

Quran Memorization Using Mobile App

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Abstract This study was carried out in an attempt to encourage students' to memorize Quran using mobile App. We have mobile App for memorizing Quran chapters. Complete Quran is stored in server and App downloads Quran chapters using Internet. The mobile App were designed our university. The mobile App is having memorization and social modules for memorization and recitation respectively. For few weeks students were asked to memorize Quran chapters using Quran Mobile App, then an assessment session about the memorization was directed. Later, students were requested to memorize Quran without App. Finally after memorization, then all students were asked to fill up opinion of these two sessions. Majority of them found mobile App easy and better way to memorize Quranic chapter and also recommended to use Mobile Apps for other knowledge based domains.

Keywords: *Quran, mobile app, knowledge, learning domain, active learning*

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1. Introduction

Quran is the God's words and memorization of its verses are considered holy and beneficial for Muslims in their hereafter life. So hence, in this research author is using Quran memorization app, especially designed for religious schools and others whoever interested in memorization. Quran has 114 chapters. "*Americans now own four digital devices on average, and the average U.S. consumer spends 60 hours a week consuming content across devices*" [1]. Hence, learning with mobile is not new thing but it is never utilized in Quran memorization.

The remainder of the paper is organized as follows. Section 2 introduces Quran App. Section 3 describes Statistical analysis. Section 4 discusses the result of using mobile App for the memorization.

2. Overview of the Quran Hifz System

The overall system consists of an open-source webserver and user application operating on android OS and IOS platform. As a part of the platform, social group memorization unit social assistant memorization (SAM) was designed and implemented with innovative algorithm, enabling students and experienced students to communicate in a user friendly manner. Hifz project offers memorization service and its experienced users can instantly help new students using SAM module.

Server provides seamless communication between new students, experienced students, and Qari. Server plays the role of an authorization and accounting of Hifz Quran chapters of any given student and Qari. To fulfill its functions, the server's design and implementation have

given importance in terms of security and easy access to the service. For students, the Hifz memorization strategy for a group of students dependent on the Quran Juz, the Juz means group of chapters of the Quran. There are generally considered to be 30 Juz of the Quran: as shown in the [Table 1](#). Of these, each Juz has variable number of chapters.

In this article, we demonstrate the server's operability and capacity to share Juz script and audio of each verse with students in real time. However, in some environments such as public places and home, wireless data transmission between server and users might be delayed. Moreover, it has been pointed out, both theoretically and experimentally, that wireless connection is slow and consumes more battery power, so our proposed App must be robust enough against severe wireless connection perturbations. To counteract such undesirable effects, it is necessary to download verses before start memorizing to avoid any delay in playing back audio clips. The Hifz app provides a seamless real time audio transmission for students. Its aim is to serve students for the Quran memorization. Users interacting with the Hifz are human actors, i.e., students. The system's main actors are the SAM module. The Hifz platform create, store, and process different types of Juz groups and students Hifz data, which require security to avoid unauthorized access. In particular, student personal data are sensitive, and it is noteworthy to protect these data during communication. The overall framework consists of three modules: The AAA modules, a reliable and secure execution of services of Hifz such as authentication, authorization, and accounting and as well as a user interface. the Media module used for audio playback of Juz, the SAM module, a social online platform for reciting Juz and rating for recitations of students of same group.

Table 1. Font Sizes for Papers

Juz	Quran Chapters
1	Al Fatiha 1 – Al Baqarah 141
2	Al Baqarah 142 – Al Baqarah 252
3	Al Baqarah 253 – Al Imran 92
4	Al Imran 93 – An Nisaa 23
5	An Nisaa 24 – An Nisaa 147
6	An Nisaa 148 – Al Ma'idah 81
7	Al Ma'idah 82 – Al An'am 110
8	Al An'am 111 – Al A'raf 87
9	Al A'raf 88 – Al Anfal 40
10	Al Anfal 41 – At Tauba 92
11	At Tauba 93 – Hud 5
12	Hud 6 – Yusuf 52
13	Yusuf 53 – Ibrahim 52
14	Al Hijr 1 – An Nahl 128
15	Bani Isra'il 1 – Al Kahf 74
16	Al Kahf 75 – Ta Ha 135
17	Al Anbiyaa 1 – Al Hajj 78
18	Al Muminun 1 – Al Furqan 20
19	Al Furqan 21 – An Naml 55
20	An Naml 56 – Al Ankabut 4
21	Al Ankabut 46 – Al Ahzab 30
22	Al Ahzab 31 – Ya Sin 27
23	Ya Sin 28 – Az Zumar 31
24	Az Zumar 32 – Fussilat 46
25	Fussilat 47 – Al Jathiya 37
26	Al Ahqaf 1 – Az Zariyat 30
27	Az Zariyat 31 – Al Hadid 29
28	Al Mujadila 1 – At Tahrim 12
29	Al Mulk 1 – Al Mursalat 50
30	An Nabaa 1 – An Nas 6

Many researchers suggested to use security of the server and particularly user data. In such environment, host system architecture should be protected from malicious users [2]. Hence, our system is protected with the help of the AAA module.

Numerous researchers and investigating teams have proved that it is significant to improve the security of the App and its file system. In such environment, we should keep App data safe from exploitation and under appropriate mechanism and access. Hence, our Hifz system should use data security to keep privacy and protect user data in an unsecured environment. The main security apprehension of Hifz system us client request authentication and authorization. Hifz supports AAA file access control mechanism for SAM module users for data security and privacy. This secured connection is created using AAA server certification phase. In the meantime, we might have deployed the Hifz system without any security and it would have failed to the malicious attack during authentication with the server, hence we should using cryptographic methods to encrypt communication between server and client.

We have used following communication protocol between client and server.

- I. Client initiates point to point protocol authentication to the server which holds the Quran data for memorization.
- II. Hifz server prompts client for username and password with suitable protocols
- III. User replies.
- IV. Client sends username and password to the RADIUS server.
- V. RADIUS server replies with Accept, Reject, or Challenge.

2.1. Audio Service Components

Hifz uses a layered media interface design to do the audio data processing. This design includes the media layer, the cache manager, and the history processing layer. Media interface uses native development kit for audio playback interface, the media layer, implements most of the playback systems for the Hifz architecture. When a client (student) accesses an audio file, SAM module determines which audio file to access with the student information. Student information consists of memorization history. If the file exists in a database, Hifz interacts with the file audio file requests from students, and manages, finds, saves, fetches, and queries audio file which is placed on the database. History processing module will keeps track record of memorization of the students..

2.1.1. History processing layer

According to the properties of our proposed architecture, we designed a history module present in SAM, the history processing layer (HPL), in order to keep track of the memorization. The HPL mainly handles the audio memorization data processing for Hifz, such as user's indicator of memorization, days left for the student to memorize given Aya, and so on. During memorization process students are given a 3 days' time frame to memorize the given Aya, if student is unable to memorize within time frame then there will be a reminder to memorize the given Aya. Following algorithm is used for HPL layer.

- I. Client initiates memorization.
- II. HPL unit will loads the Aya to memorize
- III. User replies.
- IV. If user completes the task of memorization or incompletes the Aya, then HPL module updates the history.
- V. If incompletes, then reminder.

2.1.2. Social Assistant Memorization

The SAM, a key component of Hifz architecture, makes Hifz support social services cooperating with various students. There are two main purpose of the SAM: social service operation and receiving and updating social service group from the HPL data. Social service module is a social group module formed among same group of students who are enrolled for the memorization. Memorization group is formed on the basis of Juz group. Social service group will have an expert who forms the group for the purpose of recitation. Students by default

will be in a group whereby they get tips and recitation practices before experienced teachers. Fig shows the relation between group members.

3. Statistical Analysis

The statistical analysis was used on the data of 25 arts and science students for the current academic year. The students were asked to memorize Quran along with the proposed App by interacting with Qari and with other learners. The efficiency of the proposed App as a Quran memorizing method was evaluated after utilizing the App of whom all 25 students, return the questionnaire after using App. Students' opinion from the survey are shown in (Table 1 – Table 3).

All students found the Quran memorization and recitation difficult before using the Quran memorization App. However, all students granted that Quran App helped them to memorize, socialize memorization, and recite (Table 2).

In general, most of the students appreciated the Quran App. Student's opinion to the questionnaire are accessible from Table 3. Majority 90% of the Quran memorization students sensed the App was useful. The overall student's opinion to the Quran App was very optimistic they thought the Quran App helpful in memorizing Quran, all considered the App eased the memorization and recitation of Quran verses, they have observed improved memorization and felt that increased their attention in Quran memorization (Table 3).

Table 2. Student's ability to memorize Quran before and after using App

Quran memorization	Without App in percentage	With App
Memorization	12.6	87.4
Memorization of big Aya	8.4	91.6
Memorization Along with Qari	11.7	88.3
Help from Co-learner	15.8	84.2
Pronunciation of Quranic Words	9.3	90.7
Verification of Memorized Quran	16.4	83.6
Memorization along with friends by using Social assistant memorization	7.9	92.1

Table 3. Quran memorization students survey responses about App

Questions	Excellent (%)	Good (%)	Regular (%)	Poor (%)
Is the App interesting for you?	90.2	5.3	3.4	1.1
Did the App based memorization allow students to memorize Quran	6.4	88.1	3.2	2.3
Do you think the App improved your knowledge about Quran?	11.2	72.3	1.4	5.1
Easy to use?	91.4	5.1	2.3	1.2
After using App, did you recite Quran properly	83.5	9.1	5.2	2.2

4. Discussion

Quran memorization students are continuously exposed to a large amount of Quranic Aya from different chapters of Quran such as para, Quranic prayers (Dua) names of Allah and methods of worship; so, a method that uses active-learning and memorization methods necessitating to increase fun in learning. In this regard, our App has given platform for learning memorizing Quranic verses. We formerly used memorizing strategies like social group to memorize Quran. However, with these knowledges, we further developed a different method of memorizing to improve memorization and recitation. In this manuscript, we introduced Quranic App as a tool that uses Quran Aya to memorize. Our primary objective for this App was to help Quran memorization student to increase their: (1) fun of learning; (2) knowledge about Quran; (3) memorization. Results indicate that students' information, abilities, and their efforts towards memorization improved after using App.

References

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