THE DESIGN OF THE HISTORY LEARNING BOOK OF THE DAYS OF NATIONAL STRUGGLE BASED ON ANDROID

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A b s t r a c t

The design of the history learning book of the days of national struggle is a manifestation of the author's concern for the current phenomenon. The commemoration of the days of national struggles aimed at instilling historical memories of the past is not in accordance with its purpose. The warning is followed only as a routine without knowing the history and even the warning date. Through this design, the author introduces history from the commemoration of the days of national struggle to children, and quizzes. The purpose of this design is to introduce history to commemorate the days of national struggle so that children can learn to love their country through historical knowledge so that the meaning the commemoration of the days of the national struggle did not fade.

Trials have been done on the Jallybean emulator (4.0.3). While the program implementation is carried out on Samsung smartphones. In general, the results are displayed from Samsung emulators and smartphones are not much different from the results of the Jallybean emulator (4.0.3), only Android is with a higher version has faster access speeds.

Keywords: *Childrens' Books, History, Commemoration of National Struggle Days, Android*

A. Introduction

Background to the Problem

Along with the rapid development of technology in this period, more and more communication and information media make it easy to interact with each other. In this case, handphone is one form of technological development that is not only useful as a communication tool, but also as entertainment and learning media. This fact can be proven by the development of various types of smartphones made by leading mobile phone vendors in the world. This both directly and indirectly affects the development of the world of education in Indonesia, in developing various types of technology.

Android is one of the most popular operating systems from both manufacturers and consumers, it can be seen from various vendors that carry this operating system on various kinds of smartphones made by them. Popularity is very influential in terms of increasing smartphone users. We often read various discourses that mobile phones that use the Android operating system have many advantages not only are open (open source) but can be seen in terms of appearance, ease of receiving a notification, email synchronization, and multi-tasking capabilities, (PriyoHandoyo, 2014)

History (Greek: ἱστορία, historia, which means "inquiry, knowledge obtained through research") is the study of the past, especially how it relates to humans. In Indonesian the history of chronicles, saga, history, or tambo can be interpreted as events and events that really happened in the past or the origin (lineage) of genealogies, especially for the ruling kings. This is a general term related to mass events then and the discovery, collection, organization, and presentation of information about this event. This term covers the cosmic, geological, and historical life of creatures, but it is often generally interpreted as human history, but unfortunately many people still do not know historical days. This is due to a lack of interest in reading books or articles about history.

Problem Formulation

Based on the description of the background, the formulation of the research problem is as follows:

1. How is the design of the history learning book application for national struggle days based on Android
2. How to design and create a history learning application for the day of the national struggle and can help convey information and knowledge about the day of the national struggle.

Limitation of Problems

Restrictions on a problem are used to avoid the existence of a problem or widening of the problem so that the research is more directed, so the writer gives a limitation of the problem as follows:

1. The application designed is a learning media created using the Android-based Eclipse software.
2. Users can only tell or write down some of the history of the national struggle which is common and which is often heard or read by the general public.
3. Provide information on the names of fighters and heroes, as well as biodata or curriculum vitae.

B. Literature Review

Definition of History

History comes from Arabic, which is from the word syajaratun (read syajarah), which means wood tree. Understanding of wood trees here is the existence of an event, development / growth about a continuity (continuity). In addition there are also studies that assume that the meaning of the word syajarah is not the same as the word history, because history is not only meaningful as a family tree, origin or genealogy. Even though it is acknowledged that there is a relationship between the word syajarah and the word history, someone who studies a particular history is related to the story, genealogy, history and origin of someone or event (sjamsuddin, 2009).

Types of history

Types of history are divided into several sections. Here are some types of history.

1. Local History
   Local history means that an event that occurs only covers an area and does not spread to other regions. For example the history of Yogyakarta, Jakarta, North Sumatra.
2. World History
   Events that occur can include various problems from several countries. For example World War I and World War II.
3. History of Geography
   Historical development can not be separated from the geographical state of a region because history discusses various events that have occurred in the past that are affected, the geographical conditions of a region.
4. Economic History.
   Indonesian society began to develop its economic system since the time of farming. The economic system that developed at that time was the barter system. And it develops to a wider economy
5. State Administration and government politics
   The system of governance in Indonesia dates back to the pre-history of Indonesia in the form of a tribal system led by tribal chiefs. After Hindu Buddhism entered.
6. Social history
   The history of socialism experiences a process of development from a simple level to a more advanced level as it is today.
7. National History
   Contains the notion that an event that has taken place covers a wider area of local history. National history includes events that occur in a country that affect the lives of its people in various political, economic, social, cultural sectors etc.

Java

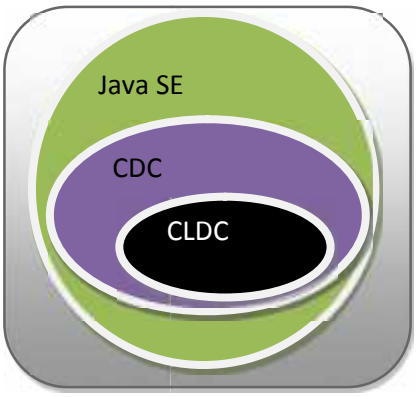
Java Mobile Edition (Java ME) is a set of API (Application Programming Interface) that is focused on developing mobile devices. Mobile devices are devices that have limited resources, good memory, batteries with little power, small screens, and low network bandwidth such as mobile phones, PDAs, game equipment, pagers, and so on.

Java ME is a part of java programming that runs on JVM (Java Virtual Machine). JVM or a virtual Java machine can be interpreted as an application that works on a java ME application / program bytecode on a device. The core of the java ME program is Configuration and profile. Configuration provides a basic runtime environment consisting of a collection of core libraries in java ME systems. Whereas Profile provides additional libraries for certain classes of Configuration in a device, (Andi, 2012).

Configuration

As mentioned above Configuration is a base class that provides a basic runtime consisting of a collection of core classes. In addition, Configuration also provides special JVM that runs on mobile devices. Java provides 2 types of basic libraries (Configuration) that are used to do mobile programming, namely CLDC and CDC. The library relationship used between Java Standard Edition (Java SE) Java ME (CLDC and CDC) can be described as follows, (Andi, 2012).

Figure 2.1 Relationship between Java SE and Java ME



CLDC

Connected Limited Device Configuration (CLDC) provides a virtual machine and core library used by an industry to define profiles. CLDC is designed and compiled by the Java Community Process which has complied with the Sun Microsystem standardization of portability and the minimum fulfillment of footprint is to build Java application blocks for devices that have limited resources. As seen above CLDC is part of the CDC, while the CDC is part of Java SE which is added by several APIs for mobile programming.

CLDC implements a java virtual machine as K Virtual Machine (KVM), and the K Java profile runs above CLDC. The CLDC framework is the most core library and the JVM feature is needed to implement each Java ME that is very limited by the device. The target of CLDC is a device with a slow network connection, battery with limited power, non volatile memory 128 kb or more, and 32 kb or more volatile memory. Volatile memory is memory that will store data as long as the device is on and data will be lost if the device and power supply are turned off. With non volitle memory it is used to store the KVM runtime library or

other virtual machines created by the device, while volatile memory is used to allocate runtime memory, (Andi, 2012).

CDC

Connected Limited Configuration (CDC) can be said as a small version of JAVA SE with the addition of the CLDC class. As shown in figure 2.3 where CLDC is part of the CDC as a whole. Thus, applications built CLDC can also be run on CDC devices, but not vice versa. CDC is also developed by the Java Community Process with standardization for consumer electronic devices and embedded devices, such as smartphones, two-way pagers, PDAs, Home appliances, sales terminals and mobile navigation systems. The device runs on a 32-bit microprocessor and has more than 2MB of memory needed for C Virtual Machines (CVM) and other libraries, (Andi, 2012).

Profile

Profiles provide the type / type of equipment that is supported by the application being built. Particularly is adding classes that are more specific to Java ME Configuration to define the proper use of devices to provide a complete runtime environment in certain device categories, Configuration must be combined with a profile or higher set of APIs, then define the life cycle model (life cycle model), user interface and access to certain properties of the device, (Andi, 2012).

Android

Android-based devices only have one foreground screen. Normally when you turn on Android, the first thing you see is home. Then if you run a chess application, the User Interface (UI) will stack on the previous screen (home). Then when you see the chess help, the UI help will overwrite the previous UI (chess), and so on. All of the above processes are recorded on the application stack by the Activity manager system. Pressing the back button only returns to the previous page, the analogy is similar to the browser where when you click the back button

the browser will return to the previous page. Each User Interface is represented by an Activity class (Activity class). Each activity has a cycle, can be seen in Figure 2.4. An application can consist of one or more activities that are processed in Linux. If you are confused by this explanation, don't think too much about it. Keep going forward, you will understand after actually practicing the exercises in this book. (ArifAkbarul Huda, 2011).

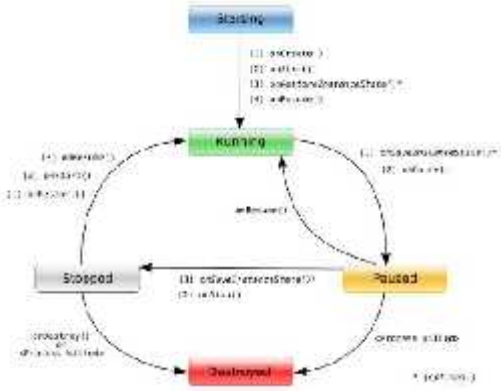


Figure 2.2 Activity

Activity cycle

During this cycle, the activity can have more than 2 statuses as shown in Figure 2.4. We cannot control every status because everything is handled by the system. But we will get a message when the status changes through the onXX () method. The following is an explanation of each status, (ArifAkbarul Huda, 2011).

Table 2.1 Activity cycle

onCreate (Bundle)	Called the first time the application starts. We can use this for variable declarations or creating user interfaces.
onStart ()	Indicates an activity that is displayed to users.
onResume ()	Called when our application starts interacting with users. Here it is very suitable for putting animation or music.
onPause ()	This method allows an activity to store each status of an instance. For example in editing text, the cursor moves from left to right.
onStop ()	Is taken when our application runs behind the scenes for a long time.
onRestart ()	Activity returns to display the user interface after the stop status.
onDestroy ()	Called when the application actually stopped.
onSaveInstanceState (Bundle)	This method allows an activity to store each status intance. For example in editing text, the cursor moves from left to right.
onRestoreInstanceState (Bundle)	Is called when the activity re-initializes from the previous status stored by onSaveInstanceState (Bundle).

As a programmer, you need to know some very important application components such as activities, intense, service, and content providers.

1. Activity
   Normally each activity displays one user interface to the user. For example, an activity displays a drink menu list, then the user can choose one type of drink. Another example is the SMS application, where one activity is used to write a message, the next activity to display the destination contact number, or another activity is used to display old messages. Even though the above activity-activities are in one sms application, each activity is independent. To move from one activity to another activity can do an event such as a button clicked or through a certain trigger.
2. Service
   Service does not have a user interface, but runs behind the screen. For example, a music player, an activity is used to select songs and then play. So that the music player can run behind other applications, you must use a service.
3. Intense
   Intense is a mechanism for describing an action in detail such as how to take a photo.
4. Content Providers
   Providing a way to access data needed by an activity, for example we use a map-based application (MAP). Activity requires a way to access contact data for navigation procedures. This is where the role of content providers is.
5. Resource
   Resource is used to store noncoding files that are needed on an application such as icon files, image files, audio files, video files or others. JPG or PNG images in an application are usually stored in the res / drawable folder, the application icon is stored in the draw / drawd-ldpi file and the audio file is stored in the res / raw folder. XML files to form a user interface are stored in the res / layout folder.

Java Android Platform

Java Android platform is one of the developments in the Java edition that is used in making mobile device applications based on the Android operating system. This is because there are classes that facilitate design, such as app classes, os, views, widgets and so on. Besides this, the combination of the Java API (Application Programming Interface) and JVM (Java Virtual Machine) makes it easy for applications to run on mobile devices.

The application made in this writing uses a java-based programming language for the android platform. This java platform is similar to Java 2 Standard Edition (J2SE) because of the command structure for conditions and looping, variable types that can be used, and operators used. This platform can be said to be a development from J2SE that is applied to mobile applications that are different from J2ME (Java 2 Micro Edition), because the files produced are .apk not .jar.

1. **Java RE Runtime Environment (JRE)**

The Java Runtime Environment (JRE) provides a library, Java Virtual Machine (JVM), and other components to run applets and applications written in the Java programming language. In addition, there are two key technologies that are part of the JRE, namely: Java Plug-in, which allows running applets in popular browsers and Java Web Start, which deploy independent applications over the network. JRE does not contain utilities such as compilers or debuggers to develop applets and applications. The JRE used is JRE6.

2. **Java Development Kit (JDK)**

Java Development Kit (JDK) is software that is used for management and contains a set of command-line tools to build various java applications. JDK is a superset of JRE, containing everything in the JRE compiler and debugger needed to develop applets and applications. JDK which supports Android applications is JDK 1.6.0_24 (JDK 1.6 update 24).

3. **Android Development Tools (ADT)**

Android provides an Eclipse plugin called ADT to run programs and debugging more easily. This ADT provides easy access to Android-Manifest / Thread, and Heap Control, incoming calls / simulated SMS. In ADT a standard emulator has been packaged so that users can immediately see the results of the program created without the need to first install the application made into the actual device.

C. Research Methodology

Research Design

To compile this thesis, the application of research methods in obtaining the data needed so that the preparation of this thesis can be completed properly, and systematically.

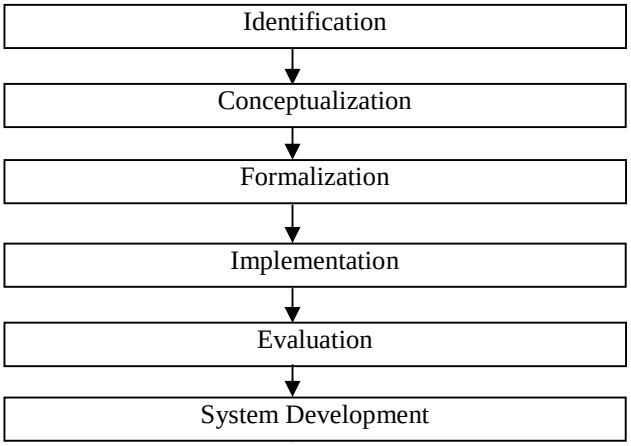


Figure 3.1 Research Design

Data Analysis Methods

After collecting data, the next stage is analyzing the data that has been collected to reach a conclusion. The data analysis conducted by the author is as follows:

1. The author uses Use case to model and declare the unit of function / service provided by the system (or part of the system: subsystem or class) to the user.
2. In describing business processes and sequence of activities in a work process (workflow) system, the author uses Activity Diagrams.
3. System requirements to build an application in the Android platform.

D. Analysis And Discussion

Analysis

1. Problem Analysis

In developing this application there are several problems and important factors that need to be considered. The factors that will be analyzed, namely regarding the problem of how a user can understand and learn through the application of history learning books on national struggle days based on Android using a cellular telephone. The results of this analysis will be used as a part of the reference in the development of the history learning book application for the national struggle days based on Android.

2. Analysis of User Needs

Based on the results of the analysis that the author did, the author gets information about the history of the days of national struggle and the results of the data obtained will be used for designing applications.

3. Hardware Specifications

In applying the results of the design previously explained, some hardware is needed to present this application. The tools needed are:

1. Mobile Based on the Android Operating System

Mobile is used to run application programs that have been developed. The cellphone used is Oppo R001 with the following specifications:

a. Operating System: Android OS, v4.2 (Jelly Bean) Color OS
b. Processor: 1.3 GHz Dual-core CPU
c. Storage Space: Internal 4 GB storage, microSD up to 4 GB
d. Memory: 1 GB RAM
e. Screen dimensions: 480 x 800 pixels, 4.0 inches
f. Connectivity: Wi-Fi 802.11

2. Serial port data cableSerial port data cable

The function of this data cable is to connect between a computer and mobile.

.4. Software Specifications

In implementing the design that has been made, it takes some software to create a learning book application history of the days of national struggle based on Android, namely:

1. Java Programming Language
   In this case Java Development Kid (JDK) 6-windows-i586 and Java Runtime Environment (JRE) are used.
2. Operating System
   For use the operating system can be used Windows 7 Ultimate (32-bit) or Vista (32 or 64 bit), Mac OS X 10.4.8 or above, and Linux.
3. Eclipse Juno Integrated Development Environment (IDE)
   To facilitate the development of applications, the IDE is used because it has several facilities needed in software development. As for the development of this Eclipse Juno was used.

To be able to build an application that can later be run on mobile devices that use the Android operating system, the Eclipse IDE needs to add supporting components such as the Android Software Development Kit (Android SDK), Android Development Tools (ADT), which will later produce files with an .apk extension. The APK itself is a file format used to distribute and install software or applications to mobile devices with the Android operating system.

Discussion

1. Code Implementation

At this stage, implementation of the application design designs and interface design is carried out. The programming language used in designing this system is to use Java. For editors and unit tests used by Eclipse Juno. At the stage of debugging the author uses a cell phone based on android Samsung brand version 4.2.2 Jelly Bean.

2. Test and Evaluation

Before the application is applied, the application must be error free. Tests are needed to find errors that might occur. This stage is done so that the application can continue to be used and run properly. Application implementation is implemented by testing applications that have been built, whether what has been built is in line with expectations, at this stage if the system developed is not as expected, the authors make revisions to the application. Application testing is done by the blackbox testing method. Testing is done by running the application and seeing whether this application is in accordance with the problem domain.

3. Icon Display

Icon display is the initial display before entering the application. The display icon installed on the emulator will appear in the image below.

Figure 4.1 Icon display

4. Display of the Main Menu

The Main Menu is the main display after the application is opened, in the main menu there is a national struggle day menu, quiz menu, menu about Applications, help menu. The main menu is navigation to go to other menus. Below is the main menu display of the application that was built.

Figure 4.2 Display of the Main Menu

5. Display of the National Struggle Day Menu

The national struggle day menu is a menu that will appear after you are in the main menu. After that, select the menu of the national struggle day found on the main menu. The following picture shows the menu of the national struggle day.

Figure 4.3 Display of the National Struggle Day Menu

6. Quiz Menu Display

The quiz menu is the menu that will appear after you are in the main menu. After that, select the quiz menu found on the main menu. The following picture is displayed from the quiz menu.

Figure 4.4 Display Quiz Menu

7. Appearance Menu Display

On the menu about this application will display an explanation of the application. The following picture shows the menu about the application.

Figure 4.5 Display Application Menu

8. Display of the Help Menu

In this menu the application will display instructions on how to use the application. The following picture is displayed from the application instructions menu.

Figure 4.6 Display of the Help Menu

E. Conclusions And Suggestions

Conclusion

From the results of the discussion in the chapters that have been described previously, the authors draw conclusions as follows:

1. To design the application of history learning books for National struggle days based on android the author uses the Android programming language with java eclipse juno.
2. In providing information about this National Day of struggle, a menu menu has been provided which will assist users in knowing or remembering events that have occurred and there is a quiz as a benchmark in remembering the days of the National struggle.
3. The application that I made is only for cellphones that use the Android operating system jellybean version down.

Suggestions

Suggestions that can be given by the author for designing this application are as follows:

1. Need to do more research about how to make this application can be applied in the operating system with versions of android 4.4.2 (kitket) to the latest version
2. Use of jQuery Mobile on applications must consider the problem of mobile device resources, especially on screen size. Because there are many smartphone models with various screen sizes. So in designing you have to adjust the smallest screen size.
3. Until now, Android continues to experience development, both in terms of systems and shape sizes. So it is expected that this application can be fixed again to be used on all sizes of devices that use the Android operating system and can follow the next version, so that it can run on a higher Android operating system.

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