CHAPTER 1. INTRODUCTION

1.1 <u>Background of The Study</u>

Mobile application development has become a broad area within the software development industry and become such a large possible market (Hansson & Vidhall, 2016). The use of mobile device reaches 52.03% in from Mar 2019 - Mar 2020 and roughly half of the use of other devices such as desktop and tablet, according to Statcounter ("Platform Market Share, Desktop vs Mobile vs Tablet vs Console Market Share Worldwide - March 2020," 2020). The popularity of the use of mobile device related to mobile applications that have substantially started to direct people's lives. Some of the apps help end-users to communicate easier, manage the daily lives, and most of it for entertainment purposes.

As the second-largest religious, following in the world, Muslims have a significant demand to be provided their needs in the mobile application. Many applications have been accessible to serve Muslims.   Applications such as submitting daily prayer times, Qiblah direction, how to perform prayers are some examples. Those kinds of applications are beneficial to Muslims, especially since they always carry their smartphone with them most of the time (Shaout & Alafeef, 2017). According to the world population review, Indonesia's largest Muslim country is an estimated 229 million Muslims. This shows that Muslims is 87.2% of the Indonesian population of 263 million and about 13% of the world's population ("Muslim Population By Country Population ", 2020).

Muslims in their daily life should perform their worship to God. The type of regular worship is multiform such as Du'a, Praying, Recite Qur'an and Fasting. The rules have been set from the Qur'an as the guideline for Muslims. One explanation in the Qur'an (a holy book of Islam) says, "Recite, [O Muhammad], what has been revealed to you of the

Book and establish prayer. Indeed, prayer prohibits immorality and wrongdoing, and the remembrance of Allah is greatest. Furthermore, Allah knows that which you do." Qur'an - Chapter 29, Verse 45. That verse explains one kind of worship that is salah prayer that Muslims need to do in their daily life to prohibit the misconduct and always recall God.

Monitoring daily worship is like the parameters used to encourage regular worship. Most every Muslim at this time is only written the daily devotion on a sheet of paper or a book or using excel as the collection of data. The journal or note is likely damaged, or the data is lost so that no progress can be seen, and there is no comparison data for upgrading themselves. So, to facilitate Muslims, especially in Indonesia, the author intended to develop monitoring daily worship applications. The application will be called Hijr and has a motto that is "Become Your Hijrah Friends" that explains the app will help Muslims to do worship regularly well schedule.

The application (Hijr) provided on both Android and iOS devices. Android and iOS, as the most prominent mobile platforms, have been the primary targets for cross-platform solutions. Therefore, the term cross-platform is used to imply solutions that support the two platforms (Dagne, 2019). Recently a new framework called Flutter was released to bring fresh ideas and tools to create cross-platform applications (Jagiello, 2019). Flutter introduced by google in 2017 that is using Dart as the programming language. It offers a framework for building cross-platform mobile applications by giving the developer tools for writing a single application in a predetermined way and language and then enabling it to run on either Android or iOS. This thesis study intended to develop monitoring daily worship applications based on a cross-platform mobile app using a Flutter framework.

1.2 Problem Identification

Based on the background, the author can identify problems that faced on the development of this application, as follows:

1. How Monitoring daily worship apps help Muslims to do worship regularly?

2. How to develop monitoring daily worship based on cross-platform application?

3. How to develop monitoring daily worship using a Flutter framework?

4. What impact does the choice of a development framework have on the application development process and the long term maintainability of the application?

1.3 Purpose of the Study

The purposes of this application development are listed as follows:

1. This application designed to help Muslims summaries their worship to increase the worship level.

2. This application designed to record Muslim daily worship activity and get a resume.

3. This application designed to make a daily worship activity management application (Hijr) based on flutter.

4. This application expected to be available for Android and iOS users.

The main focus of this thesis paper involves the development of monitoring daily worship (Hijr) as a cross-platform application to provide Muslims with Muslim app in Android and iOS. The development of Hijr applications and the research of the availability of similar applications in both the operating system will provide insight into the research questions of this investigation.

1.4   Limitation of the Study

Some limitations of this study are listed as follows:

1. This application focused on Muslim religion

2. This application provides the English language

3. Due to the platform support of Flutter, the only investigated platforms are Android and iOS. Other platforms, such as Windows Phone, are therefore not included.

4. This application needs to use a VPN when the users are located in China.

1.5   Benefits of the Study

The benefits of designing this application are listed as follows:

1. This application can help Muslims to summaries their daily worship and help them to routines their worship daily.

2. This application can help Muslims to resume their worship to standardize their level of worship.

3. This application can help Muslims in order to provide them with Android and iOS OS.

4. This application used the English language instead of the Indonesia Language to make it a global application.

1.6   Research Methodology

1.6.1. Data Collection Method

In this method, Data collection methods used by the author are as follows:

1. Observation

    Observation is a direct observation of the object of use know the system to be made and proposed to be following user needs related to the research conducted.

The author made observations of the Muslim community around the environment. The author also observes the availability of Muslim application in Android and iOS Devices.

2. Literature Review

This section is done to get data that was written as a theory and empirical related to the research topic. The author utilizes the resources of the library reference such as books, journals, tutorials, articles, and related website from the Internet to get the supporting theories and references for the development of this thesis project "*Developing a daily worship monitoring application for Muslims in cross-platform mobile application using flutter framework.*"

1.6.2. Software Design Method

The methodology used in this project is the methodology of the Software Development Life Cycle (SDLC) model, which is a conceptual framework for this research thesis. SDLC is describing all activities in a software development project from planning to maintenance. This process is associated with several models, each including a variety of tasks and activities. The author used a specific SDLC model, Rapid Application Development, to implement the application's development. Rapid application development (RAD) is an object-oriented approach to systems development that includes a method of development as well as software tools(Kendall & Kendall, 2011).

RAD projects seem to be typical of relatively small-scale and of short duration. Also, two to six months is frequently discussed as being a regular project length(Paul, C, Hugh, & Tudhope, 1999). The RAD approach thus includes developing and refining the data models, process models, and prototype in parallel using an iterative process(Cosmas, Christiana, Jeremiah, & Ikechukwu, 2018). The thesis project will be carried out in two to three months period. Based on James Martin, phases approach to RAD are in the following stage:

1. Requirements Planning Phase

   In this phase, the author will determine the purpose of the app and survey users' needs. Design a questionnaire, and distribute it to the expected users, get some feedback, then analyze the needs from it and design requirements for the application.

2. User Design Phase

   In this phase, the author would design the functions and framework of the application. The author designs the application based on the user needs and build a prototype of the application. The author also defines the UML of the project thesis.

3. Construction Phase

   Once perform analysis and system design has begun, the next step is to change the results of analysis and design into a program application that can be used. At this stage, design results are entered into the form of the programming language that used to be executed in the form of the application.

4. Cutover Phase

   In this final Cutover (or Transition) stage, the author will test the application that has been made. Testing is done by the black-box method to all parts, and each application functions. This phase will have any necessary tests and revise, followed by documentation of application for final documentation for the thesis project.

1.7 Schedule

Scheduling will be implemented in the thesis as follows:

Table 1.1 Thesis Project Schedule

No	Activities	Weeks									
		1	2	3	4	5	6	7	8	9	10
1	Observation	■									
2	Literature review		■	■							
3	Analysis of needs/requirements				■	■					
4	Design						■				
5	Coding						■	■	■	■	
6	Testing						■	■	■	■	
7	Documentation										■

The process of arranging this thesis takes approximately 10 weeks, with the first week, started early week of March 2020 and to be plan finished on May 19th, 2020

1.8   The Writing Structure

As for the systematical structure, the outline for the thesis will be explained in five Chapters. The Chapters discussion described in the writing of the Final Thesis are as follows:

1. CHAPTER I INTRODUCTION

   In this chapter, the author discusses the study's background, problem identification, the purpose of the study, the aim of the app, limitations, benefits of the study, research methodology, and schedules.

2. CHAPTER II THEORETICAL BASIS

   In this chapter, it will discuss the fundamental theories that support and related to this thesis research. This chapter also contains a literature review and theoretical basis, which used as a basis for understanding the process of developing a project that supports this Final Project thesis.

3. CHAPTER III RESEARCH ANALYSIS AND DESIGN

In this chapter, the author discusses the analysis of the general description or the current condition, then analysis the current system continues to research the analysis of system needs. The research or surveys result of users need the analysis and design of the system and implement the conceptual framework of the research project to generate a new application.

4. CHAPTER IV IMPLEMENTATION AND TESTING

In this chapter, there will be an explanation of the results of the implementation made by the author. A detailed description of the application explained by the functions of the features. Moreover, it also illustrates the system's user interfaces and conducts testing of the system to determine whether the application is already done or still needs improvement.

5. CHAPTER V CLOSING

This chapter contains the conclusions of this thesis and advises those who used as references for future development.