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# Design and Development of M-Faraid: An Islamic Inheritance Mobile App

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**Abstract**---The unclaimed properties of the deceased Muslims in Malaysia have increased from RM40 Billion in 2009 to RM60 Billion in 2013. There are several factors that contribute to this phenomenon which include among others; family disputes, rightful heirs could not be found and the heirs were not aware of the properties. Often family disputes occur whenever the distribution of wealth has not been done properly. In curbing the continual increase in unclaimed properties among Muslims, it is high time to educate Muslims in Malaysia to fully understand about the Islamic Inheritance Law or Faraid. With the advent of mobile technology, today's mobile phones provide a plethora of services. This paper elaborates on the design and development of a mobile Faraid app. This app is intended to educate Muslims by explaining the basic concept of Faraid and its distribution of wealth. It also provides the facilities for the user to calculate the shares for each rightful heir.

**Index Terms**---Faraid, Islamic inheritance law, M-Faraid, Mobile app, Faraid calculator

## I. Introduction

The unclaimed properties of Muslims in Malaysia have increased from RM40 billion in 2009 to RM42 billion in 2011 and further increased to RM60 billion in 2013 [1]. The increasing trend of unclaimed properties of Muslims has become unresolved issues faced by the Muslim community in Malaysia [2]. There are several factors that contribute to this phenomenon which include; family disputes, rightful heirs could not be found and the heirs were not aware of the properties. Besides that, if the distribution of wealth has not been done properly, this might result in family disputes and increase in the number of unsettled or unclaimed properties. Family discord has risen due to lack of sufficient awareness about the inheritance and distribution of the wealth. The Islamic law of inheritance (Faraid) has been defined as a science dealing with the law pertaining to the devotional acts based on the sharia in respect of the wealth of a person after the certainty of his/her death or on the assumption of his/her death [3]. Faraid is an essential part of Islamic sharia that Muslims need in order to show their rights to the distribution of wealth. When a Muslim dies, the properties of the deceased have to be distributed to the rightful heirs and the distributions have to be done immediately and according to Faraid.

The properties owned by Muslims are valuable assets that can be used for development and should be utilized for the glorious of Islam [4]. These assets have the potential to generate income for the development of the Muslim community in Malaysia. In order to curb the continual increase in unclaimed properties among Muslims, it is high time to educate Muslims to understand and implement Faraid. In Malaysia, Faraid has never been taught whether in schools or universities. As such information about Faraid can only be accessed through books and also online. However, Faraid is not a straightforward and easy to understand concept especially to those who have no exposure at all about this inheritance system. With numerous numbers of rules and different cases that exist in Faraid, it is almost impossible for a layman to remember every single aspect of each case. Since the calculation for the distribution of wealth in Faraid is very complex, it is difficult to find experts who truly understand Faraid and be able to calculate the distribution of wealth among the rightful heirs based on Faraid.

Nowadays, mobile phones have emerged as tools for all aged learners, making the learning material easily accessible anywhere and anytime with lowest or no cost at all. A plethora of mobile apps have been developed to cater to the mobile users worldwide. There are various mobile apps available such as apps for reading of Quran [5], Hadith [6], prayer times [7], Halal food [7], Hajj and Umrah [8], [9] and [10], Zakat [11], advertising [12], healthcare [13], and [14] and many more. The following section discusses the design and development of a Mobile Islamic Inheritance Law (M-Faraid) app.

## II. Design and Development of M-Faraid App

The M-Faraid application was developed based on Rapid Application Development (RAD) method. This method was chosen since it allows the developers to build quality apps rapidly in order to meet the need of the users [15]. This method consists of four stages namely; 1) requirements planning, 2) user design, 3) construction and 4) implementation as shown in Figure 1.



Figure 1. The Rapid Application Development Method

The following sub-sections discuss briefly the four stages.

### A. Requirements Planning

This app was developed with the intention of providing adequate information about Faraid to users especially the Muslims in Malaysia in order to facilitate Faraid learning and understanding among them. As such, Malay has been used as the language for the app. The information about Faraid that has been collected from various resources must conform to the Syafie school of thought since most Muslims in Malaysia follow Syafie. All the required information pertaining to Faraid was gathered, compiled and verified by experts before the application could be developed. The first stage is to collect information pertaining to Faraid based on the following steps. Firstly, collect all the required information that is related to Faraid, for example information about Faraid, Hadith and Quran verses that are related to Faraid, Faraid's method of wealth distribution, the rightful heirs, the types of wealth for inheritance and finally the amount of distribution among the heirs and the conditions. Secondly, once the information pertaining to the distribution of wealth among the rightful heirs has been obtained, the formulas for the purpose of calculating the distribution of wealth were identified. These were used to develop the Faraid calculator. Thirdly, an audio file consisting of a Quran recitation of the verse 11 of the An-Nisaa' Surah was recorded at 128 kbps bit rate and saved as MP3 format. This audio file was attached to the splash screen. Once all the three steps have been completed, the next stage is the user design.

### B. User Design

This stage involved the design of the interface of the app. The app consists of a splash screen, a main menu, a sub-menu, six screens for the sub-menu and the Faraid calculator. All the screens of the app were conceptualized in Microsoft Word. Word was chosen because it is easy to use in creating the conceptual interface design for the app. Figure 2 below shows two of the conceptual interfaces; the main menu and the sub-menu.



Figure 2. The conceptual interfaces

The interfaces involve several images that were used as buttons and icons for the app. All the buttons and icons images were edited in terms of size, color and also format in order to suit the mobile phone screen. The editing process was done in Photoshop CS6 and the images were saved in PNG format. PNG was chosen because the images render more quickly on the screen, have higher quality, and usually smaller than other image formats [16]. Once all the images for the buttons and icons were ready, the next stage was the construction of the app.

### C. Construction

The third stage of the RAD method is the construction of the M-Faraid app which follows the prototyping approach [17]. This approach involves three steps, namely; i) initial prototype, ii) using prototype, and iii) revising and enhancing prototype. The initial prototype of the M-Faraid app was produced as the first step of this approach. This app was developed for the Android platform using Java together with JDK 7.0, Android SDK 4.2.2, API 17, and Android emulator. Eclipse integrated development environment (eclipse Indigo IDE) enhanced with Android development tools was used as a plug-in tool to develop the M-Faraid app. XML was used to design the interface of the app while the Java programming language was used to write the logical code. After completing all the steps of the approach, the final M-Faraid app was produced as an APK file. The splash screen, main menu and sub-menu interfaces of the M-Faraid app are shown in Figure 3 below.

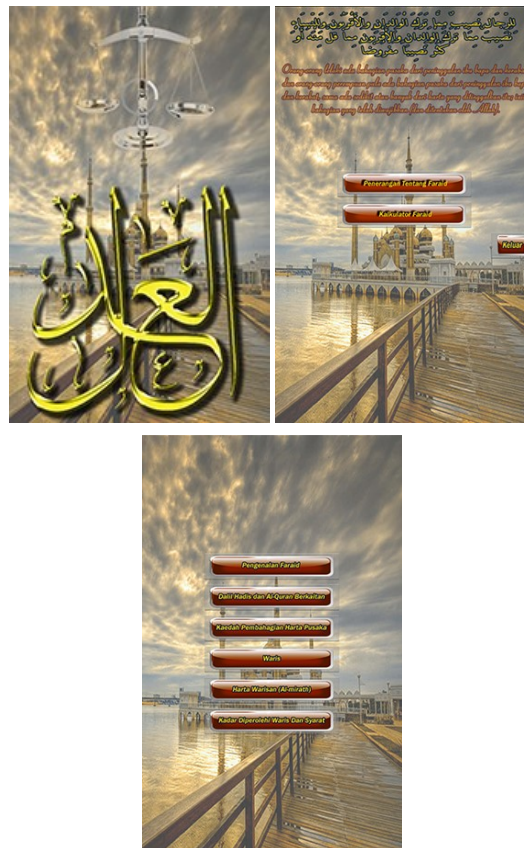


Figure 3. Splash screen, main menu and sub-menu interfaces of the M-Faraid app

The splash screen is the first screen that appears for a few seconds when the app is running while playing the Quran recitation of verse 11 of the An-Nisaa' Surah. This verse was chosen since it is related to Faraid. The Main menu screen displays two main buttons that include; explanation about Faraid and Faraid calculator. Once the Explanation about Faraid button is selected, a sub-menu which consists of six buttons that include; Introduction to Faraid, Hadith and Quran verses related to Faraid, Method of wealth distribution, The rightful heirs, The types of wealth, and finally The amount of distribution among the rightful heirs and conditions. This sub-menu screen is specially designed to provide as much information about Faraid to the users. It has been sub-divided into six buttons so that all the important information about Faraid has been covered to ensure users are able to learn and understand Faraid easily. The Introduction to Faraid screen explains that Faraid is part of the Sharia that deals with the distribution of the wealth of a deceased person among the heirs in accordance with the Quran and hadith.

The Hadith and Quran verses related to Faraid screen provides few examples of hadiths from Rasulullah SAW as well as Quran verses that are related to Faraid as shown in Figure 4 below. These are important for Muslims to acknowledge that Faraid is part of Sharia and it is obligatory for them to understand and implement it in their daily

lives.

**DALIL, HADIS DAN AL-QURAN BERKAITAN FARAIID**

**Sabda Rasulullah SAW**  
 Ilmu itu ada tiga dan selain daripada tiga itu hanyalah sebagai lehan sahaja, iaitu Ayat Mu'kamah (ayat hukum yang tidak dimansuhkan), sunnah yang sahih diwariskan daripada Rasulullah s.w.d dan ilmu untuk membahagikan harta pusaka yang adil.  
*(Riwayat Abu Daud dan Hakim)*

Pelajarilah ilmu Faraid, dan ajarkanlah ia kepada orang lain. Sesungguhnya ia adalah setengah daripada ilmu dan ia adalah ilmu yang akan diupayakan, dari ia merupakan suatu ilmu yang mula-mula akan dicabut daripada umatka.  
*(Riwayat Abu Hurairah RA)*

Pelajarilah al-Quran dan ajarkanlah ia kepada manusia. Sesungguhnya aku adalah manusia yang akan digemang (diwarfakan) dan sesungguhnya ilmu tersebut akan digemang (dicabut), dan nanti akan timbul fitnah-fitnah, sehingga nanti akan tiba masanya apabila dua orang beseleh mengenai pembahagian harta pusaka, tidak ada orang yang dapat menyelesaikan antara keduanya.  
*(Riwayat Abu Sa'ud dan Mar'uf RA)*

**Dalil Al-Quran**  
 Allah perintahkan kamu mengenai (pembahagian harta pusaka untuk) anak-anak kamu, iaitu bahagian seorang anak lelaki menyamai bahagian dua orang anak perempuan. Tetapi jika anak-anak perempuan itu lebih dari dua, maka bahagian mereka ialah dua pertiga dari harta yang ditinggalkan oleh si mati dan jika anak perempuan itu seorang sahaja, maka bahagiannya ialah satu perdua (seperdua) harta itu dan bagi ibu bapa (si mati), tiap-tiap seorang dari keduanya: Satu perempat dari harta yang ditinggalkan oleh si mati, jika si mati itu mempunyai anak. Tetapi jika si mati tidak mempunyai anak, sedang yang mewasikannya hanyalah kedua-nya itu bawanya, maka bahagian keduanya ialah satu pertiga. Kalau pula si mati itu mempunyai beberapa orang saudara (adik-beradik), maka bahagian ibunya ialah satu perenam. (Pembahagian itu) ialah sesudah disesetakan wasiat yang telah diwariskan oleh si mati dan sesudah dibayarkannya hutangnya. Ibu-bapa kamu dan anak-anak kamu, kamu tidak mengetahui, siapa di antaranya yang lebih dekat serta banyak manfaatnya kepada kamu. (Pembahagian harta pusaka dan penentuan bahagian masing-masing seperti yang ditunjukkan itu ialah) ketetapan dari Allah; sesungguhnya Allah adalah Maha Mengetahui, lagi Maha Bijaksana.  
*(Surah al-Nisa: 11)*

Dan bagi kamu satu perdua dari harta yang ditinggalkan oleh isteri-isteri kamu jika mereka tidak mempunyai anak. Tetapi jika mereka mempunyai anak maka kamu bertolak satu perempat dari harta yang mereka tinggalkan, sesudah ditunaikan wasiat yang mereka wasiatkan dan sesudah dibayarkan hutangnya dan bagi mereka (isteri-isteri) pula

**WARIS**

Jalan untuk melakukan pembahagian pusaka ialah dengan terlebih dahulu meneliti siapakah di antara waris yang berhak menerima pusaka dengan jalan Ashabul-Furud, kemudian dicari siapakah yang Mahjud, bantulah baki yang diberikan kepada yang berhak menerima Asabah.

**1. Ashabul-Furud**  
 Terdiri daripada isteri atau suami, ibu atau nenek, bapa atau datuk, anak perempuan atau cucu perempuan, saudara perempuan kandung, saudara perempuan sebapa dan saudara sebua.

**2. Asabah**  
 Golongan yang akan menerima baki setelah semua golongan Ashabul-Furud mendapat bahagian masing-masing. Terbahagi kepada:

**a. Asabah Dengan Diri Sendiri (Asabah Binafsyah)**  
 Pembahagian pusaka dengan jalan menghabisi semua harta, atau mengambil semua sisa untuk sekalian orang lelaki, tidak bersebab atau bersebab orang lain. Mereka terdiri daripada 12 orang lelaki iaitu:

1. bapa
2. datuk
3. anak lelaki
4. cucu lelaki anak lelaki
5. saudara lelaki kandung
6. saudara lelaki sebapa
7. anak lelaki saudara lelaki kandung
8. anak lelaki saudara lelaki sebapa
9. bapa saudara kandung
10. bapa saudara sebapa
11. anak lelaki bapa saudara kandung
12. anak lelaki bapa saudara sebapa

**b. Asabah Bersama Dengan Orang Lain (Asabah Bil Ghair)**  
 Pembahagian pusaka dengan jalan menghabiskan semua harta, atau pengambilannya seluruh baki anak seluruh perempuan dengan sebab adanya orang lelaki lain. Terdiri daripada 4 orang iaitu:

1. anak lelaki dan anak perempuan
2. cucu lelaki dan cucu perempuan
3. saudara sebua lelaki dan saudara sebua perempuan
4. saudara sebapa lelaki dan saudara sebapa perempuan

**c. Asabah Berserta Dengan Orang Lain (Asabah Ma'al Ghair)**  
 Pembahagian pusaka dengan jalan menghabisi semua harta, atau mengambil semua sisa untuk sekalian orang perempuan sebab beserta orang perempuan lain. Terdiri daripada 2 orang perempuan iaitu:

1. saudara perempuan kandung
2. saudara perempuan sebapa (berkongsi dengan anak atau cucu perempuan)

**3. Dhawil-Arham**

| Waris                             | Kadar Diperolehi | Syarat   |
|-----------------------------------|------------------|--|
| Suami Simati                      | 1/2              | Tidak mempunyai anak ATAU tidak mempunyai cucu dari anak lelaki  |
|                                   | 1/4              | Mempunyai anak ATAU mempunyai cucu dari anak lelaki  |
| Isteri Simati                     | 1/4              | Tiada anak ATAU tiada cucu dari anak lelaki  |
|                                   | 1/8              | Mempunyai anak ATAU mempunyai cucu dari anak lelaki  |
| Anak Perempuan Simati             | 1/2              | Hanya seorang sahaja DAN tidak ada anak lelaki   |
|                                   | 2/3              | 2 orang anak perempuan atau lebih DAN tiada anak lelaki  |
|                                   | Asabah Bil Ghair | Mempunyai anak lelaki - mendapat separuh dari bahagian anak lelaki   |
|                                   | 1/2              | Mempunyai seorang sahaja DAN tiada anak  |
| Cucu Perempuan Anak Lelaki Simati | 2/3              | Mempunyai 2 orang atau lebih DAN tiada anak  |
|                                   | 1/6              | Mempunyai seorang atau lebih jika bersama-sama dengan seorang anak perempuan   |
|                                   | Asabah Bil Ghair | Mempunyai cucu lelaki - mendapat separuh dari bahagian cucu lelaki daripada anak lelaki; Terhaling disebabkan mempunyai anak lelaki ATAU 2 anak perempuan atau lebih |
| Bapa Simati                       | 1/6              | Mempunyai anak lelaki ATAU cucu lelaki dari anak lelaki  |
|                                   | 1/6 dan Asabah   | Mempunyai anak perempuan ATAU cucu perempuan dari anak lelaki  |
|                                   | Asabah           | Tiada anak ATAU cucu dari anak lelaki  |
| Ibu Simati                        | 1/6              | Mempunyai anak ATAU cucu dari anak lelaki ATAU mempunyai dua saudara kandung ATAU saudara sebapa   |
|                                   | 1/3              | Tidak mempunyai anak ATAU cucu dari anak lelaki ATAU tiada dua saudara kandung ATAU saudara sebapa   |
|                                   | 1/3 dari baki    | Mempunyai bapa serta suami ATAU isteri   |
|                                   | Sama seperti     | Hanya mendapat bahagian sekiranya  |

Figure 4. Hadith and Quran verses related to Faraid, Heirs and Amount of share and conditions interfaces of the M-Faraid app

The Method of wealth distribution screen explains the distribution of the wealth according to Faraid. The Rightful heirs screen as shown in Figure 4 explains in detail the categories of heirs that include; Ashabul-Furud, Asabah and Dhawil-Arham. The Types of wealth screen explains the properties of the deceased that can be distributed after deducting the deceased funeral and burial expenses, debts such as zakat, nazar etc. and will that is permitted by Sharia (not more than 1/3 of the property). The types of property that can be distributed according to Faraid include; land, building, jewelry (gold, silver and others), insurance and cash (whether invested or not) and livestock such as goats, cattle, camels, buffaloes and others. Finally the Amount of share among the rightful heirs and condition screen as shown in Figure 4 provides in detail the information pertaining to the amount of share each rightful heir is entitled to as well as the condition. The information in this screen is for users to fully understand about the share of the wealth and also the conditions that need to be complied in order to be eligible to receive the share of the wealth. Understanding about this is important to avoid any dissatisfaction and also dispute among the rightful heirs.

The second button of the main menu interface is the Faraid calculator. Once this button is selected, the Properties screen as shown in Figure 5 appears.

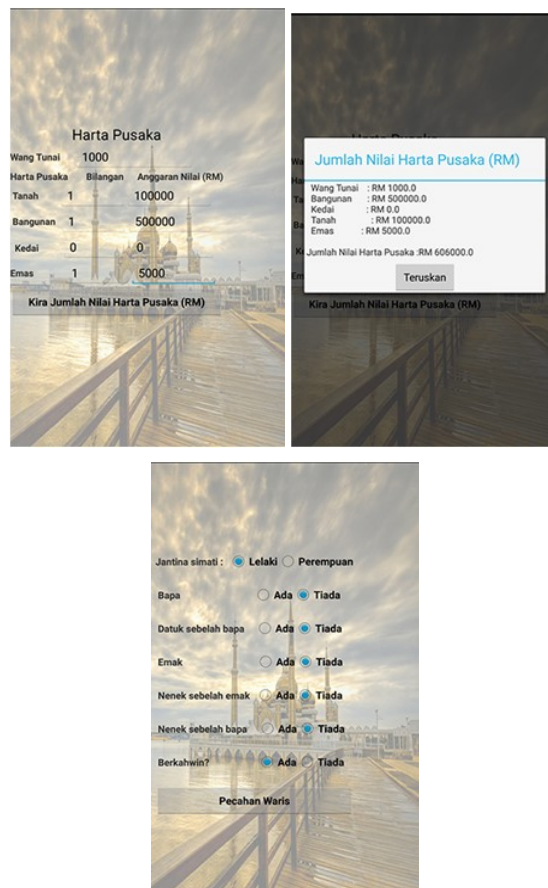


Figure 5. Properties, Value of properties and Deceased information screens

The screen requires the user to input information pertaining to all the properties of the deceased that are entitled to be distributed among the rightful heirs. The properties include; cash, land, buildings, shops and gold. In this case, livestock is not included since the user has to convert the value of the livestock to cash. The value of the properties must be based on the current value of the properties. When all the values are entered, the total value of the deceased properties can be obtained as shown in Figure 5. The next screen requires the user to input information pertaining to the deceased that include sex, father, grandfather on the father side, mother, grandmother on the mother and father sides and marriage status.

Once the information about the deceased has been entered, the next screen as shown in Figure 6 below is about the classification of the rightful heirs. If the deceased is male, user is required to enter the number of deceased wife, son and daughter. Once entered, user can determine the share of wealth among the rightful heirs.

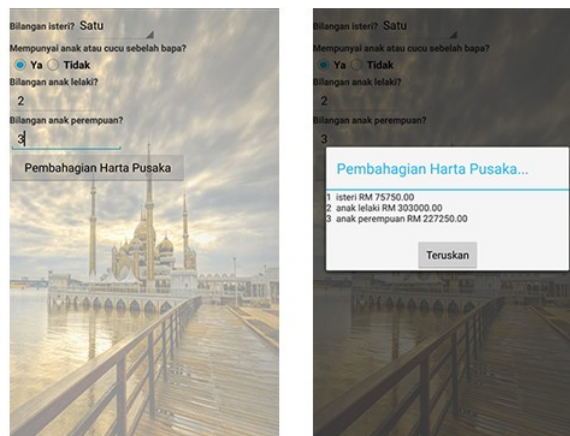


Figure 6. Classification of rightful heirs and Share of wealth among rightful heirs screens

#### **D. Implementation**

The final stage of the RAD method is Implementation which is also known as the deployments phase. At this stage, the final version of the M-Faraid app was executed in the form of APK format. Then, the APK file is installed to the users' Android mobile phones. In this stage, some of the users provide recommendations during the testing of the M-Faraid app. Those recommendations have been noted and were used in the newer versions of the app. Some of those recommendations are related to the design of the interfaces such as the design of the buttons and also text formats. Typically, several tests were conducted in this stage to ensure that the app functions as intended.

#### **III. Conclusion**

In this paper we have discussed the design and development of M-Faraid, a mobile app for Muslims to understand about the Islamic Inheritance Law or Faraid. The purpose of the app is to educate users about Faraid so that they have a better understanding about the distribution of wealth in Islam. It also helps users to determine the portions of the distributed wealth through the use of the app's calculator. Once the M-Faraid app is available to every Muslims, the users can use it to determine their portion of the wealth themselves, thus reducing the tendency of family disputes among them. Being a mobile app, it can be used anywhere and anytime without having to connect to the internet. Any Muslim, worldwide can easily compute his or her portion of the wealth left behind by the deceased according to the Rules of Faraid since it is straightforward and easy to use app. The app is able to calculate the distribution of wealth to those who have the rights or entitled to receive their portion of the wealth. The app is useful to all Muslims especially in Malaysia since it has been developed in Malay language and also according to the Shafie school of thought. Some recommendations for future works include; adding more features to the app such as choice of languages and also covers other schools of thought that include Hanafi, Maliki, and Hambali.

#### **IV. Acknowledgement**

We would like to thank the Institute of Creative Humanities, Multimedia and Innovation, School of Creative Industry Management and Performing Arts, Universiti Utara Malaysia for their cooperation during the development of the M-Faraid app.

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