GEOGRAPHIC INFORMATION SYSTEMS WEB BASED BUSINESS POTENTIAL IN BANDUNG CITY

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ABSTRAK

Department of Cooperatives, UKM and Industry, the trade is a government institution that has the task to implement the government, such as managing business data in Bandung, with the Department of Cooperatives, UKM and Industry trade investors can determine a good location for doing business, so that more effective and efficient in search business potential then needed a system that can assist in determining business potential.

With geographic information systems (GIS) will web-based information generated becomes more informative and easier to obtain data on spatial and non spatial data and equipped with Hierarcy Analytical method Process (AHP) as a system to determine the business potential.

Based on results on functional testing (alpha) and beta expected this application can help make it easier to obtain information quickly about the spread of the location - the location of the business potential as well as in determining the business potential can be made more optimal.
***Keywords**: Geographic Information Systems, Maps, potential, AHP Method*

1. INTRODUCTION

1.1 Problem Identification

How do I build a "How to build a Web-based geographic information system that is able to provide information about the area that still has the potential to start a business and businesses that are suitable for the area." The object of research conducted at the Cooperative, UKM, and Trade and Industry, Bandung

1.2 Purpose and Goal

The purpose of this research is to develop a web-based geographic information systems business potential in the city of Bandung.

The objectives of this research are:

1. Helping people who want to start a business or investors who want to develop business.

2. Providing data and web-based information in order to spread business potential in the sub region in Bandung can recognize by the public or investors or developers.

3. Ease in obtaining information on non-spatial data and spatial data quickly about the spread of the location - the location of the business potential is equipped with supporting spatial map, like roads, district boundaries, gas stations and tourist attractions on the map.

4. By drawing through a digital map information obtained is expected to more integrated spatial data with non-spatial data.

5. Determining business potential can be made more optimal, than the time needed to evaluate the business potential to be faster because it was supported by an integrated system.

1.3 Benefit

The benefits in the development of geographical information systems, among others:
1. Can help facilitate the search for potential business locations.
2. Can accelerate the process of finding information on potential business.
3. Can introduce the potential that exists to the general public.
4. Can facilitate the reading of maps of distribution of the existing potential.

2. MODEL, ANALISA, DESAIN, DAN IMPLEMENTASI

2.1 Model

1. Stage of data collection

a. Library Studies.

b. Observation.

c. Interview.

2. Stage of software development.

a. Requirements analysis and definition

b. System and software design

c. Implementation and unit testing

d. Integration and system testing

e. Operation and maintenance

2.2 Problem Analysis

*Bandung city has 26 districts, the most prominent type of business as the potential of Bandung itself is a distribution business, fo, supermarkets and hotels. Unfortunately, processing and development of this potential is less coordinated so that its growth becomes slower. This is because the difficulty to obtain information about the business potential of what is suitable to be developed and located in areas where business potential is located. Because of the lack of this information is so that the developer or investor is difficult to identify areas of potential business. Therefore, there should be a system that can provide information on locations where the business potential in the form of digital map data with the attributes to be easy to digest and easy to get geographic information quickly and integrated from the objects of this potential, because during both public and government tool in the search for the location and potential data is still done manually through ordinary paper maps are hard to find although there are government institutions but this map is not up to date and failed to give a satisfactory picture, and finally had to look for and direct observation to what addressed and it is very substantial cost.
2.3 Geographic Information System
Geographic Information System (Geographic Information System) is a special information system that manages data that have spatial information (spatial reference). Or in a narrower sense, is a computer system that has the ability to build, store, manage and display geographical berefrensi information, such as data identified according to their location, in a database.*

2.4 Flowchart Web GIS Database Management

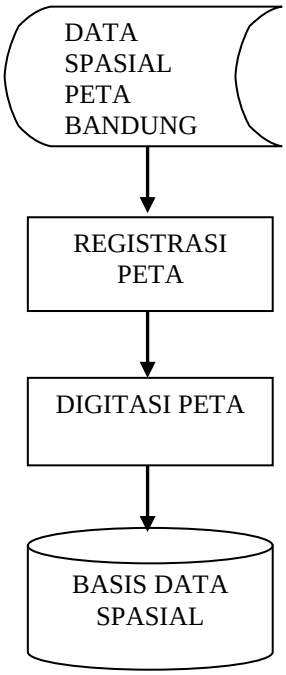


Figure 1. Making Spatial Data

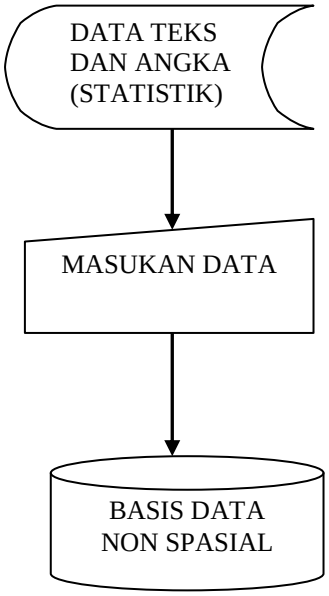


Figure 2. Non-Spatial Data Creation.

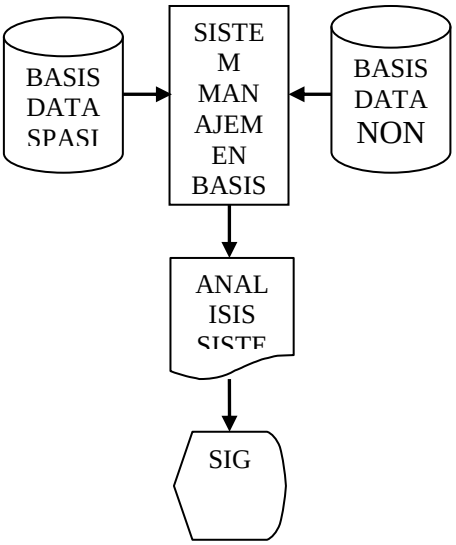


Figure 3. Planning diagram database

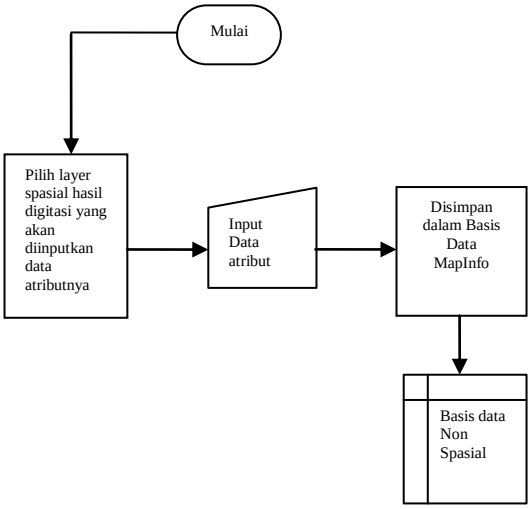


Figure 5. The flow chart of processing non-spatial data.

2.5 GIS Web Development Flowchart

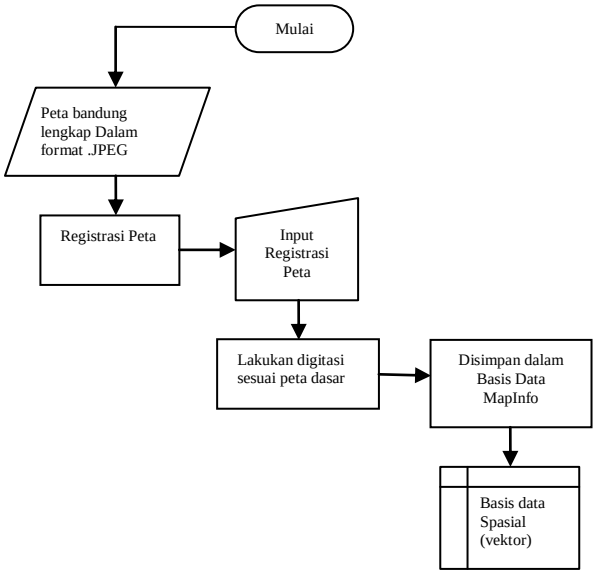


Figure 4. Spatial data processing flow diagram.

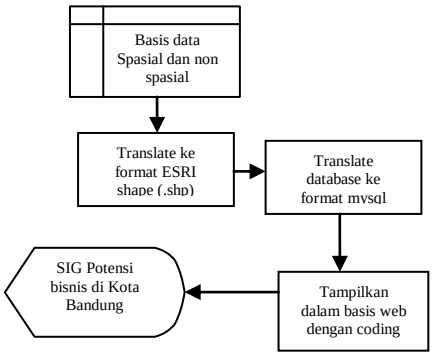


Figure 5. Data conversion process flow chart.

2.6 Design

1. ERD (Entity Relationship Diagram)

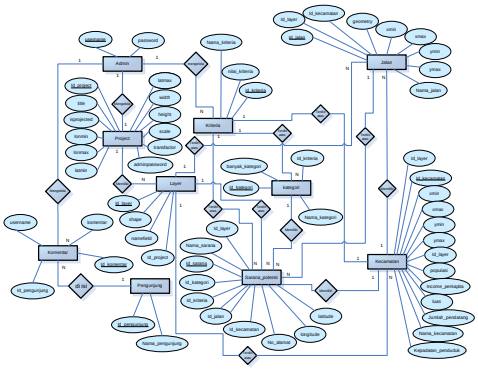


Figure 6. ERD (Entity Relationship Diagram)

2. Relasi tabel

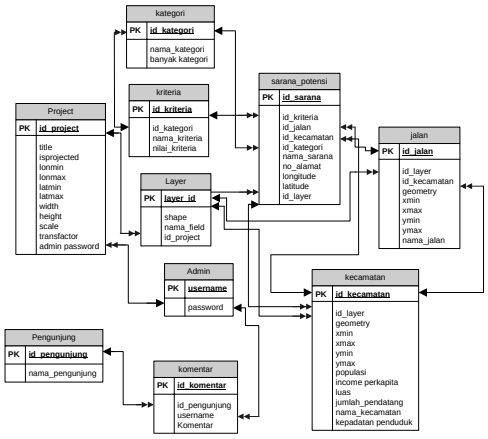


Figure 7. Relasi table

3. Diagram Konteks

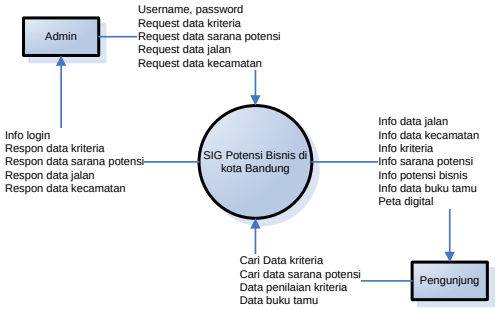


Figure 8. Diagram konteks

4. DFD (Data Flow Diagram)

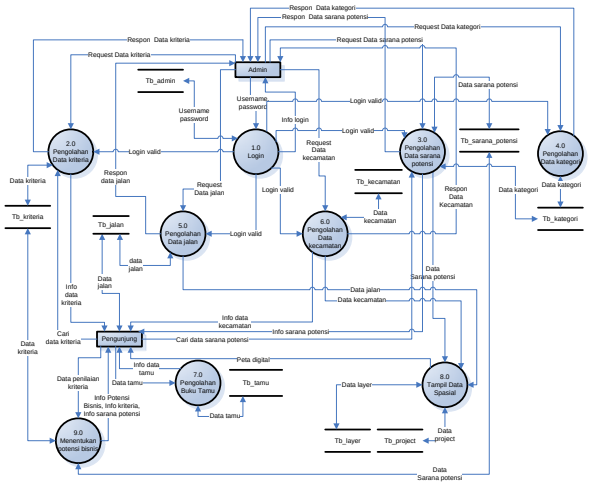


Figure 9. DFD level 1

5. Menu web admin

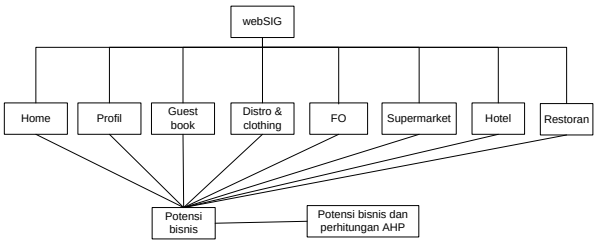


Figure 10. Arsitektur menu web admin.

6. Menu web pengunjung

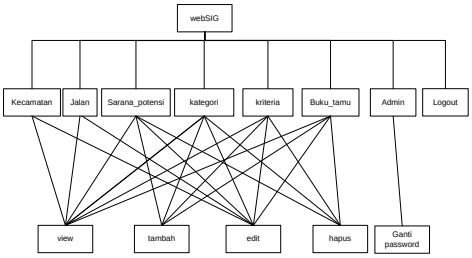


Figure 11. Arsitektur menu web visitor.

2.7 Implementation

The software used on computer systems in building GIS Web site identification of potential areas are as follows:

1. Operating System Windows XP Professional SP 2.

2. Macromedia Dreamweaver 8 for writing program code.

3. Map Info Professional 10.0.

4. Arc View 3.0.

5. Extension Opensvgmapserver101

6. Internet Explorer as your browser

7. Wampserver for Internet and local database storage

8. SVG Viewer as a plugin to read the geometry data.

1. Views base map that will be registered

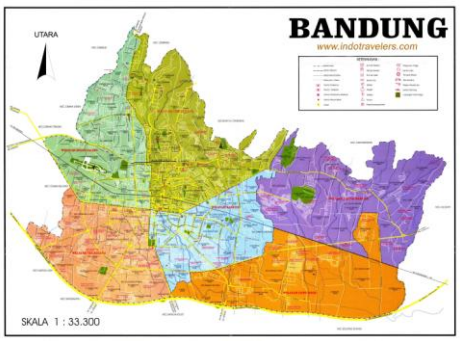


Figure 12. Peta dasar

2. Display maps and digitizing the results of the registration

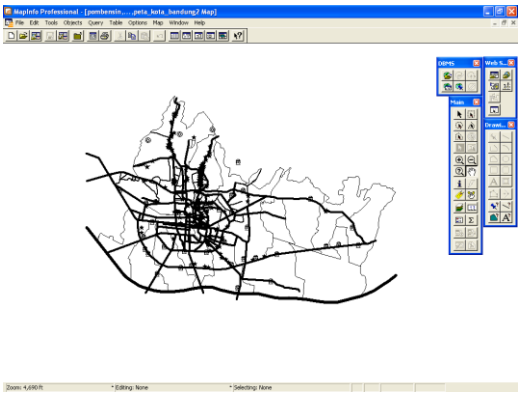


Figure 13. Map of the registration and digitization

3. Conversion results from the GIS database. TAB to ESRI formats (. Shp)

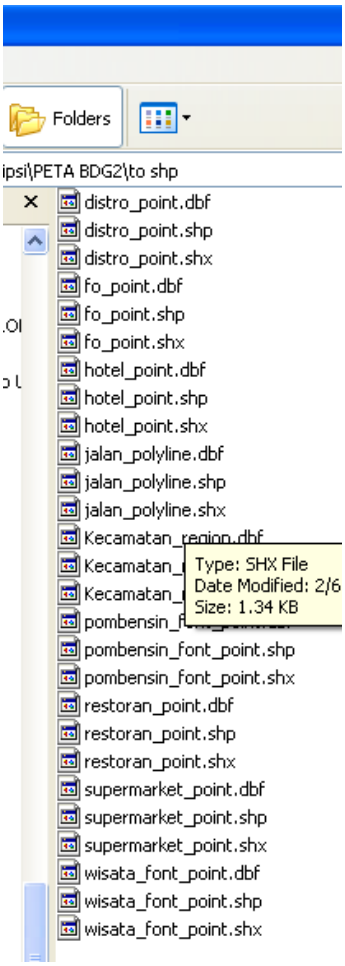
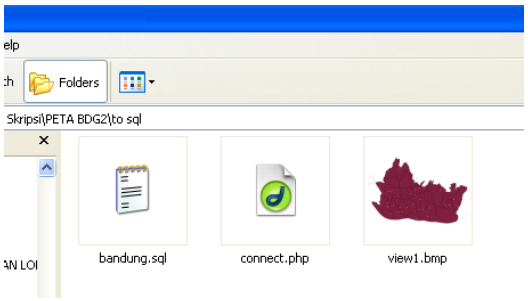


Figure 14. Spatial Data in ESRI format

4. GIS database conversion result from ESRI format to mysql format.



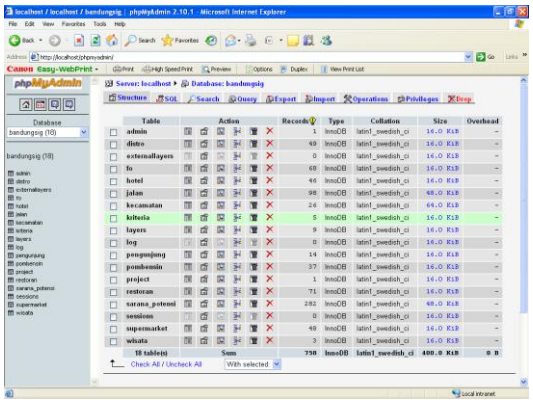


Figure 15. Database SIG mysql

5. The main visitor page Views



Figure 16. Page index visitors.

6. Page views potential

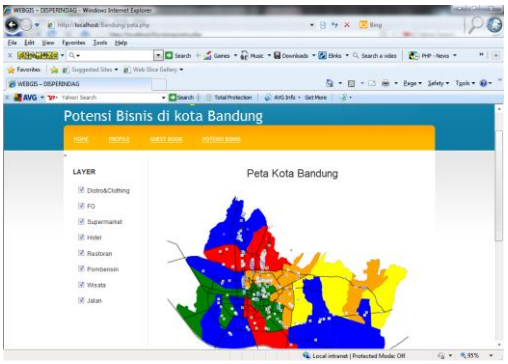


Figure 17. Potential pages

7. Info display objects on the map

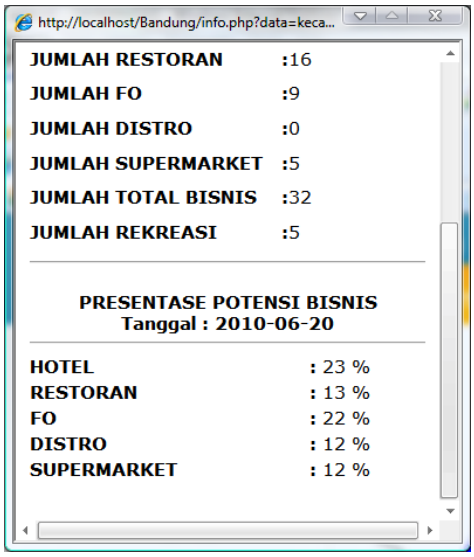


Figure 18. Map info page

8. View admin menu

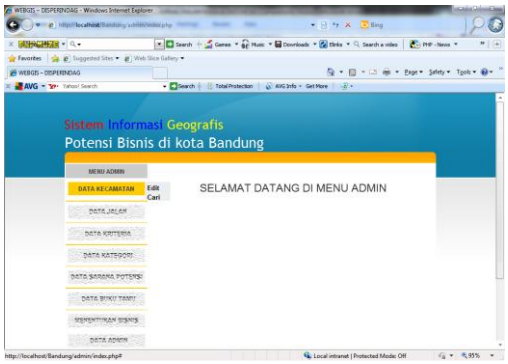


Figure 19. Admin menu page

3. RESULTS AND DISCUSSION

3.1 Potential Areas GIS Facilities

Information system built has the following capabilities:

a. *Produce distribution maps of the location of agricultural commodities, livestock and industry along with other supporting objects such as roads, district boundaries and location of the traditional markets that affect the potential for commodity distribution activities.*

b. *Produce classification maps of agricultural commodities, livestock, and industry data along with the attributes of the object potential that exists on the map and can be accessed directly from the map.*

c. *Produce maps of distribution range of these commodities.*

d. *Produce map of the area that has no potential.*

e. *Can perform a combined analysis of various data to produce a conclusion or a result of geographic analysis.*

3.2 Software

WebSIG will run normally on a software specification as follows:

a. *Windows Operating SystemInternet*

b. *Explorer with SVG ViewerIE*

c. *Or Mozilla Firefox with SVG ViewerFirefox*

SVG (Scalable Vector Graphics) is a standard format document provided to create vector based graphics content over the web. With the concept of this vector, the resulting display can be arranged and processed by computing sekalanya graphics so that if the enlargement process (zoom) the results remain good.

3.3 How it Works GIS

Connecting a set of GIS maps elements with attributes in a unit known as "layers". Examples of layers such as rivers, buildings, roads, marine, administrative boundaries, forest and others. A collection of these layers form the basis of GIS data. Thus, the database design is essential in GIS to determine the effectiveness and efficiency of the processes of input, management and output of GIS.

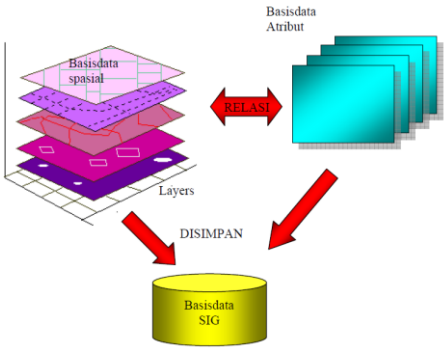


Figure 20. How it Works GIS

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 CONCLUSIONS

1. *The system built to present a picture spread of the potential areas in Garut district with a web-based so that the potency of Garut region can be recognized by society and apart from that we can know where the dominant region has great potential and areas which do not.*
2. *Given this geographical information system, information distribution of potential can be obtained quickly and can produce output in the form of digital maps.*

3. *In this system, a database of each object maps can be updated by admin in accordance with the needs and real data so that data become more up to date and quite helpful for people or investors who want to develop their potential and quite helpful in planning activities and distribution of the commodity potential.*
4. *With the presentation of spatial data through mapping and non spatial data in this system, making data more integrated with each other.*

4.2 RECOMMENDATIONS

1 *Addition of another entity or table that supports the addition of the entities that are available in this system will make the system more efficient.*

2 *Because of the limited tools that are owned by me in building a geographic information system was expected to map the future in case the registration is more than four points of reference, and using tools such as GPS to find the point with a jump directly to the field to the value of the error can be more accurate coordinates in minimal.*

3 *In spatial data processing is expected to be further enhanced where the admin can directly manipulate the spatial data not only point data only.*

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