SECP1513-02 TECHNOLOGY AND INFORMATION SYSTEM

Design Thinking Project Report

Group 4

Product Name: MBTI-Personalized Playlist and Quotes

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TABLE OF CONTENTS

TOPIC	PAGE NUMBER
INTRODUCTION	2
DETAILED STEPS	6
DETAILED DESCRIPTION	8
DESIGN THINKING ASSESSMENT POINT	10
DESIGN THINKING EVIDENCE	12
REFLECTIONS	27
TASK DISTRIBUTION	32
REFERENCES	33

Introduction

1. What is design thinking?

Design thinking is a mindset and method for solving problems and creating innovative solutions, focusing on the needs of people. Unlike other processes, it emphasizes finding solutions rather than just analyzing the problem.

For example, if a team struggles with remote work, design thinking encourages focusing on how to improve employee engagement instead of dwelling on productivity issues.

There are various models of design thinking, usually with three to seven steps. A common and widely used model includes five key stages:

Step	Description
1. Empathize 	Empathy is key to human-centered design. It involves observing, engaging and immersing. Observe : Understand people and their actions in their life context. Engage : Talk to users through planned interviews and quick, on-the-spot chats. Immerse : Put yourself in your user's shoes.

2. Define 	The define mode is about organizing and analyzing your empathy findings to identify key needs and insights, and framing a clear and meaningful challenge to address. It's a stage of focusing, not expanding. The two main goals of the define mode are: 1. Gaining a deep understanding of your users and the design space. 2. Creating an actionable problem statement, known as your point of view based on the users, needs, and insights you discovered during the empathize stage.
3. Ideate 	Ideation is the stage for generating a wide range of creative ideas, focusing on variety and quantity. These ideas form the basis for prototypes to test with users.

4. Prototype 	Prototyping is getting ideas and explorations out of your head and into the physical world. A prototype can be anything physical or visual, from fully-functional models to sketches and mock-ups. Your prototype should match the stage of your project. Early on, keep it simple and quick to create so you can test ideas and explore many possibilities quickly.
5. Test 	Testing helps us improve our solutions. It's an iterative process where we try out simple prototypes in the user's real-life context. Design with confidence, but test with humility.

2. What is an MBTI-Personalized Playlist and quotes?

An MBTI-Personalized Playlist is a music playlist curated to align with the distinct personality traits of each MBTI (Myers-Briggs Type Indicator) type. These playlists often reflect the emotional tone, themes, and genres that resonate with each type's worldview and preferences.

The MBTI framework categorizes people into 16 personality types based on four key dichotomies:

1. **Introversion (I) vs. Extraversion (E)**
2. **Sensing (S) vs. Intuition (N)**
3. **Thinking (T) vs. Feeling (F)**
4. **Judging (J) vs. Perceiving (P)**

To make the experience more immersive, quotes that reflect each MBTI type's core characteristics are paired with these playlists. These can be:

1. Motivational Quotes: To inspire or reflect the type's goals and mindset.

2. Personality Descriptions: Short summaries of the type’s main traits.

3. Song Lyric Quotes: Lyrics that deeply resonate with a type’s way of thinking or feeling.

Examples:

MBTI Type: INFP ("The Mediator")

- Playlist Vibe: Dreamy, reflective, and poetic songs.
- Quote: "We are all stories in the end. Just make it a good one." – Unknown

MBTI Type: ENTJ ("The Commander")

- Playlist Vibe: Bold, motivating, and high-energy tracks.
- Quote: "If you want something you've never had, you must be willing to do something you've never done." – Thomas Jefferson

These playlists and quotes aim to celebrate the uniqueness of each MBTI type, making for a personalized listening experience.

DETAILED STEPS

Our group was assigned a task to create a prototype based on the theme which is Big Data and Artificial Intelligent New innovation. Through extensive discussions and brainstorming sessions, we explored various insights for an innovative solution. One of the key observations we made is the increasing role of music in people's daily lives. Music has become a universal form of expression and enjoyment, with many individuals relying on curated playlists to suit their moods, preferences, or even specific occasions.

At the same time, the popularity of MBTI personality types has grown significantly, with people using it as a tool for self-discovery and understanding others. This trend inspired us to combine these two interests, which are music and personality insights to develop an innovation. Our idea focuses on leveraging Big Data and Artificial Intelligence to create a platform that curates personalized music playlists tailored to an individual's MBTI personality type. By combining psychological insights with music preferences, we aim to enhance the listening experience and create deeper personal connections with music.

Empathize

As our first step, we designed a Google Form to gather insights about the relationship between MBTI personality types and music preferences. The form includes questions about respondents' MBTI personality, their general music preferences, and their level of interest in having a playlist tailored to their specific moods or situations. This step aims to understand the needs and preferences of potential users, providing a foundation for our innovation.

Define

From the Google Form responses, we found strong interest in playlists tailored to MBTI personality types and specific moods. Notably, 46% of respondents strongly liked the idea of combining playlists with meaningful quotes, while 35.6% showed moderate interest.

This highlights the potential for a personalized music experience that integrates MBTI, moods, and quotes. Our problem statement is, "How might we create a system that curates playlists using MBTI personality types, mood preferences, and meaningful quotes to provide a unique and personal listening experience?"

Since we already have a clear problem statement, we focused on brainstorming creative solutions to address it. Our goal is to design a system that combines MBTI personality types, mood preferences, and meaningful quotes to personalize music playlists.

Prototype

In this stage, we finally developed a prototype of our solution based on the ideas generated during the Ideate phase.

Test

In this stage, we completed the design of our prototype and began testing its features. The testing phase involved allowing participants to interact with the prototype, where they could explore the curated playlists tailored to their MBTI personality types and moods. The feedback from this testing phase provided valuable insights into what worked well and what could be improved. This helped us refine our prototype to better meet user needs and ensure a more engaging experience.

DETAILED DESCRIPTION

3.1 Problem

Since the beginning of the Web 2.0 Era, people have been exponentially observed to rely on music on the internet heavily as a tool for emotional connections as well as self-expression. Although there exists many public music platforms like Spotify and YouTube Music which serve to deliver the best up-to-date music as well as underrated ones, users still face a problem when personalizing their own playlist. The problem arises due to the lack of control passionate music listeners have in their choice of music. As a result, it is difficult for them to find music that matches their tastes.

Users might choose to search by asking other users online who have the same taste they do but this approach is not efficient as it is not personalized for their mood and personality as those are different for everyone. These issues generate difficulty for users to enjoy and discover new music that they might never have found, which is a huge need for the people of social media, as they are connected to music more than ever with the increasing integration of music on platforms like TikTok, Instagram, and YouTube. The sheer volume of music available does not make it easier for users, in fact they overwhelm users such that they need to rely on algorithms that fail to capture their emotional needs.

3.2 Solution

In approaching this problem, we chose to utilize Artificial Intelligence as it can use machine learning to recognize patterns and the factors that affect the user's attraction towards certain types of music. Furthermore, AI's access to a wide range of internet data reduces the time and energy for the users in searching. Most of all, using AI means that the personalized music is dynamic and always changing as with the user. The data we gathered for the research includes respondents from Google Forms where we posed questions on their personality as well as their music tastes. Other than that, we also collected information from online papers as well as public personality test websites such as 16Personalities.

3.3 Team Working

Our team has distributed roles for the different parts of the project, which includes research and data collection (Google Forms) and also the designing of the prototype for the software to set a clear image on how the general look is going to be. We also maintained communication by doing regular meetings for updates and decision-making, which also includes online discussions through our WhatsApp group. That aside, we set up a GitHub projects folder for the team members to upload progress on their part of the work. As for the roles themselves, Azdayana worked on the prototype, Jia Ling and Xin Ying worked on the research and data as well as the report alongside Aliah and Umar.

DESIGN THINKING ASSESSMENT POINT

In order to ensure that the assessment is able to accurately evaluate the essential components of design thinking, the process of developing a design thinking assessment requires careful consideration. Therefore, the primary goal of assessing MBTI Personality Playlists with Complementary Quotes is to determine how well the playlists and quotes complement each other.

At the beginning of the stage, the empathize stage, our team members were having the conversation about the ways in which we could develop something as part of our project that would be beneficial to a significant number of people rather than just a small portion of the population who would benefit from it. Then, we noticed that the MBTI is widely used for self-reflection and personal growth, making it an appealing tool for connecting with individuals. Upon closer inspection, we found that most people's playlists reflect their personality. We also believe that adding complementary quotes can create a deeper connection with users, enhance their listening experience, and help them discover new music. So, without hesitation, we created a google form to conduct surveys among the public about their interests to use a playlist and quote combo to tailor their personality. Besides, we also create some voting and Q&A mechanisms to get more insight in-depth.

Second, we proceed to the define phase where we analyze the problem statements which were mentioned by the public users during the empathize phase. We also create an analysis report through google form to have a clearer picture on the users' needs. After conducting research and analysis, we identified several key problems. People often get bored with their existing playlists and seek new music. Additionally, many individuals follow MBTI trends and enjoy relating personality characteristics to themselves. A significant number of users are looking for MBTI-personalized playlists, but such playlists are currently unavailable in the market.

Next, we move to the ideate phase. During ideation, our team members came up with ideas and potential solutions to the issues that were outlined in the define phase. As a result, the assessment point began to perform its function, which consisted of eliminating ideas or solutions

that were illogical or unrelated. By the end of this stage, we had decided on the best course of action in order to resonate with target users.

Last but not least, we proceed to the prototype phase by using the collection of ideas and the potential solutions gathered during the previous phase. We designed our prototype which allows users to explore music variations in tone, mood, and themes for each MBTI type. Our prototype will detect some keywords from the lyrics or search from big data to generate personal quotes for users. This design thinking is a customizable, interactive and versatile tool. Playlists and quotes can be tailored further for specific themes (e.g., productivity, relaxation, relationships) or occasions. It appeals to a wider audience, from casual listeners to those deeply interested in personality psychology.

DESIGN THINKING EVIDENCE

Empathy Phase

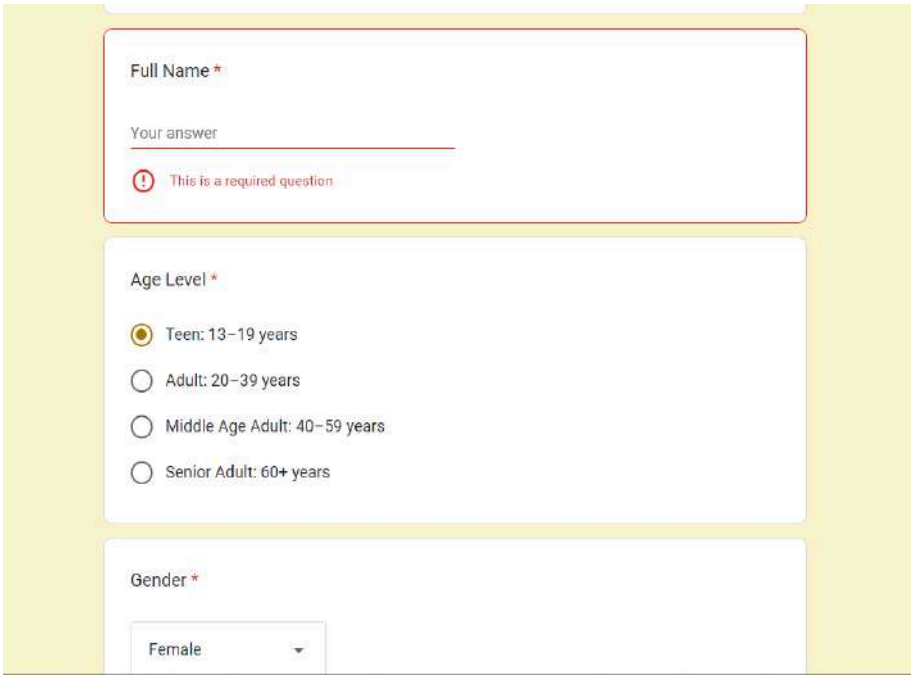
For the empathy phase, we conducted an interview session with three respondents who regularly listen to music in their daily lives. Below is the list of questions asked during the interview:

- How frequently do you listen to music? (Respondent #1)
- Do you depend on music? (Respondent #2)
- What do you think is the biggest problem in finding music? (All respondents)

We also generated a survey using Google Forms to get more information from a wider range of people.

Figure 1.0

Figure 1.0 and 1.1 : Interview with respondents



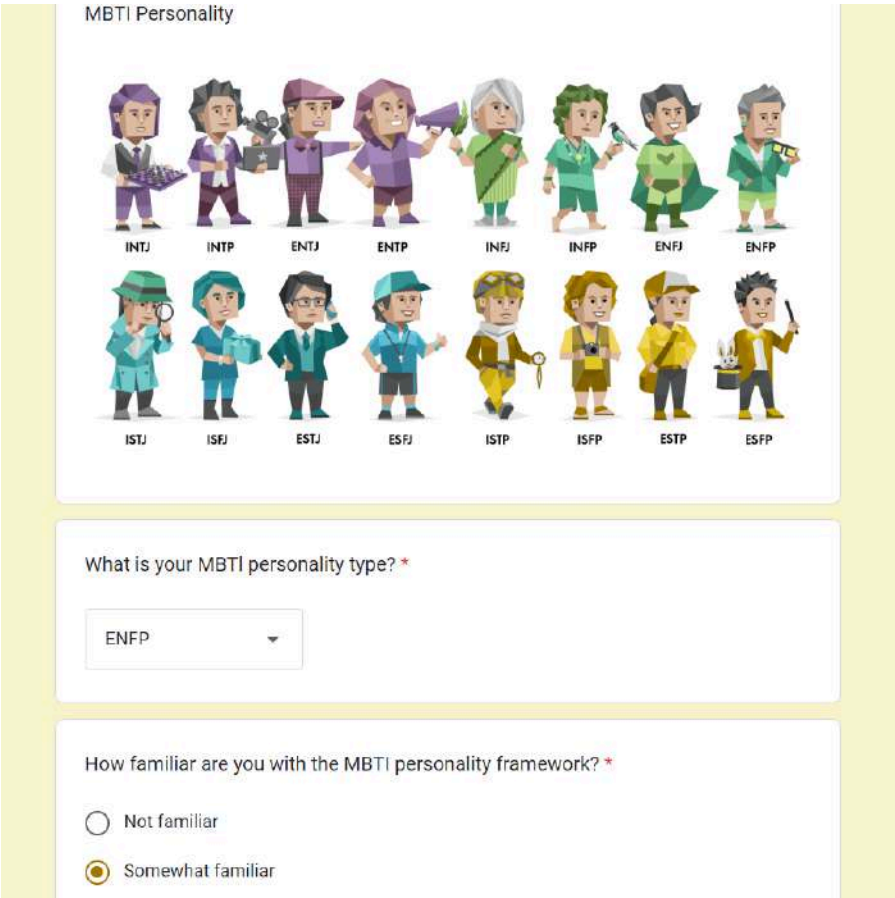

MBTI Personality
INTJ
INTP
ENTJ
ENTP
INFJ
INFP
ENFJ
ENFP
ISTJ
ISFJ
ESTJ
ESFJ
ISTP
ISFP
ESTP
ESFP
What is your MBTI personality type? *
ENFP
How familiar are you with the MBTI personality framework? *
Not familiar
Somewhat familiar

Figure 2.0

What kind of music genres do you enjoy? *

- [ ] Rock
- [ ] Pop music
- [ ] Rhythm and blues
- [ ] Classical music
- [ ] Jazz
- [ ] Electronic music
- [ ] Metal
- [ ] Country music
- [ ] Hip hop
- [ ] Funk
- [ ] Folk music
- [ ] World music
- [ ] Disco
- [ ] Other:

How often do you listen to music? *

- ◯ Daily
- ◯ A few times a week
- ◯ Occasionally
- ◯ Rarely

Do you prefer playlists tailored to specific moods or situations? *

- ◯ Yes
- ◯ No
- ◯ Sometimes (depends on the situation)

What factors make a playlist resonate with you? *

- [ ] Lyrics
- [ ] Melody
- [ ] Energy level
- [ ] Emotional connection
- [ ] Other:

Figure 2.1

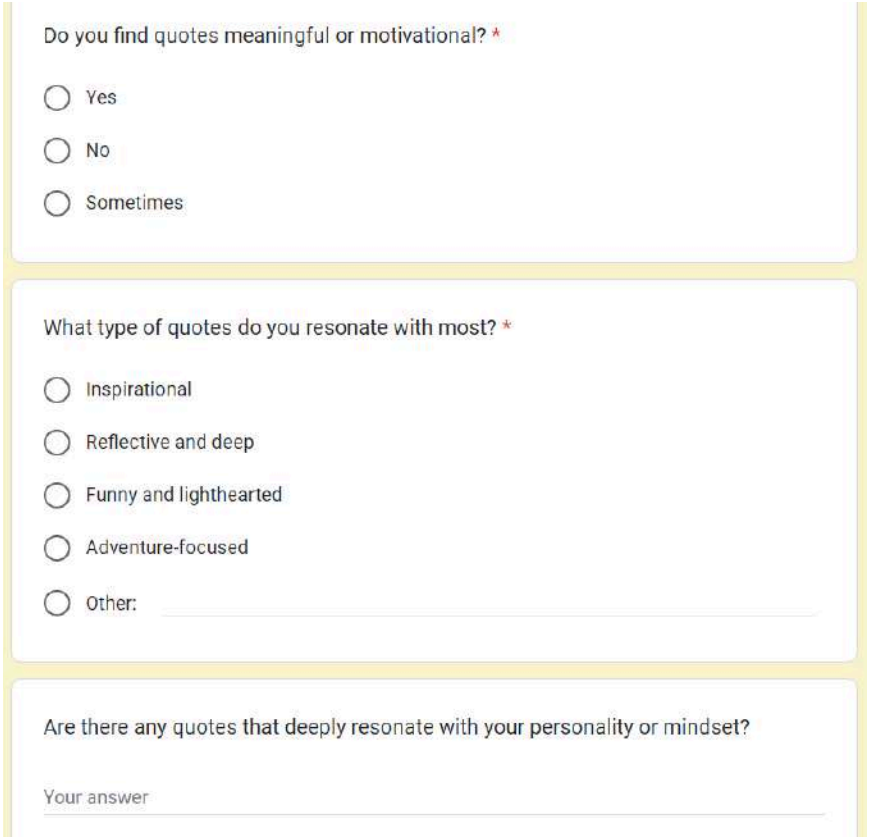


Figure 2.2

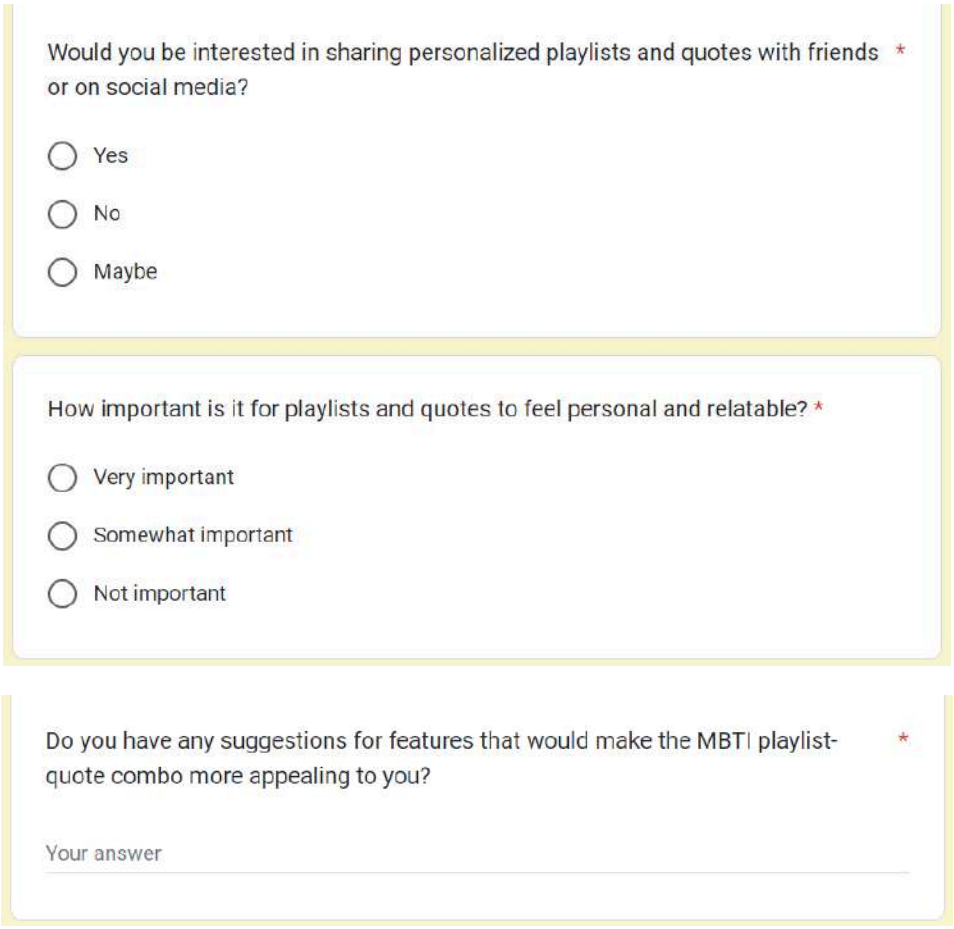


Figure 2.0-2.3: List of questions in Google Forms

Define Phase

The define phase is where we accumulated all the information obtained from the interviews as well as the Google Form. The results allowed us to analyze and understand the problems faced by users better so we could come up with solutions that meet their needs.

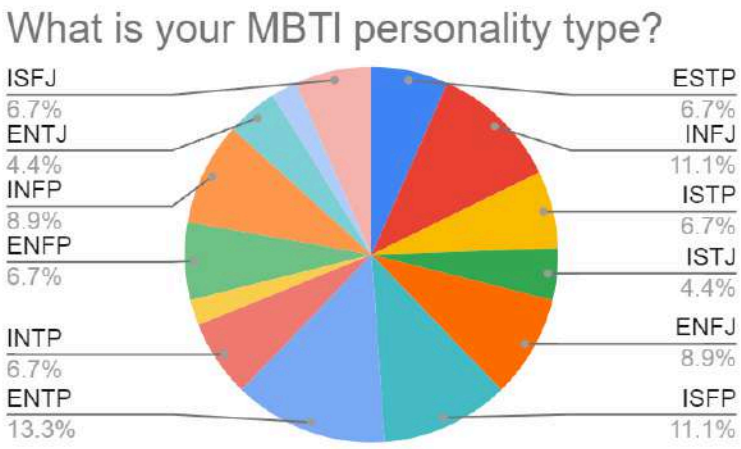


Figure 3.0

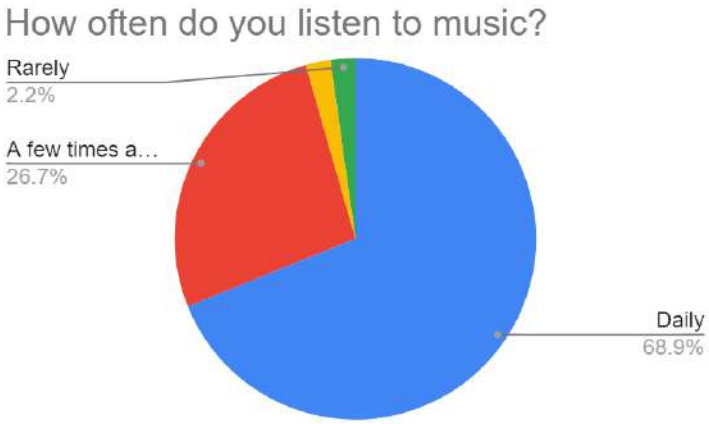


Figure 3.1

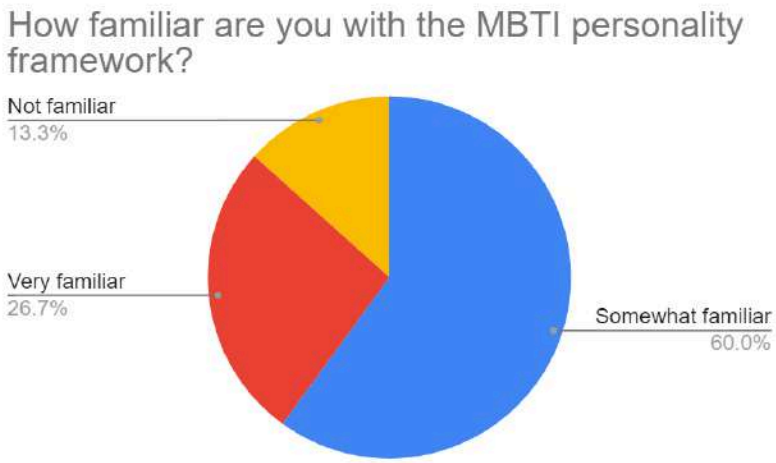


Figure 3.2

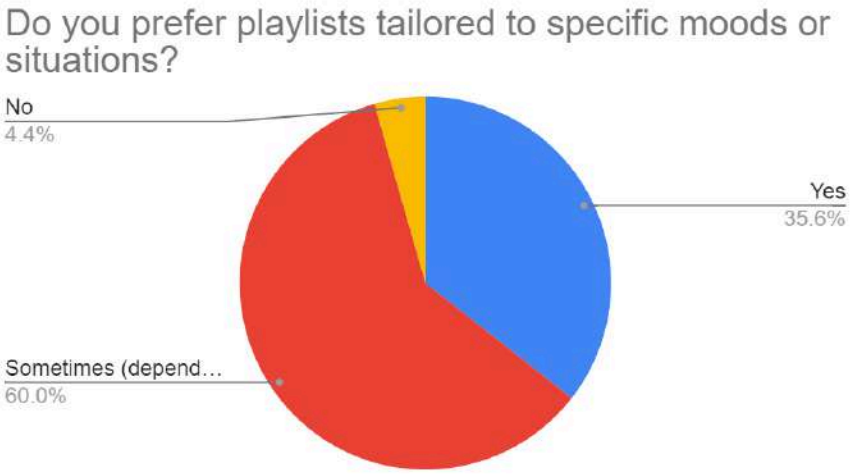


Figure 3.3

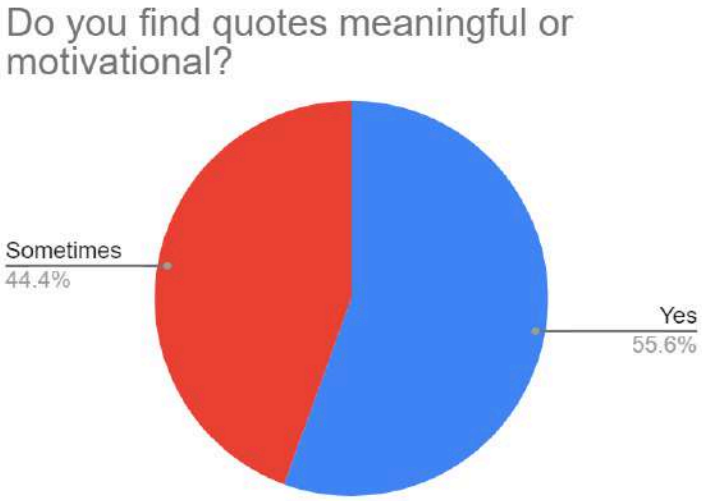


Figure 3.4

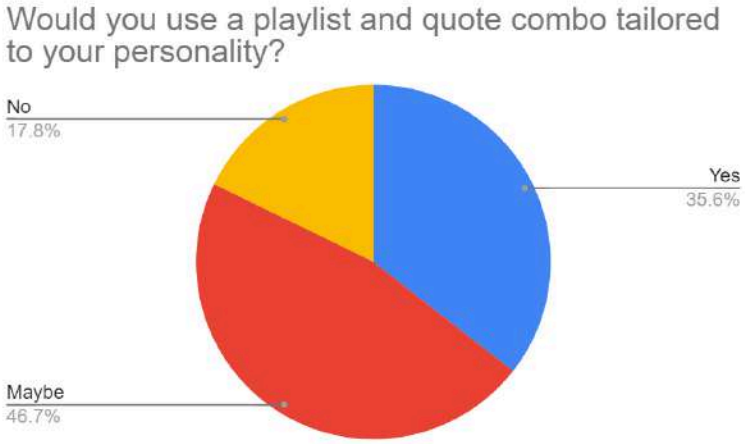


Figure 3.0-3.5: Results gathered from Google Forms

Ideate Phase

During the ideate phase, our team discussed finding the most efficient solution to the problem presented to us from the results above. After a session of brainstorming, we came up with the solution to implement Artificial Intelligence (AI) with the MBTI Personality Test to design a tool that can help users find music catered towards their personality.

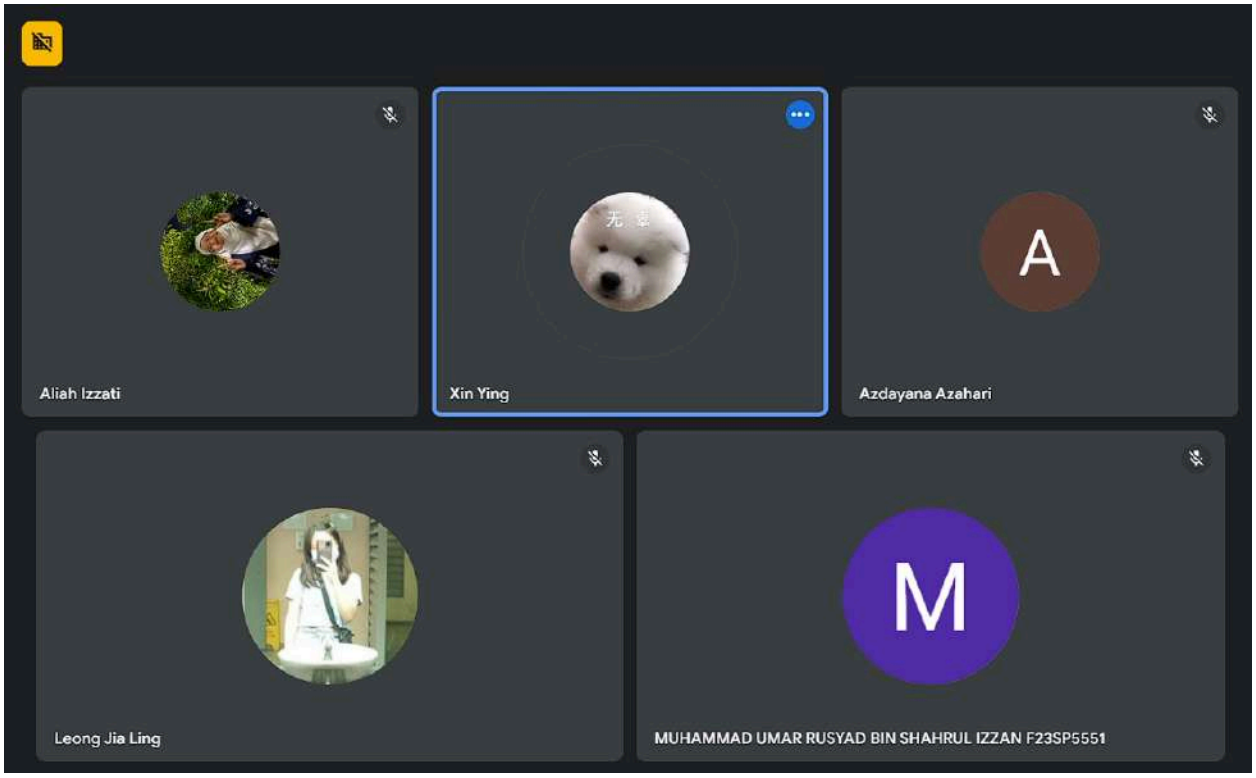
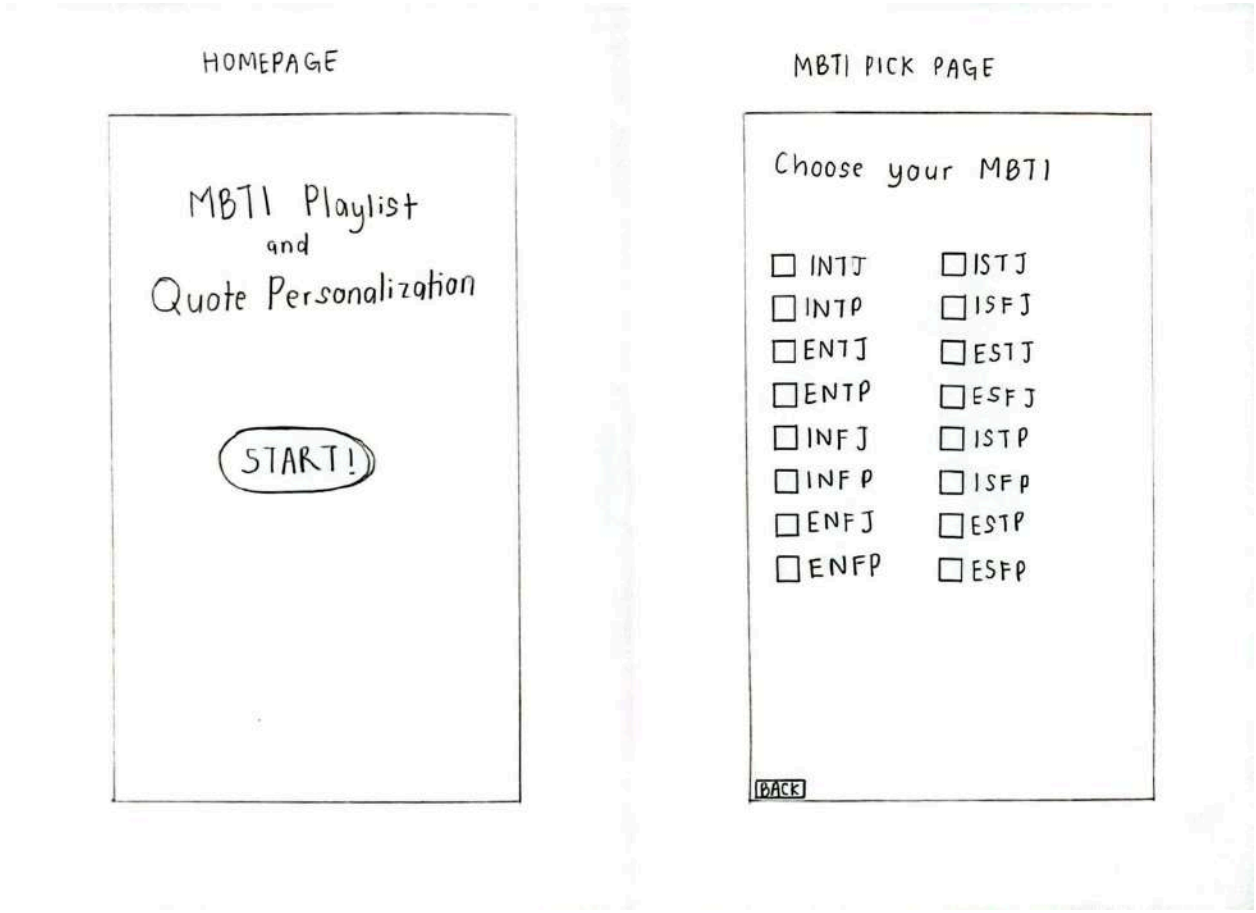


Figure: Group meeting during the ideate phase

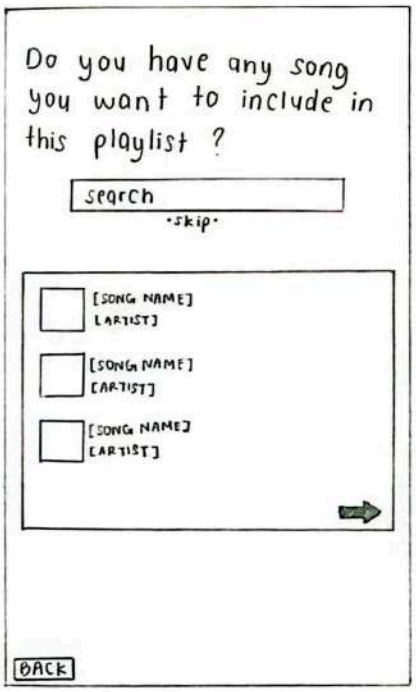
Prototype Phase

During the prototype phase, we created a prototype of the tool mentioned during the ideate phase based on the results from the define phase. The prototype is shown below:

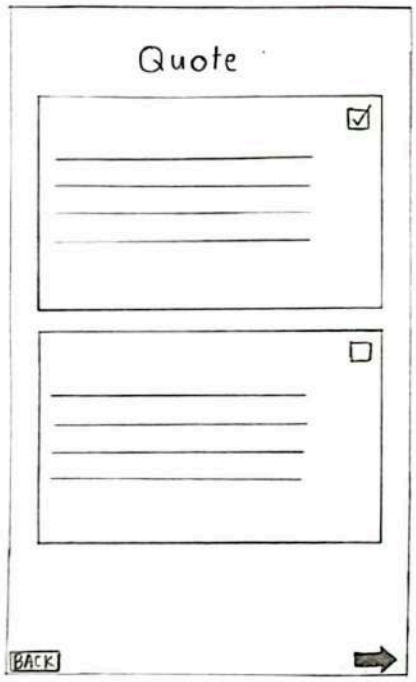


FEELINGS PICK PAGE

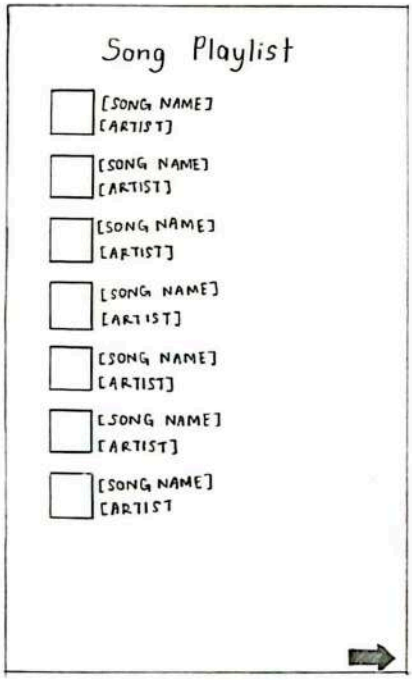
CUSTOM SONG PAGE



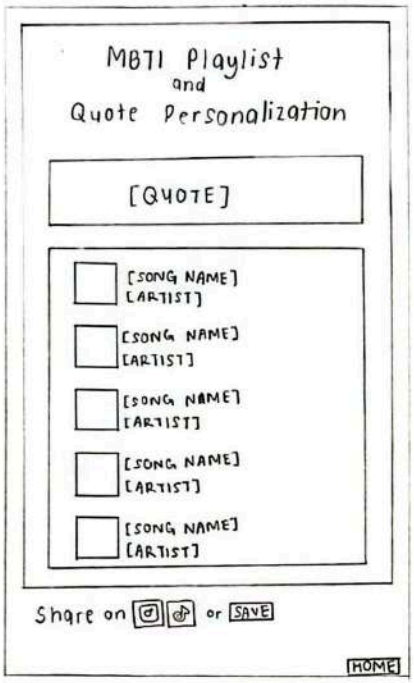
QUOTES PAGE



PLAYLIST PAGE



SHARE PAGE


MBTI Playlist
and
Quote Personalization
[QUOTE]
[SONG NAME]
[ARTIST]
[SONG NAME]
[ARTIST]
[SONG NAME]
[ARTIST]
[SONG NAME]
[ARTIST]
[SONG NAME]
[ARTIST]
Share on
or
SAVE
HOME

Prototype Testing Phase

During the prototype testing phase, we had a user try it out and share their thoughts. They gave positive feedback, were impressed with how it worked, and appreciated the design and features. Their reaction showed the prototype met their expectations and made a great impression.

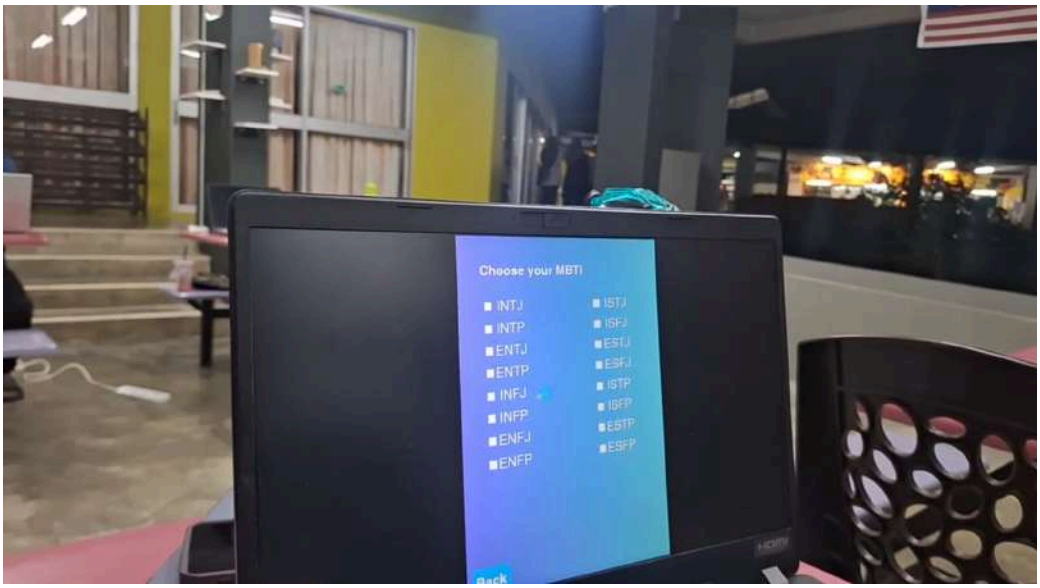


Figure: A user testing the prototype (digital version)

Figure: Users testing the prototype (physical version)

REFLECTIONS

TAY XIN YING (A24CS0200)

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

As a Computer Science (Data Engineering) student, my dream is to become a skilled data engineer who can design and implement efficient systems for managing and processing vast amounts of data. Besides, I hope to contribute to creating data-driven solutions that make a positive impact on society.

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

The design thinking project helped me improve my critical thinking and problem-solving skills. It taught me how to identify problems and come up with solutions that focus on the needs of users. These skills will be useful in my future career, as I'll be able to apply the design-thinking steps to solve problems and create better solutions based on users' needs.

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

First and foremost, I need to enhance my communication skills, as effective collaboration is crucial in this industry to achieve the best outcomes. Additionally, staying updated with new technologies is key to boosting my personal business value and adapting to industry advancements. Lastly, I plan to strengthen my foundational programming knowledge by consistently applying it in real-world scenarios and challenging myself to think critically and rationally, ensuring continuous growth and improvement in my skills.

AZDAYANA BATRISYIA BINTI AZAHARI (A24CS0230)

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

I have always enjoyed thinking of ways to solve real-world problems. Entering this course makes what I enjoy attainable by learning how to solve real-world problems using data. I want to learn how to build systems that can analyse and manage data efficiently. Entering the workforce in the future, I hope to work on improving issues that will help society.

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

This project helps me by experiencing real-world problems and finding creative effective solutions. It supports my goal of helping society by encouraging innovative ideas that are impactful.

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

I plan to strengthen my foundation in data engineering by understanding and mastering the core concepts. Not to forget to improve my problem-solving and teamwork skills, while staying active in being updated with the industry trends to prepare myself for opportunities in the future.

NUR ALIAH IZZATI BINTI AZHARI (A24CS0154)

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

My dream is to excel as a data engineer and use my skills to help society solve complex problems by creating efficient systems and producing meaningful solutions. I also hope to work or collaborate in the field of aircraft or aviation, applying my data engineering skills to innovate and improve systems in the industry.

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

This design thinking project helps me strengthen my problem-solving skills. By understanding the user's problems and needs, it allows me to develop practical solutions that can be applied to real life challenges.

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

I plan to improve my problem-solving skills and communication skills as these two skills are crucial to improve my potential in the industry. Besides, I plan to embrace lifelong learning by continuously expanding my knowledge and skills in emerging technologies.

MUHAMMAD UMAR RUSYAD BIN SHAHRUL IZZAN (A24CS0283)

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

To master data engineering, become an expert in the field, and use that knowledge to solve major real-world problems. Maybe work at a big company or contribute to impactful projects. Plus, to balance work and life so I can enjoy what I do.

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

Design thinking helps align my goals by teaching me to approach problems creatively and user-focused. It encourages critical thinking, collaboration, and iterative problem-solving, which are essential in data engineering. By applying this mindset, I can design better systems, solve complex issues more effectively, and create solutions that truly meet user needs. It also keeps me adaptable and innovative, both of which are key to succeeding in this field.

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

To improve my potential in the industry, I plan to master technical skills like Python, C++, SQL, while also gaining hands-on experience through projects and internships. Focusing on soft skills like communication and problem-solving will also ensure I'm well-rounded and prepared for real-world challenges.

LEONG JIA LING (A24CS0104)

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

My goal regarding my course which is Computer Science (Data Engineering) is to become a leader in Data and AI Integration. My goal is to lead innovative projects that integrate data engineering and AI, building systems that solve critical real-world problems (e.g., healthcare insights).

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

The design thinking project involves building quick prototypes to test and refine solutions. It gives a big impact to me which encourages iteration and learning from feedback, ensuring my systems are robust and effective. Besides, the ideating innovative solutions promote out-of-the-box thinking, leading to groundbreaking contributions in my field.

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

Firstly, I need to strengthen my technical skills by exploring databases. I can also pursue certifications in relevant fields (e.g., Microsoft Azure Data Engineer Associate). Second, I need to build real-world experience by gaining hands-on experience in a company that works on large-scale data engineering problems. Last but not least, I also need to sharpen problem-solving & soft skills so that strong teamwork and communication skills will be built in the future.

TASK DISTRIBUTION

No	Member	Task
1.	**MUHAMMAD UMAR RUSYAD BIN SHAHRUL IZZAN (A24CS0283)**	● Report Writing (Detailed Description) ● Video
2.	**LEONG JIA LING (A24CS0104)**	● Report Writing (Design Thinking Assessment Points, Design Thinking Evidence) ● Data Collection
3.	**AZDAYANA BATRISYIA BINTI AZAHARI (A24CS0230)**	● Prototype Design ● Prototype Sketch
4.	**NUR ALIAH IZZATI BINTI AZHARI (A24CS0154)**	● Report Writing (Detailed Steps) ● Data Collection
5.	**TAY XIN YING (A24CS0200)**	● Report Writing (Introduction) ● Presentation Slides Preparation ● Data Collection

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Video Link : https://youtu.be/EwoU2MK75xU?si=mWZAQs8yDTNJb-BZ