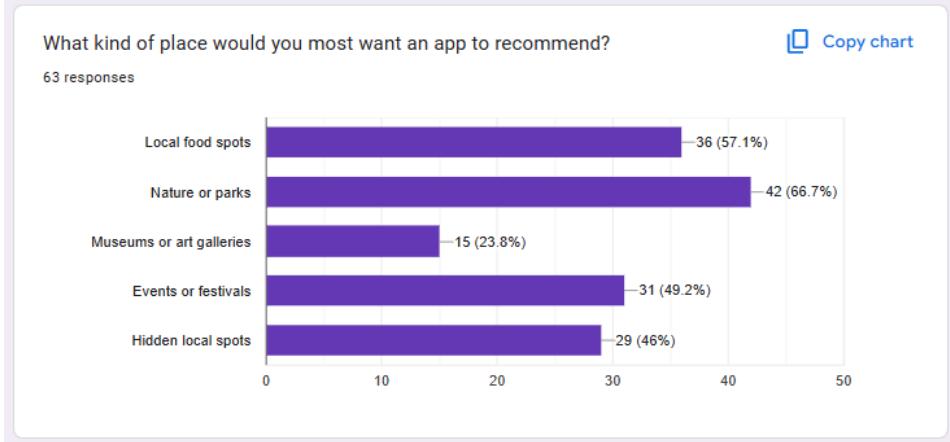
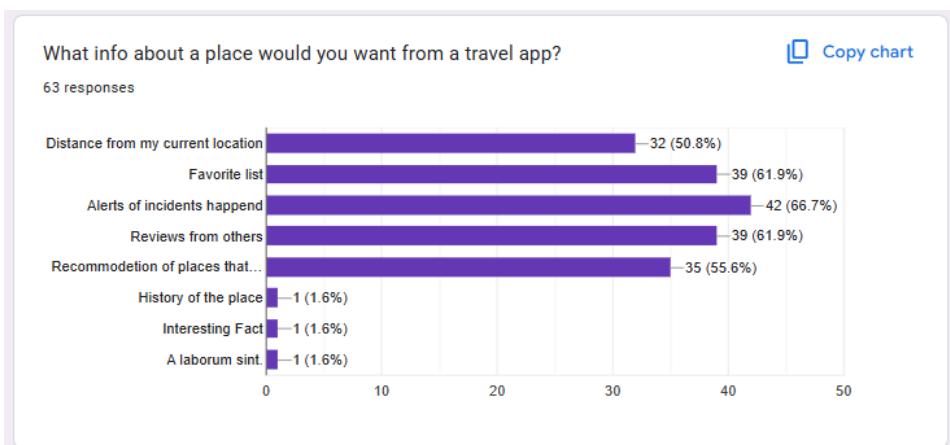
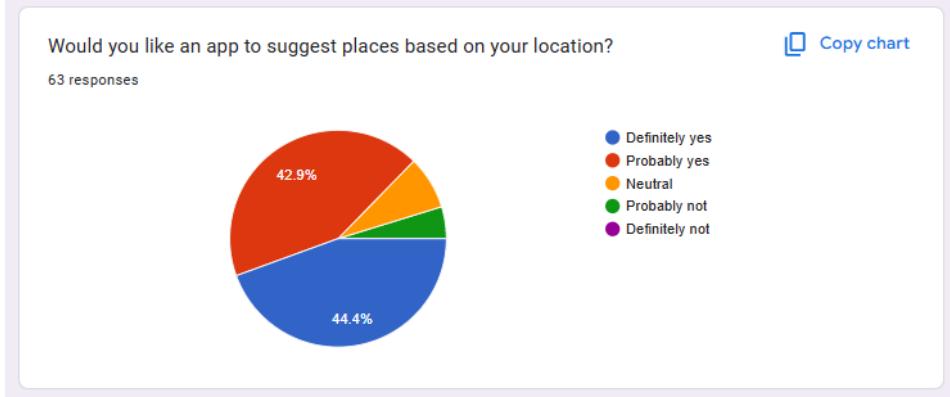
- Yes
- No
- Maybe, depends on the situation

Figure 3: Screenshot of Google Form

5.2 Define Phase

The collected data was analyzed to identify the core problems, such as the absence of real-time travel updates, route confusion, and poor personalization in existing travel apps. These insights helped in forming a problem statement: "Travelers need a reliable and personalized digital assistant that provides real-time support throughout their journey."





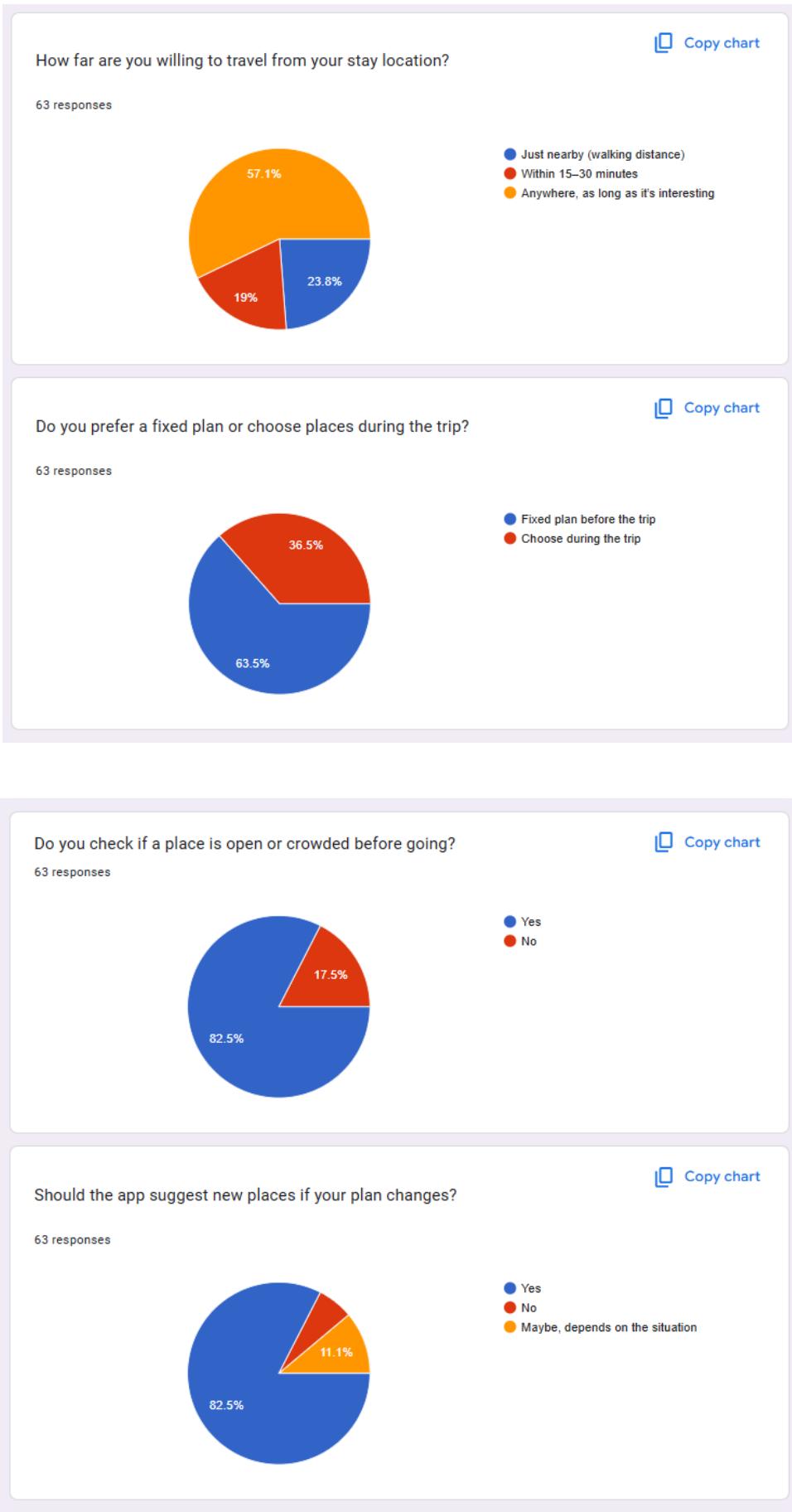


Figure 4: Summary of Responses

5.3 Ideate Phase

The team brainstormed multiple ideas and collaborated through Microsoft Teams. We explored various features like live maps, itinerary planners, and emergency help buttons. Eventually, finalized the idea of building an intelligent app named Real-Time Travelmate, powered by Big Data and AI, to provide personalized travel guidance and suggestions.

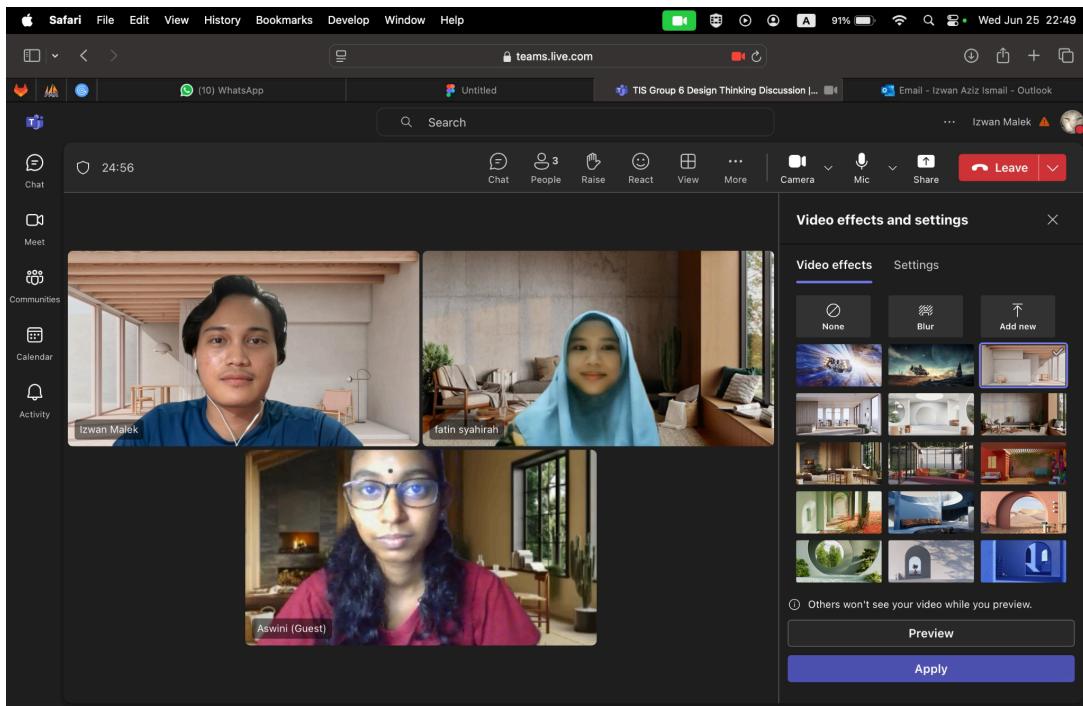


Figure 5: Group discussion via Microsoft Teams

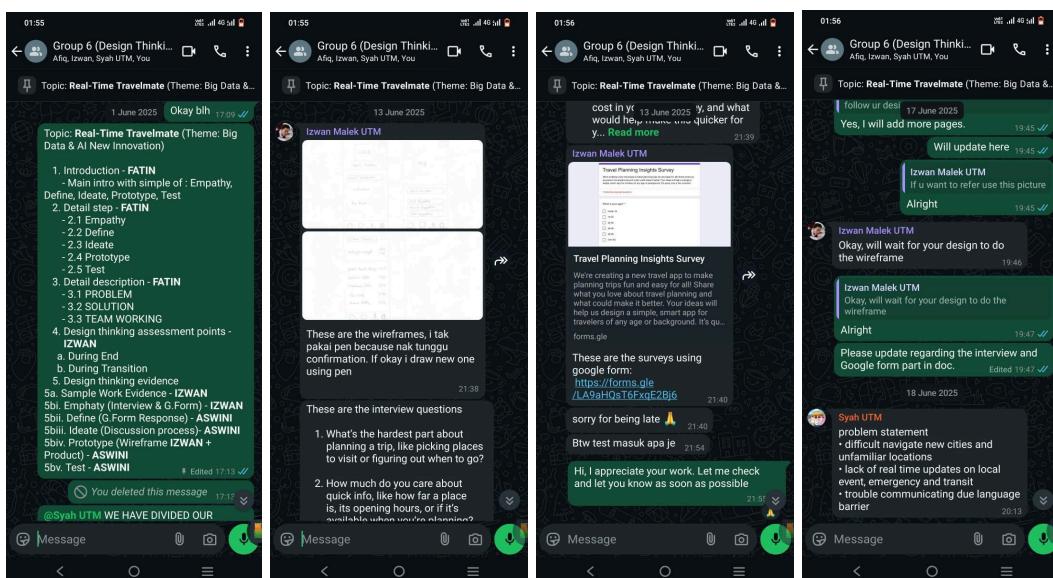


Figure 6: Group discussions

5.4 Prototype Phase

With the idea finalized, the team created sketches of wireframes showing the app layout and navigation. These designs were brought to life using Figma, where interactive screens were developed. The prototype included pages like Login, Sign-up, Map, Dashboard, My Profile, Alerts, and Help, all styled with a clean UI and consistent design language.

5.4.1 Sketches of Wireframe

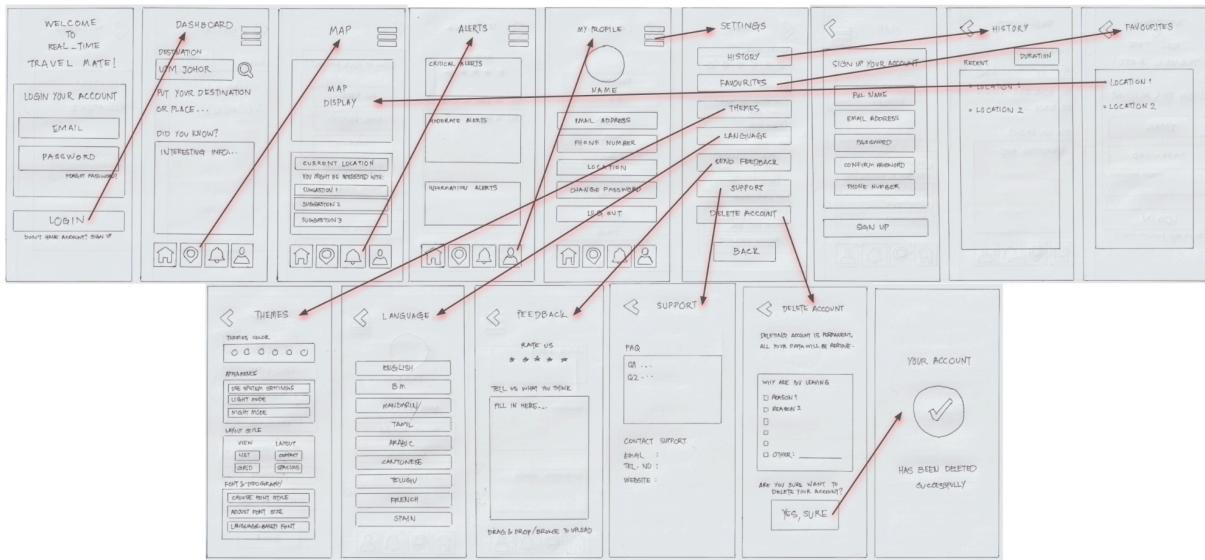


Figure 7: Wireframe with Interaction Lines

5.4.2 Proof of making of prototype design using Figma

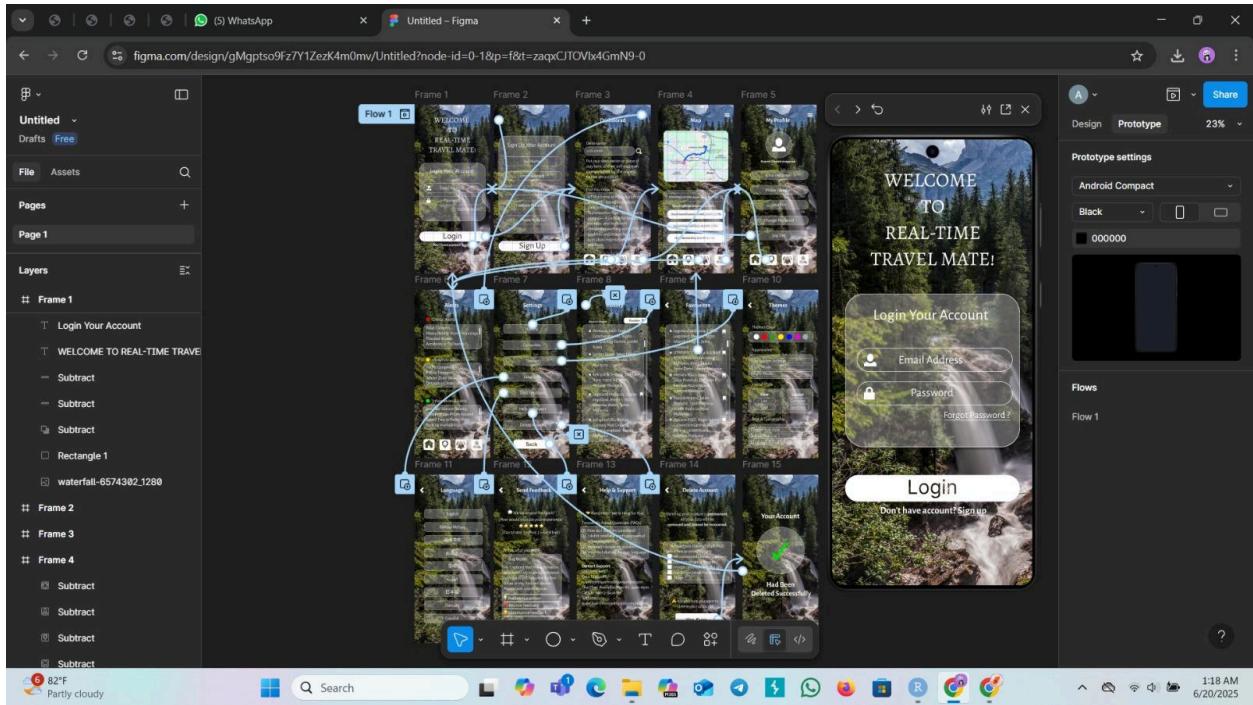


Figure 8: Proof of prototype design

5.4.3 Completed Prototype



Figure 9: Login page

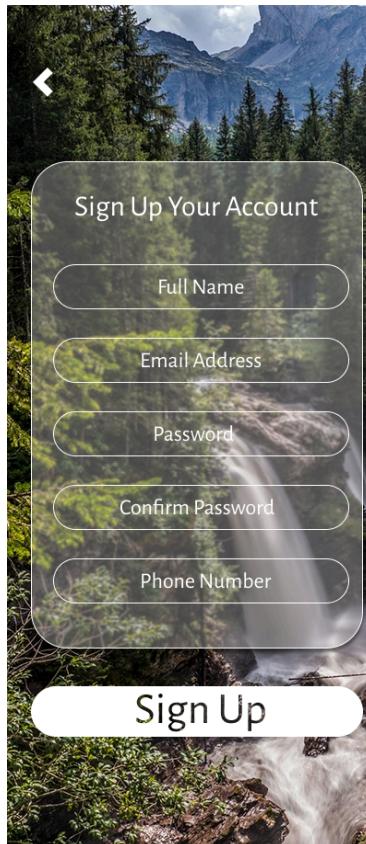


Figure 10: Sign Up page

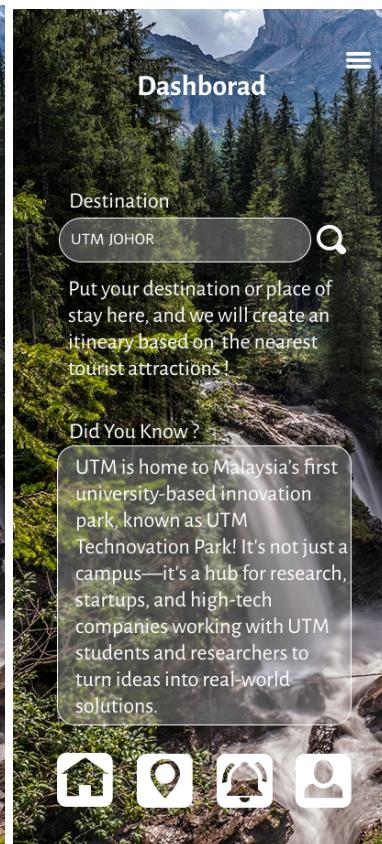


Figure 11: Dashboard page



Figure 12: Map page

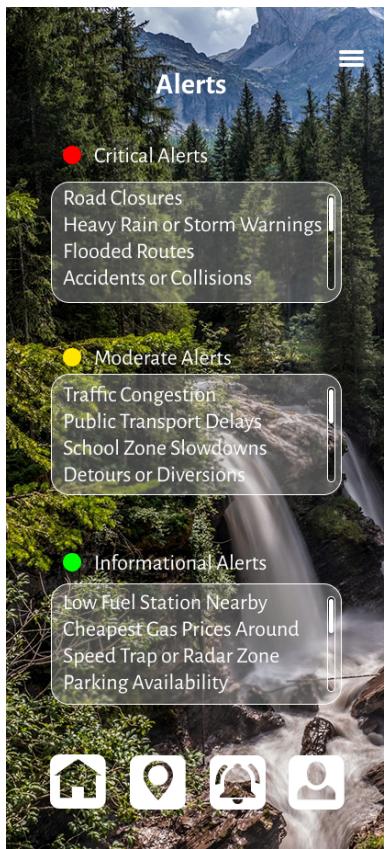


Figure 13: My Alert page

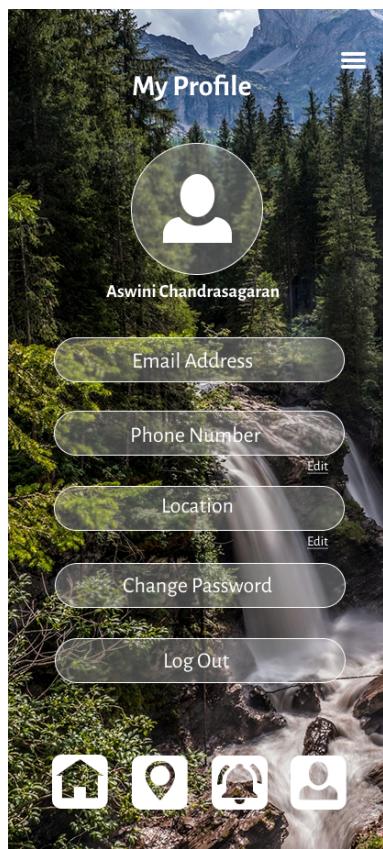


Figure 14: My profile page

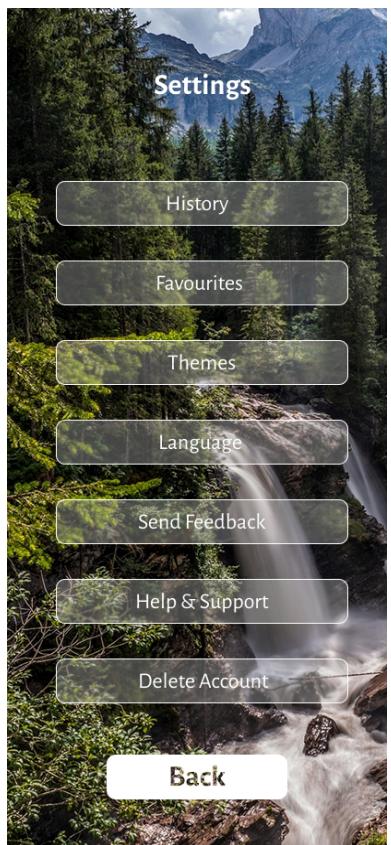


Figure 15: Settings page

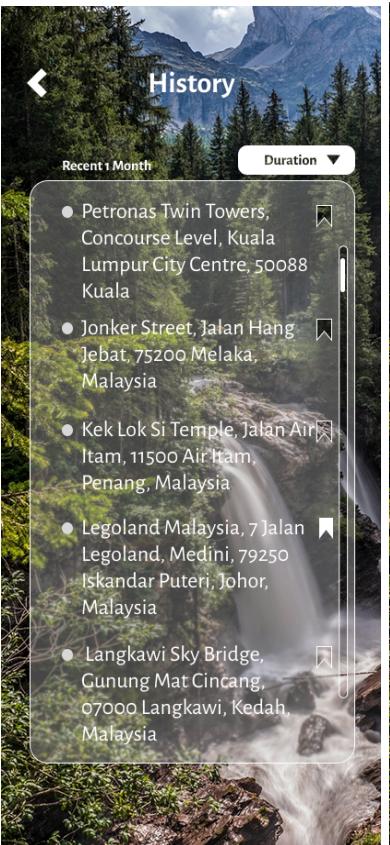


Figure 16: History page



Figure 17: Favourite List page

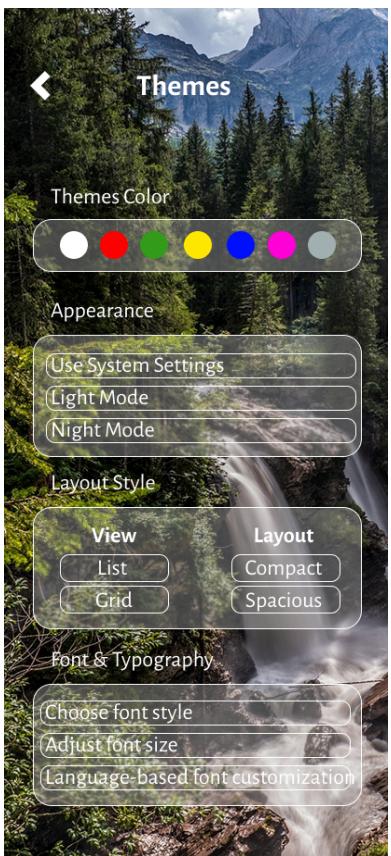


Figure 18: Themes page



Figure 19: Language page

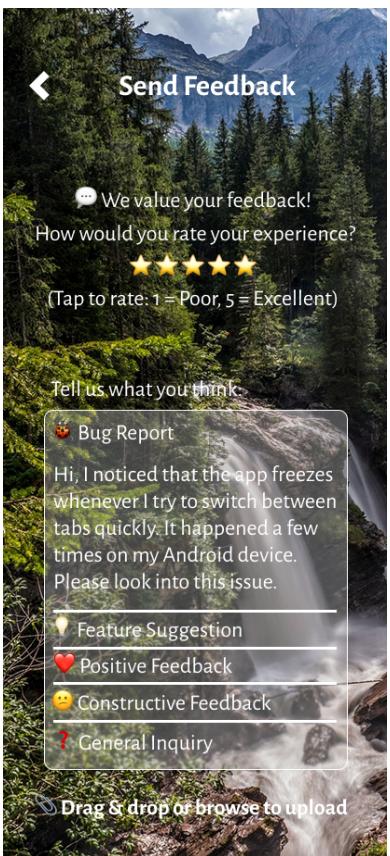


Figure 20: User Feedback page

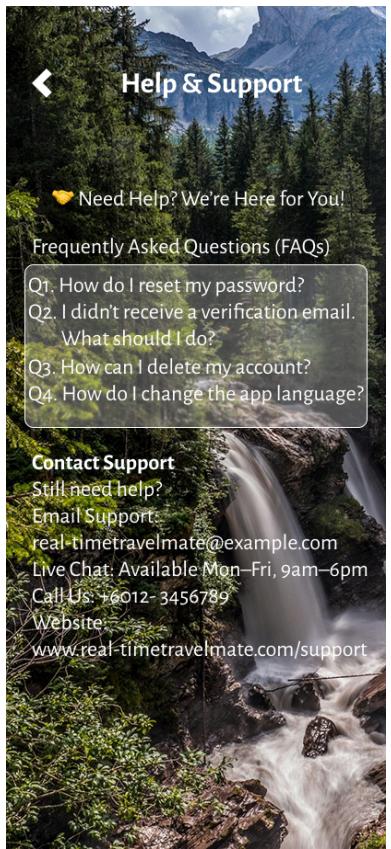


Figure 21: Help & Support page

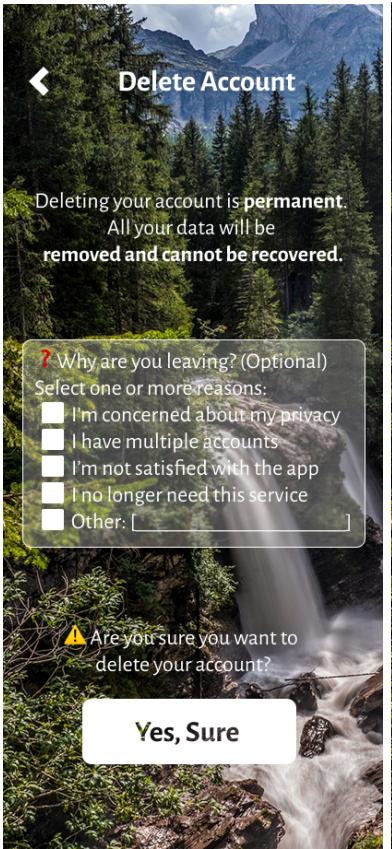


Figure 22: Delete Account page

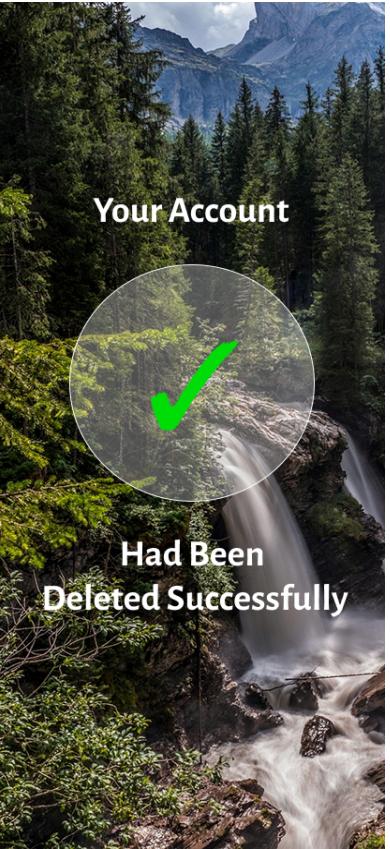


Figure 23: Account Deleted page

5.5 Testing Phase

The user, Mr Leavinesh said the app design looks unique, with the natural background as a symbol of travel and the transparent boxes, which give a clean and modern look. They found the layout easy to use. The login and sign-up screens were simple and clear. He liked the features we got in the app prototype. The colors and fonts were nice and matched well. Icons helped them understand each page quickly, and the flow between screens felt smooth. Overall, the app looked good and was easy to use.



Figure 24: User testing



Figure 25: Creator Explaining

6.0 Reflections

1. Aswini A/P Chandrasagaran (SX242452ECRHF01)

What is your goal/dream with regard to your course/program?

My goal is to become a professional in the cybersecurity industry. Although I am currently working in a non-CS field, I've been passionate about cybersecurity since I was 12. Through continuous learning—both self-paced and structured courses—I aim to build a strong foundation and eventually specialize in areas such as penetration testing, threat analysis, and cyber defense. My dream is to contribute meaningfully to the security of digital systems while working in a role that challenges me and allows me to grow.

How does this design thinking impact on your goal/dream with regard to your program?

The design thinking process has helped me develop a problem-solving mindset that is highly relevant to cybersecurity. It trained me to think from the user's perspective, define real problems, ideate possible solutions, and prototype/testing them effectively. These stages mirror the cybersecurity process, like identifying vulnerabilities, thinking like an attacker, and building defenses. Applying design thinking in projects like "Real-Time Travelmate" boosts my creativity, adaptability, and confidence, which are essential in my path toward becoming a cybersecurity expert.

What is the action/improvement/plan necessary for you to improve your potential in the industry?

To improve my potential in the industry, I plan to continue my hands-on learning using platforms like TryHackMe and Hack The Box to gain both theoretical and practical skills. I will also enroll in a full-stack development course to strengthen my programming and system understanding. In addition, I intend to earn beginner-level security certifications (like CompTIA Security+CEH) and build a professional portfolio with unique, security-focused projects. Networking with industry experts, participating in CTFs (Capture The Flag), and contributing to open-source tools will also be part of my strategy.

2. Fatin Syahirah Binti Nor Rashid (SX241920ECRHF01)

What is your goal/dream with regard to your course/program?

My goal in taking this Computer Science course, specifically in the area of Networking and Cyber Security, is to expand my knowledge, even though I previously majored in electronics and also worked in that field. I am looking forward to learning various aspects of computer science because I believe that gaining new knowledge will allow me to grow personally and professionally. Although my background is in electronics, I understand that integrating skills from both fields can open up greater opportunities and allow me to contribute more effectively in this digital era.

How does this design thinking impact on your goal/dream with regard to your program?

Through this design thinking project, I have learned that empathy is essential in initiating any project. By conducting interviews and asking the right questions, we are able to understand users' real needs. This is followed by defining the problem clearly, generating ideas (ideation), developing prototypes, and finally testing the product. This structure has taught me that successful solutions must begin with a deep understanding of the user. It shapes my mindset to prioritize the needs of others as well.

What is the action/improvement/plan necessary for you to improve your potential in the industry?

To improve my potential in the industry, I will actively participate in relevant training programs. Continuous learning is essential, especially in rapidly growing fields such as computer science. By attending certification courses and hands-on training, I aim to stay updated with the latest technologies, tools, and best practices.

3. Izwan Aziz Bin Ismail @ Abd Malek (SX241894ECJHF01)

What is your goal/dream with regard to your course/program?

My dream with regard to the course is to have a better and complete understanding of the Information Technologies system's components. Mastering hardware knowledges to fully optimize the smoothness and resilient of a system, perfecting software understanding to ensure great cooperation with the hardwares, excelling data insight so data management will be more efficient, dominating networks wisdom to provide perfect path for the data to flow, refining people behaviour aiming for the great user experiences and lastly, acing processes comprehension in order to establish perfect system for users and developers.

How does this design thinking impact on your goal/dream with regard to your program?

I do have an ambition, which is to build an app/software that people need the most and also at the same time it eases and contributes to users without burdening them with unnecessary features and elements. Before this, I assume learning to code is the only step that needs to be accomplished. After finishing this design thinking project, it opens my eyes and gives insight that we also must consider users and to jump straight away to code is not the best way to create an app or software if creating the perfect system is the end goal.

What is the action/improvement/plan necessary for you to improve your potential in the industry?

After several weeks spent to study and explore this subject, I noticed that mastering coding is not enough. Understanding how the system works and all the types there are, what the users want, and more, gives me the idea that following these topics one by one in creating a system is important. It's not only to make sure the system built is perfect and smooth, it is also to give the potential prospects to recognize our capability in building a system systematically, not just blindly and thoughtlessly.

7.0 Task Distributions

1. Aswini A/P Chandrasagaran (SX242452ECRHF01)

Report Writing and Designing

- 1.0 Introduction
- 2.0 Detail Step and Description in Design Thinking and Evidence (Edited and added evidence, the table created by Ms Fatin)
- 5.0 Design Thinking Evidence
 - 5.1 Empathize
 - ❖ 5.1.2 Questionnaires for Google Survey Form (Made a major change in questions and answers option, even though the form is created by Mr Izwan)
 - 5.2 Define Phase - find 60 responses
 - 5.3 Ideate Phase
 - 5.4 Prototype
 - ❖ 5.4.1 Wireframe Guidance to Mr Izwan
 - ❖ 5.4.2 Prototype Design
 - 5.5 Test

2. Fatin Syahirah (SX241920ECRHF01)

Report Writing and Designing

- . 3.0 Detailed Description
 - 3.1 Problem
 - 3.2 Solution
 - 3.3 Team Working
- . Reviewed and corrected alignment and formatting across the entire report
- . Ensured consistent font styles, sizes, and spacing throughout the document
- . Checked and adjusted table and diagram placements for better layout
- . Edited grammar and spelling errors in all sections

3. Izwan Aziz (SX241894ECJHF01)

Report Writing and Designing

- 4.0 Design Thinking Assessments Points
 - 4.1 During the end of the project demonstration
 - 4.2 During the transition between design thinking phases
- 5.0 Design Thinking Evidence
 - 5.1 Empathy Phase
 - ❖ 5.1.1 Interview
 - ❖ 5.1.2 Questionnaires for Google Survey Form
 - 5.3 Ideate Phase
 - ❖ 5.4.1 Sketches of Wireframe