UTM

UNIVERSITI TEKNOLOGI MALAYSIA

TECHNOLOGY AND INFORMATION SYSTEM

SECP1513-09

Design Thinking

CHAPTER 5: SYSTEM UNIT

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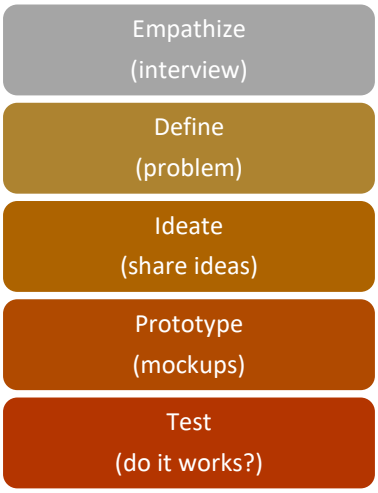
Content

Introduction

Design Thinking (DT) is the process of problem solving in a creative and innovative way through collaboration, innovation and design. It enables to analyze the target user and develop empathy. It is useful for practicing new things, but also useful for working as it helps to have a good mindset and is always ready to come up with new and evolving solutions. There are five phases of Design Thinking:



System Unit is the portion of a computer that houses the primary devices that conduct operations for complex calculations and produce results.

Type of System Unit:

Desktops
Laptops
Tablets
Smartphone
Wearable

Details Step of Design Thinking process

Empathize

The first step is to understand the problem thoroughly from all aspect. As well as understand the target users or understand what we need to fix this in order to find the best and suitable solution. Make a hypothesis to encourage the use of ideas that lead to good creativity.We can develop an empathic understanding, usually through user experience, of the problem we are trying to solve.

Define

At this stage, when we know the problems, we have to combine all the information that we got from Empathize stage to analyze and synthesize the results to define one problem which is all group member agree with it. In order to set a goal in finding solution that is relevant and efficient.

Ideate

For this stage, we should do brainstorming to generate idea and solutions to solve problems in various ways without limitation. This may not necessarily to get the result of a single idea or choose one idea but a combination of various ideas can come out as a definite final approach. This brainstorming also allows us to look at the problem in a more comprehensive and detailed manner.

Prototype

After we got the solution, we have to produce a small version of product in order to test the solution generated in previous phase. To get the best improvement of the solution. Prototype should be tested by a small group of people to make sure our solution can solve the problem.

Test

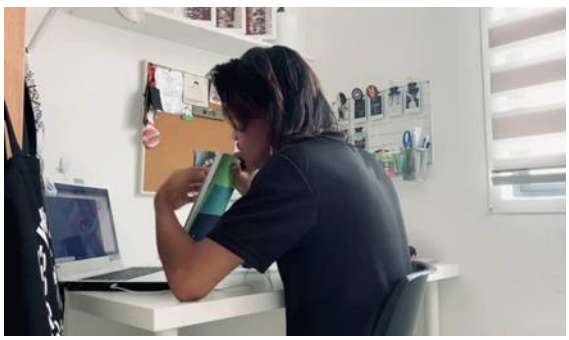
For last step, user will test the complete product. Then, we will get the result that the product can solve the problem or not. Adjustments and enhancements can also made in this stage in order to get the perfect product.

Details Descriptions of Design Thinking

The chapter that we got is chapter 5 which is System Unit. First thing we did is we read the slide presentation given by Dr. Sarina and try to understand our topic. Then, we discussed about definition of system unit and function of all component in system unit. After we knew about system unit in detail, we planned for design thinking process and divided three of us to 3 part of our project. Hazim Azlan is responsible for video design thinking. Aidatul for video chapter 5 and Bilkis for report.

For empathize phases, we had interview session with UTM Database Admin, UTM Network Admin and many experts in computing. However, because of number of students is too large, we did not have chance to ask them. We decided to select someone who always using computer and have many experiences with computer. Therefore, Hazim Azlan which is our group leader, interviewed his friend from another universitiy, which is Khairul Nazmi.

After that, we defined the problems. We list down all problem faced by Khairul. Next, we had group discussion to brainstorm the idea and solution. We shared our opinion and talked about its pros and cons. From brainstorming, we got idea to do wireless-component CPU. Then, we created prototype to show how wireless-component CPU is look like. All of process, we need team wok to finish up our project.



Design Thinking Evidence

1) Empathize

To research user's need. We have interview session with Khairul Nazmi bin Mohd Nizam,19 years old student who have a lot of experiences using computer for editing video.

Question1: Do you have any problem with your device?

Answer: When I use my computer for quite some time, I can feel that the computer is starting to heating up.

Sometimes, my computer creates some sort of buzzing noise from the inside of CPU area, but I'm not so sure what it is.

The wires in my CPU are disorganized and tangled. Dusts that are caught on the tangled wire are also an annoyance. Not just that, I often accidentally tripped on the wire which later shuts down the computer. It also hard for me to distinguish which wire is which.

Question2: How does the problem affect your work?

Answer: when my pc starts to heat up it becomes slower and lagging so I cannot finish my work properly. I am also allergic to dust, it makes me sneeze and sometimes itching and I really do not like thing got messy it will ruin my mood to do my work.

Question3: which one do you preferred wired or wireless?

Answer: I prefer wireless because it is easier and more convenient.

2) Define

After we interviewed Khairul Nazmi, we can conclude that there are many problems of system unit.

List of define:

1) The wires in CPU are disorganized and tangled cause of formation of dust.

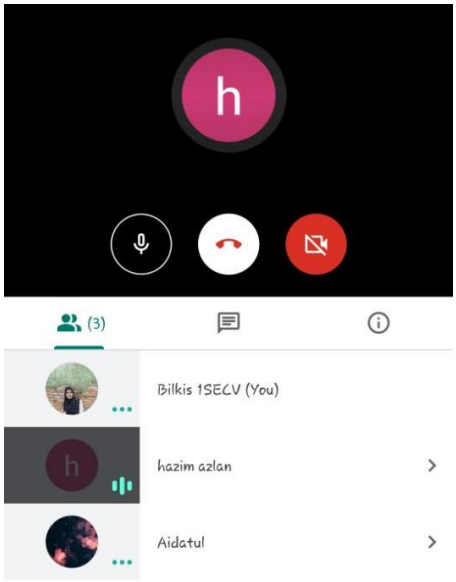
2) Computer is starting to heating up when using for long time.

3) There is some sort of buzzing noise from the inside of CPU area.

Credit to: https://www.dreamstime.com/inside-desktop-computer-cabinet-showing-motherboard-various-cables-other-hardware-image125692869

3) Ideate

We make brainstorming with group member to create the solution of CPU. There are many solutions that we bring out, then we discuss about its advantages and disadvantages to get the best solution. At the end of discussion, we decide to make wireless-component CPU, which is all of component is the desktop connect to each other by wireless and also have soundproof layer.



4) Prototype

we build up a prototype of our project which is the wireless-component CPU by using recycled box and paper. We cut out a few boxes to make a case for our CPU. For the circuit we use cardboard for the base and gold wrapper as the conductor. We also build a few components using recycled box and paper. We choose the best and suitable material for this project to make it even more realistic such we use felt fabric for the soundproof layer.

5) Test

After the prototype is complete, we find a user to get their feedback. We explained every detail of our project and how it works. We also tell them about the improvement in our project.

Record Activity

DATE	EVENT
2 NOVEMBER 2020	• Create whatsApp group • Discussion Try to understand system unit Prepare the interview session
3 NOVEMBER 2020	• Interview session with Mr Khairul Nizam, Mr Jaafar and Mr Rozee (UTM Admin) • Interview with our target audience
4 NOVEMBER 2020	• Collecting data from the interview • Analysis all the problems
5 NOVEMBER 2020	• Meeting and brainstorming via google meet • Giving task to members
6 NOVEMBER 2020	• Start making prototype • Record the video
7 NOVEMBER 2020	• Test the prototype • Edit the video
8 NOVEMBER 2020	• Collect evidence photo of the process • Start the report • Complete the video
9 NOVEMBER 2020	• Finish up the report • Check for error in the report
10 NOVEMBER 2020	• Submit assignment

Reflection

Our goal with regard to our course is become graphic designer who can generate creative idea and fulfill user's need. Moreover, become expert in computer field, can solve basic problem of computing. We also want to produce one device that make our life become easier, easy to use and suitable for all ages.

This design thinking impact us on our dream. We learnt how meticulous a product be produced and developed. Step by step, start from empathize to know user's need, define problems, and find solution. Every step is quite important for technology advancement. After we do this design thinking, we understand the step clearly and we can use it to produce any device in the future.

The improvement that necessary for us to improve our potential in the industry is studying to gain more knowledge about programming, designing, and others subject that include in school of computing. Not only for theory but also for practical part, we should know how computing applied in our daily life. Next, we should increase our creativity in solving problem and generate new ideas.

Task for Each Members

NO.	NAME	TASK
1.	MUHAMMAD HAZIM BIN AZLAN (LEADER)	• Build the prototype • Perform the interview • Edit the video • Edit report
2.	AIDATUL KHAIRINA BINTI AZMI	• Presentation video • Collecting data • Do the research
3.	BILKIS MUSA	• Report • Summarize data • Do the research

Link for Video Design Thinking :

https://drive.google.com/file/d/1hJiS0W4P4x42kQfLlagYdPUPV9e524kg/view?usp=sharing