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ENGINEERING PAGARALAM-INDONESIA LANGUAGE DICTIONARY SOFTWARE BY APPLYING VOICE RECOGNITION

Robert Raical, Jemakmun, RM Nasrul Halim

[123]Department of Informatics Engineering, Faculty of Computer Science, Bina Darma University
Jalan Jenderal Ahmad Yani No. 12 Palembang

Email: jemakmun@binadarma.ac.id , Robertraical93@gmail.com , nasrul.halim@binadarma.ac.id

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ABSTRACT

Besemah/Pagaralam as one of the regions in Indonesia which is located in South Sumatra Province which has a regional language called Besemah Language. Besemah language is the language used by the indigenous people of Pagaralam or people outside Pagaralam to be able to interact. The search requires a system that is easy to do, for example through voice technology, so that users do not need to type in a search, namely voice recognition technology. Voice recognition technology is currently experiencing rapid development. Voice recognition or also known as speaker recognition is designed to recognize who is speaking. It uses the acoustic character of the sound which differs between individuals.

1. Introduction

Language is the main communication tool. With language, we can communicate with each other. One of the keys to success in communicating is language accuracy [1]. The use of irregular language makes it difficult for listeners to interpret it. Indonesia is a large country, consisting of various ethnic groups and languages in each region[2]. Besemah/Pagaralam as one of the regions in Indonesia which is located in South Sumatra Province which has a regional language called Besemah Language. Besemah language is the language used by the indigenous people of Pagaralam or people outside Pagaralam to be able to interact [3].

This tourist arrival certainly cannot be separated from communication activities with local communities. This makes it difficult for local people or tourists to communicate due to the differences in the language used. In this case, the language used by the local community is the language commonly used daily, namely the Pagaralam language, while tourists generally when they are outside their hometown, use Indonesian to communicate. From the problems above, the author wants to make a language dictionary application consisting of the Pagaralam-Indonesian language based on Android. The Android-based application was chosen because currently Android is the operating system that is widely used on smartphones in the world [4]. In making this language dictionary application, a feature will be made, namely the word search feature. The word search feature is used to make it easier to find the word you want to know. This feature will be able to immediately correct if there are errors, either word or letter errors. So that later it can display the desired result even though it is wrong in writing. For that we need an effective algorithm to achieve the function of the search feature.

The search requires a system that is easy to do, for example through voice technology, so that users do not need to type in a search, namely voice recognition technology. Voice recognition technology is currently experiencing very rapid development [5]. Voice recognition or also known as speaker recognition is designed to recognize who is speaking. It uses the acoustic character of the sound that differs between individuals[6].

Voice Recognition in English, automatic speech recognition is a development of techniques and systems that allow computers to receive input in the form of spoken words. This technology allows a device to recognize and understand spoken words by digitizing the words and matching the digital signal with a certain pattern stored in a device. The spoken words are converted into digital signals by converting sound waves into a set of numbers which are then adapted to certain codes to identify the words. The results of the

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identification of spoken words can be displayed in written form or can be read by technological devices as a command to do a job.

Voice recognition tools, often called speech recognizers, require a sample of the actual spoken words from the user. The sample words will be digitized, stored in the computer, and then used as a database to match the next spoken word. Most voice recognition tools are still dependent on the speaker. This tool can only recognize words spoken from one or two people and can only recognize separate words, namely words in which there are pauses between words in their delivery. Only a small part of the equipment that uses this technology is independent of speech. This tool is able to recognize words spoken by many people and can also recognize continuous words, or words in which there is no pause between words in the delivery. Many applications have been generated from the speech recognition [8]. From the development of sound signal processing technology, the idea emerged to create a system, where this system can recognize and recognize sounds that are translated into words. From the explanation above, the author intends to raise the above problems as design material. Therefore, the authors took this topic for research with the title "Software Engineering Pagaralam-Indonesian Language Dictionary by Applying Voice Recognition". In order to facilitate communication activities between the Pagaralam community and tourists so that they can understand each other when communicating. From the development of sound signal processing technology, the idea emerged to create a system, where this system can recognize and recognize sounds that are translated into words. From the explanation above, the author intends to raise the above problems as design material. Therefore, the authors took this topic for research with the title "Software Engineering Pagaralam-Indonesian Language Dictionary by Applying Voice Recognition". In order to facilitate communication activities between the Pagaralam community and tourists so that they can understand each other when communicating. From the development of sound signal processing technology, the idea emerged to create a system, where this system can recognize and recognize sounds that are translated into words. From the explanation above, the author intends to raise the above problems as design material. Therefore, the authors took this topic for research with the title "Software Engineering Pagaralam-Indonesian Language Dictionary by Applying Voice Recognition". In order to facilitate communication activities between the Pagaralam community and tourists so that they can understand each other when communicating. the author took this topic for research with the title "Software Engineering Pagaralam-Indonesian Language Dictionary by Applying Voice Recognition". In order to facilitate communication activities between the Pagaralam community and tourists so that they can understand each other when communicating. the author took this topic for research with the title "Software Engineering Pagaralam-Indonesian Language Dictionary by Applying Voice Recognition". In order to facilitate communication activities between the Pagaralam community and tourists so that they can understand each other when communicating.

So that the discussion is more focused and in accordance with what is expected, the researchers limit the problem as follows: a). This dictionary translates only in the form of words, b). This dictionary can translate some Pagaralam words into Indonesian, c). This dictionary does not have the same word and d). Word search using voice recognition.

Research aims; a). Creating an effective media to help tourists to learn and know Pagaralam Language and b). Can help preserve Pagaralam language as one of the traditional languages in Indonesia. Furthermore, the expected benefits; a). Developing Pagaralam-Indonesian Language Dictionary Software Engineering By Applying Voice Recognition and b). Develop the recognition of the fence natural language using voice recognition.

2. Method

2.1. Research methods

The method used is a descriptive method where the research method is intended to describe existing phenomena, which are currently or in the past [9]. This research does not make changes to the data and variables, but describes a condition as it is. The description of conditions can be individual or using numbers [10].

2.2. Method of collecting data

Data collection methods used in this study are; a). Library, Collecting data by searching and studying data from books or from other references related to writing research proposal reports. The book used by the author as a reference, while the method used by the author in designing and developing can be seen in the

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bibliography, b). Observation, this method is done by observing directly the situation and activities, in order to get accurate information.

2.3. System Development Method

The system development method used by the researcher is the Prototype Method, this method is one of the most widely used methods in software development. According to Pressman Evolutionary models are iterative, they are characterized in a manner that enables you to develop more complete versions of the software. In the paragraphs that follow, I present two common evolutionary process models Prototyping[11].

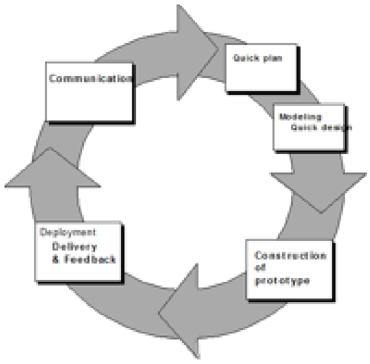

Figure 1. Prototyping method

The prototyping method as a new paradigm in the development of management information systems, is not only an evolution of the existing information system development methods, but is also a revolution in the development of management information systems. In addition, to model a software requires several stages in the development process [12]. This stage will determine the success of a software. Software developers must pay attention to the stages in the prototyping method so that the final software can be accepted by users. And the stages in the prototyping are as follows, a). Communication, at this stage defines the problems and requirements of the overall software, identifies all the requirements, and outlines the system to be made, b). Quick Plan, a quick plan by making a temporary design centered on serving to customers, c). Quick Design Modeling, System Modeling in this distribution information system uses system modeling using UML which consists of use case diagrams, activity diagrams and class diagrams, d). Construction of Prototype This stage is carried out by the researcher is to make the system into the appropriate programming language in this case using the PHP and MySQL programming languages, and e). Deployment Delivery and Feedback, in this stage the researcher sends the system to the object and receives feedback from the object so that the system that has been built by the researcher is in accordance with the wishes of the object [11]. System Modeling in this distribution information system uses system modeling using UML which consists of use case diagrams, activity diagrams and class diagrams, d). Construction of Prototype This stage is carried out by the researcher is to make the system into the appropriate programming language in this case using the PHP and MySQL programming languages, and e). Deployment Delivery and Feedback, in this stage the researcher sends the system to the object and receives feedback from the object so that the system that has been built by the researcher is in accordance with the wishes of the object [11]. System Modeling in this distribution information system uses system modeling using UML which consists of use case diagrams, activity diagrams and class diagrams, d). Construction of Prototype This stage is carried out by the researcher is to make the system into the appropriate programming language in this case using the PHP and MySQL programming languages, and e). Deployment Delivery and Feedback, in this stage the researcher sends the system to the object and receives feedback from the object so that the system that has been built by the researcher is in accordance with the wishes of the object [11]. Construction of Prototype This stage is carried out by the researcher is to make the system into the appropriate programming language in this case using the PHP and MySQL programming languages, and e). Deployment Delivery and Feedback, in this stage the researcher sends the system to the object and receives feedback from the object so that the system that has been built by the researcher is in accordance with the wishes of the object [11]. Construction of Prototype This stage is

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3. Results and Discussion

The results of the research that were found were the application of software engineering to the Pagaralam-Indonesian language dictionary, the final result of all activities and stages of system development that had been carried out was the application of the designs described in the previous chapter which consisted of file design, input design , and output design. The programming language used in building this program is PHP (PHP Hypertext Processor). The main purpose of making this program is to help tourists to learn and know the Pagaralam language. In administration, this system helps provide convenience to the user administrator (the user) to be able to learn and know the Indonesian-Pangaalam language on the system.

3.1 Main Page View

The main page is the page that is displayed to the user after opening the application. This page contains menus namely Dictionary, Help and Exit. Here is the main page view, namely:

Figure 2. Main page

3.2 Page View Select Dictionary

The select dictionary page is a page that displays options in the Pagaram-Indonesian Dictionary application. On this page the user can choose to open the Pagaralam-Indonesian or Indonesian-Pagaralam dictionary. Here is how the select dictionary page looks like:

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Figure 3. Page View Select Dictionary

3.3 Pagaralam-Indonesian Dictionary Page Display

The Pagaralam-Indonesian dictionary page is a page that displays the translation of Pagaralam into Indonesian. On this page the user can choose to type the desired word or use voice recognition and then press the Translate button. The following is the page view of the Pagaralam-Indonesian dictionary, namely:

Figure 4 Pagaralam-Indonesian Dictionary Page Display

3.4 Pagaralam-Indonesia Voice Recognition Page Display

The Pagaralam-Indonesia voice recognition page is a page that displays a microphone symbol indicating the user can say the desired word. Then the application will recognize the word and translate it from Pagaralam to Indonesian. The following is the display of the Pagaralam-Indonesia voice recognition page:

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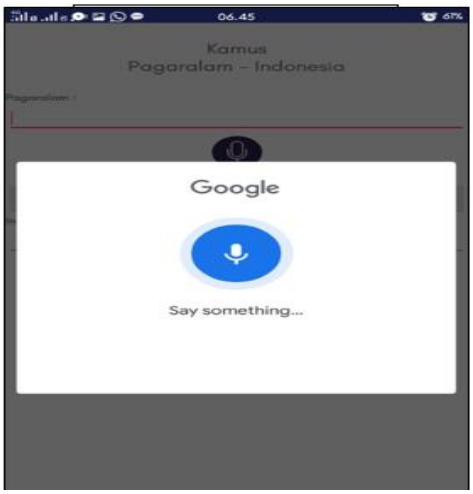

Figure 5. Pagaralam-Indonesia Voice Recognition Page Display

3.5 Pagaralam-Indonesian Translation Results Page Display

The Pagaralam-Indonesian translation page is a page that displays the results of the translation in the Pagaralam to Indonesian dictionary. On this page users can see words that have been translated into Indonesian. The following is the page view of the Pagaralam-Indonesian translation, namely:

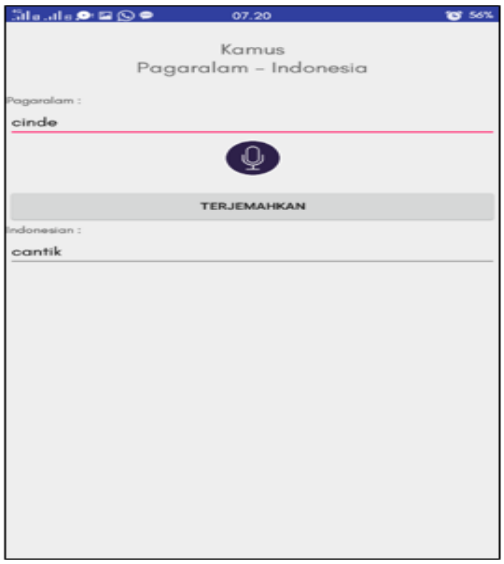

Figure 6. Page Display of Pagaralam-Indonesian Translation Results

3.6 Indonesian-Pagaralam Dictionary Page Display

The Indonesian-Pagaralam dictionary page is a page that displays the Indonesian to Pagaralam translation. On this page the user can choose to type the desired word or use voice recognition and then press the Translate button. The following is a page display of the Indonesian-Pagaralam dictionary, namely:

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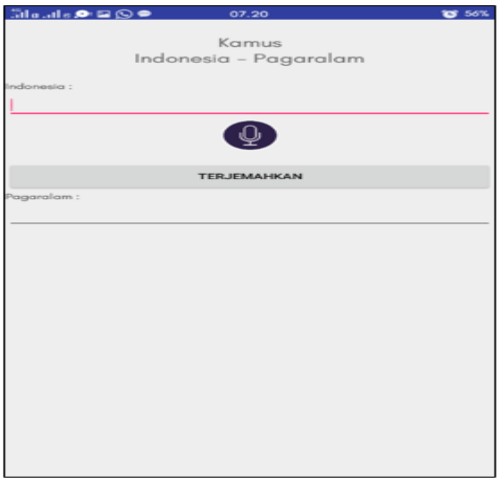

Figure 7. Indonesian-Pagaralam Dictionary Page Display

3.7 Voice Recognition Indonesia-Pagaralam Page Display

The Indonesia-Pagaralam voice recognition page is a page that displays a microphone symbol indicating the user can say the desired word. Then the application will recognize the word and translate it from Indonesian to Pagaralam. The following is the display of the Indonesia-Pagaralam voice recognition page:

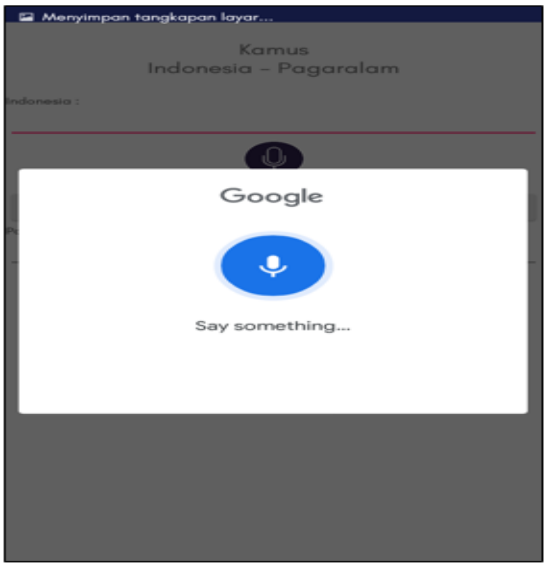

Figure 8. Voice Recognition Indonesia-Pagaralam Page Display

3.8 Indonesian-Pagaralam Translation Results Page Display

The Indonesian-Pagaralam translation page is a page that displays the translation results in the Indonesian to Pagaralam dictionary. On this page, users can see words that have been translated into Pagaralam. The following is the page view of the Indonesian-Pagaralam translation, namely:

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Figure 9. Indonesian-Pagaralam Translation Results Page Display

3.9 App Help Page View

The application help page is a page that displays instructions for using the application so that users can understand the steps to operate the Pagaralam – Indonesian dictionary application. Here's how the app's help page looks like:

Figure 10. Application Help Page Display

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4. Conclusion

Based on the results of the research that has been done, the conclusion that is put forward is that this research produces Pagaralam-Indonesian language dictionary software by applying voice recognition. Through the Android platform, it helps as a Pagaralam language learning application that utilizes speech recognition technology. The application created has succeeded in becoming an effective medium to help tourists learn and know the Pagaralam language and participate in preserving the Pagaralam language as one of the traditional languages in Indonesia.

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