FACULTY OF COMPUTING

SECP1513-01-04-2024/2025 1: TEKNOLOGI DAN SISTEM MAKLUMAT

LECTURE NAME : Dr. Aryati Bakri

DESIGN THINKING

COURSE NAME: BACHELOR OF COMPUTER SCIENCE

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1. INTRODUCTION

Our understanding of current design thinking methods have been a simple inology of the method made by our peers and our understanding of technology. In our coursework of Technology and Information System (SECP1513) , we are required to do a project on "Design Thinking Report ". To demonstrate our understanding of the subject we did a fundamental approach and created solutions with a view to overcoming the issues that we confront in our daily lives. We decided on an application where users can check on prices of different stores and make decisions on the knowledge provided.

The current era, stores branches have expanded to a front where different brands have different prices. The current user wouldn't know what brand to take with how the expansion of the store business currently. Our idea on the application of a universal price checker would be able to help and make easier decisions on grocery market purchases and allow users to shop smarter.

To decide if our idea is concrete we will use a design thinking method and decide on things such as empathy questions and evaluate possibilities of the application based on emotion and empathy questions, we will also do a brainstorming process and have an idea on how the prototype will be made based on our idea. The design thinking process consists of five stages which are empathizing, defining, ideating, prototyping and testing which are in order to tackle a problem and we will implement the process in order

Lastly, we will asset our understanding and will do individual reflection on our idea and conducting process with hope of our knowledge wide. In conclusion, we hope to be able to wide our knowledge in design thinking and how it could help us in development and future projects and course work.

2. DETAIL STEP AND DESCRIPTIONS IN DESIGN THINKING (LOGBOOK)

DATE	ACTIVITIES
16 NOV 2024	Briefing by Dr Aryati about the assignment. - We were assigned as a group and instructed on the topic given with the criteria we needed to achieve in order to complete the tasks given. - The lecturer have given us the Rubric detail beforehand as to what the requirement are
16 NOV 2024	Meeting up with the members to discuss more on the topic given. - Brainstorming ideas to draw and draft on the questions - Question must be related to our idea
18 - 22 NOV 2024	We selected the topic and question that is related to ask in the interview session based on topic - Question chosen are pick based on our idea - Final meeting to finalize the project interview session
7 DEC 2024	We show our idea to lecturer and asking for advice and knowledgeable idea - Lecturer is use as a guidance toward the project - We finalize it and start searching for interviewee
9 - 13 DEC 2024	Interviewing user who would benefit our idea - interview is done by a few people and been properly documented

	- Pointer note taken of the interview - Have a based concept of our project
14 - 20 DEC 2024	We begin designing our prototype based on concept and found the possible solutions that we got from the interview - We begin with prototype the UI and how the design of the Application we wish to build looks like - We distributed task to each member on how to distribute the workload of the project
21 - 28 DEC 2024	We tested the prototype by using Google Forms to get feedback from the users. - We get feedback on the prototype and seeing how user would interact on the design we make - We begin write and preparing the report of our project - We also begin preparing the video portion of the project
27 DEC 2024	We begin doing final preparation of the project - We checking our report on the project on the criteria portion - We begin doing final check of the video portion of the project and upload the video
28 DEC 2024	We present our report to the lecturer - We submit our report and begin to explain idea and prototype of our project - We also show our video and UI design - We any final edit based on the critic of the lecturer and our peer and submit our report

3. DETAILED DESCRIPTIONS OF PROJECT INCLUDE PROBLEM, SOLUTION AND TEAM WORKING

Our project is based on the problem of user difficulty in differentiating the price of different products from different stores. There are many stores in Malaysia and each store has different prices and has different promotions on certain products. Malaysia's retail landscape includes a diverse range of shopping venues, from massive shopping malls and department stores. With so many items at different prices, it is quite difficult to differentiate prices from different stores.

Based on our interview we have identified a few problems. The problem basic problem from shopping in current era

Components / Details / Problems	Solutions
1. Difficult to identify prices	- User have difficult to know which product is a good bargain in price and which store it can be bought
2. Different store prices	- Store price are different in many brand so it difficult to know which store giving a good bargain
3. Lack on promotion information	- Many user have lack information on store promotion and what type of promotion is having as of late.

We begin preparing our prototype based on this problem. Our prototype will focus on how users can know which products and which store giving the best prices. Our critical problem we will be facing is due to being part time student we are lacking of time to do basic interview but we overcome by word of mouth technique and along ourself to explain to many about our product

4. DESIGN THINKING ASSESSMENT POINTS

a. During the final demonstration of the project

At the end of the project, our team will present our app titled 'Beans & Bargains' to users to rate the results and effectiveness of the app at its best. This rating is important to determine whether the app works as expected and meets users' expectations. The focus of this project is divided into three main criteria: 1) ease of use, 2) functionality and 3) user satisfaction. For ease of use, it was assessed by noting how accessible the app is and fulfilling the necessary requirements. For Functionality as well, it was assessed by testing whether the app accurately displayed supermarket information and compared prices as desired by these apps. Finally, user satisfaction was measured through feedback about the design and overall features of the app. This assessment provides key insights into the strengths and areas for improvement of the app, ensuring it is practical and user-friendly.

**b. During the transition between design thinking phases**

Throughout the project, our team conducted assessments transitions between phases in the design thinking process. After conducting user interviews in the empathy phase, we carefully analyzed the data to ensure a deep understanding of the users needs before moving to the problem defining phase. In the transition from defining to generating ideas, we evaluate the creativity and usability of the generated ideas and make the selection that best suits the users challenges. Before creating a prototype, our team also evaluates whether the chosen idea can be implemented realistically and provide value and impact to users. Likewise, before the testing phase, we conduct an internal evaluation of the developed prototype and correct any major issues before presenting it to external users.This continuous assessment helps maintain focus, encourages creativity, and ensures user needs are always at the top priority of our projects.

5. DESIGN THINKING EVIDENCE

A. THE SAMPLE WORK BY STUDENTS WORKING TO SOLVE THE DESIGN CHALLENGE

We begin our work with dividing our workload amongst ourselves and decide how to create a prototype. Our decision on making a simple UI is due to lack of knowledge and understanding of creating UI. We try our best to make a proper UI suitable based on what we want and we believe we are able to do it.

We had proper online meetings amongst ourselves and in terms of team working, we had successfully created a great understanding within each group member's strength and we were able to show in our project efficiently. Each of us participated and responded actively to make sure this project became successful and it allowed us to work in a team.
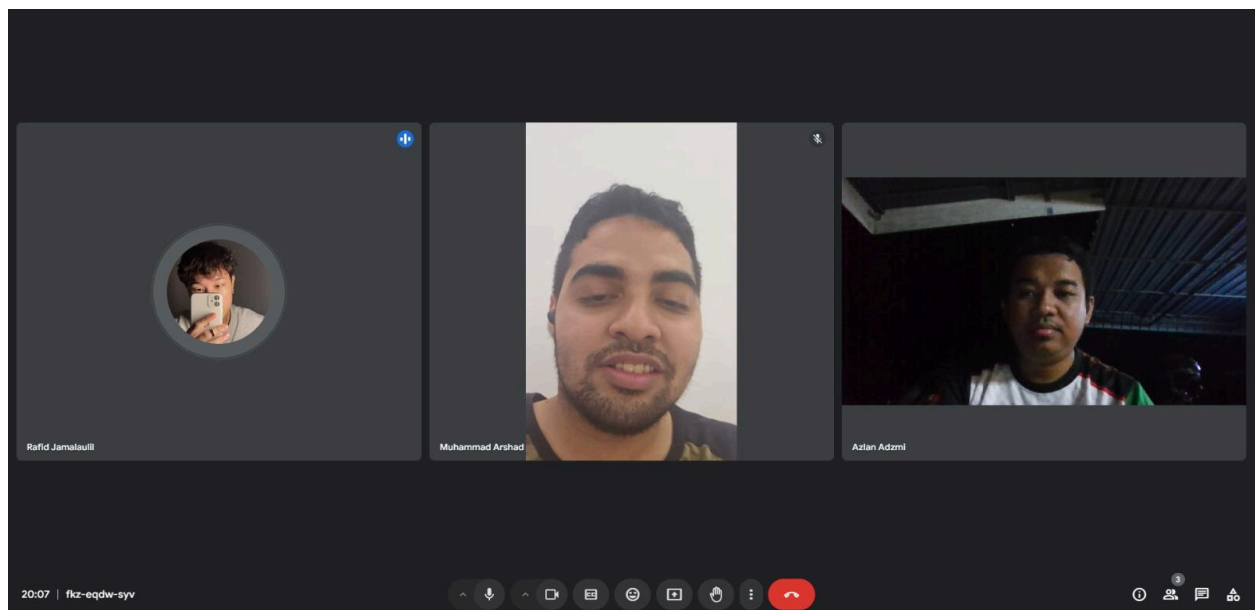
B. RECORD FOR EACH PHASE

The 3 phases we attempted to do for our project are empathy, define, and ideate. We will show and explain this following by each point forward.

1. EMPATHY

Objective

In The Empathy phase we collected data from 15 responses through interviews and observations using google form. We collected all the information about their shopping behaviors, and we are focusing on issues like how they compare the price for the same product across various supermarkets. Our team also acknowledged their frustrations and expectations for the future. Below a sample questionnaire during our interview with the respondents.

Questionnaire

(1) Please introduce yourself (name, sex, occupation)

(2) Where do you always shop for groceries? (physical, online)

(3) Which supermarket do you always shop at?

(4) What is the most important thing when shopping at the supermarket?

(5) What challenges do you face when shopping at the supermarket?

Composite character (Persona)

Name : Muhammad Azlan Bin Adzmi

Age : 37 years old

Background : Working as system support manager at a software company. Married and his wife is a housewife and has 4 children, 3 of them are at school. In the family only azlan is working and with his salary he needs to be smart to manage the financial plus have savings for the future.

Goal : An efficient app to manage and compare prices real time between supermarkets and other groceries available.

2. DEFINE

In the define phase we analyse all the input data during the empathy stage to identify what challenges of user difficulty in differentiating the price of different products from different stores. There are many stores in Malaysia and each store has different prices and has different promotions on certain products . From the feedback, we focused on the problem statement and set a clear objective for our project.

There are a few challenges what user encounter
- Find the same product at a lower price. User difficulty to search for the same product at lower prices, which influences their purchase decision.
- Managing financial for those with a single income source especially parents like mr azlan. He is facing difficulties in managing his finances due to limited income, which affects his buying decisions.
- Lack of information about which store sells the product. Sometimes users miss out on knowing which store offers the best price for a specific product. It also influences their purchase decision.

To address all the issues encountered, our main focus now is to develop a user friendly application that contains information about the price of different products from different stores and has a different promotion on certain products.

3. IDEATE

In the ideate phase, we focused on generating creative ideas synchronized with the challenger identified user needs. Through brainstorming sessions, we explore and do research on existing solutions, and outlining features such as a user-friendly interface, real time price update and comparison tools to ensure practicality and convenience.

Process Key Steps :

- Brainstorming and Research
- Explore existing solutions in the market and try to understand how its works and the benefits in the market.
- Feature Definition
- Feature real time price update, price comparison tools and simple. User Friendly user interface feature.
- Feasibility study
- Define the technical feasibility and user impact of each idea to ensure the solutions provided are practical and effective.
- Selection
- The idea comparison price checker 'Beans & Bargains" app concept is the best option with user priorities, offering clear and actionable benefits.

The chosen solution 'Beans & Bargains", will provide a real time price comparison across multiple supermarkets or stores in Malaysia, with function notification for discount and deals, and feature user friendly user interface for ease of use. This application is selected because it directly addressed user challenges such as needing a simple app, efficient to compare price with real time price update and find the best deals.
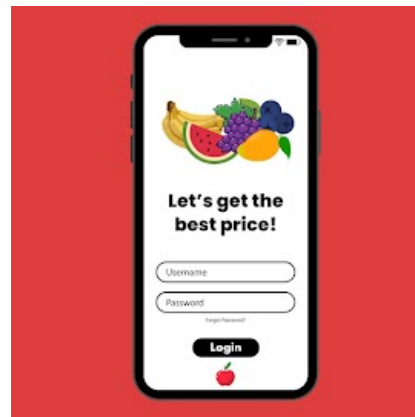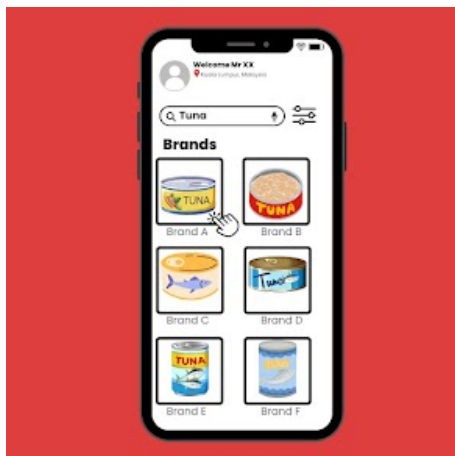
6. PROTOTYPE

Link :
Youtube Link : https://youtu.be/r8FSxq8PffA
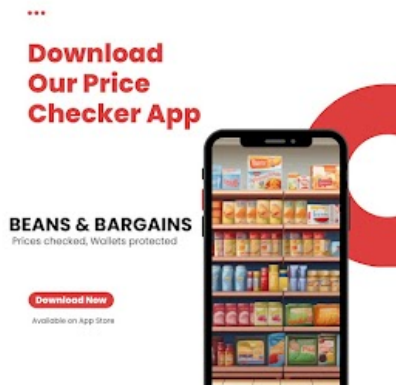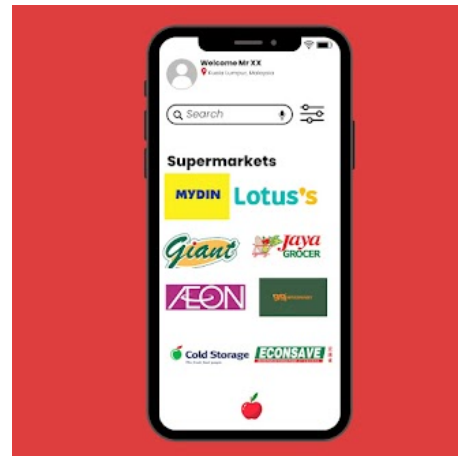

Install app Beans & Bargains


Create Account and Log In


Select Product

Store Available Update

Product Select Will Display From All Store Register

7. TEST

In this stage of the project we begin to show users our prototype and ask for feedback on those prototypes. We built one prototype due to time constraints but we got great feedback from users from the surveys. We got 20 responses based on our prototype and many were positive and gave us feedback on how to improve the UI system.
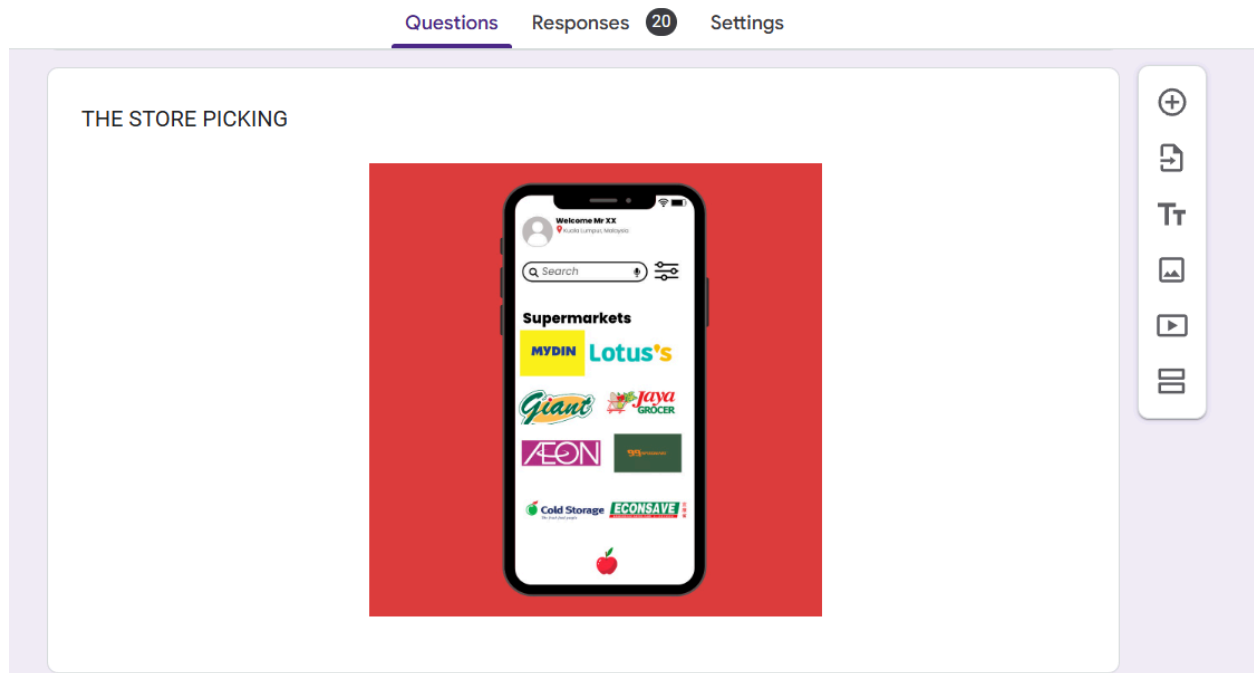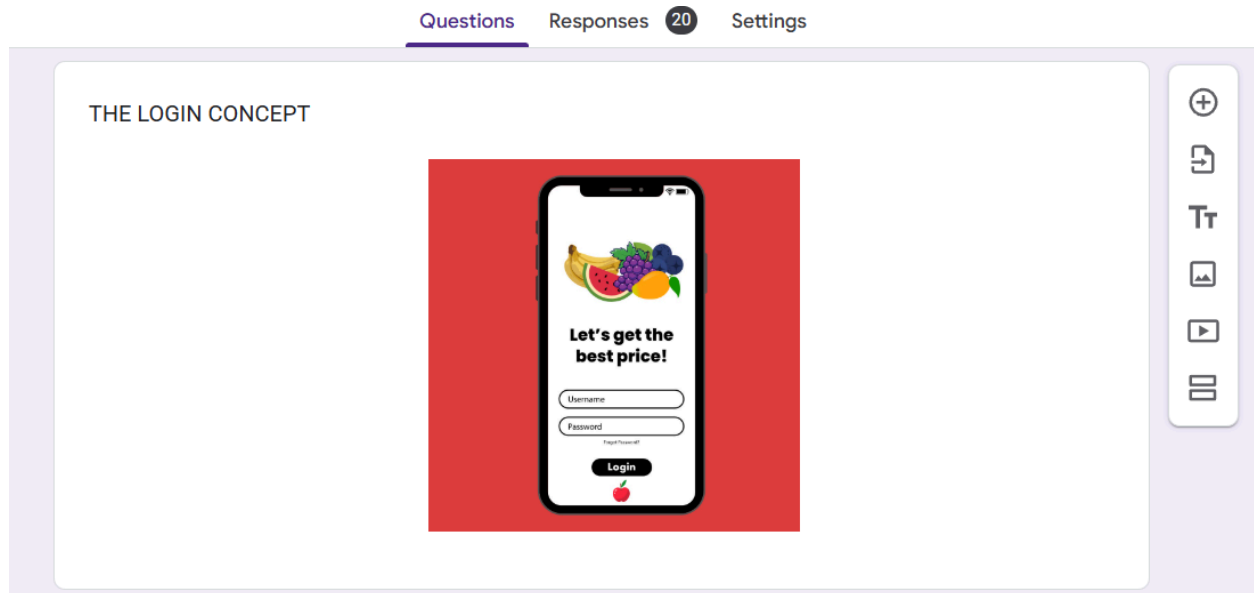
THE BRAND PICKING
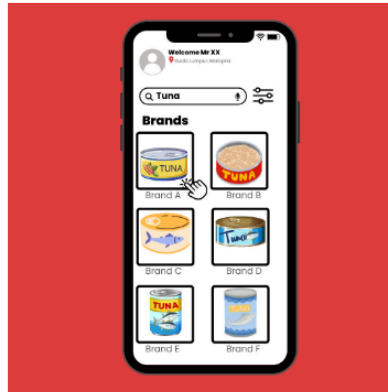
OUR UI DESIGN
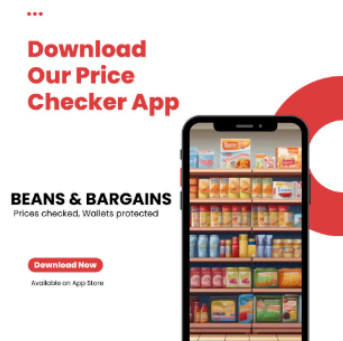
NAME

Long answer text

AGE

○ BELOW 18

○ 18-20

○ 21-30

○ 30-50

○ >51

DO YOU LIKE MY PRODUCT ?

○ YES

○ NO

WHAT YOU LIKE ABOUT THE IDEA?

○ AFFECTIVENESS

○ EASIER UI USER CAPABILITIES

○ WIDE RANGE OF STORE

○ Other...

○ NO

WHAT YOU LIKE ABOUT THE IDEA?

○ AFFECTIVENESS

○ EASIER UI USER CAPABILITIES

○ WIDE RANGE OF STORE

○ Other...

WHAT WOULD YOU LIKE US TO IMPROVE

Long answer text

I. Our google form to users

NAME

20 responses

KARTIK A/L RENGANATHEN

FAHMIE
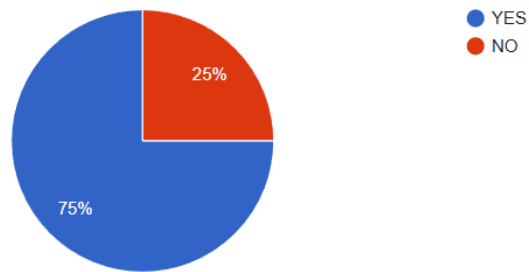
Aqilah

MO SHARHAN

Joshua

AFIDAN HIDAYAT

Nafhan

HIJ

Jaya

DO YOU LIKE MY PRODUCT ?

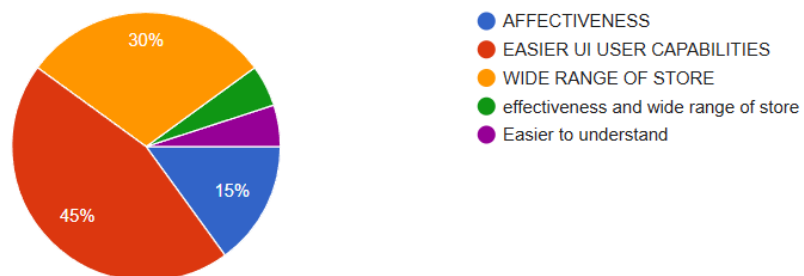20 responses

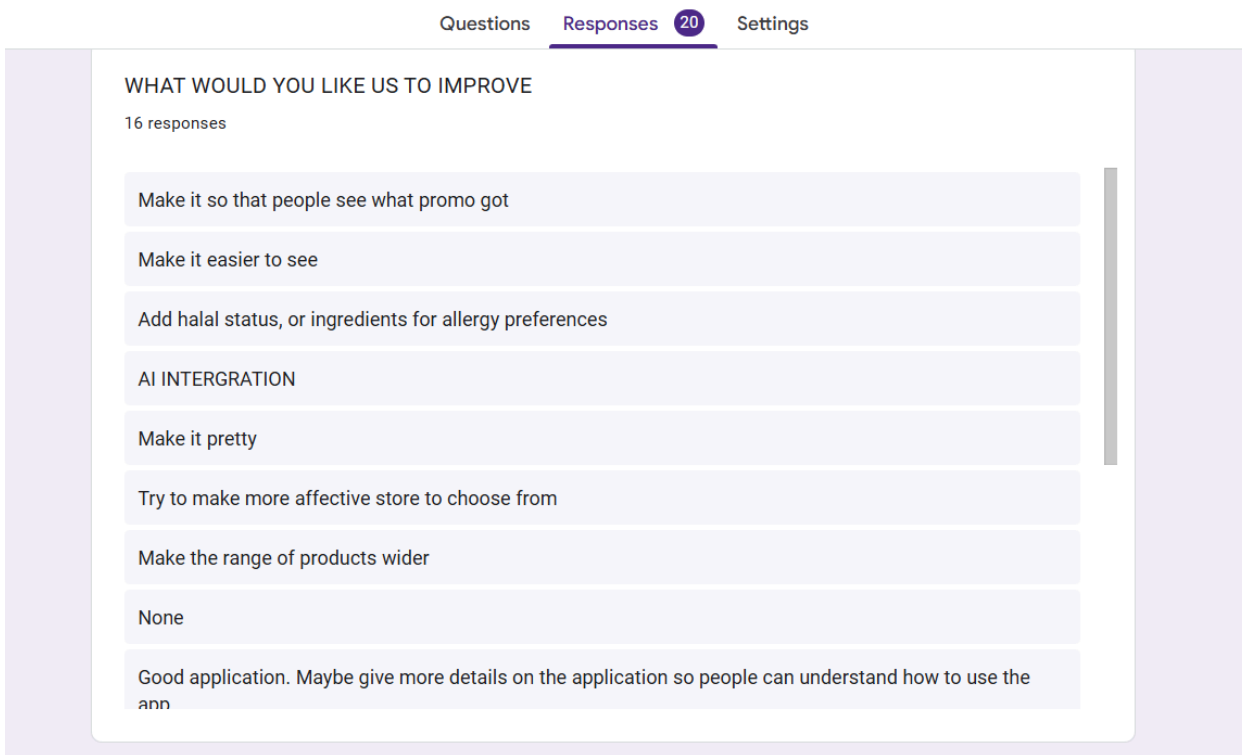

- YES
- NO

25%

75%

Copy chart

WHAT YOU LIKE ABOUT THE IDEA?

20 responses

- AFFECTIVENESS
- EASIER UI USER CAPABILITIES
- WIDE RANGE OF STORE
- effectiveness and wide range of store
- Easier to understand

30%

45%

15%

17

II. response of the prototype UI design

8. REFLECTIONS

Ⅰ. MUHAMMAD ARSHAD BIN MUHAMMAD OMAR

My goal for this course is to be able to understand the concept of technologies and basic computer knowledge. The knowledge provided by the lecturer is helpful in many ways and allows me to be more knowledgeable and attentive toward basic computer knowledge. This project has taught me how to do such things and taught me how to do design thinking according to designing a project.

The planning , decision making and problem solving skills I acquire during this project make me better at understanding the work progress and how to use design thinking in the development process. I also know how to be a good team player and

learn group management. With the knowledge provide during this project it allow me to understand the concept of the course

In conclusion, in order to achieve in this industry, the knowledge I have learned could help me in many ways and allow me to be better at my skill in computer knowledge. I hope this could help improve my software development skill and allow me to better understand other parts of this industry.

Ⅱ. MUHAMMAD AZLAN BIN ADZMI

My objective and goal for this course was to gain knowledge in the field of computer and technology. The knowledge taught by the lecture was very useful. It's helping me to understand more about the main concepts of the computer science course. The assigned project also helped me learn about how to apply design thinking to the project development process.

The project helped me to explain each level of design, decision making and problem solving, with a clearer understanding of how the work goes and how design thinking can be incorporated into development. I also learned about how good teamwork helps in solving problems and improved my skills in group management. With the knowledge gained during this project it allowed me to understand the course.

In conclusion, the knowledge and skills I gained are very meaningful and important in my study and career in this field. It will not only enhance my software engineering skills but also expand my knowledge and understanding of other important aspects of the information technology industry.

Ⅲ. SYED RAFID JAMALAULIL BIN SYED RAFIK JAMALAULIL