



Development of A Tourist Destination Object Search Application as A Madura Tourism Information Media Using ADDIE Model

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Abstract

The rapid development of tourism has caused many tourists to be interested in enjoying it. Madura Island is a small archipelago and is part of East Java. Madura consists of 4 districts, namely Bangkalan district, Sampang district, Pamekasan district, and Sumenep district. With the number of districts owned, it creates a diversity of tourism. The development of the tourism sector must also be accompanied by the development of information technology. Utilization of technology can improve accommodation in supporting tourist destination services by designing an android-based application for searching for objects supporting Madura tourism destinations. The purpose of this research is to create an object search application that supports tourist destinations and serves as a medium for information about tourist locations on the island of Madura, making it more straightforward for tourists/users to enjoy their vacation. The stages of research carried out using ADDIE Model include knowing the system requirements, analysis and design, Development, implementation, and Evaluation. The results of the study are in the form of applications by detecting supporting objects including places of interest, gas stations, lodging, religion, culinary and health. It is expected that users when visiting Madura tourism will be easy, fun, and can enjoy their holidays.

Keywords: Supporting objects, tourist destinations, Madura Island, and applications.

1. INTRODUCTION

The increasing growth of tourism has resulted in greater regional income. If there are a lot of visitors, the shift happens quickly, and if tourism lasts a long time, there are variables that impact each other. Tourists will prefer to relax after work by visiting tourist sites. Madura Island is in East Java. Madura Island is a tiny archipelago consisting of four districts: Bangkalan, Sampang, Pamekasan, and Sumenep district [1], [2], [3], [4]. Its several districts contribute to tourism variety.



As a result, Madura Island has a high concentration of popular tourist attractions. Tourism must not only grow with appealing tourist attractions, but it must also be supported by a variety of items that travelers require when visiting. One underlying cause is that visitors are visiting a tourist destination for the first time, therefore they are unfamiliar with the place. A tourist's demands throughout their vacation include a place to relax, gastronomic pleasures, worship, urgent medical needs, and a variety of other items [5]. However, tourists are not aware of all of these supporting artifacts due to a lack of information regarding their locations. The growth of the tourist industry must be complemented with advances in information technology. Currently, the utilization of technology and information is required to deliver information that is accessible whenever and wherever the user is [6], [7].

The use of information technology in the tourism industry is an application that makes it simpler for users to make tourist excursions to Madura Island [8]. Jauhari et al. developed a tourism guide mobile application in Madura that can show object information, add gastronomic aspects, and give users with directions. As a consequence, users may easily visit Madura's tourism sites without getting lost while enjoying the local cuisine of each area. Aside from that, a comparable application has been built to facilitate visitor searches by using navigation in its construction [9]. Khairil et al's research findings are intended to assist, simplify, and enable travelers in looking for and collecting information on the locations of tourist sites in Sumenep Regency. A new web-based strategy has been developed in the form of a promotional information system that intends to present the Kravalu mangrove tourism region. As a consequence, information becomes more freely available to the public, which can directly raise public interest in and surrounding Sorong City. Other advanced web-based technologies, such as searching and utilizing tourism websites, also exist. The goal of developing a tourism guide web application is to assist travelers in obtaining information about the facilities available at tourist destinations. However, Remerta et al's research focused on travelers, who frequently struggle to discover tourist attractions and are unaware of the services provided at tourist sites [10].

The current information medium is still insufficient to meet the needs of travelers on vacation. The above-mentioned study findings solely include tourism attractions. One research addressed supporting items, but exclusively in the culinary context. As previously said, travelers' demands whilst on vacation include more than just gastronomic pleasures; they also require a variety of other supports for their vacation activities. Based on the three studies mentioned above, researchers will propose to create an object search application that supports tourist destinations and serves as a medium for information about tourist locations on the island of Madura, making it more straightforward for tourists/users to enjoy their vacation.

2. METHODS

2.1. Research Area

The research area refers to the place or location where data for this study was collected. It has been revealed that Madura contains four districts, one of which being Pamekasan. The Pamekasan district was chosen as the research site. Pamekasan Regency is one of Madura Island's districts, featuring a lengthy coastline and a popular tourist destination, Tarang Siring beach.

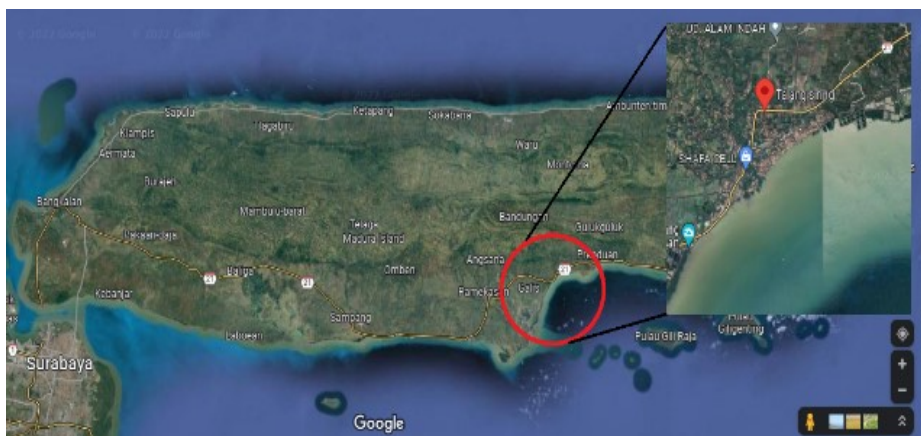


Figure 1. Study Area

2.2. Application Development Stages

Figure 2 depicts the processes involved in designing an object search application to support the planned tourism destination. In this research, the ADDIE Model is used as a system development method (see Figure 2 [11]). The process includes collecting data, analyzing and designing it, as well as developing and implementing systems, and evaluating. The stage continues with the collection of data required for application development. Interviews and observation are the approaches used to obtain data. These two strategies are part of the need mining methodology for gathering more in-depth data. The interview approach is carried out using direct engagement, which includes a question-and-answer session to extract information [12]. Observation techniques are defined as strategies for observing and describing data needs.

Based on data collected, the author develops analysis and design as a blueprint for application development. The purpose of design analysis data is to offer the development team with an overview of the functionality of the application that

will be produced. The final step is to convert into an Android-based programming language and evaluate it.

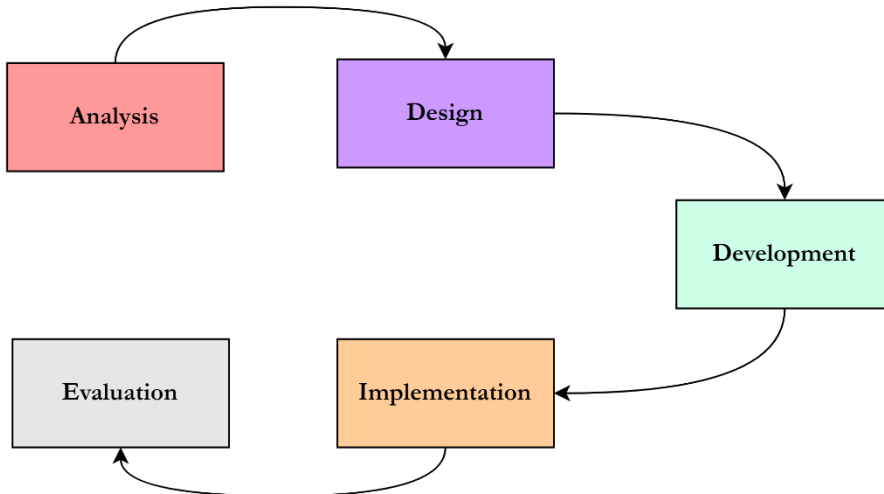


Figure 2. ADDIE Model

3. RESULTS AND DISCUSSION

3.1. Data Collection

Data collecting approaches included two methods: interviews and observation. Interview data was gathered by directly questioning tourist managers and local inhabitants. The questions focused on their knowledge and awareness of the supporting things around the Talang Siring beach tourist attraction. In the observation approach, researchers examined the region around Talang Siring beach and documented any supporting objects they discovered in logbook.

3.2. Analysis and Design

The software requirements analysis examines the software specifications necessary for the application development strategy. The criteria developed are functionality needs from the user's standpoint. Needs analysis is performed by identifying all needs (requirements), which are then represented by a use case diagram. The needs analysis in this study was carried out by gathering the data necessary from the previous stage. Table 1 shows the application functionality that was constructed and then depicted in Figure 3. Figure 4 depicts a system architecture diagram that describes the entire system's performance. The Tourist Destination Search Application was designed as a native mobile application for an Android-based device. Users who use this system via smartphones or Android devices will connect to the web service over the internet network, after which the data will be

retrieved from the database. Meanwhile, Figure 5 explains the database design, showing the relationships between tables which are represented in an entity relationship diagram.

Tabel 1. List of functional requirements.

No	Functional Requirements	Use Case
OP 1	The system must give thorough information on Talang Siring beach tourism, including photographs of tourist sites, forewords, videos, and a history of Talang Siring Beach.	View the main page.
OP 2	The system must show supporting items near Talang Siring beach.	View the supporting object categories.
OP3	When a user selects a supported object, the system must display its position.	Search for supporting items.
OP4	The system must show a description of the supported object and a picture.	View the supporting object information.
OP5	The system should display visitor statistics data.	View visitor statistics.

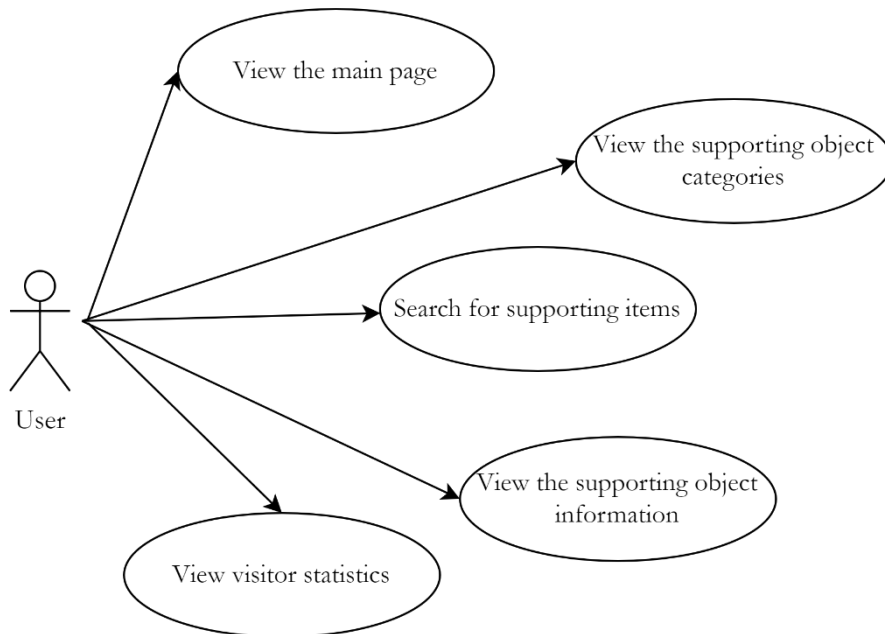


Figure 3. Usecase Diagram

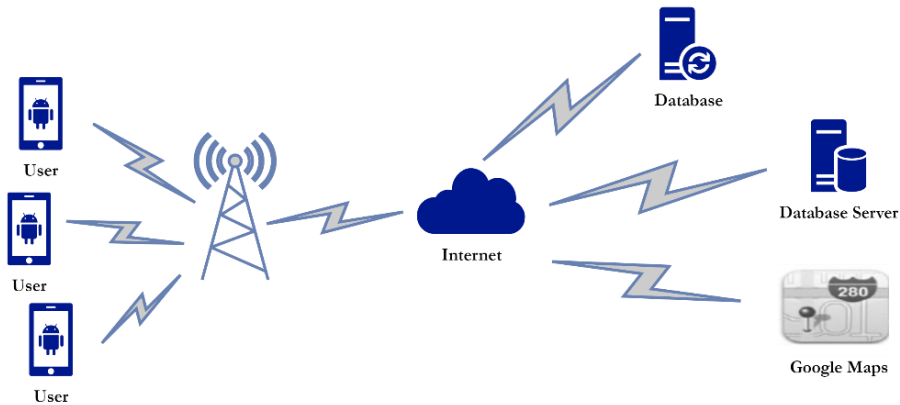


Figure 4. Architecture Diagram

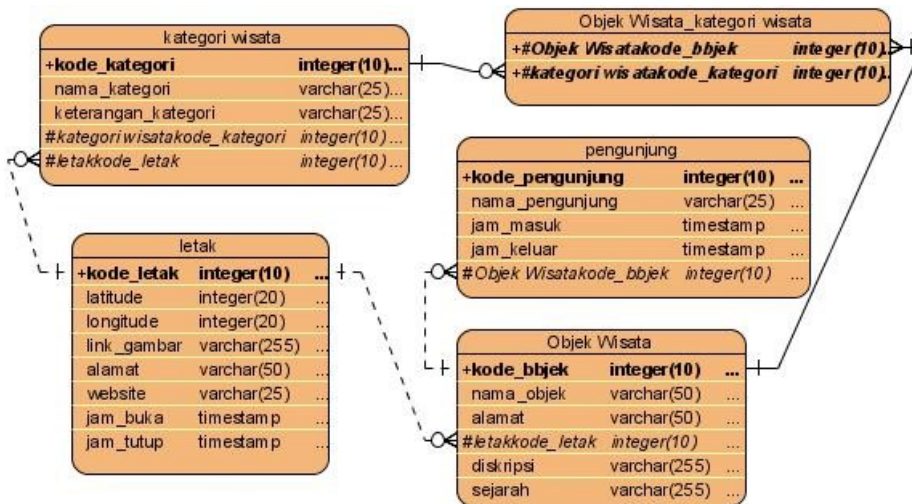


Figure 5. Entity Relationship Diagram

3.3. Development and Implementation

Software implementation relates to software design on the coding side. During the implementation stage, functional requirements and application design plans are translated into programming languages. The program was designed on the Android mobile platform, making it easier for consumers to utilize. The screenshot below displays the application results based on functional criteria. The user sees the main page in Figure 6, which has OP requirement code 1. When

users first open the application, they will be presented with the Talang Siring beach logo. After a few seconds, the user will be directed to the home page, where the application will display detailed tourist information about Talang Siring beach in the form of pictures of tourist attractions, forewords, videos, and the history of Talang Siring beach. In Figure 7, the user may examine the supporting object types using code OP2. The application will offer six tourist-friendly elements, including local businesses, petrol stations, lodging, religion for worship, cuisine, and health.

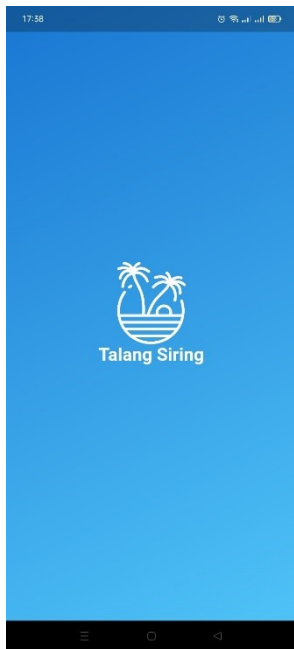


Figure 6. shows the application's initial appearance.

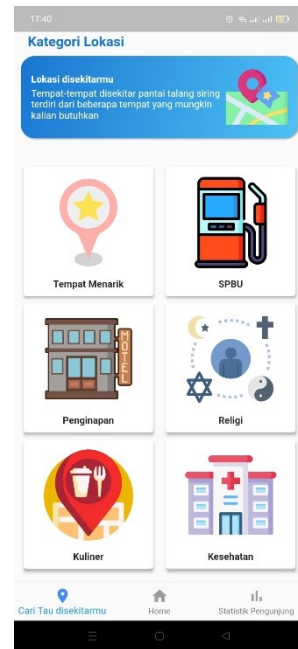


Figure 7. Location Category Features

Figures 8 and 9, using code OP3, show the user searching for supported items. This feature is a continuation of the OP2 function, in that when the user picks one of the supporting object categories, the user is sent to a map display that indicates the location of the supporting items based on the user's preference.

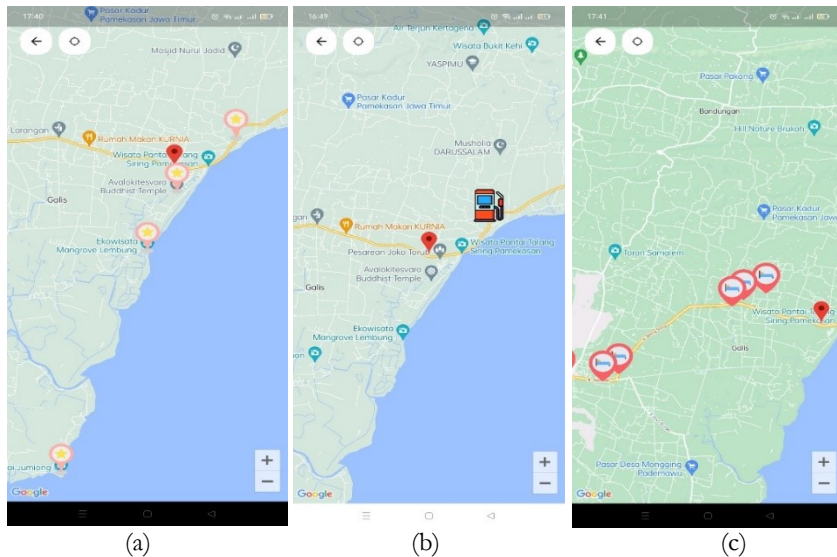


Figure 8. Location of supporting objects: (a) nearby locations (b) fueling stations (c) hotels

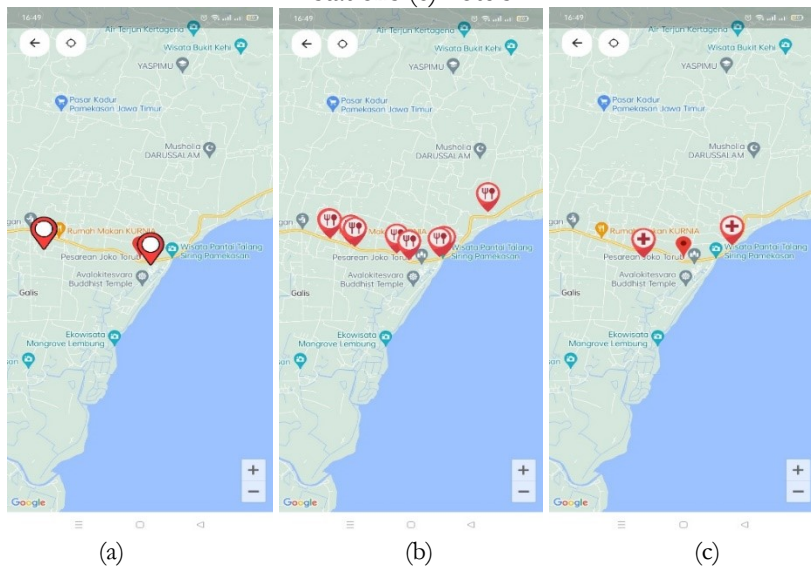


Figure 9. Location of supporting objects, (a) religion (b) culinary (c) health

In Figure 10, the user can access supporting object information using code OP4. This feature allows visitors to view extensive supporting object information, including the name of the supporting item, opening hours, and entire address, as well as an image of the supporting thing.

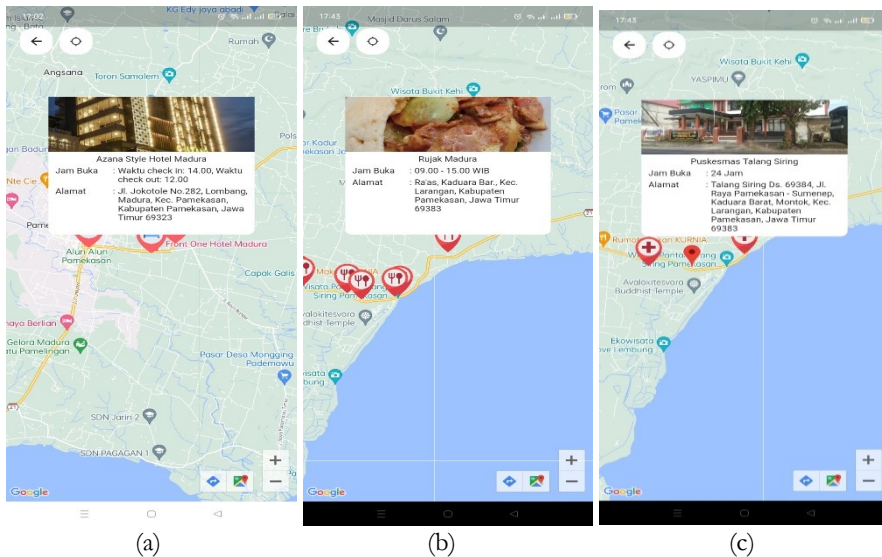


Figure 10. Detailed information about supporting objects: (a) housing (b) culinary (c) health

Figure 11 shows visitor numbers for code OP5. This feature will provide a statistics graph of visits over the past three years. With this statistical data, customers may easily determine which month to visit. Tourist destinations will be crowded due to the huge number of visitors.

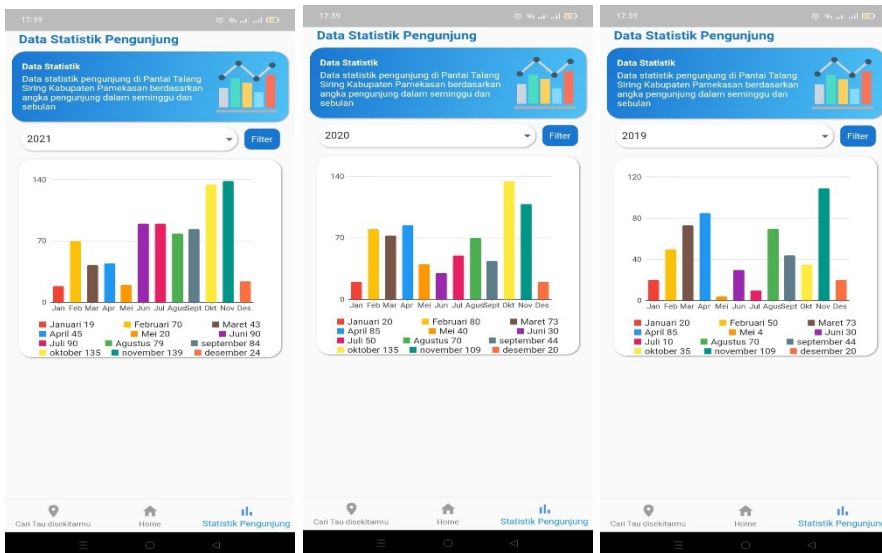


Figure 11. Statistical data about tourists visiting Talang Siring beach tourism

3.4. Evaluation

In the previous stage, the application was created and deployed on a smartphone. The next step is to confirm that the program runs properly. This is accomplished by evaluating functional needs pertaining to current features (see Tabel 2).

Tabel 2. Functional Requirement Evaluation.

Feature	Expected Result	Result
Main page	Display information on Talang Siring beach tourism, including photographs of tourist sites, forewords, videos, and a history of Talang Siring Beach.	√
Supporting object categories	Display supporting items near Talang Siring beach.	√
Search for supporting items.	Display the user's position and supporting objects.	√
Supporting object information.	Display a description of the supported object and a picture.	√
Visitor statistics	Display visitor statistics data.	√

4. CONCLUSION

Most individuals consider tourism to be the most important aspect of their vacations. Tourist attractions serve as a stopover for those seeking to experience unusual events. Tourist attractions are located over Indonesia, including Madura Island. Pamekasan Regency is one of Madura Island's districts with the primary tourist attraction, Talang Siring Beach. To facilitate travel, we suggest an object search application that serves as a tourist information medium. The program has the benefit of allowing travelers to readily obtain information on tourism-supporting objects located near tourist attractions. We created features for the program that include intriguing destinations, gas stations, hotels, religion, gastronomy, and health. Aside from that, there is an extra feature: users may access statistical data about Talang Siring tourist visits for the previous three years.

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