

# GEOGRAPHIC INFORMATION SYSTEMS DESIGN OF TOURIST ATTRACTION AND NEAREST FACILITY IN BANDAR LAMPUNG CITY

Devi Kathina Rani<sup>1</sup>, Yulmaini<sup>2</sup>

Informatics Engineering, Faculty of Computer Science<sup>1 2</sup>

Z.A. PagarAlamStreet Number 93, LabuhanRatu, Lampung 35141<sup>1 2</sup>

shinlee.love@gmail.com<sup>1</sup>,yulmainiti@ymail.com<sup>2</sup>

## ABSTRACT

Tourism is one of the selling point that Bandar Lampung City has. The information about the location of tourist attraction and the supporting facility was given in booklet and tourism map. The information distribution through those media haven't use the technology that appropriate to the current development.

Some research methods were used in this research such as, data collection methods and system design methods. The data collection methods were done in several ways such as interview with the respondents, literature study and observation. The system design methods use UML (Unified Modelling Language).

The output from this research is a design of geographic information system that interactive with the user and able to attract the tourist attention to visit Bandar Lampung City and the tourist attraction. With this design hopefully can bring more information about a tourist attraction in Bandar Lampung City and gain more tourist to visit Bandar Lampung City.

## KEY WORDS

Geographic Information System, Design, Tourism

## 1. Introduction

Geographic Information System (GIS) is one of technology development that been used by a lot of business field. The usage of geographic information system can be found in mining and petroleum section to find the spread of mining and petroleum potential point, in agricultural and plantation section to find the potential point of suitable land to plant the plants and in health section to find the spread of a disease in a location.

Tourism is one of business potential that Bandar Lampung City has. According to data that obtained from DinasPariwisatadanEkonomiKreatif, there are more than 13 tourist attraction that spread across Bandar Lampung City. Information about the tourist attraction in Bandar Lampung City was given in booklet and tourism map. It considered as less effective since the technology development nowadays is able to give information in digital map or through website.

Previous research was done by (ArdiDwiSaputra, 2012) that titled Geographic Information System of Tourism in Lampung Province, the research made a Geographic Information System of Tourism in Lampung Province. The geographic information system is website based, it gives information about the tourist attraction, tourism map, activities, tour and travel agents, hotels, restaurants, souvenirs shop and art gallery.

According to Riyanto and team (2009), Geographic Information System is a special information system that used to process data that has spatial information. Or a computer system that can build, save, manage and show geographic referenced information.

Widodo and Herlawati (2011) explain that “UML is abbreviation of Unified Modelling Language that means a standard modelling language. In iterative process, the developer do some steps repeatedly and every time it focused on different part of system”. UML is applied in some intent such as :

- 1) Designing a software
- 2) Communication tools between software and process
- 3) Explain the detailed system for analysis and find the system needs.
- 4) Documenting the available system, processes and organisation.

The purpose of this research is to produce a geographic information system design about tourist attraction and public facilities in Bandar Lampung city that can provide information and draw attention to prospective tourist to visit Bandar Lampung City.

## 2. Conclusion

The method that used to design the system is UML method that consist of use case diagram, activity diagram, class diagram and sequence diagram.

### 2.1 Use Case Diagram

There are two users that will use this system, they are visitors and administrator. Use case for visitors menu has five menu that displayed in the system, the menus are : show tourism map menu, show tourist attraction list menu, show public facility list menu, about us menu and login menu. Every visitors can access all of

the menu in the system. But only the administrator has access to login to the administrator system.(Figure 2)

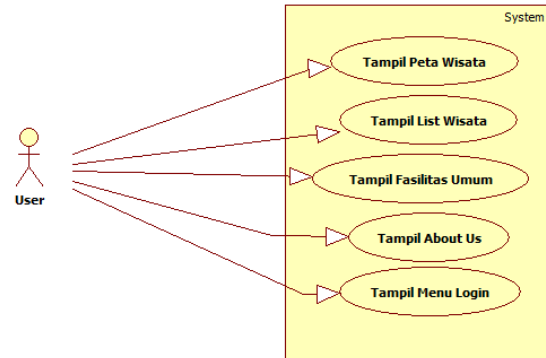


Figure 2. Use Case Diagram for Visitor

Use case system for the administrator menu has 5 menus that displayed in the administrator menu, they are : tourist attraction update, facility update, district update, login data update and logout menu. (Figure 3)

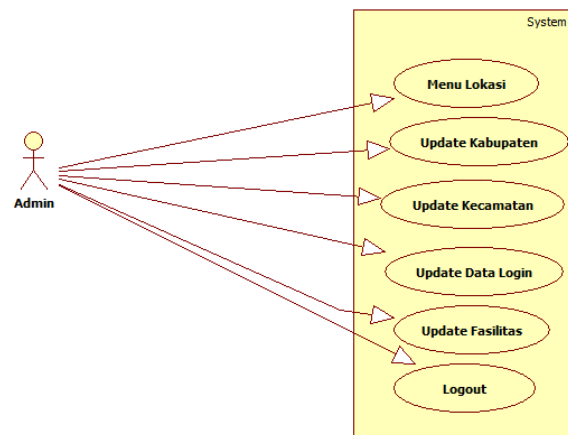


Figure 3. Use Case Diagram for Administrator

### 2.2 Class Diagram

Class diagram in administrator menu explained about a group of objects from properties, characters and relations between the menu on administrator menu. Login object has relation with district, facility and tourist attraction. To access the data from the object,

administrator has to gain access from login class. District class has relation with tourist attraction class and facility class, where the district class in tourist attraction class and facility class gained from district class. (Figure 4)

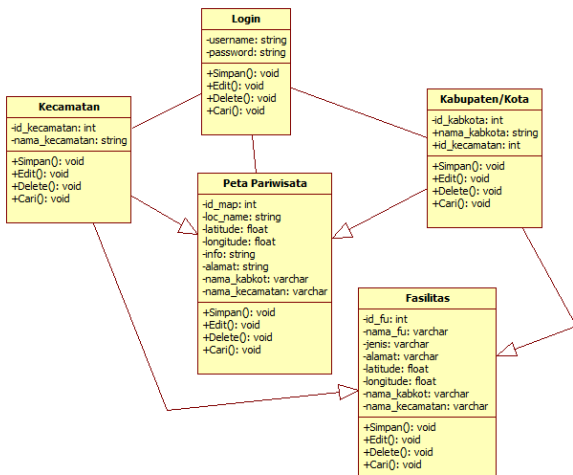


Figure 4. Class Diagram for Admin

Visitors Class Diagram explained about group of object from properties, characteristic and relations between every menu in visitor main menu. The main menu has relations with every menu element in the system. The tourist attraction list class and the tourism map class has relation with each other. The data that used in tourist attraction list class is the same with the tourism map class. (Figure 5)

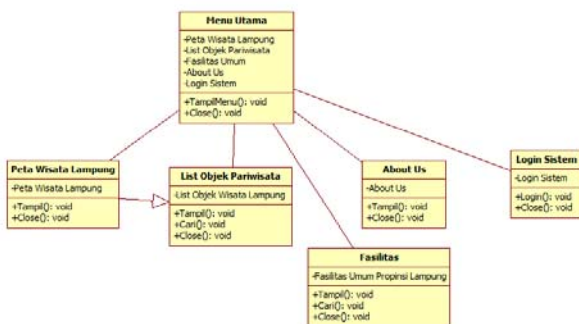


Figure 5. Class Diagram for Visitor

### 2.3 Activity Diagram

Activity Diagram explain about the activity flow of a system to another activity flow. Activity diagram of show tourism map explain about activity flow that happen in show tourism map menu. Visitor access the show tourism map menu. System will execute the activity and will show Bandar Lampung City tourism map. (Figure 6)

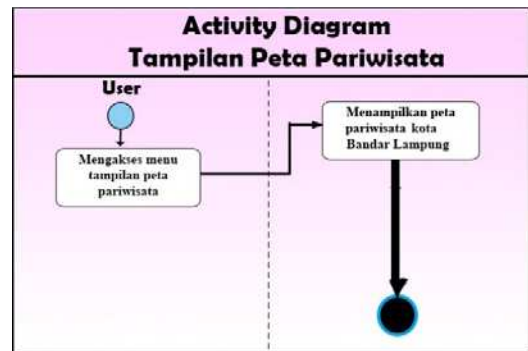


Figure 6. Activity Diagram to Show Tourism Map

Activity diagram of show tourist attraction list explain the activity that happen when user execute the tourist attraction list menu. System will display the tourist attraction list in Bandar Lampung city. Visitors can search for a tourist attraction name. When the search is done, system will do a data filter and show the list of the searched data. (Figure 7)

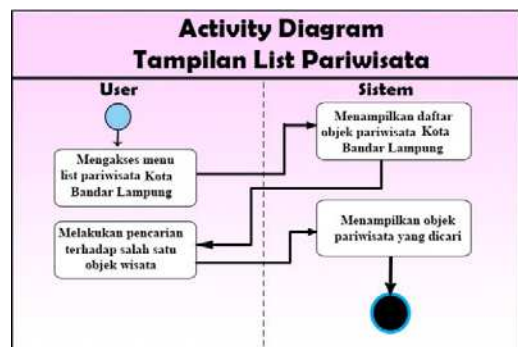


Figure 7. Activity Diagram to Show Tourism Destination List

### 2.4 Sequence Diagram

Sequence diagram is an image of step by step include the chronology (sequence) of interaction between the objects that arranged according to time sequence. Tourism map sequence diagram explains about interaction relationship between the visitors and tourism map menu. To access through the map, the visitors have to access the main menu and then choose the tourism map menu, from the tourism map menu, system will access the geographic information system database that stored in the server, from the previous process, system will show the data from the database that stored in the server and show the location and information to the tourism map. (Figure 8)

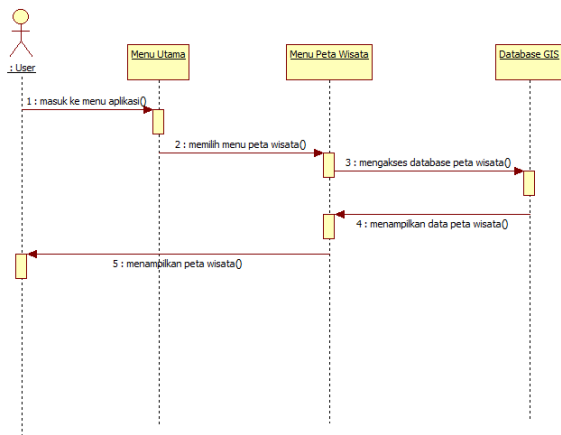


Figure 8. Sequence Diagram show Tourism Map

Sequence diagram of tourist attraction list menu explain about the interaction between the visitors with the tourist attraction list menu. To access the tourist attraction list menu, visitors firstly should access the main menu and choose the tourist attraction list menu. System will access the database that store the tourist attraction list data in the storage. The stored database will be called and show to the tourist attraction list interface menu. If the visitors want to search one of the tourist attraction, visitors can

type the name of a tourist attraction in the search text field. System will find the tourist attraction in the database that adjusted with the text that typed in the text field. System will show the list of the data if it's stored, if the data isn't stored the list will show nothing. (Figure 9)

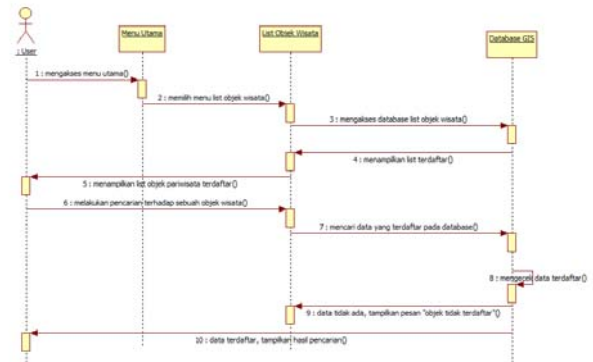


Figure 9. Sequence Diagram to Show Tourist Attraction List

### 2.5 Interface Design

Interface design is the interface view that will displayed in the system when the application is running. The interface design for the first time application executed is divided by 5 menus. The menus are tourism map menu, tourist attraction list menu, facilities menu, about us menu and login menu. Tourism map menu will show the tourism map that contains the information of tourist attraction and nearest facilities. Tourist attraction list menu contains the tourist attraction data that stored in database, the data is displayed in a list. Facilities list menu contains the facilities data that stored in database, there's seven type of facilities that stored, the types are restaurant, hotel, minimarket, station, tour and travel agent, gas station and souvenirs shop. About us menu show the information about Bandar Lampung City and the creator of the application. Login menu is to gain access to

the administrator menu, the access was given to the administrator only. (Figure 10)

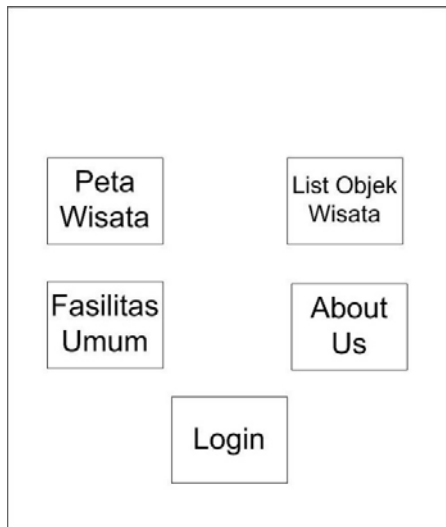


Figure 10. Interface Design for Main Menu

Interface design in the show tourism map menu, this menu will show Bandar Lampung City map, tourist attraction location and nearest facilities location. The tourist attraction point in the map will show the information about the selected location. The nearest facilities point in the map will show the information about the facilities. There's no submenu in this menu. (Figure 11)



Figure 11. Interface Design for Show Tourism Map

## References

- [1]PrabowoPudjoWidodo, Herlawati, *Menggunakan UML (Unified Modelling Language)* (Bandung, Informatika, 2011)
- [2] Eddy Prahasta, *Sistem Informasi Geografi Konsep-KonsepDasar* (Bandung, Informatika, 2005)
- [3] ArdiDwiSaputra, Yulmaini, Perancangan Sistem Informasi Geografis (SIG) Pariwisata Di Propinsi Lampung, *Jurnal Informatika* Volume 12, 12, 2012, 136-145