

**MOBILE LEARNING APP FOR HISTORY SUBJECT (PT3)**  
**MYSJMOBILE APP**



**UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

## BORANG PENGESAHAN STATUS TESIS\*

JUDUL: MOBILE LEARNING APP FOR HISTORY SUBJECT (PT3)  
MYSJMOBILE APP

SESI PENGAJIAN: 2015/2016

SAYA WONG PEI SHIEN

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**MOBILE LEARNING APP FOR  
HISTORY SUBJECT (PT3) MYSJMOBILE APP**



This report is submitted in partial fulfillment of the requirements for the  
Bachelor of Computer Science (Interactive Media)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY  
UNIVERSITI TEKNIKAL MALAYSIA MELAKA  
2016

## DECLARATION

I hereby declare that this project report entitled

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is written by me and is my own effort and that no part has been plagiarized  
without citations.

STUDENT :  Date: 24.08.2016  
(WONG PEI SHIEN)

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I hereby declare that I have read this project report and found  
this project report is sufficient in term of the scope and quality for the award of  
Bachelor of Computer Science (Interactive Media) With Honours.

SUPERVISOR :  Date: 24/8/16  
(EN WAN SAZLI NASARUDDIN BIN SAIFUDIN)

## DEDICATION

This thesis is dedicated to my beloved parents and my friends. A special feeling of gratitude to my loving parents, Wong Yip Sin and Tan Geok Choo whose words of encouragement to me. My sisters and brothers Chiew Shiew, Ai Shien, Foo Yong, and Foo Ming have never left my side and always support me. I also dedicated this dissertation to my friends who have supported me throughout the process. I will always appreciate all they have done, especially Lim Fang Keat and Ng Chin Sing for helping me develop my technology skills.



## ACKNOWLEDGEMENT

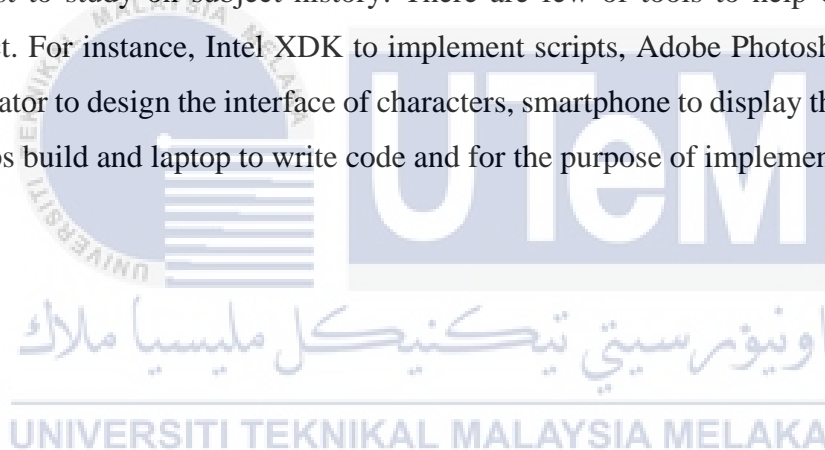
Firstly, I would like to thanks to my supervisor, En. Wan Sazli Nasaruddin Bin Saifudin that giving me lots of ideas and encouragement to complete my project successfully. With the guidance of En. Wan, I have learnt many and improve a lot in the knowledge of mobile application development. Many suggestions of him have been helped to improve the quality of project.

Besides, I would address my appreciation to my friends, Chia Min, Sing Khuan, Poh Lin, Jia Xin, Su Teng, and Sin Yee whose have been giving support and motivation throughout developing my project.

Lastly, I would like to thank my beloved parents, sisters, friends and relatives who always by my side and giving love and support throughout the project whenever I need

## ABSTRACT

The concept of “Mobile learning app for history subject (PT3)-mySjmobile app” is a mobile learning app for student PT3. Mobile learning app is one of the modern learning which enable student PT3 able to study at anytime and anywhere. The mobile app is developed to help the student PT3 able to create history notes. The mobile apps provided features of drawing, taking notes, and camera that can create the notes easily. The app is special developed to student PT3 in order to increase their interest to study on subject history. There are few of tools to help on develop the project. For instance, Intel XDK to implement scripts, Adobe Photoshop and Adobe Illustrator to design the interface of characters, smartphone to display the environment of apps build and laptop to write code and for the purpose of implementation.



## ABSTRAK

Konsep "Aplikasi pembelajaran mudah alih untuk mata pelajaran sejarah (PT3) app -mySjmobile" adalah aplikasi pembelajaran mudah alih untuk pelajar PT3. aplikasi pembelajaran mudah alih adalah salah satu pembelajaran moden yang membolehkan pelajar PT3 dapat belajar pada bila-bila masa dan di mana sahaja. Aplikasi mudah alih dibangunkan untuk membantu pelajar PT3 dapat membuat nota sejarah. Aplikasi mudah alih yang disediakan ciri-ciri lukisan, mengambil nota, dan kamera yang boleh membuat nota dengan mudah. Aplikasi ini adalah khas maju kepada pelajar PT3 untuk meningkatkan minat mereka untuk belajar pada mata pelajaran sejarah. Terdapat beberapa alat untuk membantu dalam membangunkan projek. Sebagai contoh, Intel XDK untuk melaksanakan skrip, Adobe Photoshop dan Adobe Illustrator untuk mereka bentuk antara muka aksara, telefon pintar untuk memaparkan persekitaran aplikasi membina dan komputer riba untuk menulis kod dan bagi maksud pelaksanaan.



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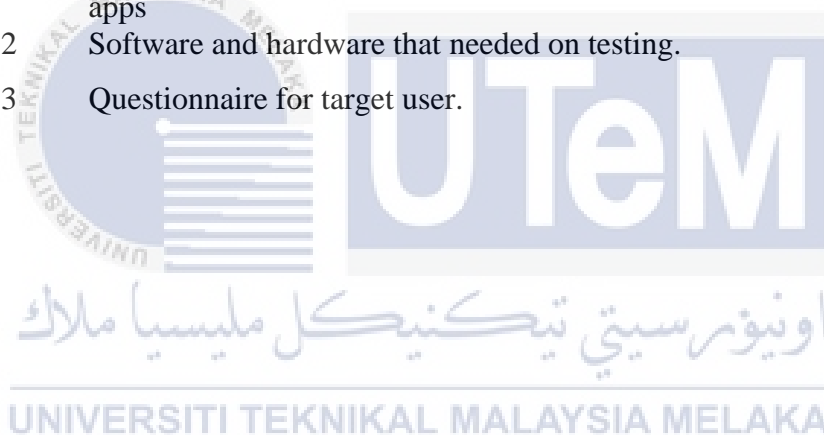
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## CHAPTER I

### INTRODUCTION

History (Sejarah) is an important subject that must be learnt for every secondary student in our country. Since the year 2013, History become a compulsory subject that must be pass in the Sijil Pelajaran Malaysia (SPM). However, most of students still cannot achieve a good result in this subject. Probably the main reason that causes students cannot get a good result because of the way of student learn is not effective, and they regard history as the most boring subject in the school. Hence, this project is created to help students that enable them to study history by themselves in an effective and interactive way which also can increase their interest to study on this subject.

#### 1.1 Project Background

In order to increase the interest of student for studying the subject History (Sejarah), Mobile learning (m-learning) will be created in my project. Nowadays, students love mobile technology and use it regularly in their lives. M-learning become more prevalent and affordable, wireless technology can dramatically improve learning and bring digital content to students. Therefore it is no surprise that young people want to employ mobile devices to make learning more engaging and personalize it for their particular needs.

The idea of my mobile app learning is come from the apps, Squid and Notepad+ which are the good references that I have refer to the mobile app learning. These are the apps suitable for student taking notes and able to keep notes and gather sources for their projects, all of the notes also can be shared with their teachers and classmates.

The objectives of my project are to investigate the most effective way to help PT3 student study on history by M-learning and to design an attractive interface to increase the interest of student PT3 on learning history. Lastly, to develop and user friendly app which may help student to study by themselves without teacher guiding.

My M-learning will create as a mobile-app that only for subject sejarah Form 1, Form 2, and Form 3. This app is designed for student PT3 which provide a platform that student able to make their own notes with the elements given. The scope of this project is for only for Malaysian secondary student, especially for student PT3. The main functionality of the app student able to create the note or folio by themselves.

The expected outcome of this project will be created with attractive interface and user friendly app that student liked.

## **1.2 Problem Statements**

### **1.2.1 Implementation of project**

To create a mobile app require to spend time to study such as language use, design of database, flow chart, interface design, build coding and etc.

### **1.2.2 Resource finding**

Need to find any resources that may help student in this subject. Besides that, developers needed to find resources of building mobile apps.

### **1.2.3 Interface design**

Developer need to design an attractive interface to avoid user feels bored and interface which may help student to memorize.

### 1.3 Objectives

- To investigate effective way for student PT3 study on history by m-learning.
- To design and develop an interactive mobile app (mySjmobile app) for student PT3 on learning history
- To test mySjmobile app for PT3 student.

### 1.4 Project Scope

#### 1.4.1 User scope

The project is designed for secondary student who take in examination of the form three assessment (PT3), it also suitable for student who are Form 1 and Form 2 because the app also has include the topics of history for Form 1 and Form 2 student.

#### 1.4.2 Application / Function scope

The apps is designed for student to take their own notes easily with the elements provided in the app. For example, pen tools and attractive images that may help student to design their notes.

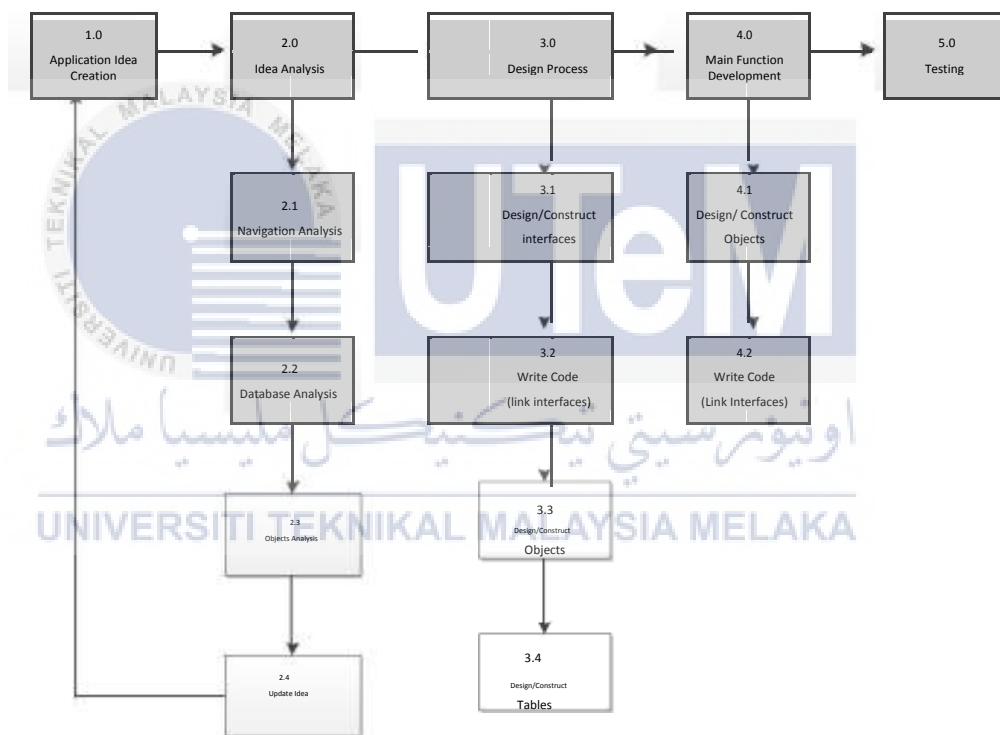
#### 1.4.3 Platform scope

The M-learning app is developed only for user who is used the smart phone in Android platform version.

## 1.5 Project Significant

Nowadays, mobile learning becomes popular in technology today. Besides that, it also brought a lot of advantages to student in education. Student is familiar to use the apps just downloading from google store. The m-learning of this project created may help the student to study themselves by taking the notes themselves without the guiding of teacher. With the apps provided, the student able to do revision easily by just open the smartphone. Hence, hopefully student may have improvement on the history after using this apps.

## 1.6 Project framework



**Figure 1.1: Multimedia Mobile Content Development (MMCD)  
Project Framework**

## 1.7 Conclusion

As a conclusion, the project is focused on developing a mobile apps that enables student PT3 for taking their own notes with the tools provided in the apps. The apps is designed in android platform. It is be believed to be a user friendly apps for the student that may help them enjoy to learn on history.



## **CHAPTER II**

### **LITERATURE REVIEW AND PROJECT METHODOLOGY**

In this chapter, it showed out the areas that I have been investigate such as mobile learning for students, area of study on history, interface design that may applied to the apps, interactivity of apps that is user friendly for the students and the most important is the area of development mobile apps in programming. Besides that, there are numerous of references that I have made references which helped me to complete the project.

In an overall, this session will be described in details of area of study, Human Computer Interaction (HCI) element, current existing system/tool/output, Project Methodology, Project Requirement, Hardware Requirement, Software Requirement, and Gantt chart that related in this project.

#### **2.1 Area of Study**

##### **2.1.1 What is mobile learning?**

What is m-learning or mobile learning? M-learning or mobile learning is the learning through portable devices such as smart phone, tables, laptop and any handled electronic devices with wireless technologies that enabled to learn at anytime and anywhere. Recently, m-learning becomes a hot issues in globe because most of people affordable to buy the devices in this era of technology. Every one of us love mobile technology that brought convenient in our daily life. Hence, it is not surprised a

children, youth and senior citizen handled a mobile devices on hand.

In this project, it will be focused on mobile learning on secondary student especially for the age between 13 years to 15 years. According to Irwin Jacobs, Chairman of Qualcomm, Inc., students that always connected to mobile devices has much potential to greatly improve to their education. On the other hand, Mobile Economy Project had been investigate that mobile learning has allows and engages learning of students as well as teachers with the convenient of the mobile technology. The different learning environment of mobile technology enable students to learn more interesting, efficiency, and interactivity.

Nonetheless, according to author Nor Fadzleen Sa'don, Halina Mohamad Dahlan, Abdelrahman Ibrahim in our country, Malaysia is the second place behind the Russia for digital for digital connectivity among resources and efficiency driven-economies world-wide. The data has been collected from 130 respondents which are teacher from university, students and teacher from secondary school and the result showed that almost most of the students and teacher own their mobile devices such as smartphone, tablets and laptops. Hence, there is big potential to develop a mobile apps for secondary students in our country which may help them in their study. Although the policy constraints towards on this technology on primary schools and secondary school, but with the advanced use of technology today's, it may bring a lot of advantages to the students and given a different environment of study which able to increase their studies.

Therefore, subject of "Sejarah" will be my target for mobile apps development in my final year project, the apps that enabled student to create their own history notes.

### **2.1.2 Why use of mobile for history learning?**

History (Sejarah) is one of the important subjects in our country. However, there are many students feel that sejarah is very hard to learn and bored. They did not discover the important of history to our country. History is important to us because it lets us know what had been happened at past. For example, we can know how the ancient developed their business, economic, policy, and the way of lifestyle that they

had been done before. With the experiences provided, we will not make the same mistakes and find the solution to solve the problems that has faced. Consequently, this may make the descendant and also the country to improve together.

As we know that, know mobile learning is quite popular recently. There are many people own their mobile devices, especially smart phone. Hence, it is not surprised when children who only have five years old own their mobile phone. Mobile learning has brought many convenience to the society which allowed them to read at any time any place with just open the mobile devices. Therefore, in order to increase the interest of student on history learning, this project able to help the secondary student create their note in digital form. With the advance function of mobile apps provided, it enables student do their work more efficiency and save more time to do revision on each subject. So, it must bring a lot of advantages to secondary students on history subject with holding a smart phone in hand.

### **2.1.3 Giving examples of mobile learning**

There are many kinds of mobile learning apps which enable student to study. In this project, the mobile learning app that I will focus is the apps that help student to create the notes by themselves. After research, the most similar mobile learning apps that I can make reference are, Fii Notes, Note Pad+, and Squid. These three kinds of mobile apps are note taking apps. Three of these mobile apps has good appearance of interface, user-friendly and popular to mobile user. For further explanation, let us read on section of 2.3

### **2.1.4 Suggestion tools of mobile development**

There are many development mobile cross platform to help developer to develop their project. To develop a mobile apps, the tools that may be use such as unity, eclipse, android studio and others. In this project, the tools that I will be use is Intel XDK HTML 5. It is a development tools that help developer to create, test, build and deploy the coding that has supplied from the software. Intel XDK supports multiples of source languages such as java script, html, css, and Node-Webkit



backend. Besides that, developers may develop variety of apps by using Intel XDK, such as games, mobile apps, apps of Global Positioning System and etc. It supports host like Microsoft Windows\* 7, 8.1, and 10; Apple OS X\*; and Ubuntu Linux\*.

## 2.2 HCI element

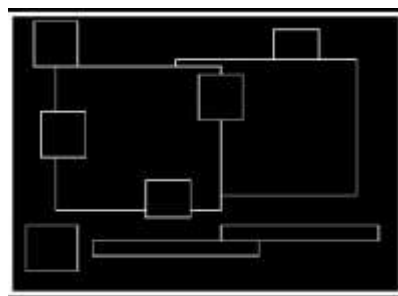
### 2.2.1 Interface designing

The interface design in this project is purposely to develop an interactive environment that enable secondary student taking notes by using mobile phone. According to Suzanne Martin, effective user interface may apply by using principles of:

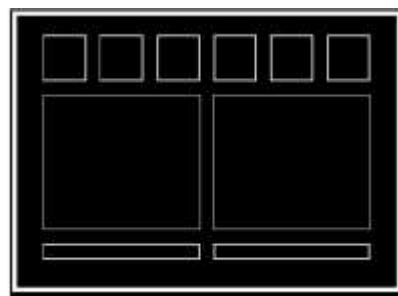
- **Organize:** provide a clear and consistent structure of interface flowing to user.
- **Economize:** Do the most with the least amount of cues.
- **Communicate:** Match to the capabilities of the user experiences.

#### Organize

To produce an effective interface, consistency, screen out, relationships and navigability are important of organization.



**Figure 2.1 Chaotic Screen**



**Figure 2.2: Ordered Screen**

#### Economize

The points need to be considered when designing an interface are simplicity, clarity, distinctiveness

- **Simplicity:** Interface with simple design that user may understand easily.
- **Clarity:** All components should be designed so their meaning is not ambiguous.
- **Distinctiveness:** The important properties of the necessary elements should be distinguishable.

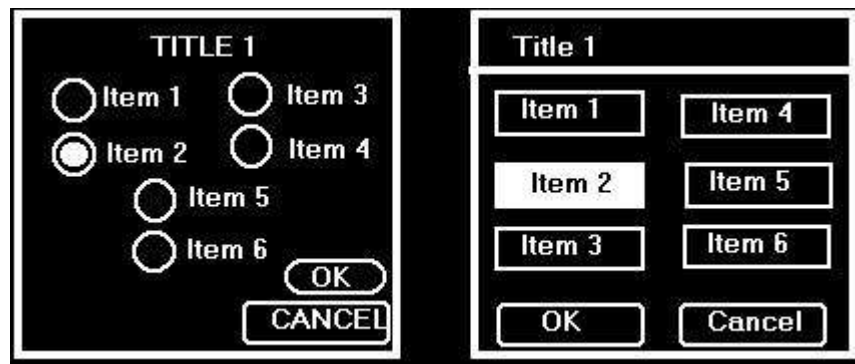


Figure 2.3: Complicated and simple design

### Communicate

The content of the system must keep in balance legibility, readability, typography, symbolism, multiple views, and color or texture in order to communicate successfully.

#### 2.2.2 Element that attract the student's attention

Lyndon Cerejo(2012), wrote an article about “The elements of the mobile user experience” which had discuss that the element of the mobile user experience when designing an interface. The element-element that had included are:

- Functionality
- Information Architecture
- Content
- Design
- User Input
- Mobile Context
- Usability
- Trustworthiness

- Feedback
- Help
- Social
- Marketing

Based on the guild lines, the element that I will be to take into account to be done in my project are, the functionality, design, and usability. For instance, functionality of button link to each pages, function of add, delete, and save. Attractive interface that may attract the attention of secondary student, and the interactivity that has well communication between system and user.

### 2.3 Current existing system/tool/output

In this section, as I list in the section 2.1.3, the ideas of taking notes app of my project is comes from the tools of Fii Notes, Squid, and Notepad+. The features and characteristic that had shown in each apps are listed as the following.

#### 2.3.1 Fii notes

Fii Notes is an android based mobile learning app. It may use by using mobile devices of phone or tablet. It is easy to use and has good appearance of interface design. The features that have provided are:

- Multiple choices of writing options such as handwriting and keyboard
- Variety of function that enable user to taking note such as text, paint, voice recording, photo taking.
- Extra features such as calendar, alarm, to-do
- Infinite of canvas provided, text box, DIY template and real pen style.



- **Writing**- this apps enable user to choose selection pens, highlights and colours of handwriting experience.
- **Drawing**-provide function sketch, draw and mix colours, it has tweak and tune for those pens, markers and styles with endless possibilities for experimenting!
- **Typing**- switch from handwriting to typing and take advantage of our handy selection of fonts, colors, and sizes
- **Organizing** - to keep, organize and protect your ideas. It may tap and gold to adjust settings. Besides that, it enables user to share via email, dropbox or Evernote.
- **Photo extension**-mark up images by using pens and highlighters to add notes and captions easily.






Figure 2.6 Attractive interface may create by using Note Pad+

## 2.4 Comparison Table

The table is make reference through the website of AppCrawlr:

**Table 2.1 Comparison between Fii, Squid, and Note Pad+**

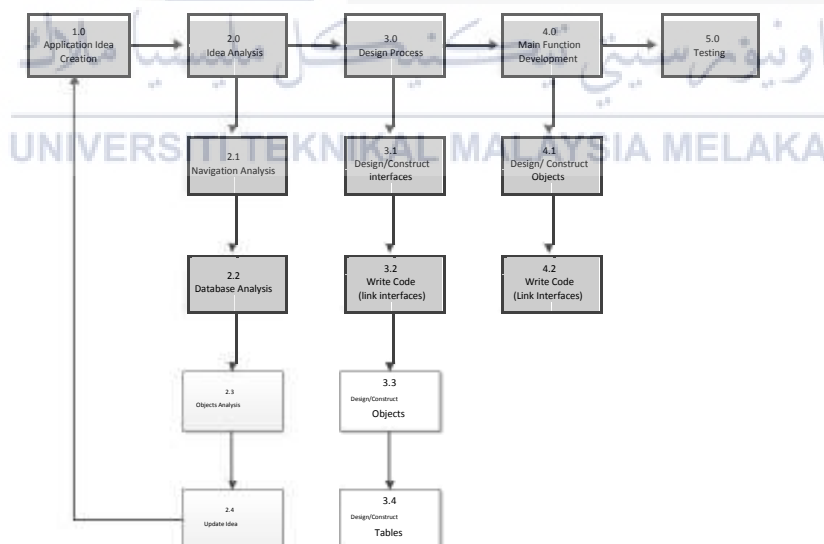
	<b>Fii note</b> 	<b>Squid</b> 	<b>Note Pad +</b> 
<b>Price</b>	Free	Free	Free
<b>Rating</b>	8.9	9.0	7.0
<b>Review</b>	8.9K	9K	7.3K
<b>TYPE</b>			
<b>Handwriting App</b>	Good	Good	Good
<b>Drawing App</b>	Ordinary	Good	Good
<b>Mind Boggling</b>	Good	-	-
<b>OBJECTIVE</b>			
<b>Making Notes</b>	Good	-	Ordinary
<b>Staying Organized</b>	Ordinary	Good	Good
<b>Jotting Notes</b>	Bad	Good	Ordinary
<b>AUDIENCE</b>			
<b>College Students</b>	Ordinary	Good	Good
<b>FEATURE</b>			
<b>Note Keeper</b>	Bad	-	Bad
<b>Voice Recording</b>	Ordinary	-	-
<b>Calendar View</b>	Good	-	-
<b>Month View</b>	Ordinary	-	-

## 2.5 Project Methodology

There are a lot of methodologies can be used to complete a project. The project methodology that I have defined is Multimedia Mobile Content Development (MMCD) Project Framework. MMCD is project methodology that created by En.Wan Sazli Nasaruddin Saifudin, and En. Muhammad Haziq Lim Abdullah. MMCD is a project management methodology that is suitable for m-learning application. The mobile application of this project methodology is focused on the object or content design and the navigation control which produced and effective m-learning application that focuses on user needs. The development process includes analysis data, design the process, develop main function, and testing.

### 2.5.1 Application Idea Creation

The application of idea creation I have refer to is according to the methodology of MMCD, then this is the process of framework that I will be referred to:



**Figure 2.7: Multimedia Mobile Content Development (MMCD) Project Framework**

### **2.5.2 Data Analysis**

Data analysis one of the steps that must be completed in a research experiment. Data is gathered, reviewed and analysed from various sources to form some sort of finding or conclusion. (Finding from website of Business Dictionary.com)

In order to properly handle the data analysis, we need to understanding the current situation so that we knew how the progress works. Hence, as a developer, we need to consider a few of elements before starting process of analysis. Developer has to stand on the view of users and must has a clearly understanding of requirement of users, what is the demand of users, scope of the project, and the value of product in market. Lastly, all of the data that has been collected need to analyzed and as a reference when develop a product.

### **2.5.3 Design the process**

In this session, developer must know clearly about how was the progress of project running. To design an efficiency process, I have referred to the framework that has been shown at Figure 2.7 MMCD project framework. The design process is divided into four parts which are design or construct interface, write codes to link to each of the interfaces, design or construct object and design or construct table. After completed each stage, then comes to next process which is Main Function Development.

### **2.5.4 Develop Main Function**

In this process, there are two stages that we need to complete which are Design/Construct Object, scripting to develop the main function of the project.

In this stage, developer need to find out and study how to implement the project with the sources provided.



### 2.5.5 Testing

Testing stage is the progress stage that allowing user to test on the application that has been developed. Developer may find the target user to test on the application. This process may test on the responses of user to our product. The users comment is write down on report and to make some improvement or final modification of the application. Once the project completed, it can be published to the apps store. The testing was conducted in PSM 2 to make improvement to the project.

## 2.6 Project Requirement

There are three requirement that have to consider in this session which are hardware requirement, software requirement, and Gantt chart or milestone.

### 2.6.1 Hardware Requirement

The hardware required to the project are:

- Laptop with processor 2.4GHZ and 4GB of RAM
- Mobile devices such as smartphone or tablet.

### 2.6.2 Software Requirement

Software required are listed as following:

- Intel XDK
- Adobe illustrator
- Adobe Photoshop

## 2.7 Gantt Chart/Milestones

Gantt Chart / Milestones that I had been showed at proposal.



## 2.8 Summary

In this chapter, it shows many aspects that to be taken into account when developing a mobile learning apps. As a developer, we need to consider every aspect that will influence the project development in order to achieve the goal of project.



## **CHAPTER III**

### **ANALYSIS**

This chapter is to carry out all of the data analysis that has been studied for the project. The objective of this chapter is to make sure that data that has been collected is keep in the right track. Therefore, user requirement and system requirement is important in this analysis report.

#### **3.1 Problem Analysis**

The analysis is done through with variety of resources. It discovers few of problems that faced by secondary students in their learning process of history subject. The user requirement and system requirement is explained further about the user need and their problem faced as show as below:

##### **A. Subject of history cannot attract interest or attention of student to learn**

There are a lot of chapter in history subject which student must cover before them entering their examination. For example, there are a lot of history characters, places, rules, politics, economic which make the burden of student comes bigger. An analysis that has been showed from Mohamad Johdi Salleh & Ariegusrini Agus, about “The multi-ethics students’ interest and motivation towards learning of history”. There are 189 students’ responses involved in the testing. The result showed that there is 43.39% of student disagreed interested in history subject which means that there are least than half of student are not interested to history subject.

## **B. Traditional learning process is not efficiency for most students.**

Most of school teacher use traditional way to teach their student. This make student feels bored and cannot focus on class. It is not an efficiency process that enable student to improve their studies on the subject. According to analyse that has been done by the Mohamad Johdi Salleh & Ariegusrini Agus, there are 46.56% of students disagree that the teachings by teachers can be easily understood by student. Besides that, analyse carried out about 44.97% of students that disagreed with the teaching style of teachers are attractive.

## **3.2 Requirement Analysis**

### **3.2.1 User Requirement**

There are few of factor that need to focus after the analysis data has been collected. For instance, the user requirement that need to take into an account are showed as the following:

- **Platform**

When defining mobile app requirements, the first things to be considered are which hardware and operating system the application will run on. In development of mySjmobile apps, mobile devices in Android or IOS need to decide for the target user before starting the development. On the other hand, developer need to consider the software tool to be used on the development of the mobile apps.

- **Usability**

In this session, developer has to address the problem that faced by the students such as to take note easily at any time and at any places. The requirements such as understandable and learnable content of the mySjmobile apps is necessary for students when they using the apps.

- **Connectivity**

Connectivity of internet connection stands important roles in mobile technology. This is because student able to use internet with multiples purposed especially for learning purposed. With the connection of internet, they able to learn at any time and any way.

### 3.2.2 System Requirement

In order to complete this project, the system requirement that we need to consider are the software tools to develop on the mobile apps. There for there are two requirement that we need to consider are development of mobile apps and requirement of end user.

- **Development of mobile apps**

First of all, a mobile devices is necessary for texting on the app running. Besides that, the design tools such as Adobe Photoshop or Illustrator to design the interface of the software. Next, a development tools such as Intel XDK is needed to help on implement the function of the project. Lastly, hardware tools such as laptop with window XP, Vixta or Windows 7 is needed to compatible with the software that we need to use.

- **End User**

The important end-user features to develop for a learning mobile apps for secondary student are the apps is easy to use and easy to understand. Besides that, the apps is able to help the student to create the notes efficiency with the functionality of each button. The target user is comfortable when using the apps.

### 3.3 Summary

User requirement and system requirement have stand important role in developing on mobile learning apps. Both requirement is important to the project because it refers to reached on the goal of the project. On the other hand, system requirement is also stand an important role to develop an apps. The efficiency of the application may be affected by the development tools using, if the application tools is not suite to the project.



## CHAPTER IV

### DESIGN

In this chapter, design stage plays important role involve in front-end application view user interacts. The design of the interface is often the main key point and first impression to users. It provides fundamental platform for human-computer interaction. There are a lot of design that can be presented by user interface such as graphical, text-based, depending upon the underlying hardware and software combination. The preliminary design of the mobile apps is explained details in this session.

#### 4.1 Design/ Product Process

Design is one of the essential part that need to be done before entering the process of implementation. All of the design work need to confirm after decided. For examples, the interaction of user interface, character design, button design and navigation flow of the mobile system running. Besides that, designer need to design a user friendly interface that users can be understand easily.

##### 4.1.1 Navigation Structure

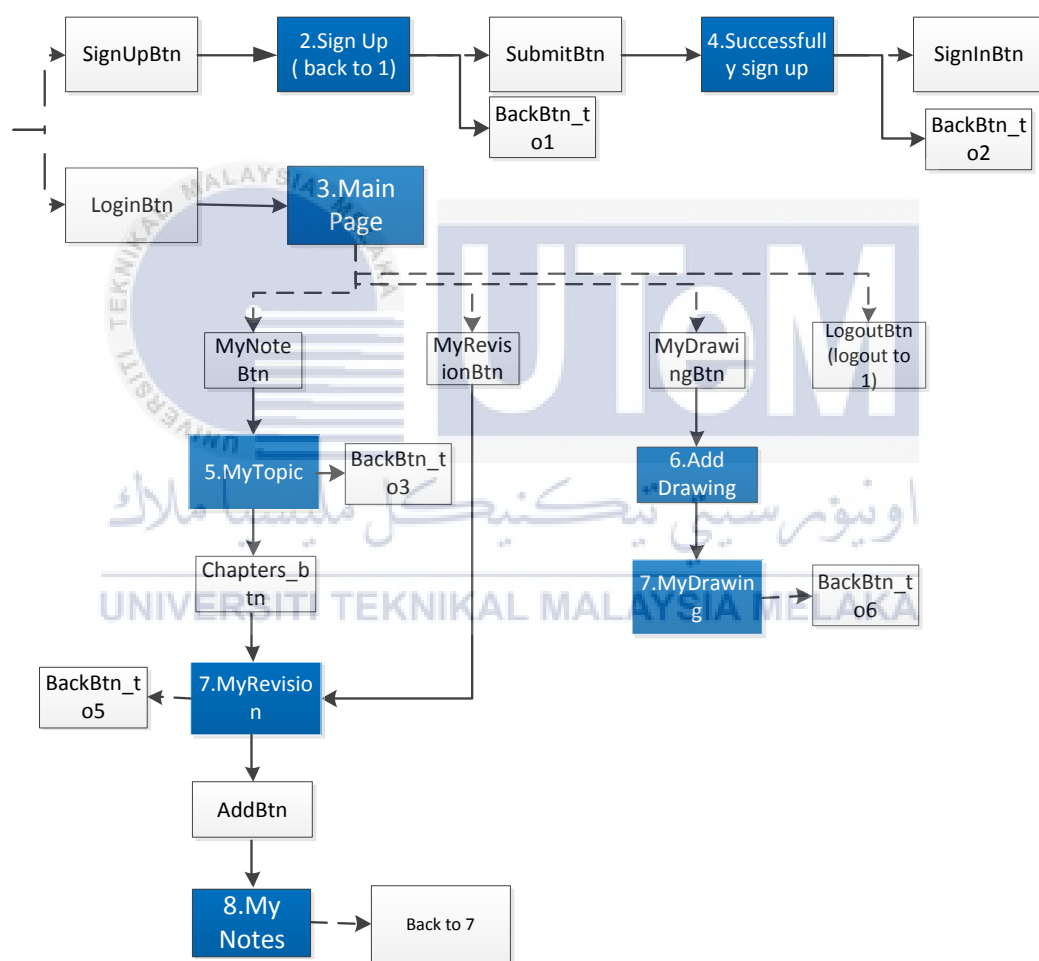
The navigation structure need to start on very project before continue to next process. Navigation structure of the project will ensure that all of flow of navigation system is run smoothly. Besides that, it will be as a reference that allow user to apply to the system.

The application of mySjmobile app consists of three module that developer must be done to. There are sign in or sign up module, my notes create module and my



drawing module. From the sign in or sign up module, user able to login to their account of mySjmobile apps. Besides that, mySjmobile apps is allow new user to create a new account in sign up function. Next, my note create module is allow user to take note in the apps. It supplied the stickers which to remind them what to do. On the other hand, my drawing module is created to allow user to draw their notes when they need. They able to save the picture after they are draw complete. It also design with clear button which allow user to clear the drawing board.

Figure below shows the navigation structure of mySjmobile application.



--> Link to button

—> Link to page

**Figure4.1: Navigation Structure of mySjmobile apps**

### 4.1.2 Database Design

A good database design able to help to create a good system which to store all of the data content in the database. Below shows the database design of mySJmobile apps which represent by Entity Relationship Diagram (ERD).

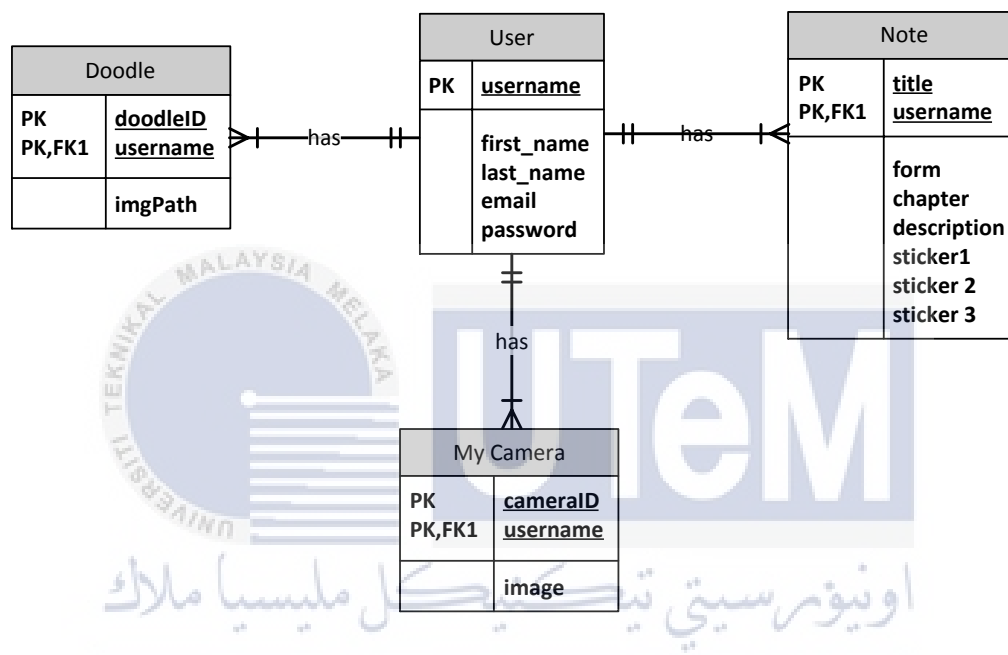
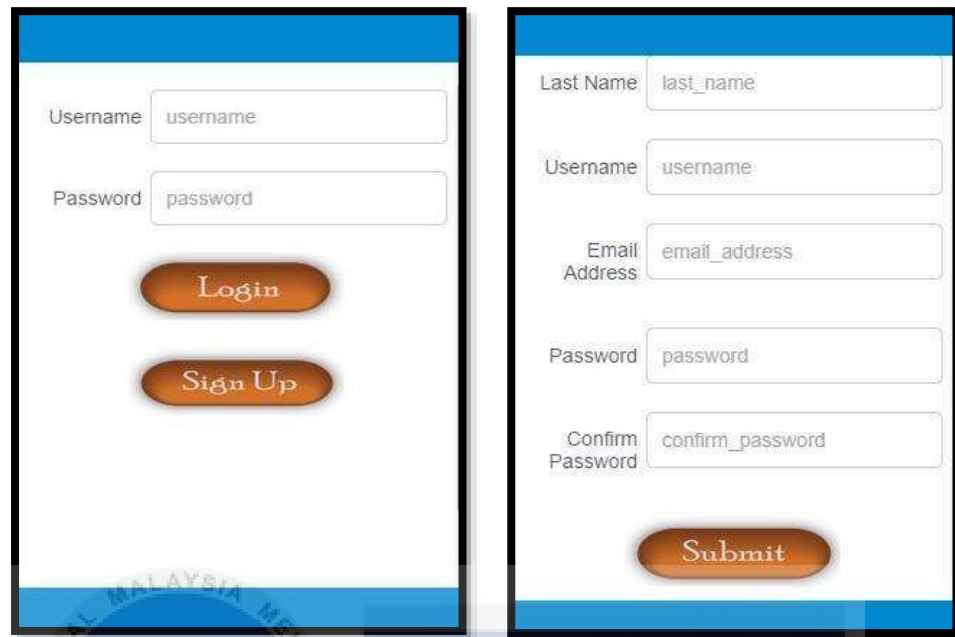


Figure 4.2: Entity Relationship Diagram (ERD) mySJmobile apps

### 4.2 Initial Design

Initial design is necessary of every development process. Every element of the application must to be well designed before applied in implementation. In mySJmobile mobile application, the elements included such as character design, button design and the interface design that will be decided on this stage. Initial design that applied in first development are shown as below:

- Interface design of each pages



The image displays two side-by-side web form designs. The left form, labeled 'i. Login Page', features a blue header and footer. It contains two input fields: 'Username' with placeholder text 'username' and 'Password' with placeholder text 'password'. Below these fields are two orange buttons with rounded corners; the top one is labeled 'Login' and the bottom one is labeled 'Sign Up'. The right form, labeled 'ii. Sign Up', also has a blue header and footer. It includes five input fields: 'Last Name' (placeholder 'last\_name'), 'Username' (placeholder 'username'), 'Email Address' (placeholder 'email\_address'), 'Password' (placeholder 'password'), and 'Confirm Password' (placeholder 'confirm\_password'). A single orange 'Submit' button is positioned at the bottom of the form.

i. Login Page

ii. Sign Up

**Figure4.3: Initial design of Login page and Sign Up page**



iii. Login Successfully

iv. Menu



v. Taking note page

**Figure 4.4: Initial design of Login successfully page, menu page and taking note page**

- Initial stage of button design



Figure 4.5 Initial design of button

- Initial stage of character design

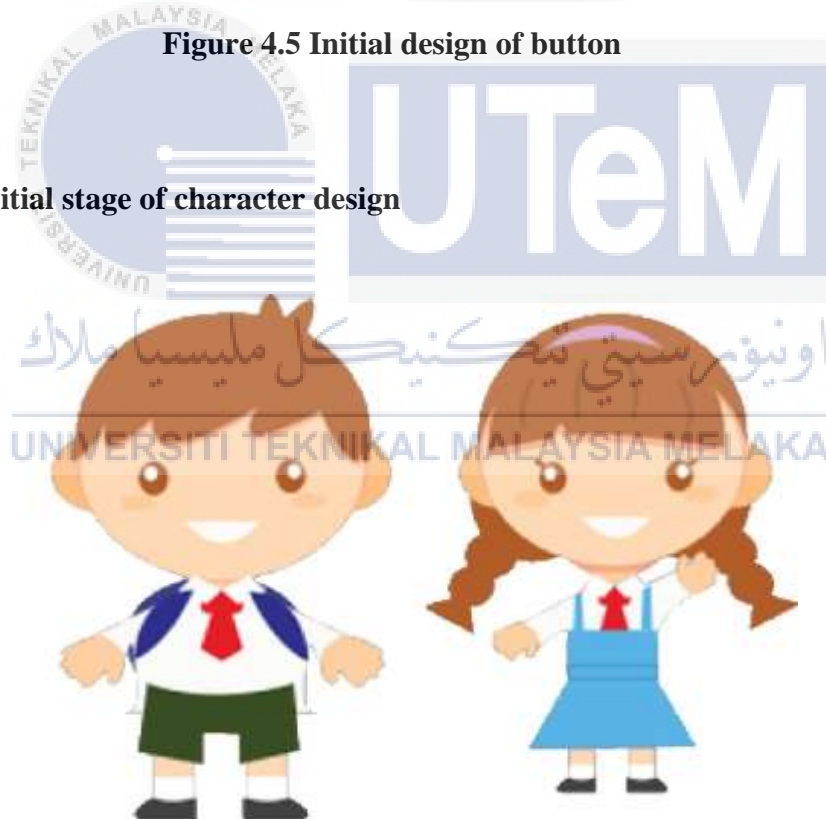


Figure 4.6 Initial design of characters

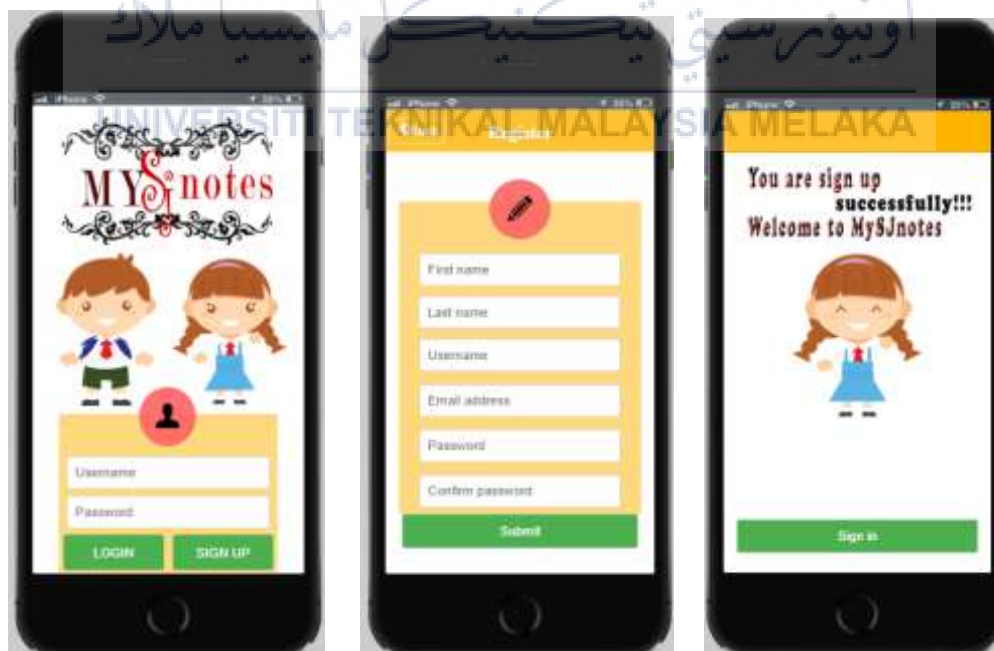
- Initial stage of logo design



Figure 4.7 Initial design of logo in log in page

#### 4.3 Final Design

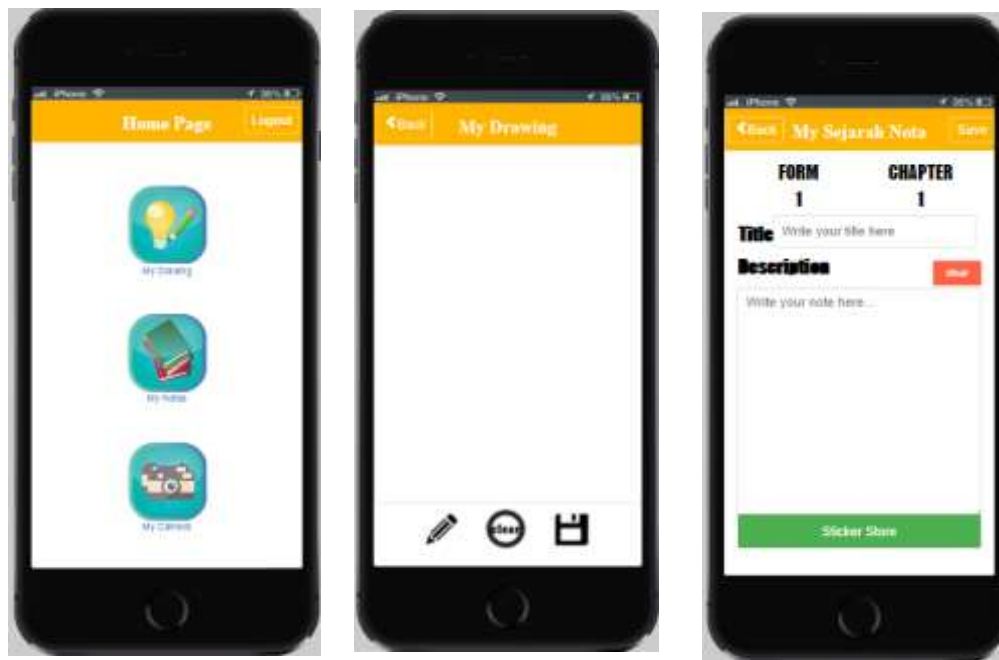
All of the designed is confirmed in this section. Each of the designed that has been updated after discuss in previous session. After the correction have been made, the final designed is came out. The final design is showed as the following:



i. Login page

ii. Register page

iii. Sign in page



iv. Menu page

v. Drawing page

vi. Taking note page

**Figure 4.8: Final design of mySjmobile app**

#### 4.4 Summary

This chapter has showed in detail the essential of things done during the design phase while developing mySjmobile app. The design stage designed with attractive interface and button-button that designed by using Adobe Photoshop and Adobe Illustrator. After completed designed, the stage is applied to Intel XDK for next progress which is implementation

## CHAPTER V

### IMPLEMENTATION

The implementation of mySjmobile application is being developed by using Intel XDK, which can be applied with scripting language of HTML 5, Javascript, CSS and PHP. In this session, we will discuss how the code applied by using different language to Intel XDK.

#### 5.1 Integration Process

Intel XDK is applied to the mySJmobile apps by multiples language used. It supports variety language to implement the mobile apps. Besides that, it provides emulator for developer testing purposed. On the other hand, develop able to test on devices after export to the devices. Furthermore, developers need to sign in their account to get access with the project that has been done. There are variety type of project that may using Intel XDK such as games, mobile apps, and websites.

#### 5.2 Intel XDK

Below are the steps of the Intel XDK applied to mySjmobile app:

- i. Create a new account for first time entering.
- ii. Open new project > set file location > and choose which type of template that will be used.
- iii. Developer may start project by using design button that has been supplied in the environment of the application.
- iv. Drag and drop the element to the working platform.



- v. It will come out to scripting area html after the element being applied to the working place. User also may apply the hard code to the apps without using the element provided.

Developer may see their result in emulator when they want to test on it. On the other hand, developer may test on devices when they export their project file to the devices used.

### 5.3 Environment of working platform

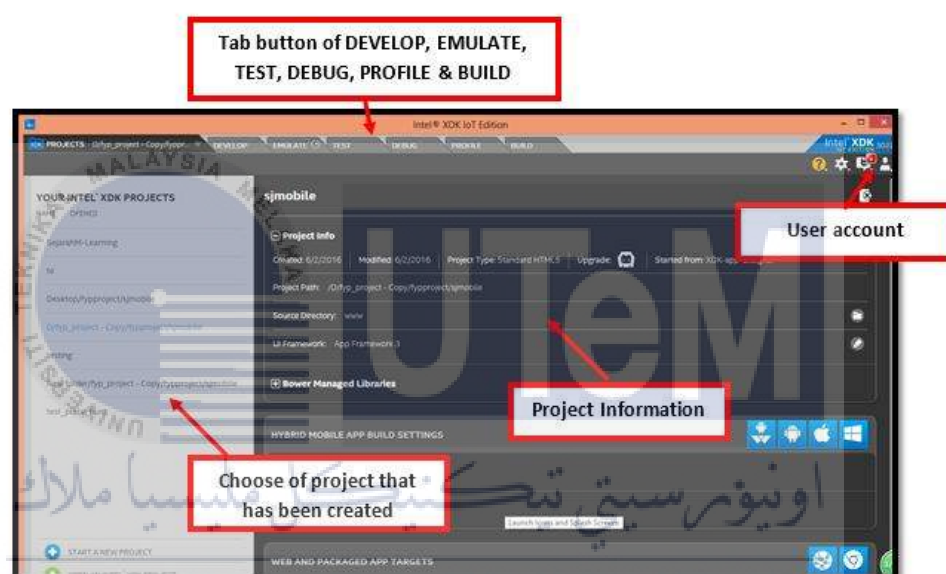
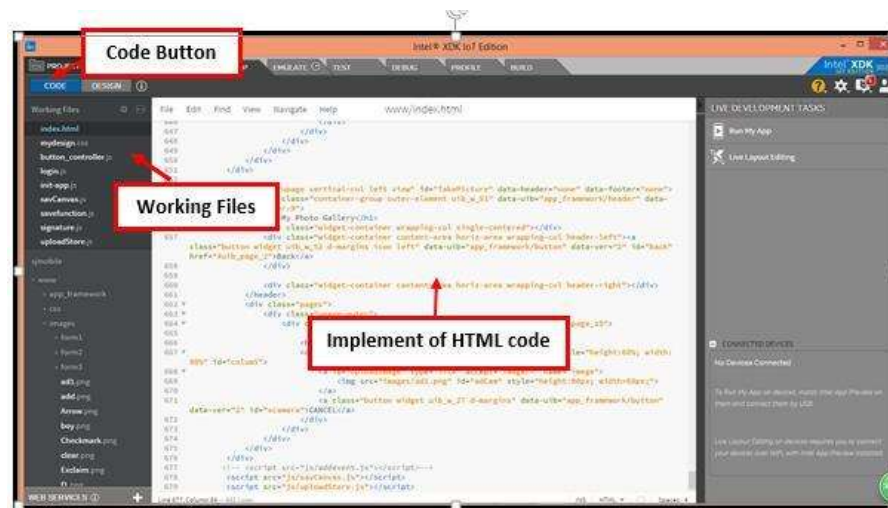


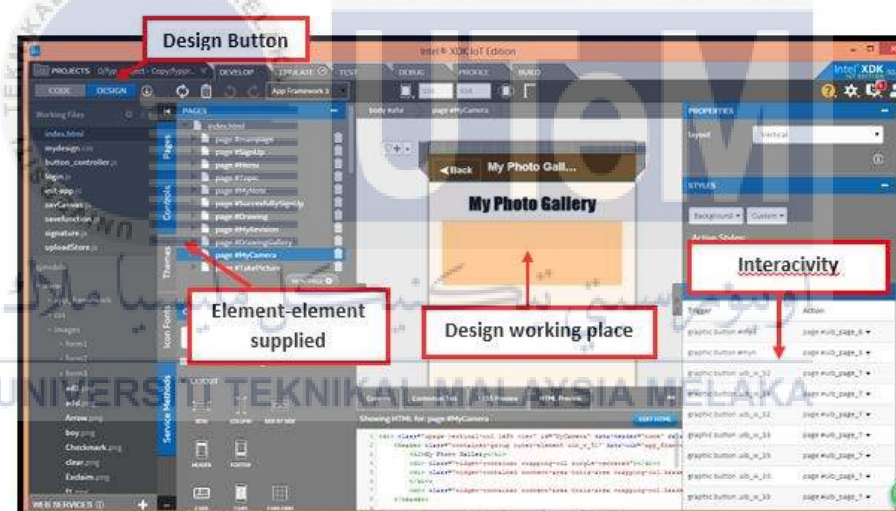
Figure 5.1: Home page of Intel XDK

Figure 5.3 2 shows the home page of Intel XDK. To open a project, it may be chosen the project that has been showed at the right hand side. Please sign in user account to ensure the project is back up. There are few of tab button shows at navigation bar above which are Develop, emulate, test, debug, profile and build buttons. The button that usually used by developer are DEVELOP, EMULATE, and TEST tab button. DEVELOP tab button is the place of script implementation, EMULATE tab button is used to show project running on emulator, and TEST tab button is used to push up files to real devices.



**Figure 5.2: Implementation of HTML of Intel XDK**

This is implementation page of HTML of Intel XDK which is on DEVELOP tab button. There is code button to show the script and working files.



**Figure 5.3: Design platform for developer to design the interface**

This is design page of project in Intel XDK which is besides on Code button. Developer may drag and drop the element needed to design the page. It is also under in the tab of DEVELOP. The element-element such as pages, controls themes icon fonts and services methods may help developer to design the page easily. Working place is a platform that allowed developer decorate, drag and drop the elements on it. While Interactivity is to show interaction of button which to going onto next location of pages.



**Figure 5.4: Emulator testing**

This is EMULATE environment of that try to see how the devices work without always push file every time. We may choose devices that same as your real devices at the right top corner. It may look exactly when you are testing on your real devices.



**Figure 5.5: Export project to the devices**

When we want to see on real devices working, we may click on TEST button to export files to real devices. When to push files to devices, we have to make sure that it is has internet connection. Besides that, we have to make sure that devices has downloaded app preview. Then, login with the current user account, it may see the project that you have been push up.

## 5.4 Summary

The implementation process is important for developer to implement the project. As a developer, we need to understand clearly when used of certain software environment. This is because we may increase our efficiency of working progress in the implementation process.



## CHAPTER VI

### TESTING AND EVALUATION

This chapter is about process of testing on the development of application of mobile apps, mySjmobile apps. The purpose of testing part is to ensure the quality of application and to reach the goal of the project. There are several test plan is provided to help on the testing part so that to ensure the flow of process in the testing part. At the end of this chapter, it will showed the result of data that has been collected which has been analyzed.

#### 6.1 Test Plan

Test plan is used to help developer to create test conditions, test cases, and expected results for the project. In this session, developer needs to describe what is being tested, such as functionality of application testing, and user acceptance testing. In order to create a better mobile apps application, a few of testing that has been used in this chapter which covered with unit testing, integration testing, testing organization, testing environment, and testing schedule.

##### 6.1.1 Test Organization

There are two main testing that must be tested for the project, Alpha testing (Technical) and Beta testing (User Acceptance). Alpha testing is usually internal acceptance testing, which is employed for off-the –testers before the software application go to beta testing. On the other hand, beta testing is external user acceptance testing, which is performed by “real users” of the software application.

### **i. Alpha Testing (Technical)**

In alpha testing, it is done through for those people who have knowledge of about mobile application development. There are five testers have been selected to be done on this test. After used on the product application (mySjmobile apps), they will give their comment on the mobile (The comment will attached on Appendix.)

### **ii. Beta Testing (User Acceptance)**

The test is continued with beta testing after alpha testing has been done. The test is carried out through the end users of PT3 student (Pentaksiran Tingkatan Tiga) which is secondary student from SMK Parit Bunga, Muar. There are 45 students have been tested on the mobile application. Questionnaire is being used on this testing. The students answered the question provided after they used on the mySjmobile apps. (Questionnaire will attached on Appendix.)

### **6.1.2 Test Environment**

There are 45 students, SMK Parit Bunga, Muar that has been choose for testing on mySjmobile apps. Only Form 3 student, which from class of 3 Bestari is tested on mySjmobile apps. After tester giving a short briefing, 10 students have been selected to start used of mySjmobile apps. Each students used around 3 minutes when testing on the apps. While the 10 students doing on the application, others student done through the testing by observed how the apps worked.





**Figure 6.1: A simple briefing to students about how the application works**



**Figure 6.2: Students was answering the questionnaire**



**Figure 6.3: Students was answering the questionnaire after used on the mySjmobile app.**

### 6.1.3 Test Schedule

The details of schedule testing is shown as table below:

**Table 6.1: Schedule testing of mobile application, mySJmobile apps**

Details	Tester 1	Tester 2
Test User	Course mate	PT3 Students
Date	17 <sup>th</sup> July 2016	20 <sup>th</sup> July 2016
Number of user	5	45
Duration	10 minutes	2 hours
Type of testing	Alpha testing	Beta testing
Place	University Technical Malaysia Malacca(UTeM), FTMK	SMK Parit Bunga, Muar, Johor

اوتيمر سیتی تکنیکل ملیسیا ملاک

**Table 6.2: Software and hardware that needed on testing.**

Software/Hardware	Functionality
Smartphone-hardware	Application that needed to use on apps
Intel XDK preview apps-software	To execute the program of apps



## 6.2 Test Strategy

The main test strategy that had been used are alpha testing and beta testing. Alpha testing able to help developer to improve the quality of product and to ensure the readiness of beta testing. It usually may be tested by experience or professional user that may be give advice so that it may make some improvement to the product. On this mobile development, the tester of year 3 student from course of interactive media has been test on the product application.

For beta testing, it is used to test on target user/end user. It is also the testing after alpha testing has been done. The target user which is student PT3 has been test on the product application. The main purpose of testing is to test on the acceptance of student to this mySjmobile apps. For instances, are they understand how the apps using and ease use of the apps. They are provided questionnaire to figure out their comments.

### 6.2.1 Beta Testing on student PT3

Target sample for this testing are PT3 students from selected school in Johor. The objective of this testing is to measure the application satisfaction level towards end users. Hence, there are few question that will be asked in the questionnaire which listed as following:

- i. Do you think that mySjmobile app is easy to use?
- ii. Do you prefer if done your note Sejarah by using mySjmobile app?
- iii. Do you agree that note Sejarah done by using mySjmobile app?

The result is counted and will be showed at the following session, session 6.3

### 6.3 Test Implementation

In this session, a detailed of the test cases are discussed with supervisor, En. Wan Sazli Nasaruddin Bin Saifudin after testing on the target user. All of the data and information that has been collected from previous testing will be recorded and analysed. According to the data collected, it will to be determined whether the project is successful or not.

#### 6.3.1 Test Description

The entire testing of alpha testing beta testing done in two months. It spend a lot of time on alpha testing as to make some improvement on the development of the mobile application. In order to increase the quality of the product application, supervisor, En.Wan Sazli Nasaruddin Bin Saifuddin had given a lot advised which to make the apps becomes better. Besides that, the product also being tested by course mate, (bachelor degree of interactive media). There also giving good advices on the product.

For beta testing, the target user is selected from a secondary school in Muar, Johor. (SMK Parit Bunga). Student PT3 from class of 3 Bestari is tested on the testing. The method that used is Questionnaire and through observation. The student will give their feedback on the paper questionnaire provided after test on the mobile application. However, there are some of them is done by observed when their friends test on the apps, they also gave the feedback with the paper questionnaire provided.

#### 6.3.2 Test Data

The result of alpha testing and beta testing is analyzed and counted. The final result represent by using pie chat which has been shown at session 6.4.2.

## 6.4 Test Result and Analysis

### 6.4.1 Test Data from testing participant

The questionnaire is divided into three section (Example questionnaire showed on next page):

- i. To identify the most of mobile application that used by student PT3.
- ii. To identify which type of learning method that preferred by student PT3
- iii. To identify the satisfaction of Student PT3 when using taking note app, mySjmobile app.

#### I. To identify the most of mobile application that used by student PT3

<b>Sila tanda(/) pada soalan-soalan antara berikut.</b> <i>Please tick (/) to the following questions.</i>	<b>YA</b> <b>YES</b>	<b>TIDAK</b> <b>NO</b>
<p><b>1. Adakah anda memiliki peranti mudah alih (telefon pintar, tablet atau komputer riba) sendiri?</b>  <i>Do you own a mobile devices (smartphone, tablets, or laptop) personally?</i></p> <p><b>2. Antara berikut, yang manakah aplikasi anda selalu mengguna?(Lompat ke Soalan 4 jika Soalan 1 anda adalah tidak)</b>  <i>Which mobile devices that you always using for? (skip this question if your answer in Q1 is NO)</i></p> <p> <input type="checkbox"/> <b>Telefon Pintar</b>             <input type="checkbox"/> <b>Tablet</b>             <input type="checkbox"/> <b>Komputer riba</b>             <input type="checkbox"/> <b>Lain-lain</b>  <i>Smartphone                      Tablets                      laptops                      others</i> </p> <p><b>3. Adakah aplikasi anda dengan kemudahan wi-fi ?</b>  <i>Is your mobile device with wireless connection (wi-fi)?</i></p>		

## II. To identify which type of learning method that preferred by student PT3

Sila tanda(/) pada soalan-soalan antara berikut. <i>Please tick (/) to the following questions.</i>	YA YES	TIDAK NO
<b>1. Adakah anda memiliki peranti mudah alih (telefon pintar, tablet atau komputer riba) sendiri?</b> <i>Do you own a mobile devices (smartphone, tablets, or laptop) personally?</i>		
<b>2. Membuat nota sejarah, penggunaan mySJmobile app lebih efficient berbanding dengan menggunakan pen.</b> <i>Using mysjmobile apps is more efficiency than using pen when doing sejarah note.</i>		
<b>3. Adakah anda rasa bahawa pembelajaran mudah alih adalah lebih kecekapan berbanding dengan pembelajaran tradisional?</b> <i>Do you think that mobile learning is more efficiency compared to traditional learning?</i>		

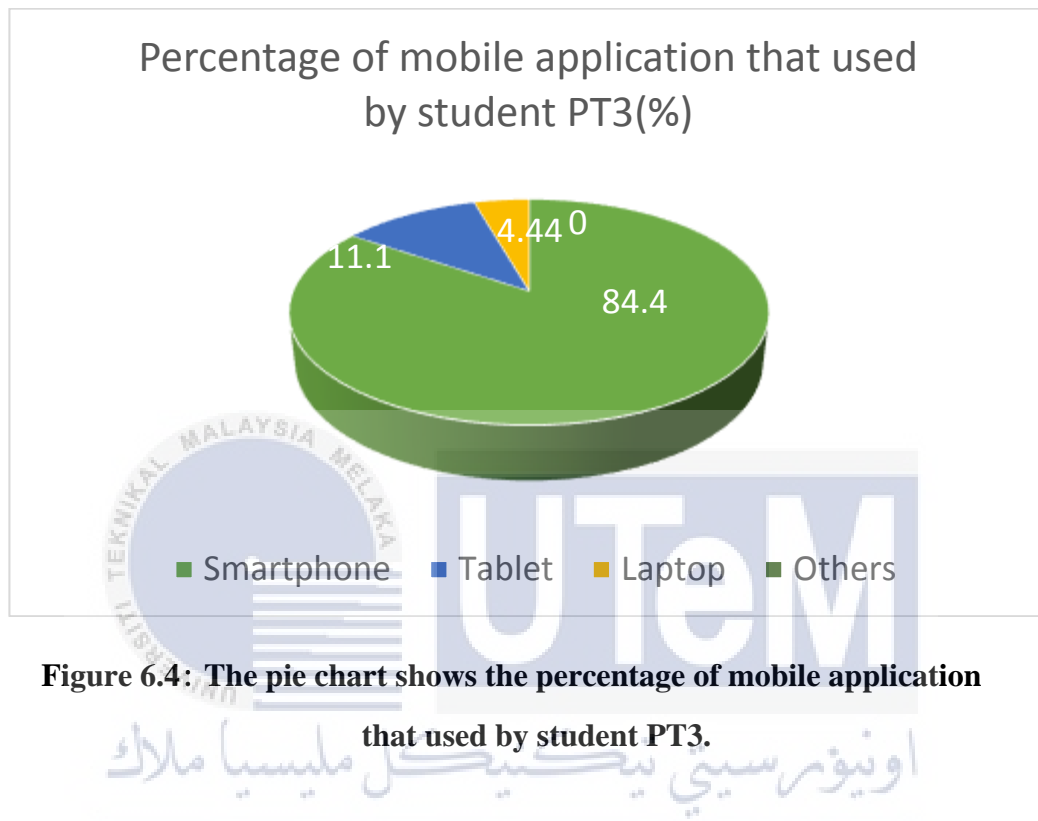
## III. To identify the satisfaction of Student PT3 when using taking note app, mySjmobile app.

Sila tanda(/) pada soalan-soalan antara berikut. <i>Please tick (/) to the following questions.</i>	YA YES	TIDAK NO
<b>1. Adakah anda rasa mySjmobile app senang digunakan?</b> <i>Do you think that mysjmobile app is easy to use?</i>		
<b>2. Adakah anda suka menyiapkan kerja nota Sejarah dengan menggunakan mySjmobile app?</b> <i>Do you prefer if done nota Sejarah by using a mysjmobile app?</i>		
<b>3. Adakah anda bersetuju bahawa nota Sejarah dilakukan dengan menggunakan mySjmobile app?</b> <i>Do you agree that Sejarah note done by using mysjmobile app?</i>		
<b>4. Adakah anda akan guna mySjmobile app jika app ini dipaparkan pada masa depan?</b> <i>Will you use mysjmobile app if it can be downloaded at future?</i>		

### 6.4.2 Analysis Result from data collect

From the questionnaire that have fill by 45 students, the data had been analyzed by using pie chart.

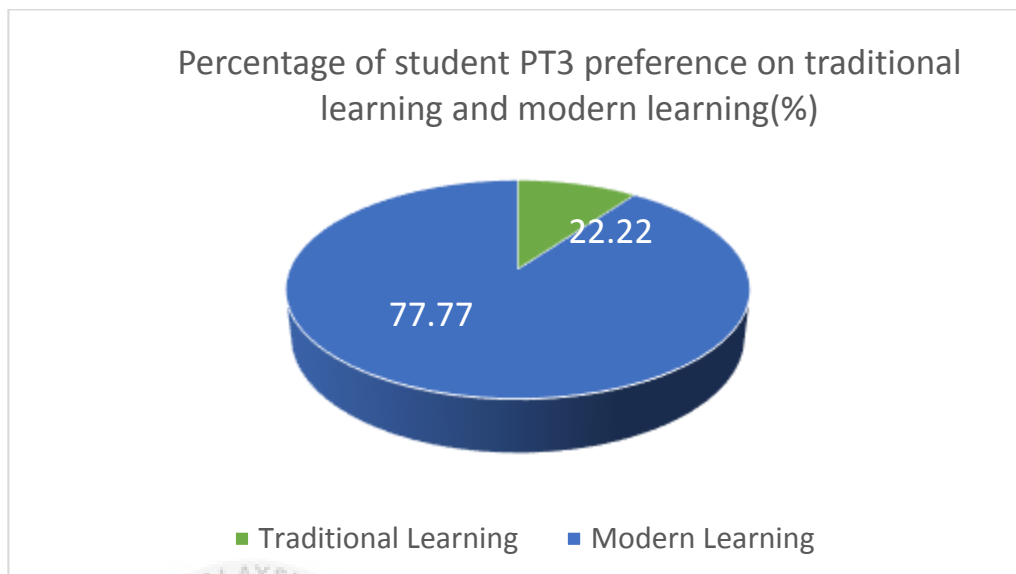
#### I. To identify the most of mobile application that used by student PT3



**Figure 6.4:** The pie chart shows the percentage of mobile application that used by student PT3.

The pie chart has showed about the percentage of mobile application that used by student PT3. It is about 84.4% of student PT3 who own their smart phone devices. However, there is 11.1% of student PT3 own a laptop and only 4.44% of student own a tablet. Therefore, Smartphone is the highest number of devices that owned by the students.

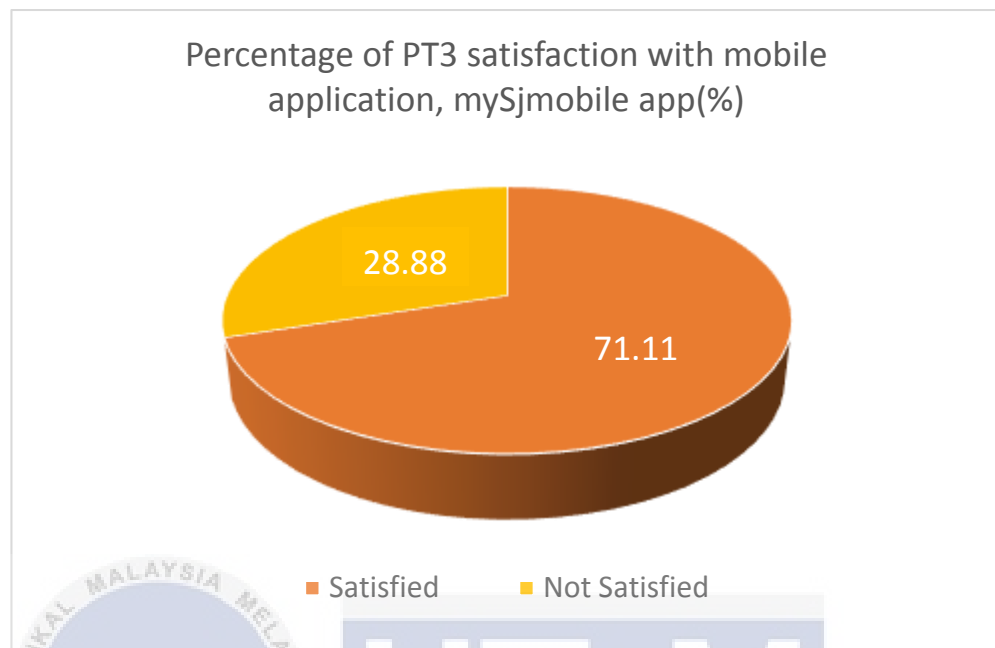
## II. To identify which type of learning method that preferred by student PT3



**Figure 6.5: Percentage of student PT3 preference on traditional learning and modern learning.**

Figure 6.5 above show the Percentage of student PT3 preference on traditional learning and modern learning. Based on the results, it shows that that Modern learning is favorite learning method using by student PT3, which has showed higher percentage compared to the traditional learning.

**III. To identify the satisfaction of Student PT3 when using taking note app, mySjmobile app.**



**Figure 6.6: Percentage of student PT3 satisfaction with mobile application, mySjmobile app**

The pie chart showed the percentage of student PT3 on satisfaction on the mobile application mySjmobile app. The result showed that percentage of satisfaction on mySjmobile apps of PT3 student is higher than not satisfied. Therefore this can be concluded that most of the PT3 student understand and easy to use on the apps.

## 6.5 Summary

As a conclusion to this chapter, alpha testing and beta testing has been well completed on the testing part. As the result showed, there are numerous of students own their smart phones devices, and satisfied with the mySjmobile apps. Besides that, student's feedback showed that the efficiency of modern learning is higher than the traditional learning. Therefore, it can be conclude that the development of mobile application, mySjmobile app is quite successful.





## CHAPTER VII

### CONCLUSION

This chapter is to make a conclusion to this project. The chapter is included of session such as the weakness, strength, proposition for improvement, contribution and future upgrading work that can be done.

#### 7.1 Observation on weakness and strengths

When we have finished the process of testing part, alpha testing and beta testing, we need to carry out the strengths and weakness of the project. The weakness and strength of project will be seen obviously when we are tested on the application. The method which to use to find out the weakness and strengths by using observation and questionnaire. With the method provided, developer able to improve and enhanced the development of application easily.

##### 7.1.1 Observation on strengths

The strength of the mySjmobile apps is to provide a platform which to enable the students to create the notes easily. The mobile apps has provided user friendly interface in order to make the student understand how the application works. Besides that, it also provided with drawing features that students can drawing and save on it.

With owning of mobile apps mySjmobile, students able to create their own notes anywhere and anytime.

### **7.1.2 Observation on weakness**

The final product of mobile application, mySjmobile apps is still consisting a few of error that still being solving. For instance, the note cannot be updated after saving. Besides that, it needs sometimes to load and display the images. Furthermore, the application must with the connection of internet so that it able to load the image and notes.

### **7.2 Preposition for improvement**

In future development, the weakness of the apps with try to be solved. For examples, the notes can be updated after saving, save images to local project files so that it able display the images and notes without the internet connection.

### **7.3 Project Contribution**

Nowadays, mobile learning is famous to the world. Most of people owned their mobile application. Therefore, mobile learning is enable to let the people reading at anytime and anywhere. The mobile application, mySjmobile apps has been developed to the secondary student, student PT3. It is a mobile apps to have an efficiency way to create the notes easily compared by using pen or pencil. It helped the students to study on modern way, which is also the way that preferred for most of students. Although there are several product that quite similar to mySjmobile apps, but it is developed specified for subject Sejarah, which is suitable to target user student PT3. Hence, it hopefully the mySjmobile app can help to improve the study on subject of Sejarah for the students.

#### 7.4 Summary

As a conclusion, the development of mobile application, mySjmobile apps is to help the student to create their notes. With the application, student able to create the notes in a more efficiency way study on subject of sejarah. On the other hand, data that has been collected from questionnaire showed that student preferred to use mySjmobile apps create the notes compared by using the pen or pencil. Therefore, the development of mySjmobile is quite successfully.



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### Questionnaire (Alpha Testing)

This is the feedback on mySjmobile app for the purpose of alpha testing. There are five testers that has been selected from the course of science computer media interactive which has experienced on development of mobile application. Below showed the feedback mySJmobile apps after they has been test on the device.

Tester 1-Oon Chia Min, major course of science computer media interactive, 3<sup>rd</sup> year student

Feedback 1:

The apps may make some improvement by adding more attractive images pictures when to create sejarah notes. Besides that, add delete button for the drawing part and to have an forder which able to save different picture.

Tester 2-Chong Sing Khuan, major course of science computer media interactive, 3<sup>rd</sup> year student

Feedback 2:

The functionality of the camera should be improved to increase the interaction between user and the apps.

The drawing part should add in edit function that brings convenience to students when they want to modify their artworks.

Tester 3-Ng Chin Sing, major course of science computer media interactive, 3<sup>rd</sup> year student

Feedback 3:

It is a new way to take notes, the apps can read to bring mobile phone and save time to write down

Tester 4-Lee Jia Xin, major course of science computer media interactive, 3<sup>rd</sup> year student

Feedback 4:

The system idea very good. The function of sticker store should change to notification or alert title. The idea of the function is very nice because it create a allow student to make notice for important note.

Tester 5- Lim Fang Keat, major course of science computer media interactive, 3<sup>rd</sup> year student

Feedback 5:

General / Overall -great idea to help students with their study online based make sure everything is backed up to the server, allowing access at any time - not able to access notes without internet connection - no audio feedback

Functions -contains multiple functions that students can make use of during their study,a ble to store digital notes that can be access anytime and anywhere by just logging into the apps, drawing function provide a more flexible input to create a note, ability to save photos as notes enable students to take down important notes quickly

Error handling - ability to record audio as notes would be great - ability to combine different type of notes (text, drawing, photo),Interface-Easy to understand, easy to read and recognise the content, good content's sequence - too many typefaces/fonts -

**Soal Selidik- Penggunaan aplikasi mudah alih untuk mata pelajaran sejarah kepada pelajar Tingkatan1, 2 &3. Questionnaire - Mobile learning for Form1, Form2 & Form3 student in subject of history.**

<p><b>Sila tanda(/) pada soalan-soalan antara berikut.</b>  <i>Please tick (/) to the following questions.</i></p>	<p><b>YA</b> YES</p>	<p><b>TIDAK</b> NO</p>
<p><b>1. Adakah anda memiliki peranti mudah alih (telefon pintar, tablet atau komputer riba) sendiri?</b>  <i>Do you own a mobile devices (smartphone, tablets, or laptop) personally?</i></p>		
<p><b>2. Antara berikut, yang manakah aplikasi anda selalu mengguna?(Lompat ke Soalan 4 jika Soalan 1 anda adalah tidak)</b>  <i>Which mobile devices that you always using for? (skip this question if your answer in Q1 is NO)</i></p> <p> <input type="checkbox"/> <b>Telefon Pintar</b>    <input type="checkbox"/> <b>Tablet</b>    <input type="checkbox"/> <b>Komputer riba</b>    <input type="checkbox"/> <b>Lain-lain</b>  <i>Smartphone    Tablets    laptops    others</i> </p>		
<p><b>3. Adakah aplikasi anda dengan kemudahan wi-fi ?</b>  <i>Is your mobile device with wireless connection (wi-fi)?</i></p>		
<p><b>4. Apakah alat-alat yang selalu anda gunakan untuk menyiapkan nota sejarah anda?</b>  <i>What is the tools that always you used to done sejarah note?</i></p> <p> <input type="checkbox"/> <b>Pen/pensel</b>    <input type="checkbox"/> <b>Peranti mudah alih</b>  <i>Pen/pencil    Mobile devices</i> </p>		
<p><b>5. Membuat nota sejarah, penggunaan mysjmobile app lebih efficient berbanding dengan menggunakan pen.</b>  <i>Using mysjmobile apps is more efficiency than using pen when doing sejarah note.</i></p>		
<p><b>6. Adakah anda rasa mysjmobile app senang digunakan?</b>  <i>Do you think that mysjmobile app is easy to use?</i></p>		
<p><b>7. Adakah anda suka menyiapkan kerja nota Sejarah dengan menggunakan mysjmobile app?</b>  <i>Do you prefer if done nota Sejarah by using a mysjmobile app?</i></p>		
<p><b>8. Adakah anda bersetuju bahawa nota Sejarah dilakukan dengan menggunakan mysjmobile app?</b>  <i>Do you agree that Sejarah note done by using mysjmobile app?</i></p>		
<p><b>9. Adakah anda akan guna mysjmobile app jika app ini dipaparkan pada masa depan?</b>  <i>Will you use mysjmobile app if it can be downloaded at future?</i></p>		
<p><b>10. Adakah anda rasa bahawa pembelajaran mudah alih adalah lebih kecekapan berbanding dengan pembelajaran tradisional?</b>  <i>Do you think that mobile learning is more efficiency compared to traditional learning.</i></p>		



