



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

Design Thinking Report

**SECP1513-03 TEKNOLOGI DAN SISTEM MAKLUMAT
(TECHNOLOGY AND INFORMATION SYSTEM)**

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1- Introduction

Design thinking is a process where one seeks to understand the user, the problem and then attempts to find a solution. You need to illustrate your idea physically to show the magnitude of it. Try to experiment with your solutions, you will eventually find a perfect solution.

We should Observe, Engage, and Immerse ourselves with the user, or basically put ourselves in the user's shoes. Design thinking helps tackle problems many people did not know they had, or did not conceive of a solution for such a problem.

The most important goal of Design Thinking is improving people's lives and making it easier for them. Most good solutions are typically uncommon. Thus, it is important to take risks.

2- Detail Steps in Design Thinking

2.1 Empathy

The key step of the Design Thinking measure is to increase an empathic awareness of the problems you are trying to understand. In this phase we try to get a good view of the user's needs. This involves numerous exercises which make people part of the process. In this phase we get to know our customers, their ideals, concerns, and objectives. If the product has existed for some time already, you will find out what the key users' concerns are.

2.2 Define

In this stage, We set up the information we generated and collected during the Empathize process, and we used different techniques to define a problem. It is important to prioritise and target goals which will have the biggest positive impact on your product first.

2.3 Ideate

In this stage, the team gathers and brainstorm to generate ideas that could solve the problem and fulfill their unmet needs. And this stage is the transition from identifying problems to exploring solutions. After we collected some ideas, we discussed them so we can have a clear idea on how we can bring these ideas to the next stage which is prototyping.

2.4 Prototype

In this stage we try to create a working, low-fidelity prototype. This can be done with pen and paper, or by using the advances in prototyping products and this allows us to have fully interactive prototypes that allows us to get ideas into physical form to gain feedback from the people they are intended to serve.

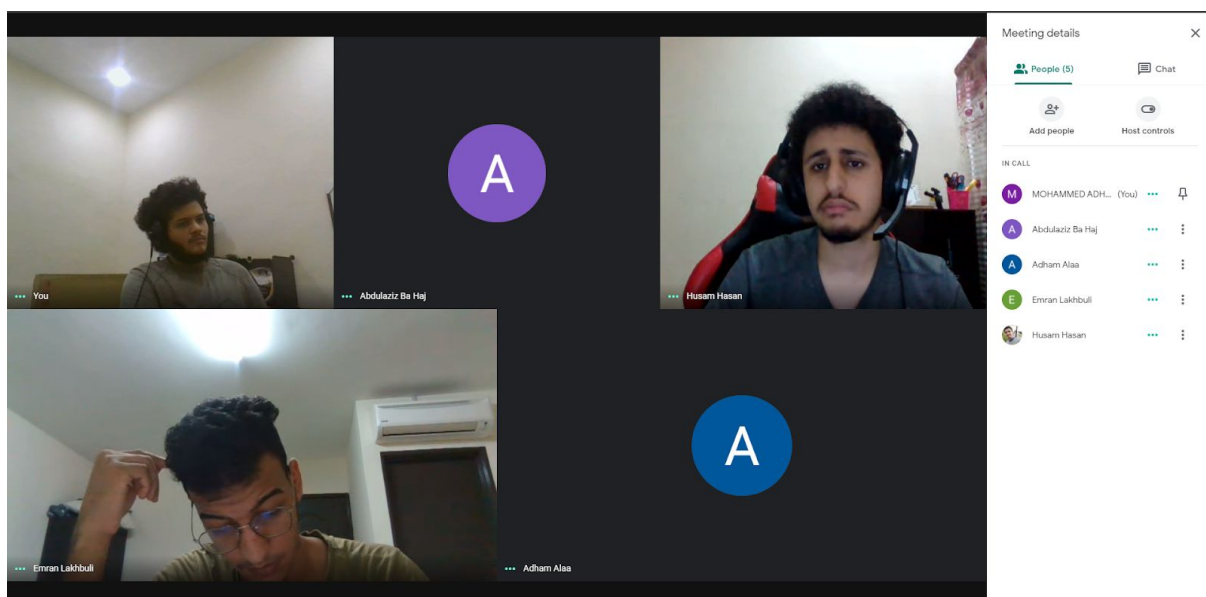
2.5 Test

In the final stage, we will check the prototype with our customers. The aim is to analyze and learn what components of your solution succeeded and where there is room for progress.

3- Detailed description

So These are some of the problems that we discussed.

- 1- Background problems that make your computer slow.
- 2- temporary files that are stored in the hard drive makes the computer run slow.
- 3- Unused programs that you don't need.
- 4- using an old operating system.
- 5- your computer is infected by viruses.



And these are some of the solutions that we have reached:

- 1- Remove and disable the startup programs that start every time when you boot your computer.
- 2- Use the disk cleanup to delete and get rid of these files that makes your computer slow.
- 3- Check your computer for the programs that you don't need and uninstall them that makes your computer run faster.
- 4- Try to upgrade the operating system that you have to the latest version.
- 5- if your computer is infected by a virus it makes the computer run slow you must have an antivirus program to clean up your computer from any virus and that will make your computer faster.

So after our discussion about the problems and the solution we decided to make a program that can solve some problems we discussed. The program will clear any viruses in your device and also will clean up the temporary and unused files so that it will make your computer faster.

4- Design Thinking Evidence

- a. Throughout all the stages of the design thinking project, each one of us has done a great job and made a lot of effort in order to make this project successful. It was a real challenge but we made it.
- b.i. During the first stage which is "Empathy" we asked several users about the most common problems that they face while using their personal computer. We have collected the most 5 common issues which are:
 - 1- They complained that the computer is extremely slow, and they need to wait some time to open any app or to do any task on their personal computer.
 - 2- They said that after using the PC for quite a lot of time, they found out there are many programs that are not being used and actually these programs take up a lot of space.
 - 3- When they want to install some of the latest programs they cannot do that and that is because these programs are not supported by their old version of the operating system.
 - 4- Some of the users claimed that they do not have enough space on their storage and that is due to the temporary files which are useless and take so much space from the memory.
 - 5- Some others assert that they have some Viruses on their computer and that make their computer very slow.

These issues can make working on the computer inconvenient and lead to some troubles such as late to complete their projects which were given by their managers.

ii. On the second stage we had a meeting on Webex and we analyzed the problems, understood what exactly the users needed and we discussed what the best solution might be in order to overcome these problems. We have decided that each one of us will work on the problem and how to solve it.

iii. The next stage is Ideate. Here we had another meeting and we discussed how to make one software that can solve all these problems and there is no need to install one application for each one of the problems. Then, we got started doing our prototype.

iv. Prototype

First, We have identified the prototype that we will build.

Second, We bought crunch items for the work (scissors, scalpel, glue. Thick cardboard, plain cardboard).

Third, We built the prototype carefully following the steps.

v. Test

We tested the prototype as shown in the video, and it was very effective in performance, and it is important for us as students to fix system problems such as slow loading and not having enough space in the storage.

5- Reflection

I am a student in Networks and Security. My dream is to be an expert in the penetration testing field, this my passion, and I hope to achieve my goal in the future. The materials and the teachers helped me a lot and I hope in the future to be able to work in a big company in the protection testing service. The design thinking changed my way of thinking before doing any project, whether it's a software or a device. I realise that when facing a problem I should go through a few steps in order for me to find the perfect solution. Finally, I am happy that I have such great and cooperative friends in the group. They helped me a lot even though we are far away from each

other. Also our great Dr. Johana, she treated us well and responded to all our questions with so much kindness.

6- Task for each member

Name:	Tasks assign
Husam Hasan	Interviewer, Building the prototype, Final testing for the prototype, report (design thinking evidence/4.b.iv and v .
Emran Almbruk Mohamed Lakhbully	Design the interface of the software, preparing and printing the papers for the prototype. Report (design thinking evidence: 4 a-b,i,ii,iii).
Mohammed Adham Tawfik	Video Editing and Sound mixing, Recorded group meetings, Recorded and Directed the final prototype test, Report Introduction.
Adham Alaa	Data gathering, problems suggestions, Detailed description in Design thinking.
Abdulaziz Abdulrahman Ba Haj	Interviewer, Editing Video, Formatting, Detailed steps in Design Thinking.

7- Design thinking video project

<https://youtu.be/a571iGamJm4>