UTM UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF COMPUTING
UTM Johor Bahru

Report on Design Thinking Project

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Section	: 05
Name of Lecturer	: Dr. Azurah A SAMAH
Date	: 30/11/2023
Title of Design Thinking Product	: Escape The Phone
Video Link (YouTube)	: https://www.youtube.com/watch?v=N6It7ssxl84

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Comments by Grader:

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INTRODUCTION

What is Design Thinking?

Design thinking is a humanic innovation approach anchored in the understanding of customers' needs, rapid prototyping and creation of creative ideas that transform how products, services, processes and organizations are developed. Instead of relying only on historical data or using risky bets based upon instinct instead of evidence, you use design thinking to make decisions that truly reflect what your customers want.

It involves five phases which are empathize, define, ideate, prototype and test. These phases are useful to tackle problems that are ill-defined or unknown.

Empathize 	**Research Your Users' Needs** The first stage of design thinking in which you gain a true understanding of your users and their demands.
Define 	**State Your Users' Needs and Problems** The second stage of design thinking in which the issue statement is defined in a human-centered manner.
Ideate 	**Challenge Assumptions and Create Ideas** The third stage of design thinking involves identifying new solutions to the problem statement you generated.
Prototype 	**Start to Create Solutions** The fourth stage of design thinking involves determining the greatest viable solution.
Test 	**Try Your Solutions Out** The last stage of the design thinking methodology, during which solutions are tested to gain a thorough understanding of the product and its users.

Diagram 1 shows 5 phases of Design Thinking

DETAIL STEPS

On the 25th of October 2023, our group was assigned with a task to create a prototype for a design thinking project. After discussing what problems that exist in our society in this modern era, we have concluded that smartphone usage has been rising recently, moreso to children that could have an effect on their health. Prolonged use of smartphones has caused many to divert their focus from important tasks to scrolling endlessly through social media such as TikTok. By utilising the design thinking process, we have made a product that can help people to overcome their addiction towards smartphone usage called "Escape The Phone".

EMPATHIZE

In order to understand the root cause of smartphone usage, we conducted interviews with students in Universiti Teknologi Malaysia (UTM), Johor Bahru. These interviews are vital to know the habits of an average smartphone user. (names). The input we got is crucial towards the development of our prototype to make sure users can still use their phones at a healthier rate.

DEFINE

After acquiring enough information, we discussed it to get a clearer picture of the problem. One by one, we argued some points regarding this problem including factors and causes when overusing smartphones on a daily basis. For example, constant notification pop-ups can interrupt users where they would then use their phone immediately and stop whatever work they were doing.

IDEATE

Through multiple mediums including Telegram and meeting physically, we have conducted discussions on solutions to the problem through brainstorming ideas. By referring to existing features in smartphones, we got the idea to make a product we called “Escape the Phone”

PROTOTYPE

First prototype we made included using a PowerPoint or Canva presentation to showcase how the product would function in a smartphone. There would be initial alerts suggesting breaks or tasks completion. Subsequently, there will be another notification alerting the imminent crash of the smartphone. There will be downtime before the smartphone is ready to be used again.

TEST

We asked users what they thought of our notification system. Most people liked the first alert reminding them to take breaks or finish tasks. The warning about the upcoming crash also works well, making users save their work. When the final crash happened, keeping the phone off for a period of time or until tasks were done, users found it helpful for a balanced digital routine. In summary, people said our notifications helped them take breaks and get things done on time.

DETAILED DESCRIPTIONS

PROBLEM

Ever since the creation of smartphones, the amount of screen time among people has risen where even young children are addicted to consuming content from social media including YouTube and TikTok. This is a serious problem that affects the society no matter the age. From a study conducted by Statista Research Department, in 2010, 11.13% of the population in Malaysia used a smartphone. In 2020 however, that figure rises to 87.61% and is projected to keep on increasing for the next few years (Statista, 2023). Overtime, smartphones have become a necessity in our daily lives which is on track to replace traditional ways including payment by online transaction instead of by cash. Understandably, smartphones have enhanced our lives for the better, and also for the worse.

In 2018, a research article was published by the International Journal of Health Sciences and Research titled "Relationship between Smartphone Addiction with Anxiety and Depression among Undergraduate Students in Malaysia". The article states that among 369 students that answered the questionnaires, 70% used smartphones more than four hours per day, where more than half of those users are on social networking sites (Ithnain et al., 2018, p. 166). What's worrying is that about 30% of the students spend more than seven hours using smartphones (p. 166). It was concluded that those that have high scores on smartphone addiction are more prone to anxiety and depression (p. 167). A similar result was also received during interviews of UTM students, where they said that mobile phones distract them from their studies. These students should focus more on their academic performance, and less screen time if they value their livelihood.

Therefore, It is certain that smartphone addiction is a major problem among the society especially students from different levels, be it primary students all the way to undergraduates. We should focus on what is more important and to prevent ourselves from addiction to any kind of entertainment. However, this is easier said than done.

SOLUTION

Through brainstorming all possible solutions to these problems, we managed to obtain interesting findings. First and foremost, we must acknowledge that smartphone manufacturers have implemented ways to help customers to deal with smartphone addiction. For instance, iOS has "Focus Mode", where you can change your iPhone's settings suited to whatever situation, such as jogging, working and many more. Another similar example would be in Samsung phones, which is "Modes and Routines". Modes include Sleep, Theatre, Driving and custom modes. These settings can be turned on at any time or set for specific times.

All the following built-in settings do help us to lessen our screen time on smartphones. However, it does not stop us from further use of it with just a simple warning message. Why not have an application that completely halts all entertainment apps so that we stop wasting time and actually focus on important tasks? This is where our product comes in. "Escape the Phone" ensures the user can control the amount of time they use their phones especially on entertainment apps such as TikTok during working or study times. If their usage exceeds certain parameters inputted by the user, it will automatically turn off the phone. Then, it will prohibit the user from accessing their phones for a period of time.

At first glance, it may be excessive, but in order to change our habits, this app helps a lot. With your consent, our product can help people to change their ways to not procrastinate during important hours and to finally have a change in their lives for the better.

TEAM WORKING

To make sure the project goes according as planned, we first appointed the leader of the group, which is Ivor Barrie Jaffery. Then, we started to discuss what kind of product that is relevant to society, which is smartphone addiction which has plagued many people no matter the age. By implementing the five phases in the Design Thinking process, which are empathize, define, ideate, prototype, and test, we started the project based on our designated roles.

After the discussion, we started doing interviews. Tegar interviewed Fadhil Raihan Gunawan and Atharalikh Baihaqi Mubarak, who are UTM students. Afterwards, we got into defining and ideating. We discuss through Telegram by listing out the problems and possible solutions. After constructing our product, we then use Google docs to make sure the report is shared among group members.

We divided our roles when writing the report. Koo Xuan was assigned to write the introduction and defining the five phases of the Design Thinking process, and Tegar Insan Tohaga wrote the detail steps. Next, Ivor Barrie Jaffery wrote the detailed descriptions and report organisation, while Liow Jia Feng was assigned for design thinking evidence. Finally, Muhamad Danish Aiman Bin Muhamad Irwan wrote the Design Thinking assessment points and prepared the video for this project.

DESIGN THINKING ASSESSMENT POINTS

At the end of this project, we fully understand the core principles of design thinking, which are empathize, define, ideate, prototype, and test. All of these core principles require a human-centered approach to solve any problem that occurs throughout our daily lives. As an example, our product “Escape the Phone” addresses a problem related to phone addiction. By using this alternative, our team members can easily solve this problem with the best solution by communicating with the user itself that is related to the same problem. As a result of the design thinking application, we get a better understanding of the problem that the user faces and acquire the ideal solution.

During the implementation of this project, we assessed some points between each design thinking phase. First of all, the empathy phase can be said to be the most important part because this is where the user-centered method occurs when our group interviews some people by asking some questions related to their phone addiction problem and gains information from their answers. Secondly, the define phase is where our group discusses and understands the problem from the interview before proceeding to the next phase, which is ideate. Thirdly, the ideate phase involves us brainstorming the best solution that is suitable for the user. Both the define and ideate phases require collaboration and communication skills from other members. Fourthly, the prototype phase requires us to be creative and innovative to create a product from all the steps above. It also makes us explore more of the many possibilities that can be made to solve the problem. Last but not least, the testing phase will show us the efficiency of the product, and this is where we can see the weaknesses of the current product so that it can be improved in the future.

DESIGN THINKING EVIDENCE

Empathy Phase

Our team members have conducted an interview with users in the empathy phase. We learn about the users habits and interests in using mobile phones and the consequences of long-term use of mobile phones through empathy. The following is the information in the interview:

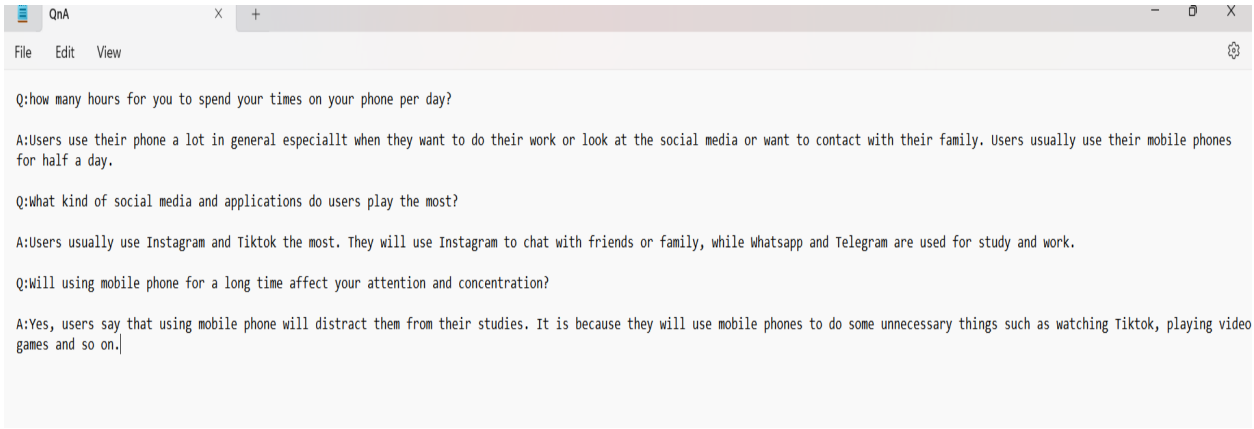


Figure 1 shows the Q&A questions about the interview

Figure 2.1 and Figure 2.2 shows that the record of the interview

Define Phase

The define phase is indispensable in the process of problem-solving. At this phase, we can understand the user's information and perspective to clarify the problem of wasting time on mobile phones. In order to make the problem more specific, we discussed it and wrote the problems that users will encounter in a book.

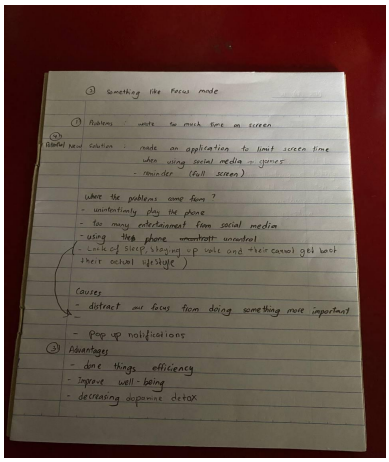


Figure 3 shows the problems that users may face

Ideate Phase

In the ideate phase, our team members can use the information and problems just collected in the define phase to produce the new solutions when we are caught in brainstorming. In order to ensure the feasibility of this solution, we adopted online via Telegram and face-to-face discussions to conceive various solutions.

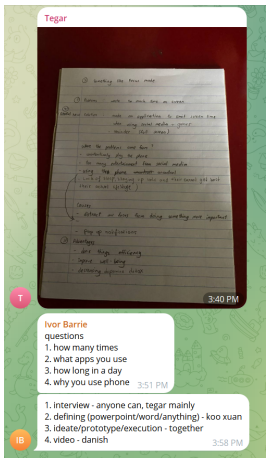
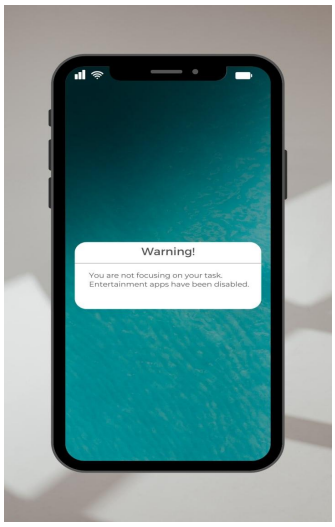


Figure 4.1 and Figure 4.2 shows the brainstorm process about the solution

Prototype Phase

During this prototype phase, the ideas and evidence collected in the define phase and ideate phase will become the basis of the concept. It will enable our team members to concretize these ideas and test them according to the needs of real users in the prototype phase. Therefore, our team members will design a sketch about this prototype through canva. The following is a sketch of our application:



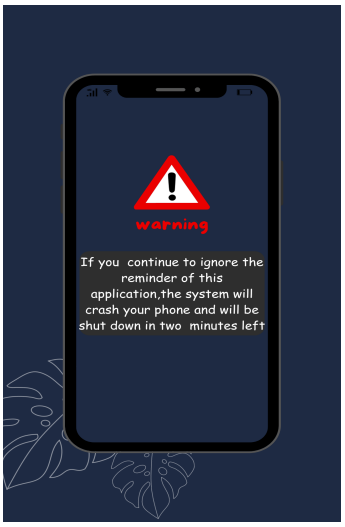


Figure 5.1 and Figure 5.2 shows that the sketch of our prototype ”Escape the Phone”

Testing Phase

During the testing phase, our team members provide real users with the opportunity to test our products. Through user testing,prototyping and usability testing, we found that the majority of users were satisfied with specific features of the solution, they also provided valuable suggestions for the improvement.

Figure 6.1 shows that the users test our products

REFLECTIONS

1. Ivor Barrie Jaffery (A23CS0087)

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

   My goal is to adapt to the ever changing world of tech and learn new things everyday. I have an interest in technology and having the ability to understand its software and hardware has always been a dream of mine since my first time using a Nokia phone my parents used back in the day.

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

   Understanding the process of design thinking is a crucial skill especially when facing challenges in the future. Knowing how to understand the user's needs when developing software is important to satisfy their desires whether it be a website or a video game.

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

   Knowing how tech always makes progress each day, I have to be committed to any assignments or personal projects to polish my skills further to get ready for the future, including better discipline and time management.

2. Tegar Insan Tohaga (A22EC4043)

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

   My goal is to make improvements in abilities for people and make their life more easier than they thought.

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

   Impaction of it gives us a higher chance to make our product highly demanded by companies, because it is just not beneficial for income, also improving realization among people.

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

To popularize amongst industries that we can create future technology more healthier and more life changing.

3. Liow Jia Feng (A23CS0302)

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

My goal is to continuously learn about the new knowledge and skills in my course which is a bachelor of computer science in bioinformatics so that I can use my computer science abilities to contribute to society in the future. In addition, I hope to learn how to innovate and creatively solve the problems through my course and also help me to contribute the technological advancement of our country,

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

Design thinking has obviously impacted my goals with regard to my course which is computer science. By implementing this project, we can know that design thinking emphasizes understanding the user experience and the needs of the users especially through the empathy phase. Therefore, this allows me to more effectively develop solutions that address real-world issues by applying empathy in defining problems.

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

First of all, I will continue to study in my university and attend relevant courses so that I can constantly update my knowledge and improve my potential in the industry. Besides, I will set a clear goal to ensure that I have a clear direction and goal in the future. Lastly, I can participate in workshops or seminars because these events will provide an opportunity to understand the skills and the progress of the industry.

4. Koo Xuan (A23CS0300)

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

Regarding my course which is computer science with a specialization in bioinformatics, my goal is to contribute meaningfully to society through the knowledge and skills gained from my studies. Specifically, I am driven to make a positive impact on healthcare and scientific discovery by playing a role in advancing the field of bioinformatics.

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

Through doing this design thinking project, it has help me better positioned to create solutions that are not only technically robust but also address the real-world needs of the scientific and healthcare communities

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 continue learning new things and explore more things that may help me in the industry. Besides, I will join more activities that are related with my program to get more information about the work in the industry.

5. Muhamad Danish Aiman Bin Muhamad Irwan (A23CS0115)

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

I set a goal to excel in academics and also be relevant in future industries regarding my course by increasing my knowledge throughout these 4 years. Specifically speaking, the computer science course, which is my course, needs someone who is really innovative and can develop something new from the existing product. As a student majoring in software engineering, I need to meet all of those criteria.

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

From my experience in completing this design thinking project, I learned that the core principle of this project is really helpful in solving a problem in the best possible way, and it can also develop many values that can build a better character as a computer science student.

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

In order to improve myself in this industry, I need to seek more knowledge on my own so that I can get more advanced compared to other students or freshmen in the same course. Other than that, I need to obtain experience by joining an industrial visit.

TASK DISTRIBUTION

No.	Members	Task
1.	Ivor Barrie Jaffery A23CS0087	❖ Leader ❖ Report Writing (Detailed Description & Report Organisation) ❖ Prototype Sketch
2.	Tegar Insan Tohaga A22EC4043	❖ Idea Contribution ❖ Report Writing (Detail Steps)
3.	Liow Jia Feng A23CS0302	❖ Design Contribution ❖ Report Writing (Design Thinking Evidence)
4.	Koo Xuan A23CS0300	❖ Report Writing (Introduction & Define Five Phrases) ❖ Presentation Slides Preparation
5.	Muhamad Danish Aiman Bin Muhamad Irwan A23CS0115	❖ Report Writing (Design Thinking Assessment Points) ❖ Video Preparation

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