

Mobile Positioning Data Based-Application for Medan Tourism Objects

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Abstract: Tourism Object is a fundamental component in the tourism industry and one of the reasons visitors travel. The State of Indonesia is one of the various countries whose number of tourist objects is very large and varied. One of these attractions is natural tourism, for example, the sea, beaches, rivers, lakes, and mountains, as well as for the building objects including historical heritage sites, forts, museums and so on. The method used in this study uses qualitative research by applying the method of mobile positioning data to help the manager of tourist attractions promote the location of tourist attractions. The mobile positioning system model can be used to understand and determine the mobile position based on location coordinates. This mobile positioning system uses GPS technology, a tool to get or generate the coordinates of the position of the online map technology that Google provides to show the position that has been stored in the system. The research results from this Tourism Object application can detect the user's location according to the mobile positioning data method. This Android-based Tourist Object application can display a list of tourist objects according to the area occupied by the user. This tourist attraction application can add new tourist objects by admin. It is hoped that in the future this application can be run on the iOS system and can add images to new tourist attractions.

Keywords: Application; tourist attraction; mobile positioning data

INTRODUCTION

Tourism is currently not defined as just walking around, but more than that, the tourism sector in a particular country will be able to develop various businesses that can be run and also equitable distribution of spatial development which will eventually lead to the encouragement of economic growth from tourism for that country (Hamouda, 2022). Indonesia is a country that has extraordinary natural beauty, diversity of fauna and flora, diverse cultures, religions, races and ethnicities with some of their local wisdom, as well as the uniqueness and characteristics of each region, this will certainly lead to the creation of potential amazing tourist destinations, if it can be optimized properly and well (Aasa et al., 2021). This development for the tourism sector is included in the five national priority programs as stated in the Government Work Plan (RKP) in 2019, this indicates that the government is very serious in managing and developing the tourism sector in the State of Indonesia to fulfill the ideals and desired hope (Nuaimi, 2018). Tourism is one of the various industrial sectors that have experienced rapid development until now. Coastal tourism is one of the most massive tourism developed to stimulate and improve the regional economy. In line with the development of access and transportation technology, it provides considerable potential in its efforts to develop this tourism sector (Sinung et al., 2021).

Takalar Regency is one of the various areas with a lot of tourism potential strengthened by its natural conditions and conditions. There are various tourist objects in the area, including interest tours and certain natural attractions. Until now, there are still many that have not been recorded and even managed properly and well (Madjid, 2019). The tourism sector requires a strategy with a well-planned and structured pattern of tourism development so that its potential can be optimally developed (Putra & Afri, 2020). The tourism sector is designed as one of the various economic sources that can generate large foreign exchange for the country and as a sector that can absorb the availability of sources or labor and can develop investment potential (Surya & Efrianto, 2022). To create for this tourism sector, the government is trying to develop plans and several policies

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that can support the progress of this tourism sector. One of these policies is to explore, develop and take an inventory of the tourist objects available in the area as the main attraction for tourists (Sari Rochman et al., 2020)

The problem at this time is the unavailability of virtual or online access which can make tourist access easier and faster. One of them is the application of a tourist attraction that makes it easy to access several tourism object sectors located in the city of Medan. With this application, potential visitors can find out about the tourist attraction to be addressed visually and in real-time. Prospective visitors can find out the location, distance, and access that can be taken to get to the tourist attraction to be addressed. This application can also visually display the location and every corner of the tourist spot, so potential visitors are more confident and intend to visit the attraction. This application can also be accessed anytime and anywhere that can access the internet (Nugraha & Alimudin, 2020).

For this research, the model used is in the form of a mobile positioning system model which is intended to understand and know the mobile's position based on its location coordinates (Fando et al., 2020). For this research, this mobile positioning system uses GPS technology which is a tool to get or generate position coordinates of the online map technology that Google provides to show the position that has been stored in the system (Fakhrurrozi & Sari, 2019).

For the public to understand all the tourist attractions available in all cities of Medan, one of the various methods to encourage the fulfillment of a good and effective understanding is to use a mobile-based introduction media. Thus, this Android-based application is designed to introduce several tourist attractions available in Medan City to the wider community, thus new and appropriate innovations are needed so that they can be understood and found easily. This is a research background for designing an application entitled "Mobile Positioning Data Based-Application for Medan Tourism Objects".

LITERATURE REVIEW

Mobile Positioning Data (MPD) or the concept of counting foreign tourists in the border area (Border area) is well received and one hundred percent accepted by the United Nations World Tourism Organization (UNWTO) (Chhonker, 2019). Mobile positioning data (MPD) are useful in studying different aspects of the spatio-temporal behavior of diverse people. Many institutional agendas and strategic plans highlight MPD as one of the most promising new smart data sources for generating official statistics, contributing to data-driven governance (Adi, 2017). Despite the rapid increase in studies using MPD, relatively little effort has been made to address questions about MPD spatial interpolation and bias and problems associated with extrapolating data to real populations, or how to minimize such problems in human and population mobility (Sri Puspa Dewi, 2022).

This Mobile positioning data (MPD) application offers details of a tourist attraction in the city of Medan via visual and realtime. The features of this application include the location, distance, and access that can be taken to get to the tourist attraction to be addressed. With this feature, potential visitors are more likely to visit the tourist attraction because they have seen the big picture of the visual image of the tourist attraction. This application can be accessed anytime and anywhere as long as the device (android smartphone) has adequate internet access.

The purpose of using Mobile Positioning Data (MPD) is to:

- a. Designing an application can display facilities at the tourist attraction discussed, for example, scenic photos, lodging prices and others.
- b. Designing applications to provide information quickly and efficiently because it only uses a smartphone that is connected to the internet network.
- c. Applying the mobile positioning data method in helping the tourist site managers promote the location of tourist attractions.
- d. Assist in the efficiency of time delivery of information to users.

(Putra & Afri, 2020)

METHOD

This research was conducted using a qualitative type of research by applying the mobile positioning data method to help the management of tourist attractions promote the location. This research was performed using a qualitative type of research by applying the mobile positioning data method in assisting the management of tourist attractions to promote the site. This research will be carried out for five months. In carrying out this research, researchers make or plan a schedule so that the research activities can run well. The study was conducted using the internet to collect data/materials for analysis, design, development and testing.

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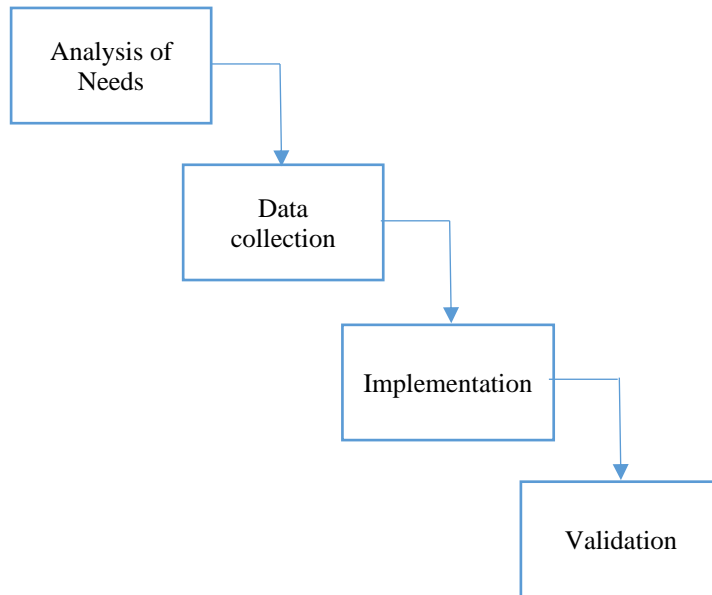


Figure 1 Research Stage Waterfall Diagram

- a. Analysis of Needs
Determine the things needed in research such as journals supporting the theory used in the study.
- b. Data collection
The data used are in the form of tourist attraction data and the location of the distribution of tourist objects.
- c. Implementation
Applying the mobile positioning data method in providing the required tourism information quickly and practically.
- d. Validation
To provide fast and practical information on existing tourist objects.

The problem discussed is how to provide information on tourist objects in the country to increase the interest of visitors from local and foreign tourists. One of the various ways to analyze the research problem is to use a Fishbone diagram.

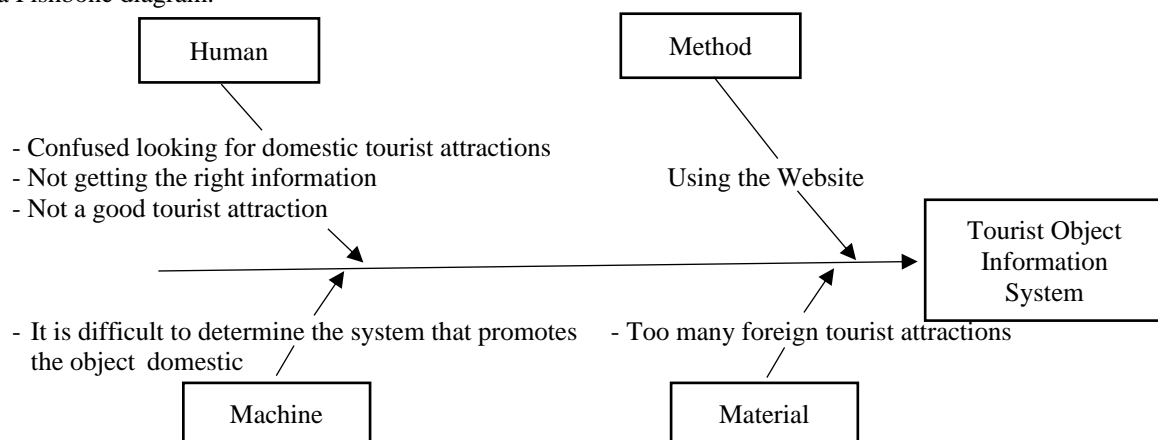


Figure 2 Fishbone Diagram

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The fishbone diagram in Figure 2 shows that the problem that occurs is confusion in finding domestic tourist objects that they will choose, because it is difficult to get the right information so they often get domestic tourist objects that are not good. It is difficult to find a system that promotes domestic tourist attractions, where the media in providing this information is still considered conventional, namely by using the brochure method.

RESULT

The running application process is described in the form of a flowchart

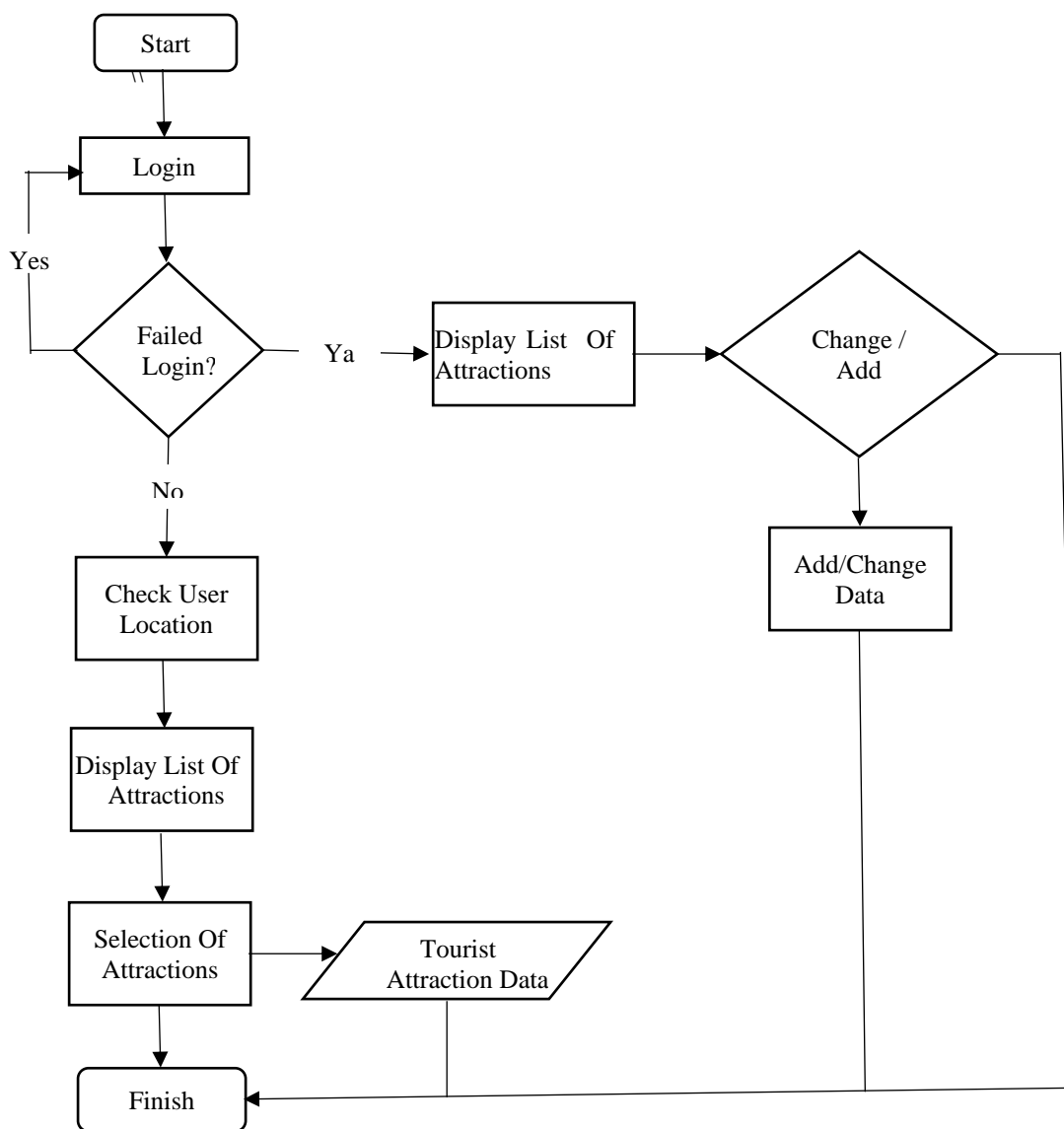


Figure 3 Application Process Flowchart

User Interface

In the results stage for this system, what will be discussed is the application and application of the results of the analysis and system design described.

1. Homepage

This page shows the start page when opening the application. The start page is shown in Figure 4.

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Figure 4 Homepage

2. Settings page

The settings page is shown in Figure 5.

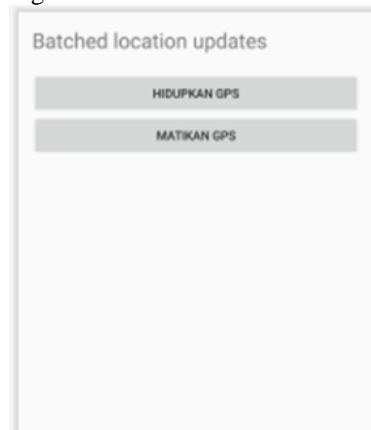


Figure 5 Settings page

3. Admin Login Page

The Admin login page is shown in Figure 6.



Figure 6 Login Page

4. Admin Menu Page

The Admin Menu page is shown in Figure 7.

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Figure 7 Admin Page

5. User List Page

The user list page is shown in Figure 8.



Figure 8 User List Page

6. Attraction List Page

The tourist attraction list page is shown in Figures 9 to 17.

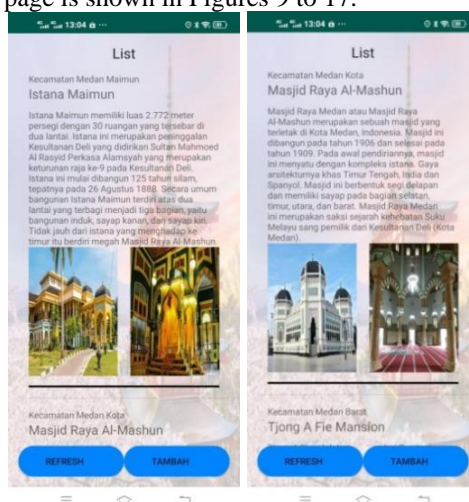


Figure 9 Attractions of Maimun Palace and Al-Mashun Grand Mosque

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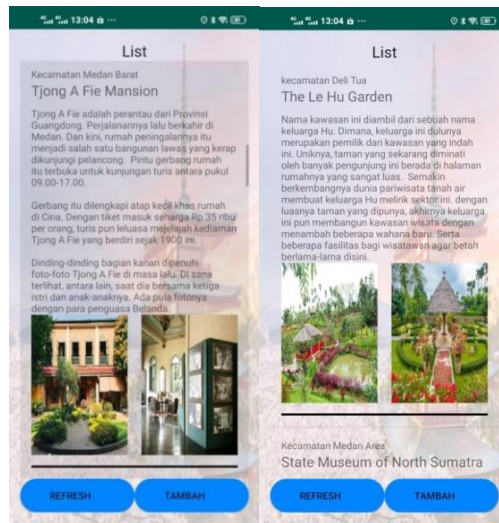


Figure 10 Attractions Tjong A Fie Mansion and The Le Hu Garden

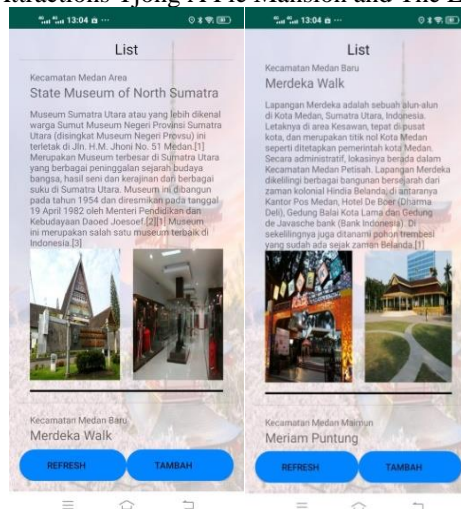


Figure 11 Attractions State Museum of North Sumatra and Merdeka Walk

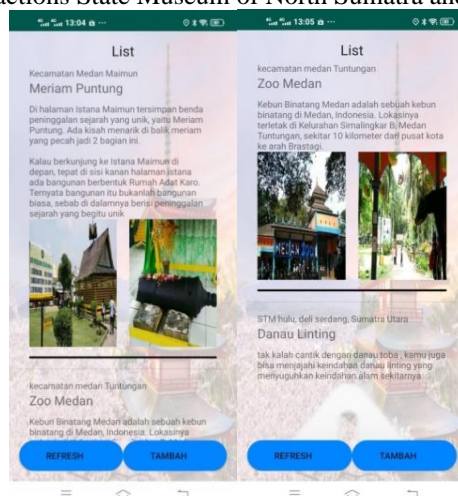


Figure 12 Attractions of Puntung Cannon and Medan Zoo

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Figure 13 Linting Lake List page

7. Add Attractions Page
The added tourist attraction page is shown in Figure 14.



Figure 14 Add Attractions Page

8. Attractions Edit Page
The tourist attraction edit page is shown in Figure 15.



Figure 15 Attractions Edit Page

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9. Member Login Page
The Member login page is shown in Figure 16



Figure 16 Login Page

10. Location Display Page
The location display page is shown in Figure 17.

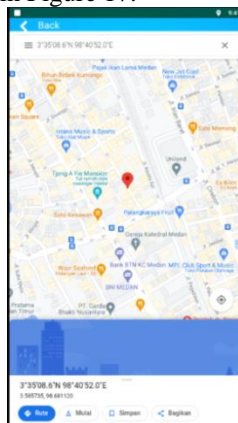


Figure 17 User Location Page

11. Member Main Menu Page
The member's main menu page is shown in Figure 18.



Figure 18 Member Main Menu Page

12. Member Search Menu Page
*name of corresponding author



The member search menu page is shown in Figure 19.

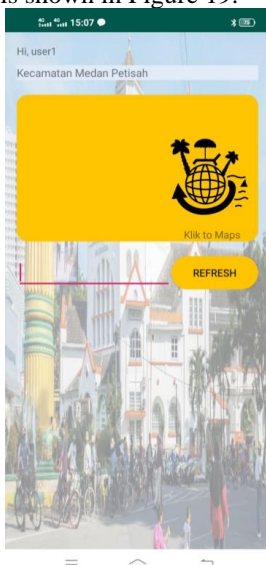


Figure 19 Attraction Search Page

13. Attraction Selection Page

The tourist attraction selection page is shown in Figure 20.



Figure 20 Attraction Selection Page

DISCUSSIONS

This application offers details of a tourist attraction in the city of Medan via visual and real-time. The features of this application include the location, distance, and access that can be taken to get to the tourist attraction to be addressed. With this feature, potential visitors are more likely to visit the tourist attraction because they have seen the big picture of the visual image of the tourist attraction. This application can be accessed anytime and anywhere as long as the device (android smartphone) has adequate internet access.

From the results obtained, this application is useful, among others:

- a. Users can more quickly get information about tourist objects equipped with views of the main tourist destinations.
- b. Users can find the location of tourist objects by applying the positioning data method.
- c. Users can access applications on Android-based smartphones efficiently.

This is in line with research (Majid, 2021) which states that the test results that show the implementation of a mobile-based presence system using a GPS sensor is going well, this is a functionality test

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using the Black boss method. With this number of employees around 75 people, thus this attendance system will be able to take place properly and well.

Pros of the Proposal System

The advantages of the proposed system designed by the author include the following:

1. This application can detect the user's location using the mobile positioning data method.
2. Android-based application that can display a list of tourist attractions according to the area the user occupies.
3. Applications can add new attractions by admin.

Disadvantages of the Proposal System

In addition to its advantages, this proposed system also has disadvantages, including the following:

1. The application is still running on the android system and has not been run by the ios system.
2. This application has not been able to add images to the added tourist attraction

CONCLUSION

The conclusions from the application design include the application of this tourist attraction that can detect the user's location according to the mobile positioning data method. This tourist attraction application is based on Android which can display a list of tourist objects according to the area occupied by the user. This tourist attraction application can add new attractions by admin.

For further researchers, it is hoped that they can develop designed applications, namely applications developed on the iOS system so that users are more numerous and wider. The application was created to be able to display images of tourist objects.

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