



DESIGN AND BUILD A TOUR & TRAVEL APPLICATION WEB-BASED USE WATERFALL METHOD

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Received: 14, September, 2022

Revised: 18, September, 2022

Accepted: 11, October, 2022

ABSTRACT

Design and Build a Web-Based Tour & Travel Application is an application system that helps make it easier for users to process in booking Tour & Travel tickets. This Web-Based Tour & Travel Application System can be accessed by anyone, anywhere, and anytime as long as there is an internet network. Web-Based Tour & Travel Application System is an application built to improve services or services and promotional media for regional tours, making it easier for customers to book tour packages via the internet. This Web-Based Tour & Travel application was created using PHP and MySQL programming languages, and the method used to develop this system is the waterfall method, namely analysis, program design, code and test. With this, Design and Build a Tour & Travel Application can help introduce something or promote the development of a good tourist attraction so that many people are interested in coming to the attraction in the hope that it can help boost other sectors, such as: tourist visits, creative economy, opening up job opportunities, reducing unemployment.

Keywords: Design, Booking, Tour & Travel, Online, Website

1. INTRODUCTION

Tourism is a dynamic activity that involves many humans and brings various fields of business to life. In the current era of digitalization, the tourism sector will become one of the main drivers in the economic sector and become one of the globalized sectors. As it goes by, tourism is one of the sectors that has been greatly affected by the COVID-19 pandemic (Yudha, 2012). Based on BPS data (Pratama, 2019), there was a significant decrease in the number of tourists, both local and foreign tourists. The total number of foreign tourist visits to Indonesia in 2020 was 4.02 million visits (Pramana et al., 2022).

When compared to 2019, the number of foreign tourists decreased by 75.03 percent (Suryani et al., 2023). Based on their nationality, there are 5 countries that visit Indonesia the most in 2020, namely Timor Leste, Malaysia, Singapore, Australia, and China. Most of these countries are neighboring countries, except China, in addition to that also from the development sector of the Tour & Travel business that exists today there are still many conventional Tour & Travel businesses that are indeed being disrupted both by digitalization and also by the pandemic, especially on Tour & Travel in the regions.

With the development of advances in information technology In addition to making it easier for users, this kind of information technology is very efficient (Faheem et al., 2018). Nowadays, information technology is no longer just developing fast but also rapid changes (Hasti et al., 2018). The use of information technology also plays a big role in being able to innovate and collaborate in the tourism sector, in terms of introducing something or promoting the development of a good tourist attraction so that many people are interested in coming to the attraction in the hope that it can help boost other sectors, such as: tourist visits, creative economy, opening up job opportunities, reducing unemployment.

Seeing the demand for market opportunities is important for the development of the company, many companies are competing to always improve the quality and service to tourists (Jelonek et al., 2022). To help tourists enjoy their trips satisfactorily, a company is needed that can handle their trips, in the world of tourism the company we know as a tourist travel agency. The BPW (Travel Agency) business is a promising business opportunity. This requires companies to always innovate by utilizing current technological advances (Kafouros et al., 2008).

Seeing the problem above, the author is interested in finding a solution in solving the problem by making a web-based Tour & Travel Application program design so that the existence of this system can help in terms of local tourism promotion media and can make it easier for consumers to get information about tourism and choose packages that match the criteria desired.

2. THEORY

Software Development Methods

According to Pressman in (Pujawan et al., 2022), the waterfall method is a systematic development model in building a software device. This method is often referred to as the "classic life cycle" or as the waterfall method. With this waterfall method, a system will be generated as an intermediary for developers and users in order to interact in the process of information system development activities. (Rahmadoni et al., 2022) explains that there are 5 phases or stages in the method waterfall, here are the phases in the waterfall model, namely:

a. Analysis (Requirement Analysis)

The process of collecting information is needed and carried out intensively to find out the needs of software by means of discussions, observations, interviews, and so on. This specification is obtained in order to know what needs are needed for development.

b. Design (System and Software Design)

This phase will focus on creating a design before closing. This process will relate to the construction of data structures, software architecture, interface design, design of internal and external functions of each presedural algorithm. This design stage will become the foundation for programmers as UI/UX Designers who have the ability in the field of design.

c. Implementation (Implementation and Unit Testing)

This stage is the creation of program code using certain programming code tools or programming languages. So this stage focuses more on technical matters that do testing and checks on documents or modules that have already been created.



d. Integration and Testing

At this stage it has started for testing and developed which aims the software is in accordance with the design or not. After the integration process is complete, an examination is carried out to identify possible system failures or errors as well as to prevent bug or error errors in the program before entering the production stage.

e. Maintenance

At the last stage this is generally the operation and repair of the application. This stage is also included in fixing errors found by users.

3. METHOD

Data Collection Techniques

For data collection using three techniques, namely:

a. DirectObservation (Observation)

This Observation Method, the author makes observations to find and collect data from conventional Tour & Travel Business Owners by making observations about the flow of the Reservation system and problems that will be used as objects

b. Interview

To get complete information, the author conducts a question and answer method regarding all activities related to the flow of the tour & travel reservation system as well as processing booking data and customer data.

c. Library Research

In this method, it is used as a support and support of existing data, as well as as a comparison material. The author conducted a literature study by taking several references from both journals and books.

4. RESULTS AND DISCUSSION

Needs Analysis

Software needs analysis is a discussion of system functionality which will be accompanied by a description of use case diagrams and use case scenarios related to system procedures that will be proposed to improve the running system. The following is an analysis of the needs of the user:

a. Customer Needs

- 1) Customers can visit the website and see the available services.
- 2) Customers can register or register by filling in their Username, Email, Password.
- 3) Customers can log in to the web using the registered account
- 4) Customers can choose the intended tourist destination and book after logging in.
- 5) Customers can make payments (transactions) via bank transfer

b. Visitor Needs

Enders who view the website can only do as follows:

- 1) Visitors can see various categories of Tourist Destinations
- 2) Visitors can see the home view, About Us, Travel Packages, and Our Contacts.
- 3) Visitors can register in advance to be able to log in and access the Tour & Travel web and make reservations

c. Admin Needs

- 1) Admins can log in and log out on the admin page

- 2) Admins can change, add, and delete data on the website, so that information about tourist destination data will always be up to date.
- 3) The Admin can see the booking data from the Customer and the Admin can confirm the proof of payment of the booking from the Customer.

The following is an analysis of the needs of the system:

a. System Administrator

Admins can log in to enter the website administrator page to manage the data and information that appears on the website, and can view incoming orders and transaction reports

b. Member/User System

Visitors who have registered can log in with their username and password, if they are not yet Members / visitor users can register to become Members / users If they have logged in, Members / users can browse the available travel packages, and make travel package reservations that have been selected.

c. Travel package Booking System (Checkout)

The selected travel package will be entered into the travel package checkout menu, in the travel package checkout menu the user / customer can see the details of the package booking that has been selected and can see the travel information, if it is as desired, you can continue booking the travel package.

Design

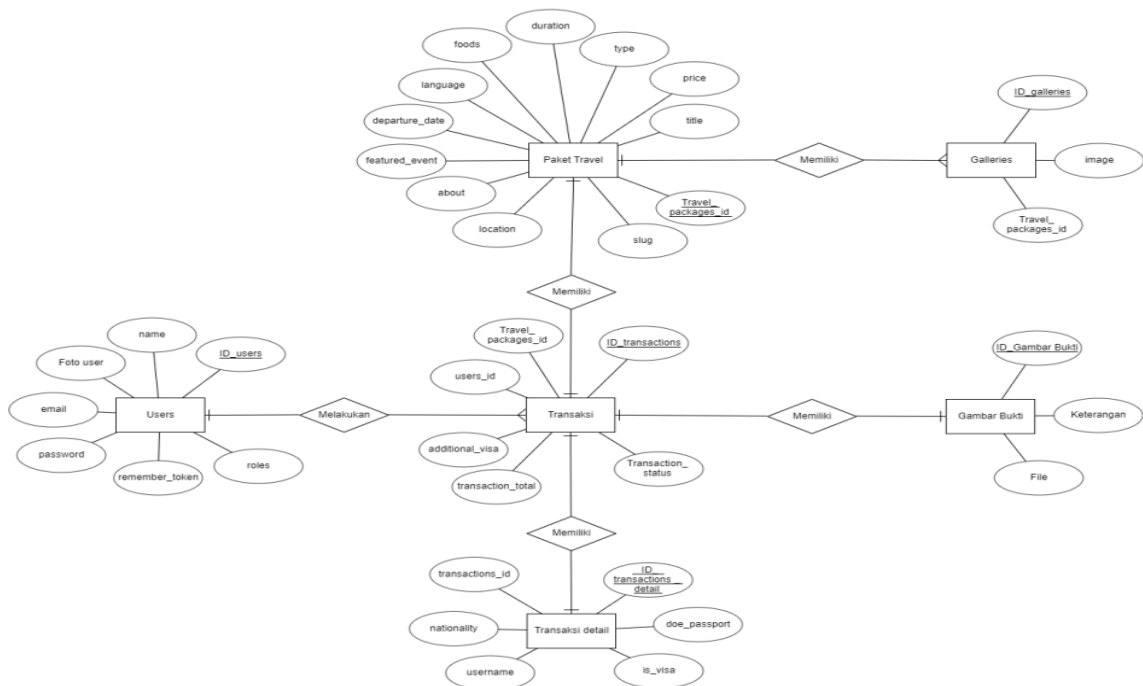
To provide a clear picture of the application being built requires the design of the information system, the design of the database, the interface to facilitate the process of implementing the system (Berkemeier et al., 2019). Here's what the interface design looks like.

a. Database Design

The database design is presented using entity relationship diagrams (ERDs), and logical record structures (LRS).

1. Entity Relationship Diagram (ERD) The view of the ERD is as follows:

This Entity Relationship Diagram (ERD) has several consisting entities, attributes, and relationships. Each entity has or has a relationship.

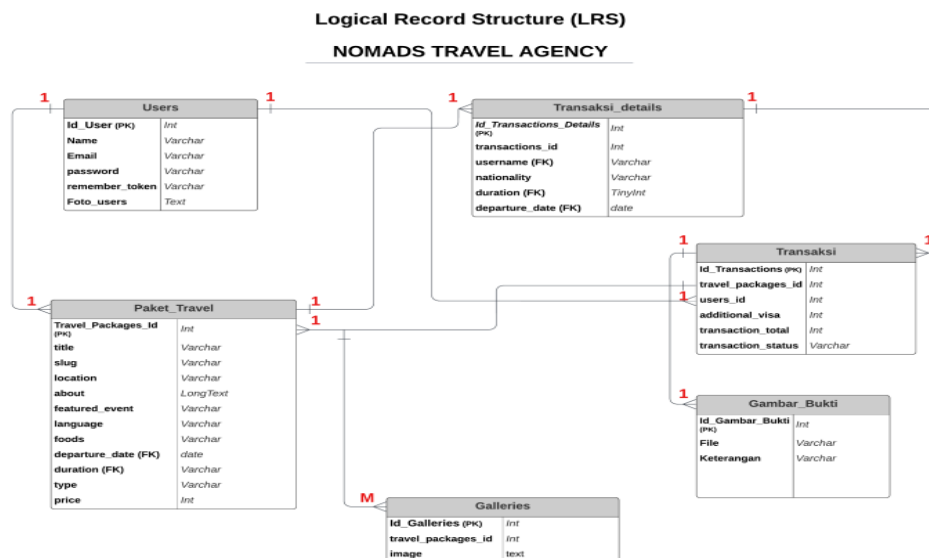


Source : Research results (2022)

Figure 1. Entity Relationship Diagram Tour Package Booking

2. Logical Record Structure (LRS)

This Logical Record Structure (LRS) is used to determine the cardinality of the number of tables, primary key (PK), and foreign key (FK). The picture and explanation of the logical record structure relationship are as follows.



Source : Research results (2022)

Figure 2. Logical Record Structure (LRS) Tour Package Booking

3. Implementation of website User Interface

In this stage, what the author does is the implementation, the realization of the system based on the design made and aims to find out whether the resulting system is in accordance with the design of the previous stages.

a. Home page (Home)



Source : Research results (2022)

Figure 3. Menu Home

b. Home page (Paket Travel)

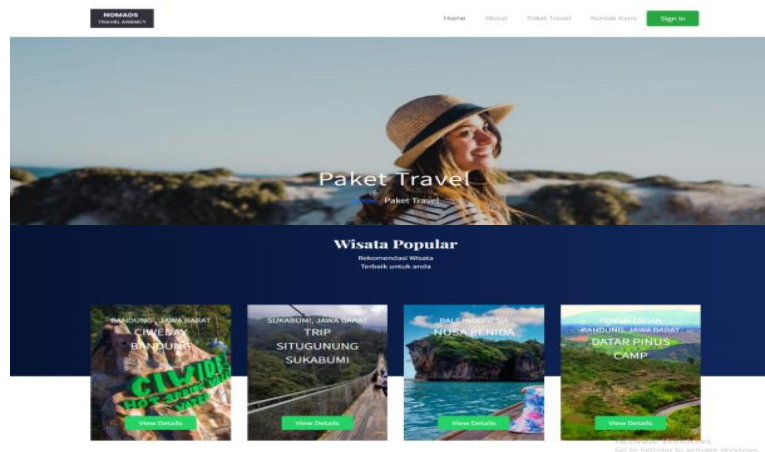


Figure 4. Home Page Travel Packages

c. Account Registration Page

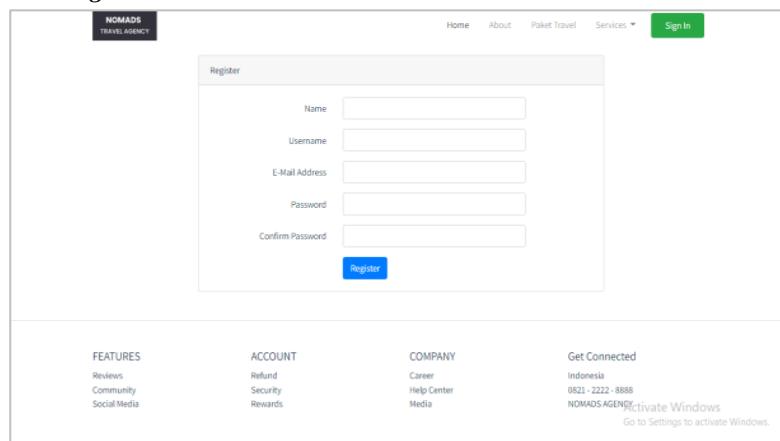


Figure 5. Account Registration Page



d. User Login Page

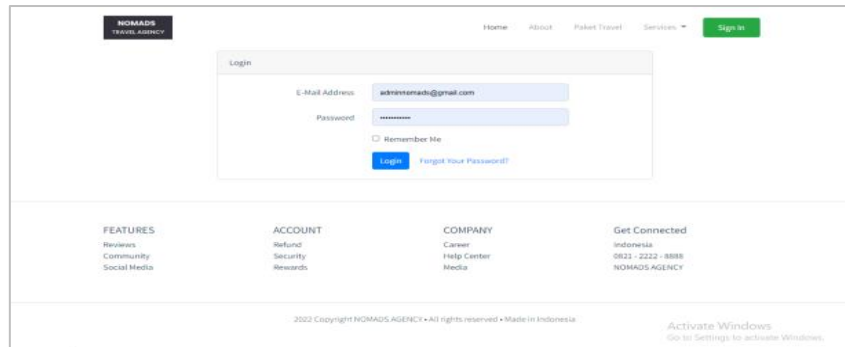


Figure 6. User Login Page

e. Package Order Detail Page

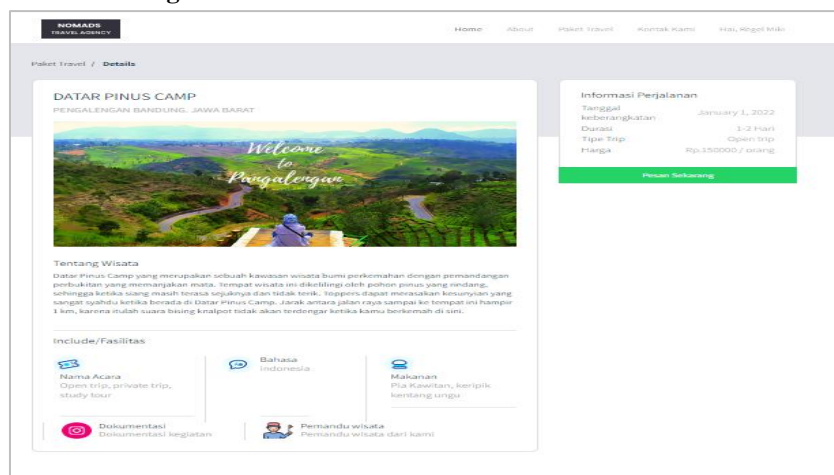


Figure 7. Package Order Details Page

f. Booking Checkout Page

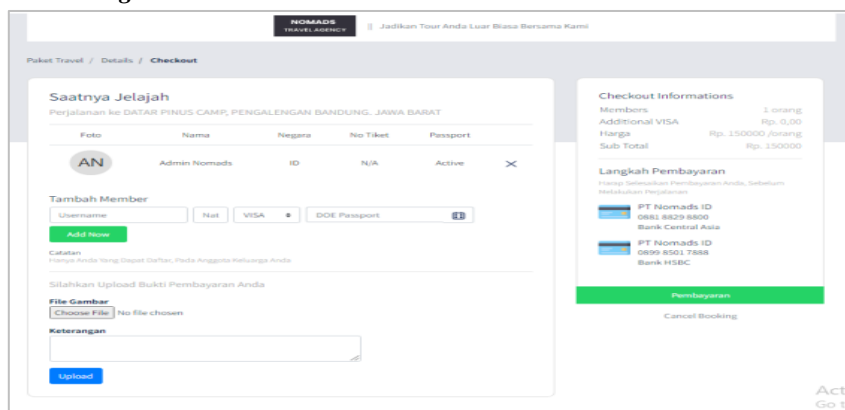


Figure 8 Booking Checkout Page

g. Checkout Page View Of Successful Booking



Figure 9. Checkout Page View Of Successful Booking

h. Email Ticket Notification Page

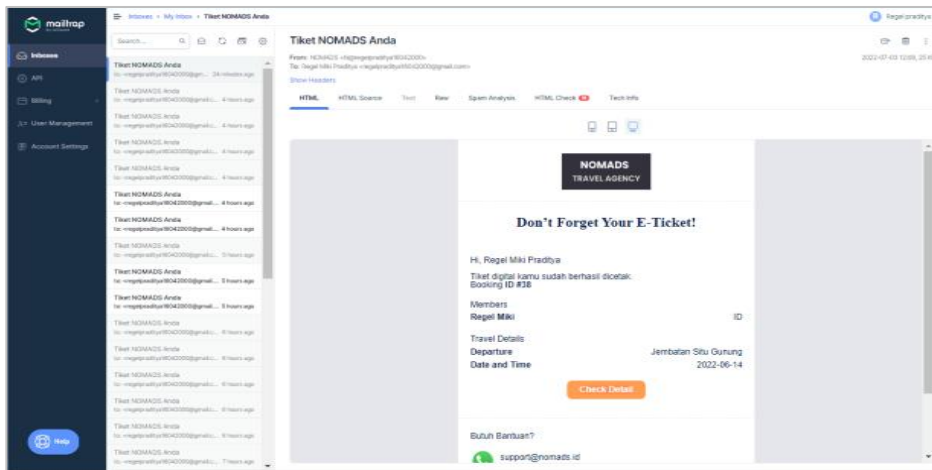


Figure 10 Email Ticket Notification Page

i. Travel Tickets

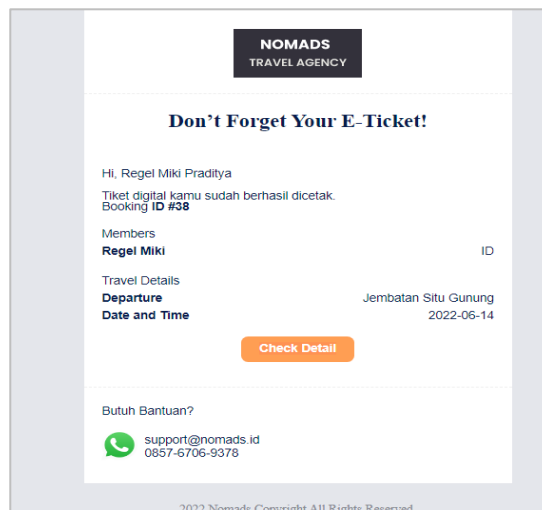


Figure 11. Travel Tickets

4. CONCLUSIONS AND SUGGESTIONS

Tourism is a dynamic activity that involves many humans and brings various fields of business to life. In the current era of digitalization, the tourism sector will become one of the main drivers



in the economic sector and become one of the globalized sectors. The tourism sector is one of the sectors most affected by the Covid-19 pandemic, in addition to that, from the development sector of the Tour & Travel business that exists today there are still many conventional Tour & Travel businesses which is indeed being disrupted both by digitalization and also by the pandemic, especially on Tour & Travel in the regions. Therefore, a solution is needed solution:

1. can help in terms of local tourism promotion media and can make it easier to get information about tourism and choose packages that match the desired criteria;
2. It is hoped that booking tour and travel tours will be faster, more effective and provide many conveniences for consumers;
3. Increasing the value of conventional Tour & Travel businesses that are being disrupted by the pandemic by digitizing in tourist service products.

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