Android based Tarjih Muhammadiyah information systems

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Abstract. Muhammadiyah is a large Islamic organization in Indonesia. Muhammadiyah does da'wah movement in order to realize the main Islamic society. This study aims to know clearly the considerations of the Assembly Tarjih and Tajdid of Muhammadiyah in determining the fatwa and decisions of everything in daily life. The research generates an android application of material viewers of Muhammadiyah in the form of tarjih fatwah and question and answer. The app has a knowledge and search comparison feature. The application runs well on a tablet or smartphone with the minimum requirement of CPU specification is 600/900 MHz, need a memory space of 111 Mb which consists of 2 files of the installer file (Muhammadiyah Guide.apk of 6.59 Mb) and data files (org.muhammadiyah 105 Mb) and Android Frozen Yoghurt Operating System (Froyo) 2.2.2.

Keywords: Android, Tarjih Muhammadiyah, Mobile.

1. Introduction
Mobile communication technology has created a major change in the world of communication. The rapid development of these technological devices has given rise to a variety of new functions. Mobile device which is one of communication media become part of society need even mobile device become a common thing, because the circulation is very wide and easy to use. Formerly this mobile application only created and developed by the telecommunication companies themselves. But now with the standard of Android programming language, everyone can create and develop the desired applications for a mobile device.

As described by Syamsul Anwar, the decisions of the Majelis Tarjih Muhammadiyah are divided into three forms. The forms of the decision are, (1) - the decision of the Tarjih; (2) The Fatwa of the Tarjih Assembly; and (3) Tarjih Discourse. The Tarjih Decision is made in a formal mechanism called the National Deliberation of Tarjih and has a binding force for members. This ruling has a stronger authority based on al-qur'an and hadith. The popular Tarjih verdict known among Muhammadiyah members is the HPT [1].

The Tarjih discourse contains ideas, thoughts, and opinions on contemporary issues. It is open for discussion and can be rejected. Borrow fiqh terminology, Tarjih discourse is mubah.

Muhammadiyah have the application of the Tarjih Decision Assemblage (HPT) of Muhammadiyah. However, This application is able to display various kinds of information about the Decision of the Muhammadiyah Tarjih Assembly which is text with pdf format in the form of online book, so user must read or pass through sheets before if we want to read a particular topic, because how to read existing HPT applications such as manuals and not digitally arranged yet.
Therefore, we will make an application of the Tarjih Decision Assemblage (HPT) of Muhammadiyah based on andorid. HPT may facilitate Fatwah tarjih Muhammadiyah always in the application made into various topics of discussion.

2. Theoretical Basis

2.1. Tarjih Muhammadiyah Forum
Tarjih in terms of association is a brief description of "Matan Faith and Aims of Muhamadiyah" is to compare opinion in discussion and take which have a stronger reason. In the first stages, task of the Majlis Tarjih was appropriate with the name which merely to choose among some of the opinions that exist in the Khazanah of Islamic Thought, which is considered stronger. The Fatwa of the Tarjih Assembly is a decision made outside the formal mechanism [2].

The fatwa is issued by the Tarjih Assembly to respond to questions raised by members or the wider society, sent to the editors of Muhammadiyah official magazines, Muhammadiyah votes, or direct to the Tarjih Assembly. According to Syamsul Anwar, the fatwa issued by the Tarjih Assembly will be binding on the members and questioners. But unlike Syamsul Anwar's opinion, Muhammad Azhar is of the opinion that the Fatwa of the Tarjih Assembly is not too binding on Muhammadiyah members but good if followed.

2.2. Software Engineering
According to O'Brien in 1999, Software is the entire command used to process information. The software can be a program or procedure. Program is a collection of commands understood by the computer while the procedure is a command required by the user in processing information [3].

2.3. Information System
In fact, what is meant by information system does not have to involve computer. Information System using computer commonly called computer based information system (Computer Based Information System or SBIS). In Practice, the term information most used without computer-based frills although in reality the computer is an important part [4].

2.4. Android
Android is an open source operating system, and Google is releasing its code under the Apache License. Open source code and licensing licenses on Android allow software to be freely modified and distributed by device makers, wireless carriers and app developers. In addition, Android has a large number of app developer communities (apps) that extend device functionality, commonly written in customized versions of the Java programming language.

Android architecture consists of these following parts:

a. Applications and Widgets: layer (layer) where the user is only associated with the application only.

b. Applications Framework: the layer where the developers Doing the creation of applications that will run on the operating system Android with its components include views, contents Provider, resource manager, notification manager, activity manager.

c. Libraries: layers where android features reside above the kernel include core C / C ++ libraries such as Libc and SSL.

d. Android Run Time: layers that execute Android is divided into two parts namely Core Libraries and Dalvik virtual machine.

e. Linux Kernel: Layer manages the Processing, memory, resources, drivers, and android operating system Others.

2.5. Unified Modeling Language (UML)
UML is a visual language for modeling and communication of a system using diagrams and supporting texts [5] says: In the development of object oriented programming techniques, there emerged a
standardized modeling language for software development that was built using object-oriented programming techniques, namely Unified Modeling Language (UML).

3. Research Methods
This research is using Research and Development method to develop products to have a higher quality. Research and development results can be: Plan, Design, Building / Construction (Construct), or Development Results of a Model/Method/Software/Hardware / System [6]. Plans, designs or constructions of engineering models, systems or products must be tested on the basis of formal methods, computational methods (hard / soft computing).

In writing this research authors collect data using data collection methods as follows:

a. Primary Data, that is data collected by researchers directly from the source.
b. Secondary Data, that is data that first collected by other party. This data is obtained by means of, among others: documentation or research library, as well as books that have to do with research.

Software (software) is a computer program associated with the documentation of needs, design models, and how to use (user manual). A computer program without associated with the documentation then can not be called software (software) [7].

The software characters are as follows:
1. Software is built by engineering (software engineering) instead Manufactured by manufacture or manufacturer.
2. The software is never outdated ("wear out") due to a deep disability Software can be fixed.
3. Production goods manufacturers usually new components will continue to be produced, While the software usually continues to improve as it grows needs.

Creation of android-based applications concerning Information System Tarjih Muhammadiyah, need to make the flow and process in the reciprocal system in the form of diagrams.

Use Case Diagram (Figure 1) is a graphical representation of some or all of the actors, use cases, and interactions that introduce a system. Use case diagrams do not explain in detail the use of use cases, but only give a brief description of the relationship between usecase, actor, and system. In this use case will be known what functions are on the system created.

![Use Case Diagram Information System Tarjih Muhammadiyah](image-url)
State Machine Diagram (Figure 2) is a technique commonly used to describe the behavior of a system. It is used to help analysts, designers and developers to understand the behavior of objects on the system.

Figure 2. Diagram State Machine Information System Tarjih Muhammadiyah

Activity diagram, as the name implies this diagram describes the activities that occur on the system. From first to last, this diagram shows the steps in the system work process that we make.

4. System Display Results
   The main view is the initial view of this tarjih muhammadiyah information system application. Consists of two menus are: Fatwah Tarjih, Decision Tarjih and exit (Figure 3).

Figure 3. Display Main Menu Tarjih Muhammadiyah
After the main view appears, then enter the menu view:

a. Fatwah Tarjih Muhammadiyah Menu View
   Views on fatwah tarjih menu there are sub-sub menus available such as: aqidah, prayer, al-quran and hadith, zadat, prayer, zikr, women, fasting and ramadan (Figure 4).

![Figure 4. Display Fatwah Menu Tarjih Muhammadiyah](image)

b. Display Menu Sentence Tarjih Muhammadiyah
   In the tarjih decision menu view there are sub-menus that have been available such as: book of faith, book of thaharah, book of prayer, book of corpse, book of waqf, book of problem five, book of some problem (Figure 5).

![Figure 5. Display Menu Decision Tarjih Muhammadiyah](image)
Sub menu is useful to inform the information contained in muhammadiyah tarjih according to sub menu choice.

a. Fill Sub Menu Fatwah Tarjih Muhammadiyah
   In the Decision Tarjih menu there is a sub menu selection that contains about Muhammadiyah Tarjih Decision (Figure 6).

![Figure 6. Content of Fatwah Sub Menu Tarjih Muhammadiyah](image)

b. Sub division Sub Menu Tarjih Muhammadiyah
   In the Fatwah Tarjih Menu there is a sub menu collection in the sub menu contains the Fatwa Tarjih Muhammadiyah (Figure 7).

![Figure 7. Content of Fatwah Sub Menu Tarjih Muhammadiyah](image)

5. Conclusion
The result has successfully created information system Tarjih Muhammadiyah. This application consists of fatwah and judgment tarjih muhammadiyah.

This Information System has implemented android technology, using an attractive design makes this application look good and this application can be used anytime and anywhere.

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