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Design of an Android-based prayer guidance application based on Al-Quran and Sunnah

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Abstract: Prayer is the cornerstone of religion and it is an obligation for Muslims who have reached the age of responsibility. Prayer is a great act of worship because it is a direct command from Allah ta'ala to Muslims, whose command was received directly from the Messenger of Allah (peace and blessings of Allah be upon him) without the mediation of Gabriel (peace and blessings of Allah be upon him) at Sidratul Muntaha on the occasion of Isra' and Mi'raj. Prayer is the first thing that will be judged on the Day of Resurrection, as the Messenger of Allah (peace and blessings of Allah be upon him) said: "The first thing a slave will be judged on in the Day of Resurrection is his prayer. If his prayer is good, all his deeds will be good. If his prayer is bad, all his deeds will be bad. Educating or teaching children to pray is so important that even Rosulullah sholallahu alaihi wassalam has strongly prescribed that prayer education begin at an early age, that is, before they reach the age of puberty. Even at the age of seven, children are commanded to pray. This application is multimedia-based to make it more interesting and easier for children to learn prayers by using pictures, sounds and videos.

Keywords: Education Software; E-learning; Multimedia; Praying Guidance

1. Introduction

Prayer is the cornerstone of religion and is also the second pillar of Islam after Shahadatain (Abu-Hilal et al., 2017). Prayer is the first act of worship for which a servant will be held accountable before Allah on the Day of Judgment (Zuhri, 2022). Therefore, it is obligatory for every Muslim to pay attention to the performance of this prayer as ordered by the Prophet Muhammad (peace and blessings of Allah be upon him) with the procedures he explained. Prayer requires serious attention, especially with regard to innovations and deviations in the practice of prayer. It is important to pay attention to this in order to fulfil the rights of Allah, may He be exalted, and among other mistakes that are often found are not being tuma'ninah in prayer, not completing the bowing and prostration, such as straightening the spine and placing the forehead and nose properly on the ground or on the earth, and so on.

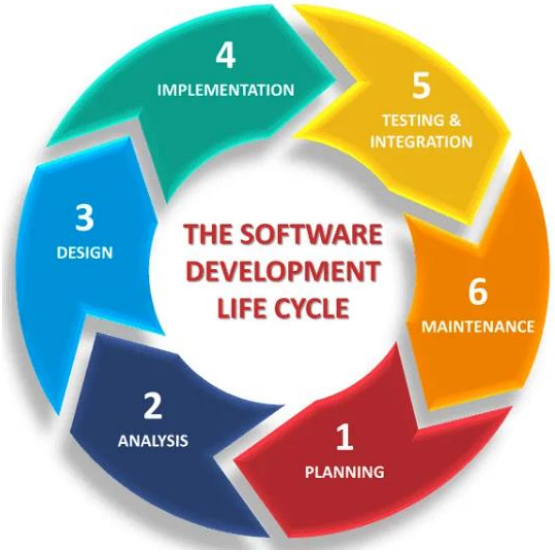
The method used in this application is divided into two, namely: data collection method, which is one of the important elements in the process of system analysis and development (Almaiah et al., 2020; Wankhade et al., 2022). This consists of interview techniques, literature studies, surveys, observations and software application development methods. The system development method used in this research is Luther-Sutopo's Multimedia Development Life Cycle (MDLC) method for software application development methods. This MDLC development method is carried out based on 6 stages, namely: concept, design, material collection, assembly, testing and distribution (Samala & Amanda, 2023).

Considering the problems that exist in the community, it is necessary to create a system or educational application to know how to pray correctly according to the Qur'an and Sunnah. Through the use of android or gadget (Richardo et al., 2023), this application is expected to provide learning that is interesting, not monotonous, and makes it easier for users to learn prayer movements, recitation of prayers, and obtain information based on statements from the Qur'an and Hadith, based on valid sources and Sahih Hadith. Therefore, the author intends to conduct research to develop a prayer guidance application based on the Qur'an and Sunnah.

2. Methods

There are several methodologies that can be used in designing a multimedia application, one of which is the methodology used in this research, namely the MDLC development (Samala et al., 2022; Winarsim et al., 2021). he development of this multimedia method is based on six stages, namely concept, design, material collection, assembly, testing and distribution. The first stage is to create a concept by creating a system using the MDLC method with Unified Modelling Language Modelling (UMLM) (Wang et al., 2021). The UMLM model used consists of use case, activity diagram, sequence diagram and interface

Figure 1. Multimedia development life cycle



The design stage aims to provide detailed specifications of the architectural style, project and material requirements needed for the application (Afikah et al., 2022). In this stage, the objectives and the users of the programme are determined. The purpose and end use of the programme influences the feel of the multimedia as it reflects the identity of the organisation that wants the information to reach the end user (Silva-C et al., 2019). The design describes a detailed view of the structure of the multimedia application and the material requirements for the learning media animation. At this stage, consideration is given to all the activities, information and explanations that will be presented in the animation. In this stage, tools such as the use of flowcharts to describe the flow of activities, menu structures to describe what options are available in the application and not forgetting to design interfaces as interfaces that are directly related to the user.

Material collection is the stage of collecting materials needed in the creation of applications, can be done together with the assembly stage, then multimedia files such as audio, video and images that will be included in the presentation of the multimedia project (Mahan, 2022; Taherdoost, 2021). Assembly is the stage of creating all multimedia objects or materials. Application creation is based on the design stage (Gazzotti et al., 2021), such as storyboards, flowcharts or navigation structures. In the application

development stage, the author uses Adobe Dreamweaver, Android Studio, Photoshop CS5 software, while the audio is created and edited using Adobe Audition CS6 and Xmedia Recode (Purnomo et al., 2023). After completion of the production stage, the testing stage is carried out by running the system to see if there are any bugs or not, if there are then improvements are made (Nidhra, 2012). And at the distribution stage is the final stage where at this stage the application can already be used by students for learning media.

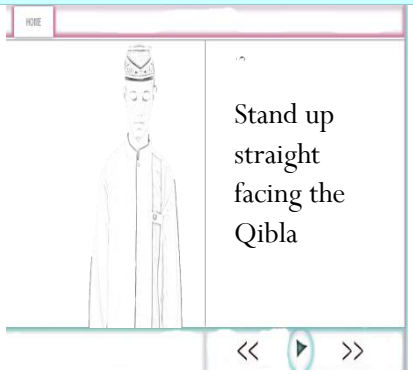
3. Results and discussion

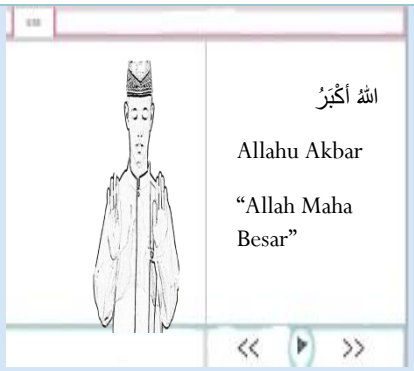
3.1 System design

The pedagogical application to be created is based on interactive animation. Interactive animation must meet certain specifications (Berková et al., 2023). This specification is a part of the programme that is directly related to the user's usage. The animation specification here also explains the steps of creating interactive animations, which aim to create an interesting animation programme and hopefully increase the effectiveness of information delivery in its use. The making of animations here is explained in the form of animation design that describes everything that appears on the monitor screen, which includes making pictures, text, giving sound, making motion effects, and making interactive animations using javascript (Daskan & Yildiz, 2020; Sari & Margana, 2019).

Creating this application using a storyboard. This storyboard is certainly supported by the role of Javascript, which is very helpful in simplifying the results of HTML publication as much as possible, so that dynamic, interactive objects are obtained and there is no excessive use of publication space. Table 1 shows a prayer movement using a storyboard.

Table 1. Application storyboard

Scene	Board	Duration	Description
1		00:00:01	When the "left arrow" is clicked, it will go to the main view.When the "right arrow" is clicked, it will go to scene 2. When the "play button" is clicked, it will play the caption sound in scene 1.When the "home button" is clicked, it will go to the main view..

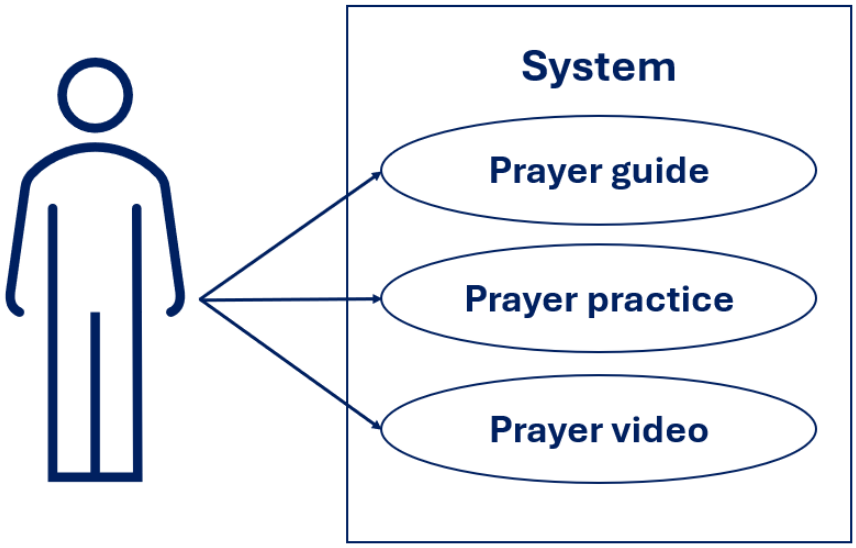
2		00:00:01	When the "left arrow" is clicked, it will go to scene 1. When the "right arrow" is clicked, it will go to scene 3. When the "play button" is clicked it will play the Takbir sound in scene 2. When the "home button" is clicked, it will go to the main display.
3		00:00:01	When the "left arrow" is clicked, it will go to scene 2. When the "right arrow" is clicked, it will go to scene 4. When the "play button" is clicked, it will play the iftitah audio in scene 3. When the "home button" is clicked, it will go to the main display.

3.2 System development method

This system development method uses the Multimedia Development Life Cycle (MDLC) to develop the system, where this MDLC consists of 6 stages, namely concept, design, material collection, assembly, testing and distribution. The first stage is to create a concept by creating a system using the

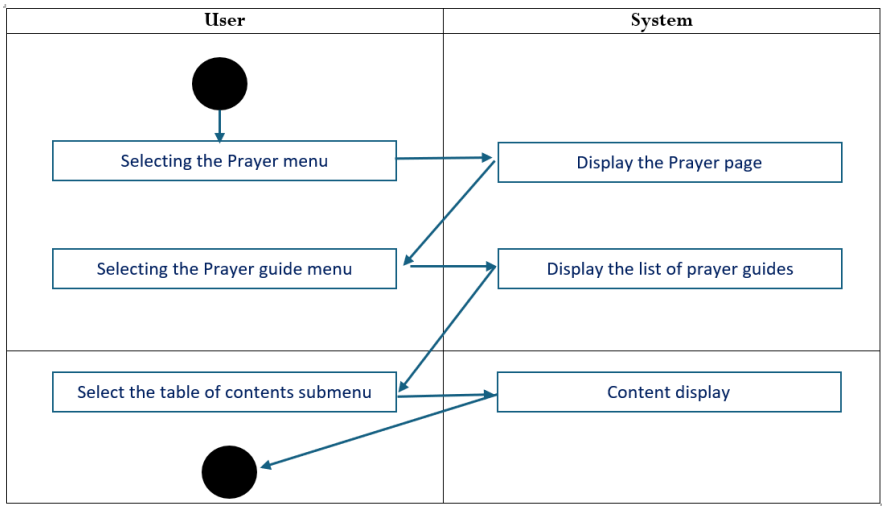
MDLC method with UMLM (Khan et al., 2019). The UMLM model used consists of use case, activity diagram, sequence diagram and interface. Use case diagrams are used to describe an interaction between one or more actors with the system being created. The use case diagram in Figure 1 is a use case diagram from the user's point of view.

Figure 2. Usecase diagram of android-based prayer guidance application



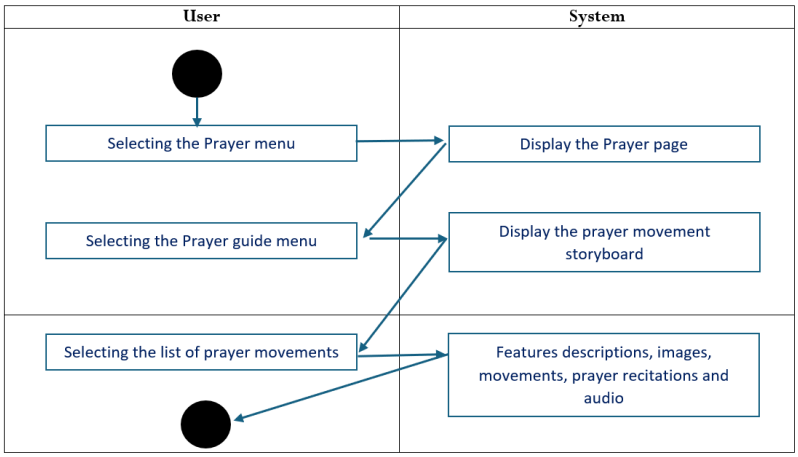
Activity diagrams describe the flow of activities and describe system activities that are performed in one operation (Jaffari et al., 2020). This android-based prayer guide has 3 activities, namely prayer guide, prayer practice, prayer video. Figure 2 shows the prayer guide menu. The diagram explains the activity on the prayer guidance menu button, namely the user selects the prayer guidance menu in the system, then the system displays a list of prayer guidance menus in the form of material on the postulates of prayer guidance procedures according to the Qur'an and Sunnah. Figure 2 shows the prayer guide menu.

Figure 3. Activity diagram of prayer guide menu



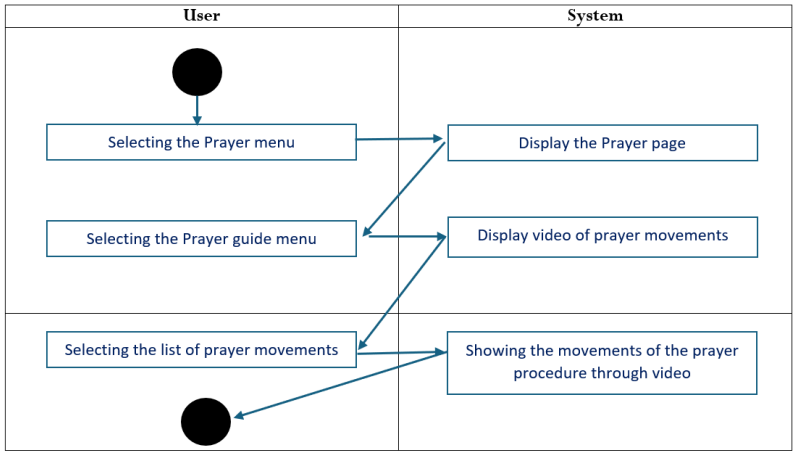
In Figure 3, the system displays the movements, recitations and audio of prayer readings using a storyboard. Here the user can select the scene of the prayer movement sequentially or not, and the user can listen to the audio description or reading in each scene. Figure 3 shows the prayer practice menu.

Figure 4. Activity diagram of prayer practice menu



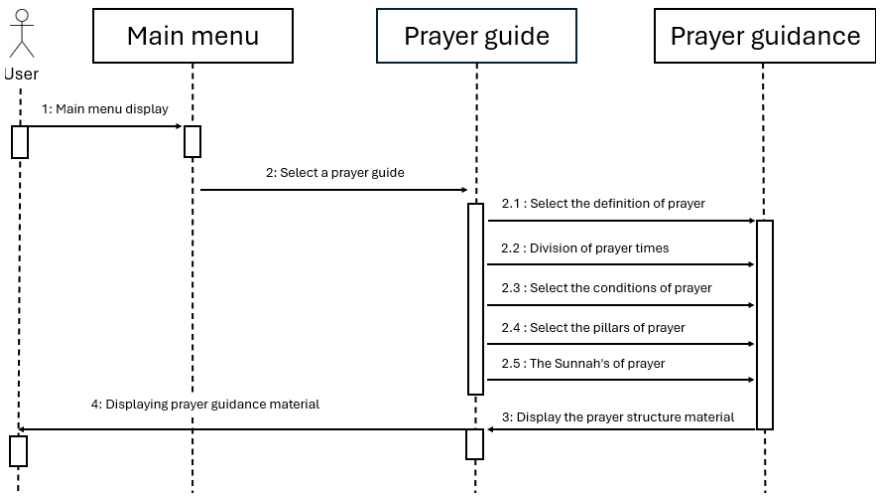
In Figure 4, the system displays the movements, recitation of prayers through prayer practice videos. Here, the user can see the prayer practice guide through a video that displays a detailed prayer practice guide, so the user can more easily understand the prayer movements from the combination of the three prayer guide menus. Figure 5 shows the prayer video menu.

Figure 5. Activity diagram of prayer video menu



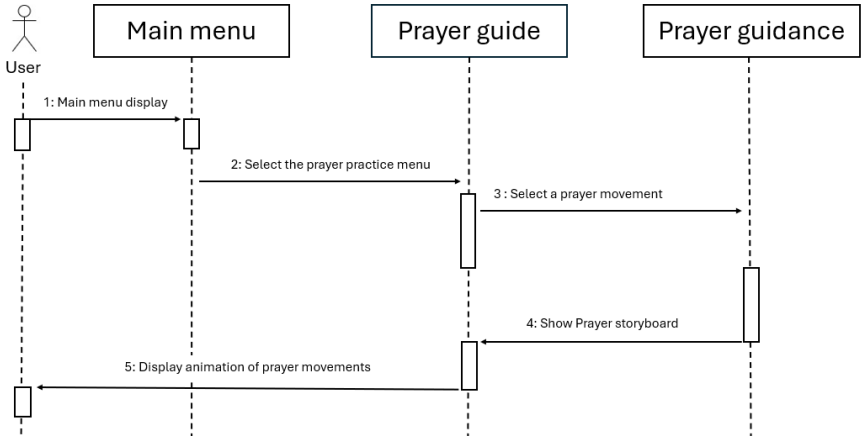
Sequence diagram At the concept stage of this system design there is a sequence diagram as a description of the steps taken by the system. The sequence diagram is shown in the figure below. In Figure 6 of the Prayer Guide sequence diagram, the user selects the Prayer Guide material to read in the Prayer Guide menu.

Figure 6. Sequence diagram of prayer guide



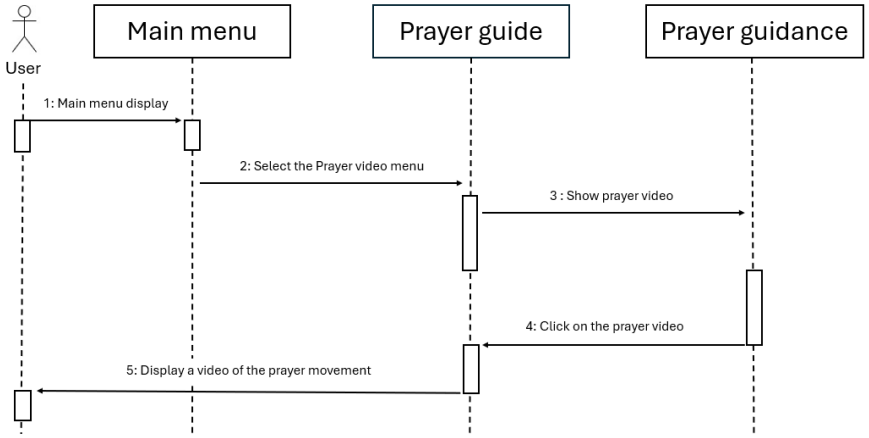
In Figure 7 of the Prayer Practice Sequence Diagram, there is a prayer scene storyboard that is selected by the user, then the system displays a description of each movement.

Figure 7. Prayer practice sequence diagram



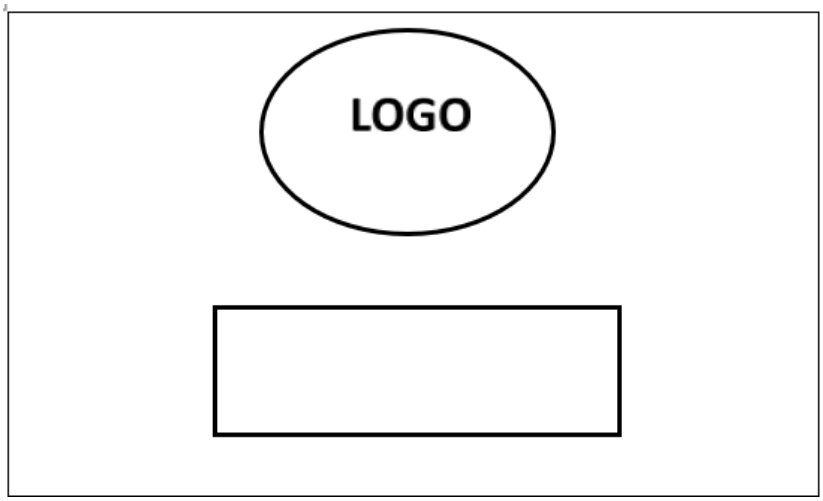
In Figure 8 of the Prayer Video Sequence Diagram, the user selects the Prayer Video menu, then the system plays the Prayer Movement Guide video.

Figure 8. Sequence diagram video shalat



The design of the interface is adapted to the needs to facilitate the information required. In this application, there are several menus that contain information displays. Splash screen This screen is used as the initial screen, i.e. the opening screen. The splash screen contains the application title to enter the main menu screen of the application. Figure 9 shows the design of the splash screen display.

Figure 9. Opening screen display

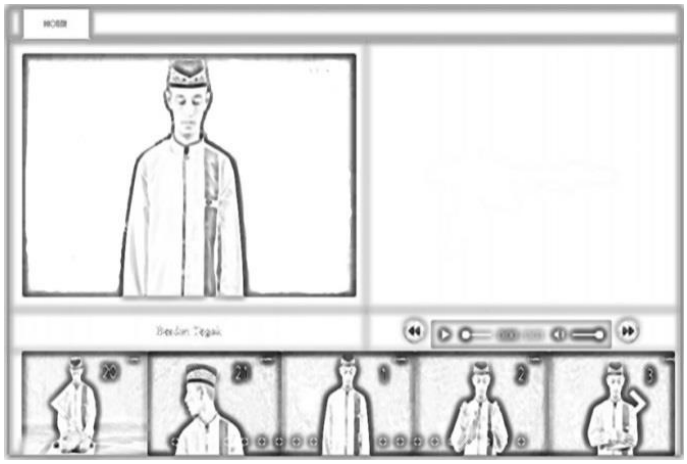


The Main Menu screen is the main screen of the created application. From this screen there are 3 navigation buttons, namely Prayer Guide, Prayer Practice and Prayer Video. The buttons on the selection options are labelled according to their respective functions. Figure 10 shows the design of the Main Menu screen.

Figure 10.
Main menu display

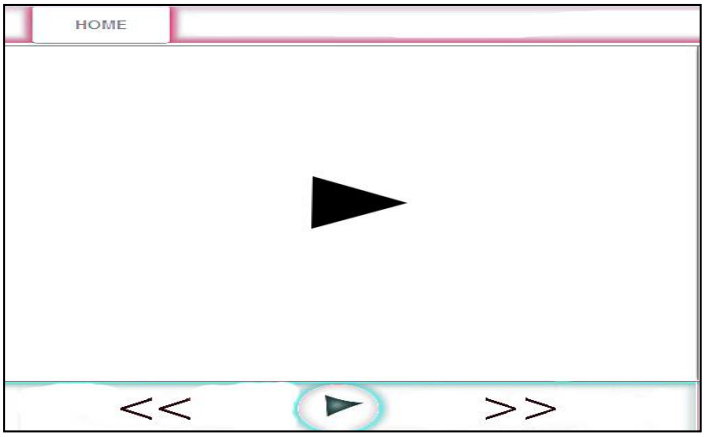
The Prayer Practice Menu display is a guide that shows several pictures of prayer movements from before Takbir to Salam, accompanied by readings and slideshows of prayer movements that can be selected manually. This menu is also accompanied by sound/audio based on the text/reading. Figure 11 shows the design of the Prayer Practice menu display.

Figure 11.
Prayer practice
display



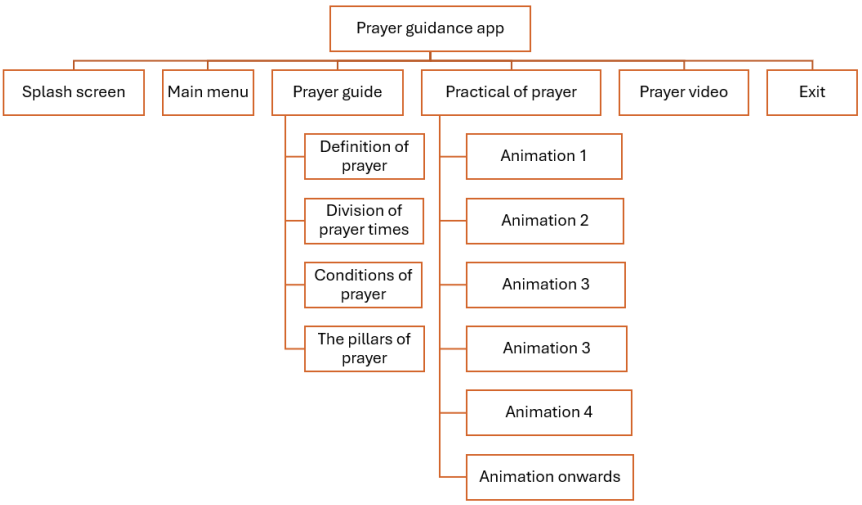
This prayer video menu is an animated video guide to the prayer procedures from Takbir to Salam. This menu is an extension of the Prayer Practice menu so that users can better understand the practice of prayer procedures. Figure 12 shows the design of the Prayer Practice video display.

Figure 12.
Video display of
prayer practice



Designing and collecting materials, the following stages are part of designing and collecting materials used in creating applications, such as icons, sound, voice, video, animation and also material slides. Design here means making any design in the system while collecting some materials for design in the system. This prayer guide application is designed using Adobe Dreamweaver software, Android Studio, Adobe Photoshop and other supporting applications. The menu structure in the design is made as an overview of the application scheme to be designed. In this application, the menu structure of the Android-based prayer guide application consists of the main menu page, prayer guide menu, prayer practice menu and video menu. Figure 13 shows the design of the menu structure of the prayer guide application.

Figure 13. Menu structure design



Assembly is the stage where all multimedia objects or materials are created. Application development is based on the design stage, such as storyboards, flow charts or navigation structures. In the application creation phase, the author uses Adobe Dreamweaver, Android Studio, Photoshop CS5, while the audio is created and edited using Adobe Audition CS6 and Xmedia Recode. Testing aims to check that the application created is in accordance with the results of the previous stages and to see if there are any errors or not, if there are then improvements are made. The process carried out in the production stage is to save the educational application, which is already in the form of an .apk file, to be shared or copied to a flash disk storage media or to a micro SD. After saving, the educational application file was distributed to the teachers of Islamic religious subjects to be used as a tool in the teaching process and prayer learning process.

3.3 Prayer guidance app

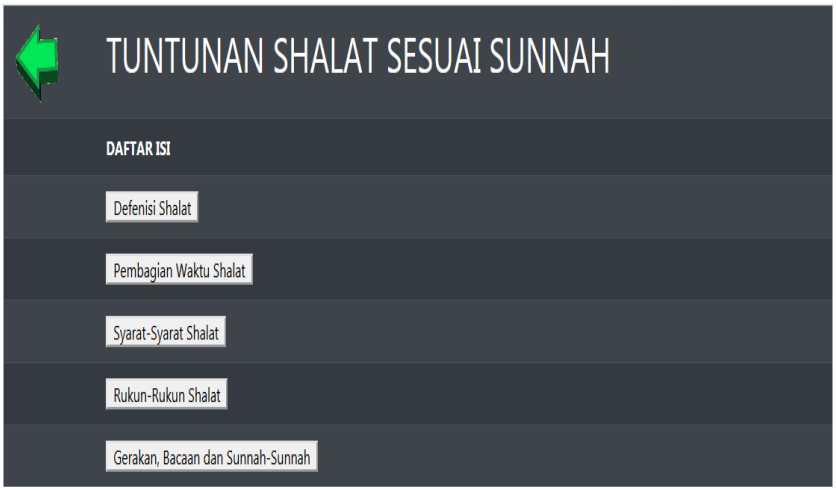
From the design and creation of the system described earlier, the programme has been designed and implemented. Figure 13 (a) consists of several properties such as animation and buttons on the page. While the function of the button itself is to call or go to the main page of the prayer guide application. Figure 13 (b) consists of several features such as animation and buttons on the page. Namely, the Prayer Guide button on this main page is the access to the Prayer Guide page where the user can read the prayer procedure material along with the arguments based on the Qur'an and Sunnah. The Prayer Practice button on this main page provides access to the Prayer Practice page where the prayer procedures are displayed with movements and recitations using storyboards. The Prayer Video button on this main page will take you to the Prayer Video page, where this menu will also display the prayer procedures accompanied by movements and recitations in more detail using video shows.

(a)

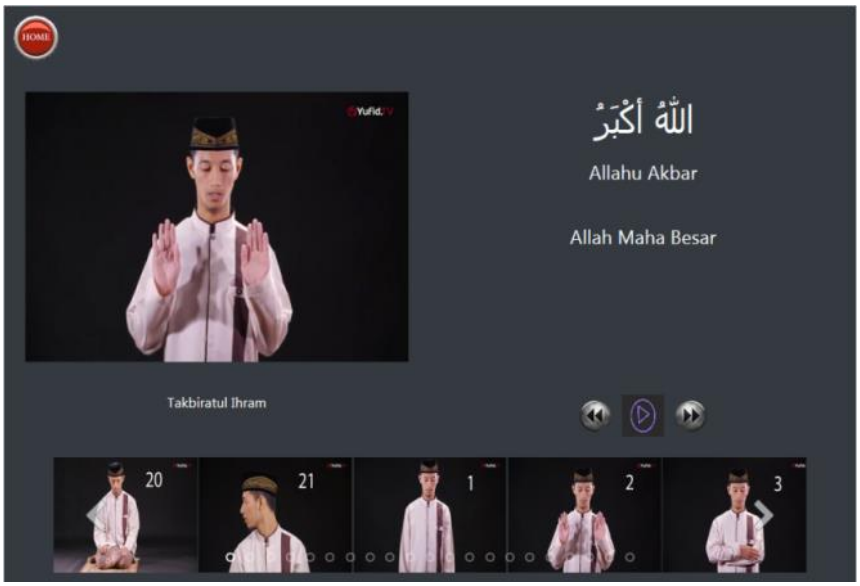
(b)

Figure 13. (a) Splash Screen Page and (b) Home page

In Figure 14, there are a number of buttons that are provided according to their functions, the Back button to return to the previous menu, which is the main page. The Prayer Definition button on this Prayer Guide page is access to a page that contains explanatory material about the definition of prayer based on the Qur'an and Hadith and the explanation of the scholars. The Distribution of Prayer Times button on this prayer guide page takes you to a page that contains explanatory material about the distribution of prayer times based on the Qur'an and Hadith. The "Conditions of Prayer" button on this prayer guide page will take you to a page that contains explanatory material on the conditions of prayer based on the Qur'an and Hadith. Button Rukun-rukun Shalat on this prayer guide page is a link to a page containing explanatory material on the pillars of prayer based on the Qur'an and Hadith. The Movement, Recitation and Sunnah button on this prayer guide page provides access to a page that contains explanatory material on the movements of prayer accompanied by readings and also explains the Sunnahs in prayer based on the Qur'an and Hadith.



(a)



(b)

Figure 14. (a) Prayer guide page and (b) Prayer practice page

In Figure 14, there are several buttons, including the Home button to return to the main page menu. Play button to play the audio description of the selected scene. Next button to view the next movement. Previous button to view the previous scene. Slider to freely select the desired menu of prayer movements without having to follow the prayer movements in sequence.

This android based prayer guide educational application is an educational application made with Adobe Dreamweaver CS6, which is a combination of various data in the form of images, text, sound and video. This application is an interactive learning medium that can help children learn to pray more easily. This application is a new thing at SD An-Nahdhah that can help teachers in teaching their students to learn in an easy and fun way. This educational application is specially designed so that children can easily use it with supervision or without the help of teachers or parents.

Based on the test results, this application can be used well because it has been able to carry out all the tasks or instructions and functions properly without any problems. Of course, as a product of development, educational media have advantages and disadvantages. As the saying goes, there is no

ivory that is not cracked, and it is undeniable that this application still has shortcomings, for example in terms of image and sound quality based on the author's perspective. On the whole, however, this educational application works and runs well.

4. Conclusion

Based on the results of the research and discussion of the developed interactive learning applications of prayer guidance based on Al Quran and Sunnah based on Android, conclusions can be drawn, namely, the design application of prayer guidance based on Al Quran and Sunnah has been successfully designed using the Multimedia Development Life Cycle (MDLC) development method, which is built with 6 stages, namely: concept, design, material collection, assembly, testing, and distribution, using HTML, CSS, and Javascript programming languages in the creation or design process of the application. This educational application is applied by being applied in the form of an .apk file, which is then installed in Android as an elearning learning media application system. This Android-based interactive learning media is more interesting and fun for children than monotonous learning media. It is hoped that this application can make it easier for children and even adults to learn and know the correct prayer procedures based on the Al Quran and Sunnah. The need to supervise children when they are playing or using the devices, as there is a lot of inappropriate information or even information that children are not yet old enough to know. The researchers hope that in further development research, the application will not only focus on the obligatory 5 times prayer, but can also provide information on the procedure for ablution.

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Declarations

Author contribution

Novi Hendri Adi as research implementer, media design and data collection. Abdul Somad as research and article concept designer. Farid Kassimov as research and article concept designer. Abzal Kuanyshuly as proofreader.

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Conflict of interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Ethical clearance

The involvement of human subjects in this research complies with the Declaration of Helsinki.

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