ANALYSIS OF GEOGRAPHIC INFORMATION DESIGN FOR HOTEL LOCATIONS IN LAU GUMBA VILLAGE BASED ON ANDROID

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Article Info	
	Lau Gumba Village is a village located in Brastagi District, Karo Regency, North Sumatra Province which is quite well known because it has quite interesting tourist objects to visit. The information system that presents information on tourist attractions in the village only displays pictures and names which are presented in the form of maps, newspaper and web advertising media that do not provide direct instructions to the destination tourist location. The problem obtained from the media information for tourists is that they do not get direct instructions on the location of the tourist attraction geographical position. This requires technology that can present tourist attraction information, namely Geographic Information Systems (GIS). So that tourists who want to travel to Lau Gumba Village but still don't know the location or place of an interesting tourist attraction to visit can be known by tourists who will visit. To overcome this problem the author uses an approach to a digital mapping model in the form of a GIS (Geographical Information System) based on an Android mobile using Google Maps as a digital map. The method used in this research is using UML (Unifed Modeling Language), PHP program, java and MySQL database as data storage. The Geographic Information System (GIS) for natural tourism objects has two programs, namely an admin program to manage web-based tourism data and a user program to display android-based tourist objects. This geographic information system aims to provide convenience and speed to the public in obtaining information about Natural Tourism Objects in Lau Gumba Village

1. Introduction

Lau Gumba Village is a village located in Karo Regency, North Sumatra Province. Karo Regency is bordered to the north by Langkat and Deli Serdang regencies, to the east by Simalungun and Deli Serdang regencies, to the south by Dairi and Toba Samosir regencies and to the west by Southeast Aceh Regency/NAD Province. Lau Gumba Village is located 49 km north of Langkat Regency and Deli Serdang or 52 km east of Dairi and Toba Samosir Regency, and is located on the North Sumatra Cross road that connects North Sumatra Province with Aceh Province. Brastagi District consists of 4 Gundaling II, Gurusinga, Lau Gumba, and Raya villages. Lau Gumba Village is located in the highlands of Karo Regency, so that the air in this village is quite cool. The Tourism Sector is the mainstay of Lau Gumba Village's potential, continues to build new tourist objects to support the plan and vision of "The Realization of Excellent Tourist Destinations with Sustainable Competitiveness and Capable of Encouraging Regional Development Towards a Modern Village Based on the Environment".

GIS can be presented in the form of desktop applications or web-based applications. GIS can also provide an explanation of an event, and other strategic plans and can help analyze general problems such as economic problems, population, social governance, defense and tourism. The selection of the presentation of information to be used in this study, in the Geographic Information System a database is needed for storing maps of tourism objects and lodging in Lau Gumba Village and information covering tourist destinations the. In this study, researchers chose Web Logs as a means of database storage by considering various things such as ease of access and flexibility of information that can be conveyed by using web logs. In accordance with the description above, the need for a tourism Geographic Information System (GIS) in Lau Gumba Village which requires

information facilities in the form of desktop applications and web-based applications. This research was conducted with the assumptions made by the researchers themselves. For this research, the researcher took the title of the research on "Geographical Information System for Tourist Objects and Lodging in Lau Gumba Village, Brastagi District, Karo Regency Based on Android"..

2. Research methods
2.1 Research Stages

At the research stage, the flow of the research will be described and explained one by one how the system of the entire research will be built. The following is a picture of the research stages.
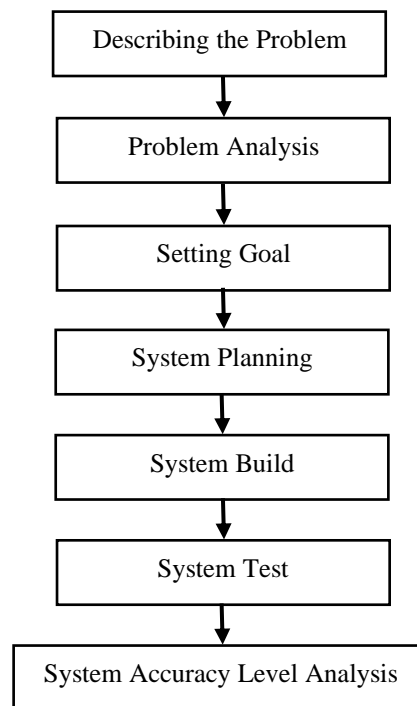

Figure 1. Research Stage Design

1. Describing the Problem
   Describing the problem transparently will support in preparing and realizing a flood detection system tool by measuring the water level to be studied, it must be described first, because without being able to describe the problem, determine and define the boundaries of the problem to be studied, there will never be a best solution. the problem. So this step is the most important first step in this research.
2. Problem Analysis
   The problem analysis step is a step to find out the problem that has been defined by its scope or limitations. By analyzing the problems that have been set, it is hoped that these problems can be studied easily.
3. Setting Goals
   Based on the understanding of the problem, the objectives to be achieved in conducting this research are determined. At this goal set targets to be achieved, the most important in solving existing problems
4. System planning
   This stage is the stage of the design of the device that is carried out, at this stage the framework of the device is made and preparation of the arrangement of the flood detection system tools by measuring the water level
5. System Build

This stage is the stage for making the control system tool turn on and off the room lights remotely. The manufacture of the tool is based on the framework and design of the tool that was made in the previous stage.

6. System Test

Testing the tool is done by detecting the water level using an ultrasonic sensor which is controlled by the NodeMCU development board microcontroller as a control center and is connected and equipped with a wifi network.

7. System Accuracy Level Analysis

This stage is the stage where the analysis is carried out in conducting internet communication in remote areas with 3G network coverage.

3 Results and Discussion

After collecting data in the field, data analysis will be carried out on the data that has been obtained. To achieve the research objectives as expected, the data that has been collected will be analyzed, because it is very influential on drawing conclusions. The data analysis technique used in this research is quantitative descriptive analysis. As stated by Nazir (1995: 63), that to find out the problems in society, methods and processes that apply in society related to activities, views and effects of phenomena are used from a descriptive phenomenon. The data analysis technique used in this research is map interpretation which is integrated with GIS. The data for the location of gas stations obtained from the field were analyzed spatially using the RBI map, the analysis model used was spatial pattern analysis, spatial association analysis.

In the process of working on the two spatial analysis models, the Arc/View software version 3.3 will be used Quantitative descriptive analysis techniques Quantitative descriptive analysis is used, mainly to provide explanations of phenomena that arise from spatial analysis. The quantitative descriptive analysis technique used is the scoring model. This technique is used to evaluate the suitability of the location of tourist attractions and lodging/hotels. The benchmark for a suitable location for tourism and lodging/hotels. can be based on several factors, including: socio-economic factors of the surrounding population, and traffic management factors. However, this research is limited to two factors, namely socioeconomic factors, and traffic management factors, due to considerations of cost and time constraints. Socio-Economic Factors Parameters used for socio-economic aspects are:

radius distance between tours and inns/hotels. which is on the same road; the ratio of the number of tours and lodging/hotels. with the number of tourists visiting the Lau Guba Village Area. The ratio between the number of tours and lodging/hotels. In an area with the availability of tourist facilities and lodging/hotels, it is assumed that the number of tourists should be comparable to tourism and lodging/hotels, in terms of the availability of tours and lodging/hotels. adequate.
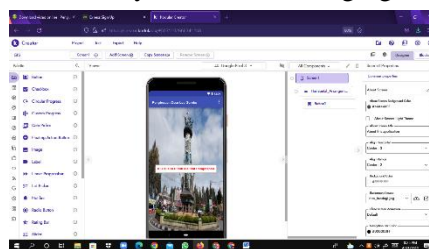

Figure 2. Main course

Currently, this Kodular Site continues to develop in making application tools to make it easier for developers to create Android applications without coding (type programs). Kodular is a website that provides tools similar to MIT App Inventor for creating Android applications using block programming. In other words, you don't need to manually type in program code to create Android applications. Kodular is providing the advantages of features, namely the Kodular Store and Kodular Extension IDE (now an AppyBuilder Code Editor) that can make it easier for developers to upload

Android applications to the Kodular Store, to make blocks of IDE extension programs according to the developer's wishes.. You you can add some advertising media in your Android application as money income. App projects that are exported from Kodular often have errors when importing or migrating their projects into IDE tools such as Thunkable, AppyBuilder, and even App Inventor, because of differences criteria on android:minSdkVersion in each IDE tools. In the main menu of the program above, there is an overview display and some guides and buttons to start the application that has been made. This application was developed with a website application, namely kodular.io is an open source web application that can be used for free and can learn about basic Android programming. Kodular is a website that provides tools similar to MIT App Inventor for creating Android applications using block programming. In other words, you don't need to manually type in program code to create Android applications. This Kodular provides the advantages of features, namely the Kodular Store and the Kodular Extension IDE (now an AppyBuilder Code Editor) that can make it easier for developers to upload Android applications to the Kodular Store, to make blocks of the IDE extension program according to the developer's wishes.
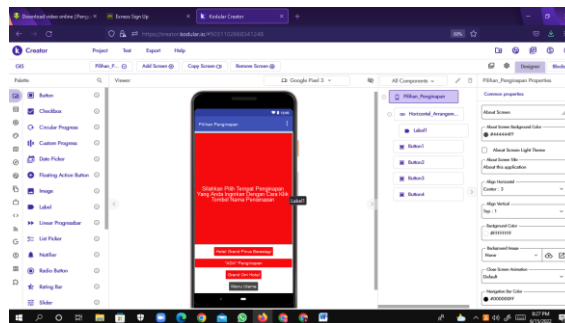

Figure 2. Lodging Options Display

In the display menu of lodging options, the user or the user of this application can choose the hotel or inn they want to go to so that when the button is clicked on the display it will enter the hotel or inn map making it easier for visiting tourists to find the nearest hotel or inn.
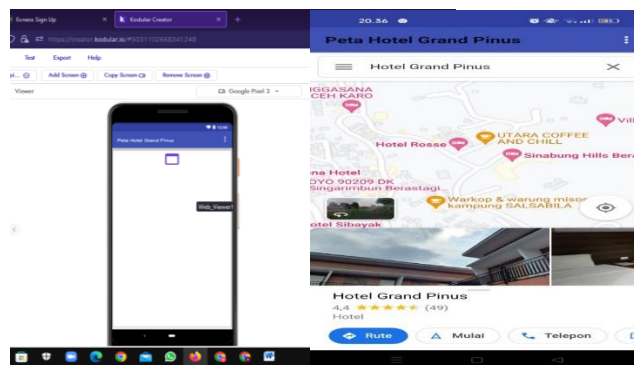

Figure 3. Map View

In the map view, there are several components that are used to run the map to be created, namely screen, web voucher and deeplink. The screen is used as a screen display to display a map, a web viewer to display a web view of the map site which will be linked to the application then for deeplink tools used for map display so that it can appear on the android application.

4. Conclusions

The conclusions of the research that has been carried out to improve the quality of subsequent research are as follows Create an information system reading program using a code that is integrated directly from the internet, The program created is only a map display which is the core of this research, Applications developed must be connected to the internet, The application developed is quite user friendly so it is easy to use In this study, the application that was developed only explained the location of the inn in Lau Gumba Village, Berastagi District, Karo Regency to make it easier for visiting tourists, the author's suggestion for further research should be to develop better applications like this by increasing the number of rooms available at each hotel..

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