Bali Tourism Village Information System Development Using Laravel Framework

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Abstract. Tourism development in Bali has been directed towards cultural tourism where development must maintain the preservation of Balinese culture. One of the concepts developed and being intensified by the regional government is tourist villages. The Bali Tourism Village Communication Forum (Forkom Dewi) is a community under the auspices of the Bali Provincial Tourism Office which oversees tourist villages in Bali. The problem faced by Formkom Dewi is that the recording of tourist village data is still manual and not systemized. This makes it difficult to access existing tourist village data when the data is needed. Referring to the problems previously explained, in this research a tourist village information system was developed which can speed up the digitalization process of tourist villages and can be used as a reference for developing tourist village resources. The tourist village information system was developed using one of the PHP frameworks, namely the Laravel framework because it is fast and efficient in building information systems. It is hoped that this system will help stakeholders who need to know in more detail about the tourist attractions in each tourist village. Apart from that, it can also be a means of promotion and information for tourists who want to visit tourist villages in Bali. The stages of this research refer to the SDLC (Software Development Life Cycle) method, namely the waterfall method which consists of requirements, design, implementation, verification, and maintenance stages.

Keywords: Information System, Tourism Village, Laravel Framework

1   Introduction

Indonesia is a country known for its various tourist attractions spread across each province (Fafurida et al., 2023a). One of the provinces in Indonesia which is known to the world community as a tourist destination and a barometer of Indonesian tourism is Bali (Nathasia & Soepriyono, 2023; Darmaastawan et al., 2021). Bali is known for its natural beauty of beaches and unique cultural traditions which attract tourists for vacations (Dharmawan et al., 2022). Bali as an international tourist destination has various types of tourist attractions such as natural tourist attractions, cultural tourist attractions and artificial tourist attractions (Prastuti et al., 2022). The potential and

tourist attractions in Bali are spread across all districts and cities (Suprapto & Sutiarso, 2021). Tourism development in Bali has been directed towards cultural tourism where development must maintain the preservation of Balinese culture. One concept that is being developed and is being intensified by the local government is tourist villages (Indriyanto et al., 2022).

Tourist villages are a strategic choice to be able to compete in the tourism industry while still making the community the main subject (Fafurida et al., 2023b). The concept of tourist villages is expected to provide variations in tourist attractions so that they are not trapped in mass tourism because the villages where most of the tourist attractions are located certainly have local wisdom that has the potential to be developed and is certainly different from other villages (Dewi & Muharam, 2022). The development of tourist villages is expected to implement the concept of sustainable development in the tourism sector which shows tourist interest and direct involvement of local communities while continuing to emphasize long-term protection and management efforts (Yasir et al., 2021).

The Bali Tourism Village Communication Forum (Forkom Dewi) is a community under the auspices of the Bali Provincial Tourism Office which oversees tourist villages in Bali. The problem faced by Formkom Dewi is that the recording of tourist village data is still manual and not systemized. This makes it difficult to access existing tourist village data when the data is needed. For example, if the department wants data on the number of tourist attractions in a particular tourist village, the data will be communicated via WhatsApp media. Of course, this is difficult because it takes a long time and the data is not updated regularly.

Research related to the use of information technology in tourist villages in Indonesia has been carried out by (Ananda & Dirgahayu, 2021) who stated that there are four purposes for using information technology, namely promotion, communication, accessibility, and transactions as well as supporting business processes in certain tourist villages. Apart from that, three information technologies are widely used by tourist villages, including websites, social media and e-commerce. The development of a tourist village information system has been carried out by (Prakosa, 2023) by developing an online ordering and payment system on the Godevi website or platform, where the system developed provides convenience for visitors or tourists and also for the management of tourist villages in Bali. Another research by (Nirmala & Lavianto, 2019) developed an application that utilized digital enabler technology for Penglipuran Village and Taro Village where the application developed was also able to achieve 5 marketing functions based on the digital marketing framework, namely the attracting function, engaging function, retaining function, learning function and relating function.

Referring to the problems previously explained, in this research a tourist village information system was developed. The development of information systems can speed up the tourism digitalization process and can be used as a reference for developing tourism resources (Wider et al., 2023). This information system was built using the PHP, HTML, CSS, and Javascript programming languages using the Laravel framework. The Laravel framework uses the Model-View-Controller or MVC concept, which is a method for creating an application system by separating data (model) from views and how to process it (Controller) (Putra et al., 2015). The Laravel framework

was chosen because it is the best framework, especially for applications with a complex scope, but also because it is fast and efficient in building information systems (Sunardi & Suharjito, 2019). It is hoped that this system will help stakeholders who need to know in more detail about the tourist attractions in each tourist village. Apart from that, it can also be a means of promotion and information for tourists who want to visit tourist villages in Bali. This research also supports the Bali State Polytechnic Center for Green Tourism Technology Excellence because this research produces products in the form of appropriate applications that support tourism in Bali.

2   Methodology

This section will explain the stages in the research that will be carried out. The stages of this research refer to the SDLC (Software Development Life Cycle) method, namely the waterfall method. The waterfall method is an information system development model that emphasizes sequential phases (Prasetya et al., 2021; Asrol et al., 2023). The waterfall method has the advantages of providing stability and structure, predictable resources, and documented planning (Thesing et al., 2021). The stages carried out in this research are shown in Figure 1.
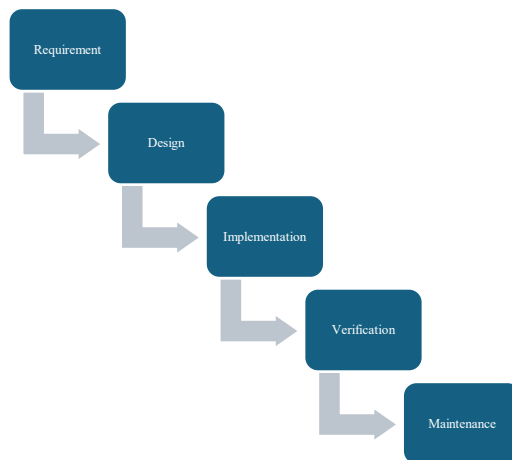

Figure 1. Research method

Figure 1 displays the research stages referring to the waterfall method which will be explained as follows: Requirements: This stage carries out discussions with Forkom Dewi through interviews regarding the system features to be developed; Design: In this stage, system design is carried out in the form of use case diagrams to database design which helps in defining the overall system architecture; Implementation: This stage carries out the system development process through a coding process using the Laravel Framework; Verification: At this stage, the system is verified and tested whether the system fully or partially meets the system requirements. Testing is carried out using

black box testing; Maintenance: This stage carries out maintenance on the tourist village information system developed if problems occur.

3   Result and Discussion

3.1   Result

Based on the results of analysis and discussions with Forkom Dewi management, the proposed concept is to develop a tourist village information system using the Laravel framework to make it easier to obtain information related to tourist villages in Bali. The tourist village information system has two types of system users who have different roles, namely admin and tourists. The dashboard for each user is equipped with several features as follows. The access rights can be seen in Table 1.

Table 1. Access rights

Role		Access rights
Admin	1	Login
	2	Manager management
	3	District management
	4	Tourism village management
	5	Potential management
	6	Potential type management
	7	Print report
Management	1	Tourism village management
	2	Tourism potential management
Tourist	1	See tourist villages
	2	See potential
	3	See about us
	4	Search for tourist village data

The relationship between user roles and access rights can be modeled using the use case diagram shown in Figure 2.

Figure 2. Use case

This stage carries out the system development process through a coding process using the Laravel Framework. The results of system development can be seen as follows. Admin. The following is the admin dashboard page where the admin can manage all the menus of the website. To enter the admin dashboard page, 1 admin must be available here first which has been provided previously. Log in first using the account provided via the login page. Dashboard page can be seen in Figure 3.

Figure 3. Dashboard page (in Indonesia language)
Photograph and Permission by Ni Ketut Pradani Gayatri Sarja

3.2 Discussion

At this stage, the system is verified and tested whether the system fully or partially meets the system requirements. Testing is carried out using black box testing. It can be seen in Table 2.

Table 2. Blackbox testing

No	Tested page	Action	Reaction	Result
1	Admin Login	Enter the password and username correctly	Go to the login page	success
		Typo error when entering password and username	Error and will re-input	success
2	Manager	data management crud	Successfully added or changed management data	success
		adding and editing data, inputting existing data	Error, a notification appears asking you to re-enter it	success
3	Regency	District data crud	Successfully added or changed district data	success
		adding and editing data, inputting the same or existing data	Error, a notification appears asking you to re-enter it	success
4	Tourism village	Carrying out CRUD of tourist village data	Successfully added or changed tourist village data	success
		adding and editing data, inputting the same or existing data	error notification appears asking you to re-enter it	success
5	Type of potential	potential type data crud	Successfully added or changed potential type data	success
		adding and editing data, inputting the same or existing data	Error, a notification appears asking you to re-enter it	success
6	Potency	potential data crud	Successfully added or changed potential data	success
		adding or editing data, the input field cannot be empty	Error, a notification appears asking you to input	success
7	Report	Export PDF button	Printed reports in PDF format	success

Table 2 displays the results of black box testing, where from these results it can be concluded that this tourist village information system has no process errors and functionally produces a system that is in accordance with the design.

4   Conclusion

Development of a Tourist Village Information System using the Laravel Framework helps stakeholders who need to know in more detail about the tourist attractions in each tourist village. Apart from that, it can also be a means of promotion and information for tourists who want to visit tourist villages in Bali. From the test results using the black box testing method for admin, manager and tourist pages, it can be concluded that this tourist village system has no process errors and functionally produces a system that is in accordance with the design.

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