REPORT ON DESIGN THINKING PROJECT 2024

TECHNOLOGY AND INFORMATION SYSTEMS (SECP 1513)
SECTION   : 06
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TITLE OF DESIGN THINKING PRODUCT : HERO HOSTEL APPLICATION

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INTRODUCTION

This report focuses on design thinking as a solution to student challenges. Introducing Hostel Hero: A design thinking approach to tackling dorm life issues. We developed a hostel management application that is already on the internet while redesigning it into one that better meets the demands of users. This 'Hostel Hero' initiative is an attempt to simplify things for both college authorities and students. We can submit any complaints or maintenance requests using just one platform, so there is no need to keep track of various WhatsApp threads or reach out to different people. We implemented user-friendly interfaces into the app's design to facilitate the submission of requests. It has easy-to-understand categories like internet, electricity, and plumbing, as well as uploading photo and video choices to help visualize the problem. Students may monitor the real-time progress of their requests, observing when the requests are received, allocated to maintenance personnel, and finalized. The application has the capability to arrange and give priority to maintenance requests effectively, facilitating streamlined resource allocation and quicker response times. Kolej Management has the capability to promptly notify students of critical information like general announcements, upcoming maintenance activities, or any minor disruptions. We designed it for empowering students with convenient online payment solutions for hostel fees and penalties. To help people feel more connected to one another, our app also has features like forums, event announcements, and roommate finding tools. Recognizing the problems described, we've taken a proactive approach by developing an app that offers a powerful solution.

RECORD FOR EACH PHASE

BEGINNING PHASE

On January 17th we attended a Webex meeting to discuss about our Design Thinking project . Our group is assigned to do a design thinking project based on Chapter 4 of TIS (Technology and Information Systems) course which is Information System and Systems Analysis and Design. From the discussion, our group have decided to develop an application that helps to simplify management process. We have discussed about possible problems faced by certain management and list a few solutions for the problems . At the end of the meeting we presented our ideas to the whole class .


Evidence of our Group discussion during the Webex Meeting

EMPATHY

In the empathy phase of design thinking, the primary objective is to gain a profound understanding of the needs and perspectives of the people for whom the design is intended. This involves engaging in activities such as conducting interviews, making observations, and having empathic conversations with users to glean insights into their experiences and challenges. The ultimate outcome of this phase is to develop a deep and nuanced understanding of users' needs, motivations, and pain points. This understanding forms the foundation for the subsequent phases of the design process, guiding the creation of solutions that are rooted in the real experiences and concerns of the end-users.

For our case, in a recent interview with Mr. Faiz, a resident of KRP Kolej, concerns were raised about the current hostel system. Faiz expressed dissatisfaction, particularly citing difficulties in submitting maintenance requests or complaints. He also highlighted a lack of accessible information regarding hostel activities, contributing to a sense of disconnection from the Kolej community. Extended response times for queries and requests were noted as a significant inconvenience. Additionally, the integration of hostel-related messages with study-related communication on WhatsApp has resulted in a cluttered digital experience for Faiz. These insights will inform ongoing efforts to enhance the hostel system, addressing specific concerns and improving the overall resident experience.
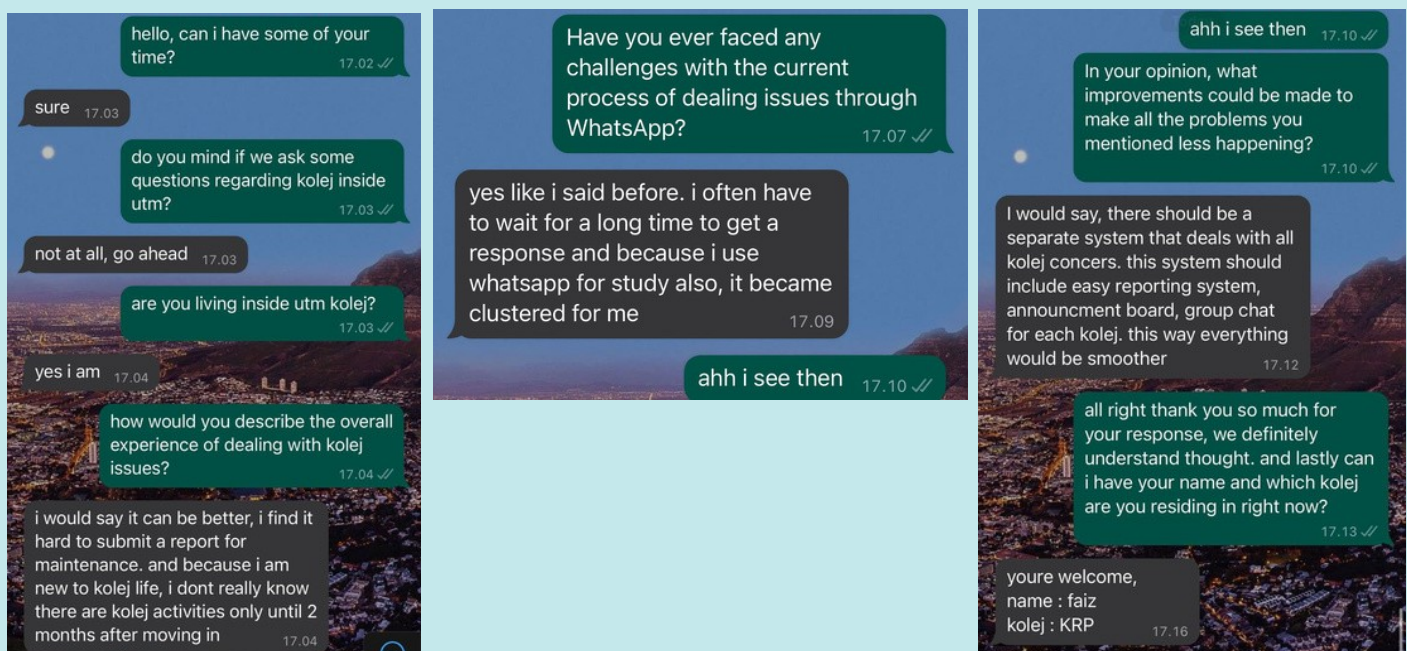
Evidence of Whatsapp text with a UTM student regarding problems faced with current hostel management system

 INTERVIEWEE PROFILE INFO

 NAME:FAIZ

 KOLEJ:KOLEJ RAHMAN PUTRA

DEFINE

In the define phase of design thinking, the primary objective is to precisely articulate the problem to be solved, drawing on the insights gathered during the empathize phase. Designers engage in activities such as analyzing and synthesizing collected data to identify patterns, define the user problem, and create a detailed user persona. The outcome of this phase is the formulation of a well-defined and focused problem statement, which serves as a guiding beacon for the subsequent stages of the design process. This clearly stated problem statement provides a strategic direction, ensuring that the design efforts are aligned with addressing the specific needs and challenges identified during the empathize phase.

Our collaborative brainstorming sessions involve a thorough review of interview results with Faiz to identify and define the primary challenges inherent in the current system. This detailed examination allows us to pinpoint five main issues that require strategic attention and resolution:

Cumbersome Complaint or Maintenance Request Process :
The existing system exhibits inefficiencies in managing complaints and maintenance requests, leading to extended processing times. Streamlining this process is crucial for enhancing operational efficiency and user satisfaction.

Lack of Student Monitoring and Observation:
A noticeable gap exists in monitoring and observing student activities, impeding the establishment of a comprehensive oversight framework. Implementing effective mechanisms for student monitoring is essential to ensure a conducive learning environment.

Difficulty in Prioritizing Requests:
The absence of a structured approach to prioritize requests introduces complexities in task management. Developing a systematic method for prioritization is vital to address urgent matters promptly and allocate resources efficiently.

**Communication Gap Between Management and Students:**
A discernible communication gap between management and students has been identified. Bridging this gap is crucial for fostering transparent communication channels, ensuring that information is disseminated effectively to all students.

Inconvenient Payment System:
The existing payment system is perceived as inconvenient, potentially leading to disruptions in financial transactions. Revisiting and optimizing the payment process is essential to streamline financial transactions and enhance overall user experience.

Additionally, our analysis has revealed the absence of a dedicated forum for communication and socialization within the current system. Recognizing the significance of community-building, our future strategies will incorporate the establishment of such a platform to encourage interactions among users

We are doing this brainstorming session with the help of online whiteboard platform
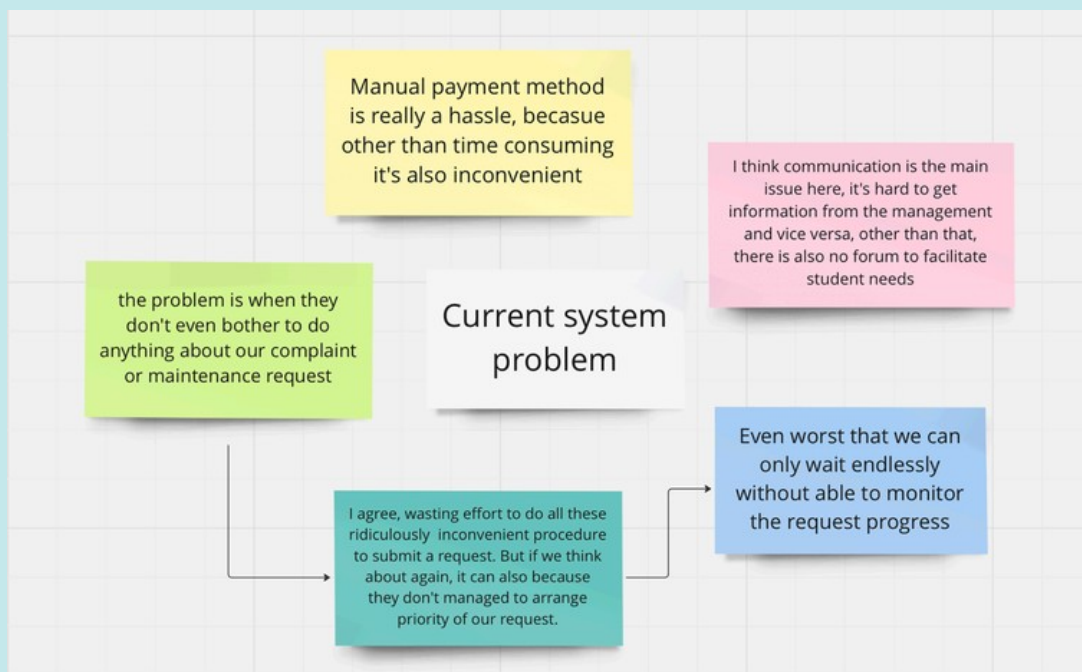
IDEATE

During the ideation phase of design thinking, the primary goal is to unleash a spectrum of creative ideas that can effectively address the problem previously defined. Engaging in activities like brainstorming sessions, mind mapping, and other creative techniques, designers foster divergent thinking. The desired outcome is the generation of a diverse pool of potential solutions, all without immediate judgment. This phase cultivates a culture of creativity and innovation, encouraging the exploration of unconventional and imaginative concepts. By embracing this open-minded approach, designers lay the groundwork for a rich pool of ideas, setting the stage for the subsequent phases where the most viable and innovative solutions will be further developed and refined.

During this crucial phase of our project, we have embarked on a collaborative brainstorming process leveraging the capabilities of online board platforms and virtual meeting tools. This strategic approach ensures an interactive and clear exchange of ideas among team members. Each participant actively contributes their insights towards formulating viable solutions, and subsequent evaluations are conducted collectively to discern the efficacy of each proposal.

Upon consolidating the diverse perspectives of our team, the final solutions are meticulously documented on our virtual board, enhancing transparency and comprehension. The overarching solution proposed involves the development of a sophisticated platform tailored to address the multifaceted challenges faced by students and management alike.

The envisioned platform prioritizes user-friendly functionalities, allowing students to seamlessly submit maintenance requests or complaints. Crucially, it incorporates a robust monitoring and observation system, empowering students to track the progress of their requests in real-time. For management, the platform boasts automated mechanisms to intelligently arrange the priority of incoming student requests or complaints, optimizing resource allocation and response times. Recognizing the need for enhanced communication channels, the platform integrates a comprehensive forum. This forum serves as a dynamic space facilitating communication among residents, and management, thereby fostering a sense of community.

Acknowledging the inconveniences associated with the current payment procedures, we propose the implementation of a streamlined and automated payment system within the hostel app. This solution aims to enhance the overall user experience by offering a hassle-free and efficient payment process.
In summary, our collaborative efforts have culminated in a holistic platform designed to address the identified pain points comprehensively. This initiative underscores our commitment to fostering a more efficient and interconnected living experience within the hostel environment.
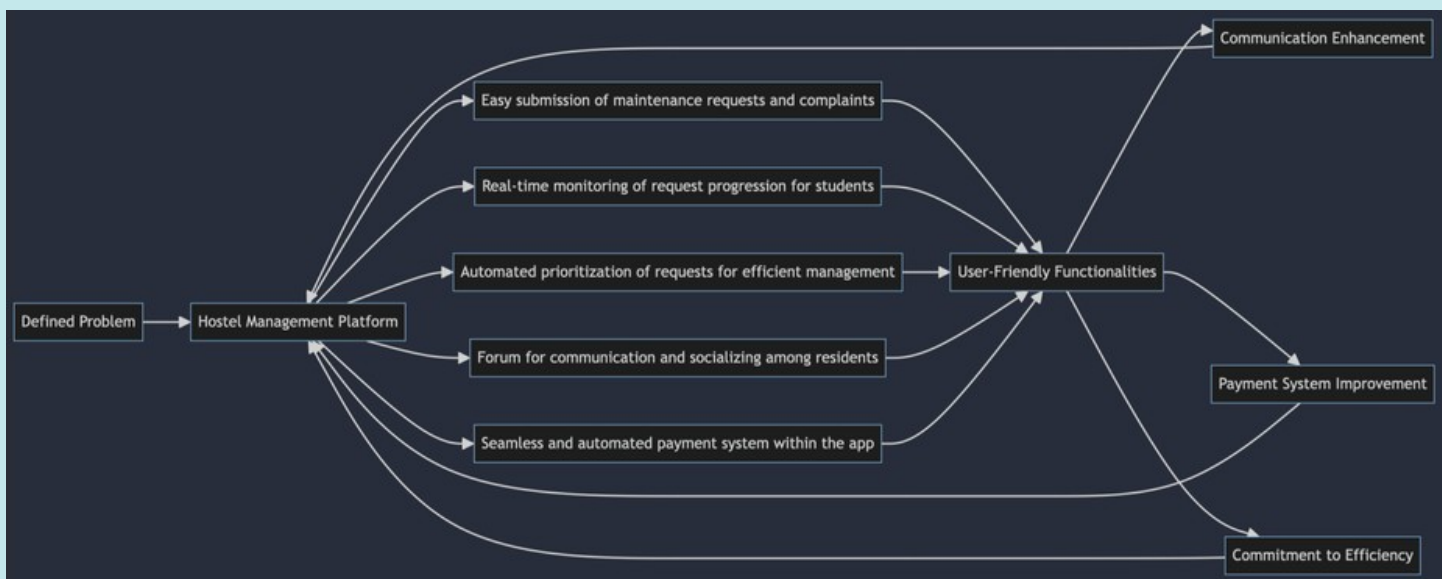
Virtual board for Possible solutions

Virtual meeting for Discussion on Possible solutions

PROTOTYPE

After having a discussion on possible solutions ,we have decided to create a prototype app to help to incorporate all the solutions. We have chosen the wireframing method to create our prototype. Firstly, we design our application logo with the help of Canva application.
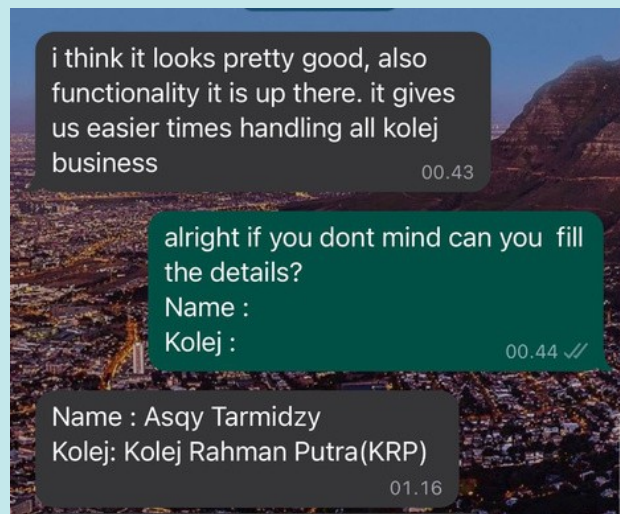

The name of our prototype application is Hostel Hero with the moto of our application which is "Manage With Ease"

We build our prototype application with the help of Proto.io app

This is our application prototype: https://pr.to/KK5B3K/
Can click the link for prototype demo.

TESTING OF PROTOTYPE TO THE USER
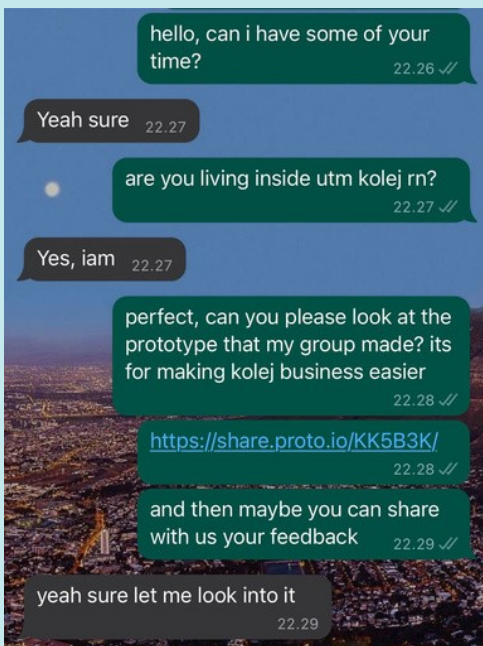
Evidence for Prototype testing

User info
Name: Asqy Tarmidzy
Kolej : Kolej Rahman Putra

Overall user had pleasent experience with our prototype as it solve some of their problems regarding Hostel Managements

# PROTOTYPE DETAILS

FEATURES:

Splash Screen:

The Hostel Hero's splash screen serves as an aesthetically pleasing introduction to the app, showcasing the brand logo and a warm welcome message. This initial screen aims to create a positive and inviting experience for users as they begin their interaction with the application.


Onboarding:

Upon clicking the "Welcome!" button, users are guided through a series of visually appealing slides that highlight the diversity of colleges within UTM. The slides not only provide a glimpse into the vibrant campus life but also emphasize the app's key features, emphasizing its ease of management, speed, and user-friendly design.
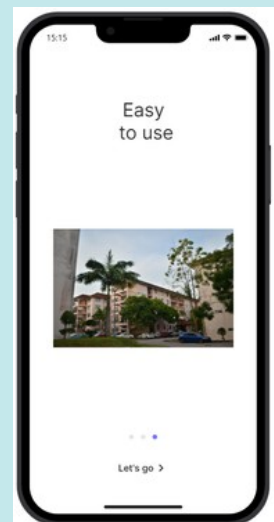
Login/Sign-up Page:

Moving forward, the app prompts users to log in with their credentials, emphasizing security and personalized access to individual student profiles. For new users, the sign-up process involves entering basic information such as email, college affiliation, and password, ensuring a seamless onboarding experience.
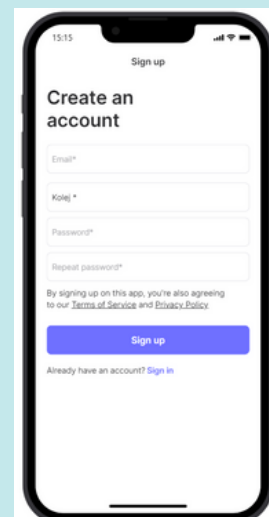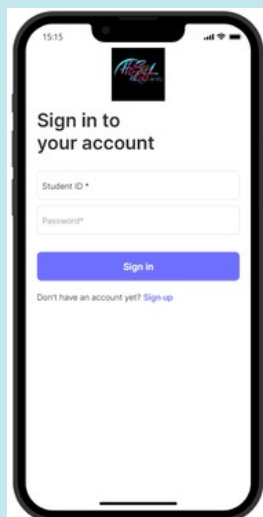
Homepage:

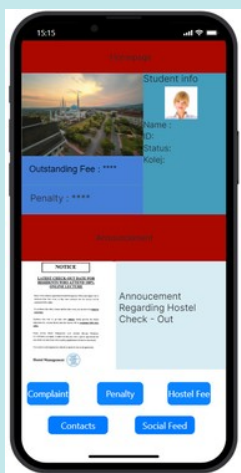The homepage serves as the central hub of the application, presenting a comprehensive overview of the user's academic and residential details. This includes a profile picture, name, student ID, status, and college affiliation. Additionally, real-time information about outstanding fees and penalties is prominently displayed, keeping users informed about their financial responsibilities.

Announcement Board:

The Homepage of Hostel Hero includes an Announcement Board, a vital feature that keeps users updated on important information from the college. This section notifies students about events, policy changes, and other crucial updates, creating a central hub for communication. Whether it's upcoming events, emergency notifications, or policy updates, the Announcement Board ensures that residents stay informed.

Navigation Buttons:

1) Complaint:
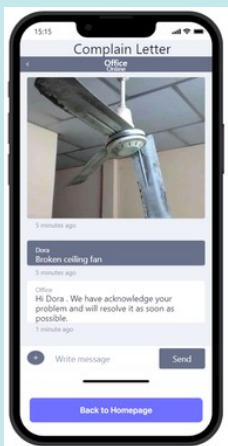
This feature enables users to report issues or problems within their college, fostering a direct line of communication with the administrative staff. The ability to attach pictures and provide detailed descriptions enhances the efficiency of issue resolution.

2) Penalty:

The penalty section provides a transparent breakdown of any fines incurred, allowing users to understand the reasons behind penalties. The convenience of direct payment through Debit/Credit Card or Bank Transfer streamlines the resolution process.
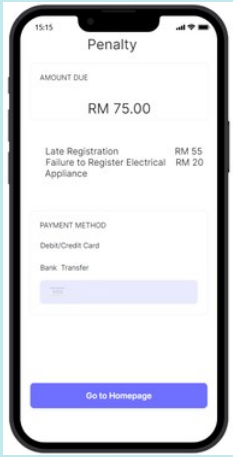
3) Hostel Fee:
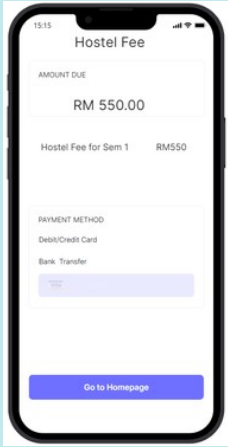
Similar to the penalty section, the hostel fee page offers a detailed overview of accommodation costs. Users can conveniently make payments directly through the app, simplifying the financial management of hostel-related expenses.

4) Contacts:
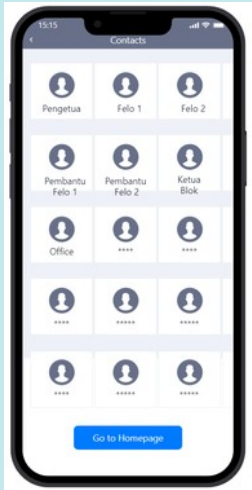
The contacts section acts as a virtual directory, offering users easy access to contact information for college staff. This feature facilitates seamless communication and ensures that students can quickly reach out to relevant personnel.

5) Social Feed:
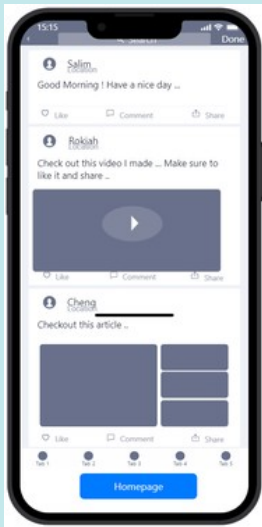
The social feed adds a dynamic and interactive element to the app, providing users with a platform to share updates, media, and information. This feature fosters a sense of community within the hostel, promoting communication and engagement among users.

Homepage Button:

Present on this five page, the homepage button serves as a convenient navigation tool, allowing users to return to the central hub of the application with a single click.

In essence, Hostel Hero offers a holistic and user-centric approach to managing various aspects of student life within UTM hostels. The combination of functional features, a visually appealing interface, and seamless navigation contributes to an enhanced user experience, making the app an indispensable tool for students in their day-to-day hostel life.

REFLECTION

BY THAYAALLAN NAIDU A/L GANESAN

My goal is to become a successful Software Engineer that is able to design and develop a useful application or software that can help people to make their life easier. Software engineers have made life and daily duties easier and contributed to all the applications available on the market. For example, with delivery apps like Food Panda, we can have our meals delivered with a few clicks, and we can study online with tools like Moodle. Therefore, I dream of becoming one of them.

From this design thinking, I have managed to acquire so many different new soft skills and knowledge. Above all, it provides me with the chance to exercise critical thinking, which is a crucial ability when creating software that satisfies user's requirements. In addition, I also gain experience in teamworking because we divide up the task equally so that nobody is left out from the project. Consequently, I was also able to improve my communication skills as it is essential to prevent miscommunication among my team members. Finally, I also was able to learn to create a prototype and test out the prototype.

Improvement that I could make to be more potential in the industry is by improving my programming techniques in multiple programming languages by doing a lot of exercises about programming. To identify my weaknesses, I should take part in programming contests or work on any programming-related project.

By Muhammad Harith haikal bin Mohd Said

My goal regarding my Technology Information System course is to become an expert in using technology to solve challenging problems in the industry. My approach has been greatly influenced by the design thinking method, which is demonstrated through the development of a hostel management application called "Hostel Hero". Through prioritising user needs, implementing feedback-driven iterations and encouraging teamwork, we have not only created a workable application but also cultivated a mindset aligned with the design thinking ideas. To further improve my potential in the industry, I intend to keep up with the trend of technology developments, broaden my technical skill set, actively participate in the tech community for networking and look into internship opportunities for hands-on, real-world experience.

BY DAFFA TANGGUH ANANDA KURNIAWAN

My constant aim was always to apply the knowledge I've gained.

Throughout the project, we navigated five phases, delving deeper into each. In the 'empathize' phase, we learned to step into the shoes of others, particularly interviewees, seeing problems from their perspective. 'Define' involved classifying main problems, while 'ideate' required collaborative work to generate diverse options, emphasizing acceptance of team members' opinions. Advancing to 'prototype,' we grasped the importance of implementing ideas leveraging creativity, imagination, and observation. The 'testing' phase, akin to tasting food after cooking, allowed iterative adjustments mirroring system development. In conclusion, these phases parallel the System Development Life Cycle (SDLC) in simpler terms—covering requirement gathering, analysis, implementation, and testing.

Looking ahead to future projects, I eagerly anticipate leveraging the design thinking mindset and methodology to enhance various aspects of problem-solving and solution development.

BY FATHAN AUZAN ASYKUR

The Empathize phase, which begins the design thinking journey, immersed us in the world of end users, emphasizing the value of a close understanding of their needs. Moving into the Define program, we crystallized the understanding of a targeted formulation of the problem and set a clear course of action. Ideation sparked a wave of creativity that emphasized the power of collaborative thinking and the diversity of perspectives. When we reached the prototype stage, the ideas became concrete and took the imperfections as a springboard for continuous improvement. Testing, an important step, validates solutions through real-world user feedback, emphasizing the dynamic and iterative nature of design thinking. Finally, the implementation phase completed the project and emphasized not only planning and execution, but also adaptability in the face of real challenges. Thinking about each step reveals the transformative power of design thinking, where empathy, creativity and iteration combine to create solutions that truly resonate with users.

BY AVISHEK SAHA

I aspire to become a Software Developer because they undeniably play a pivotal role in enhancing life's ease and efficiency through the applications and systems they create. Software developers have crafted applications that automate and optimize diverse tasks, effectively reducing users' time and energy expenditures. Utilizing communication tools facilitates seamless collaboration among group members, irrespective of their geographical dispersion. Our team came up with the idea for a hostel management software to make people's life easier. We consider developing a mobile application to solve particular social issues or demands. The objective is to devise a task management application that empowers users to prioritize, categorize, and monitor tasks with efficiency. Features like progress monitoring, frequent reminders, and work classification are combined to increase efficiency. Drawing upon my soft skills in critical analysis, group work, effective communication, and prototype development, I collaborate seamlessly with team members. I engage in the iterative design, prototype, development, and enhancement of the hostel management application, aligning with user expectations and delivering a valuable solution.

LIST OF TASKS FOR EACH MEMBER

There are many obstacles we encountered while completing this assignment. Firstly, most group members are not available in school during the study week . This results in difficulties in having face-to-face group meetings. Thus, we had our group meeting online via Google Meet. Every member of this group has done their best in each phase of the given assessment.

Avishek Saha : Provide idea on possible prototype can be developed and produce the introduction of the design thinking project report.

Fathan Auzan Asykur : Conducted the interview with students that enable us to capture all the complaints from the students about the current hostel management system. By conducting the interview with the student , we were able to understand more deeply about the student's view of of the problems faced . And with the completion of the interview, we were able to delve deeper into the meaning of the problems we found and define them so that we could propose existing solutions. In addition, also conducted the testing phase of our prototype with a user that enable us to get feedback on our prototype.

Daffa Tangguh Ananda Kurniawan : Help to record each phase of our design thinking project discussion and initiated the idea to use virtual white board for better discussion and conducted the virtual meeting via Google Meet for better discussion and understanding within our group .

Thayaallan Naidu A/L Ganesan : Develop initial prototype of the application with the help of points and views from other group members .

Muhammad Harith Haikal Bin Mohd Said : Help to improve the prototype and explain in details how the prototype works and functions of each elements of the prototype.