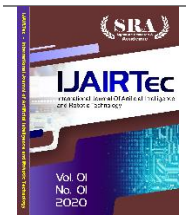

International Journal of Artificial Intelligence and Robotic Technology (IJAIRTec)

PISSN: 2775-5800 EISSN: 2775-5797
Volume: 2 Number: 1 pp. 10-19, April 2022
https://journal.sracademicpublishing.org/

TOURISM INFORMATION SYSTEM IN PRINGSEWU REGENCY USING MOBILE WEB-BASED GEOGRAPHIC INFORMATION SYSTEM (GIS)

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Article Info
Article history:
Received March 7, 2022
Revised March 25, 2022
Accepted April 14, 2022

Keywords:
GIS,
Tourism,
mobile web.

Abstract
Study this aim for build application information p aritourism with geographic information s is tem and invite you to visit a wan in get information tour in K district Pringsewu with take advantage of smart smartphones. By kar e na that writer do study about application information tourism mobile web -based in the District Pringsewu. Method used in study this is type study applied. Location study done on the spot tourism in the district Pringsewu. Data source obtained from visit live place tour t a to use get information. Technique data collection carried out with method interview, observation, documentation. From the results of the research that has been done, it can be concluded that with exists s i stem information geographic web-based mobile visitors could knowing information the place tourism in Pringsewu and knowing information about the place tourist at a time knowing direction towards the place tourism you want visited.

I. INTRODUCTION

In today's modern era, technological developments are increasing day by day. Given that technology is a very important tool to support the national development of a country, especially Indonesia. The faster technology develops in a country, the faster the country will progress. Technological advances are increasing rapidly, making it impossible to create new things in the world of computerization, where every activity always involves a computer.

Pringsewu is a regency that has many well-known and visited tourist areas. Has several other tourist attractions that cannot be informed yet. Most tourists do

not know the geographical location of the tourist object visited. Currently, many information systems are being used to provide information on tourist attractions only through newspapers, social media, websites.

However, with so much information, the presentation must also be adjusted to the object. For this reason, precise and accurate information is needed to disseminate this information. The dissemination of this geographic information can be in the form of spatial (regional) data or non-spatial data in the form of information relating to the existence of a region. Dissemination of information in the geographical field is also useful in the field of natural attractions which use (geographical) mapping information to disseminate in detail where each tourist object can be visited by tourists. For this reason, an information system is needed that can present information on tourist objects in Pringsewu Regency.

Geographic Information System (GIS) can be applied to overcome these problems. Geographic information systems (GIS) have the ability to store data and manipulate information based on geographic data. This is what distinguishes Geographic Information Systems (GIS) from other information systems. GIS (Geographic Information System) technology has developed very rapidly. Among them is Mobile GIS where GIS, which was only used in an office environment, has become more flexible and can be used outside the office in a mobile manner. Mobile GIS can be used to easily capture, store, update, manipulate, analyze and display geographic information[1], [2].

The Geographic Information System that will be developed in the delivery of information can be used via cell phones which are currently growing and making it easier for the public through their operating systems. One of the newest operating systems today is the Android operating system. The Android system allows developers to build their own applications. Webmobile-based Geographic Information Systems can be one of the main interactive mobile tools. Spatial data showing the location of public facilities in actual conditions is displayed on the mobile phone (Android) that is carried. Android technology in this geographic information system has many advantages including: enabling mobility of the user. The need for a webmobile-based tourist information system in Pringsewu Regency aims to provide information on tourist objects to tourists and the public, it is hoped that tourism in Pringsewu Regency will be increasingly recognized by many people.

II. THEORETICAL BASIS

In simple terms, a system can be interpreted as a collection or set of elements, components, or variables that are organized, interacting, interdependent, and integrated.

Definition of information according to experts:

1. According to Gordon B. Davis (2012:17), systems can be abstract or physical. An abstract system is an ordered arrangement of interdependent ideas or conceptions. While the physical system is a series of elements that work together to create a goal[3].
2. According to Sutarman (2012: 13), "a system is a collection of elements that are interconnected and interact in a single unit to carry out a process of achieving a main goal"[4].

3. According to Mustakini (2009:34), "the system can be defined by the procedure approach and the component approach, the system can be defined as a collection of procedures that have a specific purpose". There are two groups of approaches in defining the system, namely:
   a. A systems approach that places more emphasis on procedures defines a system as a network of interconnected procedures. Gather together to carry out an activity or to complete a specific goal.
   b. An approach that puts more emphasis on the elements or components defines the system as a collection of elements that interact with each other to achieve a certain goal[5].

Based on some of the opinions stated above, it can be concluded that "a system is a collection of parts, both human and non-human, that interact with each other to achieve a goal.

2.2 Definition of Information

The word information itself comes from the ancient French word informacion (1387) which is taken from the Latin informationem which means "outline, concept, idea". Information is a noun of informare which means activity in "communicated knowledge[6]–[8].

Understanding information in general is data that has been processed into a form that has meaning for the recipient and can be in the form of facts so that it has benefits for information users. So there is a transformation of data into information, namely input - process - output.

The definition of information according to experts is:

1. According to Romney and Steinbart (2015: 3), a system is a series consisting of two or more components that are interconnected and interact with each other to achieve a goal where the system is usually divided into smaller sub-systems that support the same system. bigger.
2. Pratama (2013: 7), defines a system as a set of procedures that are interrelated and connected to each other to carry out a task together.
3. Tohari (2014: 2), the system is also defined as a collection or set of elements or variables that are interrelated, interact with each other, and are mutually dependent on one another to achieve goals.

Based on some of the opinions stated above, it can be concluded that "a system is a collection of parts, both human and non-human, that interact with each other to achieve a goal.

2.3 Definition of information systems

In general, an information system can be defined as a system within an organization which is a combination of people, facilities, technology, media, procedures and controls aimed at obtaining important communication lines, processing certain types of routine transactions, giving signals to management and the other to important internal and external events and provide an informed basis for decision making.

Definition of Information Systems - According to McLeod (2005:35), Information Systems are systems that have the ability to collect information from all sources and use various media to display information.

According to Tata Sutabri (2005: 36), an information system is a system within an organization that brings together the needs of daily transaction processing that supports managerial organizational functions in the strategic activities of an organization to be able to provide certain external parties with the necessary reports.

According to O'Brien (2005, p5), an information system is an organized combination of any kind of people, hardware, software, computer networks and data communications, and databases.) that collect, transform and disseminate information within an organizational form. For more details can be seen in the picture
2.1 about the components of the information system.

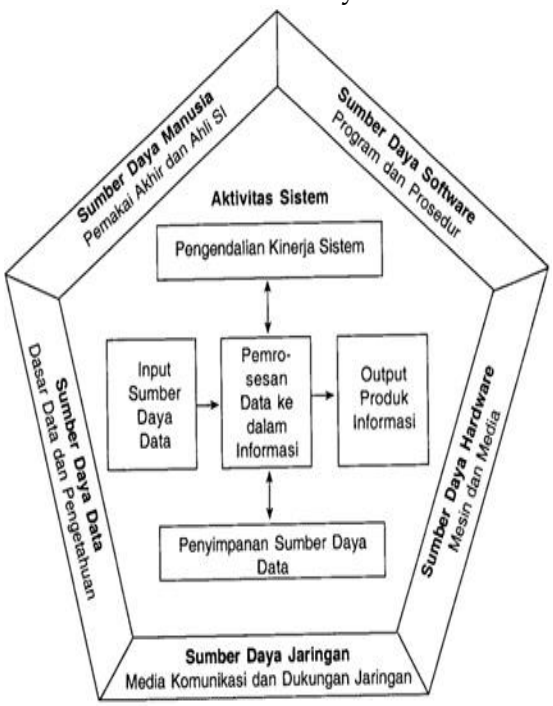

Figure 1 Information System Components.

According to Leitch Rosses (2005: 11) suggests an information system is a system within an organization that meets the needs of daily transaction management, supports operations, is managerial and strategic activities of an organization and provides certain external parties with the necessary reports. An information system is basically formed through a group of fixed operating activities, namely:

1. Collect data
2. Categorizing data
3. Counting
4. Analyze
5. Presenting reports

Information system targets are:

1. Improve task completion. Users must be more productive in order to produce high quality output.
2. Increase overall effectiveness. The system should be easy and frequently used.
3. Increasing economic effectiveness. The benefits derived from the system must be greater than the costs incurred.
   Information systems can be interpreted as an optimally integrated and computer-based system that can collect and present various types of accurate data for various needs.

2.4 Geographic Information System

Geographic Information System (English: *Geographic Information System*, abbreviated as GIS) is a special information system that manages data that has spatial information (spatial reference), or in a narrower sense is a computer system that has the ability to build, store, manage and display information. geographically referenced, for example data identified by location, in a database. According to other sources, GIS is an information system designed to work with spatially referenced or geographically coordinated data, or in other words a GIS is a database system with special capabilities for handling *spatially referenced data* along with a set of work operations (Barus and Wiradisastra, 2000). Meanwhile, according to (Anon, 2001) a Geographic Information System is an Information System that can combine graphical data (spatial) with text data *(attributes)* of objects that are linked geographically on earth *(georeference)*. Besides that, GIS can also combine data, organize data and perform data analysis which will eventually produce output that can be used as a reference in making decisions on issues related to geography.

2.5 PHP

PHP is the most widely used script programming language today. PHP is widely used to program dynamic web sites, although it is also possible to use it for other uses. Well known examples of php Applications are phpbb and Mediawiki (the software behind Wikipedia). PHP is a scripting language that integrates with HTML and is executed on the server side. This means that all the syntax provided will be fully executed on the server while only the results are sent to the browser.[9], [10]

2.5. MYSQL

Understanding Msql is software that is classified as a database server and is open source. MySQL is a type of database server, which uses SQL as the basic language to access data bases. A database is a set of tables that are interconnected with each other. To access and process data stored on a computer, a MySQL management system is needed[11].

2.6 Flow diagram

Flow chart *(Flowchart)* is a diagram with graphic symbols that indicate the different types of program operations. *The flowchart* describes in the form of a flowchart from the algorithms in a program, which states the direction of the flow of the program[12], [13].

2.7 *Data Flow Diagrams* (DFD)

Data Flow Diagram (DFD) is a tool used to describe a new system that will be developed logically without considering the physical environment where the data flows or the physical environment where the data will be stored[14].

2.8 *Entity Relationship Diagram* (ERD)

ER-diagrams are based on the perception of the real world which is composed of a collection of basic objects called entities. Entity is something or object in the real world that can be distinguished from other objects. Entities are represented in the database by a set of attribute mapping cardinality or cardinality ratios showing the number of entities that can be connected to one other entity with a relationship set (Hariyanto, 2008:12).

III. RESEARCH METHODOLOGY

3.1 Data Collection Methodology

In collecting data, the methods used include:

1. Observation
   Observation or observation is a method of collecting data when creating a scientific paper.
   Based on the statement above, the author makes direct observations to obtain accurate information based on existing facts by analyzing a system that is running directly to the source.
2. study liberatur
   Liberal studies are carried out by studying written materials, both from books, journals, or articles on the internet according to related problems.
3. Interview or interview
   Interviews, according to Lexy J Moleong (1991: 135) explained that interviews are conversations with certain intentions. In this method the researcher and the respondent face to face to obtain information verbally with the aim of obtaining data that can explain the research problem.

3.2 Waterfall System Development Methodology

The waterfall method is a method that is often used by system analysts in general. The essence of the waterfall method is that the work on a system is carried out sequentially or linearly. So, if 1st has not been done, then step 2 cannot be done. If step 2 has not been done then step 3 also cannot be done, and so on. Automatically the 3rd step will be carried out if the 1st and 2nd steps have been carried out. In general, the waterfall method has the following steps: Analysis, Design, Writing, Testing and Implementation and Maintenance.

A. Stages of the Waterfall Method

a. Needs Analysis
   This step is an analysis of system requirements. Data collection at this stage can carry out research, interviews or literature studies.
   The system analyst will dig up as much information from the user as possible so that a computer system can perform the tasks desired by the user. This stage will produce a user requirement document, or it can be said as data related to the user's wishes in making the system.

This document will be the system analyst's reference for translating into the programming language.

b. System design
The stage where the thoughts and system design are carried out for solutions to existing problems using system modeling tools such as data flow diagrams, entity relationship diagrams and data structure and discussion.

c. Program Code Writing
Writing program code or coding is a design translation into a language that can be recognized by a computer.
Performed by programmers who will translate transactions requested by the user. This stage is the real stage in working on a system. In the sense that the use of computers will be maximized in this stage. After the coding is complete, testing will be carried out on the system that was created earlier. The purpose of testing is to find errors in the system and then fix them.

d. Program Testing
The final stage is where the new system is tested for its capabilities and effectiveness so that the deficiencies and weaknesses of the system are found, which are then reviewed and improved upon to make the application better and more perfect.

e. Program Implementation and Maintenance
Software that has been delivered to customers will definitely experience changes. These changes can be because the software must adapt to a new environment (peripherals or a new operating system), or because the customer requires functional improvements.

3.3 Analysis of System Requirements

3.3.1. PHP

According to Shelly and Vermaat (2011: 682) PHP, which stands for Personal Home Page, is a free open-source scripting language. PHP, which is a language similar to C, Java and Perl, is used primarily on Linux web servers. Web developers create dynamic web pages by including PHP scripts along with HTML or XHTML in a web page. According to Aditya Nur Alan (2010: 1) PHP (Personal Home Page) is a scripting language that can be embedded or pasted into HTML. PHP is widely used to program dynamic websites. PHP can be used to build a CMS (Content Management System). From the opinions of the experts above, it can be concluded that PHP or Personal Home Page is a programming language that creates dynamic web pages that can change according to the interactions used by the user.

3.3.2. MYSQL

Some understanding of MySQL according to experts:

1. According to Raharjo (2011: 21), "MySQL is an RDBMS (or database server) that manages databases that quickly accommodate very large numbers and can be accessed by many users."
2. According to Kadir (2008:2), "MySQL is an open source software used to create a database."

Based on the opinions stated above, it can be concluded that MySQL is a software or program used to create an open source database.

3.3.3 Xampp

Xampp is a complete instant web server application because everything you need to create a website is included in this application. Xampp is an AMP (Apache, MySQL, and Php) installer package which is very easy to apply to computers that don't have a server to be able to view sites created using the server's language and database server.

3.4 Software Requirements Specifications (Software)

In making a Web-Based Sales Information System at Mitra Tani Mandiri requires several software specifications including:

1. Dreamwave CS4
2. Xampp 3.2.2
3. Adobe Phptroshop Cs4
4. Mit App Invertor

IV. SYSTEM ANALYSIS AND DESIGN

4.1 System Design

According to the Tri Haryati Journal (2013 System design is an attempt by practitioners to start having both existing systems and to have new systems.

Context Diagram

Context diagram is a flow of data that serves to describe the relationship -the outside.

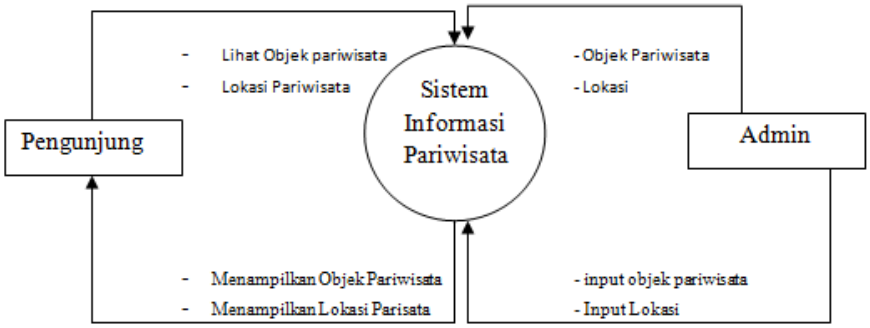

Figure 2. Context diagram of a tourism geographic information system

4.2 Implementation

Main Page

The main page displays a selection of tourism places in Pringsewu Regency

Figure 3. Main Page

Information Pages

After selecting a tourist spot from the main menu, information about the selected tourist spot will appear.

Figure 4. Information Page

Map Page

Map information to the selected tourist spot will appear as shown below

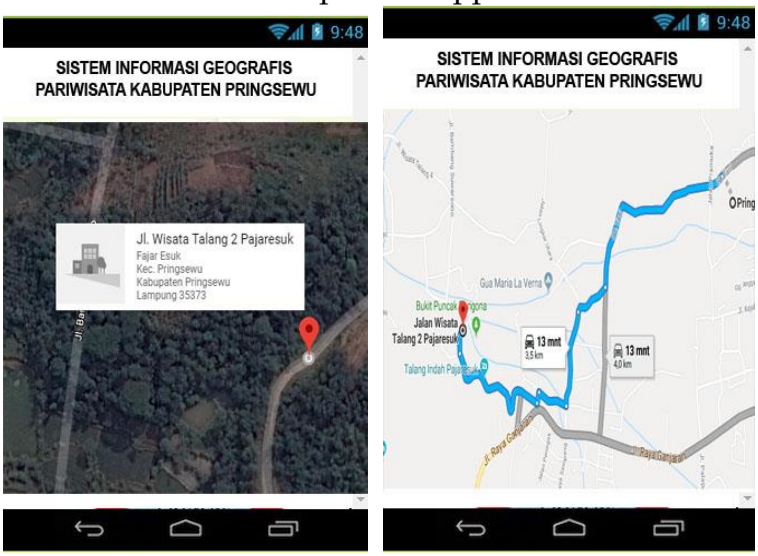

Figure 5. Map page and Directions

Directions for the location will appear from where our point is to the destination location

V. CONCLUSION

From the results of the research that has been done, it can be concluded that with the existence of a mobile web-based geographic information system, visitors can find out information on tourism places in Pringsewu and find out information about tourism places as well as know directions to the location of the tourism places they want to visit. The suggestions given by the author are that the geographic information system design is made even more attractive and provides additional menu facilities such as rating values for tourism places, visitor testimonials and others.

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