



# Website Development as a Media Promotion of Tourism Destinations in Manokwari Regency

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**Abstract:** The tourism potential of Manokwari Regency has not been widely recognized because promotion still relies on conventional media with limited reach and difficult to update, making it difficult for tourists to obtain accurate information about local destinations. This research aims to build an interactive and easily accessible web-based tourism information system to overcome the limitations of the promotion. The Rapid Application Development (RAD) method was used to enable rapid and iterative development; system needs were explored through observations and interviews with businesses, tourists, and local communities. The design was done using simple UML and MySQL database to manage destination data, routes, galleries, and tourist attraction descriptions, with a bilingual interface (Indonesian-English). The implementation was built using PHP and tested through Black-Box Testing on 19 functional scenarios, all of which passed with a 100% success rate. User testing of 50 respondents resulted in a satisfaction level of 76.75% (good category), indicating that the system is easy to understand and useful. By providing comprehensive information, interactive maps, and multilingual support, the system increases the accessibility and attractiveness of the destination, potentially strengthening Manokwari Regency's tourism promotion.

**Keywords:** Tourism Promotion; Rapid Application Development; Website; Manokwari Regency; Black Box

## 1. INTRODUCING

Manokwari Regency is one of the cities in West Papua Province as well as the provincial capital. Geographically, Manokwari Regency is located on the north coast of the Bird's Head Region of Papua Island, with an area of 3,168.28 km<sup>2</sup> and has great potential in the tourism sector, especially in protected forest areas, beaches, and beautiful islands. Based on data from the Ministry of Home Affairs in 2023, the population of Manokwari Regency was recorded at 203,191 people [1]. The tourism potential includes natural, cultural, historical, and artificial tourism. However, this great potential has not been fully recognized by the wider community due to the lack of effective promotion [2].

Currently, the Manokwari Regency Tourism, Youth and Sports Office still uses conventional and local promotion methods, such as the use of banners, billboards, RRI radio broadcasts, and local print media [3]. This method of promotion has a number of disadvantages, including limited information conveyed, difficult to access by tourists outside the region, and cannot be updated quickly because they have to reprint the media every time there is a change in information. In addition, conventional media does not include interactive features that can help tourists get a complete picture of the destination to be visited. Based on these problems, it can be formulated that the unavailability of an interactive and widely accessible web-based tourism information system is a major obstacle in the dissemination of information and promotion of Manokwari Regency tourism. The impact is the lack of exposure to leading tourist destinations that should be able to attract more tourists, both domestic and foreign.



Several previous studies have been conducted in the development of web-based tourism information systems. Research by [4] designed a web-based tourism system for Tebo Regency using UML and MySQL, with the aim of improving promotion and management of tourism data. Another study in Nabire Regency designed a tourism website that displays tourist attractions, events, and travel routes, to facilitate access to information [5]. Meanwhile, research in South Minahasa Regency built an information system containing twelve natural attractions to increase regional attractiveness through structured data presentation [6]. Another study in NTT enriched the approach with a web-based geographic information system that mapped tourist locations, types of tourism, and public facilities, and used PHP7 and MySQL for data management [7]. Although these studies have made important contributions, none have specifically discussed a web-based tourism promotion system for Manokwari Regency. In addition, most of the previous studies have not included foreign language features to reach foreign tourists, have not discussed the integration of interactive visual galleries, and have not included a direct approach to the condition of local tourism promotion that is still manual.

Thus, the purpose of this research is to build a web-based tourism information system that can be an effective and efficient promotional medium for tourist destinations in Manokwari Regency. This system is expected to increase the visibility of tourist attractions, make it easier for visitors to obtain information, and become a digital solution that can replace conventional promotion methods that have been used by local governments.

## 2. RESEARCH METHODOLOGY

### 2.1 Research Stages

Before starting the research, there are several stages of research carried out before developing the website, namely:

- Problem Identification, the first step before developing a website is to identify the problem that will be solved.
- Literature study is conducted to collect data and information from various sources such as journals, the internet, previous research reports, and other social media.
- Data collection is done by interviewing and direct observation to several tourist attractions in Manokwari Regency. This data collection is useful for determining what is needed in system development.
- Application of the RAD method, after the data has been successfully collected the system development process will follow the RAD method.
- After the system development is complete, a report will be made. The report will be completed from problem identification, literature study, data collection, development and also system testing.

### 2.2 System Development Method

The system development method uses Rapid Application Development. Figure 1 Rapid Application Development emphasizes the speed of development through strong user involvement in building, fast, iterative, and increasing a series of prototypes that form a system that will eventually develop into a final system [8].

**Tahapan Rapid Application Development**



**Figure 1.** Rapid Application Development [9]

The stages include:



- Requirements Planning: Developers and stakeholders work together to determine the main needs of the system quickly.
- System Design: This process involves two main stages: first, discussing with the users to design the required system, and second, building the system based on the discussions.
- Development: At this stage, the programming process is carried out to realize the system design that was previously discussed with related parties. The design is then developed into an application that is ready to be used as planned.
- Implementation: The system is implemented, including system testing and problem solving before it is officially used.

### 2.3 Data Collection Techniques

In this research, there are three data collection techniques used, namely:

- Interview: Conducting direct interviews with tourism actors and the local community to find out the information needs and website features that can support the promotion of tourist destinations.
- Field Observation: Researchers directly visited tourist destinations in Manokwari Regency to collect information about locations, pictures, facilities, entrance fees, and tourist attractions.
- Literature Study: Researchers will also collect data through journals, the internet, and articles related to website development and tourism promotion.

## 3. RESULT AND DISCUSSIONS

### 3.1 Designing Needs

In the needs design stage, information gathering is carried out to build a website as a tourism promotion media in Manokwari Regency. Local tourism businesses are involved as the main parties in this process. Interviews were conducted with tourism actors and the local community to obtain data such as information on facilities, entry prices, operations, and other information that is useful for potential tourists.

#### 3.1.1 User Information Needs

Travelers:

- Complete information about the location and route to tourist destinations.
- Details of facilities, such as public toilets, gazebos, food courts, parking lots, prayer rooms, and equipment rentals.
- Operational data such as entrance ticket prices (HTM), opening and closing hours, and visitor capacity.
- Photo gallery, including the surrounding scenery.

Tourism stakeholders:

- Promotional media to increase the visibility of tourist destinations.
- A platform that can showcase the superior facilities of each tourist spot.

#### 3.1.2 Data Collection

Data was collected through direct observation and interviews with several tourism stakeholders and the local community. Interview is a data collection method conducted through direct interaction between researchers and interviewees, usually in the form of face-to-face questions and answers. This technique allows researchers to explore in-depth information about participants' experiences, views or perceptions related to the research topic. Interviews can be structured, semi-structured, or unstructured, depending on the objectives and research approach used [10]. Each tourist attraction has unique characteristics that affect its appeal, such as natural beauty, historical value, or game rides, and additional facilities such as gazebos or entertainment facilities.

**Table 1.** Interview and Observation Aspects

<b>Tourist Attractions</b>	<b>Address</b>
YenBeba White Sand Beach	Jl. Pasir Putih, Kec. Manokwari Timur
Bakaro Beach	Sunsweni, Kec. Manokwari Barat
Maruni Beach	Jl. Manokwari-Bintuni, Distrik Manokwari





Batu Kotak Abasi Beach	Arowi, Kec. Manokwari Timur
Petrus Kafi Beach	Belakang Perumahan Dosen, Amban, Kec. Manokwari Barat
Amban Beach	Amban, Kec. Manokwari Barat
Sasie Tourism Beach	Saubeba, Kec. Manokwari Utara
Manneken Park	Udapi Hilir, Distrik Prafi
Toraja House Park	Soribo, Kec. Manokwari Barat
Syornebo Beach	Mansinam, Kec. Manokwari Timur
Kademir Water Spot	Sanggeng, Kec. Manokwari Barat
Table Mountain Nature Park	Ayambori, Kec. Manokwari Timur
Aimasi Dam	Waseki, Distrik Prafi
Mansinam Island	Mansinam, Kec. Manokwari Timur
Lemon Island	Mansinam, Kec. Manokwari Timur
Kaki Island	Saubeba, Kec. Manokwari Utara
Prafi Dam	Prafi Indise, Kec. Warmare
Allaza Pool	Udapi Hilir, Distrik Prafi
Alvaro Waterfun	Amban, Kec. Manokwari Barat

### 3.1.3 System Specifications

Based on stakeholder needs and data collected, the website system as a media for promoting tourist destinations is designed to include:

- Location page with interactive map
- Detailed information on the facilities of each tourist spot in the form of detailed descriptions.
- Photo gallery of tourist attractions
- Search system based on the tourist attractions you want to visit or user preferences.
- Dashboard that allows admin to add new tourist destination data and update tourist destination information.
- English language features for visitors from abroad or international tourists.

### 3.2 System Design

System design in this study using the Unified Modeling Language (UML) is a software modeling language that has been standardized as a medium for writing software blueprints. UML can be used for visualization, specification, construction and documentation of several parts of the system in the software [11].

#### 3.2.1 First Iteration for Website Home Page

In the first iteration of the website home page, the display is still simple with a black navbar containing the logo, district name, and navigation menus such as Home, Destinations, Gallery, Location Points, Language, and Admin. The center section displays a welcome "Welcome to Manokwari Regency Tourism" as well as a brief description. Underneath is "Preview Destinations" featuring Mansinam Island and YenBeba White Sand Beach with images and labels. Although functional, the design is still plain and less visually appealing. In the second iteration of Figure 2, the homepage was updated with a bright green theme and a background image of the Mansinam Island statue. A big title "MANOKWARI DISTRICT WISERY DESTINATIONS" was added along with a "See More" button. Navigation is maintained with a more modern design. Overall, the look has become more attractive and user-friendly.





Figure 2. Second iteration Iteration Website Home Page

### 3.2.2 Second Iteration for Location Point Page

In the first iteration of the Location Point page, the display was still simple and uncomfortable for users. The page title was plain without any interesting visual elements, the destination dropdown was small and lacked information, and the "Create Route" button was inconspicuous. The map takes up almost the entire screen, making the display look cramped and unorganized. Navigation is just plain text without icons, making it look stiff and unappealing. In the second iteration in Figure 3, the Location Point page and display were improved with a modern header and iconized navigation menu. Location input was made clearer with labels and icons. The "Create Route" button appears larger and more prominent. The map is neater and does not take up the whole screen, with route explanations on the side. The overall design is more consistent, user-friendly and visually appealing.

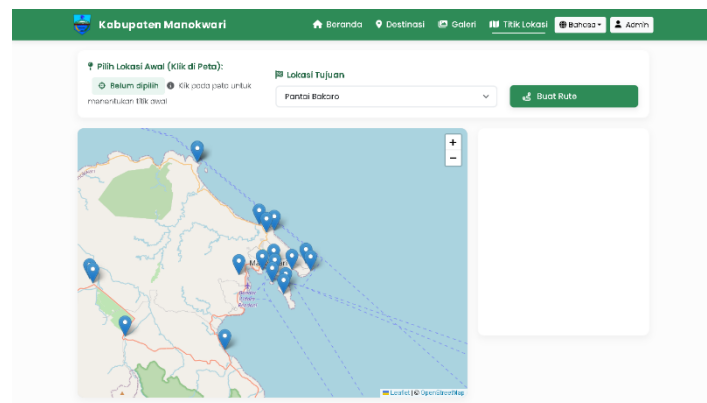
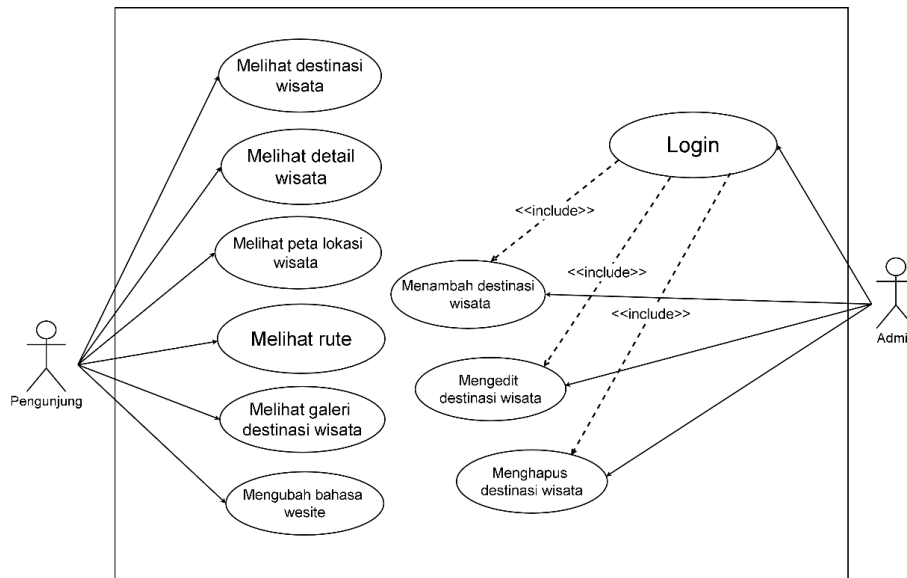


Figure 3. Second Iteration of Location Point Page

### 3.2.3 Use Case Diagram

Use case diagrams are visual representations of the interactions that occur between actors and systems, describing the series of interrelationships that occur between the two. This diagram is created to show how actors play a role and interact with the system through various relevant scenarios [12]. Use Case Figure 4 illustrates the interaction between system users and available functionality. Actors in the system are Visitors and Admins. Visitors can view tourist destinations, tour details, location maps, routes, tour galleries and change the website language. Admin can add tourist destination data, edit data and delete tourist destination data.

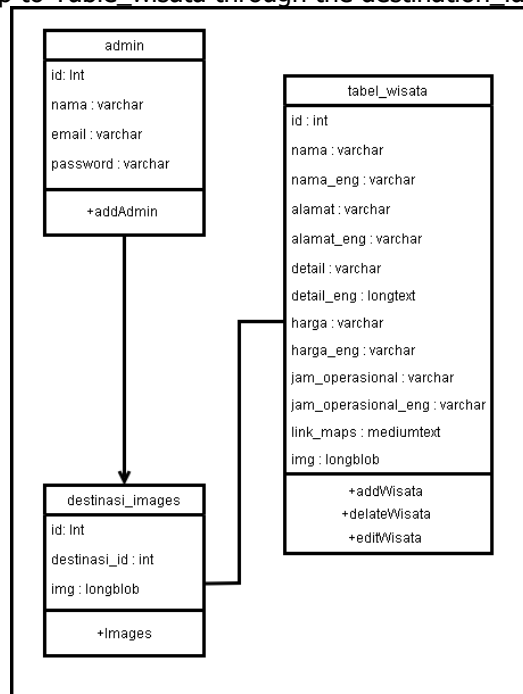




**Figure 4.** Use Case Diagram

### 3.2.4 Class Diagram

The class diagram in Figure 5 consists of three main tables: Admin, Tourism table, and Destination\_images. The Admin table stores administrator data with attributes such as id, name, email, and password. Table\_wisata represents tourist destination information, including name, address, description, price, operating hours in two languages (Indonesian and English), Google Maps link, and main image. Meanwhile, Destination\_images is used to store additional image galleries for each destination, with a relationship to Table\_wisata through the destination\_id attribute.

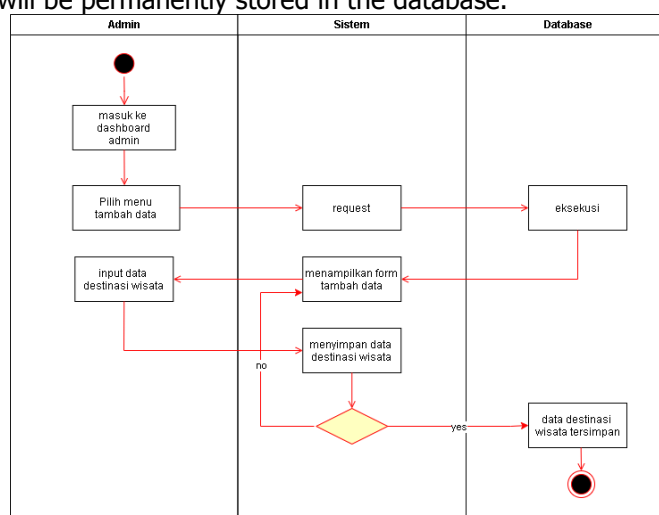


**Figure 5.** Class Diagram

### 3.2.5 Activity Diagram

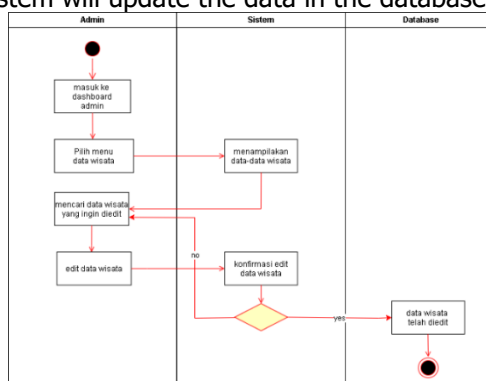
Class diagram describes the relationship between classes and the details of each class in the design model of a system. This diagram also represents the workflow of the database structure that will be used in the designed system [13]. Activity diagram is a representation of the workflow of a system that shows the sequence of activities from one step to the next, as well as showing the branching and flow that takes place simultaneously in the system process [14]. In this system describes the flow of interaction between admins and users in accessing features on tourism websites. Admin has access rights to login, add, edit, and delete tourist destination data through the dashboard, with each process involving validation and interaction with the database. Meanwhile, website users (visitors) can view the list of destinations, detailed information, location maps, travel routes, photo galleries, and can also change the website display language. Each activity is designed to facilitate users in obtaining tourist information and admins in managing system content efficiently.

Activity diagram in Figure 6 illustrates the admin process flow in adding tourist destination data. The process starts from the admin entering the dashboard, selecting the add data menu, filling out the form, until the system saves the data to the database if the input is valid. If the storage is successful, the tourist destination data will be permanently stored in the database.



**Figure 6.** Activity Diagram of Admin Adding Data

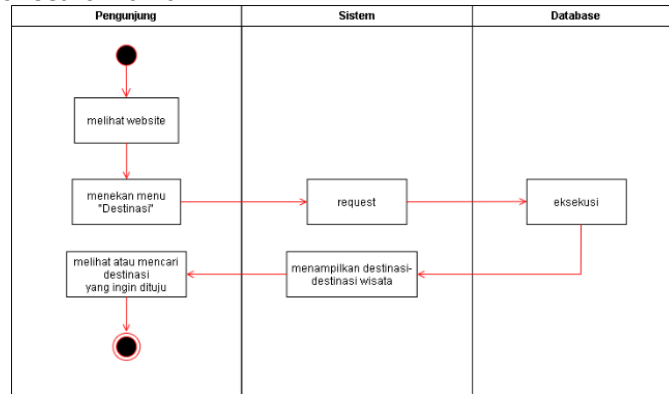
Figure 7 shows the admin process in editing tourist destination data. The process starts with the admin entering the dashboard, selecting the tourist data menu, then searching and editing the desired data. After confirmation, the system will update the data in the database if the changes are approved.



**Gambar 7.** Activity Diagram of Admin Editing Destinations

Figure 8 shows the activity diagram of the visitor process in viewing tourist destinations on the website. Visitors start by opening the website, then pressing the "Destinations" menu to send data

requests to the system. The system then displays tourist destination data retrieved from the database so that visitors can see or search for it.



**Gambar 8.** Activity Diagram of Visitor Viewing Destinations

### 3.3 Development

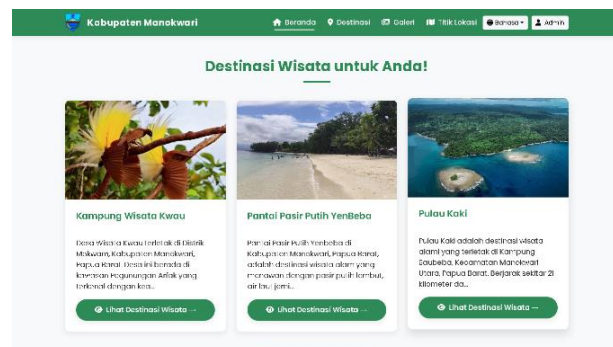
System development is a series of activities carried out to produce quality information systems that are able to meet user needs in a timely and cost-efficient manner [15]. The following is a display of the results of system development from the system design that has been made.

The home page in Figure 9 is a display that will be accessed by visitors who explain information about tourist destinations in Manokwari Regency.



**Figure 9.** Visitor Initial View

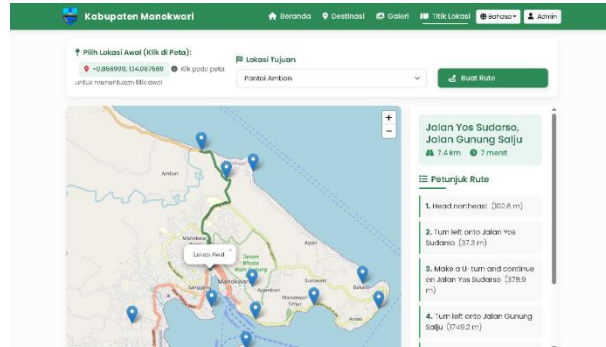
Figure 10 is a display of tourist destinations in Manokwari Regency. Visitors can see interesting things in various destinations. Tourist Destinations visitors can see more information about tours ranging from the various facilities provided and information on each facility fee provided.



**Figure 10.** Tourist Destination Menu Display

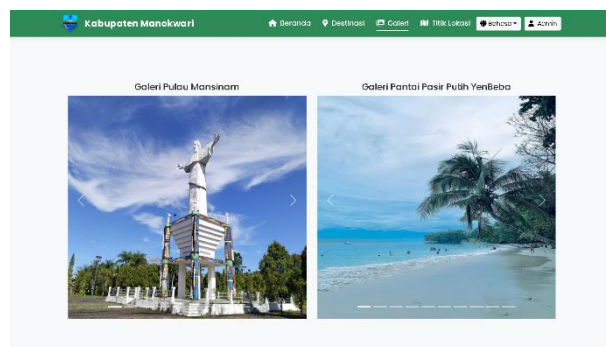


In the location point menu in Figure 11 the user can choose the tourist destination he wants to visit then from the selected tour the user can choose the initial location of departure on the map. After that the system will provide instructions from the route that has been determined.



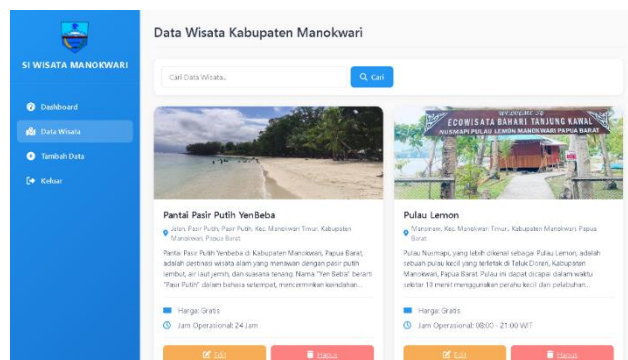
**Figure 11.** Display of Tourist Destination Locations and Routes

Figure 12 is that visitors can see various documentation on each tourist destination which displays various documentation from each existing tourist destination making it easier for visitors to be able to travel there.



**Figure 12.** Tourist Destination Gallery View

Figure 13 is an admin view to view the list and change existing tourist destinations. When there is an update the admin can change and delete existing destination data.



**Figure 13.** Tourist Destination Gallery View

In Figure 14 the admin can also add data on existing tourist destinations when there are new destinations in Manokwari Regency. This makes it easier for users to find out the list and tourist information available.



Figure 14. Display of Add Tourist Destination Data Form

### 3.2 Implementation of Test Results using BlackBox Testing

BlackBox Testing is an approach to software testing that focuses on the functionality of the system without considering the internal structure of the code. At this stage, testing is conducted to ensure that each feature developed functions according to the specified requirements. The results of testing using the BlackBox method will provide an overview of the reliability and suitability of the system to user needs.

Table 2. Sistem Testing

Testing Type	Scenario / Action	Expected Result	Test Result	Conclusion
Admin Login	Clear email & password, click Login	Failed login, return to login form	Suitable	Success
Admin Login	Enter incorrect data	"Incorrect Password" error message appears	Compliant	Success
Admin Login	Enter valid email and password	Successful login, enter dashboard	Compliant	Success
Admin Dashboard	Click on Tourist Data menu	Display tour data	Compliant	Success
Admin Dashboard	Click Add Tourism menu	Display the add data form	Compliant	Success
Admin Dashboard	Search destination	Display data according to search	Appropriate	Success
Admin Dashboard	Click Edit menu	Displays data edit form	Appropriate	Success
Admin Dashboard	Edit data and save	Data is successfully updated	Appropriate	Success
Admin Dashboard	Add new data	Data successfully added	Appropriate	Success
Admin Dashboard	Delete destination data	Data successfully deleted	Appropriate	Success
Admin Dashboard	Click the Exit menu	Logout successful	Appropriate	Success
Visitor	Click Home / Look Down	Display the main page and destination preview	Appropriate	Success
Visitor	Explore Destinations / click Destinations menu	Displays a list of destinations	Appropriate	Success
Visitor	Search tourist destinations	Displays destinations according to search	Appropriate	Success
Visitor	Click the Details menu	Displays complete destination information	Appropriate	Success



Visitor	Click Gallery	Displays destination gallery images	Appropriate	Success
Visitor	Click Location Point	Displaying a map of tourist destinations	Appropriate	Success
Visitor	Create travel route	Displaying tourist destination routes	Appropriate	Success
Visitor	Switch to English	Website content changes to English	Suitable	Success

Based on the results of system functionality testing in Table 2, all scenarios for both admins and visitors have run as expected. The main features such as login, tourism data management, search, and destination information display were successfully tested without problems. This shows that the system is stable and ready to be used by users according to their respective roles. Thus, this tourism information system can be declared feasible and functioning properly.

### 3.2 Implementation of Test Results using BlackBox Testing User Testing

Tests were conducted on 50 users to evaluate the quality of the Manokwari Regency tourism information website. The instrument used is a questionnaire with a Likert scale of 1-5, where 1 means very good and 5 means very bad. There are 9 questions that cover aspects of ease of information, visual comfort, attractiveness, and feature effectiveness.

From the results of filling out the questionnaire, an overall average value of 1.93 was obtained. This value indicates that user perceptions tend to be positive towards the tested website. To measure the level of satisfaction in percentage form, the formula is used:

$$\text{Satisfaction Level (\%)} = \frac{(\text{Highest score} - \text{Answer score})}{(\text{Highest score} - \text{Lowest score})} \times 100 \%$$

Testing was conducted on 50 users with 9 questions and resulted in an average score of 1.93. From these results the answer score is 868.5, with the highest score of 2250 and the lowest score of 450. Then it can be calculated as follows:

$$\text{Satisfaction Level (\%)} = \frac{2250 - 868,5}{2250 - 450} \times 100\% = 76,75\%$$

These results show that the Manokwari Regency tourism information website gets a satisfaction value of 76.75% which is classified as good. This means that most users feel that this website is able to present information that is easy to understand, a comfortable appearance, and features that are quite effective. Nevertheless, there are some important inputs, such as the addition of tourist manager contact information, which can be taken into consideration in further system development.

## 4. CONCLUSION

The purpose of this research is to build a web-based tourism information system that can be an effective and efficient promotional medium for tourist destinations in Manokwari Regency. The Manokwari Regency tourism information website was declared feasible to use with a functionality success rate of 100% of the 19 scenarios tested, and the user satisfaction level reached 76.75% of the 50 respondents. These results show that the website has functioned well as a medium for tourism information and promotion, providing easy access to information, a comfortable appearance, and effective features, although there are still inputs such as the addition of destination manager contact information for further development.





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