# MOBILE APPLICATION FOR JAWI LEARNING

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This report is submitted in partial fulfillment of the requirement for the Bachelor Of Computer Science (Interactive Media) With Hons.



FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
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2016

# DECLARATION

I hereby declare that this project report entitled

**MOBILE APPLICATION FOR JAWI LEARNING**

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

STUDENT : _____ Date: 17 · 08 · 2016

(MUHAMMAD AZMIL BIN ALIAS)



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

SUPERVISOR : _____ Date: 17-08-2016

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## DEDICATION

To my beloved parents, a million thanks for support me all the way to this stage in my life. All of morale support from you makes me to stay until now especailly in my studies

To my supervisor, Mdm Tarisa Makina Kintakaningrum and also my Evaluator, Ahmad Shaarizan Shaarani, million thanks for make this research project possible by guiding me.

To all my friends who lend their ideas and hand to me for all the time whenever helps is needed.

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First and most important, I would like to thank my beloved family for give me strength and confidence to complete this final year project.

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# ABSTRACT

Mobile Application For Jawi Learning is a application that help to educate children to identify Jawi numeral from one to nine. This application is develop and design for children aged 6 to 8 years old. There are a tons of application available in the internet, but all less attractive and covering only on alphabet. They use traditional 2D character and some multimedia elements. This application will help and attract children to learn and identify Jawi numerals with better understanding. By using multimedia elements such as graphic, sound, animation, 3D character and object, it more attract children attention than using current technique of learning. This project will be run in android devices.

# ABSTRAK

Pembelajaran Jawi dalam aplikasi mudah alih ini membantu untuk mendidik kanak-kanak mengenal nombor Jawi dari satu hingga sembilan. Aplikasi ini dibangunkan untuk kanak-kanak berusia 6 hingga 8 tahun. Terdapat banyak aplikasi yang boleh di muat turun di internet, tetapi kurang menarik dari segi elemen multimedia dan hanya untuk mengenal huruf Jawi sahaja. Aplikasi yang sedia ada menggunakan objek dan karakter 2D juga beberapa elemen multimedia yang lain. Aplikasi ini akan membantu dan menarik perhatian kanak-kanak untuk belajar dan mengenalpasti nombor Jawi dengan lebih berkesan. Dengan bantuan elemen multimedia seperti grafik, bunyi,animasi yang menarik,objek dan karakter 3D, sudah pasti akan menarik perhatian kanak-kanak berbanding dengan cara pembelajaran yang sedia ada. Aplikasi ini menggunakan sistem operasi *"Android"* dan dimainkan di telefon pintar.

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| | | |
|---|---|---|
| AR | - | Augmented Reality |
| VR | - | Virtual Reality |
| API | - | Application Programming Interface |
| SDK | - | Software Development Kit |
| UI | - | User Interface |

# CHAPTER I

# INTRODUCTION

This chapter views the background of the study which is an introduction of the project. It provides details of the statement, objective, scope, significances, expected outcome, stakeholder and the research element.



## 1.1 Introduction

Jawi is a Malay language writing system whose characters are similar to Arabic character. Jawi is so synonymous in the life of the Malay community hundreds years ago (Hamid & Latif, 2014). However, nowadays not all people can read and write Jawi very well. These happen due to many reasons. One of the reason is they perceive to learn Jawi due to difficult and not importance since Jawi is not evaluated in any examination (Mat Diah & Mat Zin, 2011) and no longer use in any official matters.

Hence an application is propose to make children especially interested in learning Jawi. Learning Jawi Numeral using Augmented Reality is an application that educates children to identify and write Jawi numeral. Recently, there is a lot of application

available in the internet. But there is less attractive element (Mat Diah, Ismail, Ahmad & Abdul Hamid, 2012).

Generally, this application will help and attract children to learn about to identify Jawi numeral with more depth. By using graphics, and sounds children are more likely than using the current technique of learning. This project will be module and publish in mobile devices. It will aim to help children read and write Jawi Numeral fluently thus creating more interesting platform to learn Jawi

## 1.2 Problem Statement

Thousand years ago, Jawi has spread widely in any official or non-official matter in Tanah Melayu which now known as Malaysia. Slowly with the growth of modernization, the use of Jawi in both writing and reading has been gradually forgotten. This is due to the focusing on roman character in daily communication. Roman has replacing the use of Jawi in all matters including education in school. Most of school textbook has been replacing with roman character. Family background which careless in Islamic Education is also one of the factors. Hence, made the younger generation less interested in learn more about Jawi.

The learning process of Jawi should start from children (Mat Diah & Mat Zin, 2011).This skill is important as they need it in their Islamic education especially when reading Quran. For those students who unable to know Jawi skills, they may left behind in the Islamic courses as Jawi is used as the medium or tool to teach these courses. According to Ahmad (2011), some children are unable to know Jawi well even at the age of 9. Eventhough Jawi has been though in school, but the method of teaching is not attractive. Some of the student also has negative attitudes towards Jawi because they found it to be very difficult (Mat Diah, Ismail, Andul Hamid & Ahmad, 2012), felt that it is not important and that subject is not assessed in the national level examinations.

Currently, in the market commercial, only have traditional method in learning Jawi like using book and Compact Disc (CD). Most of the content is only focusing on Jawi alphabets only not for numbering in Jawi. Numbering in Jawi also important to know because in Qur'an itself have a number in all pages. The multimedia application developments nowadays are exposing more on Quran reading compare from Jawi learning. It will be better if Quran reading development is accordingly with expose of Jawi alphabet and numeral usage.

## 1.3 Objective

The goal of this project is stated below:

1. To investigate the implementation of mobile augmented jawi learning on numbering one to nine.
2. To develop mobile augmented reality jawi learning on numbering for children age six to eight years old.
3. To measure effectiveness of mobile AR application for Jawi Number learning.



## 1.4 Scope

The scope of this project is

1. The scope for this project is will focus on young Muslim children in early stages of learning to write. The age of children that have been chosen is around 6 to 8 years.
2. Another focus for this project is only for Jawi Number. This application will introduce to the children how the Jawi Numberlooks like with sound of speech for each number.

## 1.5 Project Significance

At the end of this project, a multimedia application on Jawi numberwhich rarely found nowadays will be develop. This is the beginning for encourage more development towards Jawi application. This application can help the educator and parents on delivering their teaching effectively to children.

## 1.6 Conclusion

Jawi is the writing script for the Malay language since the 15th century derived from the Arabic alphabets. The design of the learning process focuses on the Jawi alphabets which includes the example and word. These skills are important among the children. At the same times this product also involved the Augmented Reality elements where when the reader scan at the alphabet marker by using the flash card, then the example and words will pop out. So that, this kind of learning will encourage the children become more excited to learn Jawi and make them more understand in Jawi learning

# CHAPTER II

# LITERATURE REVIEW

## 2.1 Introduction

Nowadays, research on basic children education has grown widely. There have research on alphabets, images and many more. Only few researcheshave come out with Jawi alphabet. This Jawi application has rarely found in our country market. Based on this, a multimedia application has been done as the output of this project.



Beside, to make this application gives more interactive to the user and Augmented Reality (AR) technology has been propose to this project. AR technology is the environment where virtual object are integrated into 3-Dimensional environment in a real time. Unlike Virtual Reality (VR) technology, VR allows users to see real world at the same time as virtual imagery attached to the real object and location (Billinghurst, 2002).

Recently, books have been augmented with many type of visualization which includes the 3D graphics, sound and animation. Some goes to this research. As the grown of modernization, the Islamic element need to pursuing the evolvement of technology.

## 2.2 Jawi Background

As widely known, the use of Jawi and Arabic vocabularies was widely use in Tanah Melayu around the 17 and 19Century.Jawi has been adopted from Arabis alphabet to be use in Malay language writing (Redika, Omar, & Nasrudin, 2008). Partially, it has been introduce for religious and cultural traditional propose only. Hence, slowly it involve in the business affairs. After Second World War, Jawi was acknowledged as the main writing system for classical Malay literature (Yusuff & Saidi, 2010). Unfortunately, from time to time, after British colonization era, Jawi has slowly replaced with Roman scripts.

Jawi written is different with modern Roman written. The word is written from right to left and the letters are connected to each other on the base line. But the number is written vice versa, from left to right (Das, Faruk Mollah, Saha, & Haque, 2006).

There have 28 basic characters for Jawi scripts. It may have different form depending on their position either in word or single character form. Jawi characters have up to 2 to 4 shapes and the position within the word has influence the correct shape to be selected(Razak, Abd Ghani, Mohd Tamil, Idna Idris, Mohamed Noor, & Mohd Yusoff, 2008). The segmentation of these Jawi character may become complicated and need a complex analysis due to these connectivity.

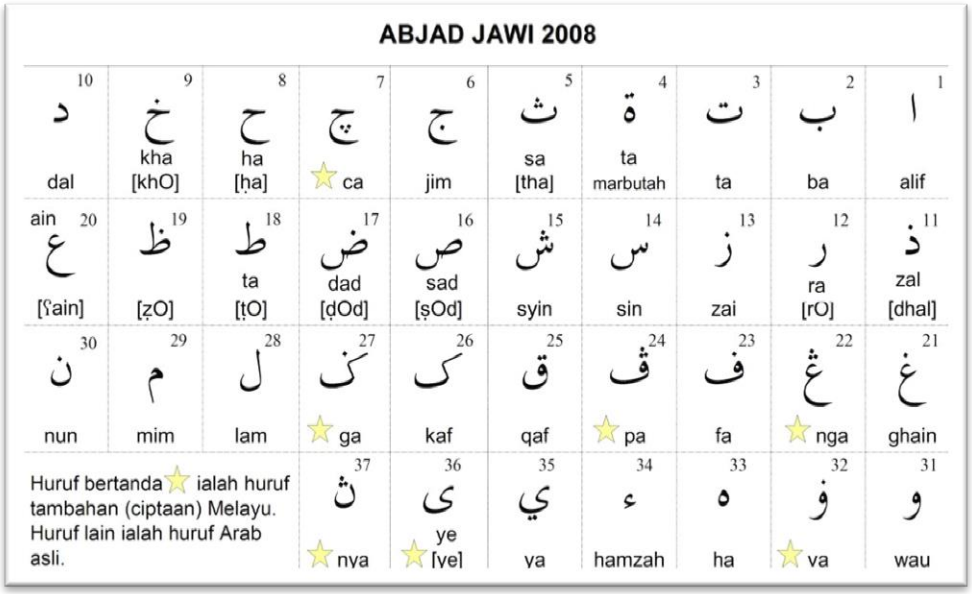


**Figure 2.1 : Jawi Alphabet (Daftar Kata Bahama Melayu Rumi - Sebutan-Jawi, 2008)**

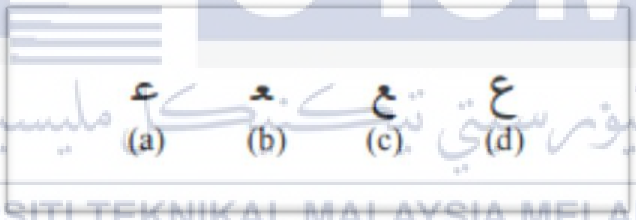




**Figure 2.2: Example of character 'ain' with different shape. (a) Beginning of word (b) Middle of word (c) End of word (d) Stand-alone (Razak, Abd Ghani, Mohd Tamil, Idna Idris, Mohamed Noor, & Mohd Yusoff, 2008)**

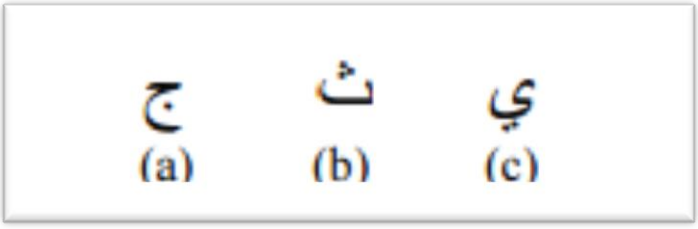


**Figure 2.3: Example of different location of dots. (a) Base line (inside) (b) Above (c) Below**

| | | | | | |
|---|---|---|---|---|---|
| | ٠ | ١ | ٢ | ٣ | ٤ |
| Roman Digit | 0 | 1 | 2 | 3 | 4 |
| | ٥ | ٦ | ٧ | ٨ | ٩ |
| Roman Digit | 5 | 6 | 7 | 8 | 9 |

**Figure 2.4 : Jawi numerals (Das, Faruk Mollah, Saha, & Haque, 2006)**



The deterioration of Jawi script become more worst when Language Act (1963) were introduce, which enforce the use of Roman or Rumi Scripts as official writing for Malay language. Since then, Jawi seems to lose the strength to become a root in dominance of Roman Scripts. As the result, many people nowadays do not know how to read and write in Jawi (Mat Diah & Mat Zain, 2011). In addition, Jawi is restricted only to Islamic matters and is primarily used in the mosque, religion school and Islamic courts.