BLOOM WITH NISSY: A RESORT RESERVATION BOOKING SYSTEM

A Final Project

Presented to the

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Laguna State Polytechnic University

Santa Cruz Campus

In partial Fulfilment of the Requirements for the course

CLIENT SERVER TECHNOLOGIES

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CHAPTER I

INTRODUCTION

An overview of the current state of technology reveals that client-server architecture has transformed industries such as hospitality into scalable and user-friendly applications. Worldwide, systems like Booking.com and Airbnb are designed based on client-server architecture for real-time reservations, integrating features such as real-time availability checks and secure management of data. These have increased user satisfaction and operational efficiency (Smith, 2022). However, locally in the Philippines, most small resorts still operate manually or at a very basic level of digitization, which results in discrepancies and loss of opportunities, as reflected in studies related to the digitization of tourism (Philippine Department of Tourism, 2023). This lag consequently raises the need to bridge the gap between conventional practices and contemporary needs through the adoption of client-server technologies, thus justifying this study. The research also highlights the role played by such systems in ensuring ease of access, minimizing errors, and facilitating economic growth in specialized fields such as eco-tourism and staycations.

The tourism and hospitality industry has increasingly employed technology in an effort to advance customer experiences and operational efficiency in this digital age. Places such as resorts or staycation spots, offering serene environments for relaxation and gatherings, for example, need to heed modern demands for seamless services. Located in the peaceful town of Pangil, Laguna, Nissy's Staycation exemplifies this trend by providing a tranquil retreat with natural views, a refreshing pool, and other amenities perfect for families, friends, or solo travelers. Currently, it struggles with manual reservation processes that make guest satisfaction and business growth inefficient. This chapter introduces the wider context of reservation systems in the field of hospitality, narrowing down to those specific to Nissy's Staycation. It concludes by setting the stage for the proposed technological solution. This research study will contribute to advancing client-server technologies in local tourism by focusing on improving these very issues.

The specific topic of this research centers on the development of an online reservation system for Nissy’s Staycation, and it has been titled "Bloom with Nissy: A Resort Reservation Booking System." The main problem that led to this research lies in the inefficiencies brought about by manual booking methods, such as double reservations, miscommunication with clients, difficulty in tracking schedules, and delays in confirmations. These are heightened when peak seasons arrive, which may inadvertently translate into lost revenues, frustrated guests, and stressed-out resort staff. Moreover, lack of real-time tools contributes to poor record-keeping and limited accessibility for clients who may want convenient, anytime-anywhere booking options. This research is called for in an effort to modernize the reservation practices in keeping with global hospitality trends and to ensure that Nissy’s Staycation stays competitive and sustainable.

Background of the Study

Client-server technology is a model of computing where client devices, including web browsers or mobile applications, request services from a central server, which then processes and responds to those requests, allowing data storage, retrieval, and real-time interactions. Its importance can be expressed in that it allows efficient, scalable, and secure applications, particularly in dynamic environments such as online reservations, by supporting features related to instant updates and multi-user access. In this project, the concepts of client-server are highly relevant, especially because the proposed system will make use of a web-based client side for guests to create bookings and a server side to handle all the data management, availability checks, and administrative functions, thus addressing the manual inefficiencies of Nissy's Staycation.

Research Problem

The research problem revolves around the inefficiency in the manual reservation process at Nissy's Staycation, which inhibits effective guest accommodation and operational management within the hospitality industry. Generally, the problem is the absence of an organized, technology-driven system for managing reservations; such leads to errors and dissatisfaction that put the viability of the resort into question. Specific problems the proposed system will find solutions for are:

1. How will the proposed system prevent double reservations by automatically tracking the availability of the rooms?

2. How will the proposed system minimize miscommunication to clients through real-time notifications and chat features?

3. How will the proposed system efficiently track and manage schedules of bookings to avoid delays?

4. How will the proposed system securely store and retrieve client records for better history management?

5. How will the system serve peak-season demands without manual overload?

All of these issues arise from outdated manual systems of phone or in-person bookings that do not have all data in one place and synchronized in real time, thus resulting in human errors and delays. The direct implications include decreased customer satisfaction, loss of potential revenue through unconfirmed bookings, and increased workload on staff that may result in burnout and operational inefficiencies. If left unchecked, these challenges may escalate and could keep customers from revisiting, hindering the growth of the resort in a competitive environment. Industry reports and local observations support evidence for the existence of these problems. For example, a study by the World Travel & Tourism Council (2023) shows that manual reservation errors are the cause of 20-30% of customer complaints worldwide in small businesses within the hospitality industry. These sources confirm the urgent need for a technological remedy. The solution proposed is an online client-server-based reservation system that replaces manual processes involved in booking with automation and works in real time.

Project Objectives

The general objective of this research study is to design and develop "Bloom with Nissy: A Resort Reservation Booking System" in order to resolve reservation inefficiencies at Nissy's Staycation and to enhance operational efficiency in general. Therefore, specific objectives are:

1. Implement online reservation features to enable the clients to book anytime and anywhere.
2. Integrate real-time checks on availability to avoid double booking and uphold precise scheduling.

3. Development of client records management for secure storage and organization of guest details and history.
4. To create an admin dashboard for the streamlined management of bookings, clients, and schedules.
5. Integrate APIs for resort location services and real-time chat with staff for better communication and improved user experience.

Scope and Limitations of the Research

The research scope encompasses the development of a web-based, client-server reservation system for Nissy's Staycation in Pangil, Laguna. It focuses on the following: online booking, real-time availability, client records, admin dashboard, location APIs, and staff chat. It shall involve the discussion of the application of client-server technology in hospitality, targeting resort facilities such as the greenhouse and pool areas, and objectives shall focus on enabling improvement in the efficiency of reservations.

The limitations of this study are constraints beyond the control of the researchers, such as possible internet connectivity issues in rural areas like Pangil, Laguna, that may impede real-time features; it will depend on the adoptive nature of users, for not all guests may be computer literate, accessibility will be via web-based platforms. The system may also not consider unexpected external forces such as natural disasters that may affect the resort operation.

Significance of the Study

For the Customers or Guests: This study is important because it simplifies the process of reservation for customers, as it intends to make such processes easy and fast. Guests can inquire about availability and book their stay anytime without going through long messages or waiting for responses. By making the whole experience smoother, guests are more likely to enjoy their stay and even come back again.

For the Resort Administrators and Staff: This study will enable the staff and administrators to manage reservations with less stress and fewer mistakes, as an organized system automatically records bookings, hence eliminating double bookings and misplaced information. They can then serve guests better, which also helps in smoothing the daily operations and increasing the income of the resort.

For the Guests and Visitors of Nissy's Staycation: This study develops a reservation system that provides an easy way for guests to plan their trips by choosing the dates, booking, and getting instant updates. A convenience such as this helps create a more pleasant experience from the very moment they decide to stay at Nissy's Staycation.

For Hospitality Professionals and Small-Scale Resorts: This study will also serve as an aid to other similar small resort or staycation owners who face the same problems regarding handling reservations. They can adopt this system as a model for enhancing their reservation methods. By using technology, small-scale hospitality businesses can provide enhanced services and keep pace with modern travelers' increasingly demanding requirements.

For the Philippine Tourism Industry: Finally, this research contributes to the tourism industry by showing how even small resorts can benefit from digital tools. Once more companies begin operating on an efficient system, there will be better customer experiences overall that also serve to promote the Philippines as a destination valuing good service, with modern hospitality practices.

CHAPTER II

SYSTEM ANALYSIS AND DESIGN

Overview of Client-Server Model

The client-server architecture is a widely adopted model in modern web-based applications, particularly within the hospitality and tourism industry. The system divides functionalities between two main components: the client, representing the user-interactive side, and the server, which processes the data, manages the resources, and secures storage.

The client, is Bloom with Nissy, refers to the interface that Nissy's guests and staff access via their devices, such as smartphones, laptops, or desktop computers. The guests use the client side for resort details, room availability, reservation, sending their booking requests and on time chat, while the staff accesses the interface to track schedules, manage confirmations and to communicate through on time chat as part of daily operational tasks.

On the other hand, the server does the crucial back-end work. It receives requests from the client, processes the booking data, checks real-time availability, manages user accounts, and updates the database. This separation enables the resort's reservation system to keep working consistently without the problem of having overlapping bookings, hence managing several users at once without confusion or loss of data.

System Requirements

This section elaborates on the hardware, software, and networking requirements necessary to effectively run Bloom with Nissy: A Resort

Reservation Booking System. These requirements ensure that the system operates smoothly, supports multiple users, and provides reliable service.

Hardware Requirements

Client Machine - The client side may use basic devices such as; smartphones, tablets, or laptops

Minimum requirements:

- Any modern web browser (e.g., Chrome, Edge)
- Internet connectivity (wifi used or mobile data)
- At least 4 GB RAM for mobile devices or 4 GB RAM for laptops or desktops

Server Machine - The server may be operated using a laptop, or desktop

Minimum requirements:

- Processor: Intel core i5 or higher
- Memory: 8 GB RAM (minimum)
- Storage: Atleast 250 GB
- Fast internet connection

Software Requirements

- **Backend Development** - The system is developed using PHP version 8.2 to handle backend processing and server-side operations.

- **Other Languages used:**

HTML (HyperText Markup Language) **-** is used to create the structure of a website, like text, images, buttons, and forms.

CSS (Cascading Style Sheets) **-** is used to style the website, such as colors, fonts, and layout, to make it look nice

JavaScript - JavaScript is used to make the website interactive, like clicking buttons, showing messages, or updating content without refreshing the page.

- **Web Hosting -** The website is hosted on the InfinityFree web server, which provides the necessary environment to develop and run the system online.

- **Database Management**

  MySQL is used to store and manage all records related to reservations, users, and schedules, ensuring organized and secure data handling.

Networking Requirements

- **Stable Internet Connection**

The clients needs a stable internet connection through WiFi or mobile data (atleast 3G to 5G for clients) to access the booking smoothly

The server must have a stable internet connection to ensure that the system can be developed, updated, and maintained properly.

- **For API Support**

- The internet connection is needed not only to access the website but also to support API, so that the features like chat, location and email services will load and work properly.

System Design

This section shows the system diagrams, including the system flowchart, ER diagram, and UML diagram, to make the system easier to understand.

System Flowchart

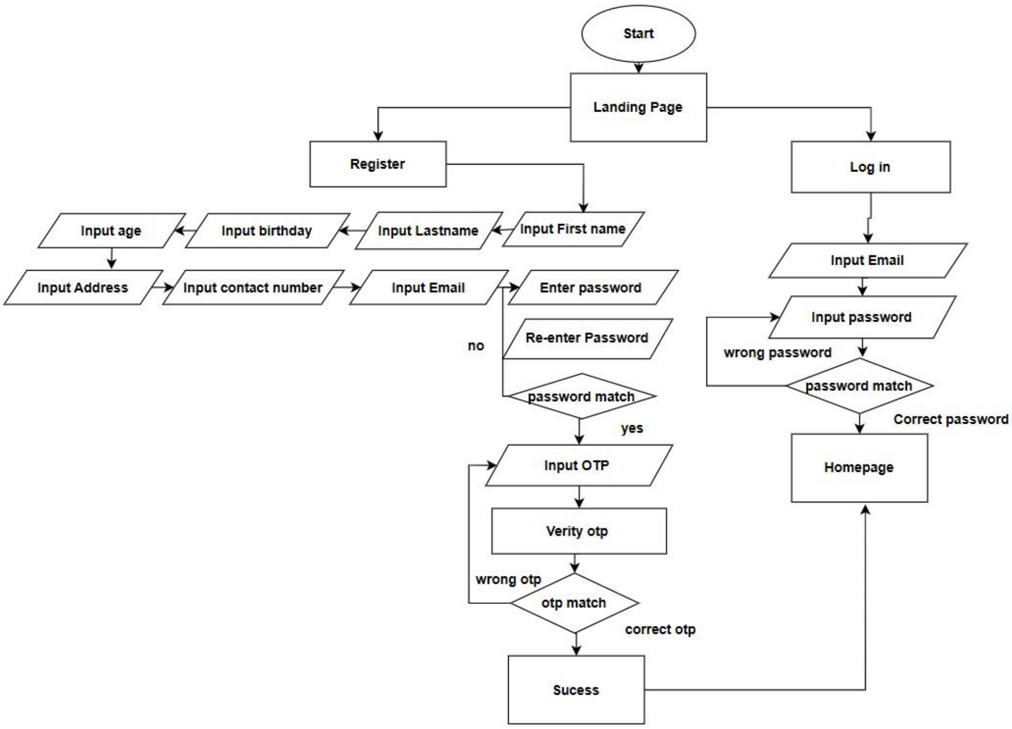


FIGURE 1: Login and Register

This flowchart shows how users can register and log in to the System. New users can create an account by entering their details, confirming their password, and verifying their account with an OTP to keep it secure. After registration, users can log in with their credentials to access the system.

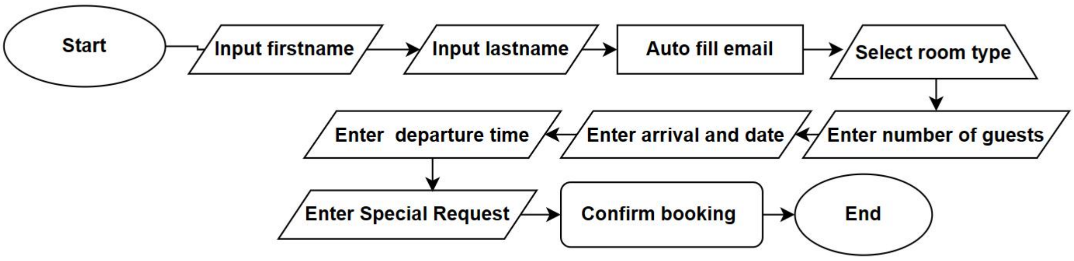


Figure 2: Booking

This flowchart shows the booking process. It starts when the user enters their first name and last name, which are automatically filled if they are logged in, but the user can edit them if they want to use a different name for the booking. The system then automatically fills in their email. The user selects a room type for their stay, and next enters the number of guests, along with the arrival and departure dates. If they have any special requests, they can enter them in the special request section. Lastly, the user confirms the booking, completing the process.

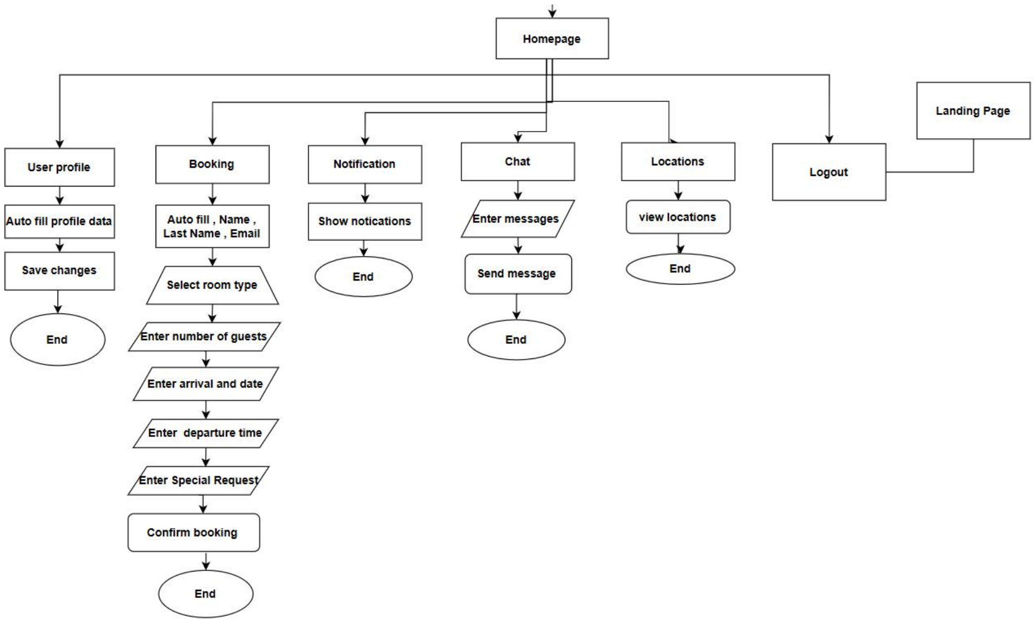


Figure 3: Overall flow of the homepage

This flowchart shows how users navigate the site starting from the Homepage. From there, users can go to their User Profile, Booking, Notifications, Chat, Locations, or Logout. In the User Profile section, the system automatically fills in the user’s information, which they can edit and save. In the Booking section, users can make a reservation by selecting a room type, entering the number of guests, arrival and departure dates, and any special requests before confirming the booking. The Notifications section shows all alerts for the user such as approve booking and decline there booking status. The Chat feature allows users to send messages. In the Locations section, users can view the locations.Lastly the Logout which can go back to Landing page where can u register or login again.

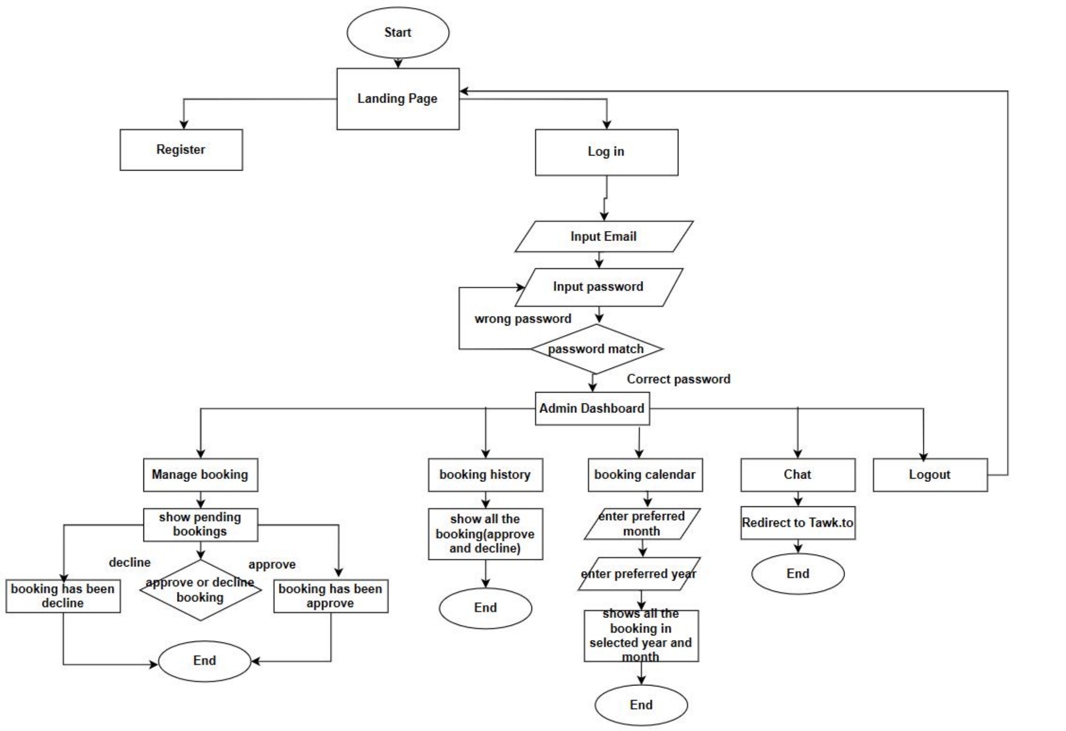


Figure 4: Admin Dashboard

The flowchart shows the Admin Dashboard process, which begins when the admin logs in with their email and password. Upon successful login, the admin can manage bookings by approving or declining pending requests, view all booking history, and check bookings in a calendar by selecting the preferred month and year. The admin can also use the chat feature to communicate with users via Tawk.to and securely log out, returning to the landing page.

Data Flow Diagram

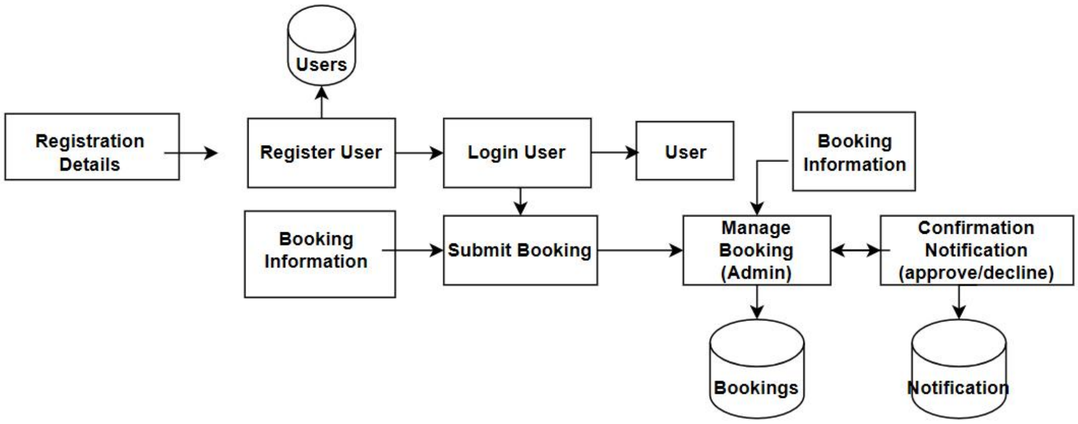
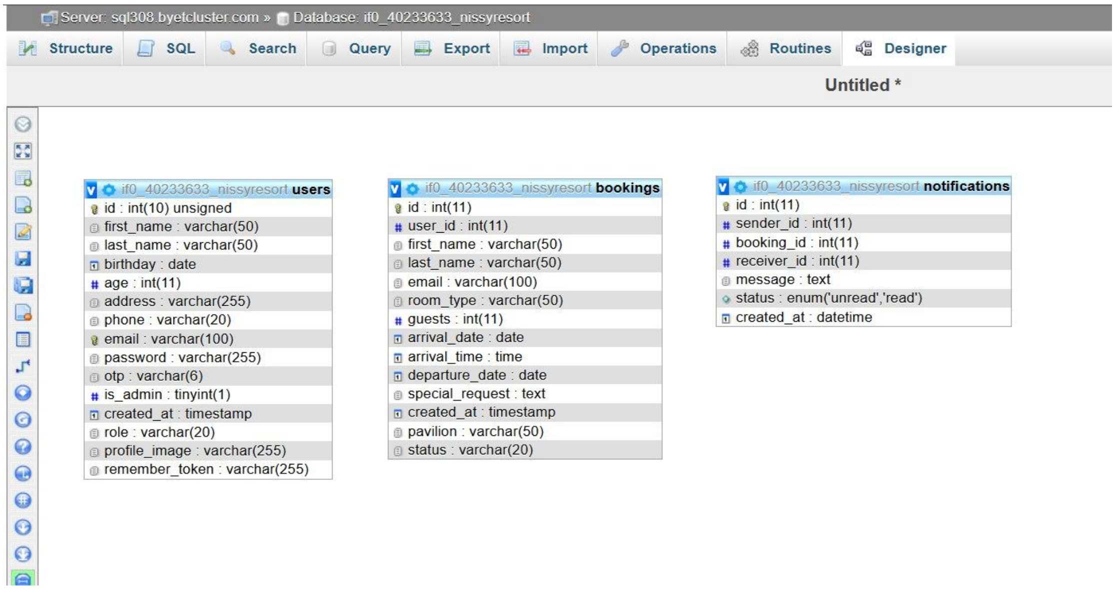


Figure 5: Admin Side

The figure below shows the Data Flow Diagram (DFD) of the booking system. The diagram illustrates how information moves from user registration to booking confirmation. First, the user provides their registration details, which are processed and stored in the Users database. After registering, the user logs into the system and can submit a booking request. The booking information is then sent to the admin through the *Manage Booking* process, where the admin approves or declines the request. The final decision generates a confirmation message that is stored in the Notification database.

Entity Relationship Diagram



if0_40233633_nissyresort **users**
id : int(10) unsigned
first_name : varchar(50)
last_name : varchar(50)
birthday : date
age : int(11)
address : varchar(255)
phone : varchar(20)
email : varchar(100)
password : varchar(255)
otp : varchar(6)
is_admin : tinyint(1)
created_at : timestamp
role : varchar(20)
profile_image : varchar(255)
remember_token : varchar(255)

if0_40233633_nissyresort **bookings**
id : int(11)
user_id : int(11)
first_name : varchar(50)
last_name : varchar(50)
email : varchar(100)
room_type : varchar(50)
guests : int(11)
arrival_date : date
arrival_time : time
departure_date : date
special_request : text
created_at : timestamp
pavilion : varchar(50)
status : varchar(20)

if0_40233633_nissyresort **notifications**
id : int(11)
sender_id : int(11)
booking_id : int(11)
receiver_id : int(11)
message : text
status : enum('unread','read')
created_at : datetime

Figure 6: ER Diagram

The Entity Relationship Diagram (ERD) shows how the system organizes and connects user information, bookings, and notifications. The Users table stores all personal and login details of each user, including whether they are regular users or admins. The Bookings table records all reservation details and is linked to the user who made the booking through the *user_id*. This table contains information such as room type, dates, number of guests, and booking status. The Notifications table manages messages related to bookings, connecting each notification to both the sender, receiver, and the specific booking. Overall, the ERD illustrates how the system keeps user data, booking records, and notifications properly linked, allowing the booking process to be organized and easy to track.

Use Case Diagram

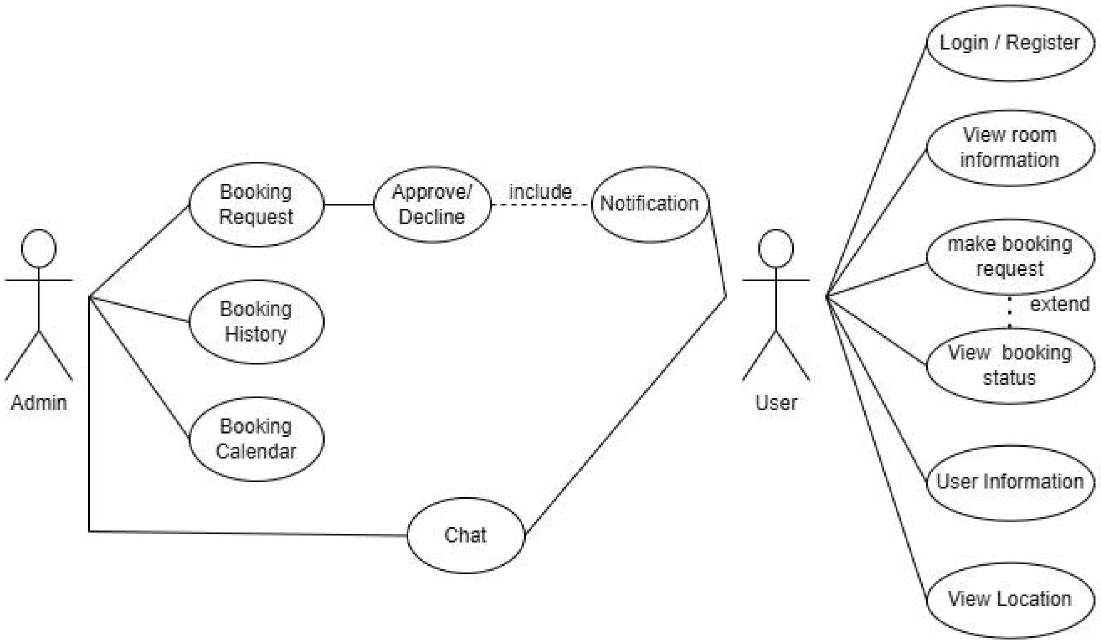


Figure 7 : Used Case Diagram

The Use Case Diagram shows how the User and Admin interact with the Resort reservation system. The User can register or log in. They can also view room and location details, submit booking requests, check booking status, update personal information, and use the chat feature. The Admin manages all booking operations. They can view booking requests, booking history, and the booking calendar. The Admin can approve or decline user requests. This action automatically sends a notification to the user. The Admin also uses the chat system to communicate with users.

API Integration

API Integration The Bloom with Nissy: A Resort Reservation Booking System uses a variety of external APIs to improve user experience and system functionality: integrated Tawk.to for chat support and a geographic address API to verify users' locations.

1. Tawk.to Chat API

Purpose: The Tawk.to API enables real-time communication between guests or clients and resort staff directly on the website. It allows users to ask questions, confirm bookings, or report issues instantly, improving customer service and engagement.

Proper Usage: The API is integrated into the website via an popup widget. When a user opens the chat box, messages are sent to Tawk.to's servers. Resort staff can then respond from the Tawk.to dashboard in real-time, to support for user inquiries.

Endpoints:

POST /api/sendMessage

GET /api/getMessages

POST /api/startChat

2. Geolocation Address API

Purpose: The Geolocation Address API detects and confirms the user's address during sign-up. So that the user's actual location is recorded accurately in the system.

Proper Usage: When a user signs up, it has a options if the client want to type manually there address or automatically copy there address in the system, and the system checks their address or GPS location using the API.

The API confirms the address, and the system saves it correctly. This helps make sure the user’s information is accurate, to prevents fake or wrong entries.

Endpoints:

\GET /api/validate/address?address={user_address}
GET /api/validate/coordinates?lat={latitude}&lng={longitude}

3. Email verification API

Purpose:

The Email Verification API is used to confirm that the user’s email address is valid and active during sign-up. This ensures that the system can send important notifications and that the email truly belongs to the user.

Proper Usage:

When a guest signs up, the system sends a One-Time Password (OTP) to the email address they entered. The guest must enter the OTP they received in their email. The system checks if the OTP entered by the guest matches the OTP sent to the email. If it matches, the email is verified and the account is activated. This is to helps prevent fake or incorrect email addresses.

Endpoints:

POST /api/verify/email

GET /api/verify/email?token={verification_token}

4. Email Notification API

Purpose:

The Email Notification API is used to notify guests through email even if they are not checking the system. It sends updates about their booking, such as whether it is approved or declined.

Proper Usage:

When a guest makes a booking, the system uses the Email Notification API to send an email notification. Once the booking is reviewed, the system automatically sends an email to the guest informing them if their booking is approved or declined. This allows guests to receive important updates without needing to log in to the system.

Endpoints:

POST /api/notify/email

POST /api/notify/booking-status

Data Flow and User Interface

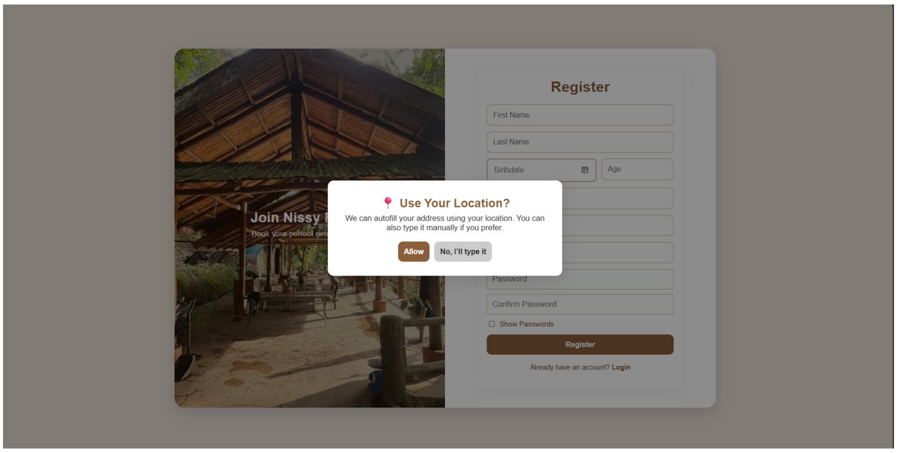
This section explains how data flows through the system and presents the basic design of the user interface (UI). It also describes a typical user journey and provides details of each step in the process.

Typical User Journey

A guest interacts with the system through a series of steps:

1. Access Website: The guest accesses the reservation system from a browser or mobile device using a strong internet connection such as wifi or mobile data.

2. Sign-Up or Login – The user logs in or signs up for an account to access booking features. The Register has an geolocation which copy the exact address of the users but users can also choose if there want to allow or manually type there address.



Register

First Name

Last Name

Birthdate

Age

Password

Confirm Password

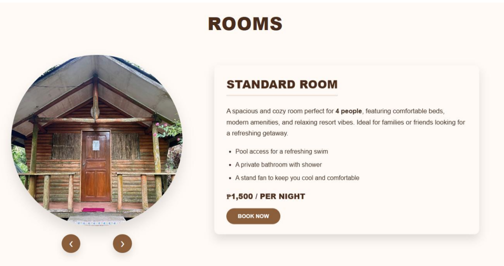
□ Show Passwords

📍 Use Your Location?

We can autofill your address using your location. You can also type it manually if you prefer.

Figure 8: Registration with Geolocations

3. Browse Rooms – The guest can Browse the rooms and such as standard room, or family room, and pavillions check the descriptions, and the price of the rooms.



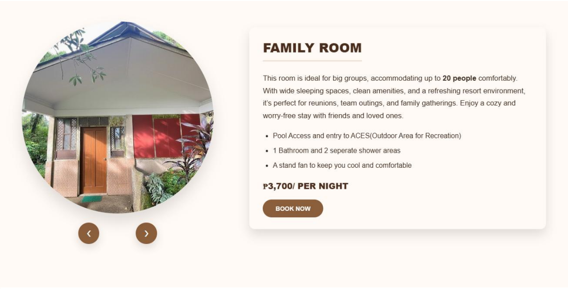
ROOMS

STANDARD ROOM

A spacious and cozy room perfect for **4 people**, featuring comfortable beds, modern amenities, and relaxing resort vibes. Ideal for families or friends looking for a refreshing getaway.

- Pool access for a refreshing swim
- A private bathroom with shower
- A stand fan to keep you cool and comfortable

₱1,500 / PER NIGHT



FAMILY ROOM

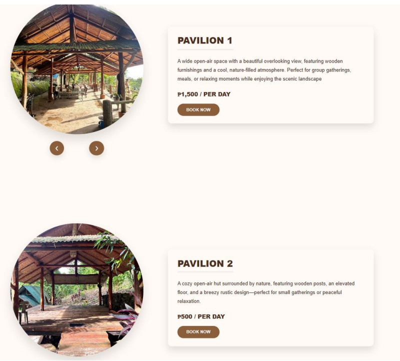
This room is ideal for big groups, accommodating up to **20 people** comfortably. With wide sleeping spaces, clean amenities, and a refreshing resort environment, it's perfect for reunions, team outings, and family gatherings. Enjoy a cozy and worry-free stay with friends and loved ones.

- Pool Access and entry to ACES(Outdoor Area for Recreation)
- 1 Bathroom and 2 seperate shower areas
- A stand fan to keep you cool and comfortable

₱3,700/ PER NIGHT

Figure 9: Rooms and descriptions

This figure shows the different types of rooms available, including their pictures, prices, and main features. It helps guest quickly understand each room option and choose the one that best fits their needs.



PAVILION 1

A wide open-air space with a beautiful overlooking view, featuring wooden furnishings and a cool, nature-filled atmosphere. Perfect for group gatherings, meals, or relaxing moments while enjoying the scenic landscape

₱1,500 / PER DAY

PAVILION 2

A cozy open-air hut surrounded by nature, featuring wooden posts, an elevated floor, and a breezy rustic design—perfect for small gatherings or peaceful relaxation.

₱500 / PER DAY

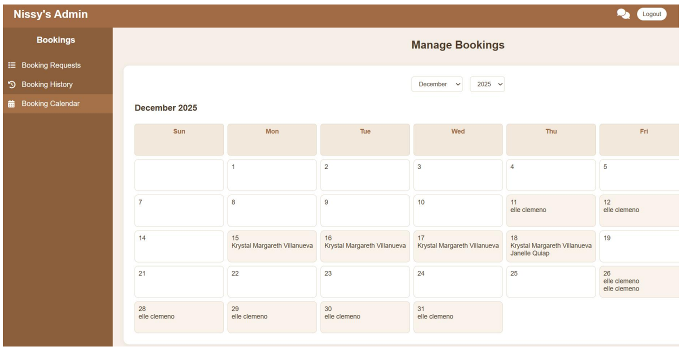
Figure 10 : Pavillions

This figure shows the different pavilions available, along with their pictures and daily prices. It helps guests easily choose a pavilion that fits their activity or event

4. Submit Booking Request: The guest will fill in the information and select there preferred dates then booking request will approved by the resort staffs.

5. Booking Approval/Notification: It involves the approval or decline of the booking by the server and its notification within the system. The guest can view the status and details of his booking to check if its approve or decline by the staffs.

Server Processing: The system checks the availability of rooms via calendar, updates the user data, and updates the database.



December 2025

Sun	Mon	Tue	Wed	Thu	Fri
	1	2	3	4	5
7	8	9	10	11 elle clemeno	12 elle clemeno
14	15 Krystal Margareth Villanueva	16 Krystal Margareth Villanueva	17 Krystal Margareth Villanueva	18 Krystal Margareth Villanueva Janelle Quiap	19
21	22	23	24	25	26 elle clemeno elle clemeno
28 elle clemeno	29 elle clemeno	30 elle clemeno	31 elle clemeno		

Figure 11: Calendar of admin

This figure shows the admin booking calendar, where all reservations are displayed by date. It helps the admin easily view, track, and manage bookings for each day, including previous and long-past bookings.

API Interactions

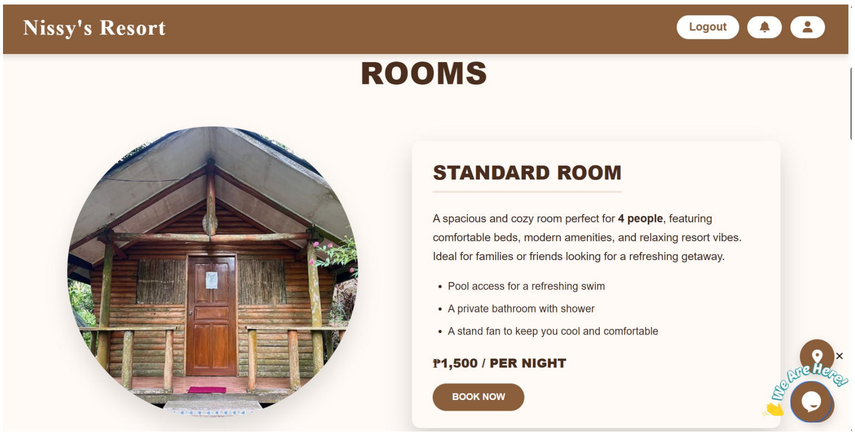
1. Geolocation API authenticates users' locations for correct booking records.

2. Tawk.to's chat API lets a guest ask questions or confirm details in real time.

3. Email Verification API sends a One-Time Password (OTP) to the guest’s email during sign-up and verifies it to ensure the email is valid.

4. Email Notification API sends automated email notifications to guests about their booking status (approved or declined) even if they are not checking the system.

User Interface



STANDARD ROOM

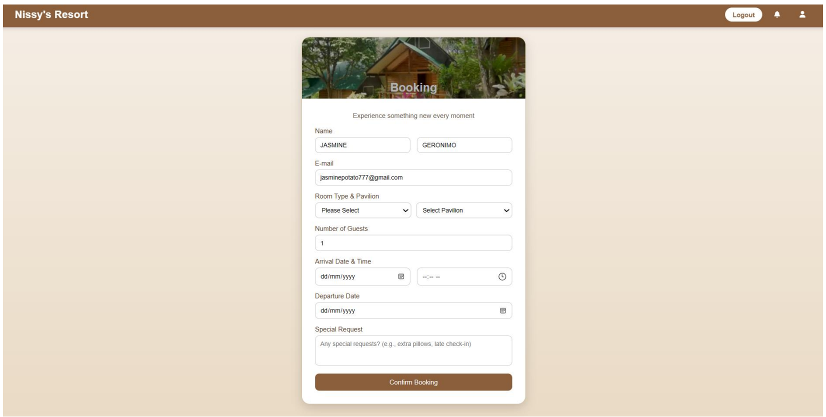
A spacious and cozy room perfect for **4 people**, featuring comfortable beds, modern amenities, and relaxing resort vibes. Ideal for families or friends looking for a refreshing getaway.

- Pool access for a refreshing swim
- A private bathroom with shower
- A stand fan to keep you cool and comfortable

₱1,500 / PER NIGHT

Figure 12: Dashboard

This figure shows the main user interface, where guest can view available rooms, see their details, and check the price per night. It serves as the dashboard that allows users to easily explore and book rooms.



Experience something new every moment

Name: JASMINE GERONIMO

E-mail: jasminepotato777@gmail.com

Room Type & Pavilion: Please Select | Select Pavilion

Number of Guests: 1

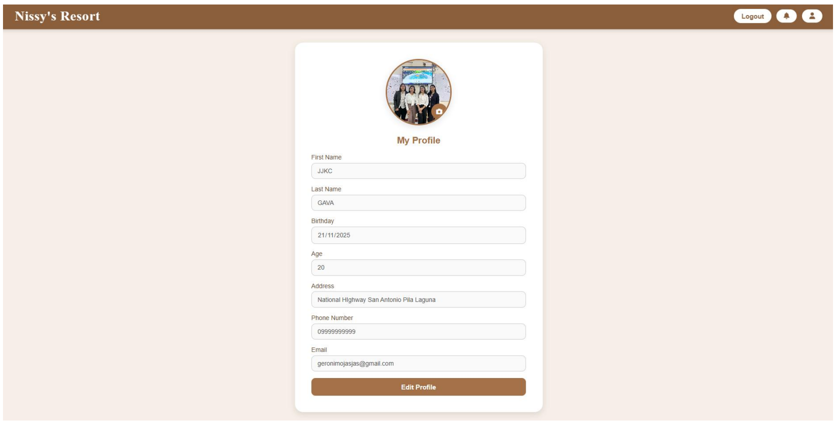
Arrival Date & Time: dd/mm/yyyy | --:-- --

Departure Date: dd/mm/yyyy

Special Request: Any special requests? (e.g., extra pillows, late check-in)

Figure 13: Booking

This figure shows the booking form where users enter their personal details, select a room or pavilion, choose dates, and submit their reservation. This allows guest to easily complete and confirm a booking.



My Profile

First Name: JJKC

Last Name: GAVA

Birthday: 21/11/2025

Age: 20

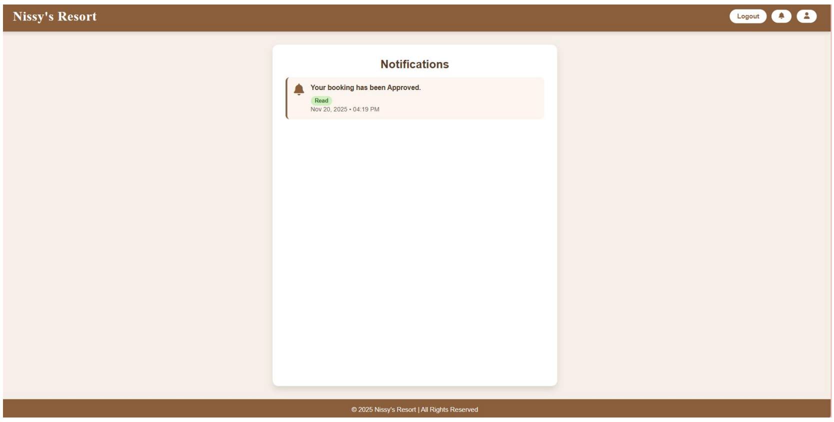
Address: National HIghway San Antonio Pila Laguna

Phone Number: 09999999999

Email: geronimojasjas@gmail.com

Figure 14: User Profile

This figure shows the guest profile page, where users can view and update their personal information. The details are automatically filled in from the registration data, but guest can still edit them if needed.



Notifications

Your booking has been Approved.
Read
Nov 20, 2025 • 04:19 PM

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Figure 15: Notifications

This figure shows the Notifications page where guest can view system alerts such as booking approval or decline status.

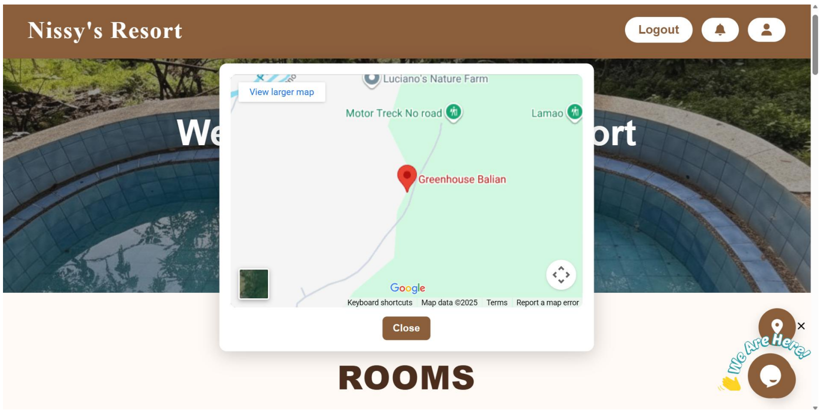
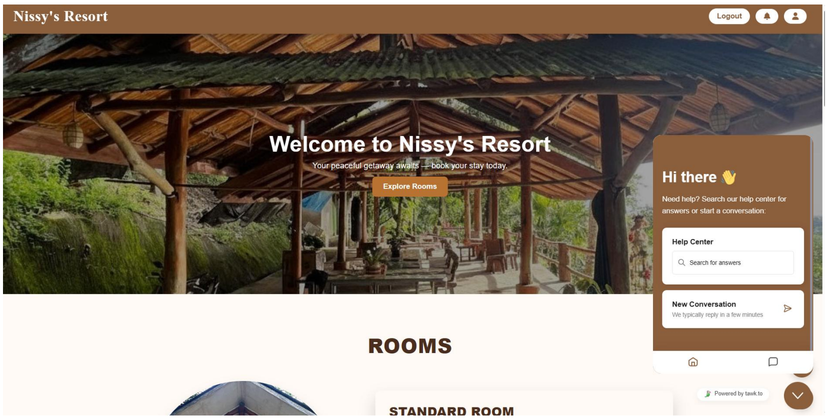


Figure 16: Location

This figure shows the Location feature, presenting an interactive map that pinpoints the exact location of Nissy's Resort.



Your peaceful getaway awaits — book your stay today.

Need help? Search our help center for answers or start a conversation.

We typically reply in a few minutes

Figure 17: Pop up chat

This figure shows the pop-up chat where guests can chat with staff in real time

CHAPTER III

IMPLEMENTATION

Technology Stack

The Bloom with Nissy: A Resort Reservation System uses a combination of programming languages, servers, databases, APIs, and network protocols to ensure a smooth and reliable booking experience.

Programming Languages

PHP 8.2 – PHP was utilized as the main server-side programming language, managing backend processes such as application logic, database transactions, API integrations, and user authentication. It was selected for its enhanced performance, strict typing support, and alignment with modern web standards.

Server and Hosting Technologies

InfinityFree – InfinityFree was used as the web server for this project. It is where the website was uploaded so users could access it online. The platform was chosen mainly because it is free and easy to use, and it supports PHP and MySQL, which are needed for the system to work properly.

Database

MySQL – Version 5.7 To stores and manages all system data, including user accounts, reservations, room details, and booking history.

MySQL (Version 5.7) - is used to store and organize all the system's data, such as user accounts, reservations, room information, and booking history. This is to helps the booking system save information safely, find data quickly, and keep records accurate and organized.

External APIs and Integration Tools

Geolocation Address API – Validates and stores users' location data during sign-up to improve booking accuracy

Email Verification API – Email Verification API was utilized to verify email address formats, ensure deliverability, and prevent the creation of invalid or fake user accounts.

Email Notification API – Integrated to automate the sending of email alerts, verification codes, and booking updates.

Tawk.to Chat API – Enables real-time communication between guests and resort staff.

Network Protocols

HTTP / HTTPS – Used for communication between the client and server to ensure secure and reliable data transfer.

System Modules

Modules	Roles	Functions
User management	Handles all user-related processes and access control within the system.	- Guest Registration - Login and Logout

		-Edit profile
Booking management	Manages room details and availability.	- Display room details to guest - Booking Submission - Booking Approval or Rejection - Booking History
Reservation module	Controls reservation scheduling and availability of rooms	- Collect reservation information (dates, number of guests, room type) - Check room availability
Notification Module	Automatically informs users and administrators about booking activities and system updates without requiring manual site checking.	- Real-time Notifications - Email Alerts, - Booking Status Notifications
Reporting Module	Provides summaries of the approved booked for resort staff.	- Displays a calendar view of approved bookings - Shows occupied dates availability - Allows staff to quickly check reservations and plan schedules accordingly
Admin dashboard	Serves as the main control panel for system administration.	- Booking request - Booking History - booking calendar
Customer support	To have an real-time communication with guest and staff	- Handle guest inquiries and concerns - Respond to guest messages - Provide assistance related to bookings

Testing and Debugging

Testing and debugging were carried out throughout the development process so as to guarantee that everything was working according to plan.

Testing Methodology

Manual Testing: Each feature of the website was tested step by step by the develop. This included testing booking form submission, chat display functionality, OTP email sending and verification, and general navigation to ensure all buttons and inputs worked as expected.

Regression Testing: Whenever new features or update were implemented, the existing features were retested to verify that they continued to function correctly and remained unaffected by the changes.

Integration Testing: The system was tested ensure that all its parts worked well together. Included checking that the frontend and the backend communicated correctly, that data was stored and retrieved properly from the database, and that external services, such as the OTP email system, were integrated and functioning as expected.

OTP Email System Testing: The OTP system was tested multiple times to ensure it functioned correctly, verifying that the codes were properly generated, sent to the user's email promptly, received on time, and accurately validated during the verification process.

User Acceptance Testing: Selected user were invited to test the system and provide feedback regarding usability and functionality. This helped identify bugs and issues that were not detected during developer testing

Debugging Tools

Browser Console: We used this tool to identify and analyze JavaScript errors, waning, and runtime issues that occurred during the execution od the system. By monitoring the application in real time, we were able to detect problems in the code, understand their causes, and ensure that the system functioned correctly and efficiently.

Network Inspector: To monitor API requests and responses through the system's operation. By observing the communication between the client and server in real time, we were able to identify failed or incomplete requests, verify that the correct data was being transmitted, and ensure that the application processed information accurately. This process was essential for detecting integration issues, debugging errors in the backend, and maintaining the reliability and stability of the system.

Manual PHP Code Review: To review the backend PHP code to identify and resolve logic errors, incorrect event triggers, and issues in API handling. By carefully examining the code line by line, we were able to detect problems that could affect the system's functionality, ensure that events were triggered correctly, and verify that data was properly processed and communicated between the client and server. This through review helped maintain the reliability and efficiency of the backend operations.

Challenges and solutions

During the development process, we faced technical challenges that were addressed through the implementation of targeted architectural solutions.

Chat Functionality

Challenge: Real-time chat functions were not supported by the hosting platform, which blocked the built-in chat system.

Solution: This was fixed by integrating an external service-Tawk.to-as a floating widget, which provided a workable chat solution despite the requirement for admins to manage messages on a separate platform.

Booking Notification System

Challenge: Booking notification system, both for on-site and email. Due to faulty backend events, the notifications would not show up.

Solution: Repeated debugging of notification logic, verification, and adjustment of event triggers, and configuration of email fixed this problem. Post-refinement, notifications started working both on the website and email.

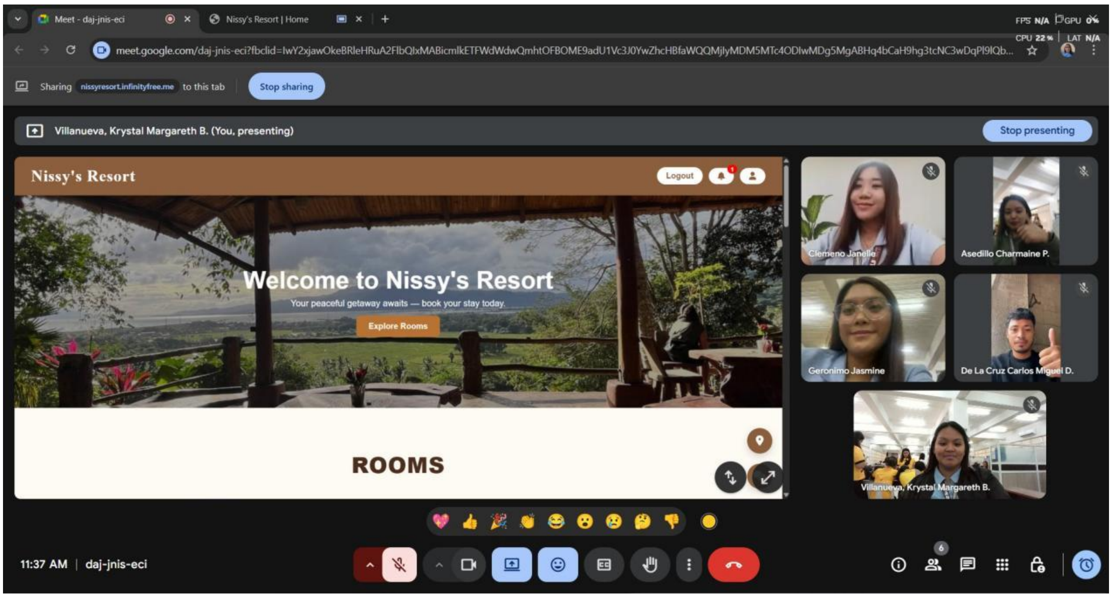
APPENDICES

Appendix A
Approved Letter

Appendix B
Photo Documentation

Action photo

Formal Photo


Meet - daj-jnis-eci
Nissy's Resort | Home
Sharing nissyresort.infinityfree.me to this tab
Stop sharing
Villanueva, Krystal Margareth B. (You, presenting)
Stop presenting
Nissy's Resort
Logout
Welcome to Nissy's Resort
Your peaceful getaway awaits — book your stay today.
Explore Rooms
ROOMS
Clemeno Janelle
Asedillo Charmaine P.
Geronimo Jasmine
De La Cruz Carlos Miguel D.
Villanueva, Krystal Margareth B.
11:37 AM | daj-jnis-eci

Virtual Picture with client

During our first meeting with the client, we don't know that we needed an in-person photo with them. Because of this, we could not take the picture on-site. The client also lives very far from us, and traveling there would not be safe. As a solution, we decided to take the required photo during a virtual meeting using Google Meet. This allowed us to meet the requirement safely and conveniently.