



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

**SECP1513-08
TECHNOLOGY AND INFORMATION SYSTEMS**

DESIGN THINKING PROJECT

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GROUP 6

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1. Introduction

Design thinking is a human-focused approach to innovation. It is an iterative process for designing and creating a product. The method is widely used across industries because it provides a structured approach to identifying problems, defining the challenges, creating ideas, and testing of solutions efficiently. This report aims to utilize the method to solve a specific problem regarding the fitness of students.

Maintaining fitness routines is a common challenge for many individuals, particularly beginners and students, due to a lack of motivation, time constraints, and access to customized guidance. “Move Mate” is a personalized fitness coaching app aimed at addressing these issues, specifically tailored for the UTM community. By integrating fitness-related activities and fostering community engagement, the app offers a practical, user-friendly solution.

2. Steps and Descriptions in Design Thinking

Phase 1: Empathy

Empathy in design thinking is the stage where we gather information, engage with the user and immerse ourselves in their experience. From this, is gathered the struggles and troubles people face while engaging in the experience, which will act as a foundation for later steps as a base understanding of the problems that need to be addressed with the proposed solution.

To empathize with our target users, we engaged with them directly. Through interviews and conversations with UTM students, we got a look into their specific needs related to fitness. This allowed us to better understand their frustrations and struggles such as tight schedules and lack of motivation.

By actively listening to students and hearing their experiences, we were able to design an app that is not only functional but reflects on the actual struggles of our users. Through this empathetic approach, we obtained a better look into the feelings of our users and served as a crucial part in the design process.

Phase 2: Define

The define phase is the step to refine the findings in the empathy stage into more solid and logical problems to solve. This phase will produce an actionable problem statement that has a focused perspective on the specific users, environment, and demographic targeted, from which solutions can be implemented.

From the Interviews and results from the empathy phase, we realized that UTM students struggle to find motivation to work out, and lack access to personalized fitness resources made for their specific needs. These challenges prevent many students from staying consistent with their fitness routines, impacting their overall health and well-being.

UTM students need a fitness solution that fits into their busy academic lives, addressing their specific needs and catering to their requirements.

Through this phase we learned the direction and goal of the intended app, allowing us to move forward with developing solutions that truly helped our users needs.

Phase 3: Ideate

In the Ideate phase, we focused on generating a wide range of creative ideas to solve the problem of helping UTM students stay consistent with their fitness routines. We encouraged brainstorming and explored diverse possibilities to ensure we were considering all potential solutions. This step was about thinking big and expanding our horizons, drawing inspiration from both fitness trends and the specific needs of UTM students.

We started by listing a variety of ideas: from personalized fitness coaching to social fitness challenges. We also considered adding features like workout tutorials, goal tracking, and peer accountability. We explored how we could integrate fitness-related events across UTM, design a platform for students to meet workout partners, or even offer virtual fitness sessions. Our goal was to come up with as many ideas as possible to address the various challenges students face with fitness.

After generating a wide range of concepts, we refined the ideas and selected the most promising one to pursue. We decided to focus on creating a tailored fitness app specifically for UTM students, integrating four key features:

1. **Suggested jogging and biking routes** around the UTM campus, making it easier to stay active without searching for places to exercise.
2. **A community feature** for students to join group workouts and engage in fitness challenges, encouraging accountability and motivation.
3. **A centralized system for all UTM fitness events**, providing students with a comprehensive view of available activities on campus.
4. **Personalized exercise recommendations** based on each user's schedule, ensuring that fitness fits into their busy lives.

These features stood out because they directly addressed the struggles UTM students face, providing practical solutions that are easy to use and accessible within the UTM environment, as well as being suited to their personal needs.

Phase 4: Prototype

This phase is the stage in design thinking where the idea is realized into physical form. Rough prototypes of post-it notes, storyboards, or objects are created to represent the formed interfaces for people to interact and experience. From the interactions further refining can be done and realized.

In this phase we created a digital graphical interface prototype that shows the proposed interfaces and features of the system showcasing the features and flow of the system.

Phase 5: Test

The Test phase allows us to fine-tune and improve our solutions by gathering valuable feedback from users. This step is critical as it helps us identify any shortcomings and areas for enhancement. By iterating on the app based on real user experiences, we ensure that the final product aligns with the needs and preferences of UTM students. This continuous feedback loop guarantees that we are delivering an app that effectively addresses user challenges and meets their expectations for a seamless, motivating fitness experience.

3. Problem, Solution, and Team Working

Problem description

Many students lack the motivation, time, and guidance to maintain fitness routines. While existing solutions and applications exist, they do not completely deal with the specific issues the students face.

Solution

The solution proposed is Move Mate, a personalized fitness app for the UTM university, providing localized jogging tracks, group activity organization, event consolidation, and timetable-based exercise suggestions. This system aims to provide a suitable exercise solution for students solving their specific needs.

Team Working

Our team split ourselves into different tasks, Focusing on different points of work such as interviewing users, documentation, creation of the prototype and so on. This allowed for a more efficient process while also still collaborating on crucial parts of the project as a team.

4. Design Thinking Assessment Points

a. Transition Between Design Thinking Phases

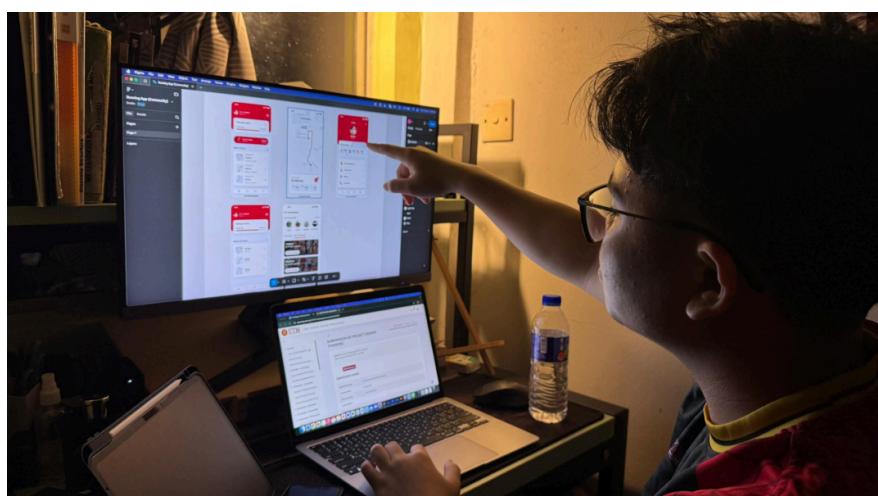
Throughout the transitions between the various phases we did regular assessments of the progress of the project and the results of the completed phase. We discussed the outcomes of the phase and assessed their accuracy and completeness. Correcting any mistakes found and improving where possible. This process allowed for frequent refining on the project to maintain its objective.

b. End of Project

At the end of the project, we thoroughly reviewed the whole of the project, assessing each phase and its contributions to the final outcome of the project. We carefully examined the completeness of the documentation. Further elaborating any missed points. This final review ensured the quality of the project and served as an opportunity to reflect on the project and the whole process.

5. Design Thinking Evidence

Sample Work



Empathy

In our interview with Adin, a UTM student who consistently follows a fitness routine, he highlighted several key challenges that students face in maintaining their fitness. One of the main obstacles he mentioned is balancing his academic workload with finding time for regular exercise. Despite his interest in staying fit, Adin often finds it difficult to carve out time in his tight schedule for consistent workouts. Adin pointed out that while there are general fitness apps available, they do not fully meet his specific needs, particularly when it comes to tracking progress.

In addition to needing a customized plan, Adin expressed the need for an app that could help him track his jogging routes and time. He often jogs as part of his fitness routine, but currently has no way to monitor or record his route and performance over time. This insight revealed a crucial feature for the "Move Mate" app, highlighting the importance of tracking not just workouts, but specific activities like jogging to help users stay motivated and see their improvements.

Adin's feedback gave us a deeper understanding of the challenges students like him face and reinforced the need for an app like "Move Mate" to offer tailored fitness guidance, time management solutions, and tracking capabilities.

Define

Based on our interviews, we discovered that UTM students struggle with motivation and lack access to personalized fitness resources. These issues prevent students from maintaining consistent fitness routines, affecting their health and well-being. UTM students need a fitness solution that fits into their busy schedules and addresses their unique needs. This phase helped us clarify the app's direction, enabling us to develop solutions that directly respond to these challenges.

Ideate

In the Ideate phase, we brainstormed creative solutions to help UTM students stay consistent with their fitness routines. We explored ideas such as personalized fitness coaching, social challenges, workout tutorials, goal tracking, and peer accountability. We also considered integrating UTM fitness events and creating a platform for students to find workout partners. After refining our ideas, we focused on four key features for the "Move Mate" app:

1. Suggested jogging and biking routes around the UTM campus.
2. A community feature for group workouts and fitness challenges.
3. A centralized system for UTM fitness events.
4. Personalized exercise recommendations based on individual schedules.

These features directly address the needs of UTM students, offering practical, accessible solutions to help them stay active.

Prototype

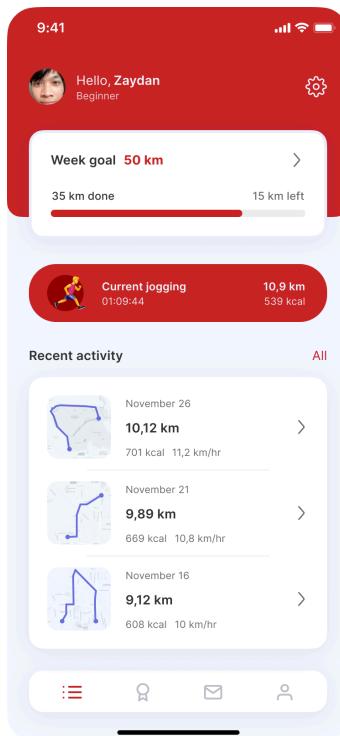
In this phase we created a graphical prototype including the main features of the proposed solution with the features as seen below.

Feature Overview

1. Homepage

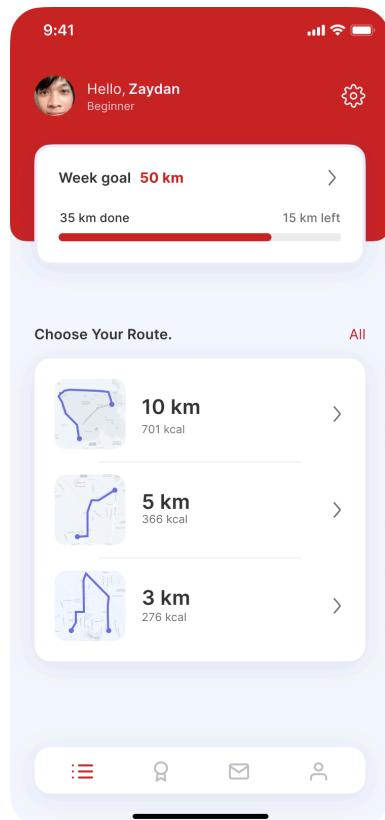
The main page serves as the central hub where users can easily navigate through the app's various features. This includes:

- Suggested jogging and biking routes around UTM
- A community section for joining group workouts
- A calendar of fitness events on campus
- Personalized exercise recommendations based on their schedule



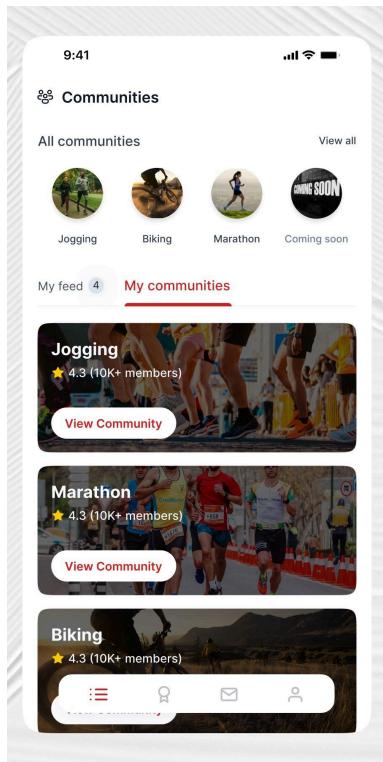
2. Suggested Routes

Selecting the jogging or biking routes feature brings users to an interactive map showing available routes around UTM. These routes are specifically curated for students, ensuring they are accessible and suitable for various fitness levels. The map also includes distance and estimated times for each route, allowing students to select routes based on their preferences.



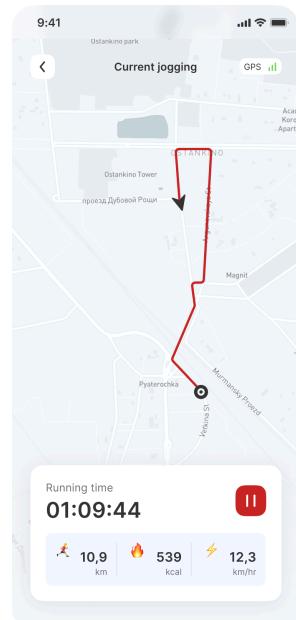
3. Community Feature

By selecting the community section, users are introduced to a platform where they can join group workouts or fitness challenges with other students. Users can browse different community groups, view events, and sign up for group activities.



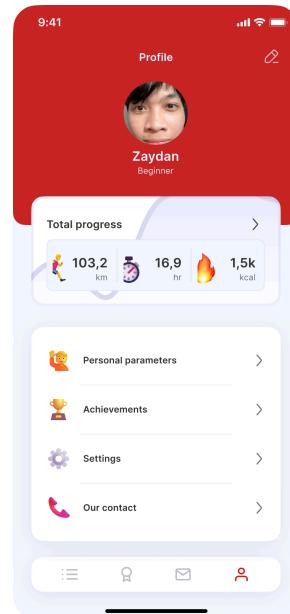
4. Live Tracker

The live tracker screen of the app provides a detailed overview of the user's jogging activity. At the top, it displays a map with a red line indicating the jogging route, marked with clear directional arrows. Below the map, a summary section shows key statistics, including the total running time (01:09:44), distance covered (10.9 km), calories burned (539 kcal), and the average speed (12.3 km/h).



5. Profile Overview

The "Profile Overview" tab serves as your personal hub, summarizing your fitness journey and providing quick access to essential features. It displays your name, fitness level, and total progress stats, such as distance covered, time spent, and calories burned. Additionally, it includes options to update personal parameters, view achievements, adjust settings, and contact support.



Test

In the Test phase, we gather feedback from users like Adin to refine our app. This helps us identify areas for improvement and ensure the app meets the needs of UTM students. By iterating based on Adin's feedback and experience, we ensure the final product offers a seamless and motivating fitness experience that aligns with their expectations.

6. Reflections

- Rodzer

“My goal for this course is to develop my skills in computer science, particularly in software engineering, with a focus on becoming proficient in both backend and frontend development. I aim to gain a deeper understanding of how to design, build, and optimize software systems, enabling me to create robust and user-friendly applications that address real-world challenges efficiently.”

- Khairil Hakim

“My goal for this course is to enhance my skills in software engineering, particularly in developing applications that combine backend efficiency with intuitive frontend design. I aspire to create an app that promotes jogging and healthy lifestyles, integrating features like activity tracking, personalized fitness plans, and community engagement. Through this project, I aim to deepen my understanding of building scalable, user-friendly solutions that inspire healthier living.”

- Adam Haiqal

“My goal for this course is to advance my skills in software engineering, with a strong focus on game development. I aspire to create immersive and engaging gaming experiences by mastering both backend mechanics and frontend design. By honing my abilities in areas like game physics, interactive storytelling, and user experience, I hope to lay a solid foundation for a career in game development and bring creative ideas to life.”

- Ahmad Muzhaffar P.

“I aim to use this course as an opportunity to enhance my skills in software engineering, particularly in web development. My aspiration is to create dynamic and responsive websites that deliver seamless user experiences. By mastering both frontend and backend technologies, I hope to develop a solid foundation for building innovative web solutions and achieving my goal of becoming a skilled web developer.”

- Nazhir Zaydan Yusuf

“My dream regarding my course is to obtain comprehensive knowledge to become a competent software engineer. This design thinking project has given me an important look into the processes within the industry. To further improve my potential, I will begin to research and take courses of more in depth techniques in programming as a supplement to the university courses.”

7. Task for Each Member

To guarantee a coherent and thorough result, all group members worked together to complete the duties. Nonetheless, each member was given particular tasks to complete in order to expedite the procedure and properly record their contributions. The task distribution is shown below:

Rodzer Channon	<ul style="list-style-type: none">• Conduct interviews and conversations with UTM students to gather insights.• Document the design thinking process: Empathy, Define, Ideate, Prototype, Test.
Khairil Hakim	<ul style="list-style-type: none">• Conduct interviews and conversations with UTM students to gather insights.• Document emotional struggles, lifestyle barriers, and fitness-related needs.• Edit the video to create a cohesive narrative showcasing the design thinking process and the app's features. Ensures the final video is concise, polished, and ready for presentation.
Adam Haiqal	<ul style="list-style-type: none">• Actively participate in brainstorming sessions, offering creative ideas and solutions during the Ideate phase.• Create a digital prototype of the app, focusing on user-friendliness and functionality.
Nazhir Zaydan Yusuf	<ul style="list-style-type: none">• Facilitate brainstorming sessions to generate a wide range of ideas.• Evaluate and shortlist the most promising ideas.• Collaborate with the team to finalize the app's key features.
Ahmad Muzhaffar	<ul style="list-style-type: none">• Demonstrate the app's features or user scenarios in the video to help viewers understand the app's value.• Act as a key person in the video, explaining the design thinking process.