



Module Code: B9IS109

**Module Title : Web Development for
Information Systems**

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Title: Resort Booking

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1. Introduction

The Sukoon Resorts Booking project is a comprehensive web application designed to simplify and enhance the experience of booking resorts. In today's fast-paced world, planning a vacation can be a stressful task. Sukoon Resorts aims to alleviate this stress by providing a user-friendly platform that allows users to search, view, and book resort accommodations seamlessly. This project leverages modern web technologies to deliver a responsive, reliable, and intuitive service for users looking to plan their perfect getaway.

2. Research and Planning

Thorough research and careful planning laid the groundwork for the Sukoon Resorts Booking project. I began by conducting an in-depth analysis of the current market and existing booking platforms to understand user needs and industry trends. This involved:

- **Understanding User Preferences:** I gathered insights into what features users prioritize when booking resorts, such as easy navigation, detailed resort descriptions, and secure payment options.
- **Competitive Landscape:** I examined various booking platforms to identify their strengths and weaknesses, helping me pinpoint areas where Sukoon Resorts could differentiate and excel.
- **Technical Evaluation:** I assessed multiple technologies and frameworks to determine which would best meet the project's requirements in terms of performance, scalability, and ease of development.

3. Choice of Framework and Technologies

3.1 MongoDB:

As the database, MongoDB provides a flexible, schema-less structure, ideal for handling diverse data types and complex queries. Its scalability ensures that the application can grow with increasing user demand.

3.2 Express.js:

This web application framework for Node.js offers a streamlined way to build the backend server. Express.js simplifies the creation of API routes and server logic, ensuring smooth data flow between the frontend and the database.

3.3 React.js:

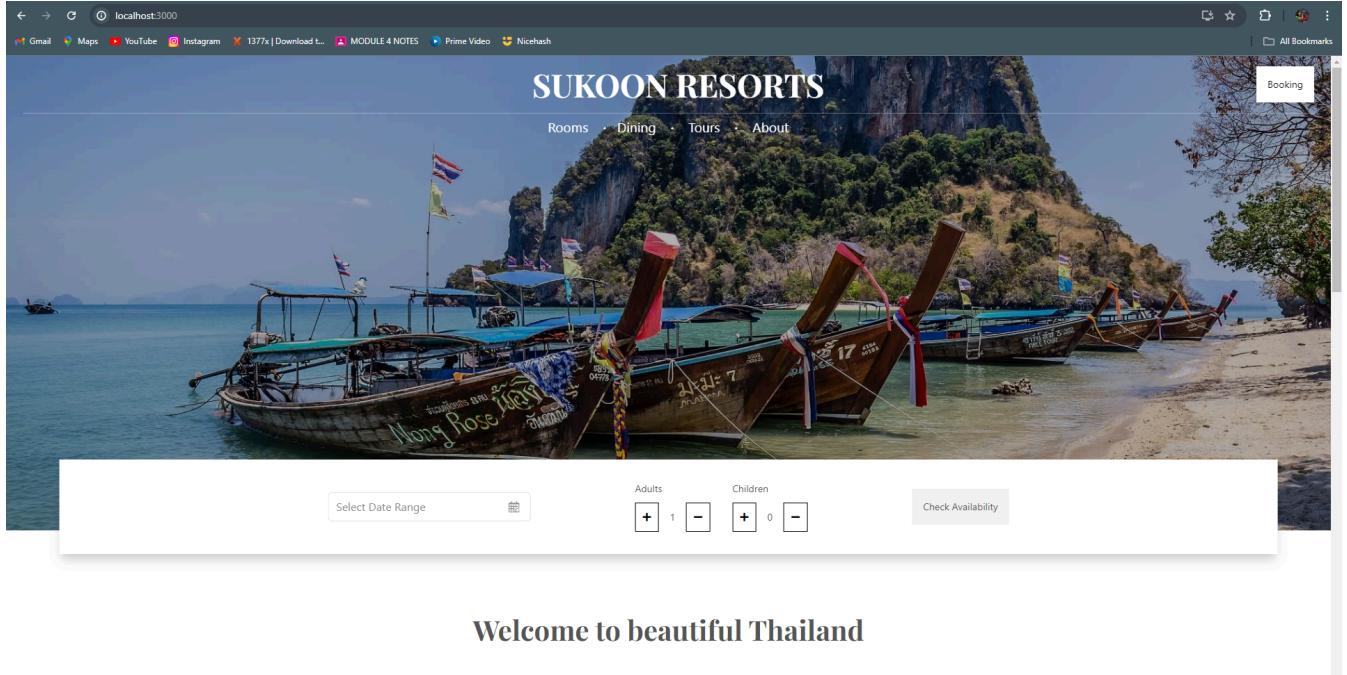
For the frontend, React.js enables the building of a dynamic and responsive user interface. Its component-based architecture allows for reusable UI components, making the development process more efficient and the interface more maintainable.

3.4 Node.js:

As the runtime environment, Node.js allows the building of fast and scalable server-side applications. Its non-blocking, event-driven architecture is well-suited for handling real-time data and concurrent user requests.

4. UX Design

4.1 : Home Page



The homepage consists of four sections. The top bar contains the resort's name and a booking button. The navbar consists of 4 navigation pages, i.e. Rooms, Dining, Tours, About. In the homepage itself users can check availability of rooms. Users can select the date range and number of people, then click on Check Availability. It will display all the available rooms based on the input.

4.2 : Home Page (Dining)

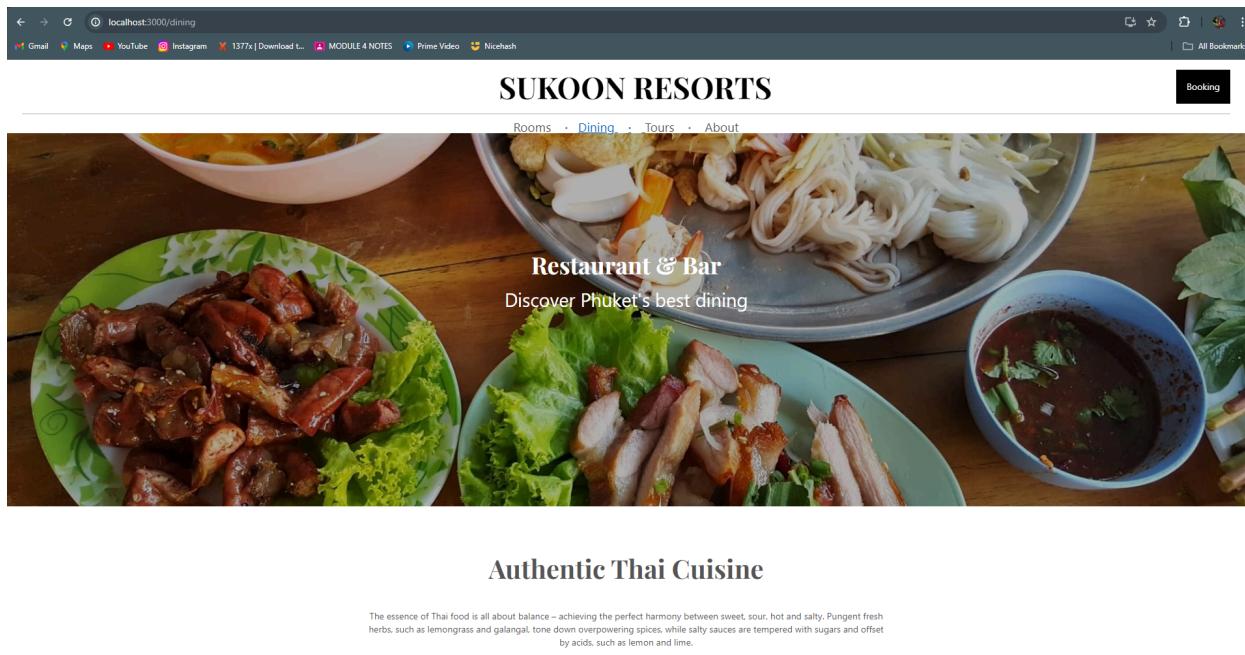
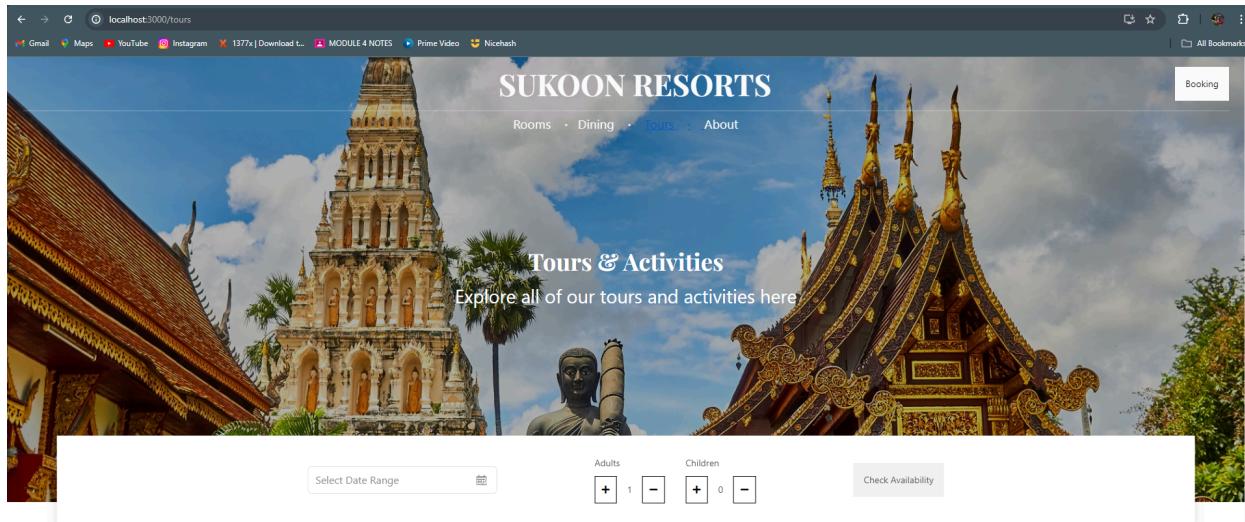


Fig 4.2.1 Homepage (Dining)

The homepage has a section for dining. This page showcases the dishes, restaurant and bar images.

4.3 : Home Page (Tours)



View all of our tours

localhost:3000/tours

thing Thailand has to offer while staying at our resort. From its pristine white sand beaches, breathtaking nature,

Fig 4.3.1 Homepage (Tours)

The homepage has a section for Tours which shows the beauty of thailand

4.4 : Home Page (About)

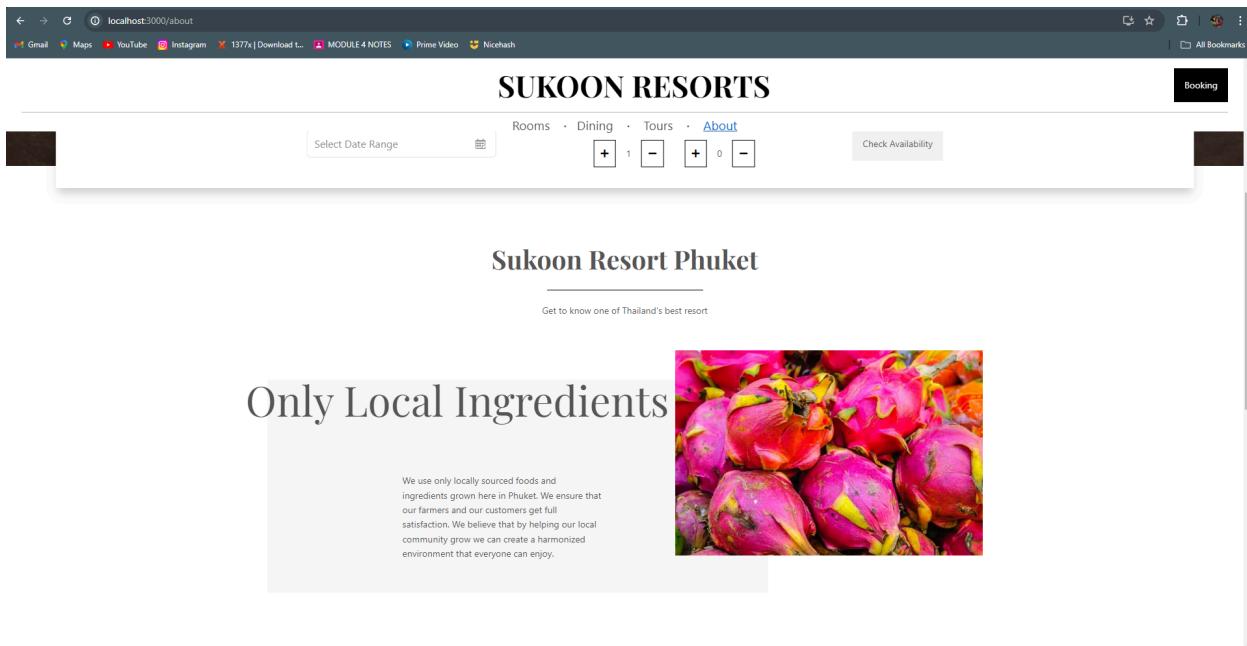


Fig 4.4.1 Homepage (About)

The homepage has a about page, which shows details about the resort and contains two testimonials.

4.5 : Booking Page

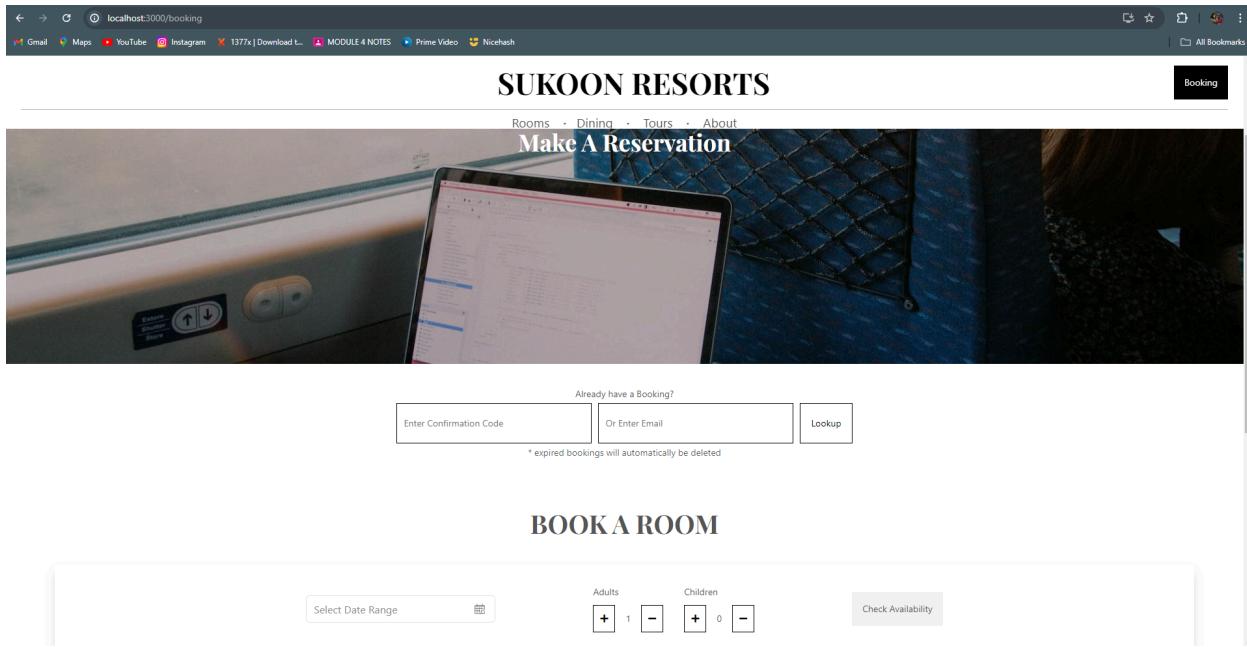


Fig 4.5.1 Booking Page

The homepage has a button named Booking on the topbar. On clicking that button, the user is taken to the booking page where they can either book a room or search for previous bookings. When a user is booking a room, they select the date range and select the number of people then click on Check Availability.

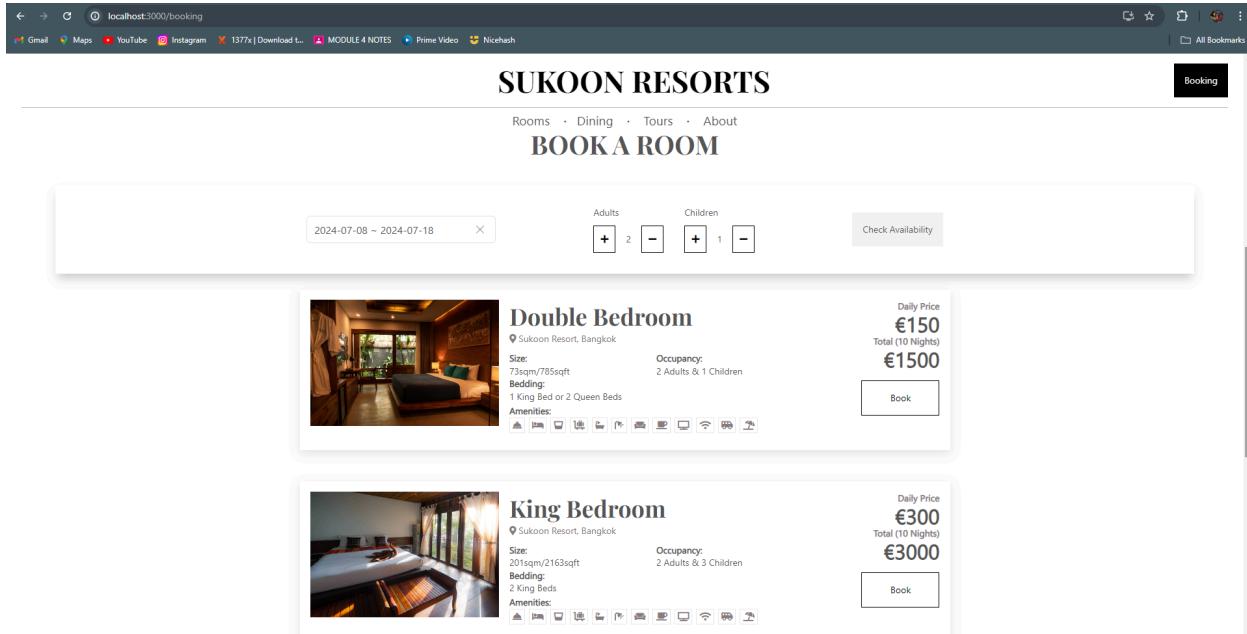


Fig 4.5.2 Booking Page (Available Rooms)

The booking page shows the list of available rooms based on the user's search.

4.6 : Booking Page/Checkout

SUKOON RESORTS

Rooms • Dining • Tours • About

BOOKING SUMMARY

Room: Double Bedroom

Dates: 07/08/2024 - 07/16/2024

Number of Nights: 10

Guests: 2 Adults 1 Children

Total: \$1500

Enter Your Information

First Name * Allen

Last Name * Kurisingal Antony

Email * allenantony26@gmail.com

Confirm Email * allenantony26@gmail.com

Phone Number * 0823455517

Select * VISA

Card Type

Fig 4.6.1 Booking Page/Checkout

SUKOON RESORTS

Rooms • Dining • Tours • About

Total: \$1500

Enter Your Information

First Name * Allen

Last Name * Kurisingal Antony

Email * allenantony26@gmail.com

Confirm Email * allenantony26@gmail.com

Phone Number * 0823455517

Select * VISA

Card Type

Card Number * 0112358132134558
This value cannot be changed

Sukoon Resort

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Fig 4.6.2 Booking Page/Checkout

When the user selects a room, they are then navigated to a checkout page where the user has to fill in the name, email id, mob no, payment type. In this application, the payment section is a dummy. After filling the details and clicking submit, the user is taken to a booking confirmation page.

4.7 : Booking Page/Confirm

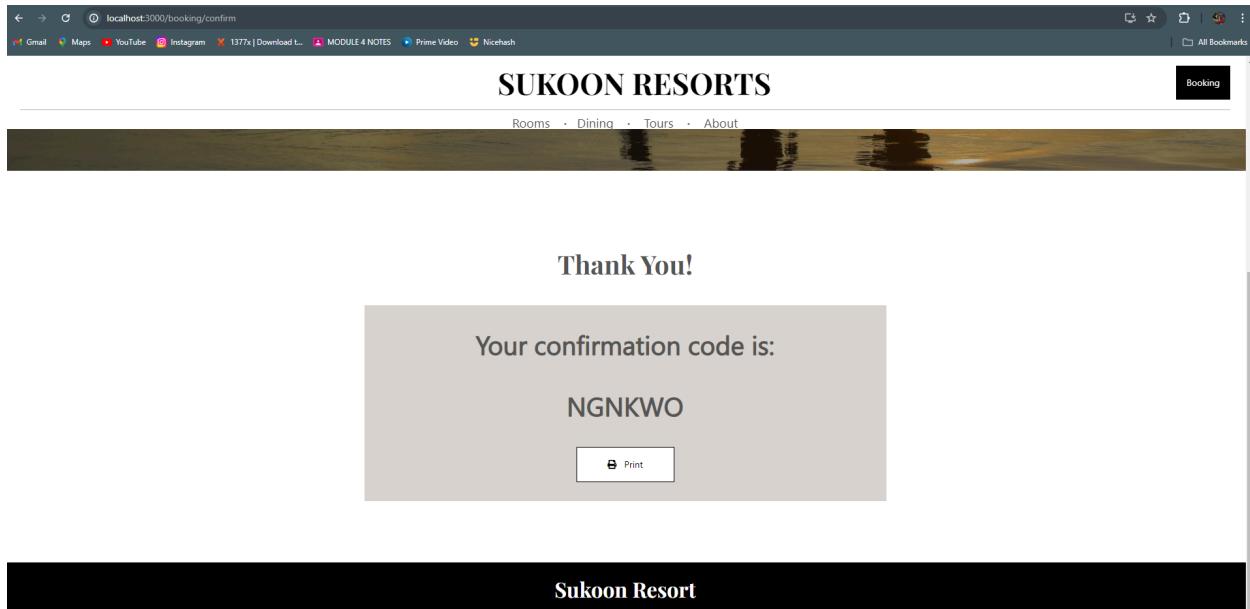


Fig 4.7.1 Booking Page/Confirm

When the user completes the personal information and clicks submit, they are taken to the confirmation page where they will receive a confirmation code. This confirmation code will be emailed to them and also can be printed as pdf.

4.8 : Booking Page/Existing

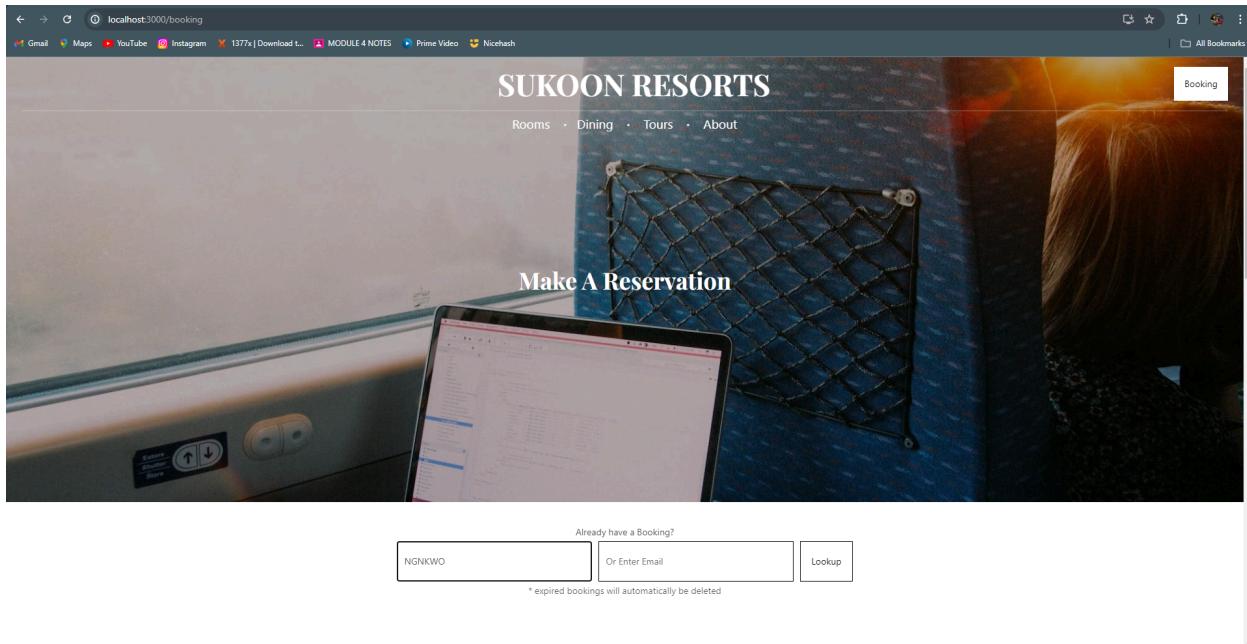


Fig 4.8.1 Booking Page

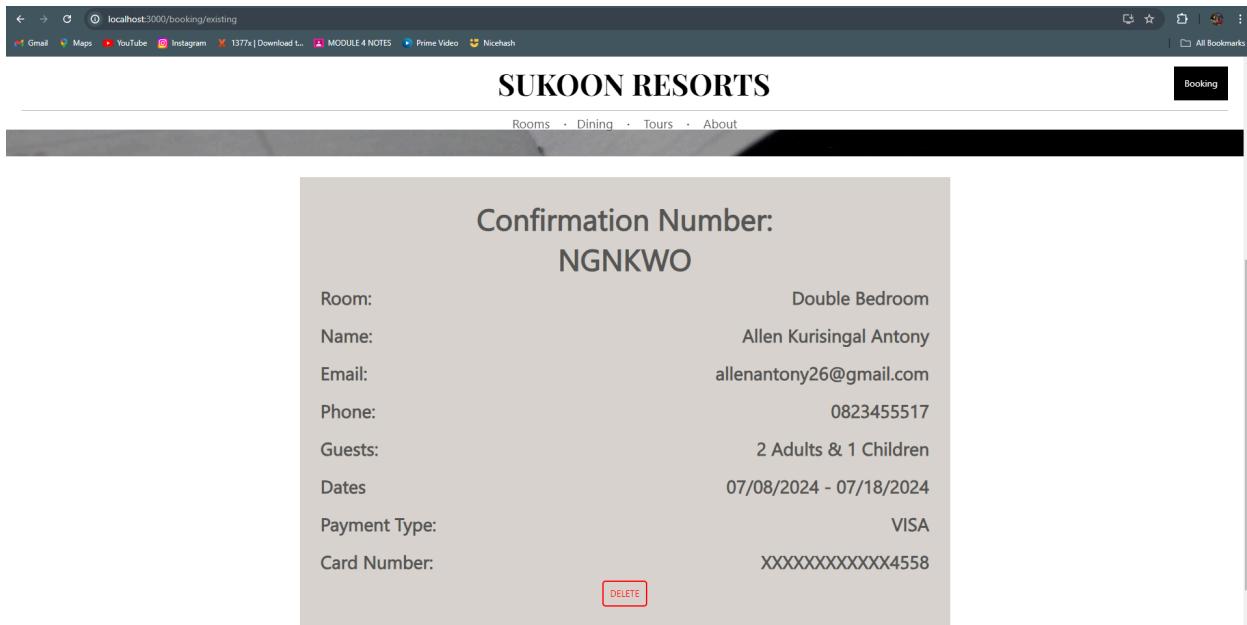


Fig 4.8.2 Booking Page/Existing

After successfully booking a room, users can navigate to the booking page and either enter the confirmation code that they received when booking or enter the email id. If the booking is a valid one, they will be able to see the booking details.

5. Consumption of Web Services

1. Frontend - React.js

The frontend of the application, built with React.js, communicates with the backend via RESTful APIs. Here's how it's structured:

- **API Service:** A dedicated service is created to handle all API calls. This service uses the axios library to send HTTP requests to the backend.

2. Backend - Express.js

The backend, built with Express.js, provides RESTful endpoints that the frontend consumes. Here's how the backend handles web services:

- **Routes:** Define routes for different resources such as rooms, bookings.
- **Controllers:** Controllers handle the logic for each endpoint, interacting with the MongoDB database via models to fetch or manipulate data.

3. Error Handling and User Feedback

- **Backend:** The backend uses middleware to handle errors, ensuring that appropriate HTTP status codes and error messages are sent back to the frontend.
- **Frontend:** The frontend catches errors from API calls and provides user feedback through UI elements such as alerts or notifications, guiding users on what went wrong and how to proceed.

6. Security Threats and Measures

CSRF - Cross-Site Request Forgery

In the Sukoon Resorts booking application, Cross-Site Request Forgery (CSRF) protection is implemented to prevent unauthorized commands from being transmitted from a user that the web application trusts. To achieve this, CSRF tokens are utilized within forms and sensitive operations. When a user submits a form or makes a state-changing request, a unique CSRF token is included in the request. The server verifies this token to ensure that the request is genuine and not forged by a malicious site. This token validation mechanism helps to ensure that actions such as booking and viewing bookings thus protecting the application from CSRF attacks.

JWT - JSON Web Tokens

JSON Web Tokens (JWT) are used in the Sukoon Resorts booking application for secure and efficient user authentication. The server generates a JWT containing the user's identity and other relevant claims, signing it with a secret key. This token is then sent to the client and stored, typically in local storage or cookies. For subsequent requests, the client includes the JWT in the authorization header. The server verifies the token's signature to authenticate the user and allow access to protected routes and resources. This stateless authentication mechanism not only enhances security by ensuring that only authorized users can perform actions like booking and accessing personal data but also improves performance by reducing the need for constant server-side session management.

7. Features

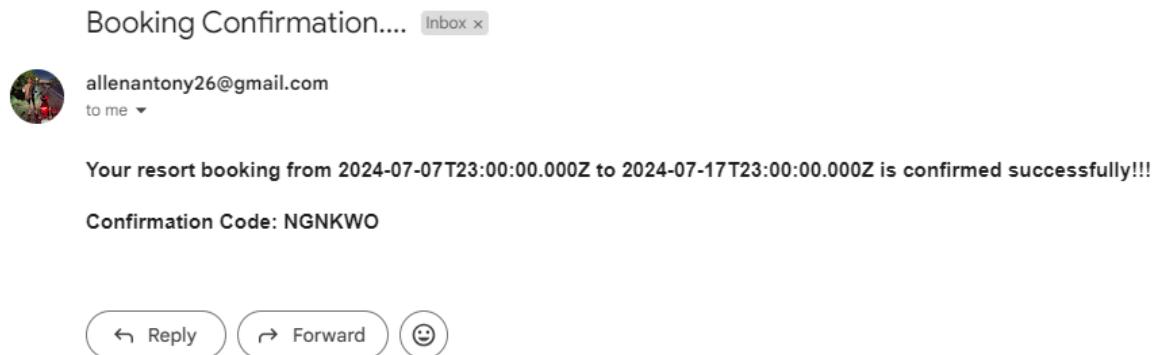


Fig 7.1 Confirmation code email

When the rooms are successfully booked, a confirmation email will be sent to the registered user with confirmation code.

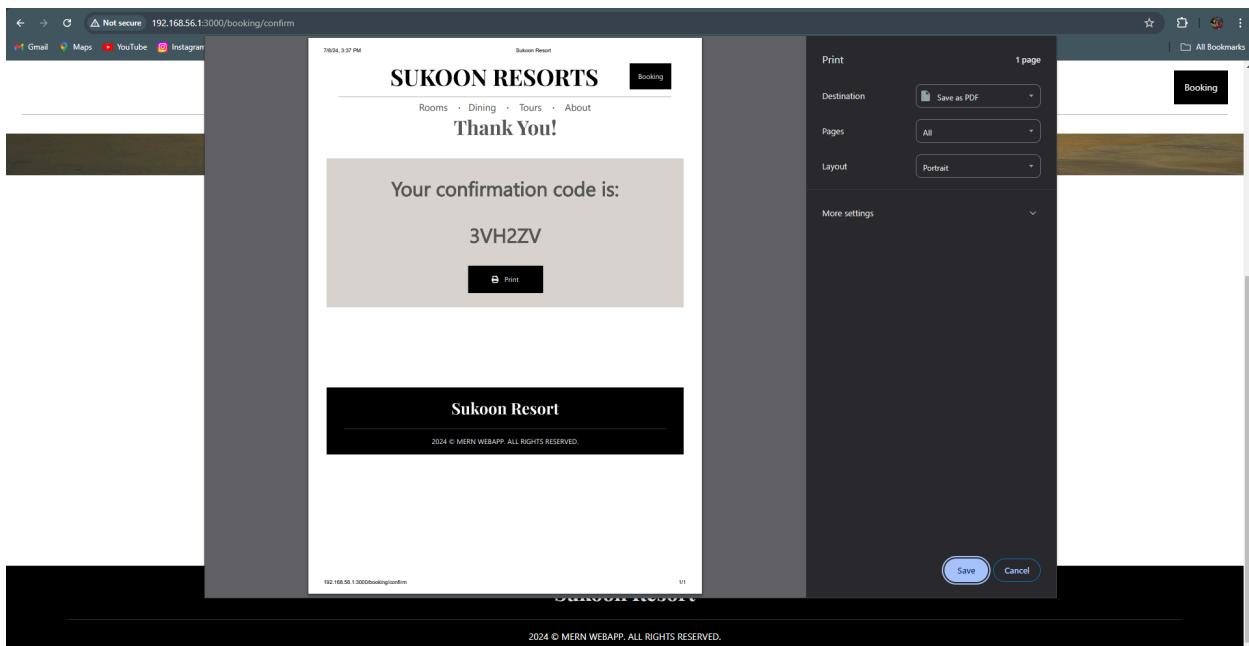


Fig 7.2 Confirmation code PDF

When the rooms are successfully booked, a confirmation code will be shown on the web page and user can print that into a pdf.

8. Links

Github Link : https://github.com/allenanto/hotel_booking_app.git

9. References

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