Published by :
http://www.ijert.org

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 6 Issue 02, February-2017

Google Map for Implementation of Geographic Information System Development Search Location SMEs

Muhammad Sholeh
Informatics Engineering
Institut Sains & Teknologi Akprind
Yogyakarta Indonesia

Naniek Widyastuti
Informatics Engineering
Institut Sains & Teknologi Akprind
Yogyakarta Indonesia

Meireza Pratama
Informatics Engineering
Institut Sains & Teknologi
Akprind Yogyakarta Indonesia

Abstract- **Today, the information system does not only show the information in the form of text and picture. By the developing of the web based application, the better development of the iformation system must be equiped with geographic based facilities. By applying geographic based system, the developed system is equiped with map and search of a certain location. The most important thing in developing information system is the database design. The developed database must be able to store and display the related data with map of location and other supporting data. In this research, the discussion is mainly about the developing of geographic information system that informs the locations of SMEs in the Bantul Regency, Yogyakarta Province, Indonesia. The developed system has special feautures such as searching the information of handycraft centre, searching the location of handycraft centre and map that show the location of the handycraft centre.**

Key words : Information Syatem; Geographic; SMEs;

I. INTRODUCTION

The completeness in the information system becomes the point of interest in accessing information. The more complete the feature, the easier the user to use the system. One of the completeness in developing the information system is the facility to determine the location of a certain place in the form of map. The process of developing geographic based application can optimize the facility in the google map application.

The geographic information system is an application that can process, save and display the data that has space information, for example, building location, the width of an area, route etc. in the development of this information system, the application used is by optimizing features of google maps. Google maps can be integrated with some other programming languages such as PHP, perl, cgi etc. In return, by using this Google Maps API, more applications can be created. By using Google Maps API, the development of application and digital map is focused only in data, while the process of making map and searching location can be easily completed with Google Maps API. [1]

The benefits of using Google Map are; then developed application can show the user factual location, the location of the object and the map of the location intended. [2]

The developed geographic information system provides useful features for user to search the data related to handy craft business in Yogyakarta. By using this application, the user can find the location of the business centre, the local potent and the route to the location visited.

II. THEORETICAL BASED

A. *Google Map*

Google map is a mapping service developed by Google. It provides a very responsive and user friendly map based service. By using this Google Map, the user can easily find a certain location and get to place easily.

In the level of programming, Google map can be developed with data base, all data related to the location spots are saved in the table and can be displayed easily. The table containing map position can be displayed by showing the location information using google map. The visitor of the web will get more detailed information especially information about location of company or institution. [3]

B. *Waypoint*

Waypoint is the reference point in the physical space used for navigation. Waypoint is the coordinate that identify a point in the physical space. The coordinate used can be various depend on the application. For land navigation, the coordinate is longitudinal and latitude while for air navigation altitude is used. Waypoint is usually used in the navigation system of GPS (Global Positioning System) and some other kind of navigation radio. The waypoint located on the surface of the earth is usually defined into two dimension (longitudinal and latitude) while in the outer space is defined into three or four dimensions (including time). Waypoint is also used to determine routing lane invisible for navigation. [4]

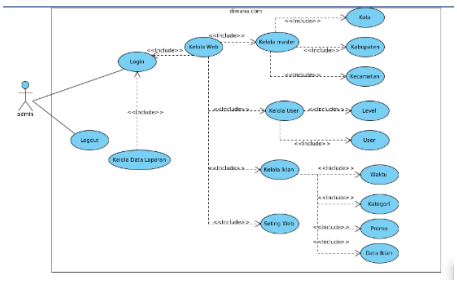
III. RESULT AND DISCUSSION

A. *Designing Unified Modelling Language (UML)*

Use Case Diagram shows the expected functionality of a system. A Use Case represents a interaction between Admin and the system. Use Case is a kind of certain action, for instance Login to a system. An Admin is human entity or machine that interct with the system to do a certain action. [5]

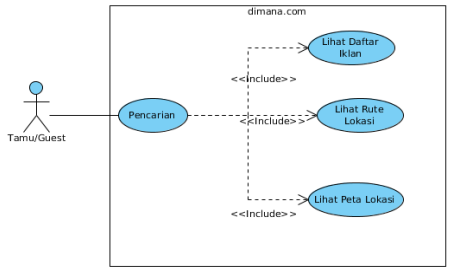
International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 6 Issue 02, February-2017

Picture 1. The design using Use Case model showing the role of Admin in the system processing



Picture 1. Use Case diagram of Admin role

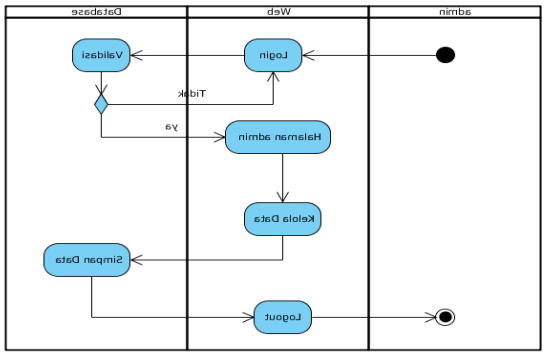
Picture 2. The design using Use Case model showing the role of guest in the system processing



Picture 2. Use case diagram of the user role

B. *Activity Diagram Admin*

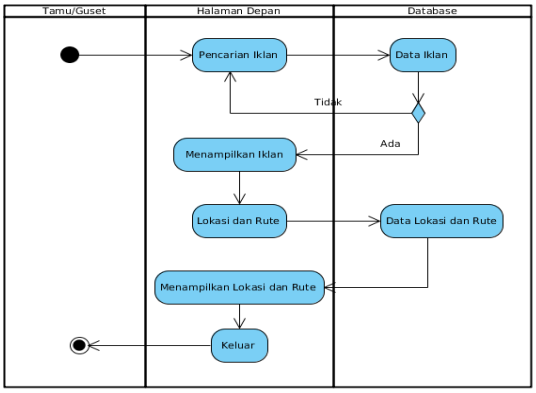
Activity diagram describes the system functionality flow. In the business modeling phase, activity diagram can be used to show the business work flow. Picture 3 shows the work flow in the activity diagram.



Figurt 3 Activity diagram admin

C. *Guest Activity Diagram*

The following is the diagram activity showing guest activity. Guest Diagram activity is showd in picture 4.

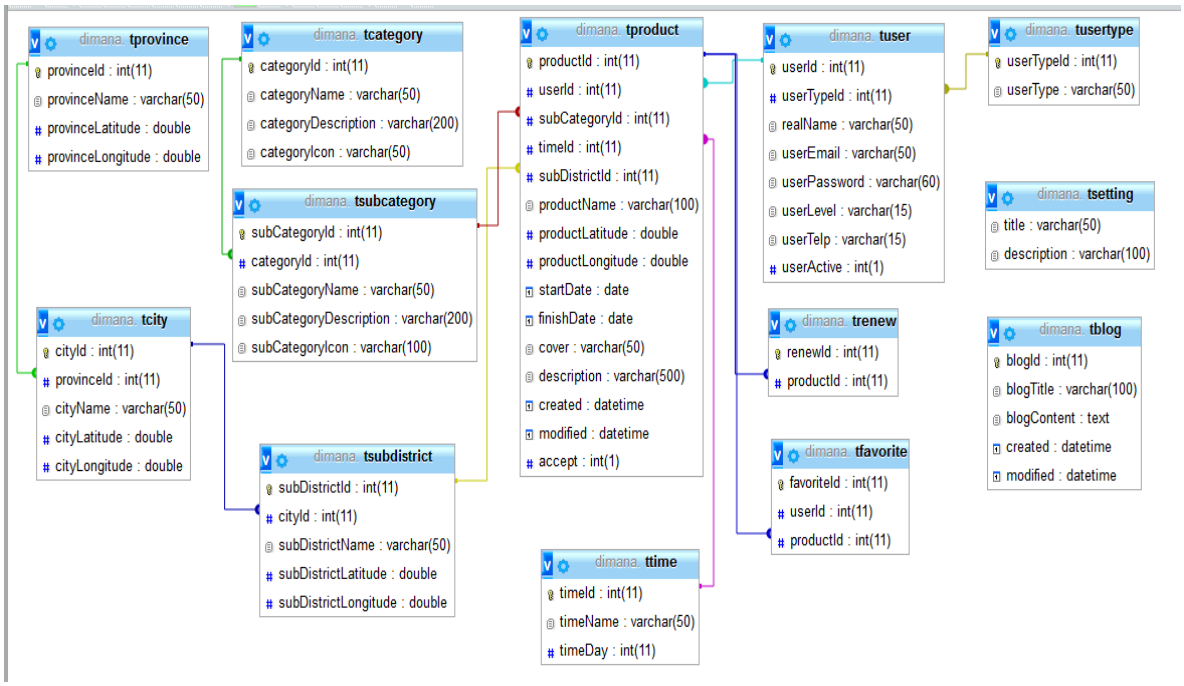


Picture 4. Guest Activity diagram

D. *Data Base*

Data base are used to save the data processed by the application. In this design, normalization has done to avoid data duplication [6]. In this design, the table in the database and is the most important are the tprovincy, tcity and the tsubdistrc tables. Those tables save the map position information from each SMEs. The structure and relation are in picture 5.

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 6 Issue 02, February-2017



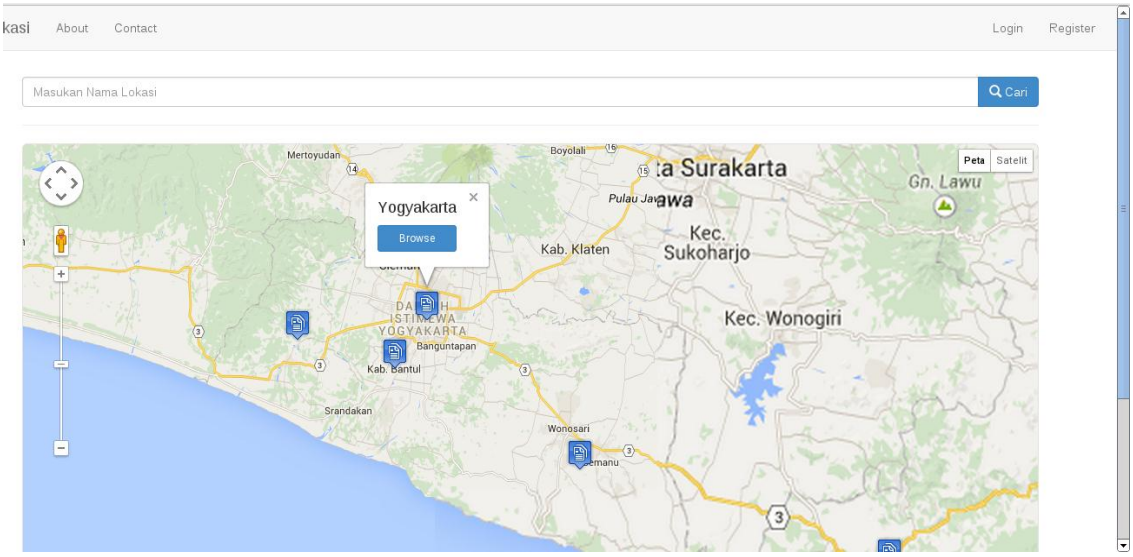
Picture 5 The structure and relation

E. Application result

This application is build with PHP programming language, Mysql database and scripts provided by google map [7]

The process of selection can be changed by selecting another location. After thet press SUBMIT button.

In the main page display there are map and several menus that give information on the handycraft centre search. The guest can 'click' every menu to see the information available. Front page picture in the picture 6



Picture 6. The display of the main page

Search page display

Search page display is the page that is used by the guest to search the handycraft centre. The following is the result of the Search page display as showed in picture 7. The display shows us the map of Yogyakarta with its search facility. On the right panel, there is city choice menu and choose then category that can be used to see the whole search.

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
Vol. 6 Issue 02, February-2017

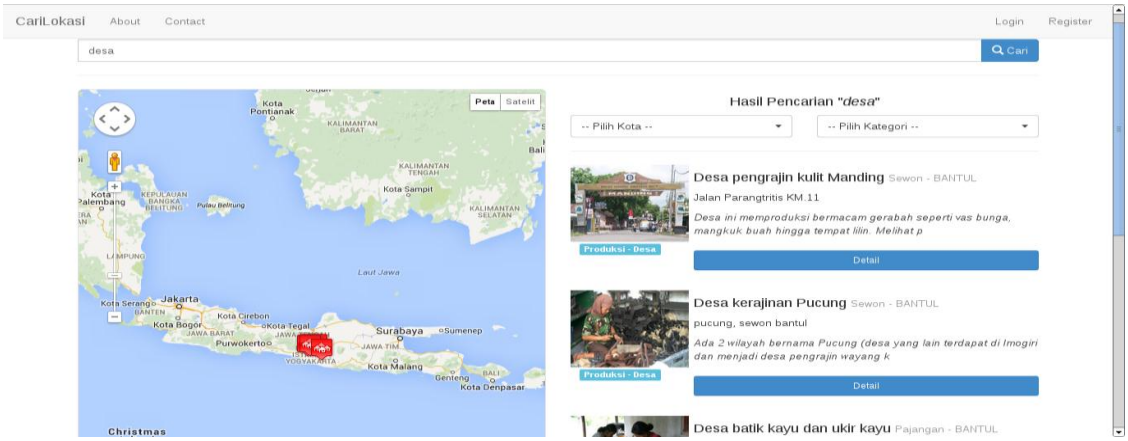
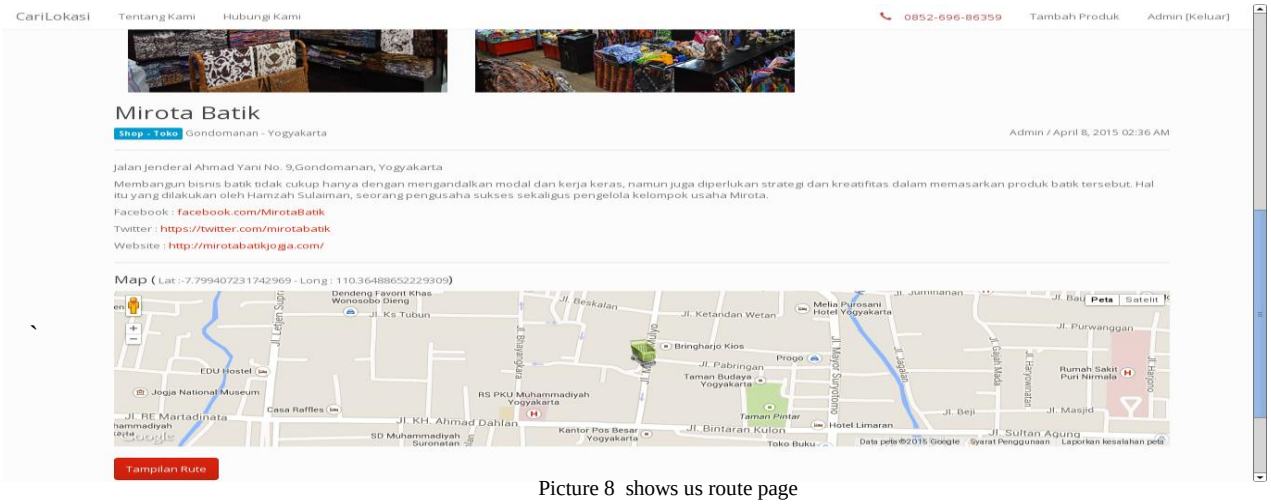


Figure 7 display the search page

Route page display

This display is used by the user to do the handicraft business route. The following is the display of the route page. Picture 8 shows us route page. The display shows us a map of Yogyakarta completed with the route of the intended SMEs.



Picture 8 shows us route page

IV. CONCLUSION

This application is developed to ease the website visitor to find tourism location in the range of 20 km. in this research, the sample of the tourism objects are located in yogyakarta. The completeness of the data from the tourism object determines the information. The process of finding the nearest location of a tourism object is determined by calculating the position os longitudinal and latitude. The searching process uses the query system in the database.

REFERENCES

[1] T. D. Shunfu Hu, "Online Map Application Development Using Google Maps API,," *International Journal of Information and Communication Technology Research,* vol. Volume 3 No. 3 , no. Maret 2013, pp. 102-110, 2013.

[2] A. K. S. B. J. Neelu.L, " Location Based Reminder Using Android and Google Maps," *International Journal of Innovative Research in Computer and Communication Engineering*, vol. 3, no. 5 May 2015, pp. 4173-4183, 2015.

[3] E. Pimpler, Google Map API The New Word of Web Mapping, Geospatial Training & Consulting, LLC , 2006.

[4] K. Hernawati, "APLIKASI PERHITUNGAN JARAK ANTARA DUA WAYPOINT," in *Prosiding Seminar Nasional Penelitian, Pendidikan dan Penerapan MIPA,*, Yogyakarta, 2012.

[5] R. Miles and K. Hamilton, Learning UML 2.0, First Edition. ed., B. M. a. M. T. O'Brien, Ed., Gravenstein Highway North, : O'Reilly Media, 2006.

[6] A. Kadir, Mudah Mempelajari Database MySql, Yogyakarta: Penerbit Andi, 2010.

[7] G. Svenneberg, Begenning Google Maps API 3, New York: Apress, 2010.