Geographic Information System Tourism In Kudus

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***Abstract*—the tourism service have been manually conducted in Kudus, in a such way they are served by books,brochure, poster,etc. for the every kind of tourists objects there. Tourism object mapping is an information which accurately presented dealing with the existence of the tourism object of a district and hardly needed in guiding the tourists. Moreover, it could be a media to promote the tourism destinations in Kudus. The information is presented in a particular ways called Geographic Information System (GIS) which data information related to a geographical condition of an area. Tourism object mapping is an information which accurately presented dealing with the existence of the tourism object of a district and hardly needed in guiding the tourists. Moreover, it could be a media to promote the tourism destinations in Kudus. The information is presented in a particular ways called Geographic Information System (GIS). GIS is addresed to emerge a system in which leads to find the coordinate of the tourist object in Kudus including the facility. The system is designed which UML modelled and utilized Quatum GIS dan Map Server then yield GIS to find the tourims coordinate.**

Keywords: GIS, Kudus tourist objects

I. INTRODUCTION

Tourism becomes the reliable sector of economy in Indonesia nowadays as it has an expected prospect and orientation in developing and creating job field. Those are seriously concerned due to the tourism development brings to the positive impact to the human progress. Besides creating job field the development leads to another economic activity included the local income and devisa.

Meanwhile, the government autonomy of the district, particularly in Kudus is demanded to make a progress in developing its tourism, since it brings to the district increasing income source.

The tourism service have been manually conducted in Kudus, in a such way they are served by books,brochure, poster,etc. for the every kind of tourists objects there.The information given by the tourism departement is so limit that the obvious information become unreachable. The fact leads to a further step of giving a better media to inform where the tourism objects in Kudus located by using internet . Furthermore, the location of the objects to another is far enough then it complicate the visitors.

The object locations mapping is an accurate information representation concerns with the tourist destinations is hardly needed as a manual guidance or promoted objects in Kudus. One of the representation is broadcasting the information into a data related to the geographical condition which is called by Geographic Information System.

The technique is utilized to study a location selection as its better ability of storing, analyzing and performing spatial data according to the user spesification selection[1].

Geographic Information System (GIS) LIU Ji-ping et al, (2008) states that using traditional decision maker methods is usually serving an description of statistics information which spatially difficulties. On the other hand, GIS performed spatially in a simple way[2].

By using the methodology, GIS contributes data manipulation and gives the necessary analysis more effective and efficient. Moreover, it also yields a different form from the graphical description[3].

The information system is aimed to design and make a system which gives an information and perform the related data to the tourist object location in Kudus.

II. METHODOLOGY OF THE RESEARCH

A. Methods of Collecting the Data

1. Primary Data Resource

   The data are directly obtained from a particular institute through an observation and notation towards the research objects which cover:

   a. Observation

      The data gathering through an observation and notetion to the selected phenomena investigated at the Kudus tourist objects.

   b. Interview

      The data gathering through face to face or direct interview to the data source or particular parties related to the research. The questions cover:

      1) What kind of tourist objects in Kudus
      2) The developing step conducted
      3) The difficulties faced in developing the tourist objects in Kudus

2. Secondary Data Resource
   The data obtained from books, documentations and literatures, as follow:
   a. Library research
      The data gathering from books deals with the topic gained from tourism department, national land agency, regional development planning agency, geographical book related to mapping and layout.
   b. Documentation Research
      The data gathering from literatures and internet documentations,textbook and the other information source according to the topic such as Kudus map and its tourist objects.

B. Methods of the System Development

In designing a software which employs *Linear Sequential/Waterfall Model* is a classical model that is systemically in designing the software

III. RESULTS AND FINDINGS

A. Implemented Area

The software of Geography Information system application of Kudus tourist objects is implemented to a platform with the configuration below:

a. Operation system employed is Windows XP Service Pack II
b. QuantumGis 1.4.0-1
c. Apache MS4W Web Server
   Meanwhile, the hardware of the Geography Information system application of tourist objects in Kudus is implemented to a secified computer of pentium IV or more.

B. Quantum Implementation

The utilized data obtained from analysis result by concluding the need some kind of maps like map of Kudus, tourist objects, hotel, restaurant, gift center, road, and bus station. The data processing employs digitization process and attribute addition to use QuantumGis software. The data utilized in this system is an emerge of Kudus regency digitization map.

TABLE 1. TABLE OF THE UTILIZED DATA

No	Nama	Sumber
1.	Map of Kudus regency	Digitization result
2.	Map of tourist object	Digitization result
3.	Map of hotel	Digitization result
4.	Map of restaurant	Digitization result
5.	Map of gift center	Digitization result
6.	Map of the regency roads	Digitization result
7.	Map of bus station	Digitization result

Every data gained should be adapted in accordance with the attribute, thus it is not all will be used. There is the form in detail:

1. Map of Kudus Regency
   It hunches of the regency map before with addition of attribute like the name of rivers
2. Map of the tourist objects
   It represents the tourist objects in Kudus, with addition of tourists objects kinds and its distance from the town.
3. Map of the hotel
   It perform the hotel in Kudus with additions of the hotel category.
4. Map of the restaurants
   It represents the name and palce of gift center in Kudus with menu additional attribute is typical foods that served by the restaurants
5. Map of the gift center
   It represents the name and place of the gift center in Kudus.
6. Map of the regency roads
   It hunches the exist road with additional attribute like the road name and it length
7. Map of the bus station
   It hunches the former bus station map with additional attribute like the villages or sub-districts name

All data will be made to visualize the map which is going to publishing web. The web layout will be divided based on shp file from the map and able to perform easily by the user.

a. Making a map publishing

In this part will be discussed the making process of publishing design. The process is perform the basic map as location reference towards the new map which will be made by using digitization process. Kind of the map has polygon type with attribute represents the information of each area part.

1. Open the QuantumGis
   The first step to start the digitization process is by activating QuantumGis 1.4.0-1, like in figure 1

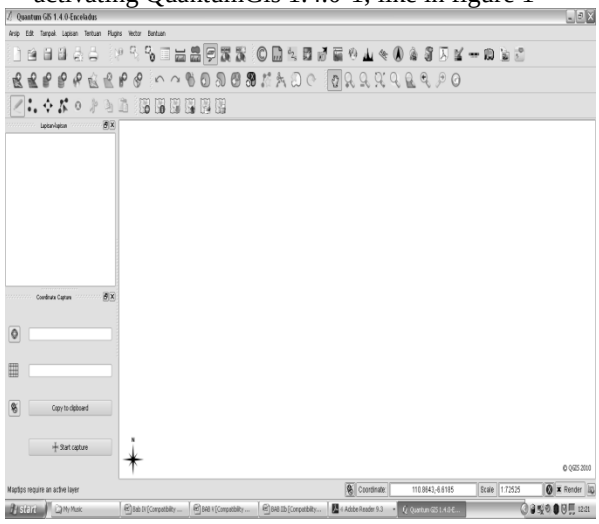

FIGURE 1. *QUANTUMGIS LAYOUT*

2. Open anew *Layer*
   Placement or description of each object suitable with the layoutin a map, then it is needed to add a new vector layer with typically point to represent the tourist object. Step should choose *New Vector Lay*er as mentioned in figure 2.
   Then fulfil the attributes needed for layers definitionby selecting plus button at the dialog box of *New Vector Layer*. After that just click OK and all files stores by the name of the shp object.

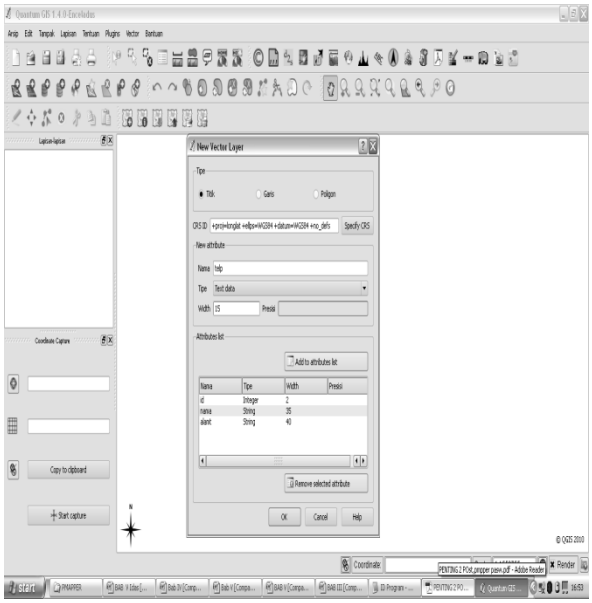

FIGURE 2: *NEW VECTOR LAYER* MENU

3. Map digitization
   Figure 3 describes that to make a point in a map select *Toggle editing* button then *Capture polygon*

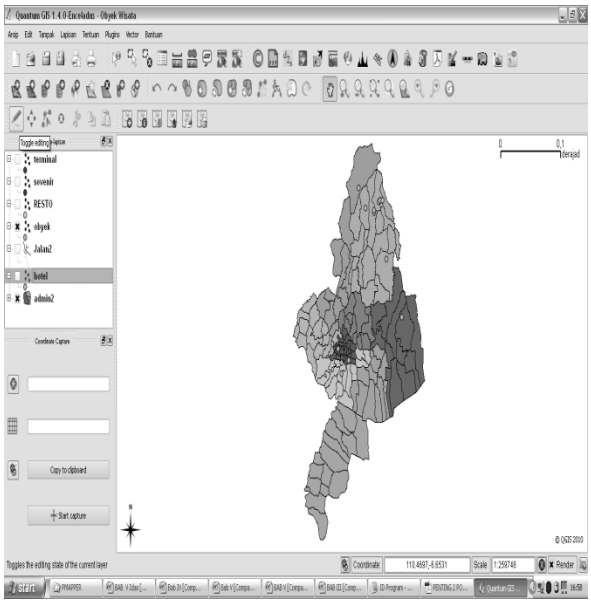

FIGURE 3. MAP DIGITIZATION

Digitization conducted for some layers suitable withthe number of map made. Those are shown in figure 4,5,6,7,8,9, and 10

b. Map of Kudus regency

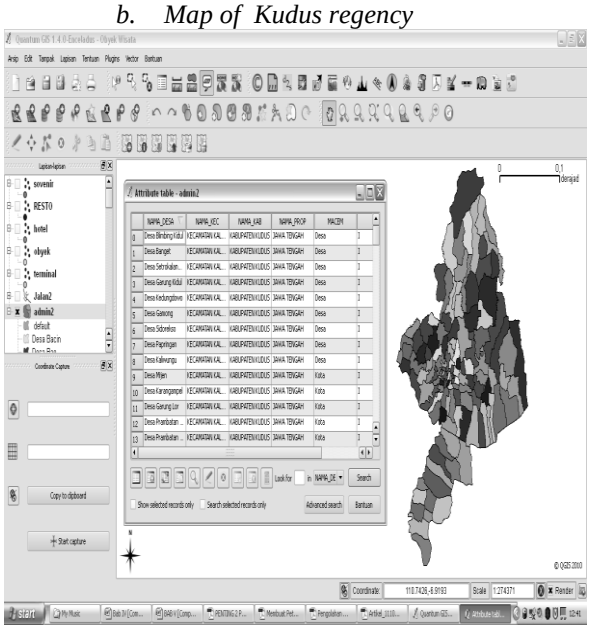

FIGURE 4. MAP AND KUDUS REGENCY DATABASE

c. Map of tourist object

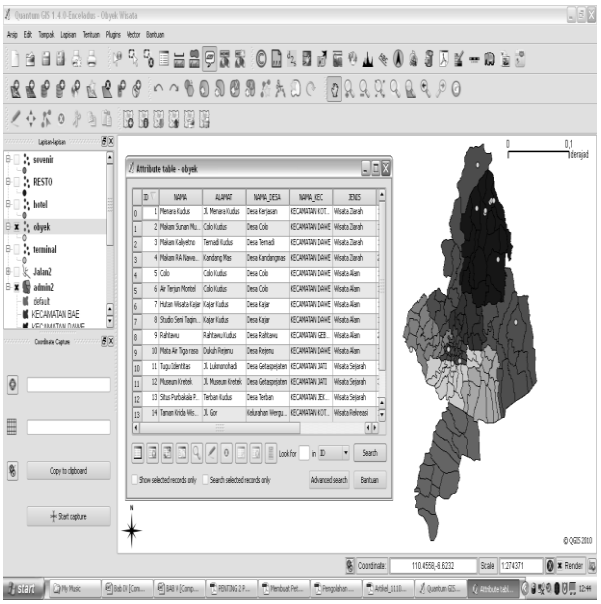

FIGURE 5. MAP AND TOURIST OBJECTS DATABASE

d. Map of hotel

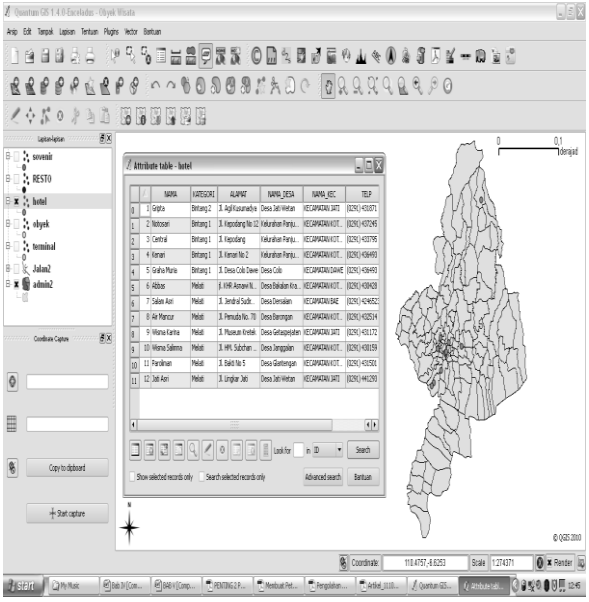

FIGURE 6. MAP AND HOTEL DATABASE

e. Map of restaurant

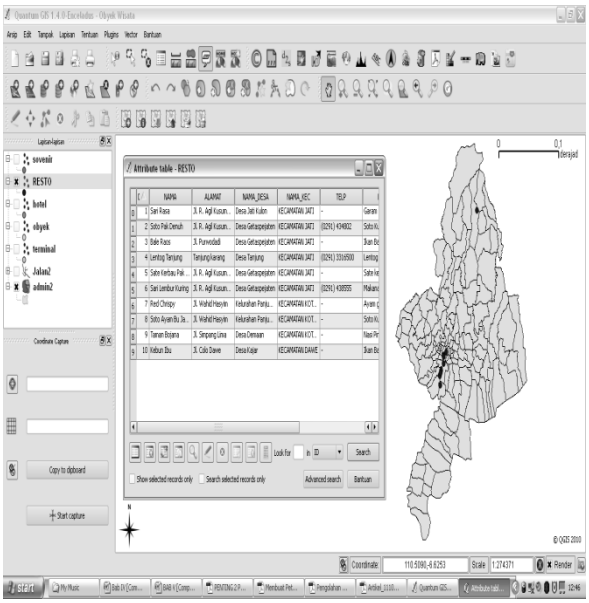

FIGURE 7. MAP AND RESTAURANT DATABASE

f. Map of gift center

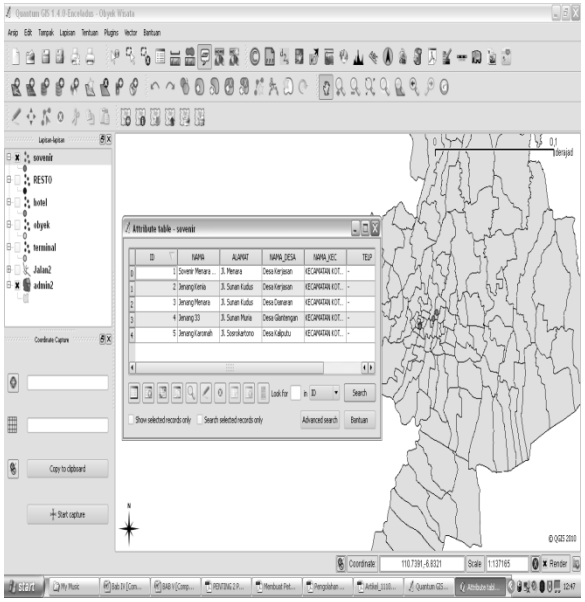

FIGURE 8. MAP AND GIFT CENTER DATABASE

g. Map of bus station

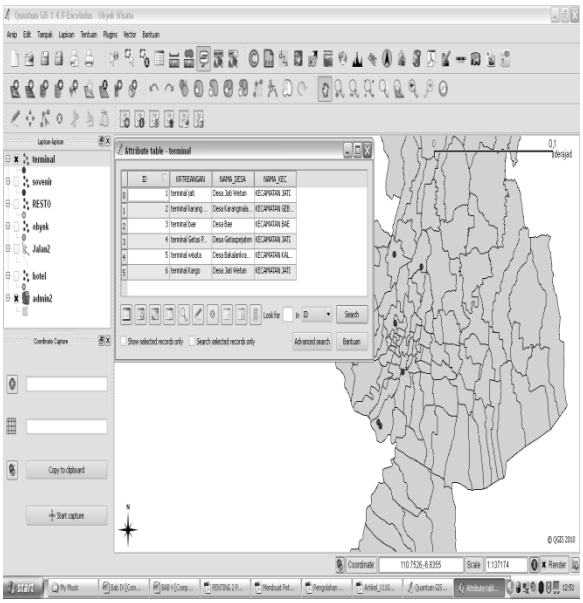

FIGURE 9. MAP AND BUS STATION DATABASE

h. Map of road

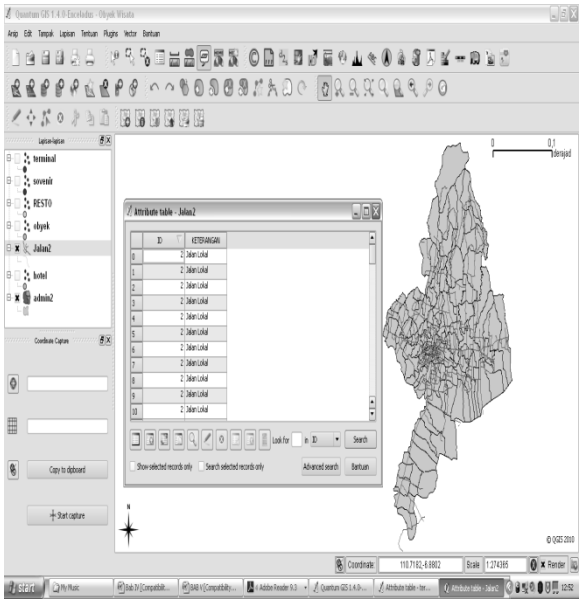

FIGURE 10. MAP AND ROAD DATABASE

C. Web application making

After making the map in QuantumGis it is uploaded in pmapper then. To see the program layout in pmapper by browsing in internet explorer or Mozilla Firefox and type http://localhost/ , there would be a main menu as shown in figure 11.

FIGURE 11. VIEW OF MAIN MENU

In figure 12 shows the tourist object area which could be seen by maximizing a particular area

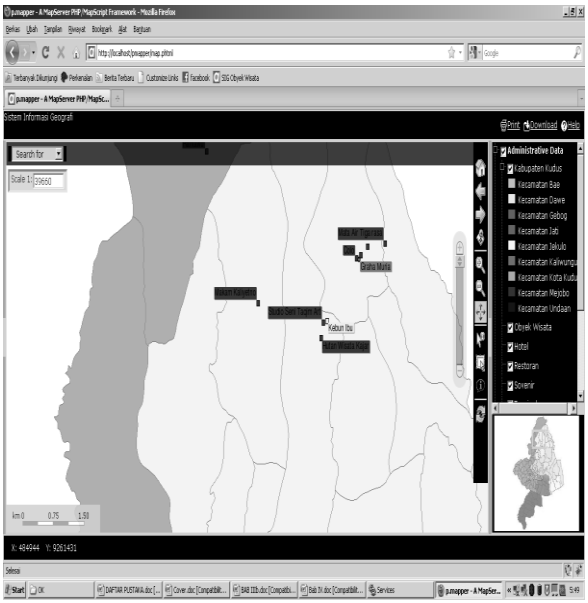

FIGURE 12. MAP OF TOURIST OBJECT

For searching in a certain condition could be seen in figure 13 below

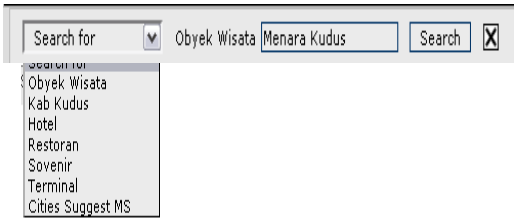

FIGURE 13. VIEW OF SEARCHING MENU

IV. CONCLUSION

1. The design of layout of Geography Information System use programming language Quantum GIS 1.4.0 and Mapserver. It covers the map of regency, tourist object including its supported facilities.
2. The new system design help the user to gain information of tourist object by using pmapper. The data can store in a database thus,it eases the searching and checking the completed data owned by the related institution.

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