

Development of Prayers and Dhikrs Before Sleep Application for Student

**Muhammad Hariz Zainuddin¹, Suhaila Sari^{1*}, Nik Shahidah
Afifi Md Taujuddin¹, Roslan Hazli², Mahamat Idris¹**

¹Faculty of Electrical and Electronic Engineering,
Universiti Tun Hussein Onn Malaysia, Batu Pahat, 86400, MALAYSIA

²Faculty of Engineering Technology,
Universiti Tun Hussein Onn Malaysia, Pagoh, 84600, MALAYSIA

*Corresponding Author Designation

DOI: <https://doi.org/10.30880/eeee.2021.02.02.087>

Received 04 July 2021; Accepted 05 August 2021; Available online 30 October 2021

Abstract: Prayers and dhikrs are a very noble worship that calms the spirit and provides the perpetrator with exceptional benefits both in this life and in the hereafter. The project is to develop iOS-based and Android-based applications for prayers and dhikrs, focusing on university students. The Graphic User Interface (GUI) for the applications development is implemented using the Visual Studio Code (VSC) software. The analysis of effects of practicing recital by using the applications is based on the respondents' experience during the indicated period of time. The performance review survey data result shows, most of the respondents believed the applications can be used continuously for long terms and respondents felt an improvement in their sleep quality, where 45% reported their sleep quality have improved significantly. Moreover, 60% of the respondents agreed that the applications are highly user-friendly to use. This project has successfully achieved its goal as the developed GUI for visual layout and functions for the Prayers and Dhikrs before Sleep recital.

Keywords: Android Applications, iOS Applications, Prayers, Dhikr, Spiritual Intelligence

1. Introduction

Sleep is an activity we do every day. On average, we will all spend 36% of our time in life with sleep [1]. During sleep, we are unconscious and helpless. Sometimes, people die during their sleep. That is why it is important for us to prepare before bed. Reciting prayers before bed can also provide peace of mind and also make sleep as an act of worship that we do [2]. Sleep is very important for the human brain. Sleep allows the brain to re-energize itself, grow new cells and repair worn out tissues [3]. Lack of sleep will affect life, especially for students. It may cause limitation of ability to learn and concentrate on study, difficulty to wake up in morning for class, and moodiness and health issues [4].

Research shows that 60% of university students having low quality sleep [3]. Therefore, university students need to find a way to improve their sleep quality. One way is by reciting prayers and dhikrs before going to bed for Muslim students. They can refer to books, internet and mobile phone applications for the recital contents.

Nowadays, mobile technology is applied in a wide range of our daily activities [5]. It is rare to get a person who does not have a cell phone [6]. Meanwhile, the mobile devices are regarded as very flexible devices because they are easy to handle and to be used everywhere by the users [7]. Mobile phones have become powerful useful devices [8]. Furthermore, statistical studies show that around the world, there are more than 3.3 billion mobile connections, and the number is increasing daily [9]. Mobile applications which are able to enhance knowledge in Islamic practices are still limited, especially in applications related to dhikrs and prayers before sleep [10].

2. Literature Review

Several research papers are chosen for this project as literature review references and used for better understanding for the applications development. There are some references that have some similar concepts to this project which are available on the website, YouTube and Android application versions. Therefore, through the reading, suitable techniques and explorable concepts can be determined. The applications for prayers and dhikrs before sleep is proposed in this project to improve the current disadvantages from other collection sources. In this project, the applications are developed with comprehensive but brief prayers and dhikrs before sleep.

2.1 Web-site based Prayers and Dhikrs Collection

There are many sources of prayers and dhikrs that can be found on the websites. Everything can be found easily just by searching the existing web browsers. It also has their disadvantages such as when surfing the prayers and dhikrs such as too many advertisements.

2.2 YouTube based Video of Prayers and Dhikrs Collection

Many videos of the prayers and dhikrs may be seen on the YouTube site. YouTube was designed to allow anybody to upload any video material they wanted. It gives users the freedom to publish, share, and watch information. It has subsequently evolved to become one of the world's most popular video distribution platforms. However, their disadvantage is most of the prayers and dhikrs have a longer version.

2.3 iOS and Android Mobile Applications for Prayers and Dhikrs Collection

There are plenty applications prayers and dhikrs can be downloaded from their respective platforms. The applications that exist today, do not focus on prayers and dhikrs before sleep. In fact, there are several applications that have to be paid to download.

The comparison of recital examples [11-14] is shown in Table 1.

Table 1: Comparison of recital examples

References	Collection sources	Description	Advantages	Disadvantages
[11]	Doa dan Zikir Sebelum Tidur (Platform: Website)	Surah Al-Ikhlas, Al-Falaq and An-Nas), Surah Al-Baqarah: 285-286, dhikrs (Subhannallah, Alhamdulillah, Allahuakbar), and prayer before sleep.	Complete basic requirement for prayer and dhikr	<ul style="list-style-type: none"> • No audio player • Need internet access • Has advertisements
[12]	Dzikir Sebelum Tidur Sesuai Dengan Sunah Rasulullah S.A.W. (Platform: YouTube)	Al Fatihah 1-7, Al Baqarah 1-5, Al Baqarah 284-286, Al-Ikhlas, Al-Falaq, An-Nas	The prayer is complete with the sunnah recital	<ul style="list-style-type: none"> • Not providing dhikr • Duration (3 hours) • Has advertisements • Need internet access
[13]	Bedtime Supplication - MP3 (Platform: Android application)	Al-Ikhlas, Al-Falaq, An-Nas, Ayatul Qursi, Al-Sajdah, Al-Mulk and others.	<ul style="list-style-type: none"> • Free to download • Many languages • Easy to use • Provide the audio 	<ul style="list-style-type: none"> • Not providing dhikr • Has advertisements
[14]	Doa Harian Anak Muslim (Platform: iOS application)	The application is focusing to on prayer for children to learn.	<ul style="list-style-type: none"> • Kids can learn to recite the prayers • Free to download 	There are only a few resources.

3. Materials and Methods

In this section, it will discuss in details of the workflow and methodology of the project. This chapter is mainly focused on the project framework, overall structure diagram of the general workflow of the project development, and software development. Figure 1 shows the flowchart for the developed applications GUI.

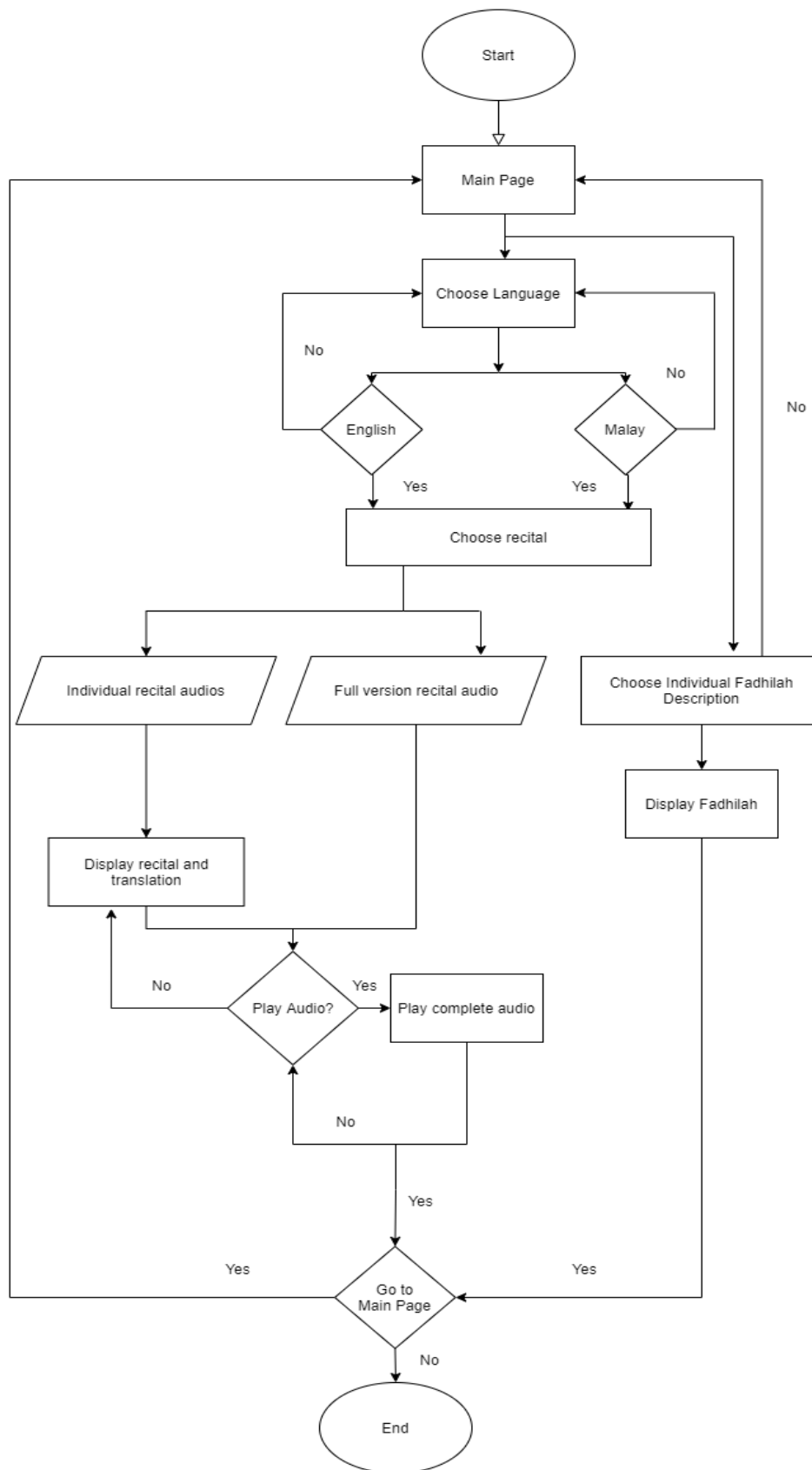


Figure 1: Applications Flowchart

3.1 List of Prayers and Dhikrs Recital

The list of prayers and dhikrs is listed in Table 2.

Table 2: List of prayers and dhikrs

Recital Names			
1. Auzubillah	5. Prayer before death	9. Al-Ikhlash x3	13. Bismillah x21
2. Bismillah	6. Selawat x3	10. Al-Falaq x3	14. Tasbih Fatimah
3. Syahadah	7. Istighfar	11. An-Naas x3	
4. Prayer before sleep	8. Ayatul Qursi	12. Al-Kafirun	

3.2 List of Fadhilah

The list of Fadhilah for prayers and dhikrs is listed in Table 3.

Table 3: List of Fadhilah for prayers and dhikrs

Fadhilah Names			
1. Berwuduk	4. Doa sebelum tidur	7. Istighfar	10. Al-Kafirun
2. Membersihkan tempat tidur	5. Doa sebelum ajal	8. Ayatul Qursi	11. Bismillah 21x
3. Syahadah	6. Selawat	9. 3 Qul	12. Tasbih Fatimah

3.3 Reciter

The reciter name is Mr. Mahamat Bin Idris from Chad and studies at Universiti Tun Hussein Onn Malaysia (UTHM). His vocal is used in this project for all prayers and dhikrs recital in the applications.

3.4 Develop applications for iOS and Android devices

In order to run the applications, they will be downloaded in the iPhone Operating System (iOS) and mobile phone that run the Android system.

3.5 Software Development

For this project, it used the Visual Studio Code (VSC), React Native Framework, Expo, Node Module, and Adobe Illustrator. The audio file in the applications is in the MPEG Audio Layer-3 (MP3). The VSC is used for writing a coding for development of the GUI application. The React Native Framework is a template to build program code inside the VSC. Next, the Expo is conducted to test the application using a smartphone. Furthermore, the Adobe Illustrator is for designing the icon and audio player symbol.

Figure 2 shows the design and code for the developed applications GUI.

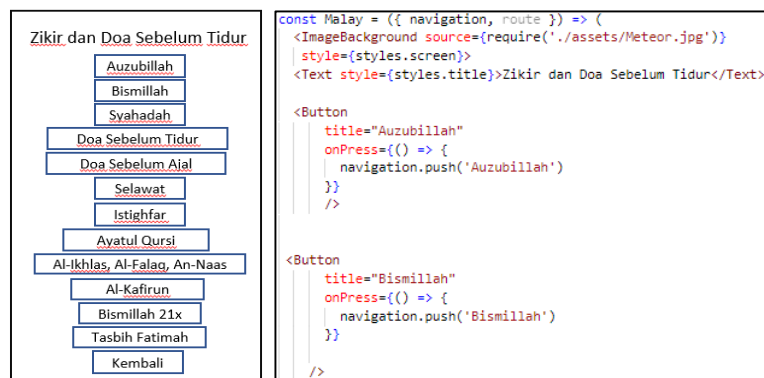


Figure 2: The design and code for developed applications GUI

3.6 Visual Studio Code

The Visual Studio Code (VSC) is installed for the software development. VSC is to write the codes for Graphical User Interface (GUI) in this project.

3.7 React Native Framework

In this part, the React Native (also known as the RN) is a mobile application framework that allows to build natively-rendered mobile apps for the iOS and Android. The framework lets user to create an application for various platforms by using the same codebase.

3.8 Expo

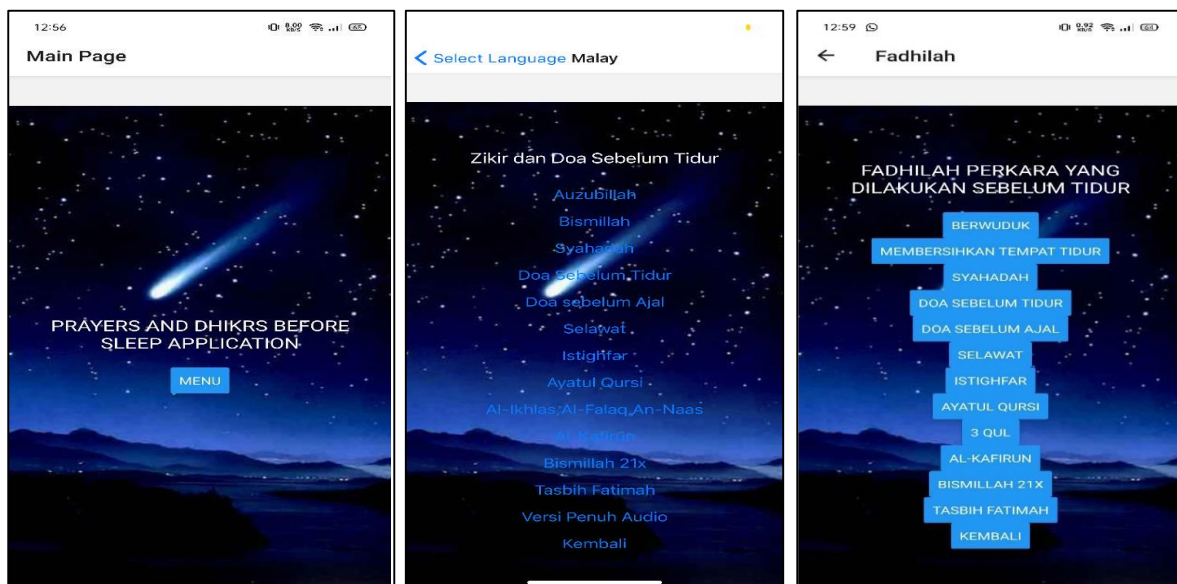
The Expo is an open-source platform for making universal native apps for Android, iOS, and the web with JavaScript and React. It is a cross-platform to build and run an application. The users need to download the Expo application from the Apps Store in their devices. All applications that have been developed will be listed in the Expo application. Users also need to scan the QR codes provided in the web browser using their devices.

3.9 Audio in MP3 format

The audio format used will be the MPEG Audio Layer-3 (MP3) which is a compressed audio file format developed by the Moving Picture Experts Group (MPEG). A typical MP3 file sounds similar to the original recording, but requires significantly less disk space.

3.10 Applications file creation

These files are created using the Expo. As for the distribution of the .apk and .ipa files, they are distributed to users by sending the files through the WhatsApp. The users need to download and install the file to their device before can be used. Figure 3 shows the interface of the applications developed in this project.



(a) Main page

(b) Recital contents

(c) List of 12 Fadhilah

Figure 3: Applications' interface

4. Results and Discussion

The results of this survey came from 20 respondents who used the Prayers and Dhikrs Before Sleep applications. This survey is intended to assess the performance in term of user-friendliness, functionality and effectiveness of the applications. The respondents' selection is randomly picked from different level of age and occupation, focusing more to higher education students (please refer to Figure 4). Respondents are given time to test the application for their daily life for reviewing after use (please refer to Figure 5). Then, the respondents are given a survey form to evaluate the performance of the application (please refer to Figures 6 and 7).

Figure 4 shows the data for Question 4, which is about the occupation of the respondents. 12 respondents are higher education students. 5 of the respondents are working at the office. The other 3 are outdoor worker, unemployed and secondary school student, respectively. The majority of the respondents are students, which are 65% of total respondents.

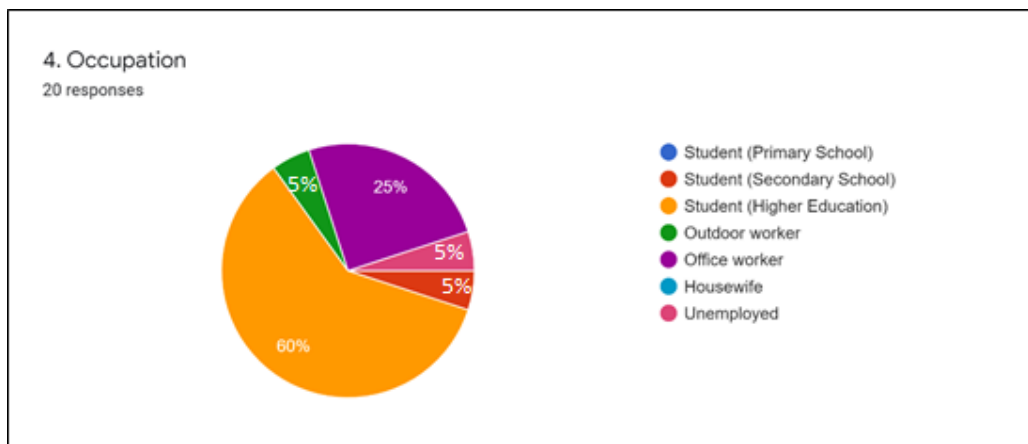


Figure 4: Occupation of the respondents

Figure 5 shows the data for Question 6, which is about their usage of the applications. 10 of the respondents are using less than a week. 6 respondents are using less than 2 weeks. 3 respondents are using more than 1 a month for the applications. Only 1 respondent is using for less than 3 weeks. The result shows that the respondents are new to the applications and have been using the applications in a short period of time. Therefore, the effects of practicing recital by using the applications are based on the respondents' experience during the indicated period of time.

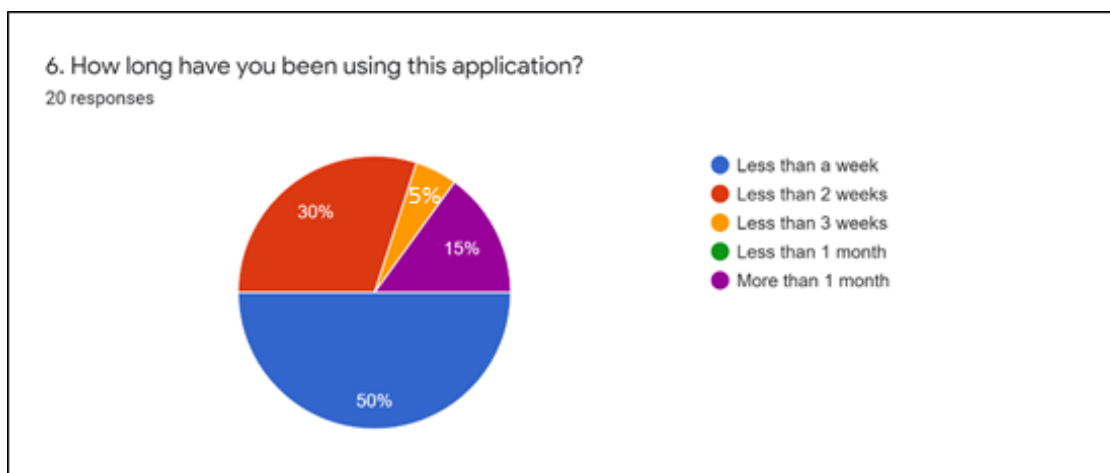


Figure 5: Period of usage

Figure 6 shows the data for Question 9, which is about the quality sleep of the respondents after using the application. All respondents agreed that their quality of sleep improved, where 45% (9 respondents) answered their sleep quality, increased significantly, followed by 45% (9 respondents) answered their quality sleep improved moderately. The remaining 2 respondents felt their quality of sleep improved slightly.

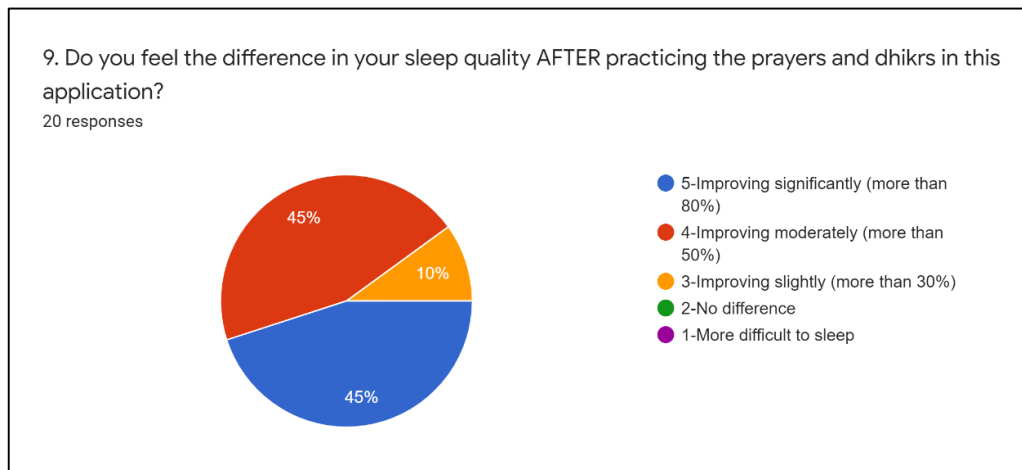


Figure 6: Quality of sleep before using the application

Figure 7 shows the data for Question 14, which is about the user-friendliness of the applications for the users in term of visual display, button arrangement, etc. 12 of the respondents agreed the applications are extremely easy to use. 7 respondents gave to 4 out of 5 rating in user-friendliness. Only 1 respondent gave 3 out of 5 rating in user-friendliness terms. Overall, most of the respondents agreed that the applications are user-friendly.

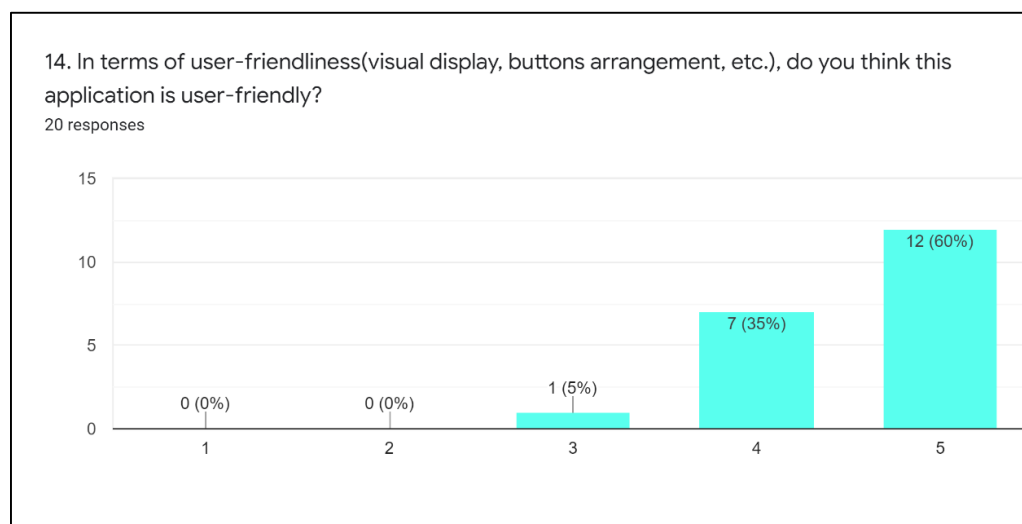


Figure 7: User-friendliness of the applications

5. Conclusion

Finally, as the created Graphical User Interface (GUI) for visual layout and functionality for the Prayers and Dhikrs before Sleep recital, this project has effectively fulfilled its purpose. Visual Studio Code (VSC) created the Prayers and Dhikrs Before Sleep applications using the React Native template (RN). The Expo may be used to create applications for the iOS and Android platforms. When utilizing the applications, they also perform well in terms of transitioning to the next specified function. 20 respondents analyze the applications based on the results of a performance review survey. The analysis

on effects of practicing recital by using the applications is based on the respondents' experience during the indicated period of time. The results show that all the respondents agreed that their quality of sleep have improved, whereas 45% respondents increase significantly and, followed by 45% respondents improved moderately and they are motivated to recite the prayers and dhikrs before sleep since using the developed applications. 85% respondents are satisfied with the ability of the application to be continuously used in the future.

Acknowledgement

The authors would like to thank the Faculty of Electrical and Electronic Engineering, University Tun Hussein Onn Malaysia for the support to complete this project.

References

- [1] Inche Naim, "Amalan Sebelum Tidur Dan Selepas Tidur," [Online]. Available: <https://inchenaim.com/sebelum-tidur-selepas-tidur/> [Accessed October 28, 2020]
- [2] Islam itu indah, "Amalan Dan Doa Sebelum Tidur Yang Di Ajar Oleh Rasulullah SAW," [Online]. Available: <https://www.islamituindah.my/amalan-dan-doa-sebelum-tidur-yang-di-ajar-oleh-rasulullah/> [Accessed October 28, 2020]
- [3] H.G. Lund, B.D. Reider. A.B. Whiting and J.R. Prichard, "Sleep patterns and predictors of disturbed sleep in a large population of college students," *Journal of Adolescent Health*, vol. 46, no. 2, pp. 124-32, 2010, doi: 10.1016/j.jadohealth.2009.06.016. Epub 2009 Aug 3. PMID: 20113918.
- [4] MyHEALTH Portal, "Teenagers and Sleep," 2012. [Online]. Available: <http://www.myhealth.gov.my/en/teenagers-and-sleep/> [Accessed October 28, 2020]
- [5] R. Baharuddin et al., "Usability Dimensions for Mobile Applications-A Review," *Research Journal of Applied Sciences*, vol. 5, pp. 2225-2231, 2013
- [6] K. C. Stacy, et al., "Worldwide Mobile Worker Population 2011–2015 Forecast," [Online]. Available: <http://www.idc.com> [Accessed November 1, 2020]
- [7] S. Aram et al, "Environment sensing using smartphone," *Sensors Applications Symposium (SAS)*, Brescia, Italy. February 7-9, 2012, IEEE, 2012. pp.1-4, doi: 10.1109/SAS.2012.6166275.
- [8] Nusca, "Smartphone vs. feature phone arms race heats up; which did you buy?" 2009. [Online]. Available:<http://www.zdnet.com/blog/gadgetreviews/smartphone-vs-feature-hone-arms-race-heats-up-whichdid-you-buy/6836> [Accessed November 1, 2020]
- [9] A. S. A. Al-Aidaros et al, "Development of Mobile Dua and Zikr," *TELKOMNIKA Indonesian Journal of Electrical Engineering*, vol. 11, 2013
- [10] S. D. Hershner and R. D. Chervin, "Causes and consequences of sleepiness among college students," *Nature and Science of Sleep*, 2014, doi: 10.2147/NSS.S62907
- [11] Lufaei, "Doa dan Zikir Sebelum Tidur,"2020. [Online]. Available: <https://akurat.co/rahmah/id-1204106-read-doa-dan-zikir-sebelum-tidur?page=1> [Accessed November 3, 2020]

- [12] HC CHANNEL, “Dzikir Sebelum Tidur Sesuai Dengan Sunah Rasulullah S.A.W.,” 2020. [Online]. Available: <https://www.youtube.com/watch?v=JI8SvYm4aDQ> [Accessed November 6, 2020]
- [13] Kingdom of Saudi Arabia, “Bedtime Supplication,” 2019. [Online]. Available: <https://play.google.com/store/apps/details?id=com.ayatapps.sherifmahmoud.sleepwakeup&hl=en&gl=US> [Accessed November 3, 2020]
- [14] Hasyim Mulyono, “Doa Harian Anak Muslim,” [Online]. Available: <https://apps.apple.com/my/app/doa-harian-anak-muslim/id1230165244?l=ms> [Accessed November 13, 2020]