



Daffodil
International
University

Project Title: A Hotel Booking Web App

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This project report is submitted to fulfil the requirements for the Degree of Bachelor of Science in Software Engineering Spring - 2024

Approval

APPROVAL

This project titled on "BookEase a hotel booking web app", submitted by **Abdullah Al Mamun (ID: 192-35-458)** to the Department of Software Engineering, Daffodil International University has been accepted as satisfactory for the partial fulfillment of the requirements for the degree of Bachelor of Science in Software Engineering and approval as to its style and contents.

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Declaration

DECLARATION

I hereby declare that I have done this project under the supervision of **Dr. Md. Fazle Elahe Assistant Professor & Associate Head**, Department of Software Engineering, Daffodil International University. I also declare that, this project is my original work for the degree of B.Sc. in Software Engineering and that neither the whole work nor any part has been submitted of another degree in this or any other university .

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Acknowledgment

I would like to thank my project supervisor, Dr. Md. Fazla Elahe, for all of his help and advice in developing the online application BookEase, which allows hotel reservations. I also want to express my gratitude to the software engineering department for all of the tools and the supportive environment.

Project Summary

BookEase is an easy-to-use online solution for hotel room bookings. For travelers or for business trips BookEase can be very helpful for them. This web application can be used to book a room through quick and easy clicks.

The system is very easy for customers to find rooms, they can read details about the hotel and book a room. Customers have the free will of booking and also choosing how many guests they will have.

An user friendly admin dashboard also guarantees that administrators can handle the booking process easily, also checking both hotel listing and customer bookings.

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Chapter 1: INTRODUCTION

To make reservations simpler, BookEase, an online hotel booking tool was developed. Customers can search for hotels, look into room details and make reservations with only a few clicks. At any time and from any location, users of the system can verify reservations and find out which rooms are available. They can also select how many guest and kids will be arriving. It also has an easy-to-use admin dashboard so that the administrators can efficiently manage hotel listings and reservations.

1.1 A PROJECT BACKGROUND

Digital solutions are taking the place of antiquated methods in the lodging sector, such as phone calls and in-person hotel reservations. BookEase was created in response to the expanding demand for practical and effective booking systems.

BookEase is a web application that, because of its intuitive design, makes it easy for users to search for, view, and reserve rooms. Additionally, it features an admin dashboard for reservation administration that is incredibly user-friendly and effective.

1.2 PROBLEM STATEMENTS

- Traditional reservation techniques are inefficient and require a lot of time.
- Centrally managing hotel availability and reservations presents a significant challenge.
- Customers can make bookings from anywhere at any time due to limited availability.
- Managing visitor reservation data may involve a lot of work.
- Inadequate security protocols to safeguard client information and transactions.

1.3 TARGETS

- ✓ Provide hotel visitors with an easy-to-use online booking interface.
- ✓ It is designed to manage bookings with a single admin dashboard.
- ✓ Makes certain that customers can schedule appointments whenever and from anywhere.
- ✓ Optimize the procedure for handling visitor information.
- ✓ Robust security protocols are enforced to safeguard client data.
- ✓ Provide a dependable integration for payment gateways to enable basic online transactions.
- ✓ To avoid overbooking, provide up-to-date information on hotel room availability in real-time.

1.4 STAKEHOLDERS

Stakeholders are from one of these two groups –

- Admin
- User

1.5 PROJECT ROADMAP

A project's timing is what makes it successful. Without a plan and a schedule, a project cannot be finished correctly. My project assignment has to be finished by a specific date. Additionally, a thorough project timeline must be created.

Activities	Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6	Wk 7	Wk 8	Wk 9	Wk 10	Wk 11	Wk 12
Research on Marketing												
Specification												
Planning												
Design												
Development												
Testing												
Assessment												
Documentation												

Table 1.5-1 Project Roadmap

1.6 PROJECT SCHEDULE AND AIMS

The project schedule and aims are here –

Tasks	Period in Weeks	Total Weeks
Analysis	(W1, W2)	2
Specification	(W2, W3)	2
Plotting	(W3, W4)	2
Model	(W4, W5, W6)	3
Development	(W6, W7)	3
Inspection	(W7, W8)	2
Evaluation	(W9, W10)	2
Reports	(W11, W12)	2
Program Launch	(W13)	1

Table 1.6-1 Project Schedule and aims

1.7 OBJECTIVE

The primary goals of this project are to help people locate different types of hotel rooms.

- **Practically:** There will be no malware or trojan horses.
- **Efficiently:** This system is free of bugs.
- **Cost:** Cost is minimum.
- **Security:** The security is checked. There will be to trouble.

Chapter 2: SYSTEM SPECIFICATION

2.1 SYSTEM FUNCTION

The system functions are below -

- Registration
- Login
- Admin Dashboard
- Book Now Hotel
- Booking Date/ Time
- See Hotel Room
- How many guests the hotel will seat.
- Confirm
- Log out

2.2 SYSTEM QUALITY

The system qualities are below –

- Performances
- Qualities
- Stability
- Authority
- Response Time
- Reliability

2.3 DEVELOPMENT MODEL

This notion allows for the possibility of a parallel evolution, which is why I chose to use an iterative enhancement method to build my project, considering all of its benefits. All potential hazards will be recognized and dealt with during the iteration.

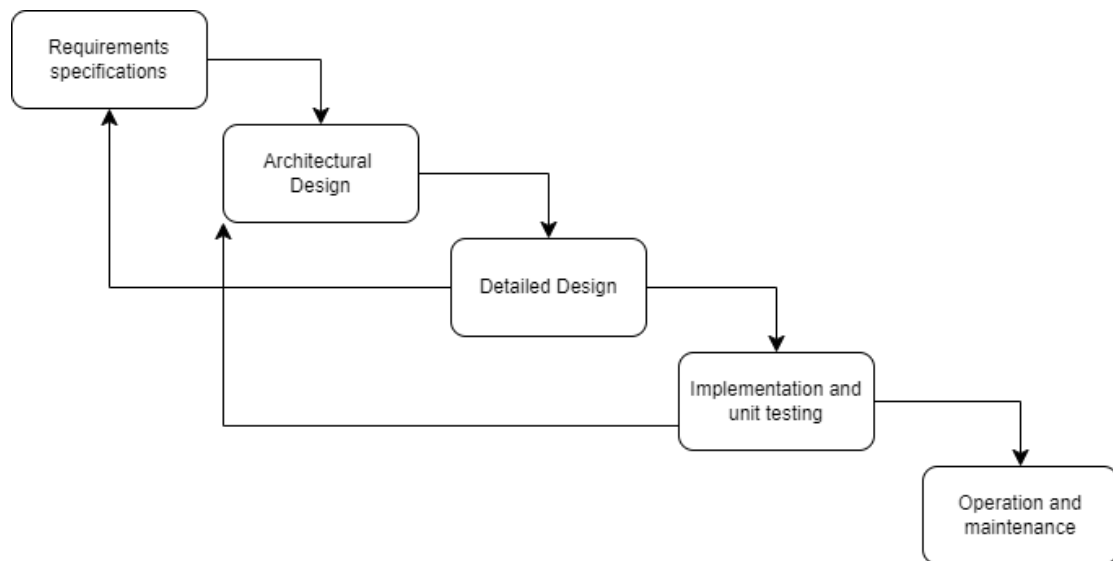


Figure 2.3-1 Development Model

Chapter 3: SYSTEM REVIEW

3.1 SCENARIO DIAGRAM

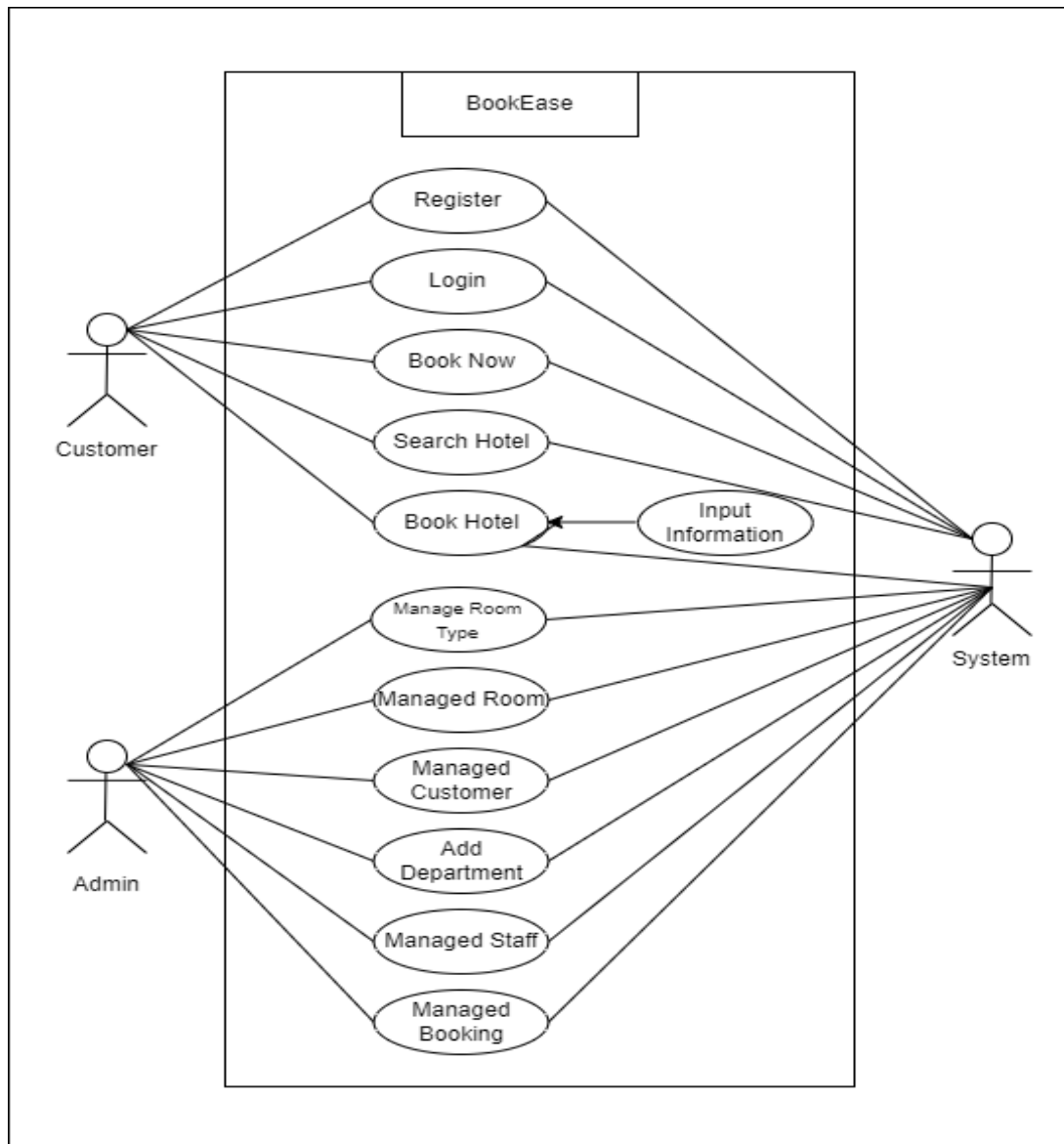


Figure 3.1-1 Scenario Diagram

3.2 SCENARIO DESCRIPTION

Registration Description: Users can enter their personal information on this module's form. They will be able to log into the system after completing the form.

Login Description: After providing their email address and password, users can access the system.

Description of the Search Room: Users can look for options and filter rooms according to their own preferences.

Check-In & Check-Out Description: Users enter the dates they would like to check in and out.

Description of Room Availability: The consumer can see available rooms that have been verified by the system.

Choose Room Description: The client choose a room based on their tastes.

Confirm Booking Description: Using the length of stay as a basis, the system determines the total cost and verifies the reservation using a special booking ID.

Add Room Type Description: Among the existing rooms, users will be able to see newly created room kinds that have particular details added by the admin.

Add Room Description: Users may see the rooms that are available based on their details, and the administrator can add new rooms by providing specifics.

Add User Description: For booking purposes, new user accounts may be created by the admin.

Manage Hotel Staff: The administrator has the ability to add new employees.

Dashboard Description: The dashboard allows the administrator to keep an eye on every action.

Modify Room & Room Type Description: Any room or room type can be altered by the administrator.

Description of Logout: This feature enables users to log off the system.

3.3 FLOWCHART

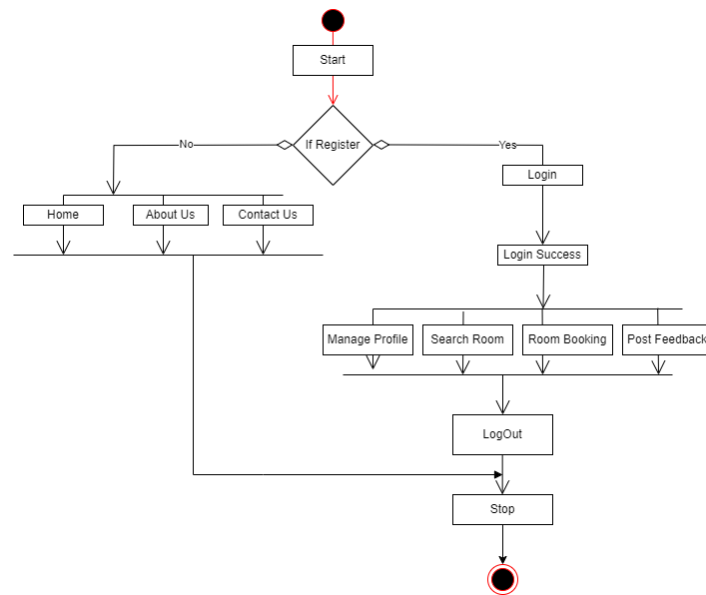
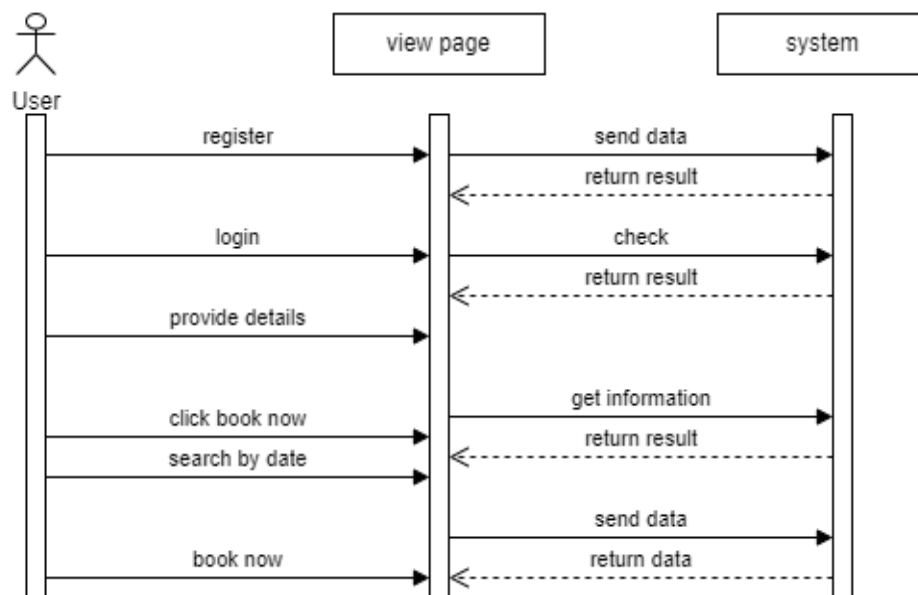


Figure 3.3-1 Flowchart

3.4 INTERACTION FLOWCHART

Sequence diagram (user)



Sequence diagram (admin)

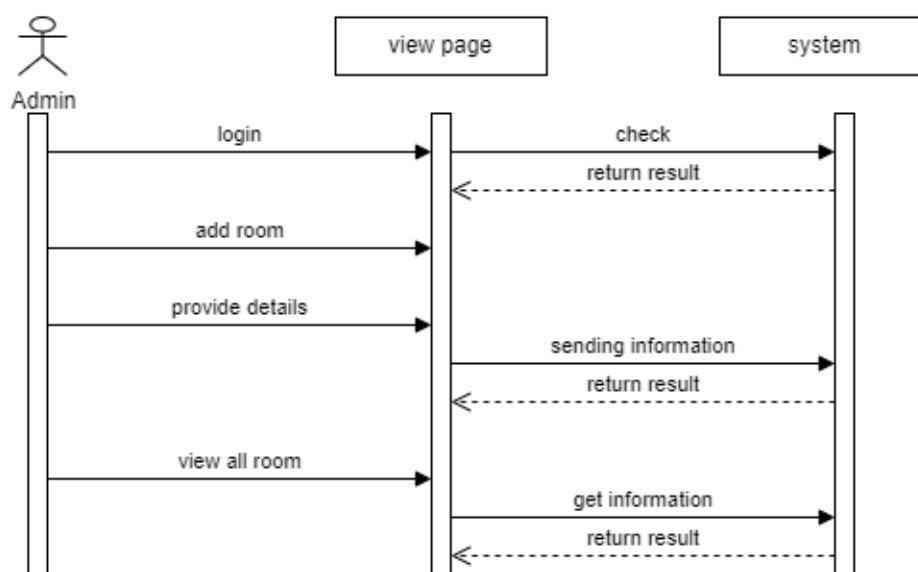


Figure 3.4-1 Interaction flowchart

3.5 ENTITY RELATIONSHIP MODEL

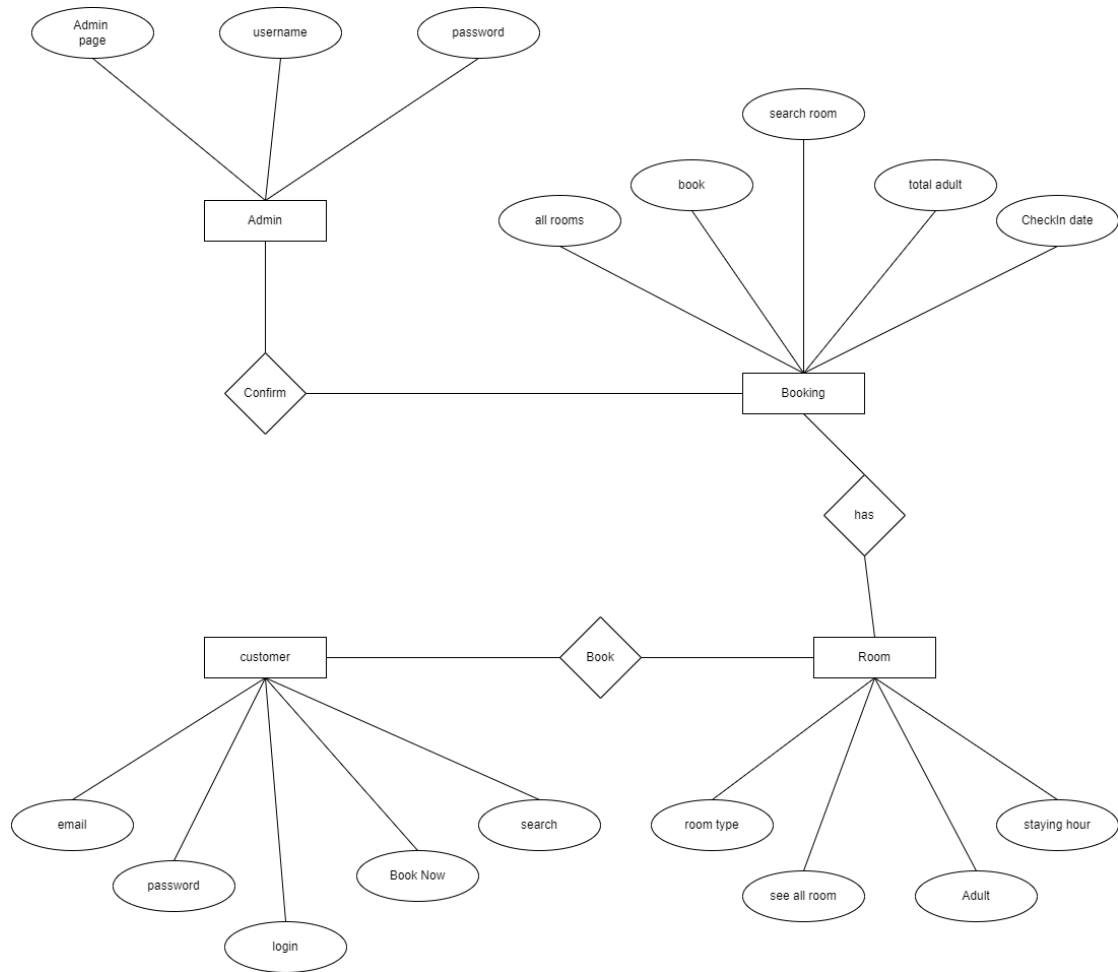


Figure 3.5-1 Entity Relationship Model

Chapter 4: END-TO-END VALIDATION

4.1 FUNCTIONALITY EVALUATION

During feature testing, the system may have new features added to it. Adding more features to this system will be the top priority. These will update and increase the effectiveness of the system.

4.2 FEATURE UNDER REVIEW

Registration (Priority 1): Users can enter their personal information on this module's form.

Login (Priority 2): Email addresses and passwords can be entered by users to log in.

Priority 2: Search & Room List: Based on the date chosen, the system determines whether rooms are available and shows the user the results.

Choose & Confirm Reservation (Priority 3): Guests can pick a room, examine its specifications, and then finalize their reservation.

Add Room & Room Type (Priority 3): Administrators have the ability to create new rooms and provide thorough descriptions of each type.

Add User (Priority 2): The power to add new user accounts is available to administrators.

Add Staff: Admins have the authority to add new employees (Priority 1).

Admins have access to and can inspect all booking history under Manage Booking History (Priority 2).

4.3 TEST STRATEGY

To make sure the BookEase hotel booking web app was dependable and user-friendly, I put it through an end-to-end test with a playwright. The testing process involved the following steps: Playwright's composition:

- You need to add the command `npm install playwright`.
- The setup required the automation of browser functions.

An explanation of the test cases

The following crucial competencies were part of the testing criteria:

User enrollment and accessibility of the dashboard

- Hotel and room views
- Verification of reservations, visitor management, and reservation process
- Sign-off functions

Automate the subsequent test cases:

- User Registration and Login: Confirm that the testing data was correct and that the user registration process was properly finished.
- Verified that the login functioned with both the correct and incorrect credentials.
- Admin dashboard access: The dashboard's operation was verified and the admin login was checked.

- Hotel search and room viewing: An automated hotel search was carried out, and the manner in which the search results were presented was examined.
- Booking Process: All steps, including selecting a hotel room and completing the payment, were duplicated.
- Guest Management: Verified that you may specify how many adults and kids would be arriving at the time of the reservation.
- Booking Confirmation: Ensured that a confirmation email was generated and dispatched.
- Both administrators' and customers' ability to log out was looked at.

Data protection and security:

- Confirmed that private information is handled securely throughout the booking, login, and registration procedures.

Try things out and evaluate the outcomes:

- Examined test findings to find and address any problems or bugs.
- Reran tests to make sure all features functioned as planned and that the corrections had taken hold.

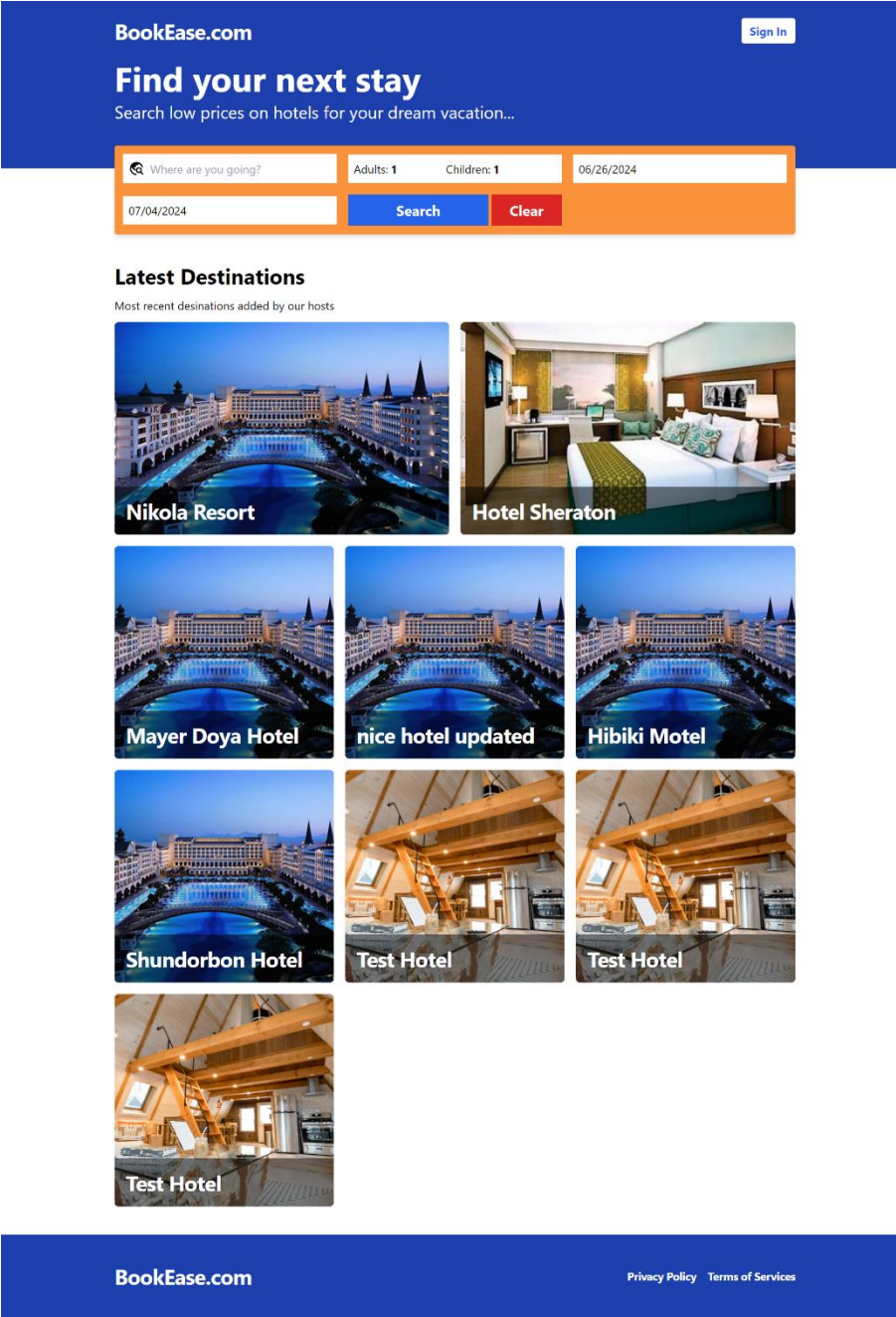
4.4 TESTING SCHEDULE

Test Phases	Time to completion
Testing plan creation	1Wk
Unit test	While development
Component test	While development
Testing user's interface	1Wk
Performance test	1Wk
Accessibility test	1Wk

Table 4.4-1 Testing Schedule

Chapter 5: HELP GUIDE

5.1 HOMEPAGE



5.2 REGISTRATION & LOGIN

This is where user will register or log in.

BookEase.com

Sign In

Find your next stay

Search low prices on hotels for your dream vacation...

Where are you going?

Adults: 1 Children: 1

06/26/2024

07/04/2024

Search

Clear

Create an Account

First Name

Last Name

Email

Password

Confirm Password

Already have an account? [Sign In here](#)

Create Account

BookEase.com

[Privacy Policy](#) [Terms of Services](#)

BookEase.com

Sign In

Find your next stay

Search low prices on hotels for your dream vacation...

Where are you going?

Adults: 1Children: 1

06/26/2024

07/04/2024

Search

Clear

Sign In

Email

Password

Not Registered? [Create an account here](#)

Login

BookEase.com

[Privacy Policy](#) [Terms of Services](#)

5.3 SEARCH HOTEL

The search bar is right up front.

BookEase.com

Sign In

Find your next stay

Search low prices on hotels for your dream vacation...

Where are you going?

Adults: 1Children: 1

06/26/2024

07/04/2024

Search

Clear

5.4 HOTEL BOOKED LIST

All the booked hotel is here.

BookEase.com

My Bookings

My Hotels

Sign Out

Find your next stay

Search low prices on hotels for your dream vacation...

Where are you going?

07/04/2024

Adults: 1

Children: 1

06/26/2024

Search

Clear

My Bookings



Nikola Resort

Dhaka, Bangladesh

Dates: Fri Jun 21 2024 -Wed Jun 26 2024

Guests: 2 adults, 1 children

Dates: Thu Jul 04 2024 -Wed Jul 10 2024

Guests: 2 adults, 1 children

BookEase.com

Privacy Policy

Terms of Services

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5.5 HOTEL DETAIL PAGE

This is the hotel's details page.

BookEase.com

My BookingsMy HotelsSign Out

Find your next stay

Search low prices on hotels for your dream vacation...

Where are you going?

Adults: 1

Children: 1

06/26/2024

07/04/2024

Search

Clear

★★★★★

Shundorbon Hotel







Free Wifi

Parking

Non-Smoking Rooms

Fitness Center

In publishing and graphic design, Lorem ipsum is a placeholder text commonly used to demonstrate the visual form of a document or a typeface without relying on meaningful content. Lorem ipsum may be used as a placeholder before the final copy is available. It is also used to temporarily replace text in a process called greeking, which allows designers to consider the form of

£110

06/26/2024

07/04/2024

Adults: 1

Children: 1

Book Now

BookEase.com

Privacy PolicyTerms of Services

5.6 CONFIRM BOOKING

This is the confirm booking page:

BookEase.com

My BookingsMy HotelsSign Out

Find your next stay

Search low prices on hotels for your dream vacation...

Where are you going?

07/04/2024

Adults: 1Children: 1

06/26/2024

Search

Clear

Your Booking Details

Location:
**Shundorbon Hotel, Dhaka,
Bangladesh**

Check-inCheck-out
Wed Jun 26 2024Thu Jul 04 2024

Total length of stay:
8 nights

Guests
1 adults & 1 children

Confirm Your Details

First NameLast Name

rinkyrinky

Email

rinky@gmail.com

Your Price Summary

Total Cost: £880.00
Includes taxes and charges

Payment Details

Card numberMM / YY CVC

Confirm Booking

BookEase.com

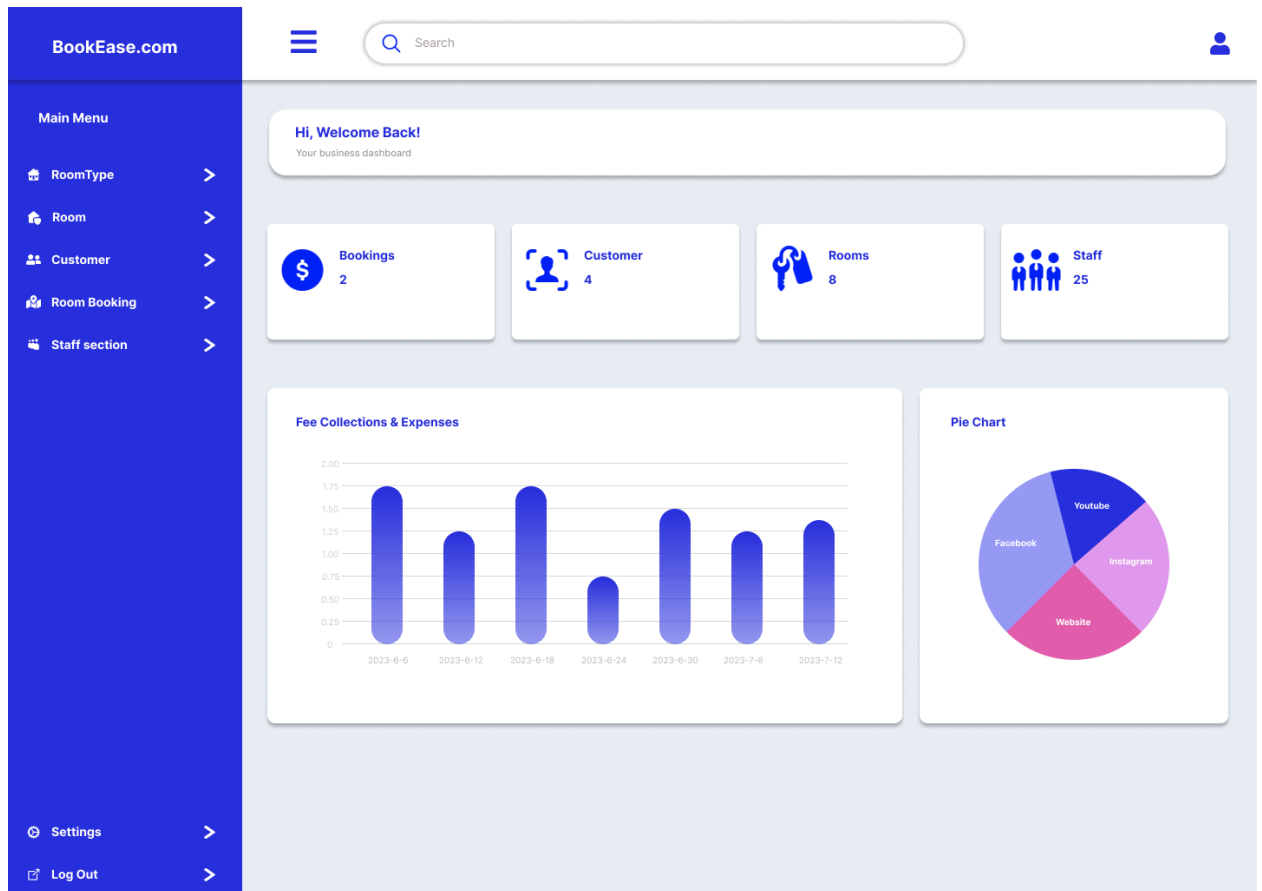
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5.7 ADMIN DASHBOARD

Admin can control the hotel booking from here. Also can see many details here.



5.8 ADMIN DASHBOARD ROOMTYPE

Admin can add Rooms with proper description and picture of the room here.

The screenshot displays the 'BookEase.com' Admin Dashboard. On the left is a blue sidebar with a 'Main Menu' containing links for 'RoomType' (with a dropdown arrow), 'Add RoomType' (with a right arrow), 'Room', 'Customer', 'Room Booking', 'Staff section', 'Settings', and 'Log Out'. The top header is light blue and includes a search bar with a magnifying glass icon and the text 'Search', a hamburger menu icon, and a user profile icon. The main content area is light blue and features a white 'Add RoomType' form. The form has three sections: 'Title' with a text input field, 'Description' with a larger text area, and 'Upload Images' with a 'Choose Files' button and the text 'No files chosen'. A blue 'Submit' button is located at the bottom of the form.

5.9 ADMIN DASHBOARD BOOKING DETAILS

Admin can see all the users that has booked. And all the details with it. Admin can also add new bookings and delete any bookings.

The screenshot shows the BookEase.com Admin Dashboard. The sidebar menu on the left includes the following items:

- RoomType
- Room
- Customer
- Room Booking
- All Bookings (selected)
- Staff section
- Settings
- Log Out

The main content area is titled "All Bookings" and contains a search bar, an "Add New" button, and a table of bookings.

Customer Name	Email	CheckIn Date	CheckOut Date	Staying Night	Action
Robin Robin	Robin@gmail.com	2024-5-24	2024-5-29	5	Delete
Rasel Rasel	Rasel@gmail.com	2024-6-06	2024-5-09	5	Delete
Robin Ahmed	Rasel@gmail.com	2024-6-06	2024-5-09	5	Delete
Robin Robin	Robin@gmail.com	2024-6-06	2024-5-09	5	Delete

Showing 1 to 4 of 4 entities

Previous Next

Chapter 6: CLOSURE

6.1 DEVELOPMENT DESCRIPTION

An end-to-end test validated the requirements and performance of this application. I have ensured that BookEase provides robust security and a seamless user experience by using playwright through the automated testing process. BookEase has been successfully tested and implemented, demonstrating that it can greatly improve the hotel booking experience by giving guests and hotel employees a dependable and user-friendly solution. With constant upgrades and enhancements, BookEase will remain in the forefront of online hotel booking solutions in the competitive hospitality industry.

6.2 TECHNOLOGY STACK

Hardware Specifications

Processors	1.6 GHZ or any faster processors
RAM	4 GB or more
Space Disk	4 GB or more

Software Specifications

Operating system	Windows 11
Front-End	JAVASCRIPT
Framework	React JS
Backend	Node JS
Code Editor	Visual Studio Code
Data Base	Mongo DB
Web Browser	Google Chrome
Web Server	Localhost

6.3 LIMITATIONS

- Messaging is not supported by the system.
- The system is still in its initial phase. More functionality will be added and deployed as a result.
- Email verification and registration are not available.

6.4 FUTURE SCOPE

Using machine learning, the technology will provide visitors with personalized recommendations based on their location, past booking history, and preferences.

Virtual reality tours: Before booking, visitors can take advantage of virtual reality tours of the hotel to have a better understanding of the space and assess whether it is a suitable fit for them.

Chatbots: When traveling, customers can interact with chatbots to book bookings, pose questions, and get help. The technology will be integrated with many payment methods, making it easy for guests to pay for their reservations.

Data analytics: The system will collect data on bookings, preferences, and reviews in order to improve and enhance user-friendliness.

Chapter 7: PROJECT LIVE LINK

The project has been deployed on render.com.

Here is the link - <https://bookease-2.onrender.com/>

Chapter 8: REFERENCE

Development – Ms Visual Studio Code

Diagram – <https://app.diagram.net>