



UNIVERSITI PUTRA MALAYSIA

***ADDRESSING USABILITY QUALITY ATTRIBUTE IN
TECHNO-SPIRITUAL MOBILE APPLICATION***

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**ADDRESSING USABILITY QUALITY ATTRIBUTE IN
TECHNO-SPIRITUAL MOBILE APPLICATION**

By

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**Thesis Submitted to the Faculty of Computer Science and Information
Technology, Universiti Putra Malaysia, in Partial Fulfilment of the
Requirements for the Master of Computer Science**

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ABSTRACT

Technology trending toward mobile devices provide significant medium for the growth of mobile applications. It grants users with advantages of portability and accessibility in the mobile context. Application providers seen this as new marketing opportunities to promote and sell products directly engagement with application users through mobile websites. This influence providers increase application development and productivity for target consumer application markets such as games and lifestyle category with potential of better revenues.

This mobilisation creates integrating technology with spirituality content known as techno-spiritual which information technology assist in humans' spiritual and religious practices. Currently there is increasing numbers of provider involve translating spirituality content into new mobile application medium and reaching users through mobile websites. This helps any religious devotees such as Islam, Buddhism, Hinduism and Christianity engage with spiritual information. The techno-spiritual application focus in this paper more on Islamic Quran recitation for Muslims that used for read the Quran in Arabic alongside its translation.

The popularity demand for techno-spiritual applications development address challenges and concerns for provider in term quality dimension impacting the success of products. Their expectations for quality products are high in delivering valuable content and useful functionality. It should convenient and

simple for prolong the usage of applications. Usability is widely used for quality evaluation and measurement of mobile application usable. It's referring the capability of the application to be learned, operated, attract and satisfy users in mobile environment

This study aims addressing usability quality attribute in techno-spiritual mobile application which beneficial practitioners in design and develop usable mobile applications in the future.



ABSTRAK

Perkembangan teknologi dalam bidang peranti mudah alih telah menyediakan medium penting untuk pertumbuhan aplikasi mudah alih. Medium ini telah memberikan kemudahan permindahan perisian dan capaian kandungan dalam konteks mudah alih. Penyedia aplikasi melihat ini sebagai satu peluang pemasaran yang baru untuk mempromosi dan menjual produk secara terus kepada pengguna melalui sesawang mudah alih. Ini turut mempengaruhi penyedia aplikasi untuk meningkatkan pembangunan dan produktiviti aplikasi yang mensasarkan pengguna dalam kategori aplikasi permainan video dan aplikasi gaya hidup yang mempunyai potensi untuk menjana pendapatan yang lebih baik.

Mobilisasi ini telah mewujudkan integrasi antara teknologi dengan kandungan kerohanian yang dikenali sebagai *techno-spiritual*. Ia merupakan penggunaan teknologi maklumat untuk membantu amalan kerohanian dan keagamaan manusia. Pada masa kini, terdapat peningkatan bilangan penyedia aplikasi yang menterjemahkan kandungan kerohanian kepada medium baru aplikasi mudah alih dan menjangkau pengguna melalui sesawang mudah alih. Ini membantu penganut agama seperti Islam, Buddha, Hindu dan Kristian mendekati diri dengan kandungan maklumat kerohanian. Perisian *techno-spiritual* yang menjadi tumpuan utama dalam kajian ini adalah berkaitan penggunaan perisian Al-Quran mudah alih bersama dengan terjemahannya.

Populariti permintaan kepada aplikasi techno-spiritual memberikan cabaran dan kebimbangan kepada penyedia aplikasi mengenai kualiti pembangunan yang boleh memberi impak kepada kejayaan produk. Harapan pengguna terhadap kualiti produk ini adalah tinggi agar ia menyediakan kandungan yang bernilai dan boleh berfungsi dengan baik. Ia perlu mudah dan ringkas bagi memanjangkan tempoh penggunaan aplikasi. Kebolehgunaan adalah faktor yang digunakan secara meluas untuk penilaian kualiti dan pengukuran aplikasi mudah alih yang boleh digunapakai. Ia merujuk keupayaan aplikasi yang boleh dipelajari, mudah dikendalikan, menarik dan memberikan kepuasan kepada pengguna dalam persekitaran mudah alih

Kajian ini bertujuan mengenalipasti kualiti penggunaan perisian mudah alih *techno-spiritual* dan dapat memberikan manfaat kepada kepada pereka bentuk serta pembangunan aplikasi mudah alih ini pada masa hadapan.

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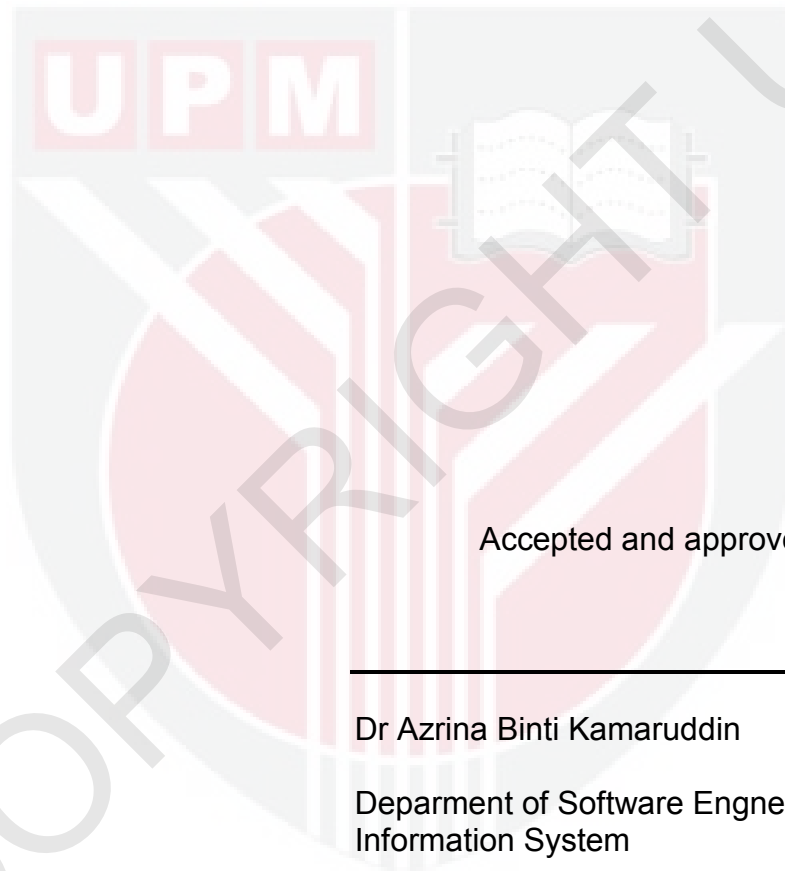
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APPROVAL SHEETS

This thesis is submitted to the Faculty of Computer Science and Information Technology of Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Master of Computer Science.



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DECLARATION

Declaration by graduate student

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CHAPTER 1

INTRODUCTION

1.1 Overview

Nowadays, the range and availability of mobile applications is evolving rapidly. More and more mobile applications are finding their way into users' daily life. The power of the internet and mobile technologies has been clearly help increasing the range of application developers can provide.

Currently, the top five common mobile applications stores that can be access by mobile users is Apple's iTunes App Store, Android App Store, Windows Phone Market Store, BlackBerry World and Amazon Apps Store (Kimble, 2010). In June 2014, Apple's company announced that iTunes App Store already reached 1.2 million applications available on its platform and had been downloaded 75 billion times (Sarah Perez, 2014). The market of mobile applications still lead by their counterpart Goggle with 1.3 million applications provided to Android mobile users but the margins of difference getting smaller.

Mobile applications are generally targeted at specific tasks and run on the various devices. The application can be categories based on the it's functionality and the most popular category is Games, Weather Checking,

Maps or Navigation, Social Networking, Music and News (Nielsen Wire, 2011). The research reported that Facebook is popular social networking application, the Weather Channel is commonly used in weather app and Google Maps dominates the Maps or Navigation category.

The technology trends also show the emerging application that related to religious matters. This application which categories under lifestyle is gaining more interest from mobile user finding religious information electronically and adapt technology in our lives (Buie, 2013). It's involves the development of mobile applications that support religious practices and ritual expression. The practices such as meditation, communal worship and abiding can be assisted by these applications. This kind of technologies is known as techno-spiritual (Ahmad, Hanis, & Razak, 2013). For example Halal Check, Muslim Pro-Azan Quran Qibla, Bible Offline, Buddha Lesson and others form of applications in act to fulfil religious obligations.

The increasing usages of mobile applications in market also come with great expectation that application should deliver in good quality condition for the users. Even with large amount of investment in new software development but neglecting the quality factor can result application failure to deliver users requirements and creates rejections from users (Madan & Dubey, 2012).

Usability is the widely used quality attribute to that determine the success of mobile applications (Fatih Nayebi, Jean-Marc Desharnais, 2012). It's contributes the continuity of mobile application usage and generates popularity choices among users. Usability is defined as "the capability of the

software product to be understood, learned, used and attractive to the user, when used under specified conditions.” (ISO/IEC 9126, 2001)

The criteria measuring usability of mobile application is different with the traditional devices such as desktop and notebook. It also depends on the various mobile device provider and platform been used such as iOS in Apple and Android for Google. User expect the mobile application is user friendly, easy to learn, have good performance in accomplish the required task in different environment from traditional devices (Baharuddin, Singh, & Razali, 2013).

1.2 Problem Statement

The techno-spiritual mobile applications have attracted more mobile user attention in recent years. It influence consumer to use and adapt these mobile application frequently in their daily life activities (Buie, 2013). Based on the survey, there are numerous number of techno-spiritual application that support religious practices in the internet market. It's provided for a different purpose in religious practices (Ahmad et al., 2013). The goal of every techno-spiritual mobile application is to provide valuable spiritual information for user to practice their religious obligation.

However, there is need in seeking the underlying usability issues because of limited insight related to these applications domain (Buie 2013). The usability issues in a techno-spiritual mobile application could lead a user to an

undesirable outcome, such as system halting, incorrect information and difficulty in application use due to limitations of its capability to meet user requirements. Also its can result a revenue loss for companies and developers.

1.3 Research Questions

In software development, measurement mechanism provides the evaluation for answering a variety of question associated with the project. It show the strengths and weakness impose in current processes and product. There are many numbers of measurements that have appeared in the literature. One of it, is Goal Question Metrics (GQM) approach develop by (Basili, 1992).

The GQM approach is based upon a hierarchy structure which an organization must first specify the goals for itself, then define those goals operationally inform of question and finally refined into metrics for each question that will be used for interpreting data referring to the stated goals (Basili, Victor R, Gianluigi Caldiera, 1994). A three layer of GQM approach help measure particular set of issues and give rules for interpreting of the measurement data.

This means that GQM model is suitable to develop generic usability metrics for mobile applications. The goals are specify based on quality characteristics of usability factors then refined it into several questions. Finally, a set of

metrics created and used to answer those questions (Hussain & Kutar, 2012).

The main research question in this study refers as follow:

RQ 1 : What is the degree of each usability quality attributes in current techno-spiritual mobile application?

The main research question then refined into sub-questions that reflect to each usability quality attributes of effectiveness, efficiency and satisfaction:

RQ1.1 How severe the functionality effect on user to complete a task in techno-spiritual mobile application?

RQ1.2 How effective the techno-spiritual mobile application was in achieving the task accurately?

RQ1.3 How pleasant the user's experience was using the techno-spiritual mobile application?

Figure 1 present the GQM model in evaluate the quality attribute for mobile applications.

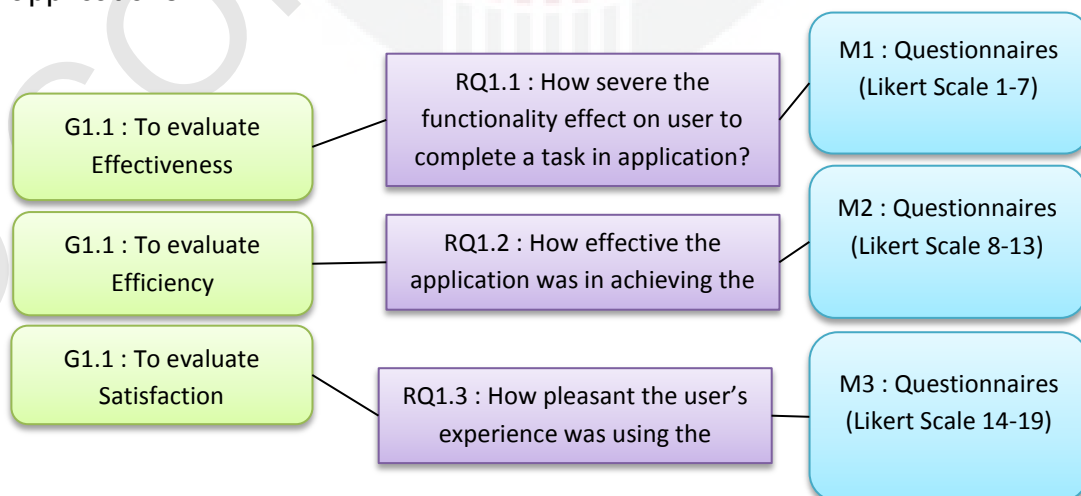


Figure 1.GQM for Mobile Application Usability

1.4 Objectives

In accomplishing the addressing usability quality attribute in techno-spiritual mobile application, follow are objectives of this study:

- a. To identify the usability issues had been originated in current techno-spiritual mobile application.
- b. To design a prototype interface of techno-spiritual mobile application.
- c. To evaluate usability quality attribute on the improve techno-spiritual mobile interface prototype.

1.5 Project Scope

Currently there are various techno-spiritual applications in the app store, this study only focused on Islamic techno-spiritual mobile applications related with Quran recitation for Muslims. The applications that help users read the Quran in Arabic alongside its translation.

The usability attributes in this study based on mobile usability framework define by (Baharuddin et al., 2013; Kim, 2011; Madan & Dubey, 2012). It's

listed as below:

- a. Effectiveness: Attribute measured the ability of a user to complete a task in a specified context. The user must achieve the goals successfully within application functionality.

- b. Efficiency: Measuring the ability of a user to complete a task with speed and accuracy. It's show the productivity of a user while using the application
- c. Satisfaction: Attribute measured the freedom from discomfort and user positive attitudes towards the mobile application.

1.6 Project Contribution

Usability concept in this study focuses on evaluating mobile application in domain of techno-spiritual usage. The effectiveness, efficiency and satisfaction are usability sub attributes characteristics used for measurement. These give a clear view of usability and its elements determine the success of a mobile application. The inclusion of four factor user, task, technology and environment need to consider because nature of mobile devices that different from traditional desktop applications.

The study will be beneficial for the application provider in the field of mobile software industries. This show the value and importance of usability should imply in techno-spiritual application to gain more acceptance by the users. It's investigating the issues associated with the usability of techno-spiritual applications that run on mobile devices and then provide comprehensive solution for this class of mobile applications. Moreover, the improved solution particularly on the usability aspects of the application hope will contribute to software development industry about techno-spiritual mobile application

environment and help the developer in terms of designing the techno-spiritual mobile applications.



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<http://techcrunch.com/2014/06/02/itunes-app-store-now-has-1-2-million-apps-has-seen-75-billion-downloads-to-date>.

APPENDIX A – SURVEY FORM FOR PRELIMINARY STUDY



SURVEY FORM

ADDRESSING USABILITY QUALITY ATTRIBUTE IN TECHNO-SPIRITUAL MOBILE APPLICATION

Dear sir/madam,

I'm student of Universiti Putra Malaysia. I am conducting a research to understand more about applications that support religious practices and ritual expression using mobile devices today. It would take you no longer than 10 minutes of your time. Your respond is really important for us so we can improve quality of Al-Quran mobile applications for Muslims. All of your information in anonymous and remain confidential. We are very appreciating and thank you for your precious time to do this response.

.....
Tuan/Puan

Saya merupakan pelajar dari Universiti Putra Malaysia. Saya sedang menjalankan satu kajian untuk mengetahui lebih lanjut mengenai penggunaan aplikasi yang berkaitan amalan dan ekspresi tatacara keagamaan menggunakan peranti mudah alih. Kajian ini tidak akan mengambil masa melebihi 10 minit dari masa tuan/puan. Maklumbalas tuan/puan amat penting dalam membantu kami dalam menambahbaik kualiti perisian Al-Quran mudah alih bagi umat Islam. Maklumat yang diperolehi daripada maklumbalas tuan/puan adalah sulit dan akan dirahsiakan. Kami amat menghargai dan berterima kasih atas luangan masa yang tuan/puan berikan dalam menyiapkan maklumbalas ini.

Student : Ahairul Afza Bin Abdul Wahab
Pelajar

Supervisor : Dr Azrina Binti Kamaruddin
Penyelia

Section A: About You

Please tick ✓ where applicable

Tandakan ✓ mana yang berkaitan

A.1 Gender : Male
Jantina Female

A.2 Age Group : Below 15 15-20
Kumpulan Umur 21-30 31-40
 41-60 Above 60

A.3 What type operation system used in your mobile device?
Apakah jenis sistem operasi yang digunakan dalam peranti mudah alih anda? Apple iOS
 Android
 Others : _____

A.4 What Al-Quran mobile application have you used? (you can choose more than one)
Apakah jenis aplikasi mudah alih Al-Quran yang pernah anda guna? (anda boleh membuat pilihan melebihi satu) : Quran for Android Quran Majeed
 iQuran Quran Touch
 Quran Reciter Other : _____
 Quran Explorer

A.5 How often do you used the Al-Quran mobile application?
Berapakah kekerapan anda menggunakan aplikasi Al-Quran mudah alih ini? : Once a month or less Every day
 Once a week Several times a day
 Several times a week

A.6 In which location do your frequently used the Al-Quran mobile application?
Dimanakah lokasi yang kerap anda menggunakan aplikasi Al-Quran mudah alih ini? : At home At school
 At mosque At public area
 At office In Car

Section B: Usability Questionnaires

Please tick ✓ where applicable

Tandakan ✓ mana yang berkaitan

Effectiveness Keberkesanan		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
B.1	It is simple to use this application. <i>Aplikasi ini adalah mudah untuk digunakan.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.2	The application provides easy to use touch screen input or virtual keypad. <i>Aplikasi ini menyediakan paparan sesentuh memasukkan data atau papan kekunci maya yang mudah untuk digunakan.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.3	The application provides easy to understand the output for user. <i>Aplikasi ini menghasilkan output yang mudah difahami oleh pengguna.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.4	I found it easy to install the application. <i>Saya mendapati perisian ini mudah untuk dipasang.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.5	It was easy to learn to use this application. <i>la adalah mudah untuk belajar menggunakan aplikasi ini.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.6	The application does not provide appropriate feedback for my actions. <i>Aplikasi ini tidak meyediakan maklumbalas yang tepat berdasarkan tindakan saya.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.7	The application gives error messages that clearly tell me how to fix problems. <i>Aplikasi ini memberikan mesej ralat yang memberitahu saya dengan jelas bagaimana untuk memperbaiki masalah.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Efficiency Kecekapan		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
B.8	The application is too slow I had to wait for response to continue. <i>Aplikasi ini adalah perlahan sehingga saya perlu menunggu untuk mendapatkan maklumbalas seterusnya.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.9	It was easy to complete the tasks without much effort. <i>la amat mudah untuk menyelesaikan tugas tanpa terlalu banyak usaha.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.10	The application provides useful help information. <i>Aplikasi ini menyediakan maklumat bantuan yang amat berguna.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

B.11	The menu of application is confusing. <i>Menu aplikasi ini adalah mengelirukan.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.12	The application provides clear and understandable navigation keys such as back/next buttons to move to previous/next screen. <i>Aplikasi ini menyediakan kekunci navigasi seperti butang kembali/seterusnya untuk pergi ke skrin sebelum/seterusnya yang jelas dan mudah difahami.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.13	The application provides clear information on automatic update for this application. <i>Maklumat kemaskini automatik yang diberikan oleh aplikasi adalah jelas.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Satisfaction Kepuasan		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
B.14	I was comfortable with the screen orientation of application. <i>Saya berasa selesa dengan orientasi paparan skrin aplikasi ini.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.15	It was easy to read the text in this application. <i>Adalah mudah untuk membaca teks dalam aplikasi ini.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.16	I find the design of application attractive. <i>Saya mendapati rekabentuk aplikasi ini adalah menarik.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.17	The colors used in this application are not attractive. <i>Penggunaan warna dalam aplikasi ini adalah tidak menarik.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.18	The icons and buttons used are attractive and recognizable. <i>Penggunaan ikon dan butang adalah menarik dan mudah dikenalpasti.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.19	Overall I enjoyed using the application. <i>Secara keseluruhan, saya berpuas hati dengan aplikasi ini.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section C : Your Opinion

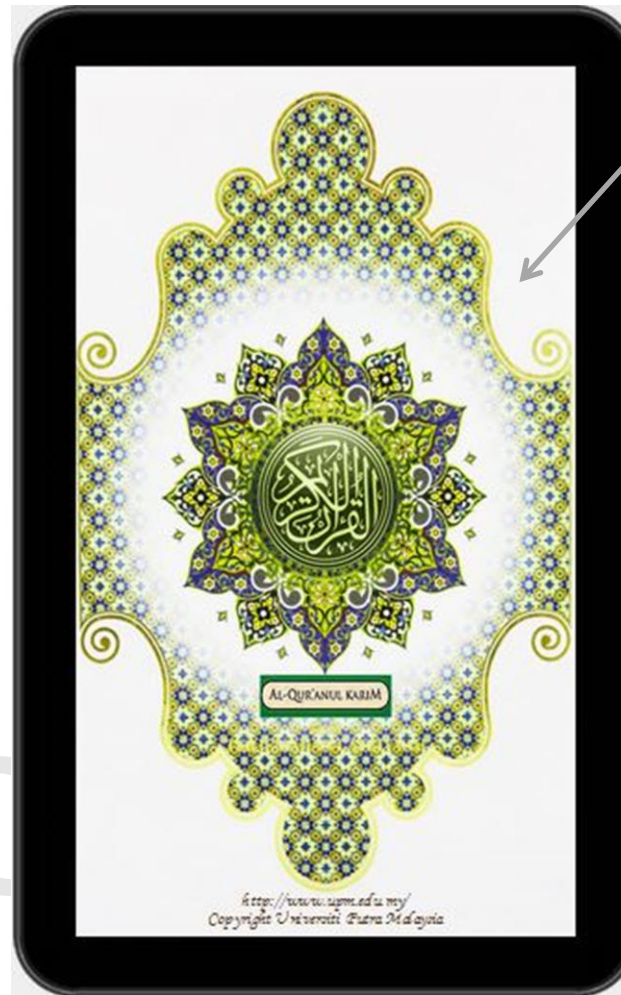
C.1 What additional features of Al-Quran mobile application would you like to see in the future using your mobile devices?

Apakah ciri-ciri tambahan dalam perisian Al-Quran mudah alih yang anda inginkan pada masa hadapan dalam peranti mudah alih anda?



Terima kasih atas luangan masa yang tuan/puan berikan dalam menyiapkan maklumbalas ini.

APPENDIX B – MOBILE APP PROTOTYPE



Splash screen is a graphical control element consisting of window containing an image, a logo and the current version of the software. A splash screen appears while Al-Qur'anul Karim application is launching.

Figure 28. Splash screen

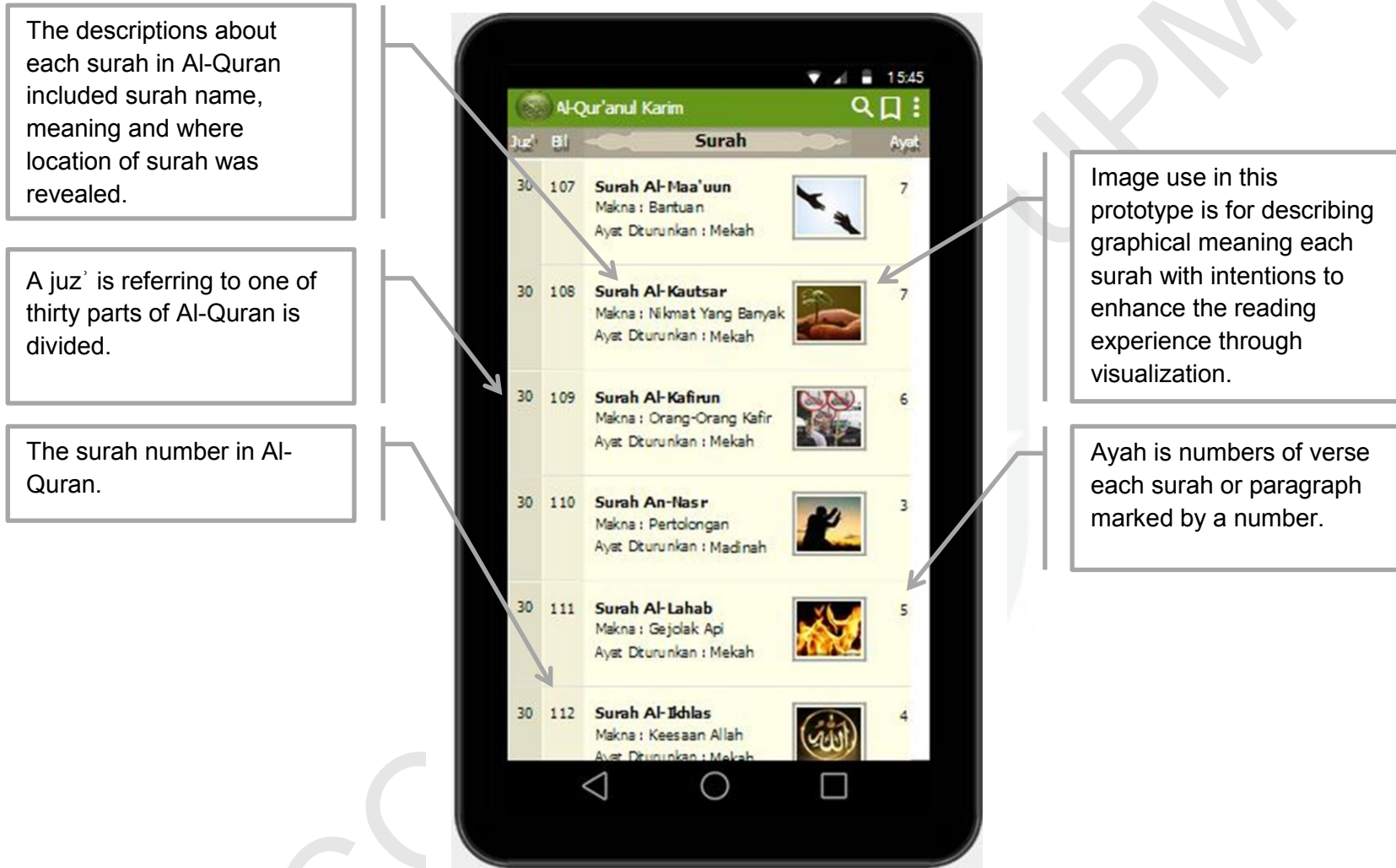
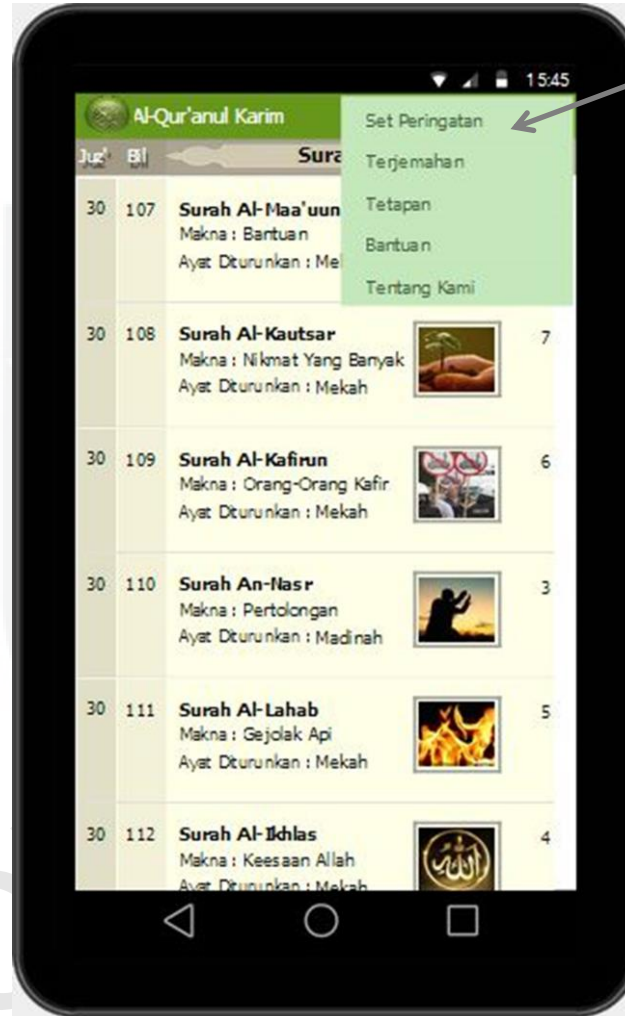


Figure 29. Surah screen



List of menu inside the prototype used for application setup.

Figure 30. Main menu list

Quran tajweed is the rules of Quran pronunciation by the reader and represented in the Malay language



Prototype developed with tafseer feature to give more information and explanation of Quran. It represented in the Malay language

Prototype developed in the Uthmani font with color coded tajweed, Verse by verse translation and recitation.

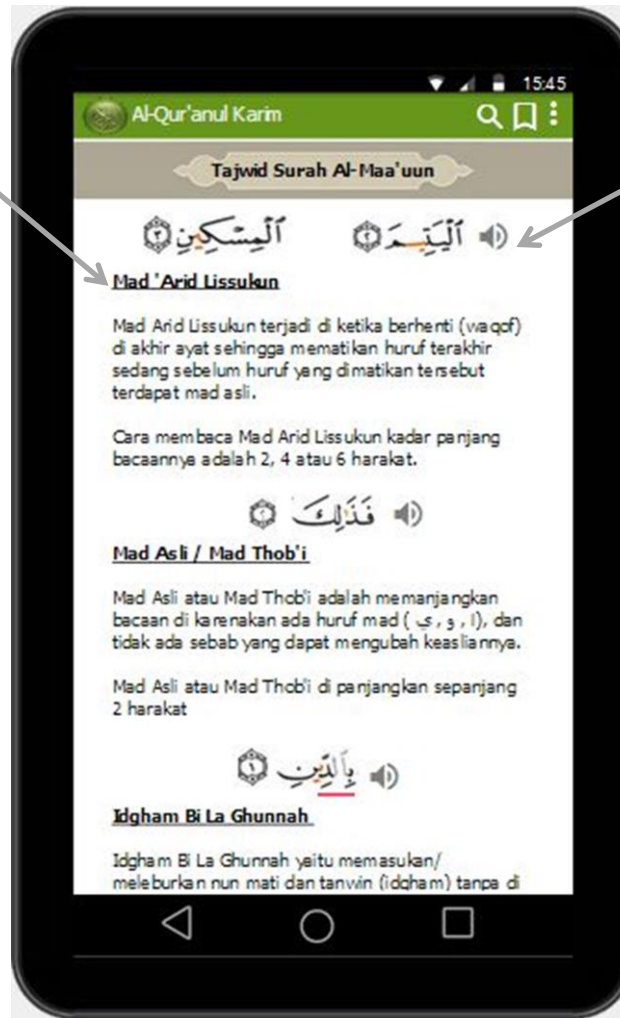
Figure 31. Surah screen



This recitation features will provide the users audio files that help the reading and creating significant learning experiences. It's focusing the recitation by the Malaysian reciter.

Figure 32. Surah play menu

This prototype provides direct tajweed explanations on the users selected surah. It represented in the Malay language.



This play button is for audio files that recited the tajweed word on that particular surah.

Figure 33. Tajweed screen

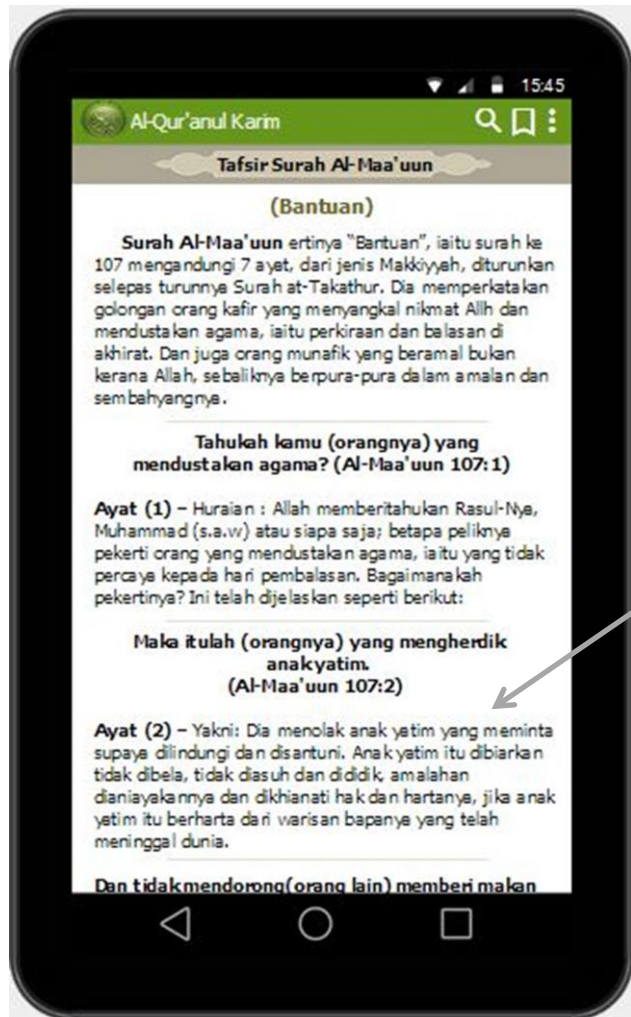


Figure 35. Tafseer screen

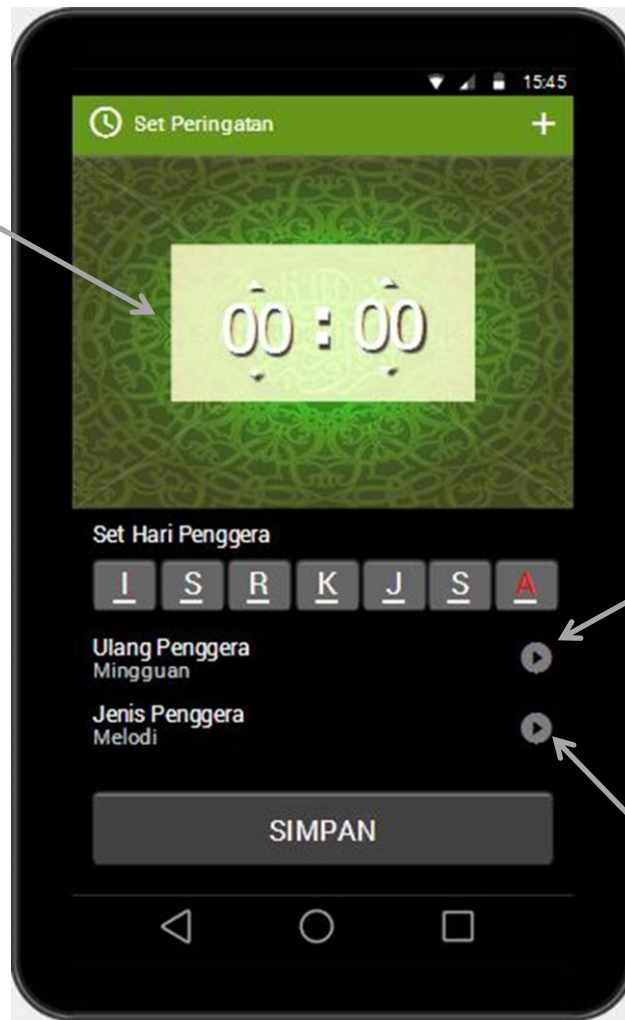
The translation feature that provides user facility to select the language used in the application.

Prototype developed with tafseer feature that give more information and explanation of each surah. It represented in the Malay language



Figure 34. Translation setting menu

Reminder or alerting system that help reader consistently read Quran in personalize frequencies rate and times



Frequencies setting which assists the user setup the reminder option on daily or weekly.

Melodies setting which assists the user setup the sound and mode of vibration use in alerting system.

Figure 36. Reminder screen

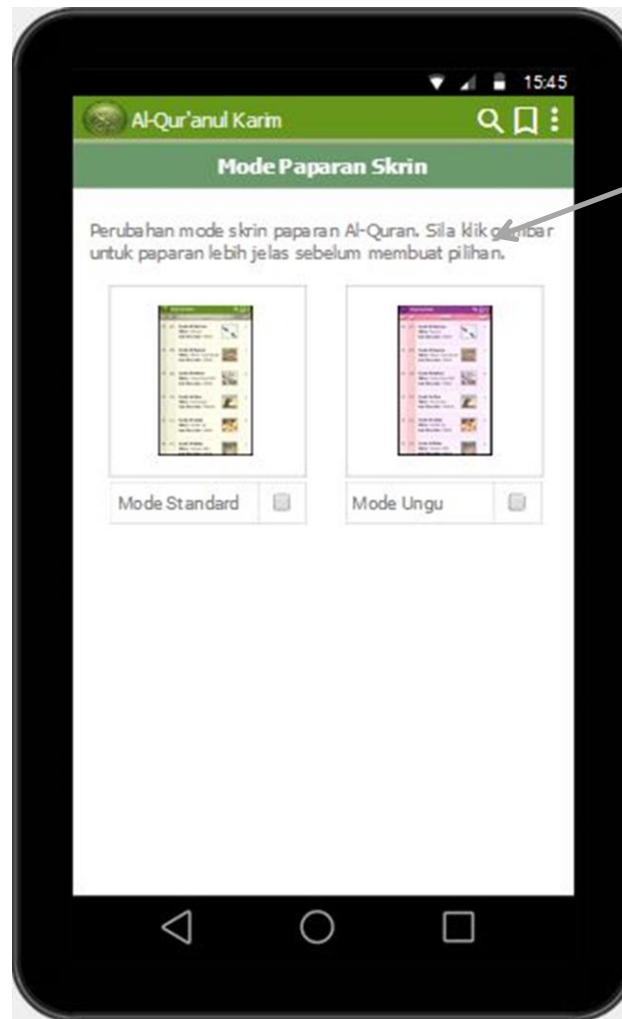


Figure 373. Background setting screen

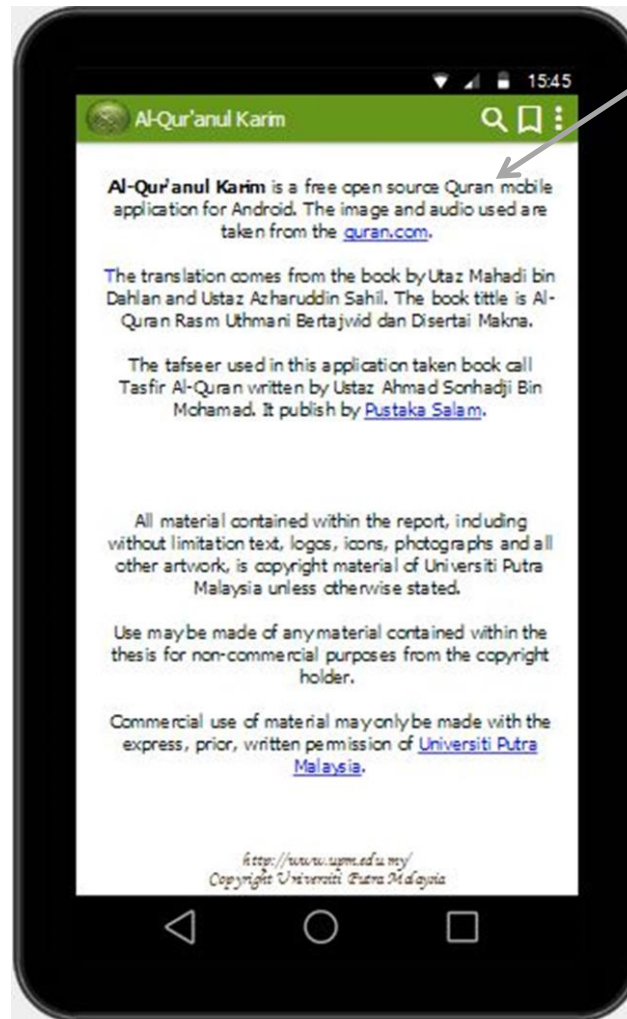


Figure 39. Content screen in purple background

This is example of purple modes that more color friendly for female users.



Figure 38. Surah screen in purple background



About us screen is explain what the purpose of application and source of references used.

Figure 40. About us screen

APPENDIX C – SURVEY FORM FOR POST TEST STUDY



SURVEY FORM

ADDRESSING USABILITY QUALITY ATTRIBUTE IN TECHNO-SPIRITUAL MOBILE APPLICATION

Dear sir/madam,

I'm student of Universiti Putra Malaysia. I am conducting a research to understand more about applications that support religious practices and ritual expression using mobile devices today. It would take you no longer than 10 minutes of your time. Your respond is really important for us so we can improve quality of Al-Quran mobile applications for Muslims. All of your information in anonymous and remain confidential. We are very appreciating and thank you for your precious time to do this response.

.....
Tuan/Puan

Saya merupakan pelajar dari Universiti Putra Malaysia. Saya sedang menjalankan satu kajian untuk mengetahui lebih lanjut mengenai penggunaan aplikasi yang berkaitan amalan dan ekspresi tatacara keagamaan menggunakan peranti mudah alih. Kajian ini tidak akan mengambil masa melebihi 10 minit dari masa tuan/puan. Maklumbalas tuan/puan amat penting dalam membantu kami dalam menambahbaik kualiti perisian Al-Quran mudah alih bagi umat Islam. Maklumat yang diperolehi daripada maklumbalas tuan/puan adalah sulit dan akan dirahsiakan. Kami amat menghargai dan berterima kasih atas luangan masa yang tuan/puan berikan dalam menyiapkan maklumbalas ini.

Student : Ahairul Afza Bin Abdul Wahab
Pelajar

Supervisor : Dr Azrina Binti Kamaruddin
Penyelia

Section A: About You

Please tick ✓ where applicable

Tandakan ✓ mana yang berkaitan

A.1 Gender : Male
Jantina Female

A.2 Age Group : Below 15 15-20
Kumpulan Umur 21-30 31-40
 41-60 Above 60

A.3 What type operation system used in your mobile device?
Apakah jenis sistem operasi yang digunakan dalam peranti mudah alih anda? Apple iOS
 Android

A.4 What Al-Quran mobile application have you used? (you can choose more than one)
Apakah jenis aplikasi mudah alih Al-Quran yang pernah anda guna? (anda boleh membuat pilihan melebihi satu) Quran for Android
 iQuran

Section B: Usability Questionnaires

Please tick ✓ where applicable

Tandakan ✓ mana yang berkaitan

Effectiveness Keberkesanan		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
B.1	It is simple to use this application. <i>Aplikasi ini adalah mudah untuk digunakan.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.2	The application provides easy to use touch screen input or virtual keypad. <i>Aplikasi ini menyediakan paparan sesentuh memasukkan data atau papan kekunci maya yang mudah untuk digunakan.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.3	The application provides easy to understand the output for user. <i>Aplikasi ini menghasilkan output yang mudah difahami oleh pengguna.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.4	I found it easy to install the application. <i>Saya mendapati perisian ini mudah untuk dipasang.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.5	It was easy to learn to use this application. <i>la adalah mudah untuk belajar menggunakan aplikasi ini.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.6	The application does not provide appropriate feedback for my actions. <i>Aplikasi ini tidak meyediakan maklumbalas yang tepat berdasarkan tindakan saya.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.7	The application gives error messages that clearly tell me how to fix problems. <i>Aplikasi ini memberikan mesej ralat yang memberitahu saya dengan jelas bagaimana untuk memperbaiki masalah.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Efficiency Kecekapan		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
B.8	The application is too slow I had to wait for response to continue. <i>Aplikasi ini adalah perlahan sehingga saya perlu menunggu untuk mendapatkan maklumbalas seterusnya.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.9	It was easy to complete the tasks without much effort. <i>la amat mudah untuk menyelesaikan tugas tanpa terlalu banyak usaha.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.10	The application provides useful help information. <i>Aplikasi ini menyediakan maklumat bantuan yang amat berguna.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

B.11	The menu of application is confusing. <i>Menu aplikasi ini adalah mengelirukan.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.12	The application provides clear and understandable navigation keys such as back/next buttons to move to previous/next screen. <i>Aplikasi ini menyediakan kekunci navigasi seperti butang kembali/seterusnya untuk pergi ke skrin sebelum/seterusnya yang jelas dan mudah difahami.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.13	The application provides clear information on automatic update for this application. <i>Maklumat kemaskini automatik yang diberikan oleh aplikasi adalah jelas.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Satisfaction Kepuasan		Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
B.14	I was comfortable with the screen orientation of application. <i>Saya berasa selesa dengan orientasi paparan skrin aplikasi ini.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.15	It was easy to read the text in this application. <i>Adalah mudah untuk membaca teks dalam aplikasi ini.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.16	I find the design of application attractive. <i>Saya mendapati rekabentuk aplikasi ini adalah menarik.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.17	The colors used in this application are not attractive. <i>Penggunaan warna dalam aplikasi ini adalah tidak menarik.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.18	The icons and buttons used are attractive and recognizable. <i>Penggunaan ikon dan butang adalah menarik dan mudah dikenalpasti.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.19	Overall I enjoyed using the application. <i>Secara keseluruhan, saya berpuas hati dengan aplikasi ini.</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Section C : Your opinion on enhancement

Please tick ✓ where applicable

Tandakan ✓ mana yang berkaitan

Enhancement Penambahbaikan		Bad	Poor	Moderate	Good	Excellent
C.1	How do you rate the tawjeed functionality reside in this Al-Quran'nul Karim mobile application? <i>Bagaimana anda menilai fungsi tawjeed yang terdapat di aplikasi Al-Quran'nul Karim ini?</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C.2	How do you rate the Malay language tafseer available in this Al-Quran'nul Karim mobile application? <i>Bagaimana anda menilai Tafsir bahasa Melayu yang terdapat di dalam aplikasi mudah alih Al-Karim Quran'nul ini?</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C.3	How do you rate the usage of Malaysian reciter available in this Al-Quran'nul Karim mobile application? <i>Bagaimana anda menilai penggunaan qari dari Malaysia yang terdapat di dalam aplikasi mudah alih Al-Karim Quran'nul ini?</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C.4	How do you rate the recitation speed features available in this Al-Quran'nul Karim mobile application? <i>Bagaimana anda menilai ciri-ciri kadar kelajuan bacaan yang terdapat di aplikasi Al-Quran'nul Karim ini?</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C.5	How do you rate the reading reminder functionality available in this Al-Quran'nul Karim mobile application? <i>Bagaimana anda menilai fungsi peringatan bacaan yang terdapat di aplikasi Al-Quran'nul Karim ini?</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C.6	How do you rate the localize background features available in this Al-Quran'nul Karim mobile application? <i>Bagaimana anda menilai ciri-ciri latar belakang setempat yang terdapat di aplikasi Al-Quran'nul Karim ini?</i>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

-Thank you for your precious time to do this response-

Terima kasih atas luangan masa yang tuan/puan berikan dalam menyiapkan maklumbalas ini.