

# Learning to Recite the Qur'an through Mobile Applications

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**Abstract.** Muslims are expected to be able to recite the Quran. Unfortunately, many Muslims cannot do this in proper ways. Fortunately, mobile applications can help Muslims how to recite the Qur'anic verses in proper ways. Focusing on a mobile application known as "Quran E-Learning", this paper describes the advantages of using this mobile application as a new tool to learn to recite the Qur'an. The use of this mobile application is expected to contribute to the attempt to overcome the obstacles facing millennial Muslims in learning to recite the Qur'an in proper ways.

**Keywords:** Alquran Learning; millennial Muslims; mobile application; Google Play

## 1 Introduction

Indonesia is the largest Muslim country in the world, in which around 12.7 % of the world's Muslim population live in this country. Around 200 million or 88% of Indonesian population are Muslims. However, according to a report of Susenas BPS in 2014, around 54% of them cannot recite the Qur'an properly.

This is a serious problem for reciting the Qur'an is one of Muslims' daily obligations. There are many factors contributing to this phenomenon. These include the facts that many Muslims do not start learning to recite the Quran at their early ages; they are busy with their daily business so it is difficult to find suitable time to learn how to recite the Qur'an; there are limited number of good teacher or credible learning resources; or adult Muslims are embarrassed to learn how to recite at the same place with children Muslims.

Therefore, there is a need for a private, flexible, accessible and credible learning resource. Some Qur'an publishers have responded to this need by producing e-pen version of the Qur'an which guides its users to recite the Qur'an properly. However, this product has two disadvantages: it is expensive and not mobile. Fortunately, a mobile application known as "Qur'an E-Learning" is seen to be able to overcome these weaknesses in that it provides mobile, interactive, and self-learning resource, which can be accessed easily and freely via smartphone.

## 2 Background Study

Nowadays, there are more than 500 Qur'an applications using android platform[1]. However, most of them provide only one way interaction, such as text, recital, translation and exegesis. Only few of them provide two-way interaction, so users can improve and evaluate their ability to read Qur'an[2].

Reading Quran properly is reciting Qur'an according to *makhraj* and *tajweed* rules[3]. The conventional process of learning Qur'an is highly depending to the guidance of an expert teacher. The teacher plays an important role, such as to make some examples, hear the student's recitation and do some corrections. This process is called *talaqqi* and *musyafahah*[4]. The teacher will correct student recitation based on *tajweed* rules with respect to *harakat*, *makhraj* and *sifat*[5]. The weakness of this conventional method is the difficulty to find suitable time and teacher.

In conventional *talaqqi* and *musyafahah* method, the learning process divided into three steps. They are the teacher's recitation as reference guide to read Quran, the student's recitation following the guidance, and the corrections from the expert teacher[6]. The second and third steps usually repeated several times until student reach proper recitation according to teacher judgment. These three steps technically can be transformed into artificial intelligent process, so the student can practice and improve his ability as much as he please, anytime and anywhere, without the presence of expert teacher. It can be used as a pre-evaluation process before doing actual correction with the real teacher.

### 3 Related Work

There were some studies about Qur'an learning program based on mobile application, one of them is "*Al-Qur'an Learning Using Mobile Speech Recognition: An Overview*" which presented the design of Qur'an learning application using recognition speech ASR (*automated recognition speech*). This application serves as tutor which helps user to spell Qur'an properly and also correct the mistake of user spelling[7].

Another research is "*Toward Designing And Modeling Of Al-Qur'an Learning Application For Android Devices.*" This research present "Noor Al-Qur'an" application which equipped by some features such as recitation, translate, root words and tafseer in the form of audio, video and text. This application help users to recite, memorize and understand the Qur'an. The flaw of this application is the absence of *tajweed* features. The application fits for the users which have basic knowledge in reciting Al-Quran[8].

The next research are "*iTajweed, to Enhance The Interactive Learning Modules For The User*[9]", "*Membangun Aplikasi Berbasis Android Untuk Pembelajaran Dalam Membaca Lafadz Al-Quran Disertai Tajwid*[ 10]", "*Aplikasi Pengenalan Ilmu Tajwid Berbasis Android* [11]". These researches attempt to build applications which help users learning to read Qur'an properly according to *tajweed* rules. These applications equipped by some features such as *tajweed* rule explanation, examples and voice over.

Another research is "*Implementasi Google Speech Untuk Penentuan Level Pembelajaran Iqra* [12]". The research attempts to design an application using Google Speech which helps users learning to read Qur'an properly according to *iqra* method. This application equipped by some features such as voice over menu which explain the theories and the examples, and test menu to evaluate the result of the learning process.





## 4 System Development Method


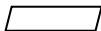
The system development used in this research are three stages: (1) Users need determination, (2) making the design, and (3) implementation stage. The first stage generates three basic needs in learning to read Qur'an. They are teacher's recitation as reference guide to read Quran, the student's recitation following the guidance, and the facility to record and replay student's recitation so the student can do self correction to his recitation. The second stage is conducting the architecture design and system interface. This design consists of several the workflows including registration phase, read phase, how to read phase, test phase, and play again-record phase. The third stage Implementation stage is to apply the design with Android Studio, Javascript, and DB Browser for SQLite and perform users acceptance test.

## 5 Result and Discussion

This research will present new method of learning to read the Qur'an using mobile application. This method will help users to know how to read Qur'an effectively and easily. Users can also record, delete and rerecord his own reciting as much as he wishes. Users can also compare between his recorded voice and voice over from the application or bring his recorded voice to the real teacher to be evaluated. The notations used throughout this paper and the proposed work flows are as follows:

**Table 1.** Workflow Notations

Notation	Name	Description
	Actor	Stakeholder that calls on the system to deliver one of its services
	Use Case	Represents a user goal that can be achieved by accessing the system or software application
	Association	Actor and use case can be associated that actor participates in that use case
	Gateway	Determine forking and merging of paths, depending on the conditions expressed

	Process	A process in the system
	Input	Get value from actor in the system

This research has five phases:

1) Registration Phase

User must have an account to access this application. The user can get the account via email and password after filling out the form.

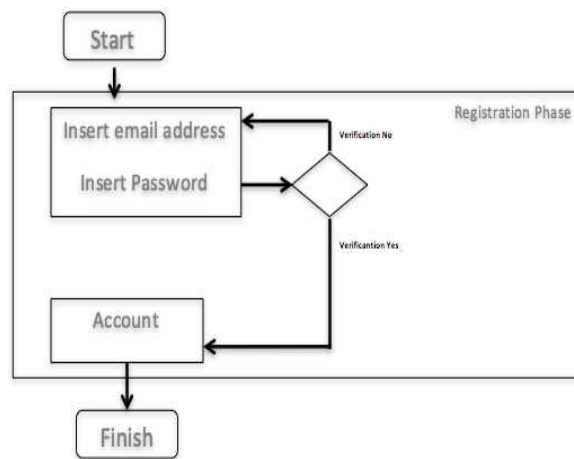
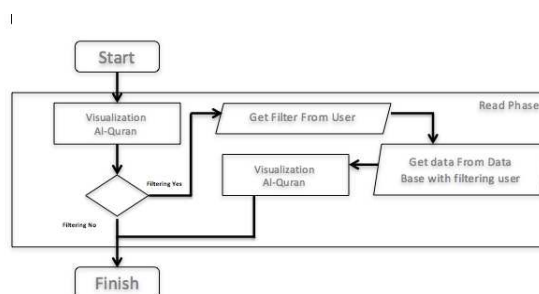


Figure 1. Registration Phase

2) Read Phase

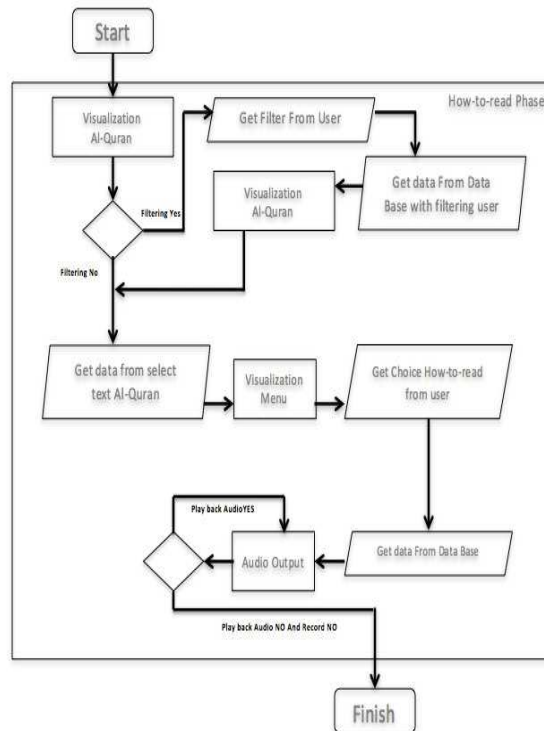
User can read Qur'an using mobile application



**Figure 2. Read Phase**

3) How-to-Read Phase

User can select the text of a particular part of the Qur`an, and listen how to read that text section.



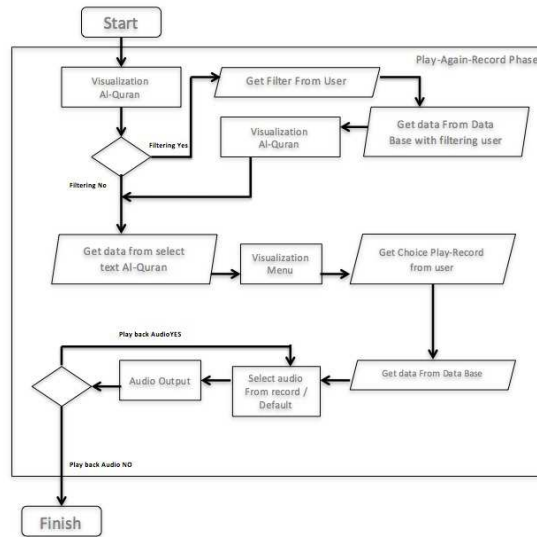
**Figure 3. How-to-read Phase**

4) Test-Phase

In this phase, users can record their own voices and compare it with audio (voice over) from the application. The users can also skip this phase and continue to next phase (Play-Again-Record-Phase)

5) Play-Again-Record-Phase

User can play the record voice from the application, and user can bring the voice record to real teacher to fix the spelling and reading Al-Quran.



**Figure 4.** Play-again-record Phase

In accordance with the proposed scheme, users have six modules to learn read Qur'an. In use case diagram actor has association with six menus or modules.

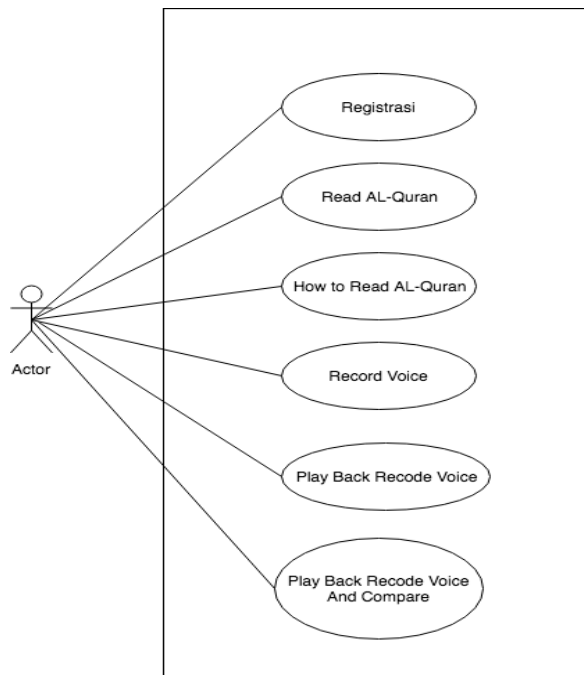


Figure 5. Use case diagrams

## 5 Conclusion

Reciting the Quran is an obligation for Muslims. Yet, many Muslims cannot recite the Qur'an properly due to many factors, including lack of learning resources. The need of millennial Muslims for more private, flexible, accessible and credible Qur'an learning resource has increased. The traditional methods of Qur'an reciting do not fit anymore with the needs of millennial Muslims. In response, the Qur'an E-Learning application is found to be useful in helping those millennial Muslims how to recite the Qur'an as often as possible and repeat their recital without the presence of teachers. This application can be used as a pre-evaluation tool before the learners test their Qur'anic recital before offline teachers.

## 6 Future Work

The future research is needed to improve the capability of Qur'an E-Learning application in testing its users' ability to recite Qur'an in proper ways. This can be conducted through the use of use the ASR (automated recognition speech). By doing this, it is expected that the application will be more useful as a learning resource for millennial Muslim generation to improve their skill of reciting the Qur'an.

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