

**SEMESTER 2 2020/2021**

**COURSE: TECHNOLOGY AND INFORMATION SYSTEM**

**TOPIC: DESIGN THINKING (INDIVIDUAL REPORT)**

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**GROUP MEMBERS:**

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**INTRODUCTION**

In an era, where people are facing numerous problems and living difficult lives, we are fully aware, this world expects new University graduates to tackle these problems and to have the ability to solve them. That is the reason why universities are trying to create new and exciting initiatives so that their graduates do not have to struggle in such situations. One step towards that goal, is Design Thinking, which is a method that teaches students about how to approach such problems and about how to solve them. Not only that, but it also teaches students teamwork. Later, we visualize our solution by building a prototype.

Both teamwork and the ability to solve problems have been proven to be necessary in the average competitive workplace. These days, employers want to see what you have done in teams or if you can work in groups as the average employee spends a great deal of time working in teams. We learn the essence of teamwork through Design Thinking. On the other hand, learning how to approach a problem will teach us how we can be active and sincere to solve problems in the workforce.

Design Thinking consists of five steps: Empathize, Define, Ideate, Prototype and Test. These points were taught extensively in class. I have described how our project relates to each of these points in the parts after this.

Test

Prototype

Ideate

Define

Empathy

*Figure 1: Steps of Design Thinking*

**STEPS AND DESCRIPTION**

1. **EMPATHIZE:** Empathize consists of three stages:

* Observe
* Engage
* Immerse

Observe

We realized a problem that all of us, students, were struggling with, every day in classes. We know many of our friends have already realized that attending classes in the university, were not going to help them to better understand the topics that were being taught as they could not get themselves to garner the courage to ask questions in class, thinking that they could get laughed at or get despised upon by other students for asking a silly question and for wasting other students’ time. Thus, they hesitate to ask questions and as a result they score much lower than they would if they had asked questions and cleared their misconceptions.

Engage

Therefore, we conducted surveys as well as interviews to find the root cause of this problem. We interviewed students as well as teachers to find out from their perspective. From the students, we tried to find out how many students would get nervous whilst asking a question in class or how many had difficulties to explain their problems in class. We also tried to find out how many preferred to ask questions to the teacher personally rather than in class and how many preferred looking for solutions through online sources rather than raise questions in class. And lastly, we asked how many would prefer to ask questions anonymously in class.

For the teacher, we asked quite a few questions. Some of the more important ones were:

* Have you experienced students who hesitated to ask questions because of the possibility that his/her question could make the class laugh considering it was too silly or not?
* Have you experienced that students were less hesitant to ask questions after class?
* Would a system for asking questions anonymously be beneficial?

*Evidence for teacher’s/student’s questionnaires, interviews and interactions*:

A picture containing graphical user interface, application

Description automatically generated

Graphical user interface, application

Description automatically generated

*Figure 2: Above is a preview of the questionnaire which was provided to lecturers and students.*

A screen shot of a person in glasses looking at the camera

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*Figure 3: Above is my interview with my dearest friend, Mahir Faisal, who is also a student of UTM, facing similar problems.*

Immerse

From the responses that we got from the interviews and questionnaires, we were able to find out how the problem came to be and understand how they felt. The problem became clearer. From here on, we will start thinking of solutions to solve this problem.

1. **DEFINE**

From the answers that we received from the google form and the interviews, we got to know the reasons of the problems and how they came to be. We also found out teachers preferred students who ask questions in class and that students’ cooperation in class actually helps teachers explain better.

*Evidence for answered questionnaires:*

*Graphical user interface, application

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*Figure 4: A preview of the results of our survey has been provided above.*

Problems:

* Students hesitated to ask questions thinking it was silly or he/she was shy, or he/she was scared of wasting other’s time or feared getting judged by other students
* In the end, students failed to grasp all the concepts that was taught in class.

This gives an overall idea that mostly students fear if their image would get tarnished if they asked the question that is in their mind while teachers had experienced several students who hesitated to ask questions. Our goal is to design a prototype which would be an app that would hide students’ identity whilst asking questions so that their identity is not revealed.

1. **IDEATE**

Each of the members shared their ideas based on the problem listed. We scoured through the internet and had several group meetings to find the solution. Out of all the ideas given, we chose the one based on:

1. Rational Choice
2. Most likely to delight
3. The favorite
4. Long shot

*Evidence for this phase:*

*Graphical user interface, application, Teams

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*Figure 5: A screenshot of our group meeting, where each of us are brainstorming on ideas.*

*Rough and initial plan for our prototype was developed as each member gave ideas:*

*A picture containing diagram

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*Figure 6: The rough and initial plan of our prototype.*

1. **PROTOTYPE**

In the parts after this, I shall describe how our prototype works to solve majority of the problem. Our prototype is an interface which is to be an extension of the UTMSmart app, where students can ask questions in class anonymously. The teachers can choose to answer those questions as well as students. Our interface will consist of 2 views: teacher’s view and student’s view.

*Evidence for this stage:*

*Graphical user interface, text, application, chat or text message

Description automatically generated*

***Student’s view above***

Timeline

Description automatically generated

***Teacher’s view during class above***

***Timeline

Description automatically generated***

***Teacher’s view after class above***

*Figure 7: Our prototype was finally developed.*

*We discussed how our prototype works on the video:*

*Graphical user interface

Description automatically generated*

*Figure 8: Description of our prototype is being carried here. You can find more about this on the video that was provided.*

1. **TEST**

We tested our prototype in the video to see whether it works or not. We listened to what the people, who we were showing our prototype, had to say.

**DETAILED DESCRIPTION**

The problem we faced was clash between ideas of members. For the solution, we let each member share their ideas and then we settled on ideas that had the most votes. We worked in groups throughout the whole process. If one member is not fully aware on how to proceed with the tasks, it can get very difficult, so we made sure each member actually understood what they were to do.

A screenshot of a computer

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*Figure 9: Another brainstorming session of our group.*

**DESIGN THINKING ASSESSMENT**

To have a deeper understanding of the problem, we interviewed students who were facing these problems. To be more specific, we interviewed students in their 20s. We also interviewed lecturers of UTM to find out their perspective. A future improvement of having a one-to-one conversation with the teacher unanimously through the app could be added but for the initial stage we planned our system to be simplistic.

Our project relates to the Technology and Information System topics: Application Software and Systems Analysis. It relates to application software as it is a mobile app, and it is accomplishing a certain task. It relates to Systems Analysis as our app takes almost every measure to be economically and operationally feasible. It is operationally feasible as it has a friendly user interface, and it is economically feasible as it is not a separate system so less money is spent to make it.

**REFLECTIONS**

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

My main goal is to become a successful app developer. I hope, in the near future, I will have enough knowledge to design complicated apps so that my apps could be used all over the world. I look forward to working in teams to develop interesting apps.

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

I have learnt about the five steps of design thinking which will prove useful whilst working in a team to develop complex program. I will make sure to implement it whenever I work in groups. I have also learnt how to work in teams. App developers work in groups very frequently so learning how to work in teams is definitely useful for me.

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

I need to improve my skill on how to approach a problem and on how to solve it. I also need to improve my skill to work in groups. I think if I just keep on learning, I will have improved my potential gaining all the necessary skills.

**TASKS FOR EACH MEMBER**

1. Nafi: I have worked on interviews and on the prototype explanation.
2. Mehedi: He has worked to make the prototype and on the protype explanation with me.
3. Furqan: He has worked on interviews and on chapter wise explanation of the project.
4. Mubashhera: She has worked on interviews and on chapter wise explanation of the project.
5. Mariam: She has worked on video editing and on creating the google form.