**A CHATBOT APPLICATION FOR IOS TO RECOMMEND RECITING**

**THE QUR’AN AYAH**

by

**Agung Ramadhan Putra**

**A Thesis**

*Submitted to the Faculty of Nanjing Xiaozhuang University*

*In Partial Fulfillment of the Requirements for the degree of*

**Bachelor of Software Engineering**



School of Information Engineering

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May 2020

To:

This thesis, written by Agung Ramadhan Putra, and entitled A Chatbot Application for iOS to Recommend Reciting the Qur’an Ayah, having been approved in respect to style and intellectual content, is referred to you for judgment.

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Chief of Foreign Affairs Office

Nanjing Xiaozhuang University, 2020

*Dedication*

*To my beloved family, teacher, and friends.*

**ACKNOWLEDGMENTS**

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If you are not including acknowledgements, delete this page.

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Nanjing, May 2020

Agung Ramadhan Putra

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ABSTRACT

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Keep the section break below to allow Chapter 1 to start page 1.

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# INTRODUCTION

1. **Background of the Study**

Religion is a doctrine or system that regulates the system of faith or belief and worship of Almighty God and the rules relating to the association of humans with humans, and humans with their environment [1]. In 2016, it was recorded that 62% of the world considered themselves to be religious people, 25% consider themselves unreligious, while 9% think they are atheists or have no faith [2].

Islam is the last shari'ah that Allah sent down to the Prophet Muhammad bin Abdullah Sallallahu 'alaihi wasallam which is the closing of His prophets and messengers. Islam is the only true religion. Allah does not accept religion from anyone but Him. And Allah has made Islam an easy religion, there are no difficulties in it [3].

Indonesia is the 4th most populous country in the world, in 2010 data were collected with a total of 238.5 million people and the population of Muslims was 207 million or 87% [4]. The International Community said that Indonesia was the largest Muslim country in the World [5].

But even though the majority of Indonesian people are Muslims, the religious level in Indonesian society itself is very weak at 58%, while the non-religious figure reaches 30% [2], whereas religion itself is a guideline, a life guide for those who believe it, because the non-religious rate of the community is very high, indicating they do not involve religion in their lives so they often fall into a state of depression where depression is a mental disorder characterized by feelings of sadness, loss of interest or pleasure, decreased energy, feelings of guilt or inferiority, problems with sleep or appetite and lack of concentration [6] because of. WHO estimates that in 2020 depression will become the disease with the highest number of cases, which ranks second in the global disease burden, after heart disease. The prevalence of depression in Indonesia in the age group of more than 15 years reached 6.1 percent or 11,315,500 people [7], this indicates that the level of depression in Indonesia is very high.

With the development of technology in this era, it is inevitable that the presence of information technology is the cause of the emergence of various application, the one of the application is social media whose initial purpose is to connect between family, friends and those around them to be one of the causes of depression, because they see friends or people around them have a better life, more established or more perfect than themselves to be the cause of the emergence of negative emotions that feel hopeless and helpless, and ultimately choose to commit suicide.

Based on this problem, the author decides to make a bot application on an iOS-based smartphone that becomes a counselor for users so that the bad feeling of users can be better, the name of the application is Mualim.

1. **Problem Identification**

Based on the background, the author can identify the problem to develop the application, which is:

a. How to design a bot to be able to have a conversation like humans?

b. How can bots analyze user feelings and provide a solution in the form of verses of the Quran?

c. How can bots help reduce or eliminate a person's negative feelings?

d. How can the application be easily understood by users?

1. **Purpose of the Study**

The purpose of this application is:

a. This application is used as a medium of chat for users to get the advice of the Quranic verses to read.

1. **Limitation of the Study**

Limitation of the application is:

a. This application only available on Indonesia's language, users must understand Indonesian.

b. This application was made only on the iOS platform.

1. **Benefit of the Study**

Some benefit of the application is:

a. Application designed like a human being and a chat media for users.

b. The application provides recommendations of the verses of the Qur'an to be read which make users feel better.

1. **Research Methodology**

The methodology used in this research is Rapid Application Development (RAD) which is a part of Agile Software Methodology. The author chose RAD, because the authors saw the time available to make this research and were suitable for making a mobile application, and also prioritized the prototype release and iteration. Rapid Application Development is … [8]. The approach of used RAD software methodology divides the process into four distinct phases [9]:

1. Requirements Planning Phase

At this stage, the author does the analyze for applications requirement based on the problem, determine the user’s need, the scope of the project and planning for the system requirements.

2. Design Phase

During this phase, the authors design a system design that will be implemented into applications in the form of Unified Modeling Language (UML) such as Activity Diagrams and Use Case Diagrams, and also design the interface of the application.

3. Construction Phase

This stage will focus on program and application development based on the planning and design done before. To construct the application, the author chooses several tools and technologies that support during the construction.

4. Implementation Phase

The implementation phase do the testing for the application that has constructed, consists of testing the interface design and also testing the black box for each function in the application.

1. **The Writing Structure**

As known, this study consists of six chapters, with the explanation of each chapter as follows:

Chapter 1. Introduction

In this chapter, the author explains the background of the issues raised for thesis making, problem identification, the purpose of the study, limitation, benefits, research methodology, the writing structure, and the schedule.

Chapter 2. Theoretical Basis

In this chapter, the author explains the theoretical basis used as a tool for making applications.

Chapter 3. Analysis & Design

In this chapter, the author explains the system analysis and design of the device to be created.

Chapter 4. Implementation

In this chapter, the author gives an illustration of the application that has been made, which at this stage the author is coding so that the application can be used by the user.

Chapter 5. Testing

In this chapter, the author tests the applications that have been made whether there are still errors or not.

Chapter 6. Conclusion

In this chapter, the author explains conclusions and unresolved things that can be used as a reference for future work.

1. **Schedule**

The time for doing research is detailed in Table 1.1., as follows:

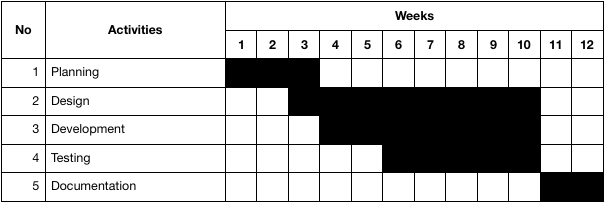
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Table 1.1. Schedule

The process of arrange this thesis takes around 12 weeks, based on domestic schedule, start from February 24th to Mei 14th 2020.

# THEORITICAL BASIS

**2.1 Theoretical Basis Content**

Theoretical Base Content includes the technologies that are used by the author during application creation, therefore this chapter contains follows:

2.1 Theoretical Basis Content

2.2 Programming Language Literature Review

2.3 Application OS Literature Review

2.4 Technology Overview

2.5 Integrated Development Environment

2.6 Software Development Technology

**2.2 Programming Language Literature Review**

Programming Language Literature Review is a programming language used by the author for making applications, that are:

2.2.1. Hypertext Markup Language (HTML)

HTML is the standard markup language that web browser uses to interpret and compose text, images and other material into visual or audible web pages.

The web browser receives HTML documents from a web server or from local storage and renders the documents into multimedia web pages. HTML describes the structure of a web page semantically and originally included cues for the appearance of the document. [9] Wikipedia 2020, accessed April, 20 2020, <https://en.wikipedia.org/wiki/HTML>

How HTML plays role in Mualim Application:

Why did the author choose HTML, because:

2.2.2. Cascading Style Sheets (CSS)

CSS is a style sheet language used for describing the presentation of a document written in a markup language like HTML.

CSS is designed to enable the separation of presentation and content, including layout, colors, and fonts. The separation can improve content accessibility, provide more flexibility and control in the specification of presentation characteristic, enable multiple web pages to share formatting by specifying the relevant CSS in a separate .css file and reduce complexity and repetition in the structural content. [10] Wikipedia 2020, accessed April, 20 2020, < https://en.wikipedia.org/wiki/Cascading\_Style\_Sheets>

How CSS plays role in Mualim Application:

Why did the author choose CSS, because:

2.2.3. Javascript (JS)

JS is a programming language that conforms to the ECMAScript specification. JS is a high-level programming language and one of the core technologies of the World Wide Web.

JS enables interactive web pages and is an essential part of web applications, and also supports event-driven, functional, and imperative programming styles. It has Application Programming Interfaces (APIs) for working with text, dates, regular expressions, standard data structures, and the Document Object Model (DOM). [11] Wikipedia 2020, accessed April, 20 2020, < https://en.wikipedia.org/wiki/JavaScript>

How JS plays role in Mualim Application:

Why did the author choose JS, because:

2.2.4. Hypertext Preprocessor (PHP)

PHP is a widely-used open source general-purpose scripting language that is especially suited for web development and can be embedded into HTML. [12] PHP Documentation, accessed April, 20 2020, <https://www.php.net/manual/en/intro-whatis.php>

PHP code is usually processed on a web server by a PHP interpreter implemented as a module, a daemon or as a Common Gateway Interface (CGI) executable. On a web server, the result of the interpreted and executed PHP code which may be any type of data, such as generated HTML or binary image data – would form the whole or part of a HTTP response. [13] Wikipedia 2020, accessed April, 20 2020, <https://en.wikipedia.org/wiki/PHP> From PHP create various web template system, web content management systems, and web frameworks.

How PHP plays role in Mualim Application:

Why did the author choose PHP, because:

2.2.5. Swift

Swift is a general-purpose, multi-paradigm, compiled programming language developed by Apple Inc. for iOS, iPadOS, macOS, watchOS, tvOS, Linux and z/OS. [14] Wikipedia 2020, accessed April, 20 2020 < https://en.wikipedia.org/wiki/Swift\_(programming\_language)> Swift built using a modern approach to safety, performance, and software design patterns. [15] About Swift, accessed April, 20 2020 < https://swift.org/about/> It has a clean and modern syntax, offers seamless access to existing C and Objective-C code and frameworks, and is memory safe by default.

Although inspired by Objective-C and many other language, Swift is not itself a C-derived language. As a complete and independent language, Swift packages core features like flow control, data structures, and functions, with high-level constructs like objects, protocols, closures, and generics. Swift embraces modules, eliminating the need for headers and the code duplication they entail. [16] Github 2020, accessed April, 20 2020 < https://github.com/apple/swift>

How Swift plays role in Mualim Application:

Why did the author choose Swift, because:

2.2.6. Structured Query Language (SQL)

SQL is a domain-specific language used in programming and designed for managing data held in Relational Database Management System (RDBMS), or for stream processing in a Relational Data Stream Management System (RDSMS). [17] Wikipedia 2020, accessed April, 20 2020 < https://en.wikipedia.org/wiki/SQL>

SQL statement are used to perform task such as update data on a database, or retrieve data from database. The standard SQL command that can be used to accomplish almost everything that one need to do with the database such as Select, Update, Insert, Create, Delete and others. [18] SQLCourse, accessed April, 20 2020 < http://www.sqlcourse.com/intro.html>

How SQL plays role in Mualim Application:

Why did the author choose SQL, because:

**2.3 Application OS Literature Review**

2.3.1 Bot Application

2.3.2 Mobile Application

2.3.3 Web Application

**2.4 Technology Overview**

2.4.1 Dialogflow

2.4.2 Firebase

2.4.3 Laravel Framework

**2.5 Integrated Development Environment**

2.5.1 MySQL Workbench

2.5.2 Sublime Text

2.5.3 Xcode

**2.6 Software Development Technology**

2.6.1 Database Diagram

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2.6.5 User Interface Design

# ANALYSIS AND DESIGN

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# IMPLEMENTATION

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# TESTING

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# CONCLUSION

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**References**

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