Design of tourism application for Morotai island

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Abstract. Morotai Island Regency is one of the new districts located in the eastern tip of North Maluku Province, Northern Indonesia. Morotai Island has several beautiful tourist spots that attract the attention of foreign and local tourists to visit the places. The aim of the research was to discuss the use of internet technology as a medium for the introduction of Morotai Island tourism. The research intended to make a mobile application for tour packages and location-based services (LBS) so that it could find out routes and locations to destinations easily and quickly. The mobile application used some media or storage assistance in MySQL for databases on the Web server. The search application also had the main feature that could find the easiest and closest destination location based on where the user's location was located just by utilising GPS technology. The results of the research present a geographic information system (GIS) or application for Morotai Island tourist destinations and show that this information media is feasible. The app is for tourists to know and find the location of attractions easily and quickly.

Keywords: Location Based Services (LBS), Geographic Information System (GIS), Morotai island

1. Introduction
Morotai Island is one of the new districts located in the eastern part of North Maluku Province, which has an area of 2,476 km², with a population. 64.00 based on the Central Statistics Agency Data (BPS) Morotai Island Branch in 2018. Morotai Island consists of 5 (five) districts, namely, South Morotai District, West South Morotai, East Morotai, North Morotai, and Morotai Jaya, although Morotai Island is a district new city, its development is very fast compared to other cities or regencies in North Maluku Province [1].

Morotai Island is one of the 10 islands in Indonesia and will be made as a new Bali by the Government through the Ministry of Tourism (Kemenpar RI), because Morotai Island has many tourist attractions, both natural attractions and fascinating historical tourism, with tourist attractions and historical sites that are relics of World War II, such as several warship wrecks and Panzer Cars (TANK), as well as several other historical site artifacts, which are still preserved and preserved to this day. Although there are many tourist sites and historic sites of World War II relics on Morotai Island, they are still very rarely visited by tourists/visitors, this is due to the lack of promotion and recognition of historic sites on Morotai Island, and there are no applications made as a medium of information by tourists about tourist attractions and historical sites on the island of Morotai.

Therefore, in this research, the author will make a breakthrough to create a location-based tour package application, where this application not only provides information but can show the location of attractions and historic sites to users to find tourist sites and historical sites easily and quickly. This

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application is implemented through an Android smartphone as a media of information, travel recommendations, and location-based tour packages, by adding/displaying some interesting features and animations so that it can invite the user's attention to find out the tourist sites of historical sites on Morotai Island.

2. Literature review

History is an event that has happened in the past and arranged based on the legacy of an event. The importance of history is like the words of the nation's proclaimer Bung Karno in his speech on August 17, 1966. He says, "never forget history” because many things can be learned from history, one of them is the historical site of World War II, Morotai Island with relics and several tourist objects, which became the charm of Morotai Island.

Determine the special paths of tourism, tourism, culture, and history on Carriacou Island in Grenada [2]. Track tourism objects using GPS (Global Positioning System) technology, via a smartphone [3]. Cellular Geographic Information System (GIS) techniques and global positioning systems (GPS) are implemented to help provide information and or guidance in managing tourism destinations effectively and efficiently [4]. The development of Digital Humaniora to increase understanding of the history of tourism [5]. Uses GPS through cellular to determine the position or tracking of attractions [6]. the application of monitoring technology to determine the flow of tourist visitors with the data methodology [7]. Tracing human experience in exploring cellular devices in visiting museums, cultural heritage and in learning others [8].

Cellular technology is revolutionizing the way people understand their environment. Recent research explores opportunities to use augmented reality (AR) to enhance user experience; however, there is only limited research on the acceptance of AR users in the context of tourism [9]. This recommendation-based mobile application aims to provide accurate and effective travel recommendations [10]. Location-based travel destination search (LBS) [11]. Using a technology approach to tracking tourist movements, the research objective is to identify the behavior of tourist movements in historic cities and cultural heritage. [12].

The development of this mobile application as an information medium to introduce tourism in Southwest Sumba based on location services and tourist destinations [13]. The purpose of this study is to develop a mobile application to introduce a creative sustainable tourism model with a factor analysis confirmatory approach [14]. Building the concept of tourism development in the Pacific region [15]. Relationship between tourism development and the impact of tourism [16]. Develop a marketing strategy and design of tourism products in meeting the needs of tourists [17]. Provision of services and products by local fishing communities in support of tourism development [18]. Create a tourism strategy through product invoices to attract the attractiveness of island or tourist destinations [19].

How to design (design) architecture and organizational management in achieving the island's tourist destinations that are effective and efficient [20]. Politics can influence tourism implementation [21]. Shaping visitor awareness in protecting the tourist environment (museum) [22]. Designing marketing activities to increase enthusiasm and competitiveness and create competitive strategies for consumers [23].

From some reference works of scientific papers and research journals on tourism both from the aspect of making applications as well as from the aspect of tourism development analysis. Therefore, in this scientific work, the writer wants to make a tourism application design that can make it easier for visitors to get to know historical sites and tourist objects on the island of Morotai that have never been made before.

3. Proposed method

The research only focuses on the design of mobile-based tourism applications of Morotai Island, which will make it easier for tourists to access information about tourist attractions. It can also choose travel packages with the closest destinations and routes via smartphone.
3.1 Design system

Figure 1 is the application system design for location-based Morotai Island tour packages.

Steps of application design when the user operates the Application is as follows.
1. Users look for information in the form of explanations, about the location and the nearest route and answers to quizzes about historic sites and or tourist attractions on Morotai Island.
2. The application will display information in the form of a brief and clear explanation as well as location, the nearest route as well as information about the quiz winner based on quiz points about historic sites on Morotai Island.
3. The application requests location data, where the location of historical sites and attractions of Morotai Island via GPS to Google Server.
4. Google servers confirm or send location data and the nearest route to a tourist attraction.
5. The application requests data in short form an explanation of historic sites on Morotai Island.

3.2 Design application

Following is the mobile design of the Morotai Island tourism application which can be seen in Figure 2.
At this stage is the design phase of the Morotai Island tourist application architecture which illustrates the processor implementation flow of the application that will be used by users via smartphones. The process and application flow can be seen in Figure 2.

3.3 Description of attractions and historical sites.

Table 1 describes the attractions and historical sites on Morotai Island.

| No | Tourist Attractions   | Category                                      |
|----|-----------------------|-----------------------------------------------|
|    |                       | Paket A.                                      |
| 1  | Dodola Island         | Natural Tourism                               |
| 2  | Sumsum Island         | Natural and Historical Tourism                 |
| 3  | Army Dock            | Natural and Historical Tourism                 |
|    |                       | Paket B.                                      |
| 1  | Dive Morotai          | Historical Tourism                            |
| 2  | Air Terjun Raja       | Historical Tourism                            |
| 3  | Trikora Monument     | Natural and Historical Tourism                 |
|    |                       | Paket C.                                      |
| 1  | Moro Ma Doto          | Natural Tourism                               |
| 2  | Gorango Beach         | Natural Tourism                               |
| 3  | Tabailenge Island     | Natural Tourism                               |
|    |                       | Paket D                                       |
| 1  | Nunuhu Beach          | Natural Tourism                               |
| 2  | Goa Pupugu            | Natural Tourism                               |
| 3  | Air Kaca              | Natural Tourism                               |
Table 1 is a list of natural attractions and historical tourism on the island of Morotai, grouped by package, namely packages A, B, C, and D, and on each package, there are three attractions that will be selected by visitors.

1. “Dodola” Island
   “Dodola” Island is one of the tourist attractions in Morotai that is most in demand by visitors because the island is very charming with a stretch of white sand that is smooth and broad, so that the local community and government call Dodola Island as a pearl on the Pacific lip. Dodola Island there are two islands, namely between small and large dodola, both separated by sea water at low tide, and will be seen falling at high tide. Dodola Island has been equipped with supporting facilities that become the needs of visitors such as hotels, restaurants and gaming facilities such as jetski, snorkeling, diving and fishing.

2. “Sumsum” Island
   Marrow Island is. The island with a high historical value, the distance or location of the island is only 3 miles in front of the City Center of Morotai Island. Sumsum Island is classified as a small island with beautiful natural panorama and gravel of white sand. This island is known as a hiding place for the Great General of the United States (US), General Douglas McArthur, the war leader of the allied forces for the Asia Pacific region during World War II in Morotai. This island has been equipped with supporting facilities such as restaurants and rides or games that can be enjoyed by visitors.

3. “Trikora” monuments and museums
   The “Trikora” Monument and Museum is a historical site located in the village of Wawama. This monument was established to commemorate the landing of the Indonesian army in the Trikora operation, and in this place keeps many historical relics of World War II, so the museum is visited by many foreign tourists, especially tourists from Australia and America, in addition to visiting historic sites they also tried to trace their ancestors. These places or attractions have been equipped with facilities that can be enjoyed by visitors such as restaurants and other rides.

4. Results and discussion

![Figure 3. Main Menu](image-url)
Figure 3 is the main menu display (interface) that appears when the application is run with Background map and Morotai Island, in the first display is given a timer (time setting) so that it will automatically disappear intermittently 1 minute, then the application process will display the main menu for package options tours based on location and the nearest mileage.

In designing this application, tour packages are grouped into four tour packages namely packages A, B, C, and D, which are analyzed through consideration of zones and distance to the destination location, so that tourists or visitors can choose the appropriate tour package menu. is desirable.

Figure 4 is a detailed menu display description of tourist attractions and historical sites on the island of Morotai, in the design of this application there are 3 tourist places in each package, in this process visitors can see information about historical attractions that are displayed in detail, starting from the pictures, name of tourist attractions, addresses, and facilities provided by selected tourist attractions, if visitors are interested in the chosen tour package, then visitors can make the booking process by clicking the go menu, then the application will show the location of tourist attractions through Google MAP and the application will display the time visits to each place and distance to the destination location.

5. Conclusion

Following are the conclusions from the discussion and evaluation in the research, as follows.
1. The Android-based mobile tourism application will provide the distribution of historic sites on Morotai Island
2. The tour package application can also provide information about distance, time, and the closest path to the tourist attractions.
3. The tourism application can provide a brief description of historical sites and other tourist objects on Morotai Island

For the development of applications in the future, the researchers suggest that this application is still quite simple, therefore it is expected that there will be application development carried out by others with better appearance and ideas.
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