

## Pre-Sleep Recital Application for Android System

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**Abstract:** Islam advises us to pray and recite the dhikrs and prayers before sleep. The mobile phone can be utilized to spread and improve awareness of Islamic practices. There are various types of application related to the recital of Islamic prayers available, but it is difficult to find an application that provides a brief but comprehensive combination of prayers and dhikrs before sleep. This project provides audio and visual content with a display, audio play in the background, and sleep timer mode. The software to develop the application development is implemented using the Visual Studio Code (VSC), and the framework of the application using the Flutter. The mobile application is Islamic Before Sleep Recital. It can be accessed from the Google Play Store under the name “Islamic Before Sleep Recital” application. The majority of respondents said that it is good (62.5%), and 37.5% said that the application is very good in terms of user friendliness. After using the applications, 31.3% respondents said that their sleep quality are very good, and 56.3% claimed their sleep quality are good. In conclusion, most respondents agreed that their sleep quality have improved. Furthermore, all respondents are satisfied in terms of the user-friendliness of this application.

**Keywords:** Islam, Sleep, Application, Prayers and Dhikrs

### 1. Introduction

Prayers and dhikrs are two forms of devotion practiced by Muslims all over the world. Praying and reciting dhikrs can calm the soul and provide exceptional benefits to the perpetrator both in this world and after death. Sleep is something we do every day, with the majority of us spending 36% of our lives sleeping [1]. Sustained insufficient sleep has been linked to an increased susceptibility to chronic health conditions [2], as well as a potential impact on cognitive function, reaction time, work performance, learning, and social interactions. According to Lund H.G., Journal of Adolescent Health (2010), 60%

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of university students sleep poorly [3], therefore university students must find a way to improve the quality of their sleep.

Muslims are advised to pray before retiring to bed in order to become more tranquil and make sleep an act of worship. The Prophet taught us to pray before heading to bed, as shown by the hadith from Hudzaifah [4]. According to the hadith, if a person recites the hadith's reciting, they would sleep better and be better able to deal with the day. Nowadays, technology is progressing quicker than ever before, with mobile phones being particularly versatile and powerful. The global mobile connections have surpassed 3.3 billion, as per research findings [5]. This presents an opportunity to spread and increase awareness of Islamic customs, particularly those linked to dhikrs and prayers before sleep.

In order to have better understand on the application development, a variety of study reference are selected for this project as its literature study reference, including sources on the websites, YouTube, and Android application versions. Other than reading books, we can use technology to practice the recital. However, there are not many platforms that offer specialized prayers for night-time or before sleep recital. There are several digital versions of bedtime prayers available on websites such as Dzikir Sebelum tidur – Rumasyho.com and Doa dan Zikr Sebelum Tidur – Akurat.co [6][7]. However, most are not included with audio recital. Another recital source is the YouTube channel such as Dzikir Malam Sesuai Sunnah Sebelum Tidur | Dzikir Penenang Hati dan Pikiran | Doa Sebelum Tidur – Lafadz Doa [8]. It generally features audio and visual versions of the recital. However sometimes, there are advertisement in between reading which may interrupt or induce the listener to fall asleep before the prayer recital is finished. Another option is by using mobile applications. There are various applications related to the Islamic prayers recital available such as Bedtime Supplication – MP3 – Ayatapss and Development of Android-Based Application for Prayers and Dhikrs Before Sleep [9][10]. However, it is difficult to find an application that provides a brief but comprehensive combination of prayers and dhikrs before sleep. Another study for application development for recital before sleep is developed by Mohammad Ashraf Bin Che Hariff from the Faculty of Electric and Electronic Engineering at University Tun Hussein Onn Malaysia (UTHM) have been developed prayers and dhikrs before sleep application [10]. The application has some drawbacks such as the audio may be forced to stop in the middle of playback due to sleep mode timer and the audio is overlapping with the other audio. This application has not been distributed in the Google Play Store nor Apple App Store.

The project significance of this project is designed to help users to practice their daily prayers and dhikrs before sleep. The aim of this project is to develop or create an Android application that provides a system for users in one application for Islamic pre-sleep recital purpose. Therefore, the objectives are: (a) to design and develop the visual content and the layout for the Graphical User Interface (GUI) for pre-sleep recital, (b) to create an Android-based application capable of displaying and playing back created prayers and dhikrs content, (c) to evaluate the performance of created application in terms of application functionality and effectiveness.

## 2. Materials and Methods

The project management framework covers of the methods, task on and assets needed to accomplish a project from the beginning to end. It includes every essential element needed for organizing, directing, managing a project. The flowchart for developed application Graphical User Interface (GUI) is shown in Figure 1 to Figure 3.

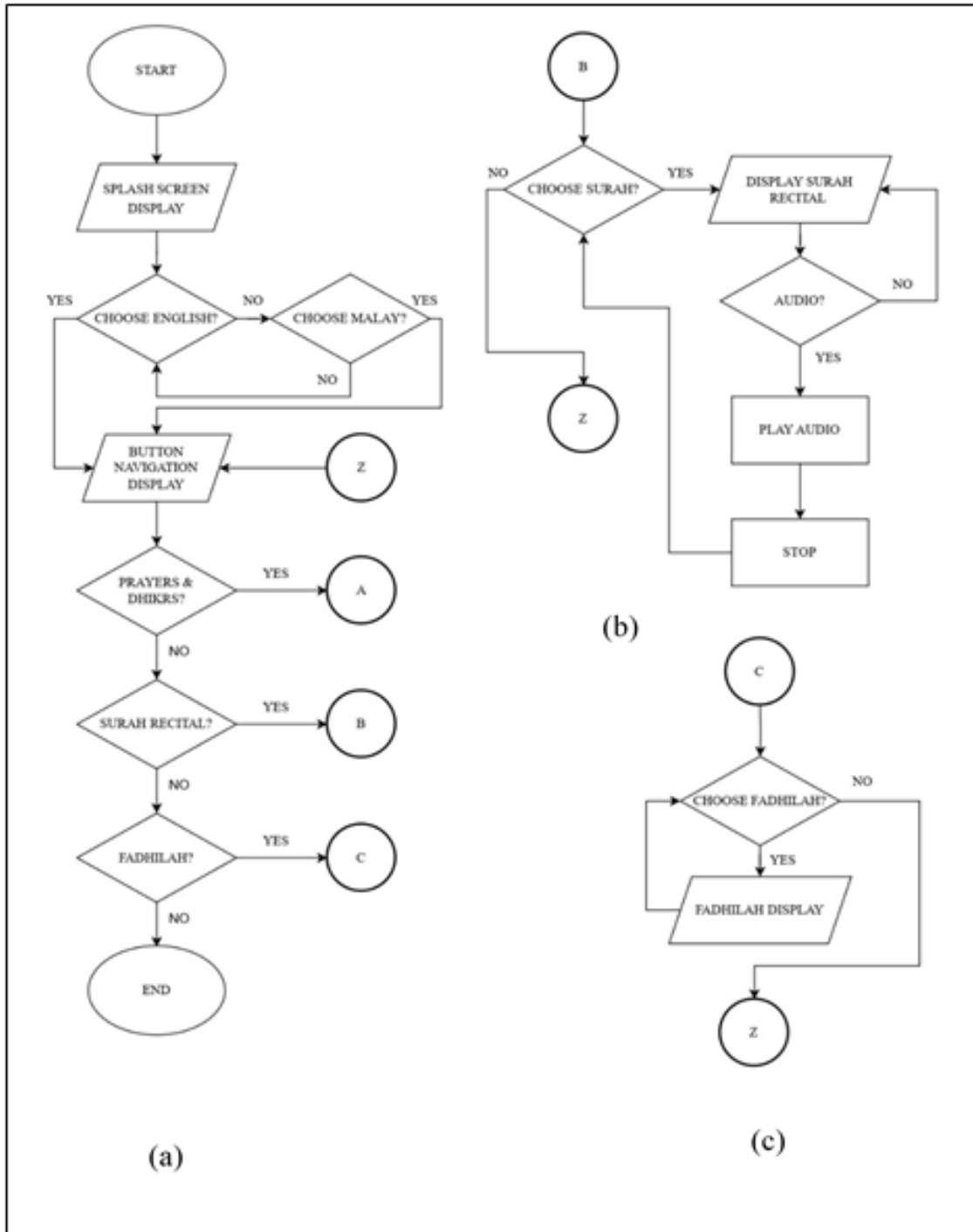


Figure 1: Application flowchart. (a) main menu, (b) surah recital, and (c) fadhilah

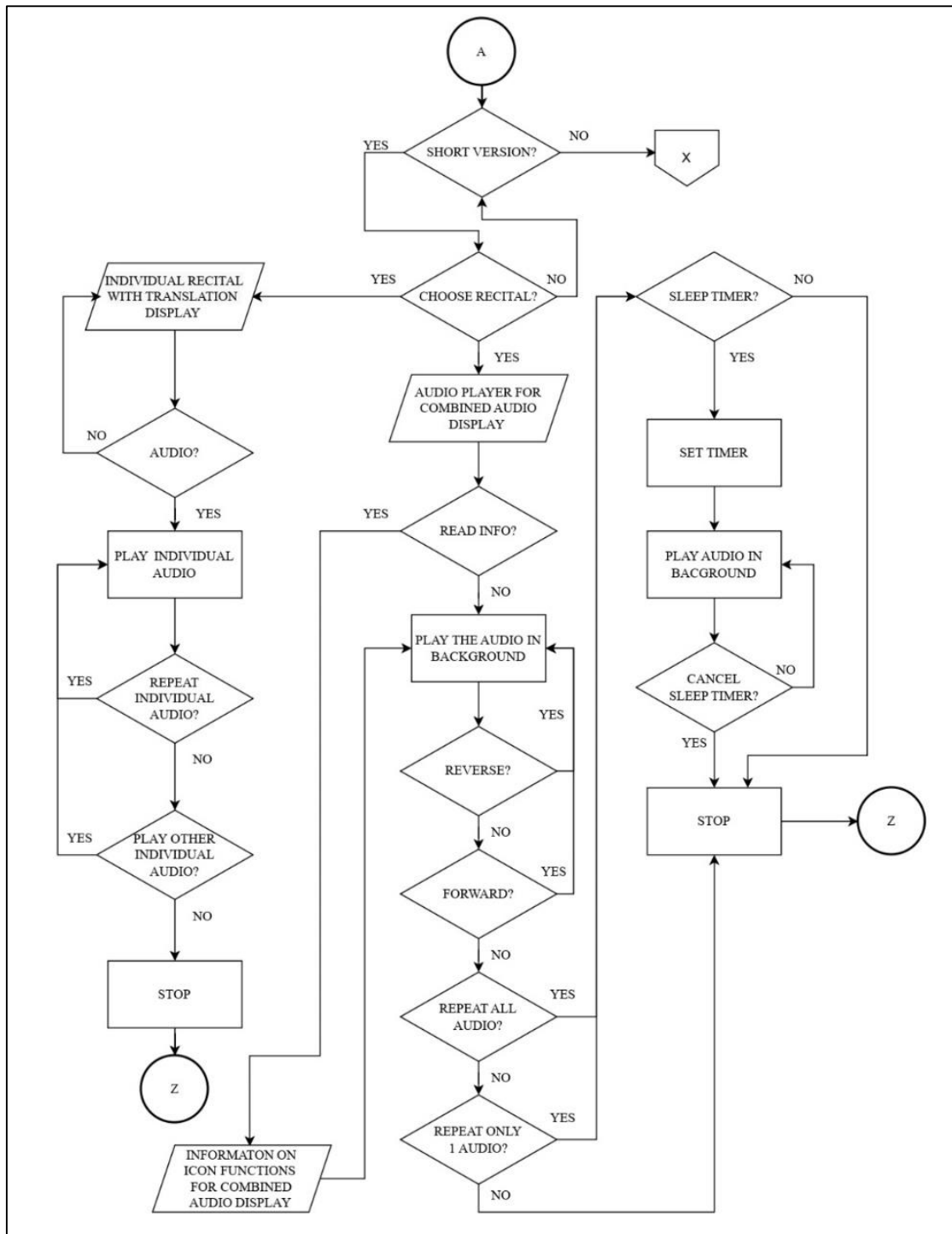
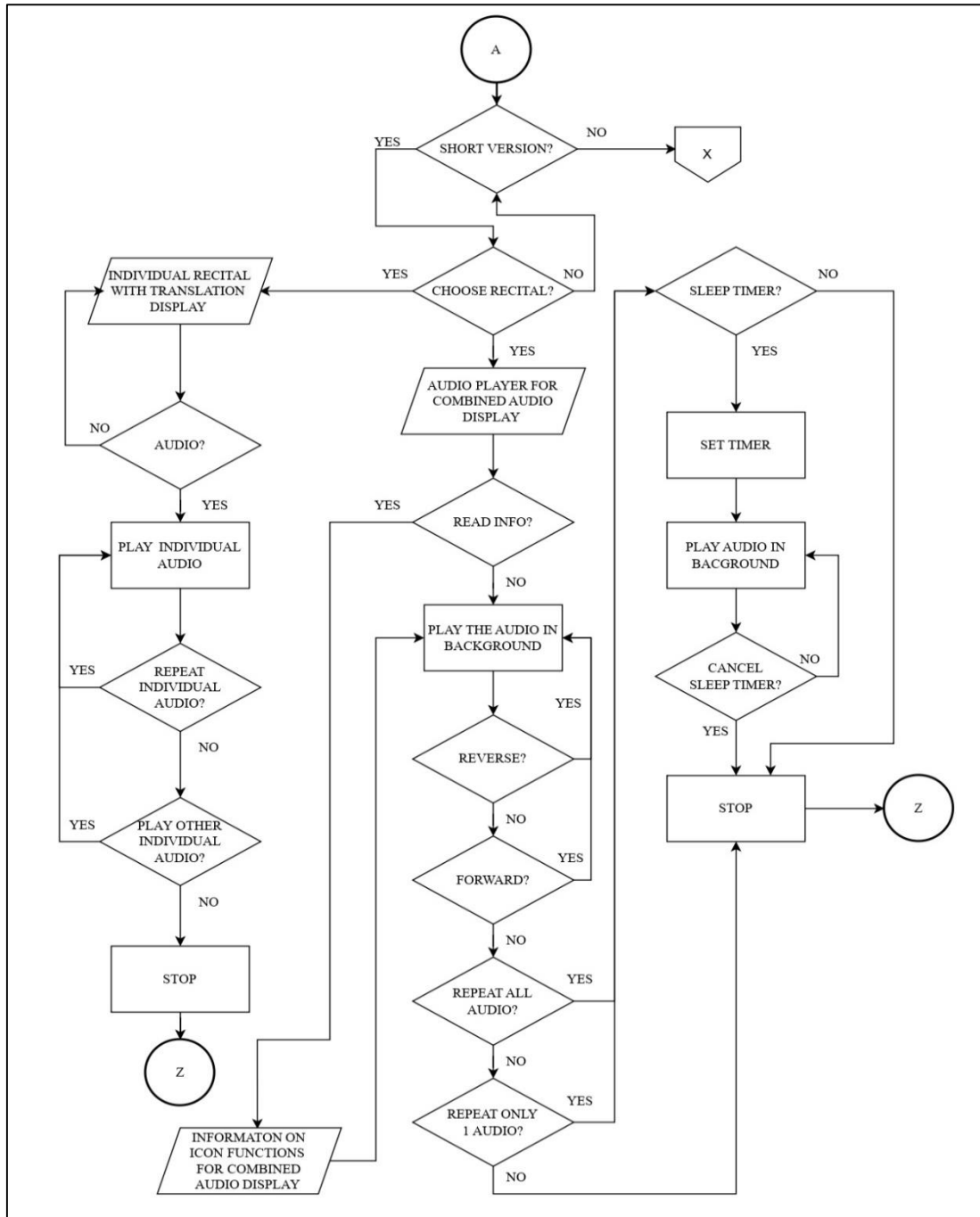


Figure 2: Application flowchart (prayers and dhikrs short version)



**Figure 3: Application flowchart (prayers and dhikrs full version)**

2.1 List of Prayers and Dhikrs Recital

The list of prayers and dhikrs has two versions as listed in Table 1 and Table 2.

**Table 1: List of prayers and dhikrs for short version**

Recital Names		
1. Auzubillah (Ta'awwuz)	5. Husnul khatimah prayer	9. Al-Kafirun
2. Bismillah	6. Salawat	10. Al-Ikhlās
3. Shahadah	7. Istighfar	11. Al-Falaq
4. Before sleep prayer	8. Ayatul Qursi	12. An-Nas

**Table 2: List of prayers and dhikrs for full version**

Recital Names			
1. Auzubillah (Ta'awwuz)	5. Husnul khatimah prayer	9. Tasbih fatimah	13. Al-Falaq
2. Bismillah	6. Salawat	10. Ayatul Qursi	14. An-Nas
3. Shahadah	7. Istighfar	11. Al-Kafirun	
4. Before sleep prayer	8. Bismillah 21x	12. Al-Ikhlās	

## 2.2 List of Surah Recital

The list of surah recital is listed in Table 3.

**Table 3: List of surah recital**

Surah Names	
1. Al-Mulk	4. Yasin
2. As-Sajdah	5. Al-Kahfi
3. Al-Waqiah	

## 2.3 List of Fadhilah

The list of Fadhilah is listed in Table 4.

**Table 4: List of fadhilah**

Fadhilah			
1. Ablution	6. Salawat	11. Bismillah 21x	16. Yasin
2. Clean the Bed	7. Istighfar	12. Tasbih Fatimah	17. Al-Kahfi
3. Shahadah	8. Ayatul Qursi	13. Al-Mulk	
4. Before Sleep Prayer	9. 3 Qul	14. As-Sajdah	
5. Husnul Khatimah Prayer	10. Al-Kafirun	15. Al-Waqiah	

## 2.4 Audio

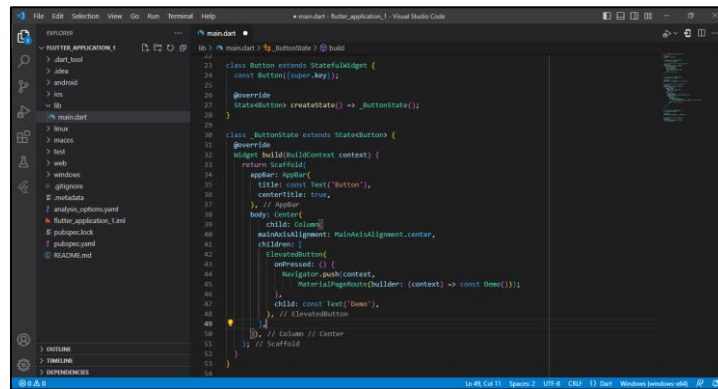
The audio files for prayers and dhikrs recitations are using recital from Mohamad Ashraf Bin Che Hariff project [10]. The prayers and dhikrs have been recited by Mr. Muhammad Azarul Afiq Bin Abdul Mutalib, who is from Rawang, Selangor, and is a former student of Universiti Tun Hussein Onn Malaysia (UTHM) [10]. Also, for the surah recital has been recited by Mishari Rashid al-'Afasy and these audios are taken from online source [11].

## 2.5 Development of an application for Android devices

The application that was developed underwent testing on an Android device. The test can be executed on any model of Android mobile phone. For this project, the device to run the application is the Sony Xperia X Performance. For the specifications, this phone uses Android 8.0 (Oreo) with 3 GB of Random-Access Memory (RAM), and the chipset is a Snapdragon 820.

## 2.6 Development of software

This project used the Visual Studio Code (VSC), Flutter Framework, Canva, and Audacity. The format for audio files is MPEG Audio Layer-3 (MP3) files. The VSC is used to write the coding for the GUI application development. The Flutter framework is a template for building computer code within the VSC. Additionally, the Canva is employed to design the application logo and background images. Figure 4 shows the example code for the developed application.



**Figure 4: Example code for the menu interface with button and text**

## 2.7 Visual Studio Code (VSC)

The application for the Graphical User Interface (GUI) for this project is created using Visual Studio Code (VSC). To enhance the functionality of VSC, the extensions need to be installed before starting to write the code. The extensions that need to be used in this project are the Dart and the Flutter. The Dart is for language programming, while the Flutter is for the framework to develop the application.

## 2.8 Flutter Framework

The Flutter is a Google open-source framework that allows developers to create stunning, natively built, cross-platform applications from a single codebase. After creating the new project file, a simple coding for the menu interface is created by using the framework widget that has been provided. The widget can represent various visual elements, such as buttons, text, images, and many more.

## 2.9 Canva

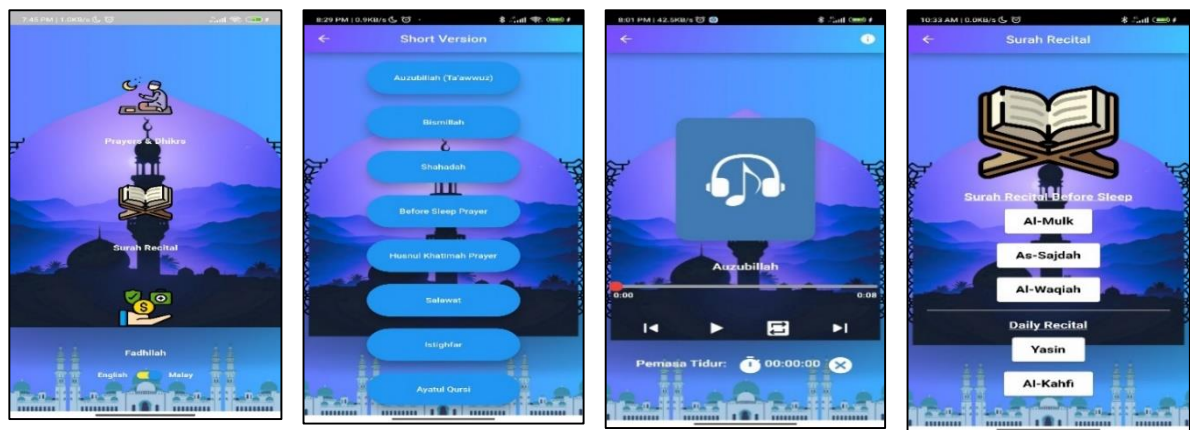
The Canva can be used for a variety of purposes, including creating marketing materials, designing social media posts and banners, and creating educational resources. The Canva is used in this project to create the application logo and background images.

## 2.10 Audacity

The editing to enhance the audio quality for the audio files is needed because the source audio encountered some issues such as the volume for each part is not synchronized, some overlapping between recital parts and have a little bit of noise in the background. The software helps in merging the audio into a combined audio version and adjusting the volume for each file.

## 2.11 Publishing the application in Google Play Store

Creation of file application is in Android Packet Kit (apk) format. It is then published to the Google Play Store through the Google Play Console [12]. As for the distribution of the application, they are distributed to users by sending the link of the Google Play Store or search the name of application in the Google Play Store. Figure 5 shows the interface of the application developed in this project.



(a) Home page (b) Prayers and Dhikrs content (c) Combined Audio (d) Surah Recital content

Figure 5: Application interface

### 3. Results and Discussion

16 users of the Islamic Before Sleep Recital application provided the survey's results. The purpose of the survey is to evaluate how well the application performs in terms of user-friendliness, functionality, and efficiency. According to Figure 6(a), the respondents are chosen at random from a range of ages and occupations, with a preference for students. Figure 6(b) illustrates time range of respondents' application usage in their everyday life before evaluating it. Then, as seen in Figures 7 and 8, the respondents have provided their opinions on the functionality and effectiveness of the application.

The data obtained from Question 3, which asks about the respondents' occupations, is shown in Figure 6(a). 11 respondents are students. Only 1 of respondents is unemployed, compared to 4 who are employed. The other 1 is housewife. About 68.8% of all respondents are currently enrolled in school.

The data from Question 5 shows the period of usage for the application, which is shown in Figure 6(b). 10 respondents used it for less than a week, 2 respondents used less than 2 weeks and 2 respondents used less than 3 weeks, respectively. 2 of the respondents have utilized the applications for more than four weeks. According to the results, 62.5% of the respondents are considered as new users of the applications and have just recently started using them.

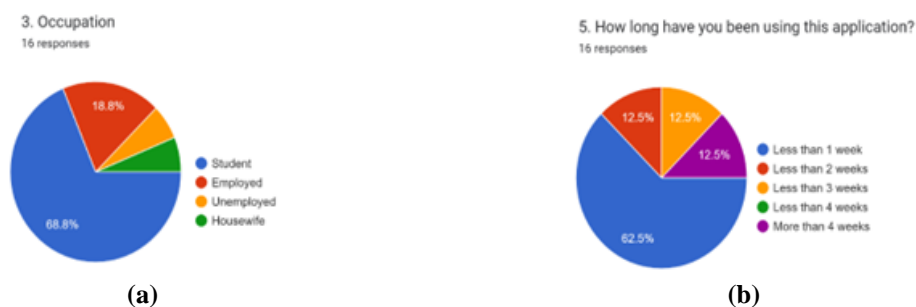
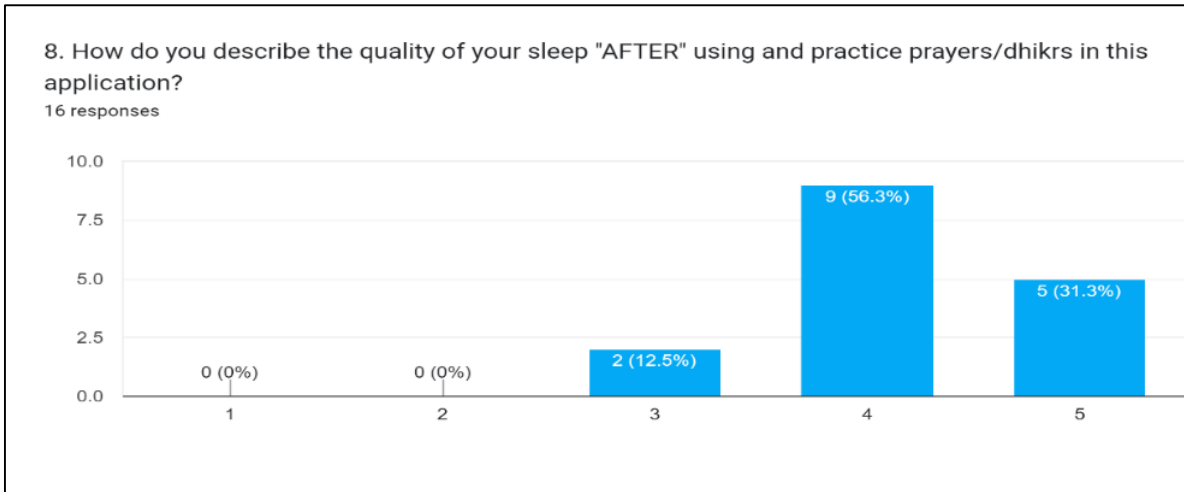


Figure 6: (a) Occupation of the respondents, (b) Period of usage the application

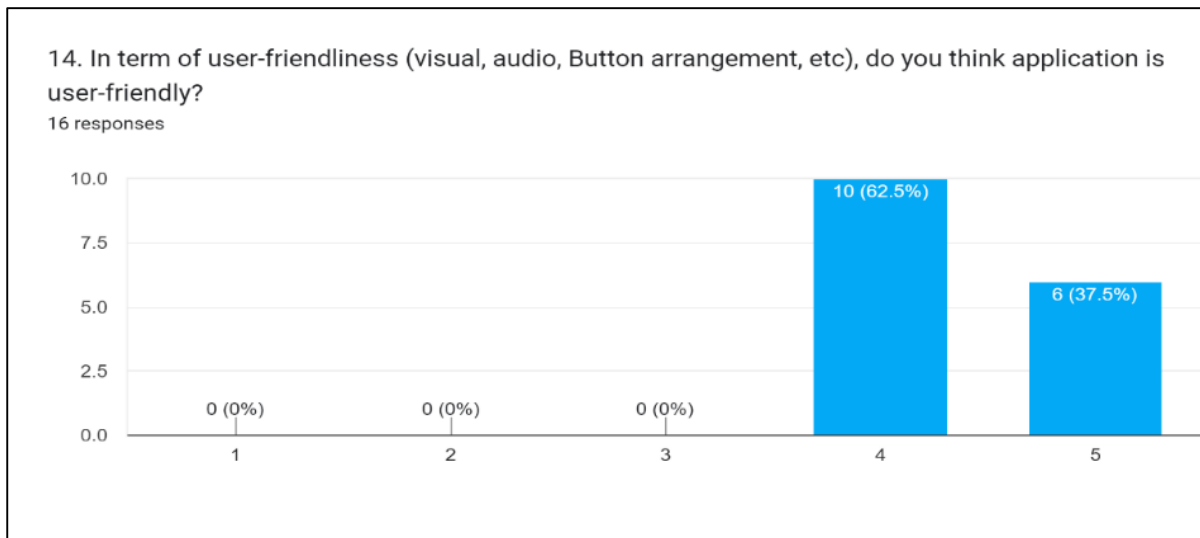
The data obtained from Question 8, which questions about the respondents sleep quality after using the application, is shown in Figure 7. After using the application, there are 31.3% respondents saying their sleep quality were very good, followed by 56.3% who said good. Only 12.5% of the respondents stated that their sleep was of average quality.





**Figure 7: Quality of sleep after using the application**

Figure 8 shows the data of Question 14, which concerns the application the user-friendliness for the users in term of visual presentation, buttons placement, and others factors. 6 of the respondents felt that the user-friendliness of the applications was very good, which rated at a perfect 5. 10 of the respondents gave it a user-friendliness rating of 4 out of 5. Majority of respondents agreed that the application was user-friendly in general.



**Figure 8: User-friendliness of the application**

#### 4. Conclusion

This project has successfully developed a graphic user interface (GUI) for the visual layout and functions of the Islamic Before Sleep Recital application. A set of Islamic before sleep recital is developed using the Visual Studio Code (VSC) software with the Flutter as a framework to build the application for Android devices. Additionally, the application is available in the Google Play Store for Android devices. The application has worked well for users. The functions for each button and transitions are very fast. According to the performance review survey, the applications reviewed were examined from 16 various perspectives. The majority of respondents, according to the study, felt that the quality of their sleep had improved. After using the applications, 31.3% respondents said that their sleep quality are very good, and 56.3% claimed their sleep quality are good. Furthermore, the majority of respondents said that it is good (62.5%), and 37.5% said that the application is very good in terms of user friendliness.

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