Design of an Android-based Sundanese Javanese Regional Language Learning Application

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Keywords	
Learning, Language, Java Area, Sundanese Region.	**Abstract.** Along with the development of smartphone technology, it has become an option for learning needs. With so many types of regional language learning, it is of interest to most people from outside the region. The regional languages of Java and Sunda are mostly in demand by people from outside the region. Based on the large amount of interest in learning regional languages, the Jasun Regional Language Learning Application is the choice of researchers. In this study, the SDLC method was used with a prototype model. By using the prototype model, the author as well as the developer can find out the specifications of the user's needs in more detail and the prototype model is suitable for making small applications. With the development of the Sundanese Javanese Regional Language learning application, it is hoped that it will make it easier for people who want to learn Javanese and Sundanese Regional Languages. That way learning Javanese and Sundanese Regional Languages does not need to come directly to the area. Simply by using a smartphone as a medium for learning Javanese and Sundanese languages, it can be done anywhere and anytime.

1.   INTRODUCTION

The rapid development of technology and information today. Language is one of the bridges to communicate [1]. In this world there are many varieties of languages, one of which is Indonesian, Indonesian is the National Language of the State of Indonesia. But many languages from other regions are used to communicate including Javanese and Sundanese. Javanese is an Austronesian language that is mainly spoken by Javanese people in the Central and Eastern regions of the island of Java. Javanese is the official language of the Special Region of Yogyakarta. Sundanese is a common language spoken by the people of West Java, precisely the area dubbed Tanah Pasundan [2].

The problem that exists at this time is that Javanese and Sundanese have some impolite speech that is usually used with peers as well as polite language used to speak to older people. Quite a lot of Javanese and Sundanese dictionary books are circulating but the book is quite troublesome because users have to look for the meaning of a word or sentence in the dictionary manually, opening each sheet of the language dictionary is quite time consuming. But with technology in this day and age, all information can be found very quickly.

For this reason, it is necessary to have a medium for learning Javanese and Sundanese, in order to make it easier for ordinary people and anyone who wants to learn and understand the meaning of words and sentences in Javanese and Sundanese. Like the research conducted by Ayu Ernawati to create a Javanese dictionary application [3] and Dinar Sugiri who created a Sundanese dictionary application [4], so this Sundanese Javanese Learning Application was designed to facilitate both.

2.   METHOD
Research Method

The method used in this research methodology is the Software Development Life Cycle (SDLC) method with a prototype model. By using the prototype model, the author can find out the specifications of customer needs in more detail and the prototype model is suitable for making small Applications. The method is carried out by collecting data through written and electronic documents from the institution/institution where the research is carried out where the documents are needed for the completeness of the research..

Systems Development Life Cycle SDLC is the stages of work carried out by system analysts and programmers in building information systems [5]. Lulnak device or what is often nicknamed 'application' itself embodies the real wuljuld of the results of system design that is intended to process

data or work on tasks given by the penggulnanya based on certain atulran rules of the programming language used .

The concept of System Development Life Cycle (SDLC) is the basis of various information system developments in forming a framework for planning and controlling information systems. Models of SDLC that are often used include Waterfall and Prototype. SDLC (System Development Life Cycle) is a classic methodology used to develop, maintain, and use information systems. In this research, the SDLC method uses a waterfall model or also called waterfall, which is used due to the limited time of software development [6].

System analysis can be defined as the decomposition of an intact information system into its component parts with the intention of identifying and evaluating the problems that occur and the needs that are expected so that improvements can be proposed. System analysis aims to understand and document the business needs and process requirements of the new system. Analysis is very necessary in the construction or development of information systems, the success of an information system depends on good analysis and design, so that the system to be built will be able to overcome the problems found in the old system .

Research Stages
   a.   Data Collection
The method is carried out by collecting data through written and electronic documents from the institution/institution where the research is carried out where the documents are needed for the completeness of the research.
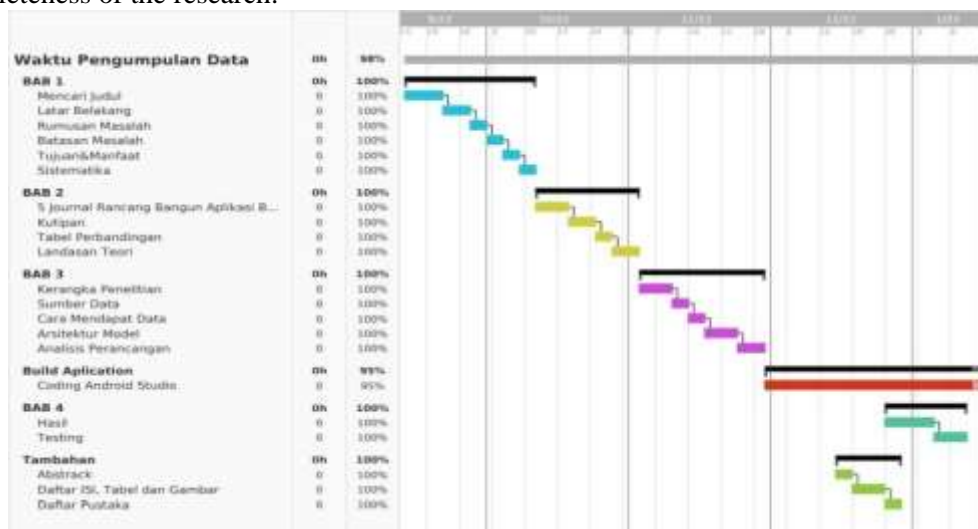
Gambar 1. Data Collection

   b.   Literature Study
Literature study is carried out by studying literature and obtaining information related to the research being studied, such as books, magazines, or articles on the Internet. Therefore, it can be used as a basis for Design of an Android-based Sundanese Javanese Regional Language Learning Application .

Sugiri et al. conducted research with the title Designing Sunda-Indonesian Dictionary Application with Binary Search Method. The study discusses the design and manufacture of applications that are carried out in order to make it easier to learn Sundanese. The author intends to design an Android-based Sundanese Dictionary application. Because the theme taken by the author is an information system where the application is designed in the form of information in the form of an electronic dictionary that is on android-based mobile technology. By using the Binary Search Method. The final result of the system can operate properly [4].

Fernaldy & Karnadi conducted research with the title Chinese Language Learning Application for Middle School Level. The application has several features, namely Reading, Writing and Listening. This application aims to learn Mandarin according to the wishes of the user to be learned. To use the application, users can choose one of the features they want to learn where Reading

contains vocabulary in the form of photos with Chinese-Indonesian writing, Writing contains photos that contain the sequence of Chinese writing sequences while Listening contains conversation material whose contents consist of photos with related audio. Application results in the form of information from the selection of learning from Reading, Writing and Listening about Mandarin [7].

Rahmah & Juhriah conducted research with the title Android-Based Sundanese Language Recognition Application in the World of Education. The research discusses the design and manufacture of applications in the form of information systems. In the application there are 5 options for learning including Undak Usuk Basa Sunda, Tata Wangun Kecap, Kecap Color, Sundanese Language Assimilation and Tata Sora. Where Undak Usuk Basa Sunda contains a description of the meaning of undak usuk basa sunda or the level of Sundanese language consisting of loma, fine and coarse, Tata Wangun Kecap contains the procedures for using Sundanese, Warna Kecap contains vocabulary in Sundanese-Indonesian, Sundanese Language Assimilation contains how to write, pronounce and translate Indonesian, Tata Sora contains Sundanese-Indonesian pronunciation procedures. The result of the application is an information system in the form of learning selection related to Sundanese language [8].

Wihidayat & Maryono, to create Android-based applications, many Integrated Development Environments (IDEs) can be used. Android Studio with the Java programming language is an IDE and native programming language officially supported by Google. As an IDE supported by Google, AS is the best IDE that can be used to build applications [9].

Setiyadi & Hariyati, SQLite is a library that implements a self-contained, serverless, zero-configuration, and transactional database engine. Unlike the relational DBMS in general, SQLite has a relatively small library code, easy to use without requiring installation and configuration. All the capabilities offered by SQLite can be controlled remotely with a client-server system. Likewise, the time measurement application built using the SQLite database can choose which applications will be activated or which will not be activated directly without having to go through the server (remote) [10].

c. **Design**

Conceptual is an abstract way of thinking about something that will later be poured into a performance that has a framework [11]. The following UML diagram is used in the design of the Android-based Sundanese Javanese Regional Language Learning Application:

Flowchart

Flowchart or flow chart is a diagram that displays the steps and decisions to perform a process of a program [12]. Each step is described in the form of a diagram and connected by a line or arrow direction. The following is a Flow Chart for the Sundanese Javanese Language Learning Application.
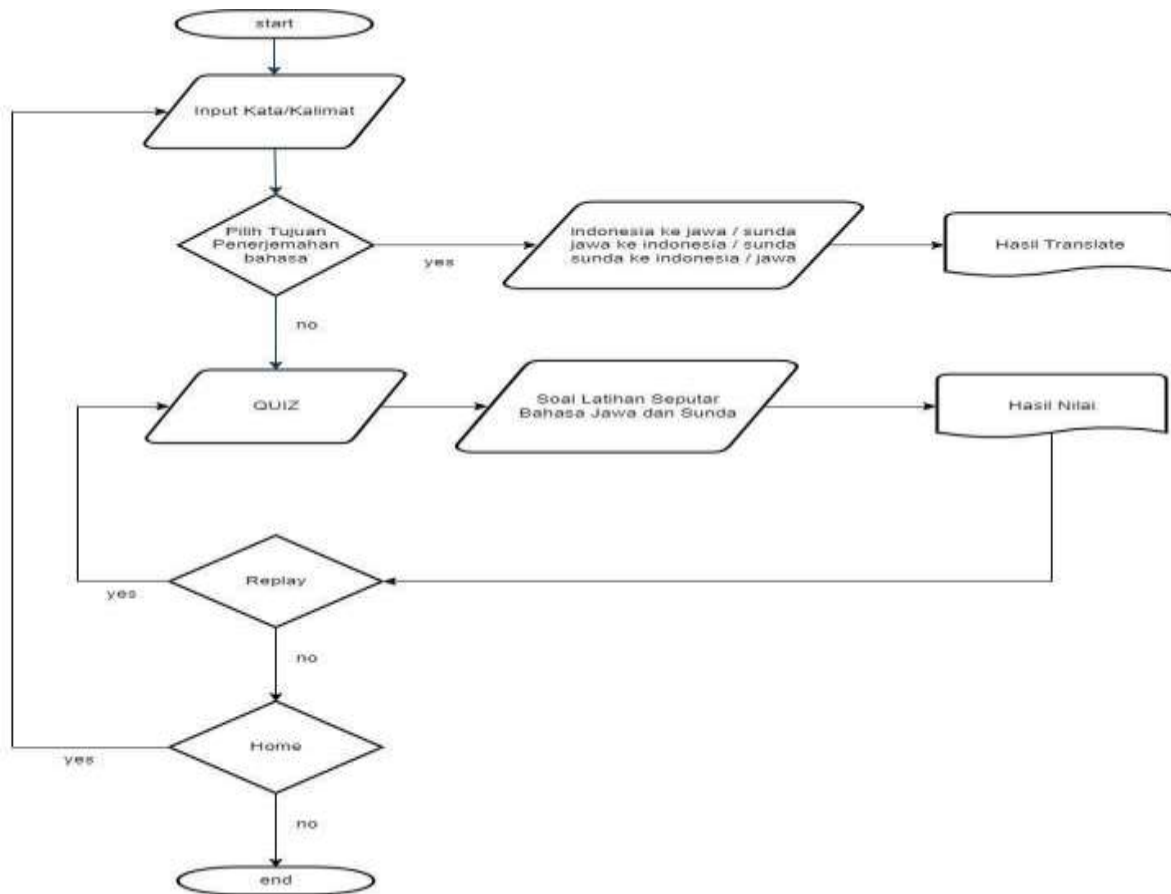
Gambar 2. Flowchart System

The main function of a flowchart is to illustrate the course of a program from one process to another. Thus, the flow of the program becomes easily understood by everyone. In addition, another function of the flowchart is to simplify a series of procedures to facilitate understanding of information such as the flowchart of the Sundanese Java application above.

Use Case Diagram

Use case diagram is one of the various types of UML (Unified Modeling Language) diagrams that describe the interaction relationship between the system and actors [13]. Use Case can describe the type of interaction between the system user and the system. The following is a use case diagram for the Sundanese Javanese Language Learning Application;
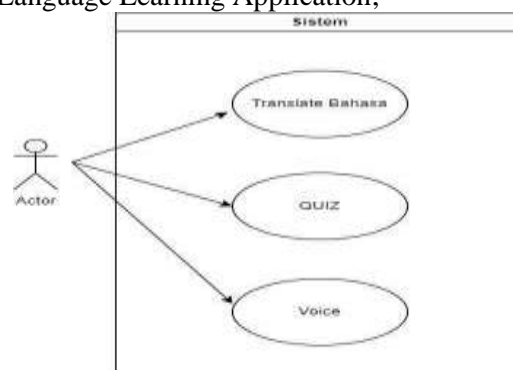

Gambar 3. Use Case Diagram

Application users can perform activities other than translate the inputted words or sentences because this activity is only performed by the system.
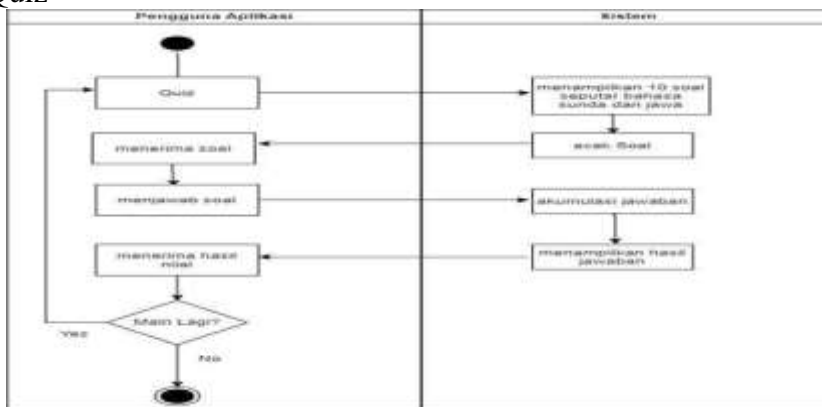
Activity Diagram

Activity diagram is a diagram that can model the processes that occur in a system. The order of the process sequence of a system is described vertically.
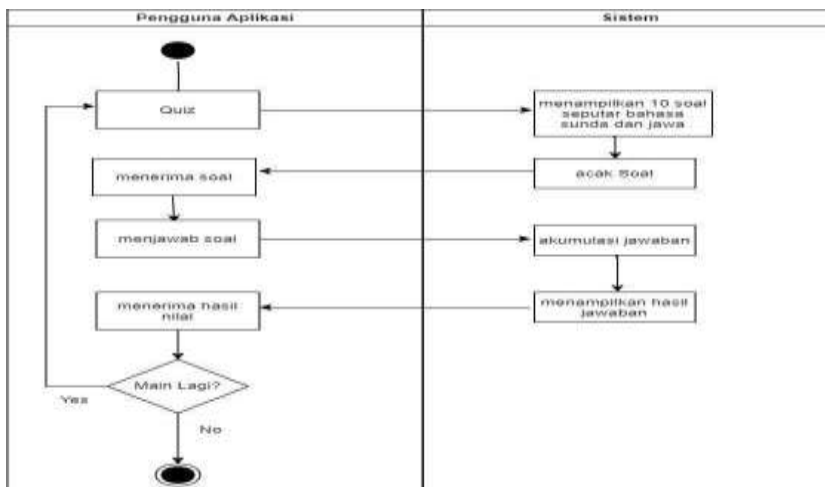
1) Language Translate
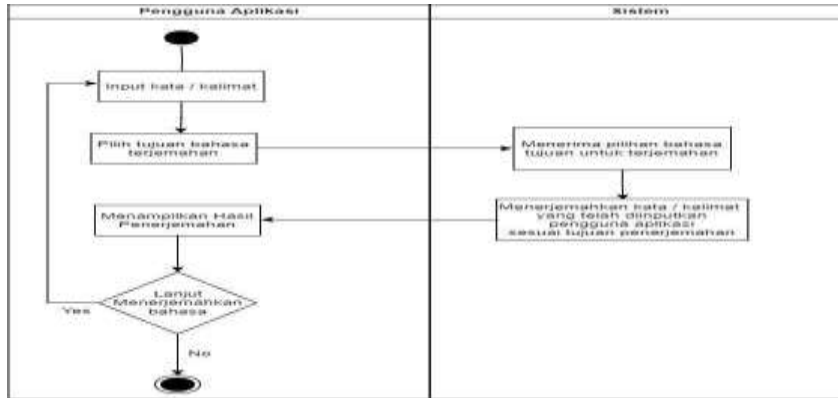
Gambar 4. Language Translate

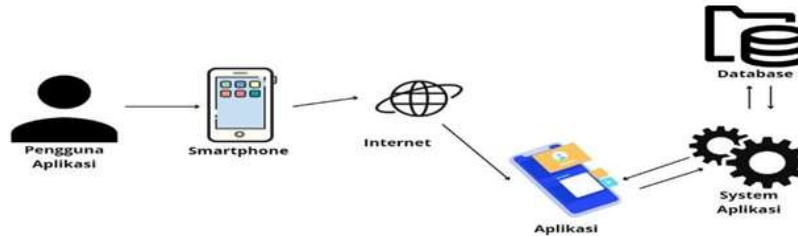2) Quiz

Gambar 5. Activity Diagram Quiz

3) Voice

Gambar 6. Activity Diagram Voice

Arsitektur Model

The following is an overview of the Architecture Model on the Android-based Sundanese Javanese Regional Language Learning Application.

Gambar 7. Model Architecture

3.   RESULTS AND DISCUSSION

Results

The implementation process of the application design is carried out with the aim of translating software requirements into the actual form that is understood by the computer In the following implementation stage is the hardware (hardware) and software (software) used in building the system as well as the files used in building the system [14].

Hardware Used

The hardware used to design and operate this Sundanese Javanese learning application are:
1. Acer Nitro 5 AN-515-57
2. Intel Core i5-11400H processor
3. 8 GB RAM
4. 512 GB hard drive
5. NVIDIA GeForce RTX 3050

Software Used

The software used in building this Sundanese Javanese language learning application are:
a. Figma
b. VSCode
c. Android Studio
d. Google Crome

With this Android-based Sundanese Javanese Regional Language Learning Application has been successfully built using Android Studio, with Kotlin language. Which where the application can run as expected by using the Sqlite database. The following is an explanation of the results of the Android-Based Sundanese Javanese Regional Language Learning Application:

1) Splash Screen Page

The splash screen page is the first display that appears on the mobile app application, which is when the user opens the application for the first time.
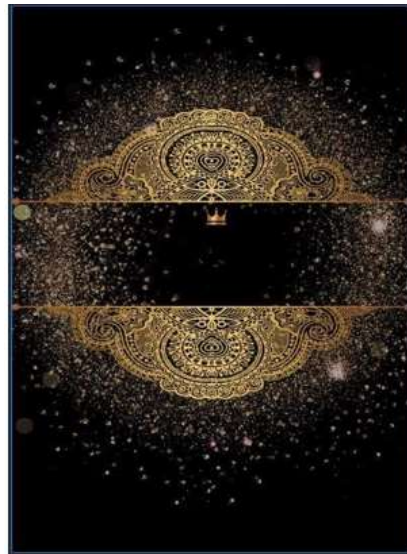
Gambar 8. Splash Screen Page

The splash screen above is the splash screen of the Sundanese language learning application.

2) Home Page

The main page contains the Translator and Voice menu and the Quiz menu, this page will appear after the splash screen.

Gambar 9. Main Page

on this page users can do language translation and practice questions.

3) Quiz Page

On the quiz page, there are 10 questions with Javanese and Sundanese regional languages as material and questions will be displayed randomly Users can answer questions by selecting the available answers if the answer is correct a green backgound will appear and if it is wrong a red background.

Gambar 10. Quiz Page

4) Quiz Score Result Page

Where this page will display the results of the value of working on quiz questions on the results page there are also buttons to play again or return to the main page.

Gambar 11. Score Result Page

Discussion

The results of the Android-based Sundanese Javanese Regional Language Learning Application system run normally and abnormally. The results of the application system are not perfect, there are still many things missing, there are still errors. The results of the Android-based Sundanese Javanese Regional Language Learning Application system that runs normally and has not run will be explained as follows.

Tabel 1. Discussion Results

Normal Running Results	Results Not yet running properly
Translator	Voice
Quiz	

The following are the test results of the Sundanese Javanese learning application from several android mobile phones. The android mobile used is the mobile android of the closest family and friends.

Tabel 2. Test Results of Sundanese Javanese Language Learning Application On Android Devices

No.	Android device name	Test Result
1	Realme C51	Successful

No.	Android device name	Test Result
2	Samsung Galaxy A04	Successful
3	Huawei Mate 10 Pro	Successful
4	Samsung Galaxy M30s	Successful
5	Oppo A55	Successful
6	Oppo A31	Successful
7	Redmi 10c	Successful
8	Oppo F11	Successful
9	Samsung Galaxy A30	Successful
10	Redmi 10	Successful

4. CONCLUSION

With this Android-based Sundanese Javanese Regional Language Learning Application has been successfully built using Android Studio, with Kotlin language. Which where the application can run as expected by using the SQLite database. The results of the Android-based Sundanese Javanese Regional Language Learning Application system run normally and abnormally. The results of the application system are not perfect, there are still many things missing, there are still menus that do not match expectations. Suggestions for other developers and aspiring developers to add UI and complete Voice.

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