**IM3080 Design and Innovation Project (AY2023/24 Semester 2)**

**Individual Report**

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Group No: 01

Project Title: Moodify

**Contributions to the Project** (1 page)

[Week1 Idea brainstorming]

* Contributed different software development ideas, Language learning APP with personal vocab dictionary feature, Food delivery APP with group order feature, Room layout planner with AR visualization feature, Online shopping APP with family wallet feature.

[Week2 UI design]

* Designed a 5-colored color palette,designed a hand-drawn UI design for four different screens: HomeScreen, ProfileScreen, LoginScreen, MusicPlayerScreen
* Collaborated to complete the Figma user flow (navigation between screens)

[Week3 Account Screen]

* Designed and coded the basic layout of user profile screen, elements including buttons and user profile imageholder

[Week4 Account Screen]

* Added icons for each button (local source), enables navigation for each button
* Coded profileInfo Screen, enables profileInfo editing by user

[Week5 Settings/Following&Follower Screen]

* Merged all frontend screens in one branch to test, Added navigation between screens
* Coded settings screen, enables toggle buttons for future use
* Coded followings and follower screen, showing a list of user names with profile photo

[Week6 Music Player Screen]

* Coded music player screen, enables spinning album cover, play/pause/previous/next buttons, Changed UI style for Account Screen

[Week7 API integration]

* Integrated Spotify API into Account Screen, added in function to fetch user token and retrieve account info

[Week8 directDiary Screen]

* Coded the basic layout of directDiary screen: calendar format, designed the UI style for directDiary screen

[Week9 Merging and preparation for firebase]

* Merged with other screens to test API calls
* Implemented necessary configuration for Firebase integration for future use

[Week10 RecomScreen]

* Implemented navigation (press any date)and passing of timestamp value for directDiary
* Linked diary with Firebase, screen can now display the details of recommended song with the retrieved timestamp from directDiary Screen

[Week11 RecomScreen]

* Work with backend team to display the embedded music player in RecomScreen, screen can play the recommended song of a given day with play/pause buttons

[Week12 Poster and logo design]

* Designed first version logo using Procreate and Adobe Illustrator
* Designed first version poster using Procreate
* Video recording

[Week13 Report diagram]

* Completed use-case diagram for report using Canva
* Completed ER diagram for report using Canva

**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:**

1. Engineering knowledge
2. Problem Analysis
3. Investigation
4. Design/development of Solutions
5. Modern Tool Usage
6. The Engineer and Society
7. Environment and Sustainability
8. Ethics
9. Individual and Team Work
10. Communication
11. Project Management and Finance
12. Lifelong Learning

Point 1: b) Problem Analysis

Given the problem of making innovative improvements on current mobile applications before idea brainstorming, I first narrow down the scope to Android mobile application as most of us are more familiar with utilizing Android studio and Android development framework. Then I defined ‘making innovative improvements’ as implementing a feature that can enhance user experience by applying cutting-edge technologies, such as VR, AR and AI. I then proceeded to research on the applications we used in our daily lives, including food delivery APP, online shopping APP, online learning APP etc.. I’ve chosen a base APP for each of the categories for first stage development reference. For each of the APP I researched, I first understood the basic features of the APP, experience the functionalities from a user’s perspective, then I browsed through the respective APP official website to look for the latest features, finally, I’ll pay attention to the UI scheme used by the APP. Moving on the technical-related analysis, I’ll first search for whether there is official APIs available for respective APPs, if not I’ll examine the usability of non-official API libraries. Tech stack information such as programming language and database platforms used were also gathered. All the information collected were then summarized in the table below (Figure 1). Through comprehensive analysis of the problem, I had 4 ideas to contribute during Week 1’s group meeting. Though my ideas were not chosen eventually, I had a clear understanding of how the preparatory stage of software development process should be. This practical process also aids me to apply what I have learnt in IE4001 software Engineering module about problem formulation.

图形用户界面, 应用程序, 表格, Excel

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Point 2: e) Modern tool usage

Throughout the development process, I have utilized modern tools of different categories. First category being the design-related software. Starting from very beginning, the prototyping stage, the team used Figma to design the desired user interface of the APP. I was mainly responsible for adding interactive elements such as buttons and clickable titles to link navigation between different screens in the prototype. Since this was the second time I utilized Figma, I was not very familiar with how to use it. Hence, I watched several tutorial videos about Figma, and referred to a few other designer’s Figma prototype design. I also managed to find several free Figma icon libraries which were eventually used in our APP. Additionally, I also utilized Adobe Illustrator for our font logo design (1st version, Figure 2), poster design (1st version, Figure 3). Effects such as 3D layered effect on font and color gradient were applied. Functionalities and techniques of Adobe Illustrator I have learnt from DA2002 module were practically used through design process in this project. Furthermore, Canva was used for diagram drawing, poster and final presentation slides. Assets in Canva were effectively used to provide visual aids for audience. Lastly, Procreate was used for logo design (1st version, Figure 4) and UI drawing in Week 2 (Figure 5). The various brushes provided by this software effectively enhanced aesthetics of my design.

The second category of modern tools used is AI tools. It is very common to utilize ChatGPT nowadays for any problem-solving cases. In my own development process, I used it mostly for debugging or when I’m not sure which built-in function should I use to help with implementation of a specific feature. For example, I have asked ChatGPT for help on the spinning album cover part, and received reply from it that Animated library can be used. This saved plenty of time to read through every line of documentation to find the appropriate built-in function to be used. I have also noted that the information given by ChatGPT is not always correct and accurate. Therefore, while embracing the convenience of ChatGPT it offers us, it is also important to carefully examine the content it gives us each time.

Overall, usage of modern tools not only aids me to provide visually appealing design to enhance the attractiveness of our application in the marketing aspects, but also increased productivity and efficiency of coding process.

Point. 3: f) Individual and teamwork

As a group project, the importance of teamwork is undoubtable. Starting from the first week, we decided to meet once a week to share about individual progress as well as discuss about goals for the coming week. This ensures everyone is on track and the project is progressing appropriately. We also split the role into two teams: frontend and backend. As one of the frontend members, I was in charge of the UI layout as well as API integration of some screens. When I finish designing the layout and navigation, I collaborated with backend team regarding linking with Firebase and API usage. The collaboration between frontend and backend team was not just limited to this, when one team encountered a bug, members from another team would also offer help to solve. Approaching the final stage of the project when several deliverables were to be submitted, work were equally split among us. As I was taking IE4001 Software Engineering module this semester, I took up the job of drawing diagrams for the report. Additionally, as me and another member had some ideas on poster and APP logo, each of us designed one set of design and her design was selected at the end. Throughout the project, our team collaborated well, and each member was contributing in an area that he/her expertized on. However, if there was one thing that could be done better, it would be the version control and merging of branch in different stages. Since there was no one being assigned to merge versions when necessary, it was quite messy at the beginning when each of us had more than two branches. It was difficult to test whether other member’s part integrates well with each of our own part. Additionally, merging branches was very time-consuming, in one of the weeks me and the other member both were trying to merge the frontend branches concurrently, greatly affected the overall productivity of that week. This problem was solved when project had about to come to an end, one of the member took up this role to help with resolving merge conflicts and handling pull requests. I believe it could be more efficient if there could be one member in charge of version control throughout the project.

Point 4: j) Communication

The team was having frequent discussion even after the two meetups every week, usually in the Telegram group chat. When someone was unclear about the code or functions of another, we would seek help immediately. Another mode of communication was the commit message every time we modified and pushed our new versions. I always specified the date and content of changes in the message for the ease of other’s reference. As mentioned in Point4, we would seek help from one another if encounters bug especially during integration between backend and frontend. The communication channels we utilized were Teams and Google classroom. By sharing our screens to other members, it allowed everyone to see the output from changed code immediately and increased productivity. Overall, I believe everyone in the team was communicating effectively by utilizing various channels.

Appendix 1: Designs

徽标

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Figure 2 Font logo

图片包含 文本

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Figure 3 Poster

图形用户界面, 文本, 应用程序

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Figure 4 Logo

图形用户界面, 应用程序

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Figure 5 UI design