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Design and Build Bali Tourism Information System in The Pandemic Time Based on Website

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ABSTRACT

The island of Bali is one of the international tourist attractions that has long been known by tourists, especially from foreign countries. This must be supported by developing a tourist information system that can provide further information about tourist attractions and facilities on the island of Bali. One of the information system technologies that can support progress in the tourism sector is internet technology which has long been considered a technology that has succeeded in becoming an unlimited communication tool. The purpose of this study is to design and implement an information system that provides information, including suggestions and tourist attractions, including natural attractions, accommodation facilities, transportation facilities, places to sell art goods, restaurants, entertainment venues, and other facilities. For this reason, a database system and webserver application were designed along with an interface design that can be opened via an existing internet browser. In this study, for the manufacture of Web Server applications, the Back-end uses PHP. For the Front-end, the Javascript programming language is used. Meanwhile, for the creation of the database used SQL. It is hoped that the design and development of the Bali island tourism information system application can make it easier for domestic and foreign tourists to get information about the location and tourism facilities on the island of Bali quickly. Meanwhile, for the creation of the database used SQL. It is hoped that the design and development of the Bali island tourism information system application can make it easier for domestic and foreign tourists to get information about the location and tourism facilities on the island of Bali quickly.

Keywords: Design and build, information systems, Bali tourism, website

Introduction

There are so many websites built to convey various kinds of information (Ma'rufi et. Al., 2020), but not all websites can provide satisfaction to their users with the information presented (Masdiyasa, et al., 2020). This can be influenced by many factors, one of which is because the information presented is incomplete. So, careful planning is needed in building a website and determining complete information to be conveyed to satisfy its users.

Various types of information have been conveyed through many websites. One of them is websites that are built to provide information on tourist attractions (Deden et. Al., 2017). To present tourist information, of course, management of information or data related to tourist attractions is

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needed. Not only tourist attractions but information about car rentals and lodging can also support user satisfaction. Based on the description of the background of the problem above, this study aims to design a web-based information system called Bali Backpacker using the Model View Controller (MVC) method (Dragos & Adam, 2014).

Literature Review

Model View Controller (MVC)

Model View Controller, also abbreviated as MVC, is an architecture that is very helpful in developing a system, including information systems (Rinci et. Al., 2017). The concept of MVC has been introduced by the inventors of Smalltalk, which is used to encapsulate data along with processing (model), isolating it from the manipulation process (controller), and display (view) which is represented to the user (Deacon, 2009). The MVC concept has three crucial components that interact with each other, as described above.

PHP programming language

PHP programming language is a programming language that has been widely used in the development of web-based systems and can also be integrated with HTML. PHP is an acronym for Hypertext Preprocessor, which is helpful as a server-side scripting language in web development which is then displayed using HTML (Anggia et. Al., 2019). The PHP programming language was chosen in website development because it can allow dynamic website development, making it easier for developers to carry out maintenance and further development.

Database

The database is a system created to manage data so that data can be easily stored and used. The database will accommodate all data in digital form, which can then be used by one or more users (Sofwan, 2011). Some databases still used today are MySQL, SQL Server, Oracle, PostgreSQL, and others. In this study, the database used is MySQL (Cornelia et. Al., 2020). MySQL is one of the most popular types of databases. So that the use of MySQL will be easier because it has more learning resources and reference sources. Not only that, MySQL, which can be used for free and can be used on various platforms, is an excellent thing to use in the development of information systems in this research.

Material and Methods

System design

The system design in this study uses the model view controller (MVC) method (Hidayati, 2020), which consists of several stages, namely planning, analysis, design, implementation, and system maintenance. In this planning, the thing to do is prepare the tools used to conduct research, provide user satisfaction, and the feasibility of system planning. What is meant in the system above is the Bali Backpacker Information System.

Analysis

At this stage, researchers will analyze the problems and needs in more depth by compiling a feasibility case study and analyzing the needs of the equipment used.

Device needs analysis

The device requirements analysis stage is a stage to collect the needs of all elements of the device system used.

Design

Based on the analysis of the existing system, a website-based application program is proposed, namely Bali Backpacker, which can help disseminate information on tourist attractions in Bali.

1. Flowchart design

   In designing the Bali Backpacker information system application program using the flowchart method, which is as follows.

   a. Manager flow chart

      The management flow chart describes the process in the system carried out by the managers when they manage the data entered into the Bali Backpacker information system. The procedures in the system are described in the management flow chart, as shown in Figure 1.

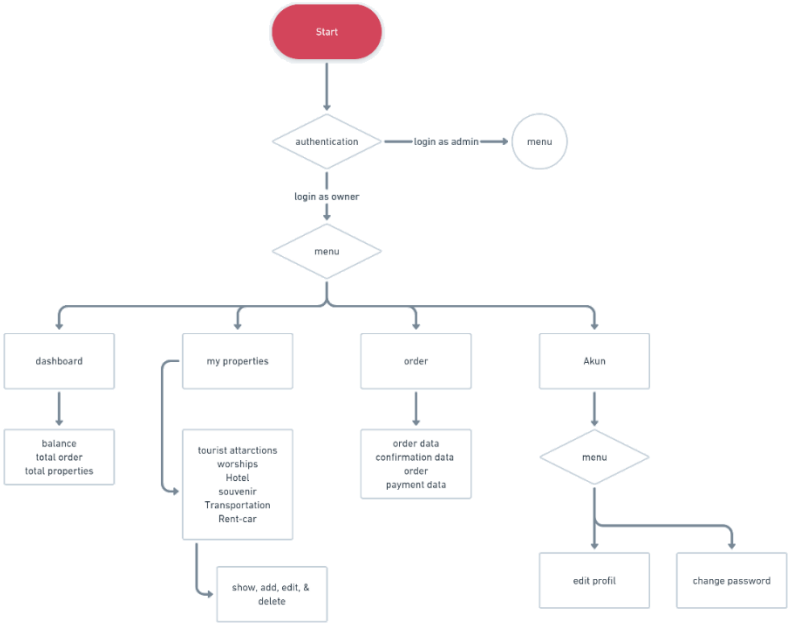

Figure 1. Flowchart of manager

   b. Administrator flow chart

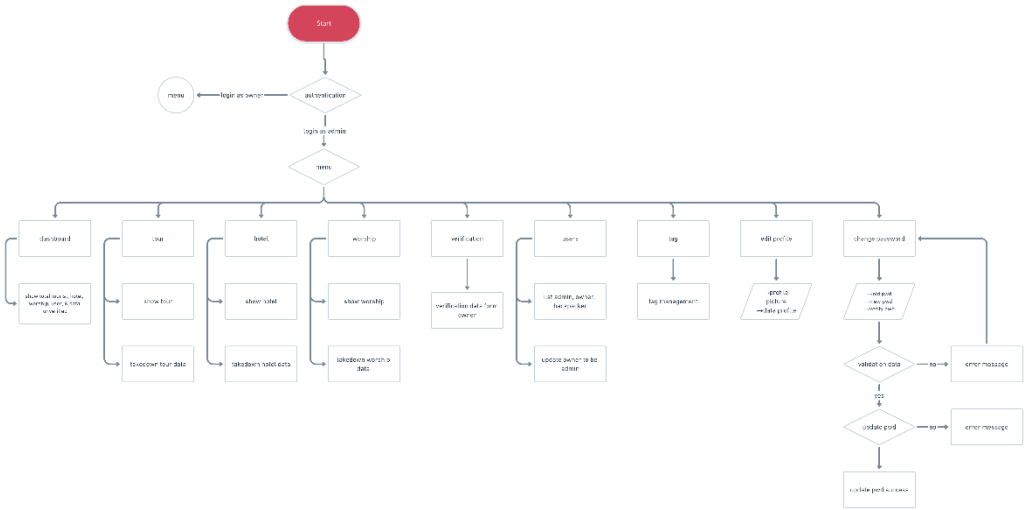

Figure 2. Flowchart administrator

The admin flow chart is the process carried out by an administrator in verifying the data entered by the manager in the Bali Backpacker information system. The process in the system is described in the administrator's flow chart, as shown in the following Figure 2.

2. Database design
   Database design is data that is stored in a record which is a file that manipulates the data. The table design in the Bali Backpacker Information System data processing consists of the following.
   a. Users table, which is a table that contains data for all users such as e-mail and passwords, both admins and managers. The user's table can be seen in Table 1.

Table 1. Users.

Field Name	Data Type	Wide
id	bigint	20
name	varchar	255
e-mail	varchar	255
email_verified_at	timestamp	
password	varchar	255
level	enum	
remember_token	varchar	100
created_at	timestamp	
updated_at	timestamp	

   b. Profiles table, which is a table to accommodate more detailed user data such as contacts and addresses. The profiles table can be seen in Table 2.

Table 2. Profiles

Field Name	Data Type	Wide
idea	bigint	20
name	varchar	255
e-mail	varchar	255
picture	varchar	255
phone	varchar	20
address	text	
holder_name	varchar	255
bank	varchar	255
acc_bank	varchar	255
created_at	timestamp	
updated_at	timestamp	

   c. Places table, which is a table that contains data on places such as tourist attractions, hotels, places of worship, and places of souvenirs. The places table can be seen in Table 3.
   d. Tags table, which is a table that contains tag data for each place entered into the system. The tag table can be seen in Table 4.
   e. The place_tag table is a table that contains data that relates to the data in the places table and the data in the tags table. The place_tag table can be seen in Table 5.
   f. Galleries table, which is a table that contains data on pictures of places that are entered into the system. The galleries table can be seen in Table 6.
   g. Messages table, which is a table that contains message data for confirmation from the admin on the data entered by the manager. The messages table can be seen in Table 7.

h. Cars table, which is a table containing rental car data belonging to the manager entered by the manager into the system. The cars table can be seen as in Table 8.

Table 3. Places

Field Name	Data Type	Wide
id	bigint	20
title	varchar	255
slug	varchar	255
thumbnails	varchar	255
desc	text	
address	varchar	255
latitude	varchar	255
longtitude	varchar	255
type	enum	
verified	enum	
created_at	timestamp	
updated_at	timestamp	
user_id	bigint	20

Table 4. Table Tags

Field Name	Data Type	Wide
id	bigint	20
name	varchar	255
created_at	timestamp	
updated_at	timestamp	

Table 5. Place_tag

Field Name	Data Type	Wide
id	bigint	20
place_id	bigint	20
tag_id	bigint	20
created_at	timestamp	
updated_at	timestamp	

Table 6. Galleries Tabel Table

Field Name	Data Type	Wide
id	bigint	20
place_id	bigint	20
picture	varchar	255
created_at	timestamp	
updated_at	timestamp	

Table 7. Messages.

Field Name	Data Type	Wide
id	bigint	20
user_id	bigint	20
place_id	bigint	20
message	text	
created_at	timestamp	
updated_at	timestamp	

Table 8. Cars

Field Name	Data Type	Wide
id	bigint	20
user_id	bigint	20
no_car	varchar	255
name	varchar	255
status	varchar	255
year_production	year	4
rent_price	varchar	255
purchase_price	varchar	255
fuel_capacity	bigint	20
passanger_capacity	bigint	20
created_at	timestamp	
updated_at	timestamp	

i. Facilities table, which is a table containing data on rental car facilities which are then linked to the car data in the cars table. The facilities table can be seen in Table 9.

Table 9. Table of facilities

Field Name	Data Type	Wide
id	bigint	20
name	varchar	255
created_at	timestamp	
updated_at	timestamp	

j. Car_facility table, which is a table that connects car data in the car table and car facilities data in the facilities table. The car_facility table can be seen in Table 10.

Table 10. Car_facilities

Field Name	Data Type	Wide
idea	bigint	20
car_id	bigint	20
facility_id	bigint	20
created_at	timestamp	
updated_at	timestamp	

k. Drivers table, which is a table that contains driver data for rental cars owned by the manager, and the data is entered by the manager. The driver's table can be seen in Table 11.

Table 11. Drivers

Field Name	Data Type	Wide
id	bigint	20
user_id	bigint	20
name	varchar	255
address	text	
phone	varchar	255
created_at	timestamp	
updated_at	timestamp	

l. The rents table, which is a table that contains data on car rental belonging to the manager whose car is being rented by backpackers. The rents table can be seen in Table 12.

Table 12. Drivers tabel table

Field Name	Data Type	Wide
id	bigint	20
user_id	bigint	20
name	varchar	255
address	text	
phone	varchar	255
created_at	timestamp	
updated_at	timestamp	

Results and Discussion

Website created has two types of users, namely administrators and managers. So that when you enter the system, you will get different access according to the kind of user.

Research results

The Bali Backpacker information system makes it easy for tourism managers in Bali to market their tourist attractions. To support the development of tourist attractions in Bali, the Bali Backpacker information system does not only provide a forum for tour managers. However, hotel managers, gift shops, places of worship, and car rentals can also be marketed on this Bali Backpacker information system.

The data in the Bali Backpacker information system is mainly entered by the manager, whom the administrator then verifies. The data that appears and can be seen by backpackers has passed the verification by the administrator. The administrator can cancel the verification status of the data from the manager if invalid data is found in it so that it is not displayed to backpackers.

Web security system

The security system used in the Bali Backpacker information system is to use a session obtained by the user when logging into the system via a login. Sessions owned by users can be used starting from the successful login to logout. Sessions held by users can be used to perform operations on the system according to the access granted based on the type of user.

Manage

Stages of new system maintenance can be done after the implementation stage. A system that is run will be used as needed as long as the system is active. Then the system will also be reviewed periodically. Changes to the system will be made if there are problems or new requirements that you want to add. The system used is updated. The steps taken in system maintenance are as follows.

1. System usage
   The use of system in question is used for its respective functions and duties that are operated routinely.
2. System audit
   A system audit uses the system and proper maintenance to determine how well a system is meeting performance criteria.
   a. System maintenance, namely monitoring the system regularly so that the system can continue to run correctly. System maintenance is also carried out to maintain system updates in case of changes to the system.
   b. System improvement is what is done when an error occurs in the system or a system weakness is not detected when the testing phase is carried out.

c. System upgrades, i.e. things done to modify the system if possible to provide upgrades to the system after operating for some time

Conclusion

Based on the research results and discussion contained in the previous section, several things can be concluded as follows.

1. The Bali Backpacker information system built using the MVC method can be a promotional medium for tourism managers in Bali and other related sectors.
2. Bali Backpacker can provide complete information for backpackers who want to travel to Bali.
3. The data entered by the manager will be verified first by the administrator before being displayed to backpackers. So that the truth and security of the data can be guaranteed

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