Analysis Mapping Application Of Geographic Information System Hospital

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1. Introduction

1.1. Background

The development of increasingly rapid technological changes that make the rise. No wonder if all of the current facility has much mapped into a digital form that is easier for everyone to search for it. This is the main attraction in the development of location-based services technology.

The hospital is a professional health care institutions whose services are provided by doctors, nurses, and other health professionals. Along with needed her more in the hospital, then every community is expected to know the locations of the hospital closest to the place of residence to anticipate things that are not desirable. It takes a Geographic Information System application that can help people to find out where the locations of hospitals that will go.

In this study, the authors wanted to learn how to build the information system applications, so that the writer can know clearly about the design of information technology, and can be implemented in future studies. Based on the above, the writer gave the title description "GEOGRAPHIC INFORMATION SYSTEM ANALYSIS MAPPING THE HOSPITAL".

2. The Theoretical Basis

2.1. Review of Literature

Review this library is used for comparison among researchers that has been done and that will be designed by the researcher. Here are some of the literature review were obtained from several journals.
1. According to Ika Arfiani of Ahmad Dahlan University Yogyakarta.
Writing a journal entitled Geographic Information Systems Mapping Hospital. In the study of information systems are tools (tools) necessary and very useful to provide information to the user.
2. According to DETI Marlena and Day Aspriyono from Bengkulu Dehasen university. Writing a journal entitled Geographic Information System Layout Area Hospital and Pharmacy-Based Android Bengkulu City. In the study of geographic information technology can be implemented on android smart phone. This application is built with Java programming.

3. Analysis And Discussion

3.1. Analysis

This section describes the results of several journals and books that has been read by the author, so it will be known the results that have been made to achieve the desired goal or not.

3.1.1. The workings of Geographic Information Systems

GIS can represent the real world (real world) on a monitor as a sheet map that can represent the real world. Because the forum organizing element - an element based on its location - its location, it is a very good map to show the relationship or relationships that are owned by the elements - elements.
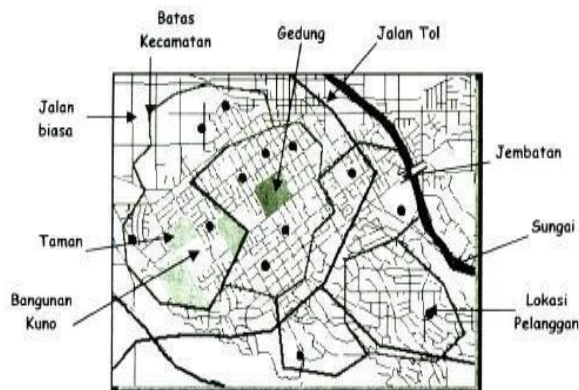
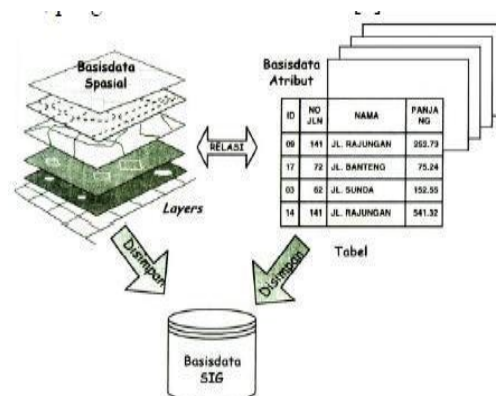**Figure 1** Examples of map and its elements.　　　　**Figure 2** Layer, Tables, and GIS data base.

SIG connect a set of elements - elements of a map with the attributes - attributes within the unit - a unit called layer. River, building, road, sea, limits - administrative boundaries, plantations and forests is an example - an example of the layer. The collection of this layer will form a GIS database. Thus, the database design is essential in GIS. The design of the database will determine the effectiveness and efficiency of the process - the process of input, management and output of GIS.

3.1.2. Android Developer Studio As The Tools

Of Android Studio is an Integrated Development Environment (IDE) specifically for building applications that run on android platform. This studio Android based on Intel iJ IDEA, an IDE for the Java programming language. The main programming language used is Java, whereas to make an appearance or layout, use the XML language. Android studio is also integrated with the Android Software Development Kit (SDK) to deploy all android devices.

Android studio is also a code editor and developer tools and android studio also has several features, such as:

1. System-based manufacture of flexible Gradle

2. Emulator fast and feature-rich

environment 3. fused to a developer for all Android devices

4. Instant Run to push changes to a running application without creating a new APK

3. Temple code and GitHub integration features to make the same application and import the sample code

6. Tools testers and extensive framework.

3.1.3. Coding on Android Studio

```
<org.osmdroid.views.MapView android:id="@+id/map"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent" />



maps = (MapView) findViewById(R.id.map);
maps.setTileSource(TileSourceFactory.MAPNIK);
maps.setBuiltInZoomControls(true);
maps.setMultiTouchControls(true);


public void test(latitude, longitude){
    GeoPoint point = new GeoPoint(lat, lon);
    IMapController mapController = maps.getController();
    mapController.setZoom(20);
    mapController.setCenter(point);

    Marker startMarker = new Marker(maps);
    startMarker.setPosition(point);
    startMarker.setAnchor(Marker.ANCHOR_CENTER, Marker.ANCHOR_BOTTOM);
    maps.getOverlays().add(startMarker);
```

3.1.4. Marker function

marker function is a sign that can be used to indicate a location on the map. Suppose want to find a place on the map, it can use a marker to give an indication on the map in accordance with what we were looking for.

Figure 3 an example of a marker on the map.

Figure 4 Main Menu.

Based on the picture above, can the coordinates of latitude - 3.402587, 103.258631 longitude and according to the state of fact that shows the location of the position of Hospital Dr. H. Abdul Moeloek, Bandar Lampung.

3.2. Discussion

This app runs on Android, and is made using the Java programming language. Through Android Mobile Device users will interact with a GUI interface (Graphycal User Interface) system.

3.2.1. Main Menu

The main menu on the system directly into the search menu location because it is basically the system is built to handle the problem of finding the location of the hospital. Early maps were displayed at the default for the city of Yogyakarta to narrow the search area. Then press the button "Check Current Location" to know the position of the presence of users. Once the location is detected then the user can search for the type of hospital in accordance desired by selecting options contained in the combo box, general hospitals, specialist hospitals, teaching hospitals, private hospitals / institutes, and clinics.

3.2.2. Input menu New Location

This menu can be accessed when there is a new hospital or no hospital that have not been entered into the database system. Then by clicking the location on the map, automatically the coordinates x and y aka generated and we are only filling up the name of the hospital and a description of the services on offer.
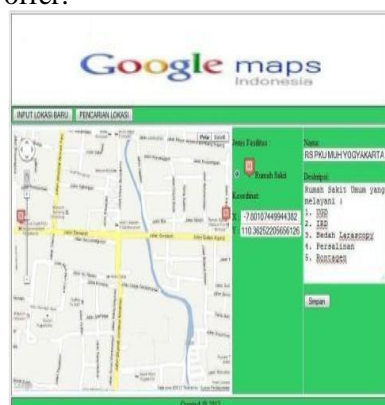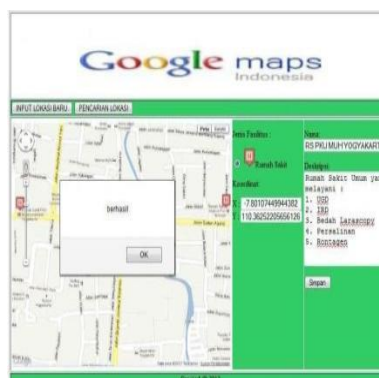

Figure 5 form input new location.

Figure 6 if the data has been successfully inserted.

Figure 7 PM if markers / signs at the location of the RS selected

4. Conclusions And Recommendations

4.1 Conclusion

Based on the research above can be summarized as follows:

1. The above information systems can be designed and developed using the Java programming language.
2. This mobile application can be used on smart phones with Android operation minimal system 4.1.2.
3. This system can display the address of the health service required by the user.

4.2 Suggestion

This information system can be developed to be more accurate, effective, and efficient in its use as well as more comes with a description of other information. So users can more easily obtain the required information.

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