# TECHNOLOGY AND INFORMATION SYSTEMS (SECP1513)

*DESIGN THINKING REPORT*

**Done by : Group 5**
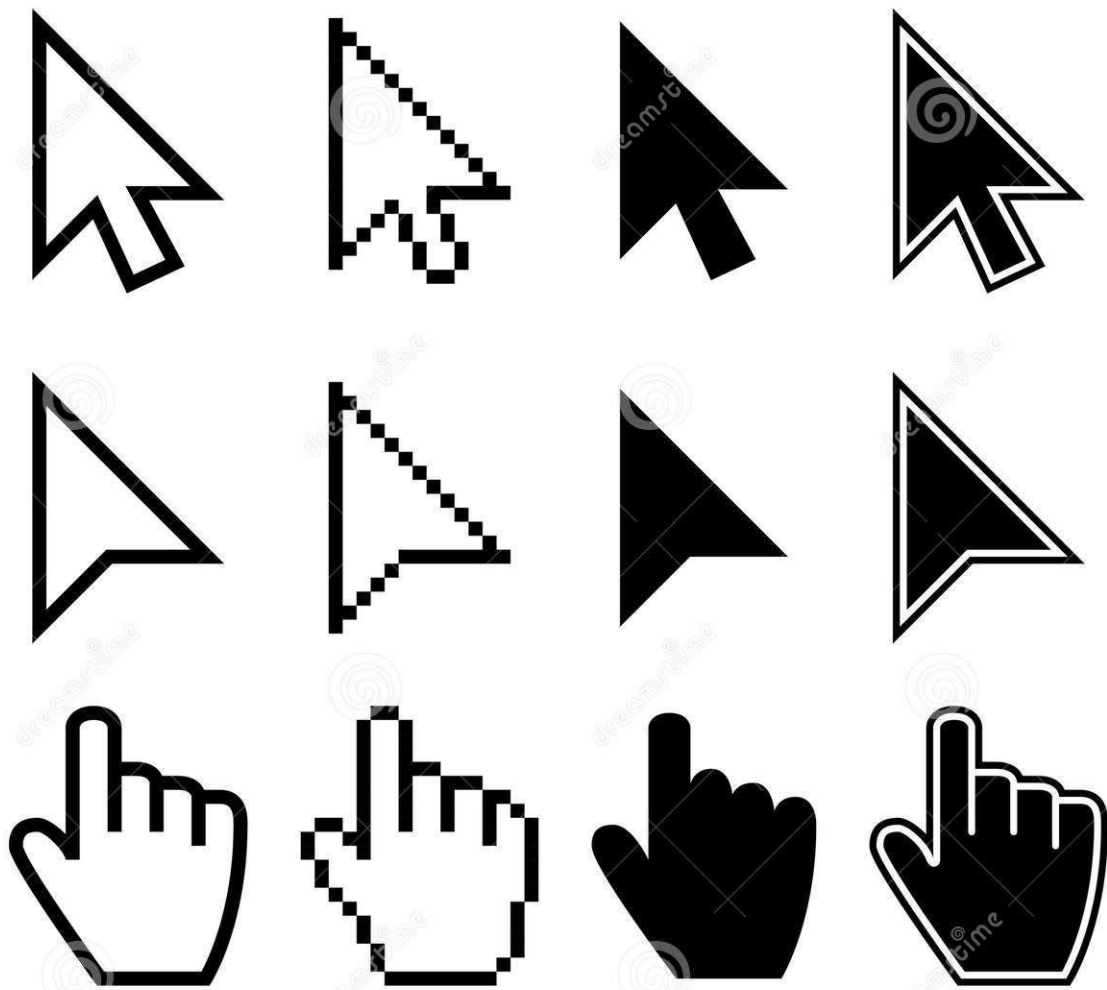
FARHANA TAHSEEN (A20EC4015)
MD FARIDUL ISLAM (A20EC4030)
RADIN NAZHAN BIN RADIN JAMZULKOMAR (A20EC0136)
MD MASQURUL HASAN (A20EC4031)

The process in which a user provides data to a computer is called input. The input devices which are very familiar to us include keyboard, mouse, touchpad, scanner, digital camera, microphone, joystick etc. Among all these, mouse is one of the most popular and essential input devices to all the computer users throughout the world. So, the proper functioning of mouse and its pointer is inevitable for the smooth use of computer.

The topic of our design thinking is - "Mouse pointer does not move smoothly". All the steps in our design thinking have been described below in details -
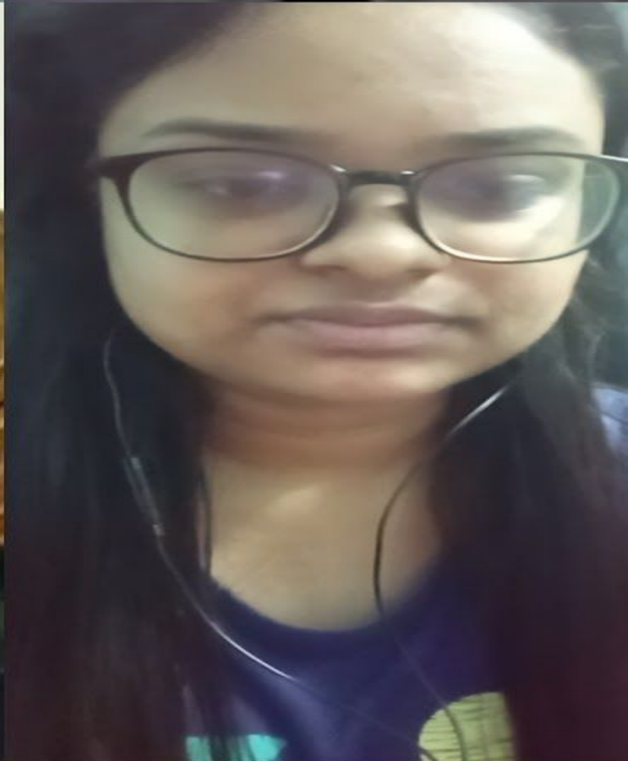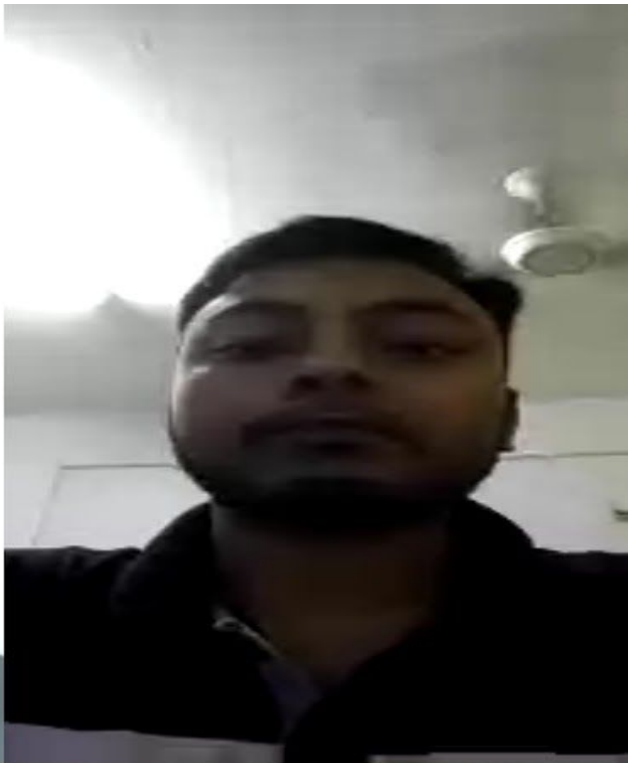
# 1.Selection of a topic/problem :

The chapter that was assigned to us is "Chapter 06 : Input and Output". So we thought of working on a problem which is related to any common input or output device. After a lot of

discussions, we came up with the idea of working with a very common problem of mouse, which is "Mouse pointer does not move smoothly."

## 2. Division of work among the group members :
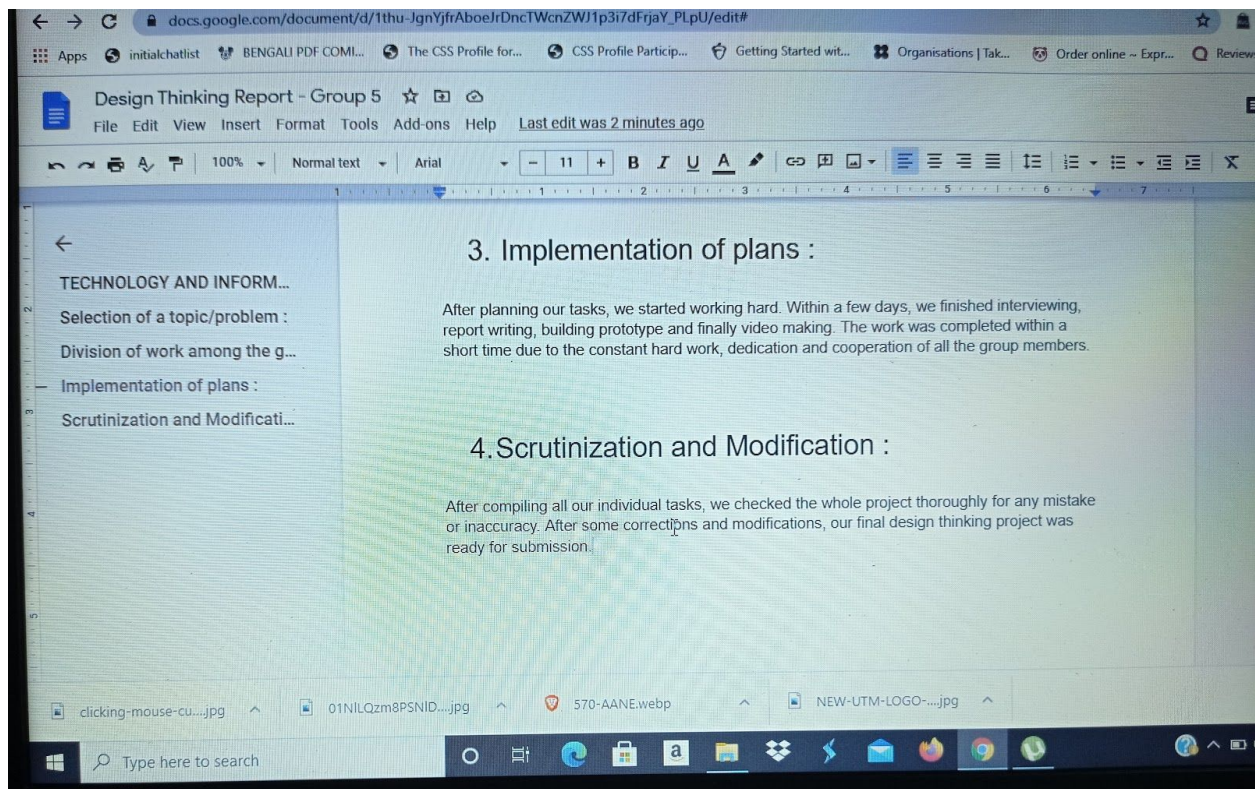
After the topic was finalized, work was divided among all four group members. Since due to Covid-19 the university is closed and four of us are in four different parts of the world, it was quite challenging for us to work together with proper coordination and synchronization. But still we didn't give up and kept on working according to our discussion and planning.

Discussion and Planning

# 3. Implementation of plans :

After planning our tasks, we started working hard. Within a few days, we finished interviewing, report writing, building prototype and finally video making. The work was completed within a short time due to the constant hard work, dedication and cooperation of all the group members.



Report writing

# 4.Scrutinization and Modification :

After compiling all our individual tasks, we checked the whole project thoroughly for any mistake or inaccuracy. After some corrections and modifications, our final design thinking project was ready for submission.

# EMPATHY :

## 1. 1st User

Name : Hasan Abdullah
Age : 25 years
Profession : Web Developer


List of possible questions and answers for user and the composite character -

1. Why do we need mouse cursor in the computer ?
(Ans) We need it because it is for opening a software or program in the computer.

2. How does it affect your life or work when the movement of the cursor is slow ?
(Ans)  It will slow down the flow of  my work and i cant do my job properly because it takes too long to do a task.

3. What can be done so that the mouse pointer moves smoothly ? How ?
(Ans) You can use a device such as gaming mouse that has low latency, it will make the cursor moves smoother because it has lower response time

4. What characteristics of the mouse are suitable to control the cursor?
(Ans) For the mouse, the shape must be ergonomic, which fits the hand grip and is easy to move.

Interview of Hasan Abdullah

## 2. 2nd User

Name: Bayes Ahmed Shoharto
Age : 25 years
Profession : Student of UTM (Software Engineering) and a Graphics Designer

List of possible questions and answers for user and the composite character -

1. Hi, I am Md Faridul Islam. Currently I and my group members are doing a design thinking project. If you don't mind, I would like to ask you some questions. Can I continue?
(Ans) Yes sure.

2. Thank you. 1st of all, can you introduce yourself?
(Ans) Yes, I am Bayes Ahmed Shoharto. I am a student of software engineering in University of Technology Malaysia.

3. Besides a student, what do you do?
(Ans) As a student of computer science, I have to do lots of work in computer. Besides my study I am also freelancing in the motion of graphics development section.

4.  As a software engineering student and also a graphic designer it's true that every day you need to do a lot of activities by using your computer and that's why I think it's mandatory for you to use your mouse every day, am I right?
(Ans) Yes.

5. So, do you feel comfort when you use this device?
(Ans) During my working time, the mouse is the only tool to do that, though I have to work a lot of time but sometimes I have faced some problem with my mouse.

6. Actually, we are evirating the problem. What's the problem you face most of the time?
(Ans) Basically, I face a lot of problems when I use the mouse but the common problem which I have faced frequently is that sometimes it's pointer doesn't move smoothly.

7. Ok, I understand your problem. You mean most of the time our mouse pointer doesn't move smoothly, am I right?
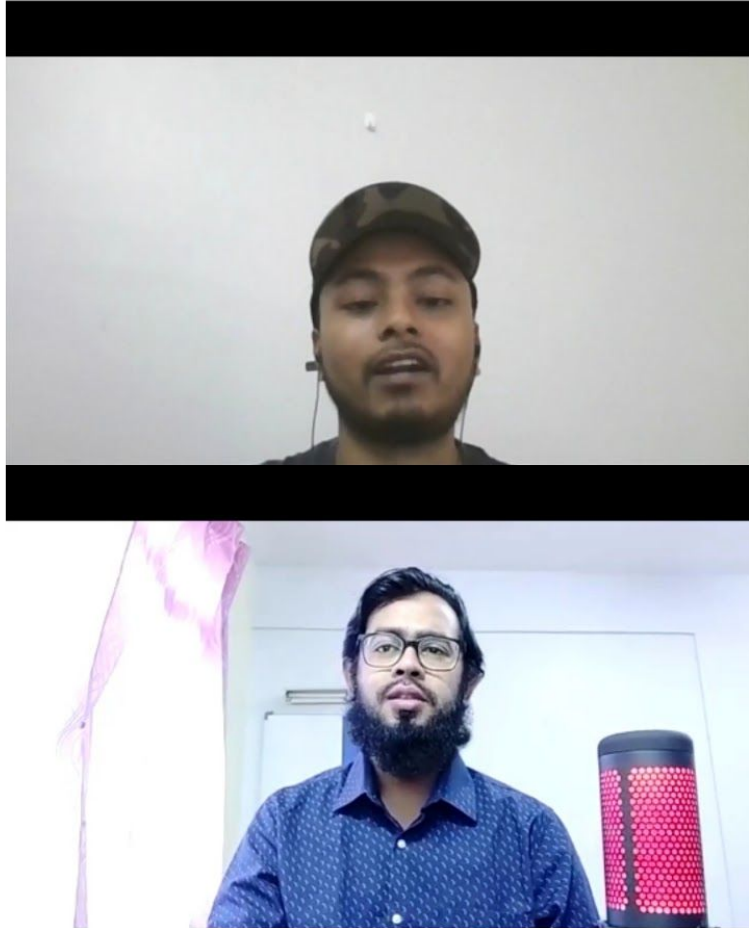(Ans) Yes.

8. I also think it's a big problem. Sometimes I face the same problem. When you face this problem more?
(Ans) Whenever I move the mouse it feels and looks like a cursor is jumping, skipping pixels. And that's why the mouse is not emphasized to use at all. So sometimes it is really difficult to work with PhotoScape or any other technical tools or if we like to play games like a Scouter

strike or any shooter game it is also difficult to play. I have already tried to update this mouse driver but it isn't able to solve my problem.

9. If we try to solve this problem and then succeed later, do you think it will be too beneficial for the computer users?
(Ans) Yes, definitely. If anyone is able to solve this problem that will be a great innovation. I hope you guys are able to do that. Thank you for your excellent opinion. You are welcome.

Online interview of Bayes Ahmed Shoharto

## 3. 3rd User

Name : Babagana Digol Maikale
Age : 38 years
Profession : Researcher and Lecturer of computer science (BUIR), Babcock University Ilishan Remo, Nigeria

List of possible questions and answers for user and the composite character -

1. Sir, as a computer researcher what's the problem you are facing when you use the mouse?
(Ans) Ok, as a researcher I already evirate some problems by using the mouse. But today I will discuss the common problem in the mouse. 1st of all the users use the mouse regularly in a stationary position. Stationary position means it is to stay in one place. So sometimes it has to be friction with the place. That's why it's pointer doesn't move smoothly every time. I think it is one of the common problems. To recover this problem, a new idea is growing in my mind.

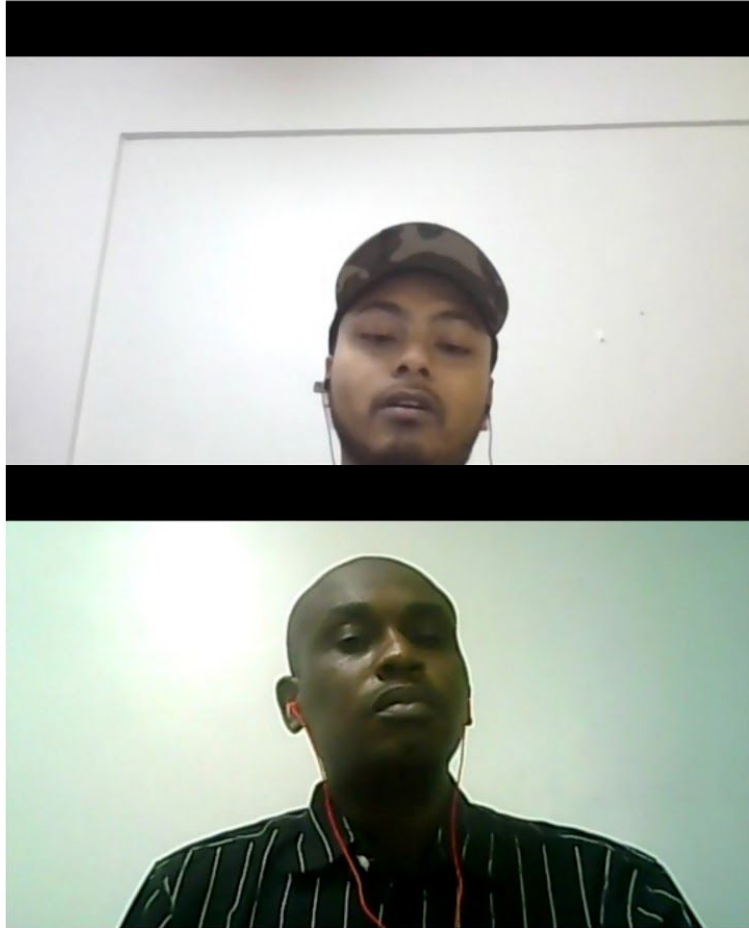2. Thank you sir, can you share with us about your idea?
(Ans) As a researcher I found a solution. By optimizing the mouse we can solve the problem. That means we optimize the mouse using the magnetic field which will be totally collision less. We control it in the airspace. It's an interesting idea we can implement it. I hope if we implement this idea, we will be able to solve this problem.

3. Sir, I also think it's an excellent idea. If we implement this idea and then achieve success later, do you think it will be too beneficial for the computer users?
(Ans) Yes, definitely.

4. Thank you very much for your valuable opinion. Inshallah we will implement this idea and hope will be successful.
(Ans) You are most welcome.

Online interview of Babagana Digol Maikale

# DEFINE :

Razer, a multinational technology company is going to launch Project McFly in the future, where they are going to introduce 'The Hovering Mouse'. As a result, a lot of employment opportunities will be created for this project.

# IDEATE :

The tech company Razer has already announced that they are going to introduce the future in gaming mice. It doesn't only reduce the friction in game play, it completely eliminates it. So, frictionless control means that the only limitation is your skill. Through extensive research and testing, Razer developed a way to use earth's own magnetic field through collisionless magneto-hydrodynamics.

The Maxwell's system of equations describes a self-consistent collective field created by charged plasma particles. By using water vapour in the air, free raser wave hover drivers use parametric excitation of torsional or mega-frequency alpha waves to achieve limitations. Razer's 6400 DPI optical sensor calibrates the mouse to the desired height above any surface. The mouse still operates even if it runs out of surface.



Hovering mouse technology : Project McFly by Razer

# PROTOTYPE :

First of all, a sketch of the Mcfly mouse was made. Three wooden boards were taken and then cut into a basic shape of mouse. Then the boards were glued with each other and kept in pressure and kept them to dry. After drying , it was shaped with a sand-paper. Then three holes were drilled for the lighting and after that , the mouse was colored and the glass piece was fixed. That's how our prototype was made.



The complete protoype

# REFLECTIONS :

**REFLECTION OF FARHANA TAHSEEN**

a. My goal or dream regarding my course or program is to gain knowledge about various technologies, which can help me a lot to become a successful software engineer in the future.
b. This design thinking project is about solving a common problem related to mouse and inventing a new mouse technology. This will definitely enhance my knowledge about the future of mouse technology, which I can apply in different aspects of my study and career. In this way this design thinking impacts on my goal or dream regarding my program.
c. I need to be more up-to-date about the tech industry. I need to be more conscious about the trending technologies all over the world. I need to expertise more on using the latest technologies. I think these should be the actions or improvements or plans necessary for me to improve my potential in the industry.

## REFLECTION OF MD FARIDUL ISLAM

a. I am Md Faridul Islam, a member of group-5. Recently I and my group members finished our design thinking project. I hope it will help me to move towards my goal. I choose this course because I want to be more practical in my daily life activities.
b. It's my thought this project makes us more practical and increases our potentiality. Basically, which is really important to fulfill my dream.
c. And I also believe if we want to develop our potential, we need to be more practical in our daily activities. So, my thinking is that, we have to put a lot of emphasis on our practical activities, which is really important for me and all of us.

## REFLECTION OF RADIN NAZHAN BIN RADIN JAMZULKOMAR

a. I hope with the current course I am taking right now, I am able to be a professional software engineer or any career related to the information technology field which consists of artificial intelligence, robotics or related to computer hardware and software. This is because the current course I am taking is teaching me the fundamentals of the work that I will do later in the job life and also provide me with an insight to various new technologies.
b. The design thinking part teaches me a lot about problem solving and management by simulating simple real world problems which requires critical thinking and cooperation from different partners in order to solve it which is crucial for me to achieve my dream. Furthermore, it also exposed me to a new set of experiences of handling a project which will be the main focus of my favourite career later in the future.
c. My plan for improvement is to involve in a lot of activities which use a different set of skills for each one of them so I can be more knowledgeable and flexible in new surroundings with different people. Due to that, I am able to adapt to any situation, strengthen my endurance and also polished my problem solving skills.

## REFLECTION OF MD MASQURUL HASAN

a. My goal is to be a successful software engineer in a big company such as Google, Amazon or Microsoft. The program I am enrolled in has shown and taught me several aspects of technology which consist of network, multimedia, system application and a lot more which is needed to achieve my dream.
b. Design thinking gave me a huge impact on my dream as it introduced me to a lot of new skills which will be the basic foundation of my goal. Skills such as creating new ideas, problem solving and organization of work have been taught to me so that I could apply it in the next project. It also gave me a work-like experience so I could get used to it.
c. I decided to increase my knowledge related to the industry as well as expose myself to various activities which require different methods to accomplish it. This way, I am able to learn several information and ways to tackle certain problems efficiently and manage the work properly. Furthermore, I should join any club or society to hone my leadership skill.

**THE TASK FOR EACH MEMBER :**

Face to face interview - Radin Nazhan Bin Radin Jamzulkomar
Online interview - Md Faridul Islam
Report writing - Farhana Tahseen
Prototype building and DT video editing - Md Masqurul Hasan

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