
Development of Mobile Dua and Zikr for Hajj (MDZ4H)

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Abstract

In the last decade, the number of mobile phone users has increased dramatically. Nowadays, mobile phone has become part of people's life. Today's mobile phones provide not just voice call and messaging services, but plethora of other services. This research is about the utilization of mobile phone for dua and zikr for Hajj. The main aim of this research is to develop a mobile Dua and Zikr application to help Hajj pilgrims to recite them while performing all the Hajj, Umrah and Ziarah rituals. At the moment, this research focuses on developing the application on Android platform. In developing the application, all the required Dua and Zikr have to be gathered, compiled and verified before the prototype could be developed using J2ME. The prototype consists of text and audio files of the recited Dua and Zikr in Arabic as well as the translations in Malay. The prototype has been proven to be useful in helping the pilgrims to easily and conveniently recite the Dua and Zikr towards achieving Hajj Mabruur.

Keywords: Mobile phone, dua and zikr, Hajj, Android

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1. Introduction

Hajj is the pilgrimage to Mecca and must be carried out at least once in a lifetime by every able bodied Muslim. Hajj is also known as the "Five Pillars of Islam" [1]. Hajj involves several rituals which among others include Ihram, Tawaf, Sa'ie, staying in Mina, staying in Muzdalifah, Wuqf in Arafah, and stonning of the Jamarat. The Hajj procedures are complex with many information, rules, tasks, practical steps and Al-Quran verses that must be memorized. All these rituals are accompanied with duas that have to be recited by the pilgrims. Since there are so many duas, it is impossible for the pilgrims to memorize all of them. Thus, several methods have been introduced to help the pilgrims to recite the duas while performing the rituals of Hajj. Among others include book, booklet, pamphlet, and etc. Even though these approaches have been the most popular and widely used approaches, there are some limitations to them. Among the limitations include difficulty to find pages of the required Dua and Zikr especially while performing ritual such as Tawaf which involve large crowd. Electronic gadgets have been developed to cater for reciting of Dua and Zikr for Hajj such as Hajj Player. It is a mobile device like MP3 Player containing only audio of Dua and Zikr for Hajj. Using this device, pilgrims have to listen to the audio while reading the text of the duas provided in a separate booklet. This device is useful to those who cannot read the duas in Arabic.

The most popular technological devices in the world are mobile phones and they are essential in our live [2]. Their technologies are rapidly growing, and they have played an important role in the management of relations between people in social, economic and in everyday life [3, 4]. In addition, mobile phones are regarded as very flexible devices since they are easy to handle and to be used everywhere by the users. Mobile phones markets have grown up dramatically. At the end of 2011, it is estimated that there were 6 billion mobile subscriptions which is equivalent to 87 percent of the world population [5].

Mobile phone applications which are related to Hajj and taking full advantage of improved capabilities are still limited especially related to Dua and Zikr for Hajj. There is a need to develop Dua and Zikr for Hajj by using mobile phone. Thus, the aim of this paper is to elaborate on the development of the Mobile Dua and Zikr for Hajj (MDZ4H) based on Android platform.

This paper is structured as follows. In Section 2 we present the Background. Section 3 presents the steps involve in the development of Dua and Zikr for Hajj. Section 4 explains the MDZ4H System and finally, Section 5 covers the conclusion of this study.

2. Background

Hajj is an important event in every Muslims' life, which offers religious, educational, scientific, social, economical, political and other benefits that are rewarded by Allah to Muslims [6]. Two to three millions out of 1.5 billion Muslims around the world perform Hajj annually. The term Hajj literally means to resolve for visiting a sacred place. However, technically it means to visit a sacred place for performing certain acts of worship (Ibadah). In Islam the term Hajj implies to visit the Kaabah for the sake of performing a particular kind of Ibadah that Allah (SWT) has made an obligation for those Muslims who fulfill certain conditions stipulated by Him [7].

Several studies were conducted where devices and gadgets were developed in order to facilitate the pilgrims in performing the hajj. A group of researchers from the Electrical Engineering and Information Technology Department, Faculty of Engineering, Gadjah Mada University in Indonesia have developed an information technology product in the form of interactive application to enhance the Hajj performance's usefulness, by delivering a new media in the education of Hajj for pilgrims. The study indicates that although benefits can be gained from this work but the management system of Hajj organizing process will be increased. Also it will reduce the cost of organizing Hajj, therefore the surplus cost will be used to support other training activities [8]. The system has been published on the internet and it is accessible to all pilgrims.

Researchers at Universiti Utara Malaysia have already developed V-Hajj, a courseware for learning to perform Hajj, Umrah and Ziarah. It encompasses all the requirements, steps and procedures in performing the Hajj and Umrah. It incorporates interactive multimedia and virtual environments which enables users to learn step-by-step Hajj and Umrah procedures as well as participate in 3D environments in enhancing user experience in performing the Tawaf, Sa'ie and Jamrah [9]. Figure 1 shows some snapshots of V-Hajj.

In term of Information and Communication Technologies (ICT) which utilizing web services, the research on developing a comprehensive module for Hajj has been conducted by [1]. He's proposed the a comprehensive Hajj model which consist of three parts; Hajj database module, Hajj educational module, Hajj emergency and guidance module. This comprehensive solution offers; religious, educational, scientific, social, economical, political and other benefits for Muslims. Besides that, the other researchers from Saudi Arabia have proposed the architecture for a Web services-based Hajj information system [10]. The implementation of this system provides background knowledge to most of pilgrims about Hajj and its environments. It also helps on updating the latest information on Hajj and guiding people during the Hajj.

3. Development of Dua and Zikr for Hajj

MDZ4H application was developed using Java to work in Android Smartphone. JDK7.0, Android SDK 2.2 platform and Android emulator (virtual device to run the developed Android application) were also used for the development. Eclipse integrated development environment (eclipse Indigo IDE) enhanced with Android development tools was used as a Plug-in tool to develop the proposed application in which Java programming language was used to write the logical code while XML was used to design the interface of the proposed MDZ4H application. Photoshop 7 (Image Processing Program) was used to create and modify the required images, photos and icons. While Audacity 2.0 (A Free Digital Audio Editor) was used to record and edit the required dua audios.

The development process of this project was based on the prototyping approach. This approach was adapted from [11] involves three steps which include; developing initial prototype, using prototype, and revising and enhancing prototype as shown in Figure 2. Each step of the prototyping approach involved sub steps or rules and results. The first step results pass to the next step and so on. The second and third steps can be repeated till achieving a satisfied prototype.



Figure 1. Snapshots of V-Hajj

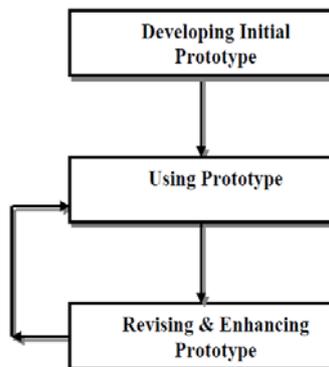


Figure 2. Prototyping Approach

3.1. Developing Initial Prototype

This step involved three activities which include information gathering, content preparation and programming. The activities are as follows:

3.1.1. Information Gathering:

The required information like the prototype contents which include all the Duas and Zikr were gathered, compiled and verified before they can be used in the prototype.

3.1.2. Content Preparation:

Place figures and tables at the top and bottom of columns. Avoid placing them in the middle of columns. Large figures and tables may span across both columns. Figure captions should be below the figures; table heads should appear above the tables.

a. Image preparation: The required Duas are converted from text form to image form, since some mobile phones do not support Arabic language. By using PrtScn button the primary version of images were captured. Then those images have to be processed by using Photoshop 7 to convert the big images to small one which are suitable with the mobile screen size and combining the different parts of the long images.

b. Sound file preparation: In this step all the required audios for the Duas and Zikr were recorded by using Audacity 2.0. The MP3 extension has been chosen for the audio format since it is supported by many types of mobile phones.

c. Icon preparation: The required icons like the system icon and button icon were prepared in this step. By using Photoshop 7, those icons were created and saved in PNG format.

3.1.3. Programming:

In order to develop this prototype, two programming languages were used which include XML 2.0 and Java. Java programming has been used to develop the logical body of the application. The interface of the system is created by using XML 2.0. Eclipse was used as the integrated development environment (IDE). After that the application was tested by using the Android Emulator to ensure that the code works properly without any error. Finally the APK file was created.

3.2. Using Prototype

The APK file which was produced in the previous step has been installed in Android mobile phone (Samsung Galaxy S) and iOS mobile phone (iPhone 4S) that have 3.7 inch screen size for testing. During the system testing some notes have been taken to improve and enhance the next version of the prototype like the font size and image size and so on.

3.3. Revising and Enhancing Prototype

In this step the notes that have been taken in the previous steps have been considered and applied in the second version of the prototype. After that the APK file was created again to install and test it again until the prototype is fully satisfied.

4. The System of MDZ4H

The MDZ4H system is divided into several sections as discussed below.

4.1. Logo

This is the first screen (splash screen) of the application (see Figure 3). It shows the system name and logo with background sound. This screen will be displayed for several seconds only, then it automatically disappears to show the main menu of the application.

4.2. Main Menu

The second screen in the system is the main menu which is the most important screen (see Figure 4). It allows the user to navigate the system by clicking on the required duas to be displayed. The user can only exit from the system from the main menu.

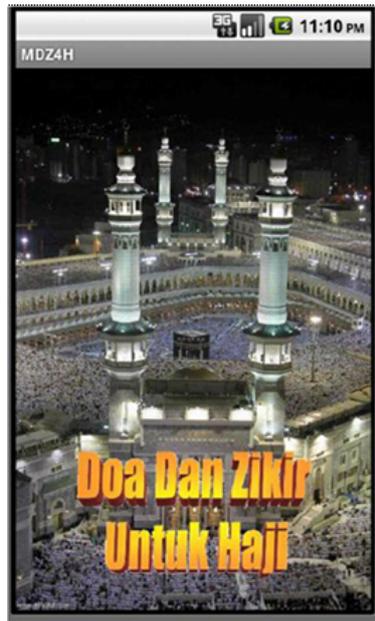


Figure 3. Logo

4.3. Information Screen without Sound File

This is the third screen in the application (see Figure 5). This screen contains information and instruction which may be needed by the pilgrims. It informs the pilgrims about the times and places where dua is most acceptable (Mustajab). There are three buttons at the bottom of each screen which allow the user to navigate the system and go through the system screens. The pilgrim can proceed to the next screen by clicking the forward button or can return back to the previous screen by clicking the back button. The user can also go to the main menu by clicking the home button.



Figure 4. Main Menu

4.4. One Page Screen with One Sound File

This type of screen contains dua in Arabic with the Malay translation at the bottom plus an audio of the dua recitation (see Figure 6). The user can play the sound and pause it any time and continue playing it again by clicking the speaker icon on the top of the screen. The user can also use the buttons (back, home, and forward). If the pilgrim clicks on one of those buttons while the audio file is playing, the audio sound will stop and proceed to the function related to that button to avoid overlapping audios.



Figure 5. Information Screen

4.5. One Page Screen With Multiple Sound File

This kind of screens contains more than one sound file (see Figure 7). The user is allowed to play one audio file only at a time. If the speaker icon is clicked while the dua is still playing, then the audio will stop. But if the user clicked another speaker icon of another Dua while the audio is still playing, then the previous audio file will stop and then the selected Dua audio file will be played.



Figure 6. One Page Screen with One Sound File



Figure 7. One Page Screen with Multiple Sound Files

5. Conclusion

The development process of the Mobile Dua and Zikr for Hajj (MDZ4H) application has been elaborated in this paper. MDZ4H has been developed to help pilgrims to recite the required Duas and Zikr while performing Hajj, Umrah and Ziarah rituals. It is useful for pilgrims as it is capable of helping them to make their Duas and Zikr recitation easier regardless of their ability of reading the Duas and Zikr in Arabic. This application is not intended to replace the existing approaches of reciting the Duas and Zikr but instead to complement them through the utilization of Smartphone technology. The authors hoped that MDZ4H application will be widely used by the Hajj pilgrims one day towards achieving Hajj mabrur.

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References

- [1] Hameed SA. *ICT to serve Hajj: Analytical study*. Proceedings of the International Conference on Computer and Communication Engineering (ICCC). Kuala Lumpur. 2010.
- [2] Saran M, Cagiltay K, Seferoglu G. *Use of mobile phones in language learning: Developing effective instructional materials*. In: Proceedings of the Fifth IEEE International Conference on Wireless, Mobile, and Ubiquitous Technology in Education (WMUTE). Beijing, China. 2008.
- [3] Goh KW, Kim E, Lavanya J, Kim Y, Soh CB. *Issues in implementing a knowledge-based ECG analyzer for personal mobile health monitoring*. Proceedings of the 28th Annual International Conference of the IEEE. New York City. 2006.
- [4] Müller J, Lenhart T, Henrici D, Hillenbrand M, Müller P. *Developing web applications for mobile devices*. In: International Conference on Distributed Frameworks for Multimedia Applications (DFMA). Besançon, France. 2005.
- [5] International Telecommunication Union, *The World in 2011-ICT facts and figures*, ICT Data and Statistics Division, Telecommunication Development Bureau, 2011.
- [6] Khan QS. *Hajj-Journey problems and their easy solutions*. 1st Edition. Mumbai, India: Tanveer Publication. 2007.
- [7] Obaid MA. *Hajj Concept & Practice*, 1st Edition. Kuala Lumpur, Malaysia: A. S. Noordeen. 2008.

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- [8] Fathnan AA, Wibowo CP, Hidayat NF, Marenda DA, Ferdiana R. *Web-based Hajj simulation software Learning Hajj through interactive software*. Proceedings of the International Conference on Information and Communication Technology for the Muslim World (ICT4M). Jakarta, Indonesia. 2010.
- [9] Yusoff MF, Zulkifli AN, Mohamed NFF. *Virtual Hajj (V-Hajj) - Adaptation of Persuasive Design in Virtual Environment (VE) and Multimedia Integrated Approach Learning Courseware Methodology*. Proceedings of the IEEE Conference on Open Systems (ICOS). Langkawi, Malaysia. 2011.
- [10] Harmain HM, Khatib HE, Saeed N, Aljohar B. *Web Services-Based Hajj Information System*. Proceedings of the International Conference on Information and Computer Science (ICICS). Dhahran, Saudi Arabia. 2004.
- [11] Laudon KC, Laudon JP. *Management Information Systems: Organization and Technology*. 11th Edition. Upper Saddle River, NJ, USA: Prentice-Hall. 2009.