

**MECHANICAL ENGINEERING
DEPARTMENT
POLYTECHNIC UNGKU OMAR**

PROPOSAL: PROJECT 2 - DJJ 5141

**ONLINE STUDENT'S PROJECT
MANAGEMENT SYSTEM**

Group: DEM5C-G6

BY

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CHAPTER 1: INTRODUCTION

1.1 Introduction

The online student's project management system is a cross-platform application that allows students, supervisors, and project coordinator to interact with each other. The application will only be available on 1 platform which is Android.

The main purpose of this application is to enlighten the burden of fellow lecturers and students in their final year project. On the other hand, this application will replace other applications such as WhatsApp, Google Classroom and etc. in managing the project. The reason that it will replace other applications is because the application has more functions that is design specifically for final year project related task.

There are many applications available in the market ever since it first debut in July 2008, and ever since then it has become even more advanced and easier to obtain, which is why one of the best way to assist fellow lecturers and students in their final year project is to through an application that everyone gain access easily through their fingertips.

1.2 Problem Statement

Based on the survey, many students feel that it is a hassle and a waste of time to purposely set a time and day to meet up with their supervisor every week just to update on their progress. They feel that it is inconvenient for them to travel all the way just for a simple task mostly because they either have no transportation or live quite far away. After further surveying, data showed that a lot of students get confused about where and how to get the project guidelines and forms as most of them could not receive the message clearly during the seminar with the project coordinator.

Other than that, after discussing with the project coordinator, it can be said that even the project coordinator is facing problems with keeping track of every students that are involved with project 1 as there is too many students. Currently the project coordinator uses Google classroom to inform students about new information and announcement however, it is limited to not exceed 250 participants, therefore not everyone that is involved with project 1 can join the classroom and receive any information on time.

1.3 Objectives

The objectives for the project are as below: -

- Designing an intuitive and responsive user interface which helps to complete the project efficiently and effectively compared to existing application.

1.4 Scopes

The scopes for the project are as below: -

- The designing of the application's user interface is done using Adobe XD and Adobe Photoshop.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter will cover all the procedures of developing the application and other applications that are relevant to the final year project. Procedures will be broken down into four parts which is application designing, application developing, application improvement, and application data analysis. Even though there are various project managing application, most of them lack the features needed for a final year project, and those that meet the requirement often require payment.

2.2 Study of the of design software (Adobe XD)

Software design is the process by which is an illustrator program creates and visualizes a function or a feature in an early-stage development of software. Software design may refer to either "all the activity involved in conceptualizing, framing, implementing, commissioning, and ultimately modifying complex systems" or "the activity following requirements specification and before programming, as a stylized software engineering process. Thus, a proper software design can be achieved by using the best design software that is available in the market right now such as Adobe XD.

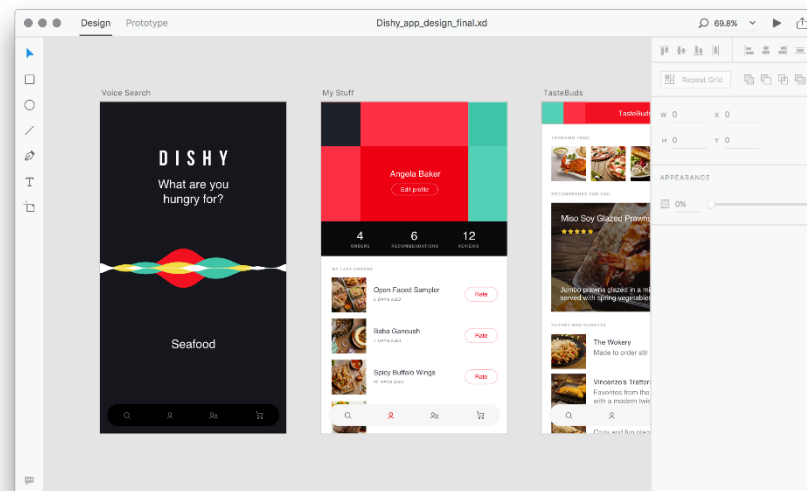


Figure 2.1

Adobe XD is a vector-based tool developed and published by Adobe Inc. for designing, lightweight vector graphics editor and prototyping user experience. The software is available for macOS, iOS, Windows and Android. Adobe XD supports vector design and website wireframing and creating simple interactive click-through prototyped combines lightweight layout and drawing tools with a simple button linking to different artboards to simulate navigating through an app or site. The results can be published online directly from the application as an interactive presentation, making it quick to share with project partners or clients. Adobe XD allows users to create user interfaces for mobile and web applications. XD offers many features that allow creative design and functionality. Adobe XD comes with UI kits for Apple iOS, Microsoft Windows, and Google Material Design already built-in.

Based on this, to create a revolutionary user interface (UI) requires a strong foundation. That's where Adobe XD plays a major role in designing our application. There are a lot of developers have created UI kits specifically for this software which helps us to implement design features such as in-app navigation, buttons, tabs, text files and much more. This software has a good integration with Android Studio in terms of transferring design into it easily. Therefore, there are no worries of redesigning the entire designs which has been illustrated in Adobe XD.

To exhibit the designs, there is a feature in Adobe XD called desktop preview which shows the prototype of the design which can be used like normal ordinary application. The way stated helps us to give a clear view of how the design works in normal usage and if there are any errors or design flaws, it can be corrected easily in an instant.

Thus, it can summarise that using Adobe XD is the most brilliant and efficient way to design the user interface in terms of dark mode and material design of the application.

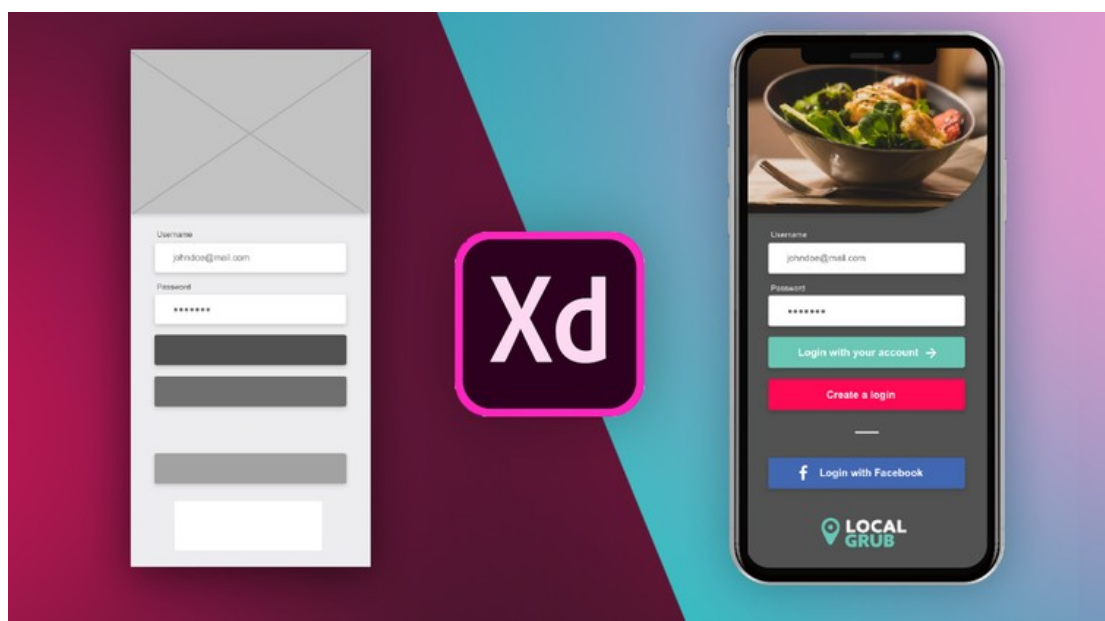


Figure 2.2

2.3 The Study of User Interface (UI)

In this modern age, telecommunication devices like smartphones play a major role in human life. To use a smartphone requires applications and those applications need a user interface to operate it. So, what is User interface? User interface (UI) is the design language of interaction and looks in all applications, software, and programs in smartphones and computers. The ultimate aim of the user interface is to maximize the usability and productivity of the user experience. Thus, what makes a good creation of user interface? Well, a good UI makes it easy for users to use their smartphone what they want to do, either requesting information or presenting information clearly and understandable to the users. A well communication between the application of the smartphone and the user proves that it has the best UI design. They are few criteria that accomplish a good UI.

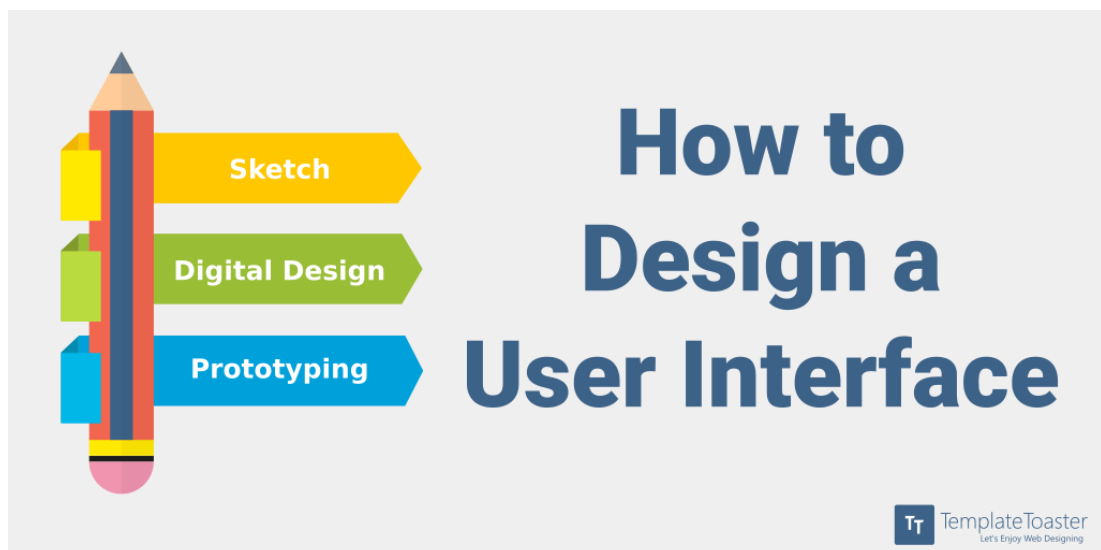


Figure 2.3

Firstly, a good UI requires a clear and understandable way of showing the information. Based on this, it helps to prevent users from detecting mistakes and makes important information obvious which contributes to simplify learning and usage. Next, a simple

and consistent is a must for a good UI. It helps to illustrate a uniform look that balances between increasing functionality and not affecting the simplicity of the application. Besides that, it also allows the user to apply their previously experienced when using the application. After that, a good UI must be direct and user-controlled. The UI must provide the users to start and control all actions of the application and they must see the visible cause and effect relationship between the actions that they take on the screen. This makes users feel that they are fully in control of their UI in the application. Lastly, every UI in the application must-have section for users to provide feedback. If anything in UI design makes the users to feel unhappy or uncomfortable when using the application, the section helps them to complain or suggest the improvements or solutions that they want that needed to be solved immediately and increase the productivity when using the application.

Finally, it can be summarized that a good user interface is compulsory for every application in a typical smartphone. Based on this, a good UI is the key point of usability and productivity of the project.

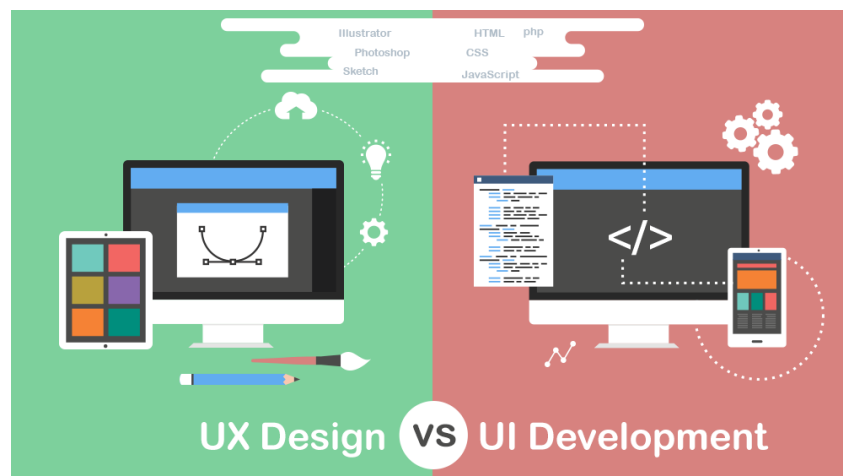


Figure 2.4

2.4 The Implementation of Material Design with Dark Mode in Designing User Interface (UI)

In this evolving technology world, the way of implementation of user interface is the foundation of an application in a typical smartphone. In the early days, most designers use schemophoric design to make the icons or designs to look like real objects when using the application. This was first started in 2007 when the CEO of Apple Inc., Steve Jobs announced the first touch-based smartphone to this world, the iPhone. He showed how the interaction of an application which is being control by his touch. Thus, the application has its user interface which is specifically designed for touch-based and it uses schemophoric design.



Figure 2.5

In 2013, Apple Inc. releases iOS 7 and macOS Yosemite which shows the transition from schemophoric design to a uniform flat design. This was a game-changer in the designing aspect of the tech industry and everyone take note of this and followed the footsteps of Apple. For example, Google LLC releases Android 5.0 (Lollipop) which features a Flat design also known as Material Design. It illustrates the icons and user interface to look like coloured papers which are aligned together to form multiple

designs with shadows to give a depth feel in the user interface of the application. Most applications were having a white user interface as their foundation. But after that, most users start to complain that they are bored of seeing the same white user interface for a long period and they want something new. And the new was the introduction of night mode also known dark mode in the user interface of the application.

So basically, what is a dark mode? Well, it is a dark colour scheme that uses light-coloured text, icons, and graphical user interface elements on a dark background. Dark mode became a user experience option that uses an inverted colour scheme to provide a greyscale version of an application. So, what are the benefits of using dark mode? Well, it requires less energy to display the content on some display technologies such as OLED (Organic Light Emitting Diode) and IPS (In-Plane Switching) display panels. An OLED panel will consume around 40% of the power of an IPS panel displaying a primarily black image, for the most of images it will consume 60–80% of the power of an IPS panel. This shows that dark mode helps to reduce power usage in these displays.

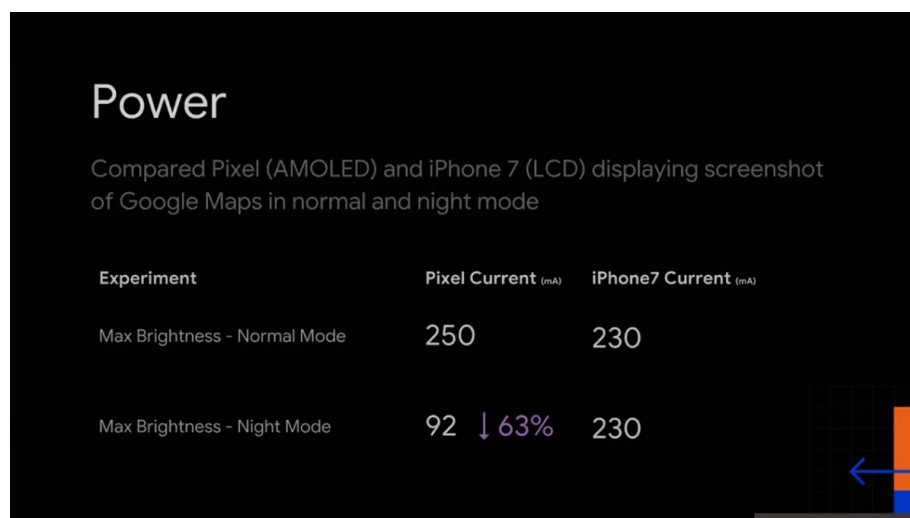


Figure 2.6

In a survey conducted by Google LLC by implementing dark mode on YouTube, they found out that 80% of YouTube users prefer to enable the dark mode option in their YouTube settings. Even other big tech companies such as Apple Inc. has implemented dark mode as their colour option in their latest macOS which is macOS Mojave and in the upcoming IOS 13 and Samsung Electronics Co., Ltd has a dark mode option in

their One UI on their galaxy phones. Thus, this shows that most users love to experience a dark user interface compared to the traditional white user interface and dark mode provides colour scheme with light text on a dark background which is easier to read on the screen, because the lower brightness causes less eyestrain. Based on this implementation, most application developers in any platforms have started to develop and adding a dark mode option as their colour scheme in their settings of the application. By the year 2020, most the editor choice applications in the App Store or even in Google Play Store will be updated to have the dark mode feature.

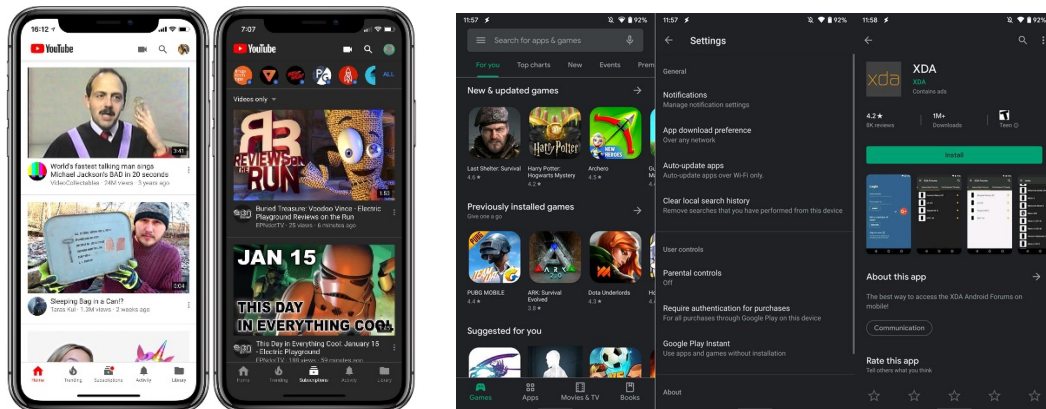


Figure 2.7

Based on this, it can be wind up that implementing dark mode in the application was a brilliant idea and follows on the current trend of designing an application. Moreover, dark mode also helps us to design material user interface much easier when developing the application.

CHAPTER 3: METHODOLOGY

3.1 Introduction

This chapter will discuss the flow of our project from beginning to the end including the process of preparing the survey to collecting the data to be analysed.

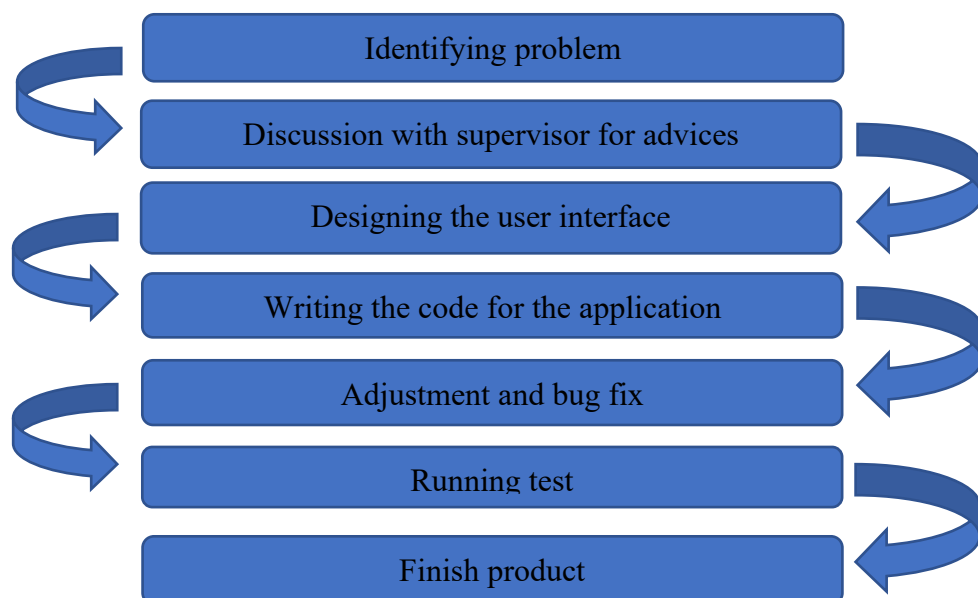


Figure 3.1 Project Flow

In order to make sure that the project goes on smoothly, everything is planned carefully from the very beginning. Each of our process are arranged one by one to ensure that the project flow goes smoothly. For example, designing the user interface before writing any programming so that it would be easier to identify which code to create first.

3.2 Designing work flow

Before we start designing the application, we have to find all the feature UI kits to add into the application. After preparing proper plans ideas to design the application, we came up with a proper work flow for better guidance. So, we made a list of design features required to aid the workflow of Final Year Project. Regarding to this project, all the methods and procedures in this chapter to accomplish this project



Figure 3.2 Work Flow

CHAPTER 4: EXPECTED RESULT AND COSTING

4.1 Introduction

In this chapter will discuss about the expected results and costing of the project. Further improvement will be made after running some test on the usability of the application.

On the other hand, this chapter will also discuss about the expected budget and costing that would require for developing and publishing the application throughout the entire project. The budget and costing of the project is listed out in a form of a table.

4.2 Result

4.2.1 The Design

The design was able to achieve according to the plan and it took the number of tries to attain a layout, perfect scaling, and colour scheme. At first, we design according to the 2015 Google Material design but that was quite outdated and not appealing. With time, we found a new UI Kit plus material icons and we were able to achieve the design towards the current design language that Google has to offer in a matter of days. The design language does inspire us to generate a good user interface. We also used Google Sans for uniform look in all word fonts in the design. And we successfully implemented dark mode because that was our ultimate target when initializing the design part. The colour scheme of Dark mode is as follows:

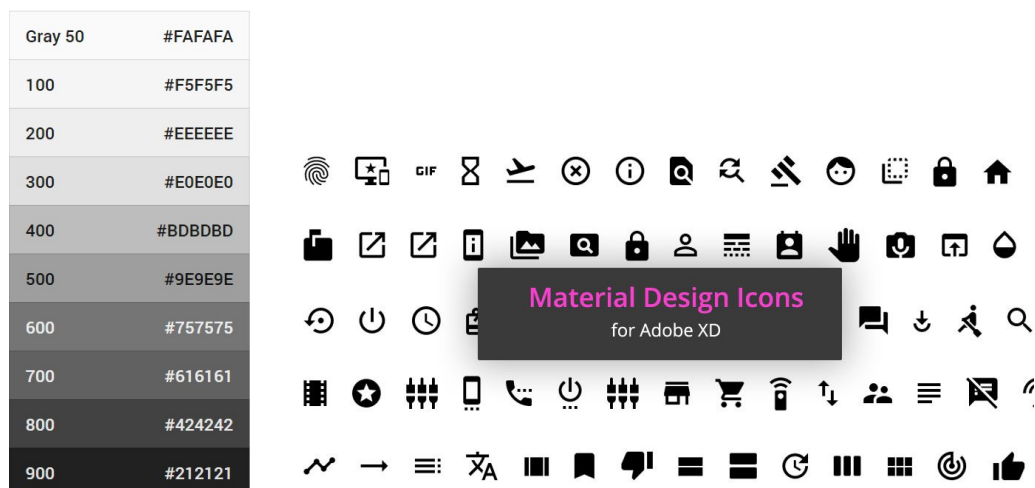
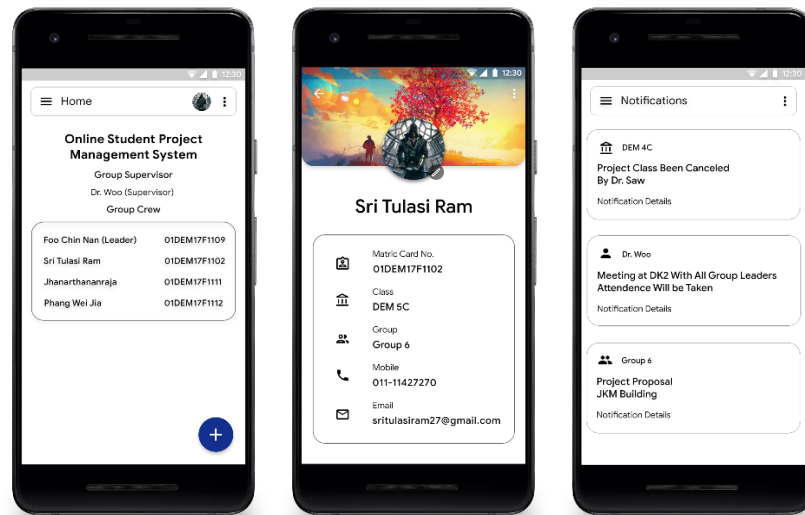


Figure 4.1

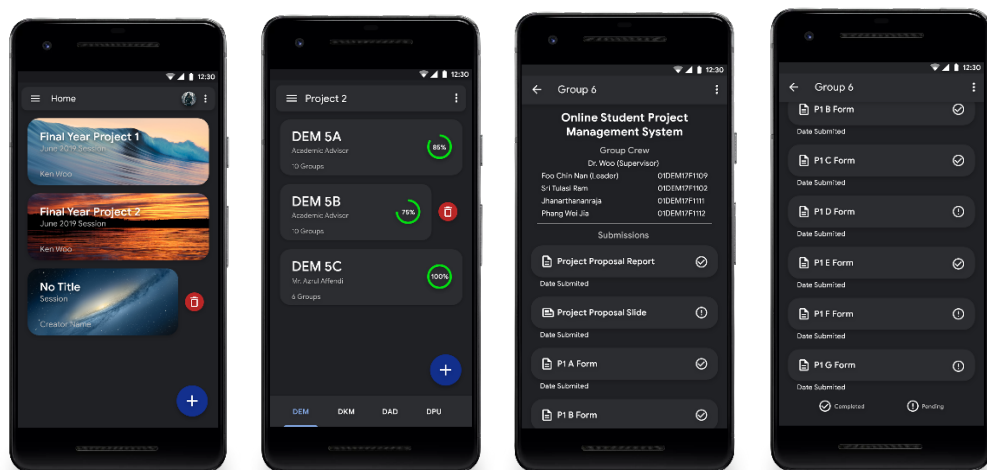
We use the last 4 colour codes as our primary foundation in the dark colour scheme. This will help us to differentiate easily between light and background tones for objects and layouts. We use white colour code which is #000000 for titles and subtitles so that it is easy to read. As for button colours, we used #14318F as our blue colour code because it exhibits clearly to eyes. As for light mode, we reversed the colour scheme that we design for dark mode. We used white colour as our foundation colour and black font colour scheme to give a contrast ratio. Thus, the design we achieve was able to satisfy both users who love light or dark mode.

4.2.2 The User Interface

We have successfully designed a user interface that will be suitable for both the programming part and for the user experience. With the goal, simple and minimalist, we were able to achieve a good-looking user interface design for both students and coordinator. This how it looks:



Light Mode



Dark Mode

Figure 4.1

The images show how the applications look like before reaching the programming. When designing, we made sure all these criteria being planned before was fulfilled completely. These are the criteria:

STUDENTS

- login
- register
- chat
- project data
- upload form
- contact
- notification
- settings
- help and feedback

COORDINATOR

- login
- register
- chat
- create class or group
- create session
- download forms and upload forms
- contacts
- create notification
- view all student data
- help and feedback

4.3 Costing

Well, when designing doesn't require any payment or costing because its already free open source which is available on the internet. There are a lot of communities that generate new and futuristic designs that are most suitable for our project design. Plus, Google also provides free UI Kits for everyone to download which helps us a lot to understand better how user interface design should be.

While design software that we use which is Adobe XD is free to download given by adobe Inc. This a plus for us to save a lot of cost because other design software is expensive to purchase with proper license. Also, Adobe provides regular updates to keep the software stable and less bugs when design.

In conclusion, designing is free to generate new ideas that contribute a lot when designing the project.

4.4 Gantt chart for Project 1

Table 4.2 Gantt chart

Task description	Task duration	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16
Team organisation	3 weeks																
Team setup																	
Choosing supervisor																	
Planning discussion	11 weeks																
Discuss about project idea																	
Decide for final year project																	
Preparation forms																	
Preparation logbook																	
Designing the apps																	
Design the flow of the apps																	
Preparation proposal																	
Proposal report																	
Presentation slide																	
Presentation for project																	

4.5 Gantt chart for Project 2

Table 4.3 Gantt chart

Task Description	Task Duration	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15
Planning discussion	14 WEEKS															
Project 2 briefing																
Done the flow chart for degree app																
Design for degree app																
Testing the app using firebase																
Complete the diploma app 70%																
Complete the forms in diploma app																
Write the program for degree app																
Preparation degree forms																
Arranged the degree forms																
Complete the design home page of app																
Complete the forms in degree app																
Complete the diploma app 100%																
Complete the degree app 100%																
Preparation final year project report																
Project poster																
Project pamphlet																
Preparation logbook																
Final year project presentation																
Medspec																
Submission final year report																

CHAPTER 5: CONCLUSION

For a student, the final year project is among one of the most important things in their education. However, in order to be able to fully focus on the final year project can be very time consuming. It is known that students have made many excuses of not completing their assignments because they were too busy with their project. The development of this application has helped solved these problems. The application is easy to use and students and supervisors can keep track of their progress anytime by simply using the application through their mobile phones. The application has solved the problems of having a limited user quota and the needs of meeting supervisors every week. The application not only helps to save time, but also ease communication, and reduce the workload of fellow lecturers. However, there is still much room for the improvement of the application as for now, the application is only limited to Mechanical Department of Ungku Omar Polytechnic and it is limited to only Android users. The current system requires allot of effort and unnecessary task, in the twentieth century, students and supervisors both should be able to access and monitor the flow of the project effortlessly any time anywhere at the tip of their fingers.

Reference

- 1 <https://www.bourncreative.com/meaning-of-the-color-grey/>
- 2 <https://uxplanet.org/how-color-can-effect-emotion-ccab0431b1d>
- 3 https://en.wikipedia.org/wiki/User_interface_design
- 4 https://en.wikipedia.org/wiki/Software_design#Overview
- 5 <https://www.quora.com/What-is-the-use-of-Adobe-XD>
- 6 <https://lifehacker.com/use-dark-mode-to- conserve-your-phones-battery-power-1830368436>
- 7 https://en.wikipedia.org/wiki/Light-on-dark_color_scheme
- 8 http://osr600doc.sco.com/en/SDK_vtcl/vtclgN.style_goodui.html
- 9 <https://www.hindawi.com/journals/ahci/2017/6787504/>
- 10 Kim, Design for Experience, Springer International Publishing, Switzerland, 2015.
- 11 Interaction-Design.org, Introduction to Usability, n.d., <https://www.interaction-design.org/literature/article/an-introduction-to-usability>.
- 12 Interaction-Design.org, User Experience (UX) Design, n.d., <https://www.interaction-design.org/literature/topics/ux-design>.
- 13 G. C. Vanderheiden, Application Software Design Guidelines: Increasing the Accessibility of Application Software for People with Disabilities and Older Users, Trace Research and Development Center, Madison, Wis, USA, 1992.