

# IM3080 Design and Innovation Project (AY2023/24 Semester 1)

## Individual Report

**Name** : Gabrielle Nicole Suharjono

**Group No** : 4

**Project Title** : JamStream

### Contributions to the Project

#### 1. Skill Development Facilitation:

In the early stages of the project, I recognized that most of our team members were new to app development, so I took the initiative to facilitate the skill development of my group mates in frontend development and API integration.

Together with Aftanza, we shared resources like links to YouTube courses and reference projects and provided hands-on guidance to ensure a solid foundation in the required technologies.

#### 2. Initialize style guide, page routing, and Spotify API integration

As my group mates familiarized themselves with the tools, I proactively established the initialization of the project:

- the color palette and sizing constants
- reusable components, like StyledText.jsx
- managing route navigation with React Navigation (Navigation.tsx)
- templates on data fetching with APIs
- state management storage with Zustand (useProfileStore, useMusicStore, etc)

#### 3. Code and develop the essential component of the application, Music Player

My primary focus on this project was on the music player component. Creating this component required working with audio files and managing numerous asynchronous behaviors, with its unpredictability and delays. The functionality that I worked on covers:

- creating sound object from url source
- playing and pausing audio
- handling next and previous song
- handling sliders to change audio position
- repeats song when user preferred
- syncing music player across multiple user's devices

#### 4. Debugging and Merging Conflicts

One of the most common difficulties faced by my group mates was identifying the source of errors in their code. I dedicated a significant amount of time to reviewing their code, correcting incorrect logic, and incorporating error detection.

## Reflection on Learning Outcome Attainment

Reflect on your experience during your project and the achievements you have relating to at least two of the points below:

- (a) Engineering knowledge
- (b) Problem Analysis
- (c) Investigation
- (d) Design/development of Solutions
- (e) Modern Tool Usage
- (f) The Engineer and Society
- (g) Environment and Sustainability
- (h) Ethics
- (i) Individual and Team Work
- (j) Communication
- (k) Project Management and Finance
- (l) Lifelong Learning

### Point 1: **Design/development of Solutions**

This project presented an opportunity for me to design and develop a comprehensive solution—it was different from my usual focus on smaller-scale personal projects. While my personal projects typically involve developing a few functionalities, this project required creating a fully functional application. This encompassed aspects such as authentication, data fetching, communication with a database, music player integration, and real-time database syncing. The broader scope challenged me to consider and implement a holistic solution. It's not just about writing code for a standalone feature; it's about understanding the interconnectedness of different elements and ensuring they work seamlessly together. This project has definitely expanded my skills in creating and managing diverse components of a full-fledged application.

### Point 2: **Modern Tool Usage**

I have always been passionate about the software development industry. What excites me about software development is the never-ending learning journey. Whether it's mastering the latest tools and frameworks, or exploring design trends, I thrive on the process of continuous improvement and new challenges.

This project provided me with the opportunity to explore technologies I hadn't used before, such as Expo Audio, React Navigation, and Toaster libraries. Delving into the world of asynchronous behaviors at a deeper level was particularly enlightening. Prior to this project, I had never worked with an audio player that demanded asynchronous functions for every interaction. Engaging with these technologies not only expanded my technical skill set but also deepened my understanding of complex concepts, especially in the realm of asynchronous behavior.

### Point 3 and 4: **Problem Analysis and Investigation**

While working on this project, I encountered challenges I hadn't faced before, such as updating a state when a page unmounts. Resolving this issue required exploring multiple workarounds, seeking references from similar projects that faced the same problem, and examining solutions used by others.

One key distinction between mobile and web applications is how pages are loaded. Unlike web pages where leaving a page typically results in the unmounting of all components, mobile applications may retain certain components even when navigating away. This presented a unique set of challenges, requiring myself to delve into the behavior of components in a mobile app and learn how to find solutions for such scenarios. Through this process, I developed valuable skills in investigating component behavior within mobile applications and honed my ability to find effective solutions to previously unfamiliar problems.

### Point 5: **Ethics and Communication**

Working with a team of 10 peers on this project has been a valuable learning experience, highlighting the importance of cultivating a collaborative and supportive team environment. As we recognized that some group members were new to app development, it was clear that each of us had a responsibility to share knowledge and mentor our teammates, especially in areas where they had less experience.

One challenge I faced was the temptation to rewrite code written by my group mates rather than tidying it up, which could potentially hinder my peers' learning opportunities. To address this, I found it helpful to take a break when I encountered such struggles. I ensured effective communication by sharing every fix or change I made to others' code. This way, my peers could learn from the adjustments, fostering a collaborative atmosphere that encourages growth and skill development among the entire team.

I also learned how to communicate effectively when answering my groupmates' questions about frontend development. Sometimes, I understood a concept but found it hard to explain it to other people. This project provided an opportunity for me to communicate more clearly and offer explanations that are easier to comprehend.