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**Design Thinking Skill**

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# Introduction

Design thinking is the way for designers to use to solve complex problems and find the ideal solution for their customers. Design thinking is not problem be the centered, but rather focused on solutions, action as a guide, and prioritizing the future. Design thinking uses imagination, intuition, logic, and systematic reasoning to explore possible possibilities and create expected results that benefit end users.

# Contents

## Detail step and descriptions in design thinking and evidence for each phase

Empathy

We choose Discrete Structure as our target subject. This is because we understand that some of the part in Discrete Structure in hard to understand by students. After we carry out interview, we found that they really facing some problem during study Discrete Structure. Figure 1 shown one of our group member carry out interview.

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| --- |
| **Figure 1** |

Define

From our interview, we found that our respondent facing problems in study Discrete Structure. They felt boring during study it. One of our respondent also response that it is hard to understand the theory part as it is hard to memorize it. Another respondent said that it is hard to understand practical part as she do not know how to us the formula. Figure 2 shown another interview.

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| --- |
| **Figure 2** |

Ideate

We discuss it together at student interaction area in our faculty. Finally, we decided to construct an application that consists of short note for certain chapter in Discrete Structure. We decided to create a short note about Graphs Theory. Besides, we also create a short games for them to test their understanding about this chapter. Figure 3 shown discussion between out group members.

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| --- |
| **Figure 3** |

Prototype

We find some recycled material such as card board and A4 paper to construct our application. We use the card board to construct a screen of IPad and the white paper becoming the slide in the iPad. We decorate it with some colours so that it become more attracting. Figure 4 shown the process we doing our physical prototype.

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| **Figure 4** |

Test

We find one of our respondent as a user to test our application. After she use our application, she response to us that it is very helpful to her Discrete Structure and now she become more clearly about this course. Our application is successful. Figure 5 shown the respondent try to use our application.

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| --- |
| **Figure 5** |

## Detailed descriptions include problem, solution and team working

The problem that we faced is some people reject our invite for interview. However, we also meet some people that willing to cooperate with us. In this design thinking task, we need to create an application to solve people’s problem. So we have the problem in designing the physical prototype. But we inspired by our friends and lecturer and finally we found the way to design the physical prototype.

In this project, two of our group member have interview people and get the problem that faced by respondent in discrete structure. One of our group member in charge of edit the video. Another two members in our group in charge of do the physical prototype. After that, we discuss together and done the report.

## Design thinking evidence

### The sample work by students working to solve the design challenge

The sample work by students working to solve the design challenge is we do not understand the concept of design thinking in the beginning. To overcome this challenge, we searched using google and ask lecturer or friends to get some information and idea about this design thinking task.

### Record for each phase

#### Empathy

List of Possible Question:

1. Do you take Discrete Structure before this or currently taking Discrete Structure?
2. What is your way to study Discrete Structure?
3. Do you feel boring when you’re studying Discrete Structure?
4. Do you feel difficult to understand in Discrete Structure?
5. Which part do you feel that it is difficult to understand? (Theory part, practical part)
6. What will you do if you did not understand a question?

List of Possible Answers:

For Question 1

1. Yes, currently taking
2. Yes, taking this course before
3. No, haven’t take this course yet.

For Question 2

1. By studying the lecturer note
2. By studying text book
3. By doing past year questions or tutorials
4. Search on Google to gain information
5. Watching YouTube

For Question 3

1. Yes, it is boring.
2. No, it is not boring.

For Question 4

1. Yes. Some of the part is hard enough to understand it.
2. No, I totally understand it.
3. Yes, I not understand at all.

For Question 5

1. Most probably is theory part, too many words, hard to understand
2. Is practical part, because sometime I don’t know how to use the formula

For Question 6

1. Asking friend or lecturer
2. Find some information in text book or lecturer note
3. Searching online, for example Google or YouTube
4. Try to find it out by keep on thinking the question or problem

#### Define

The problem of interviewee is hard to understand some subtopic in the chapter well.

#### Ideate

After we interview, we conclude the problem of interviewee faced and decide to create an application that contains games and note. Finally, we create an application SmartDiscrete to attract the interest of students in discrete structure.

#### Prototype

We use paper and cardboard to construct our prototype. We make a screen from the cardboard and use paper as the screen to display all the information. We use to pull the paper to show the movement of the paper.

#### Test

We ask the respondent to try our prototype which can help the respondent studying the discrete structure by the way of interesting. Finally, it is successful to use by the respondent.

# Reflections

The goal of this design thinking task is to help people to solve their difficulties from the human prospection. In design thinking task, we able to develop our logical thinking and solve the problems. Logical thinking is a learned mental process, we analyse, observe and get the feedback from the user that faced problem. Conclusions are drawn based on that feedback from user. From this task, the improvement and the plan necessary for us to improve the project is to create a better application other than smart discrete in future. We aimed to improve students’ studying style and create a more comfortable way for them to study. We hoped that this application will be able to help the students in their studies and therefore let studying becomes an interesting activity.