FACULTY OF COMPUTING
UTM Johor Bahru

Report on Design Thinking Project

Subject   : Technology and Information Systems (SECP 1513)

Section   : 01

Name of Lecturer   : Dr Azurah A Samah

Date   : 30 November 2023

Title of Design Thinking Product: UTM StudyVerse

Video Link (youtube): https://youtu.be/VhbnQDswOf0

Link e-portfolio   : (Ang Chun Wei) https://github.com/AngCW/cw

                           : (Jayadhanya A/P Vijayalingam)
https://github.com/JayadhanyaV/JayadhanyaV.github.io

                           : (Muhammad Haziq Bin Mohd Hafizal)
https://github.com/HaziqHafizal/eportfolio.git

                           : (Nazatul Nadhirah Binti Sabtu)
https://github.com/nazatulnadhirah/naza-eportfolio.git

                           : (Wan Nur Raudhah Binti Maszamanie)
https://github.com/wannurraudhah/github-portfolio1.git

Group Profile

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Comments by Grader:

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INTRODUCTION

Design thinking means a problem-solving approach that prioritises consumer needs above all else. It relies on insightful observations of how individuals engage with their surroundings and adopts an iterative, hands-on methodology to cultivate innovative solutions. The process consists of five stages: **empathize**, **define**, **ideate**, **prototype**, and **test**.

The first is the **empathize** stage. Designers carefully observe consumers to deeply understand how they interact with products and overcome challenges. We observe people with understanding and kindness, without judgment. This approach helps identify problems that people may not be aware of. This allows us to really understand what people need, which is a central aspect of designing things for them. Empathy, or understanding and caring for others, plays an important role in the design process. To do this effectively, we must observe carefully, connect, and fully participate.

In the next step, **define**, we move on to analysis, interpretation, and planning. This means bringing together the information we gathered during the empathy stage to represent the customer's needs. By summarising our observations, we clearly define the problem we need to solve. Our goal is to understand the challenges consumers face and how the identified problem affects them.

In the next stage, which is **ideate**, the focus is on thinking, imagining, researching, and coming up with ideas to solve the identified problem. Ideas can happen in a group, encouraging creativity, or individually. The goal is to generate many different ideas, offering different possibilities for moving forward.

At the **prototype** stage, ideas become tangible solutions. Prototypes are not perfect; they use creativity to bring the concept to life. The goal is to quickly release a specific version of the idea to see how consumers react. Prototypes can be things like landing pages or videos to test consumer interest and improve the process.

In the final step, **testing**, we review and make modifications. After showing consumers the prototype solution, we observed how they interacted with it and gathered their feedback. The design thinking process is iterative and non-linear, so we can go back to one or more stages. Testing may reveal the need to modify the prototype, bringing us back to the prototype stage, or if there is a misunderstanding about consumer needs, we may need to revisit an earlier stage of the process.

Empathize

We decided to conduct a short interview with a few students at Universiti Teknologi Malaysia on the difficulties of obtaining study materials. Firstly, the student we interviewed was Syafina from Malacca. We asked her what her thoughts were on finding past year questions for her own revision. She replied that it is rather difficult because most of the questions online are not in the course syllabus that she was studying. Materials online also require a subscription to fully access the documents. This makes it rather hard for her to self-study and demotivates her to study because the study materials are limited. The image shows the process of interviewing Syafina.

The second user was Welson from Sabah. The problem he had was that it was quite hard to obtain reference book for each subject because it is expensive. Alternatively, we can use pre-owned books from our seniors, but they are hard to find. Most pre-loved study materials are also usually not in the best conditions. The image shows the interview happening between Jayadhanya and Welson.

The last student we interviewed was Muhammad Hafiz, who originated in Kedah. According to him, ready-made materials help him study because they are the simplified version of long notes. Simplified notes are good and all, but to make them requires time and creativity. He suggested that it would be much easier if there was a place where students could upload their notes so other students could easily find and access the materials. This is because a lot of students do not know who to reach or where to find the notes and exercises. The image shows the interviewing process between Jayadhanya and Hafiz.

Define

	Problems	Elaboration
1.	Challenging to find example questions and past years papers that are in the syllabus	The fact that too many online questions are not specifically designed for their course of study. Additionally, the need to purchase a subscription to access online materials is a hassle.
2.	The challenge of obtaining reference works on various topics	This is a problem because finding reference books on various topics is difficult due to the high cost of acquiring them.
3.	Difficulty finding simple notes online	There is no place for students to upload their study material, and it is not well known among them. It also requires time and creativity to produce the notes.

IDEATE

During group discussion, group members proposed some ideas to solve the problem. The original idea was to create a limited-access location for students to submit study materials, but it was rejected because it was not user-friendly and expensive. The second idea was to develop a mobile application for students to download materials, but this posed challenges in terms of technical support and funding. Finally, the team proposed a website where students could share notes, practice questions, and other web-related resources. This website can also serve as a platform for searching documents and purchasing reference books, offering advantages such as cost savings, efficiency, and user friendliness.

PROTOTYPE

The prototype is named UTM StudyVerse and is designed to address the issues identified in the define stage and other student problems. It serves as a platform for UTM students to upload and access study-related materials freely. Contributors are rewarded with merits to ensure high-quality shared content.

The website was built using a free online web design app, with team members collaborating on designing the interface and ensuring functionality. Tasks were assigned for designing the website's look, creating the registration function, and setting up folders for document uploads.

How does UTM StudyVerse work? Students need to register with their UTM student email address and matric number to submit or access documents. This ensures that both uploaders and those requesting access are UTM students, maintaining privacy and confidentiality. While UTM's past year papers are confidential, the website provides a direct link to the UTM library's past year papers. Additionally, there's a feature for buying or selling pre-loved books, making it convenient for students to find and access what they need.


*Group discussion on making the website*

TEST

After finishing the prototype, we interviewed the students from the empathizing step after testing our website, UTM StudyVerse. All of them gave good ratings, and they were satisfied because it helped them overcome the challenges that they were facing. One of the students suggested that we put our website in the official UTM application so that it is more convenient for UTM students to use.
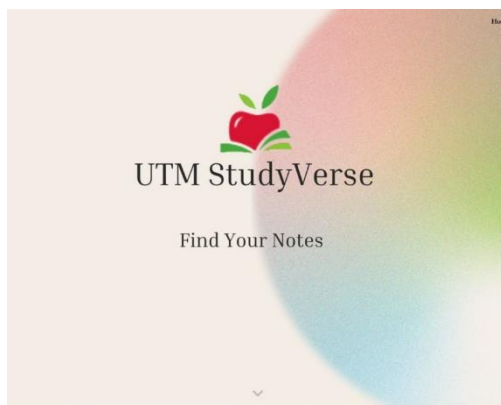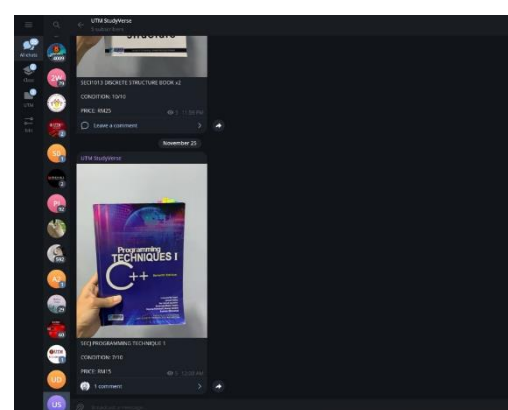

The interface of UTM StudyVerse
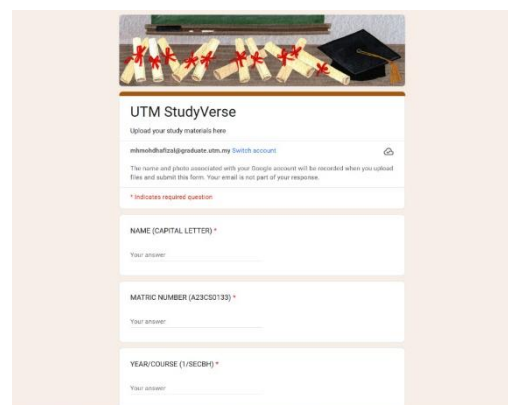
The form to upload their materials
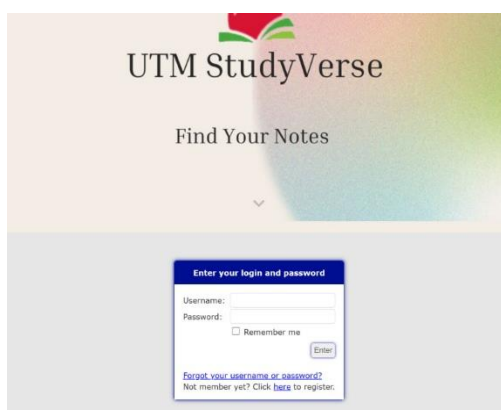
Log in system for verification

Buy/Sell pre-loved books and notes

REFLECTIONS

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

(ANG CHUN WEI) - The main goal in this programme for me is to learn more about the Internet of Things and solve most of the problems. Thanks to this programme that I have taken, I can survive in the era of technology by applying all the techniques that I've learnt such as website making and programming as everything right now is online and automated. I hope that taking this course can help me when I am in the industry to work.

(JAYADHANYA) - My goal in undertaking this course is to develop a career in a technological field where I can constantly challenge myself while enhancing my troubleshooting abilities. I am also determined to constantly learn new programming techniques that will allow me to obtain a better grasp of how the Internet functions and its own security measures. By pursuing Computer Science, I dream of working for large corporations such as Google, Apple, or Microsoft. I intend to constantly grow in this field until I am able to work for the companies mentioned.

(MUHAMMAD HAZIQ) - The main goal of me pursuing a degree in computer science is to gain a deep understanding of the foundational principles and advanced concepts within the subject. I am intrigued and interested in learning programming and to have a strong problem-solving skill. My dream is to work in this field, and I ultimately aim to make a positive impact in the tech industry.

(NAZATUL NADHIRAH) - My dream regard for my course is that I want to be successful in my studies and in my work life as a data scientist. Not only that, but also being able to learn about the advancement of technology is a part of my dreams.

(WAN NUR RAUDHAH) - My objectives in this programme are to broaden my knowledge in the field of technology and learn how to apply problem-solving techniques. As a technology enthusiast, I'm fascinated by technology and aim to discover how machines function and what advantages they provide for us. I hope that

taking this course will help me work in an industry that focuses on improving society's quality of life.

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

(ANG CHUN WEI) - This project helps me learn how to overcome problems when we are facing it. It is very important for us to train ourselves on problem-solving team working. For us, we communicate a lot among the group members when it comes to finding ideas and it really works out as many hands make light work.

(JAYADHANYA) - This design thinking project requires a user-centric approach, which urges me to acquire knowledge about the needs and preferences of users that would use my product or website. It has also strengthened my problem-solving abilities since I encountered and overcame several challenges while developing my project. These are key characteristics that major tech companies, such as my dream companies, are interested in. Furthermore, working with my team has also taught me how to adapt and adjust to the ideas of my co-workers in any possible future group projects during my career.

(MUHAMMAD HAZIQ) – This project required me to think critically to solve the problems I faced. I learned how to think of solutions to overcome the challenges, and I learned how to work as a team by accepting any suggestions from my teammates. These impacts will help build skills that are useful when entering the corporate world.

(NAZATUL NADHIRAH) - This design thinking helps me wonder about the problems that we face as students and how we want to solve the problems. It makes me think that not only people can have problems, but in the world of technology, they can also have problems regarding their function or how their system works.

(WAN NUR RAUDHAH) - This project helped me understand the importance of creative thinking and how it allows us to view and solve problems innovatively by

using available technology. This project also gives me exposure to how an organisation operates and adjust to it.

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

(ANG CHUN WEI) - First, the time management for me is necessary for me to improve when I'm in the Industry. I need to manage every work well and in time to prevent any compact work. Even though I've mentioned that I've learned how to solve problem during this project, but I feel like my problem-solving skills are not enough when it comes to industry, I need to train myself more on solving heavy problems as they need an efficient worker in the industry.

(JAYADHANYA) - To improve my potential in the industry, I need to continuously learn and develop my skills by taking an interest in creating my own projects using concepts that I have not explored before. Moreover, I should participate more in networking events and seek internship opportunities to gain hands-on experience. I also must keep up with the most recent advancements in technology and be mentally prepared to deal with challenges with an optimistic attitude.

(MUHAMMAD HAZIQ) – Actions that are necessary for me to improve are to be more creative, more innovative, to have better communication skills, and to get used to be in uncomfortable places. These improvements will help me to be a better person overall, and the skills are required for getting a job.

(NAZATUL NADHIRAH) - Master a lot of skills that the industry need such as communication, creative thinking, and problem solving. It will help in improving potential of the industry.

(WAN NUR RAUDHAH) – The action necessary for me to improve my potential in the industry is to increase my researching, communication and time management skills. With those abilities, I can find more creative and effective solutions to solve problems.

THE TASK OF EACH MEMBER

	NAME	TASKS
1.	ANG CHUN WEI	➢ Front cover ➢ Test ➢ Photographer
2.	JAYADHANYA A/P VIJAYALINGAM	➢ Empathize ➢ Interviewer ➢ Editor
3.	MUHAMMAD HAZIQ BIN MOHD HAFIZAL	➢ Define ➢ Ideate ➢ Leader
4.	NAZATUL NADHIRAH BINTI SABTU	➢ Introduction ➢ Videographer
5.	WAN NUR RAUDHAH BINTI MASZAMANIE	➢ Prototype ➢ Script writer

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