

Design Of Hangout Location Search Application In Medan City Using Geographic Information System (GIS)

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Abstract: GIS or planning and geology-based data framework is an administrative tool as data that utilizes a PC connected to the planning and investigation framework of everything, and events that occur on this planet. Because GIS is a field of science and technology with a relatively high demand for digital maps, its definition continues to evolve. Especially by tracing the home base area in the city of Medan. The problem that often arises when looking for a place to hang out is that not everyone knows the hangout in the city of Medan. Therefore, there is a need for a smartphone application that can track the location of hangouts in Medan. The programming language of this application is Android Studio, and the database is Firebase. Regarding how to use it, just open the GIS application at your hangout place and the method is very easy because nowadays the world of mobile phones or the internet has become commonplace and is widely used by the community. The end result is a GIS-based Android smartphone information system that can be used by the public to find hangouts in the city of Medan. By involving the existing apparatus in GIS to search for the home base area, it is believed that it can help the local community, especially the younger generation, in tracing the home base area in Medan.

INTRODUCTION

Medan City, as one of the largest cities in Indonesia, has rapid development in the tourism and lifestyle sectors. Various hangouts such as cafes, restaurants, and entertainment venues are increasingly mushrooming to meet the needs of the community, especially the younger generation who tend to like to look for unique and comfortable locations to socialize, work, or just relax. However, with the many choices available, people often have difficulty finding a hangout location that suits their preferences based on location, facilities, and atmosphere. Geographic Information System (GIS) technology can be a solution to overcome this problem. GIS allows mapping and analysis of geographic data, so that it can be used to create applications that can display hangout

locations in Medan City interactively. With this GIS-based application, users can easily search for hangouts based on the nearest location, category, and certain preferences. (Izhari & Dhany, 2023)(Hendrawan, Perwitasari, & Ritonga, 2023)(Syahputra Novelan & Putra, 2020)

In addition to providing easy access to information, this application also has the potential to improve the local economy by supporting the promotion of small and medium enterprises (SMEs) that are not yet widely known by the public. On the other hand, the use of GIS in this application can enrich the user experience by providing route information and estimated travel time to the selected location. (Rizal & Fachri, 2023)(Rizal et al., 2022) (Septian Hardinata et al., 2022)(Supiyandi et al., 2022)(Bangun Sistem et al., 2019)

Thus, the development of a GIS-based hangout location search application in Medan City is expected to provide significant benefits to the community, both in terms of ease of information and in supporting local economic growth.

RESEARCH METHODS

This exploration uses an improvement technique called cascade, specifically the progress strategy of the methodology used in the illustrative subjective examination. This technique is a process of product improvement that is carried out sequentially, where progress is seen as water that continues to flow down (like a waterfall) through the stages of arrangement, display, implementation (development) and testing.

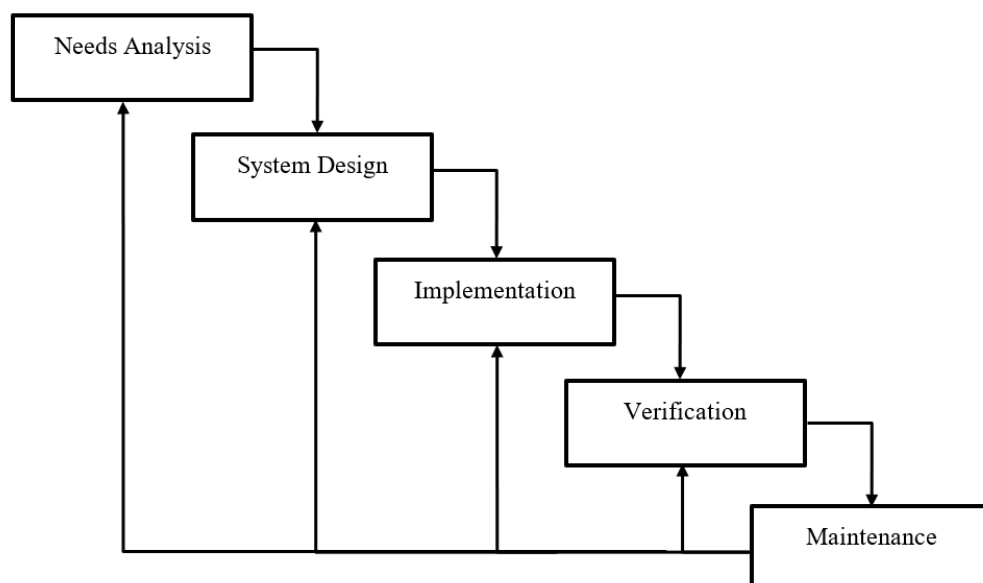


Figure 1. Research Stages

The stages in making an application are carried out according to the waterfall method scheme. The following is an explanation of the application creation scheme, namely:

a. Needs Analysis

At this stage the creator decides the administration, constraints and objectives of the framework through meetings with the framework. The system specification results from this detailed definition of requirements.

b. System Design

Before starting coding, the above requirements are converted into a software blueprint using the current system design process. We will provide solutions to the problems that arise in the analysis stage at the system design stage.

c. Implementation

The implementation stage is the planning of the system implemented into a real situation with the selection of hardware and the preparation of the design (coding). For the implementation of the system, namely by entering the design that has been made into the device provided.

d. Verification

Something that is made must be tried. Likewise with programming, all product functions must be carried out carefully so that the product is free from errors, and the results must be in accordance with the requirements that have been described in the previous stage. In addition, the testing stage determines whether the developed plan can solve the client's problem or not. Limiting the desert of web composition is the goal of this test so that the framework developed can really function as expected. This test will be completed by welcoming several meetings as testers to assess whether the system created can solve the problem.

e. Maintenance

Android maintenance and care is done at the maintenance stage. If the system's time period has expired, minor repairs will be made later if necessary. Then at that time it will return to the arrangement stage.

RESULTS AND DISCUSSION

In the output and introduction that runs on this framework, the point is to know and test the Application Plan for Finding Hangout Locations in Medan City Using the Geographic Information System (GIS) Concept. Until now, this system has only searched for hangout locations manually, either by asking the public directly. However, we rarely find information about the area of the hangout location.

1. Main Menu Design

The main menu display is the initial page that will appear when the program is run. On this page the user can choose what menu they want. The Main Menu display can be seen in Figure 2.



Figure 2. Main Menu Design

2. Display of the List of Names of Information about Hangout Places

In this display, users can select the name of a hangout before viewing information about hangouts in the city of Medan. The display of the list of names of hangouts in the city of Medan can be seen in the image.



Figure 3. Menu Selection Design

3. Overall Map Display Design

In this display, users can see overall information about hangout locations. In this display, there are several hangout markers that are visible on the map display as markers for hangout locations in Medan city. The Overall Map Display can be seen in the image.

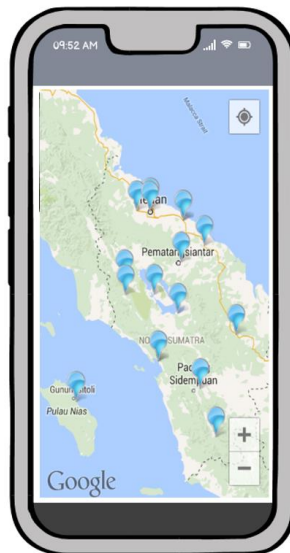


Figure 4. Overall Map View Design

4. Design of the Display of the Nearest Location for Hanging Out

The Nearest Hangout Area display on this application is a page to display the Nearest Hangout Area in the city of Medan. The nearest point map display can be seen in the image.

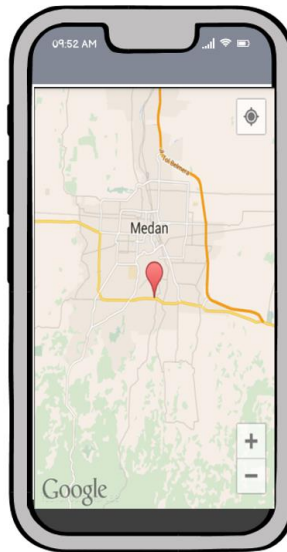


Figure 5. Nearest Location Point Design In Medan City

5. Admin Login Page Display Design

The appearance of the Admin Page of the Application for Searching for Hangout Locations in Medan City can be seen in the Pictures 6.

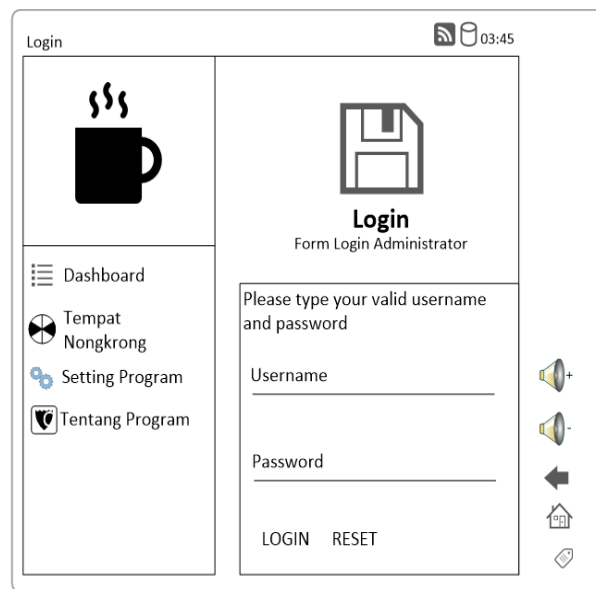


Figure 6. Admin Home Page View

6. Form Display Design for Viewing Maps on Admin

On the design page of the form display to see the map is where the admin updates the

hangout location data by using the hangout location points in the city of Medan. The design of the form display to see the map can be seen in the picture 7.

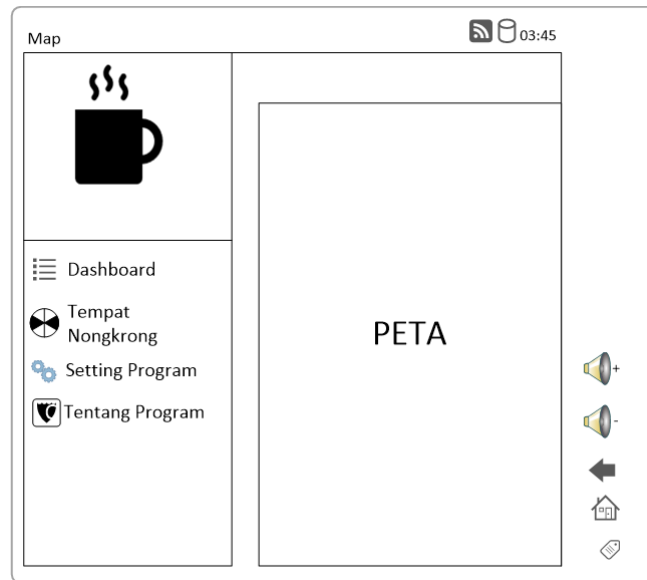


Figure 7. Form Display Design To View Map On Admin

7. Form Display Design for Viewing Maps on Admin

In this display design, it is a design where the admin can delete data on the location of hangouts in the city of Medan. The design display can be seen in the image 8.

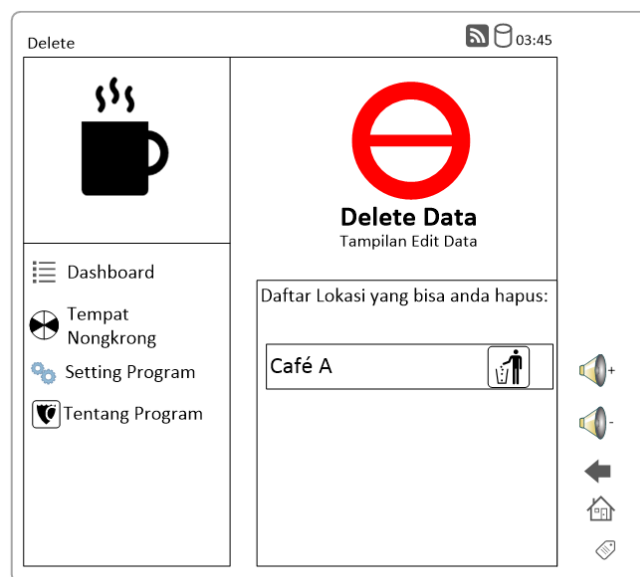


Figure 8. Design of the Display Form for Deleting Data

CONCLUSION

After describing the workflow for creating this system, the author can draw several conclusions regarding the geographic information system for determining hangout location search points in Medan City as follows:

1. With this exploration, readers can learn the design of a data framework using a programming language so that it can make it easier for the people of Medan City to search for hangout data.
2. With this exploration, readers can learn the design of a data framework using a programming language so that it can make it easier for the people of Medan City to search for hangout data.
3. With the ultimate goal of introducing clients to online-based innovations within a geographic data framework, the client's ease in reaching the home base area in the city of Medan can be utilized.
4. The improvement of this application is made and planned in such a way as to utilize the Java programming language with MySQL and UML as the framework technique so that it can plan the Regional Balancing Search Application in Medan City Utilizing the Geographic Data Framework (GIS) Idea which can be utilized quickly, productively and effectively.

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