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Development of Android-Based Application for Prayers and Dhikrs Before Sleep

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Abstract: Lack of sleep will affect life and may cause limitations in the capability to study and concentrate on the study, trouble attending early class, moodiness, and health problems. Mobile gadgets, especially mobile phones, can be utilized in Islamic rituals. Some applications in the Playstore or IOS store do not have bedtime prayers and dhikrs in one application. Most related websites do not feature audio files for prayers and dhikrs. The source from YouTube usually has a long version of the recital and it also has advertisements that may cause interruptions or cause the listener to sleep before finishing the prayer recital. Some recent mobile dhikrs and prayer applications may not really offer specific prayers and dhikrs for bedtime. Recently, an Android application that provides a system for users in one application for prayer and dhikrs before sleep has been developed. The project in this study provides audio and visual contents with display, playback and timer functions for prayers and dhikrs before sleep application. This study utilizes several software; Adobe Illustrator, Visual Studio Code, Node Module, Expo, and React Native Framework. The performance assessment questionnaire data demonstrates that most of the respondents are satisfied with the recital audio (68.4% found that the function is extremely good and 31.6% responded as very good). Moreover, most of the users are satisfied playback mode and timer mode of the applications (84.2% found the function extremely helpful). Furthermore, most respondents indicated that the application is user-friendly (94.5% found it is very and extremely user-friendly). Finally, in terms of quality sleep, 72.7% of respondents found that their quality sleep improved (to very and extremely good) after practicing prayer and dhikrs in this application.

Keywords: Android, Application, Prayers and Dhikrs, Sleep

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1. Introduction

The human brain requires sleep as well. The brain uses sleep to refresh itself, generate new cells, and heal damaged tissues [1]. Sleep deprivation has a negative impact on life, particularly for students. Lack of sleep may affect somebody's ability to study and focus in class, cause difficulties getting out of bed in the morning for class, and cause moodiness and health problems [2]. Research from Lund H.G., Journal of Adolescent Health (2010) demonstrates 60% of higher education students have lesser quality sleep [1]. As a result, university students must discover a solution to increase the quality of their sleep. For Muslim students, one method is to recite prayers and dhikrs before going to bed.

Nowadays, technology is growing faster than before [3]. This will provide numerous benefits to individuals around the world. However, we are advised to use it properly, particularly as a tool for carrying out our religious responsibilities [4]. In particular, mobile phones are regarded as incredibly adaptable and powerful technologies since they are simple to use and can be used anywhere by users [5]. According to statistics, there are over 3.3 billion mobile networks in the world, with the number growing every day [6]. However, mobile applications that might help people learn more about Islamic rituals are still infrequent, especially in the development of bedtime dhikrs and prayers [7].

2. Literature Review

This chapter will go over the research that has gone into the development of this project. For this project, several research publications were chosen as literature review references, and the findings were analyzed to obtain an understanding of the application development process. There are a number of references to this project in journals and proceeding papers as well as on the internet, Android applications as well as YouTube channels. As a result of the reading, appropriate methodologies and explorable topics can be identified.

2.1 Prayers and Dhikrs Collection based on website

Numerous websites can be used to find prayers and dhikrs. Everything is easily accessed by searching the existing web browsers.

2.2 Video of Prayers and Dhikrs Collection based on Youtube channels

Users can find numerous video content for prayers and dhikrs on the YouTube platform. YouTube is created as a platform for anyone to post any video contents they desired. It enables users to freely upload, share, and view the material. It has developed to turn into one of the world's leading video distribution websites. Many content creators nowadays make a decent profit by selling ad space before or during the creation of videos and then submit to the site. There are various categories of content that can be found. For example, movies, music, education and religious content.

2.3 Mobile Applications for Prayers and Dhikrs Collection

Abundant prayers and dhikrs applications can be found on different platforms. From our research, there are several applications that have been developed and are available in the Android Playstore, IOS, Youtube and website. Table 1 shows the comparison of a recital.

Table 1: Comparison of recitation examples

References	Collection sources	Description	Advantages	Disadvantages
[8]	Doa dan Zikir Sebelum Tidur (Platform: Website)	Consist of Surah An-Nas (Ayat 1-6), Al-Falaq (Ayat 1-5), Al-Ikhlas, as well as Surah Al-Baqarah: 285-286, Fatimah dhikr, and also prayer before sleep.	Comprehensive main necessity for prayer and dhikrs before sleep.	• Audio is not provided • Require internet access • Has advertisements
[9]	Dzikir Malam Sebelum Tidur Agar Mendapatkan Ketenangan Hati Dilancarkan Rezeki Hilangkan Kesesusahan (Platform: YouTube)	Consist of Surah An-Nas, Surah Al-Ikhlas (Ayat 1-4), Surah Al-Fatihah (Ayat 1-7), Surah Al-Falaq, Surah Al-Baqarah verse 286-286, and Surah Al-Baqarah verse 255 (Ayatul Qursi)	The prayer is including the sunnah recital.	• Audio player is not provided • Has advertisements • Require internet access
[10]	Bedtime Supplication - MP3 (Platform: Android application)	Consist of An-Nas, Al-Falaq, Ayatul Qursi, Al-Ikhlas, Al-Mulk, Al-Sajdah	• Various language option • User- friendly • Includes audio • Free access to download	• No dhikr provided • Has advertisements
[11]	Do'a dan Dzkir Setelah Sholat (Platform: iOS application)	The prayer and dhikr after prayers.	• Helpful after prayers. • Lots of choices. • Application is completely free	• The advertisement always shows up.

3. Materials and Methods

A project management framework involves the procedures, activities, and tools that are utilized to complete a project from the beginning until completed. It covers all the crucial components essential for scheduling, handling, and governing projects. The general workflow of this project is shown in Figure 1.

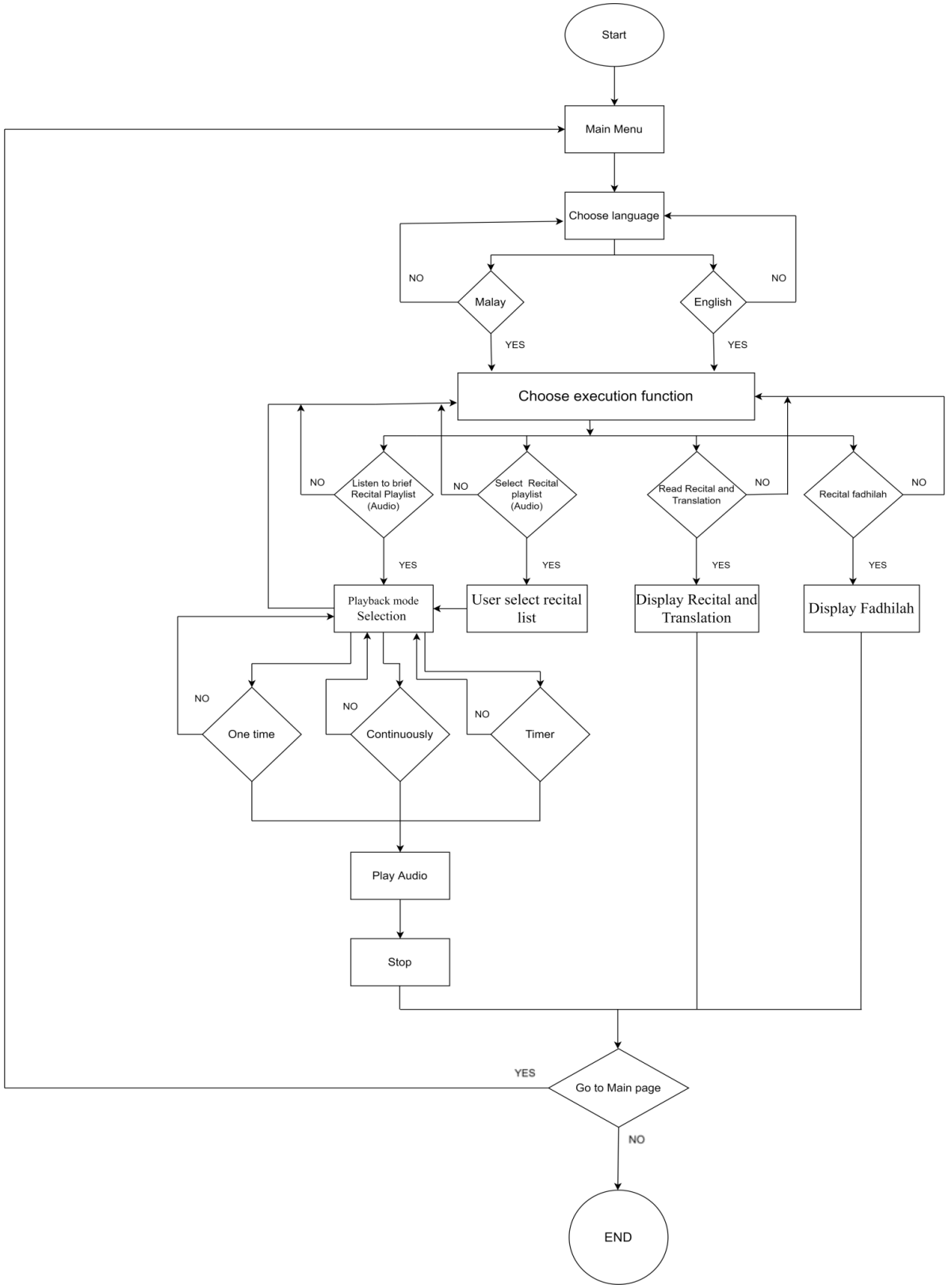


Figure 1: Applications Flowchart

3.1 Prayers and Dhikrs Content Recital List

The prayers and dhikrs content list are tabulated in Table 2.

Table 2: Prayers and dhikrs list

Recital Contents			
1. A'uzubillah	5. Before death prayer	9. Al-Ikhlas 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 Fadhilah List

Fadhilah list is tabulated in Table 3.

Table 3: Fadhilah contents for prayers and dhikrs list

Fadhilah Contents			
1. Berwudu	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 Audio Reciter

En. Muhammad Azarul Afiq bin Abdul Mutalib has contributed as the reciter for this project. He is from Rawang, Selangor and studies at Universiti Tun Hussein Onn Malaysia (UTHM).

3.4 Development of an application for Android devices

The developed application will be tested on an Android device. Any Android handphone model can be used to run the test.

3.5 Development of Software

This study used Visual Studio Code (VSC), Adobe Illustrator,Node Module, Expo, and React Native Framework(RN). The audio files in this application are MPEG Audio Layer-3 (MP3) files. The Visual Studio Code is utilized to write the coding for the application. The RN is a platform for building computer code within the VSC. After that, the Expo is hosted to test this application utilizing mobile phones. Additionally, Adobe Illustrator is employed to design the audio/icon player symbols. Figure 2 demonstrates the design/code for the developed application.

Figure 2: The application codes (example)

3.6 Visual Studio Code (VSC)

The Visual Studio Code (VSC) is utilized in developing the codes for the GUI for this study.

3.7 React Native Framework (RN)

React Native (RN) is a well-known JavaScript-based framework application that lets users create natively rendered applications for iOS and Android.

3.8 Expo

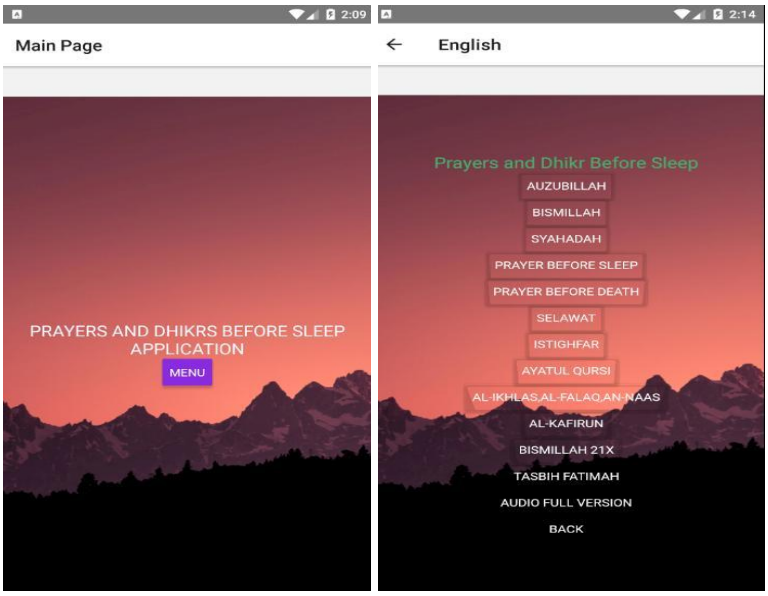
It is a set of software tools/services based on the React Native and native platforms that enable users to create, build, deploy, and iterate on iOS/Android/web applications utilizing similar JavaScript/TypeScript codebase. The developed applications are included in the Expo. Users are needed to scan the provided QR codes before can be used.

3.9 Audio editing software (Filmora)

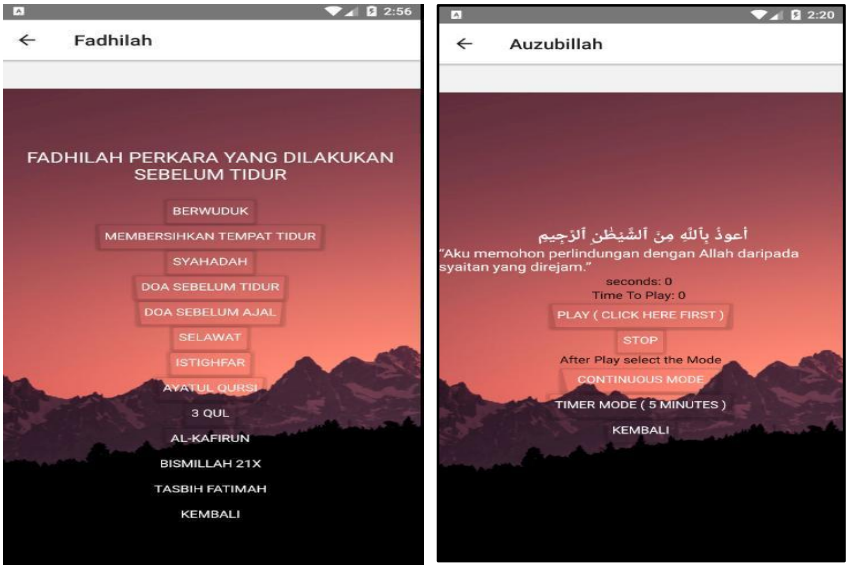
The audio format is the MPEG Audio Layer-3 (MP3). An MP3 file sounds like the initial recording but needs extremely lower storage. They are merged using the Wondershare Filmora. The software helps in merging the audio recorded for each prayer and dhikr into full version audio.

3.10 Creating Application files

Application files are created by utilizing the Expo. The .apk files are distributed to users through the WhatsApp platform. They are required to download and install it to their devices before use. Figure 3 displays the developed application interface.



(a) Main page **(b) Content of recitals**



(c) 12 Fadhilah List **(d) Playback and timer mode**

Figure 3: Applications interface

4. Results and Discussion

The output of this assessment originated from 19 respondents surveyed who tried the developed application. The assessment is proposed to evaluate the performance of this application (functionality, effectiveness, as well as user-friendliness). They are randomly selected from diverse ages and careers, concentrating on university students (Figure 4). They are given an opportunity to try the application for a certain time. Their opinions are considered for a performance review (Figure 5). They also need to answer the questionnaire to assess the application's performance. (Figures 6 and 7).

Figure 4 displays the output for Q12 (related to the recital audio quality). 13 respondents (68.4%) gave 5 out of 5 ratings for very good quality audio for the recital. 6 respondents selected (31.6%) 4 out of 5 rating audio quality. Overall, most of the respondents are satisfied with the recital audio quality.

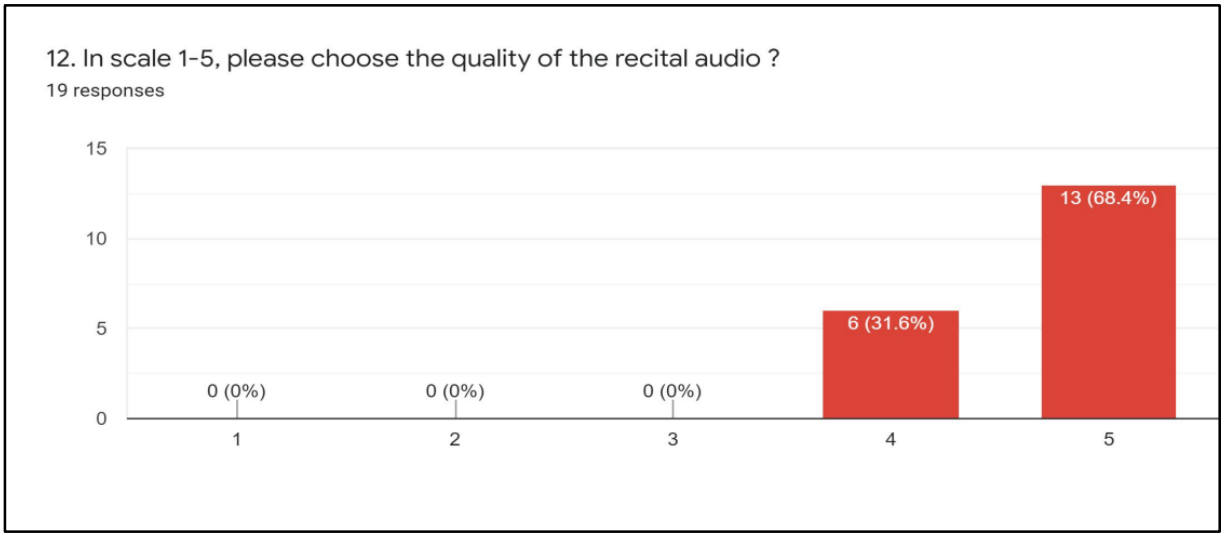


Figure 4: Recital audio quality

Figure 5 displays the result of Q14 (related to the future of application). There are 16 who chose 5 of 5 ratings and 3 respondents choose 4 of 5 ratings. In conclusion for this question, most of the users are satisfied or like the playback mode and timer mode of the applications.

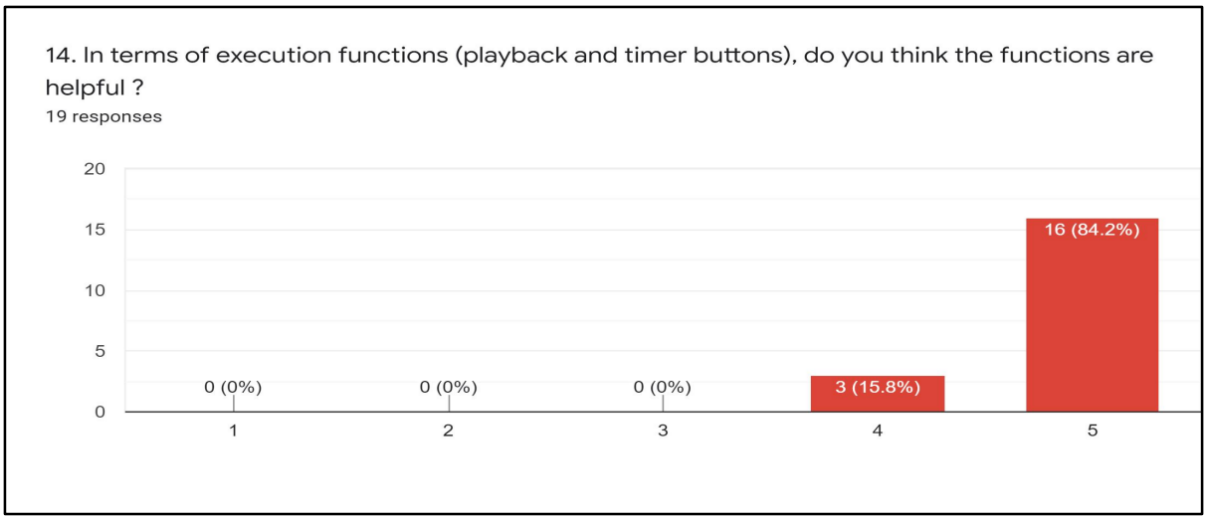


Figure 5: Playback and timer functions

Figure 6 displays the output for Q13 (related to the application user-friendliness level, i.e., visual presentation, audio, button arrangement, and others). 7 of the respondents gave this application a 5 of 5 rating in user-friendliness. 12 respondents gave 4 out of 5 ratings in terms of user-friendliness. Generally, a large number of respondents admitted that this application is user-friendly to use.

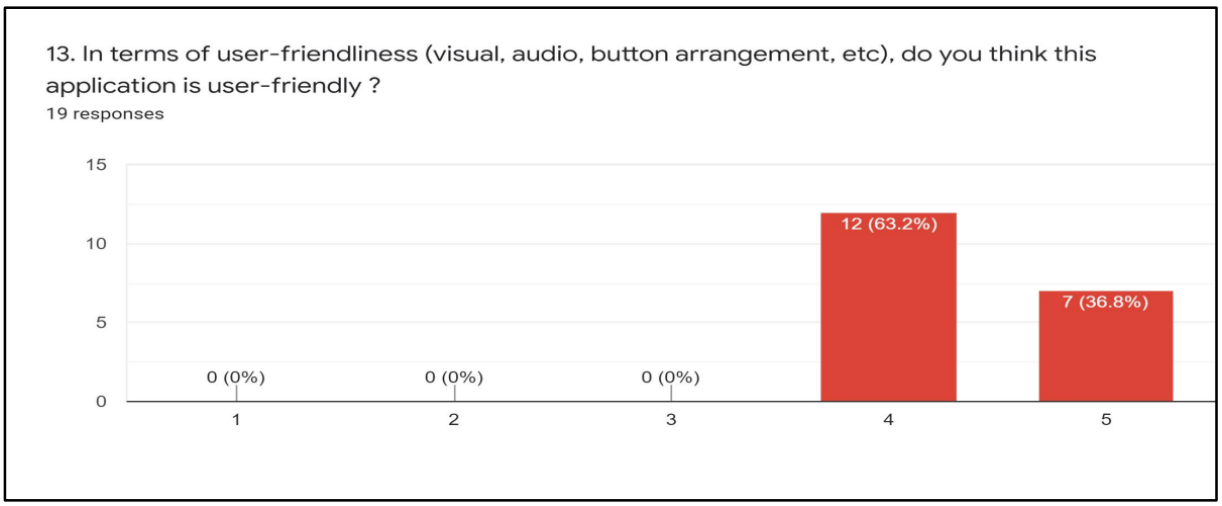


Figure 6: User-friendliness of the applications

Figure 7 displays the output for Q8 (related to the respondents' sleep quality after using this application). All respondents stated that their sleep quality improved, with 63.2% (12 respondents) replying that their sleep quality is extremely good, whereas 36.8% (7 respondents) indicated that their qualities of sleep are very good.

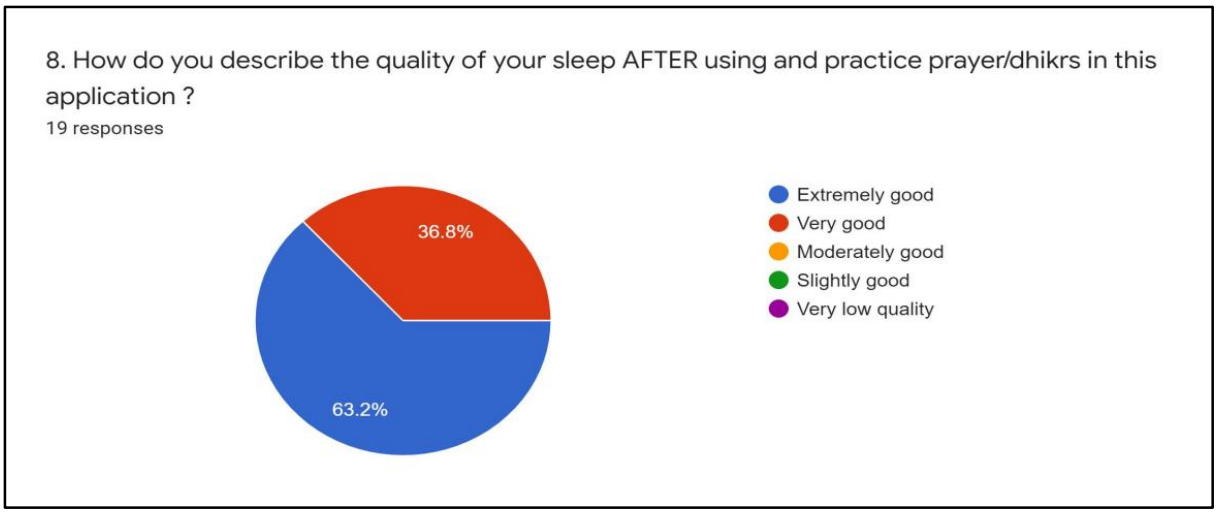


Figure 7: Quality of sleep after using the applications

5. Conclusion

The project has successfully created an application for visual layout as well as functions for prayers and dhikrs before sleep recital. Visual Studio Code (VSC) developed a set of prayers and dhikrs before sleep utilizing React Native. The Expo is a platform that allows developers to build applications for Android devices. Additionally, the applications are available on the Android platform. The applications have been found to work well while using them. The applications are fast when transitioning to the next selected function. The performance review survey found that the applications surveyed were analyzed from 19 perspectives. According to the statistics, all respondents agree that their sleep quality has improved, with 63.2 percent stating that it is extremely improving and 36.8 percent saying it is improving, since using the developed applications. Last but not least, the potential of the application has been evaluated and categorised as a long-term application. 100% of respondents are happy with the application's capability to be used in the future.

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