

Developing Android Developer as an Introduction to the National Hero of East Java

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ABSTRACT

The independence of the Republic of Indonesia did not escape the struggle of the heroes who have valiantly defended the truth, sacrificing themselves for the sake of the integrity of this nation. The task of those of us who have enjoyed the results is to have a moment of silence, remember all his services, and also study seriously. The development of today's world of technology is very influential on the nation's children, because of the many social media applications and games that might make them forget their current joy over the struggles of the heroes of the past. With the development of technology at this time, learning media must also participate to increase stability in the application world. This study aims to build a learning application about the introduction of national heroes in East Java. The design of this game uses the Waterfall method which has 5 stages, namely: Requirements, Design, Implementation, Verification, and Maintenance. The author hopes that by making this learning application, it can assist users to remember the services of the heroes who have fought in the State of Indonesia, and won the independence of the Republic of Indonesia.

Keywords: *Learning Media, Android, Waterfall Method, Indonesian Hero.*

INTRODUCTION

In this era the world of technology has developed rapidly and provides various applications, be it social media applications, games, learning media and so on, with these various applications, almost all of a person's daily activities are carried out digitally. We have seen this and we have felt how much use of digital media in society in completing and living their days, from seeking, providing, and getting information (Alimuddin et al, 2020). The development of increasingly advanced technology, learning media should also participate in a balance against the emergence of other applications.

Indonesia is a country that has a very long history of struggle against colonialism before Indonesia's independence and after. At that time the heroes from all over the region united for the sovereignty of Indonesia. The Indonesian government officially calls the heroes who are very meritorious as Indonesian National Heroes. With the participation of learning media in technological developments, making learning media to always remember the struggles of the heroes also increases a sense of empathy for their services.

METHOD

Operational Definition

- Definition Android
Android is a complete set of software that can be in the form of an operating system, middleware, and key applications for mobile devices. Android consists of a complete stack, from boot loaders, device drivers, and library functions, to API (Application Programming Interface) software, including SDK (Software Development Kit) applications. So, actually Android is not one particular device, but a platform that can be used and adapted to support various hardware configurations. Although the main class of devices supported by Android are mobile phones, they are now also used in electronic book readers, netbooks, tablets, and set-top boxes (STB).(Putra & Jupriyanto, 2018).

- **Definition of Mobile Application**
Mobile Application is an application that allows humans to perform mobility by using equipment such as PDA, cellular phones (mobile phones). By using mobile applications, humans can easily carry out various activities ranging from entertainment, selling, studying, doing office work, browsing, chatting, email, and so on.(Kuncahya, 2020).
- **Definition of National Hero**
National hero is a title given to Indonesian citizens who fought against colonialism who have died on the battlefield. So that during his life he left achievements or progress for the Republic of Indonesia. With this, his services are remembered as a national hero because they have made a very significant contribution to the independence of the Unitary State of the Republic of Indonesia.(Kuncahya, 2020).
- **Definition Indonesian**
Indonesia is a country that has a long history in its struggle against colonialists before independence and after independence against intruders who tried to reclaim Indonesian independence.(Kurniati et al., 2020).
- **Definition Indonesian**
Indonesia is one of the countries with the fourth largest population in the world, therefore it is necessary to increase equitable national development in order to create prosperity for all Indonesian people.(Purnia et al., 2019).
- **Definition the Waterfall Method**
The waterfall method is a systematic and sequential information system development model.(Wiro Sasmito, 2017).
- **Definition Use Case Diagram**
Use case is a pattern or picture that shows the behavior or habits of the system.(Simaremare et al., 2017).
- **Framework7**
Framework7 is an Open Source framework and can be used for free to create or develop mobile, desktop or web applications with a native appearance, and framework 7 is also an indispensable prototyping tool to show working prototypes of applications to be created or used as soon as possible. as soon as possible if it is needed, of course this will make it easier for android developers or programmers who usually do development or make an application, especially android and ios, because there have been included several models that are ready to be developed and only need to add features and functions according to what that has been needed, where there we can easily imitate or even copy the source code of the interface model from the template display,it's just how we activate the functions and adjust the features we need later.(Aminulloh et al., 2020).
- **Definition Activity Diagram**
Activity diagram is a diagram that describes the dynamic nature of a system naturally in the form of a flow and control model from activity to activity.(Simaremare et al., 2017).

Research Methods

The method used is the Waterfall Method, the Waterfall Method is a device development step that uses sequential stages, with the completion process of making it flowing from top to bottom (like a waterfall) which passes through the following phases:

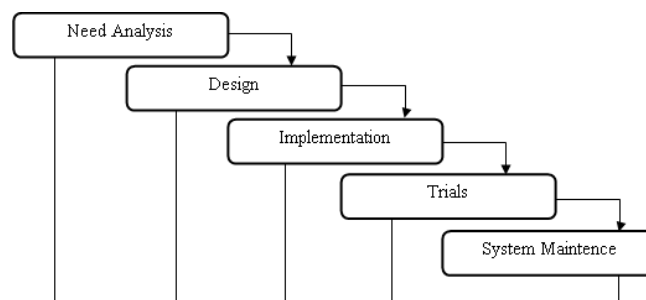


Figure 1. Waterfall Diagram

The waterfall method emphasizes systematic and sequential stages.

This method is called the waterfall method because it is sequential. This method also has several stages, namely:

- **Need Analysis**
 At this stage it hasThe purpose is to analyze system requirements, determine materials, data and so on to design applications to be made. At this stage in conducting research, data collection is obtained by means of interviews or literature studies to meet the needs in making applications..
- **Design**
 This design provides an overview for the design of the application that is made. In this study, the author designed a display design that will be displayed on the application for the introduction of the National Hero of East Java.
- **Implementation**
 The implementation phase begins with the coding process from start to finish in the preparation of the application. In this study, the author uses framework7 to design an application for the introduction of the National Hero of East Java.
- **Trials**
 This stage is the testing stage of the application that has been made after the coding process is carried out. In the application made by the researcher, the researcher designed an application for learning media, from the introduction of the names of heroes and their backgrounds, and also a quiz to train knowledge about the National heroes that have been studied in this application.
- **System Maintenance**
 The maintenance stage is the final stage where the author can later make improvements if there are deficiencies in the application that has been designed.

Research flow

- **Application Flowchart**
 The application flowchart is the performance flow of the application, which starts from the start of the application to the exit of the application as shown in the following flowchart:

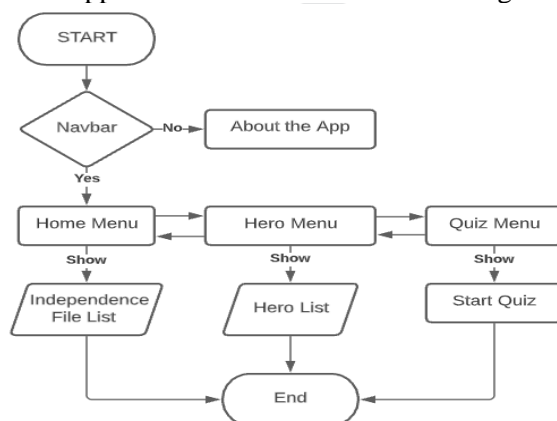


Figure 2. Application Flowchart

- **Use Case Diagram**
 Shows that this application has 3 navbars and a menu bar, 3 navbar menus, namely the home menu, hero menu and quiz menu, for the menu bar when clicked it will display a list of applications. Example as follows:

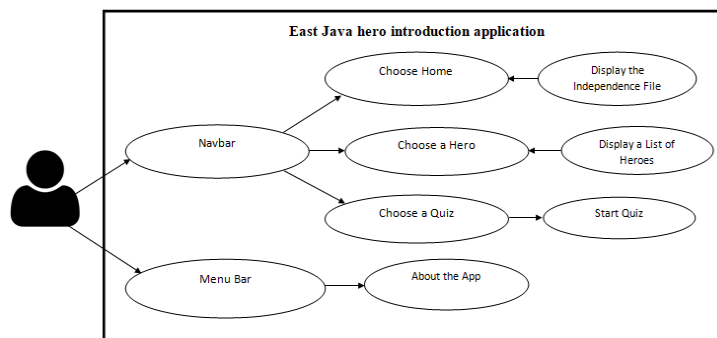


Figure 3. Use Case Diagram

- **Activity Diagram Main Menu**
 The main menu activity diagram shows the flow of the menu, when clicked, the menu will display

the contents of the menu. Example as follows:

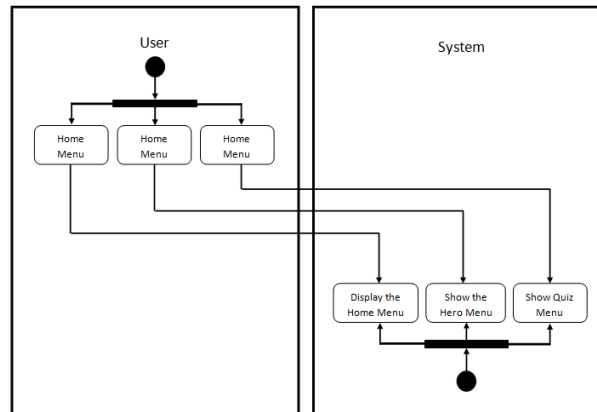


Figure 4. Acrivity Diagram Main Menu

RESULT AND DISCUSSION

The following are the results and discussions obtained after the research and process of working on the Introduction to the National Heroes of East Java application:

Result

The result of this research is an application that can be used by anyone. This application has 3 menus, namely the home menu, the hero menu, and the quiz menu. The home menu displays independence files, the heroes menu displays a list of heroes, and the quiz menu displays quizzes that have been studied or read on the hero menu or on the home menu.

Discussion

The discussion of the results of this study is that each menu has its own appearance and function. The following is a discussion of the features and functions of each menu.

- Home Menu

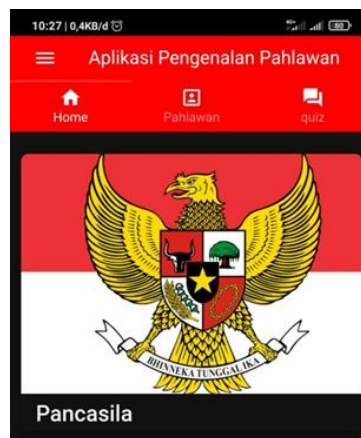


Figure 5. Home Menu

The Home menu is the initial display of the application that is opened and provides several lists in it such as Pancasila, the proclamation and others.

- Hero Menu

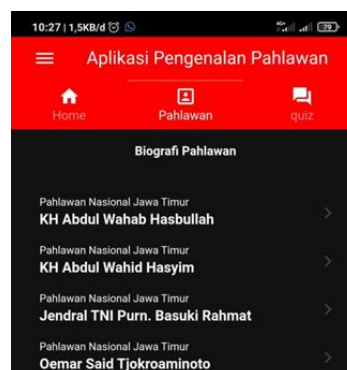


Figure 6. Hero Menu

The hero menu displays lists of hero biographies, there are 21 biographies in the hero menu, the biographies include photos, place and date of birth as well as his services who are called national heroes

- Quiz Menu

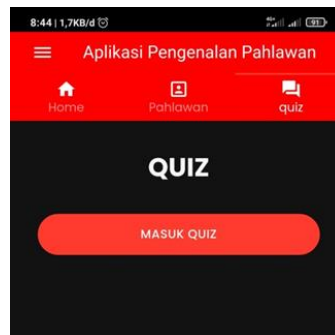


Figure 7. Quiz Menu

Displays the quiz button to start the quiz.

- Quiz View

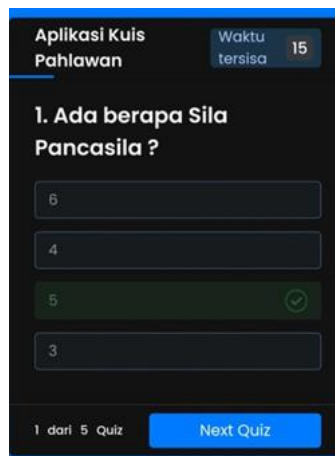


Figure 8. Quiz View

The quiz shown is taken from the hero menu and the home menu, in starting the quiz there are several conditions that must be considered, these provisions appear when the quiz will start.

- Display About Application



Figure 9. Display About Application

The menu about this application displays the version of the application as well as the purpose for which the application was made.

- Application Feasibility Test Results

The data analysis technique used to calculate the score from the questionnaire uses a Likert scale technique with 4 answer choices. Furthermore, the score obtained is converted into a value with a Likert scale as shown in the table below:

Table 1 Likert Scale

Score Meaning	Score
Very Good	4
Good	3
Low	2
Very Low	1

The collected data is then analyzed by looking for the average score or mean as follows:

Description:

x_i = Average Score

$\sum x$ = Total Score

N = Number of Question

$$x_i = \frac{\sum x}{N}$$

Based on the result of the participant response assessment, there were 11 participants and a total score of 377 was obtained, the total score was then calculated using the previously described formula to determine the feasibility of the application. The calculation is as follows:

$$\text{Average Score: } \frac{\text{Total Score}}{\text{Number of Participants}} = \frac{377}{11}$$

The average score obtained from participant responses is 34.2, then the data is recalculated with the following formula:

$$\text{Average Score: } \frac{\text{Total Score}}{\text{Number of Questions}} = \frac{34,2}{10}$$

So that the result of due diligence from material experts is 3.42 which is included in the good category, and is suitable for use. Including the good category can be seen from the previous Table 1 Likert Scale.

CONCLUSIONS

From the explanation that has been presented, it can be concluded several conclusions as follows:

- The Android developer used for making this application is framework7, while the compiler uses Cordova.
- With this application, it can help in learning about the history of the National Heroes of East Java..
- Based on the application feasibility questionnaire, the results of the due diligence got a score of 3.42 which is included in the good category, and is suitable for use.

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