UE22CS352B - Object Oriented Analysis & Design

Mini Project Report

Title

Submitted by:

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Semester 6 - Section 'G'

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FACULTY OF ENGINEERING
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(Established under Karnataka Act No. 16 of 2013)
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Problem Statement:

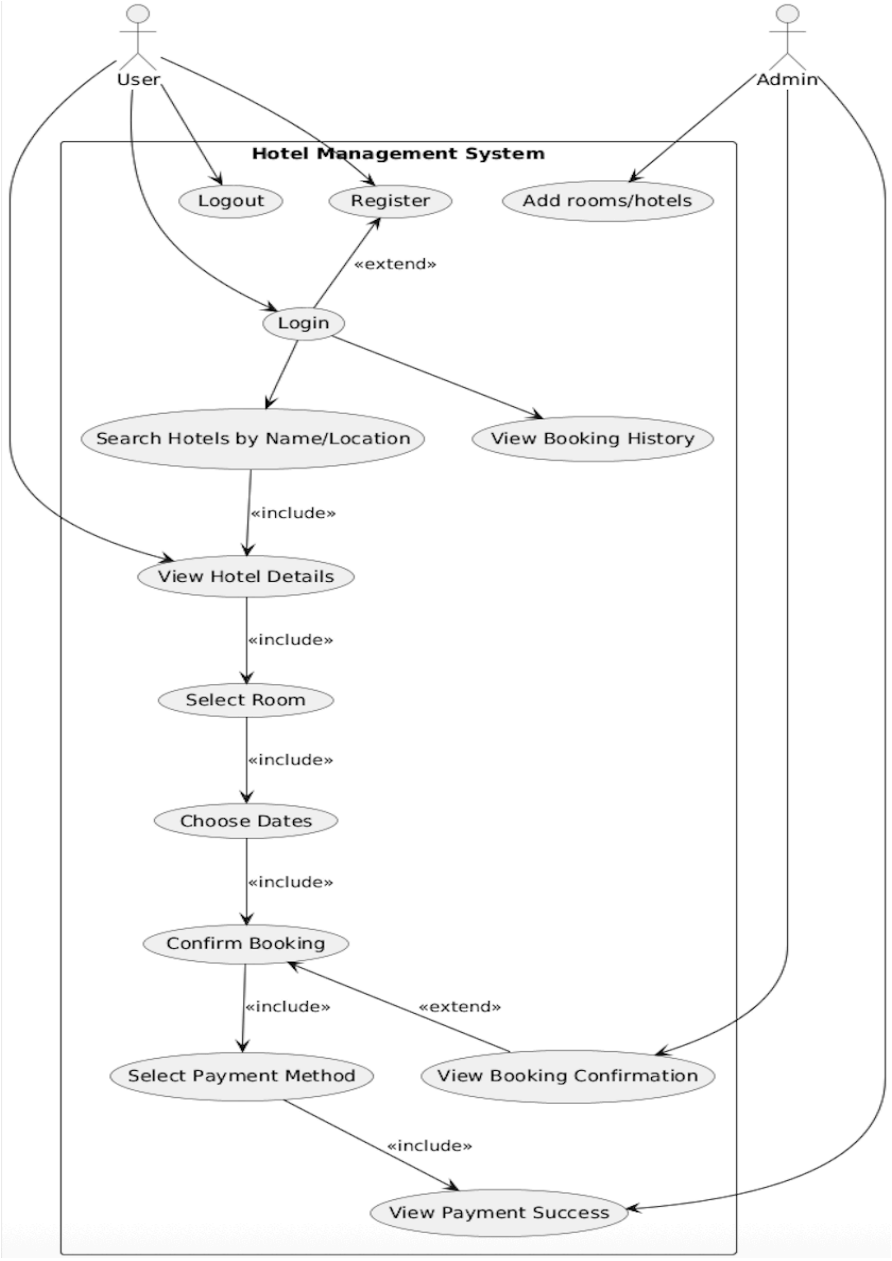
To design and develop a Hotel Management System that allows users to search for hotels and rooms,make bookings based on availability, confirm those bookings, simulate payments using different strategies, and view booking history. The system is structured using the MVC architecture and leverages Object-Oriented Design Principles and Design Patterns to ensure modularity, scalability, and maintainability.

Key Features:

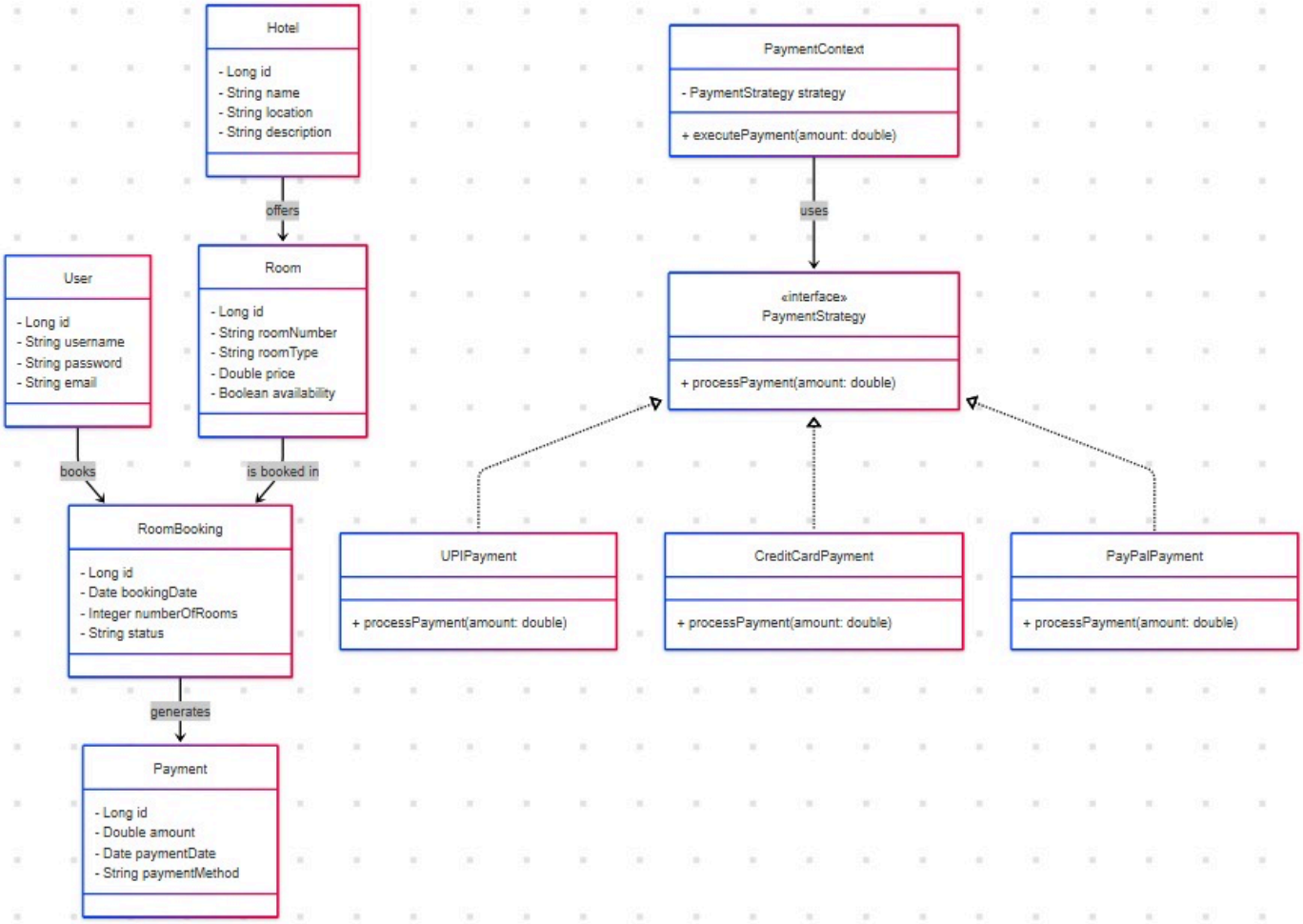
- Secure user registration and login (Spring Security)
- Hotel and room search functionality
- Room booking with selection of date
- Payment simulation via UPI, Credit Card, etc.
- Display booking confirmation and history
- Input validation using Thymeleaf

Models:

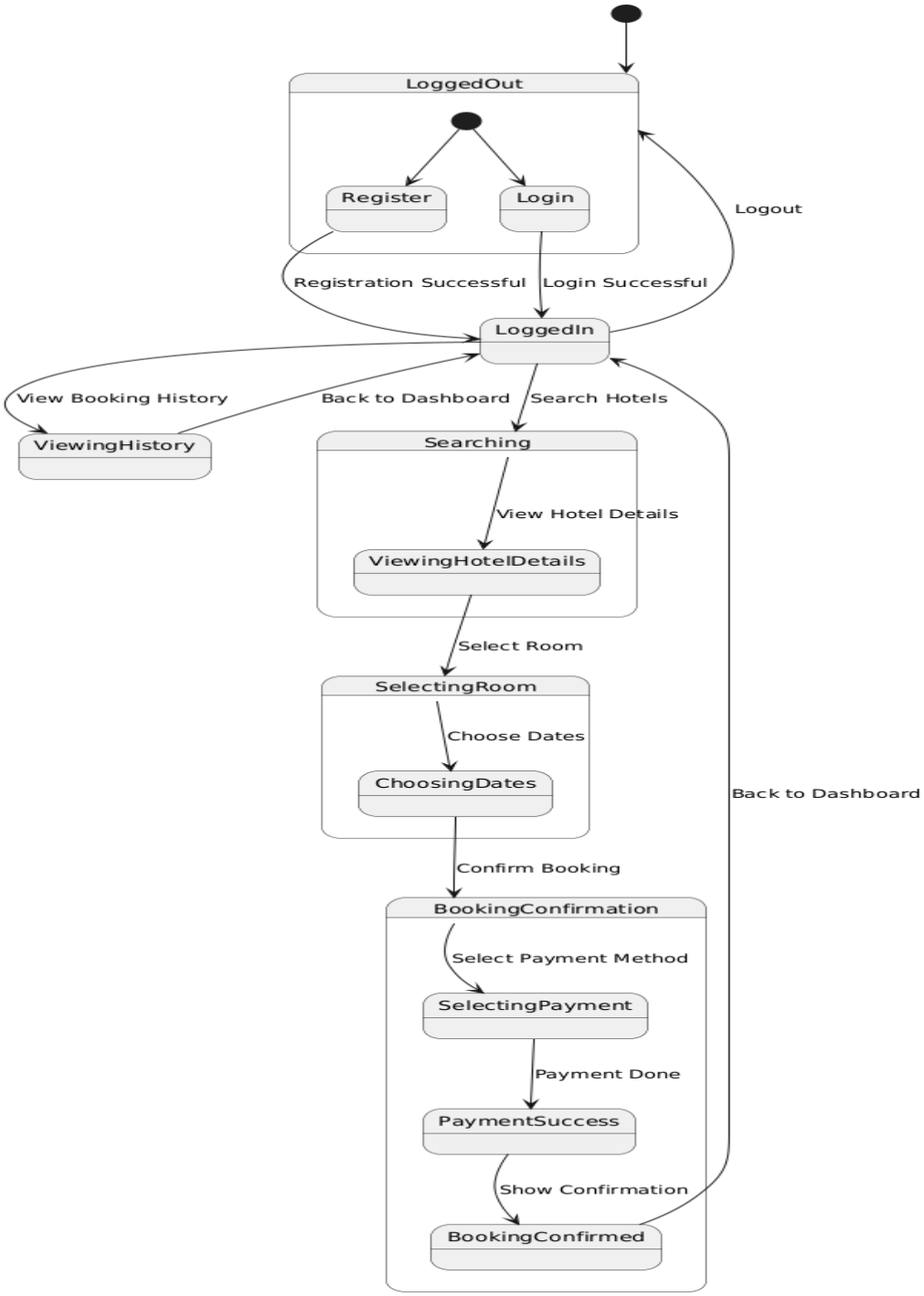
Use Case Diagram:



Class Diagram:

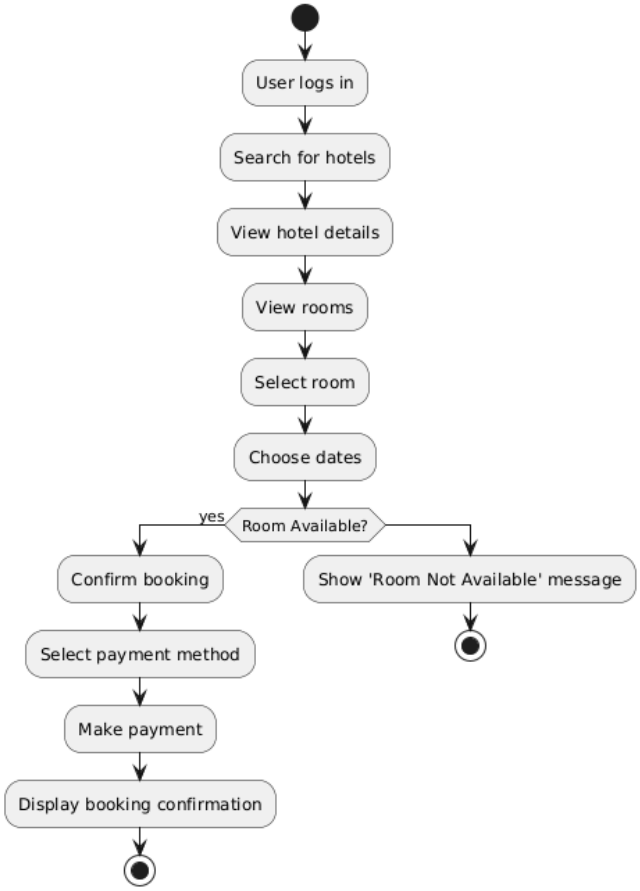


State Diagram:

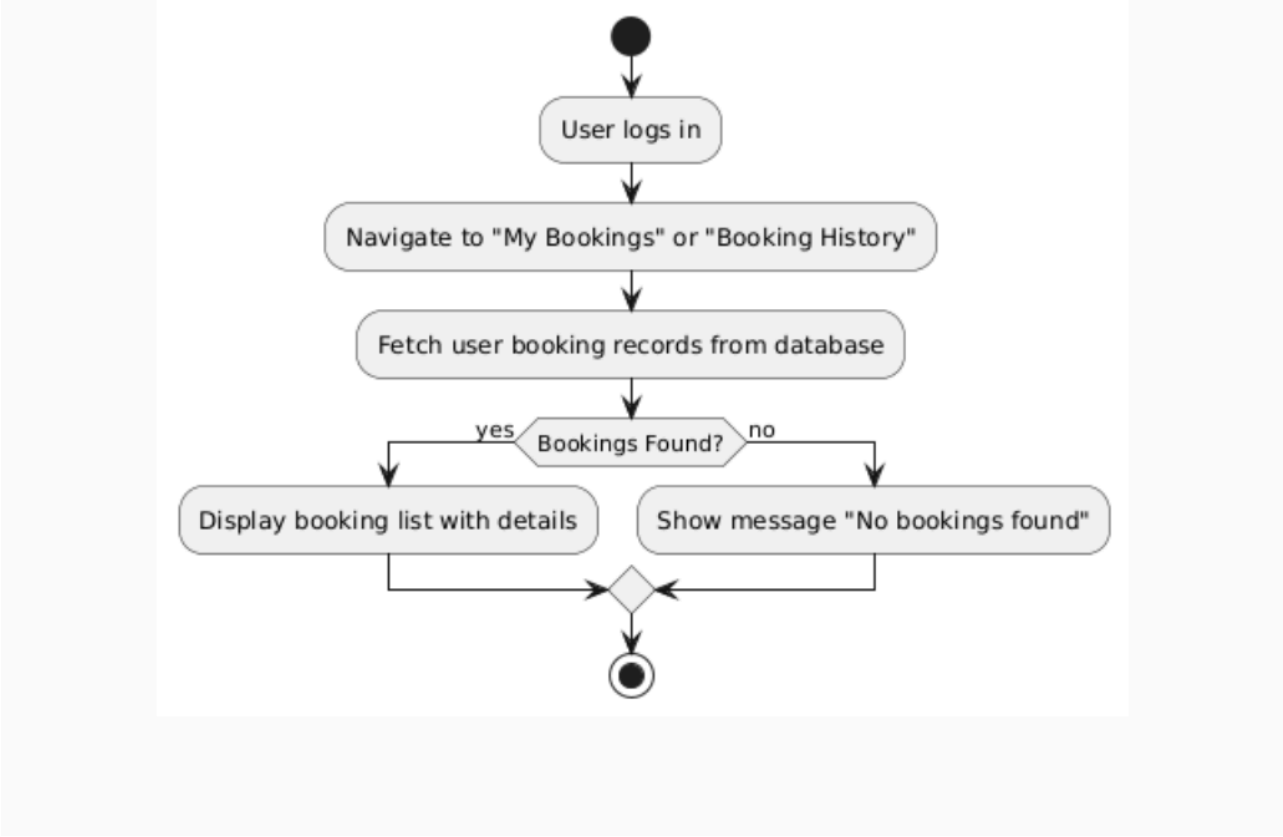


Activity Diagrams:

1. Major Use case : Room booking



2. Minor Use case: View booking history



Architecture Patterns

Model – View – Controller Pattern (MVC)

Design Principles

1) Single Responsibility Principle (SRP)
2) Open/Closed Principle (OCP)
3) Liskov Substitution Principle (LSP)
4) Dependency Inversion Principle (DIP)

Design Patterns

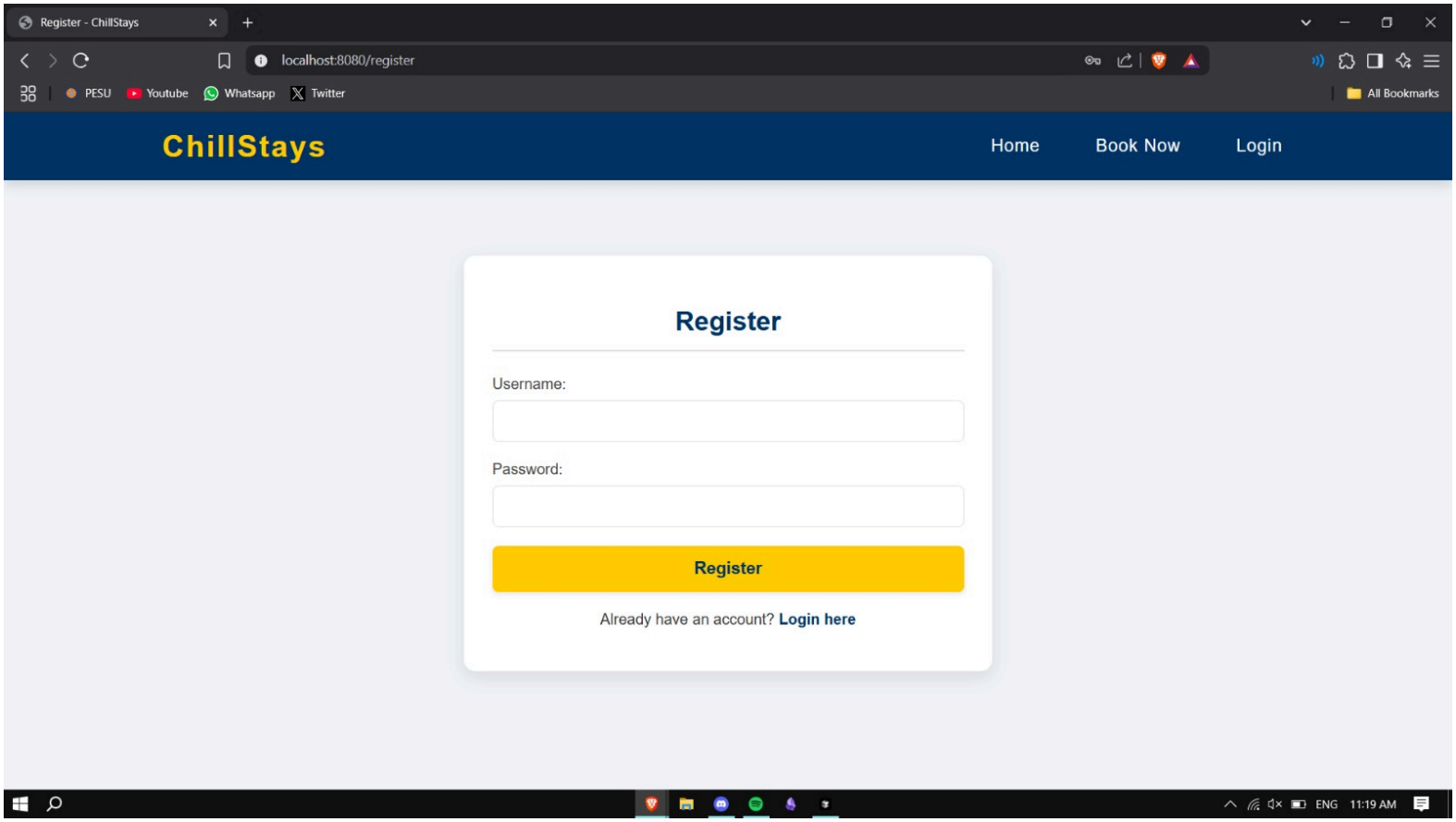
1) **Factory Design** : In the BookingFactory or RoomBookingFactory, to instantiate different types of bookings depending on user input.
2) **Builder Pattern** : To construct a RoomBooking object step by step.
3) **Strategy Pattern** : Used to implement various Payment methods.
4) **Repository Pattern** : used to abstract the data access layer. It acts as a bridge between the domain (business logic) and data mapping layers.

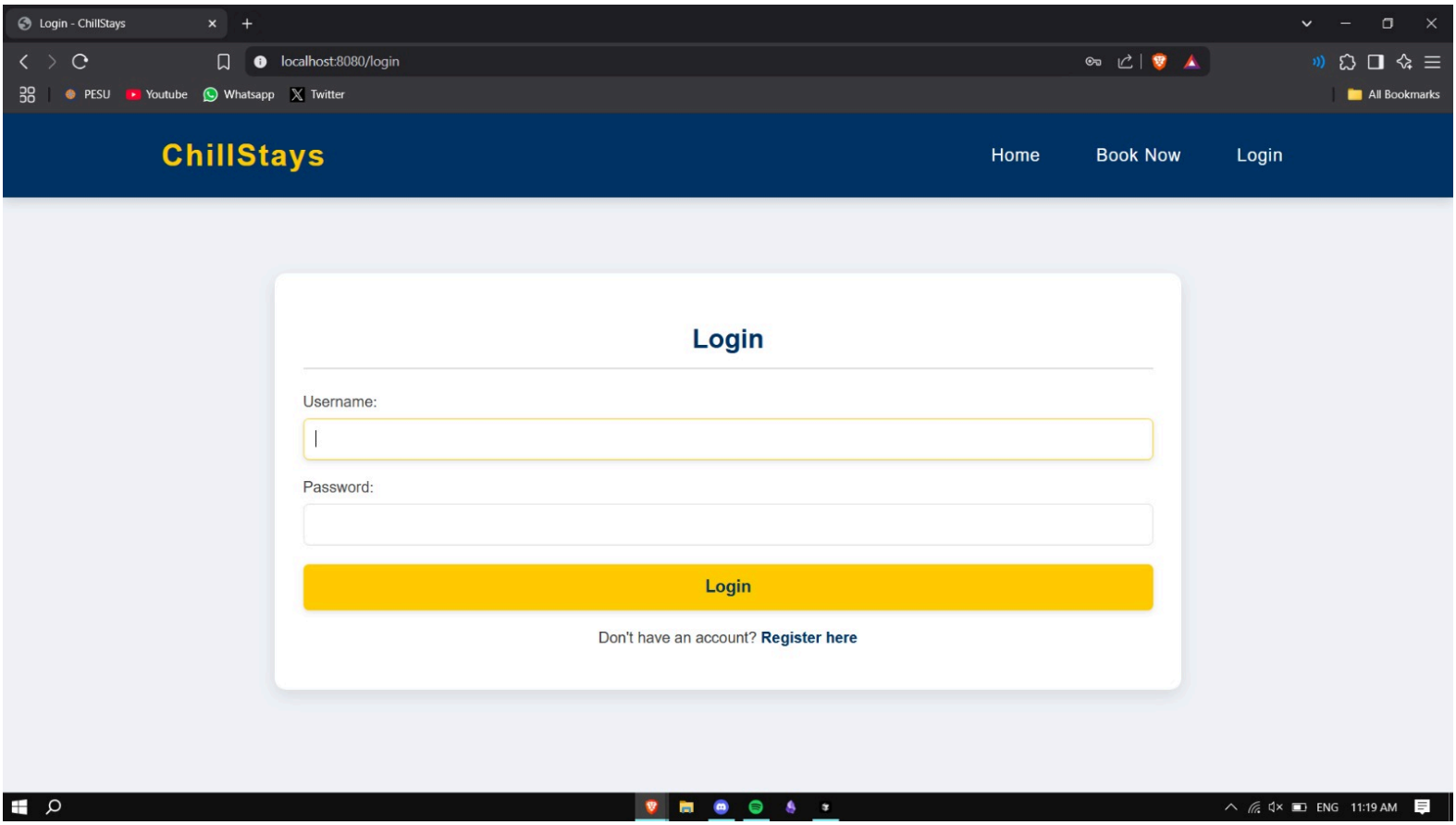
Github link to the Codebase:

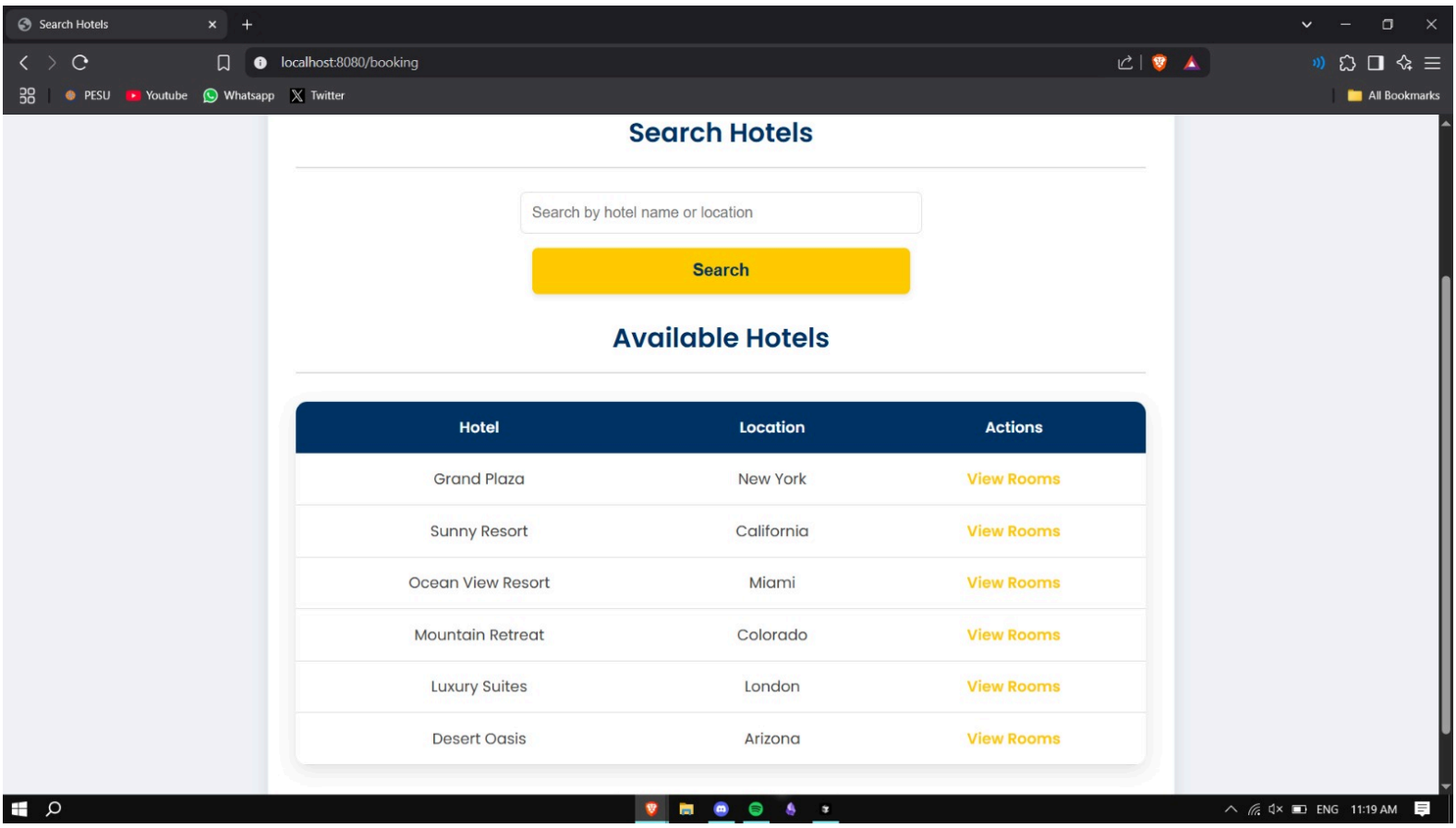
https://github.com/Omm28/HotelManagementSystemMVC

Screenshots

UI:




Login - ChillStays
localhost:8080/login
PESU
Youtube
Whatsapp
Twitter
All Bookmarks
ChillStays
Home
Book Now
Login
Login
Username:
Password:
Login
Don't have an account? Register here
ENG
11:19 AM


Search Hotels
localhost:8080/booking
PESU
Youtube
Whatsapp
Twitter
All Bookmarks
Search Hotels
Search by hotel name or location
Search
Available Hotels
Hotel
Location
Actions
Grand Plaza
New York
View Rooms
Sunny Resort
California
View Rooms
Ocean View Resort
Miami
View Rooms
Mountain Retreat
Colorado
View Rooms
Luxury Suites
London
View Rooms
Desert Oasis
Arizona
View Rooms
ENG
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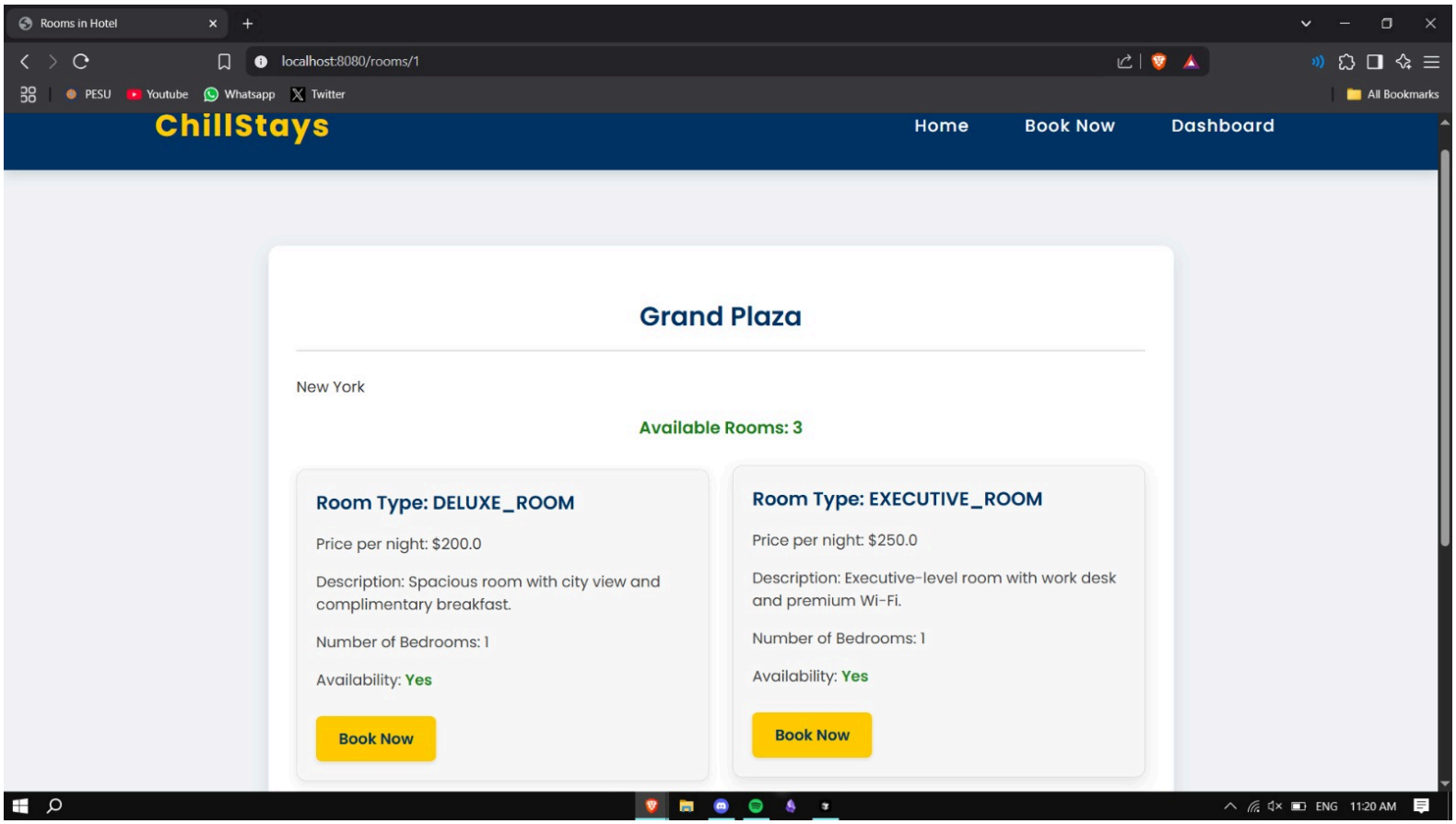
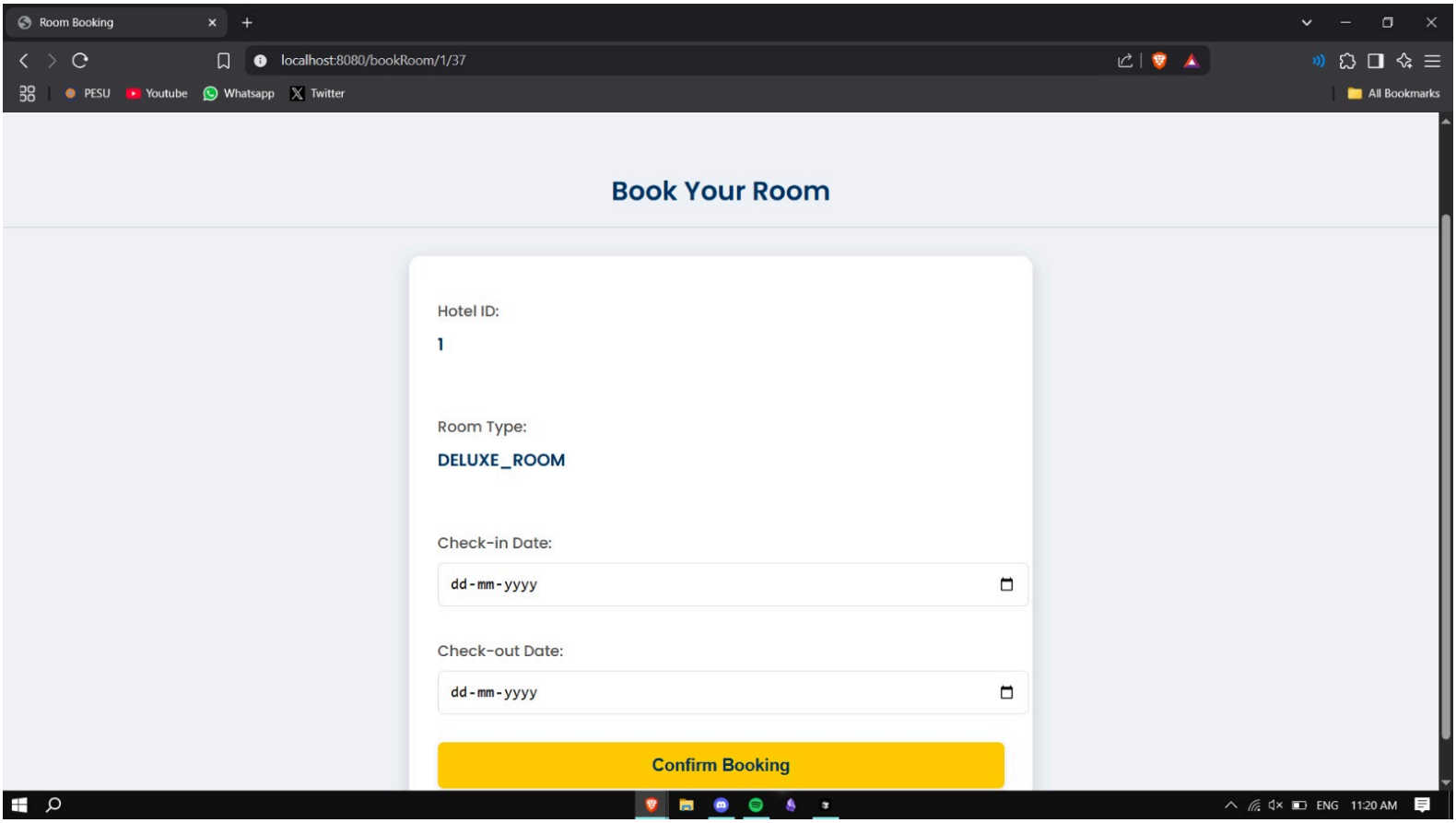

Rooms in Hotel
localhost:8080/rooms/1
PESU
Youtube
Whatsapp
Twitter
All Bookmarks
ChillStays
Home
Book Now
Dashboard
Grand Plaza
New York
Available Rooms: 3
Room Type: DELUXE_ROOM
Price per night: $200.0
Description: Spacious room with city view and complimentary breakfast.
Number of Bedrooms: 1
Availability: Yes
Book Now
Room Type: EXECUTIVE_ROOM
Price per night: $250.0
Description: Executive-level room with work desk and premium Wi-Fi.
Number of Bedrooms: 1
Availability: Yes
Book Now
ENG
11:20 AM


Room Booking
localhost:8080/bookRoom/1/37
PESU
Youtube
Whatsapp
Twitter
All Bookmarks
Book Your Room
Hotel ID:
1
Room Type:
DELUXE_ROOM
Check-in Date:
dd-mm-yyyy
Check-out Date:
dd-mm-yyyy
Confirm Booking
ENG
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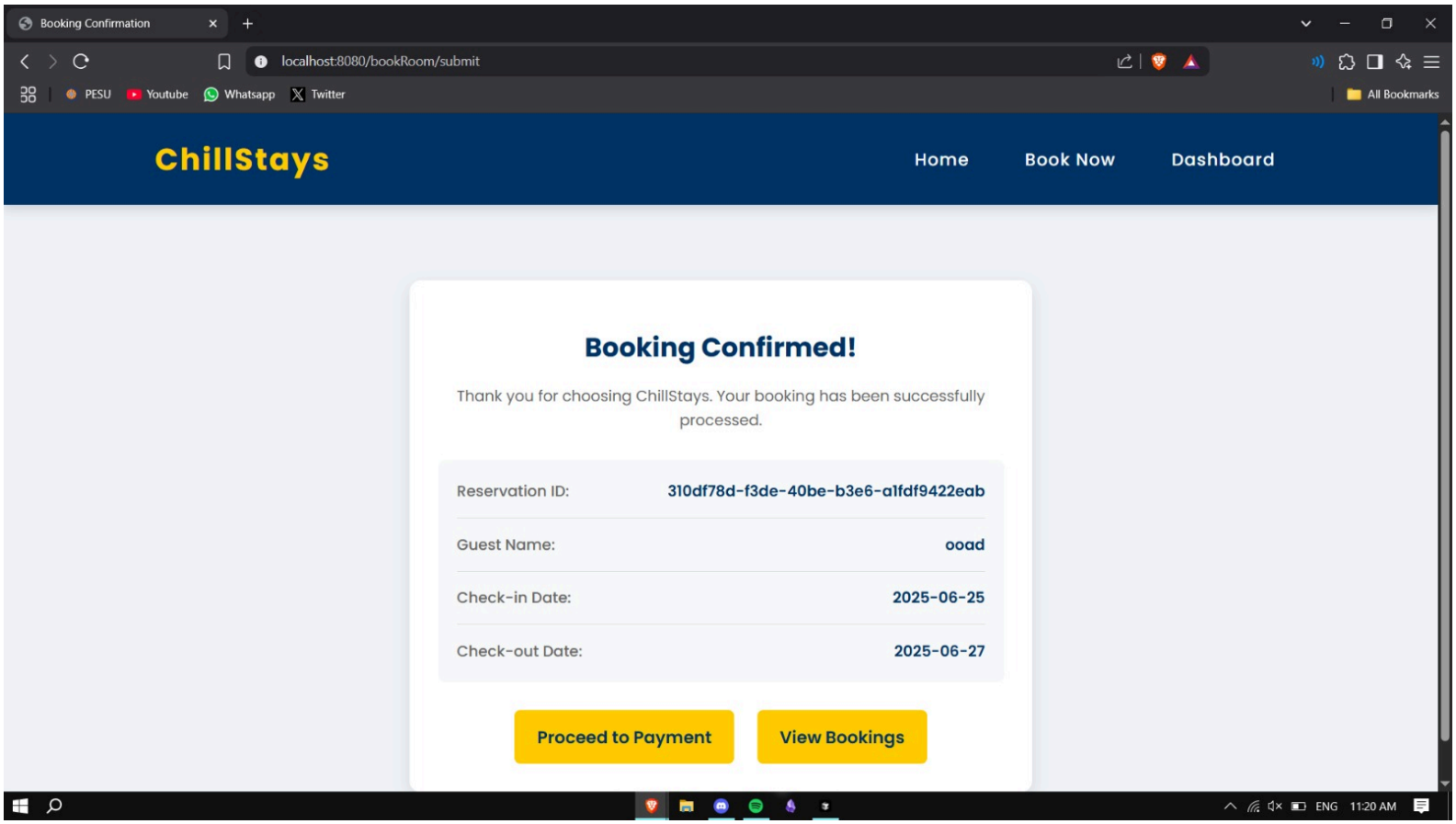
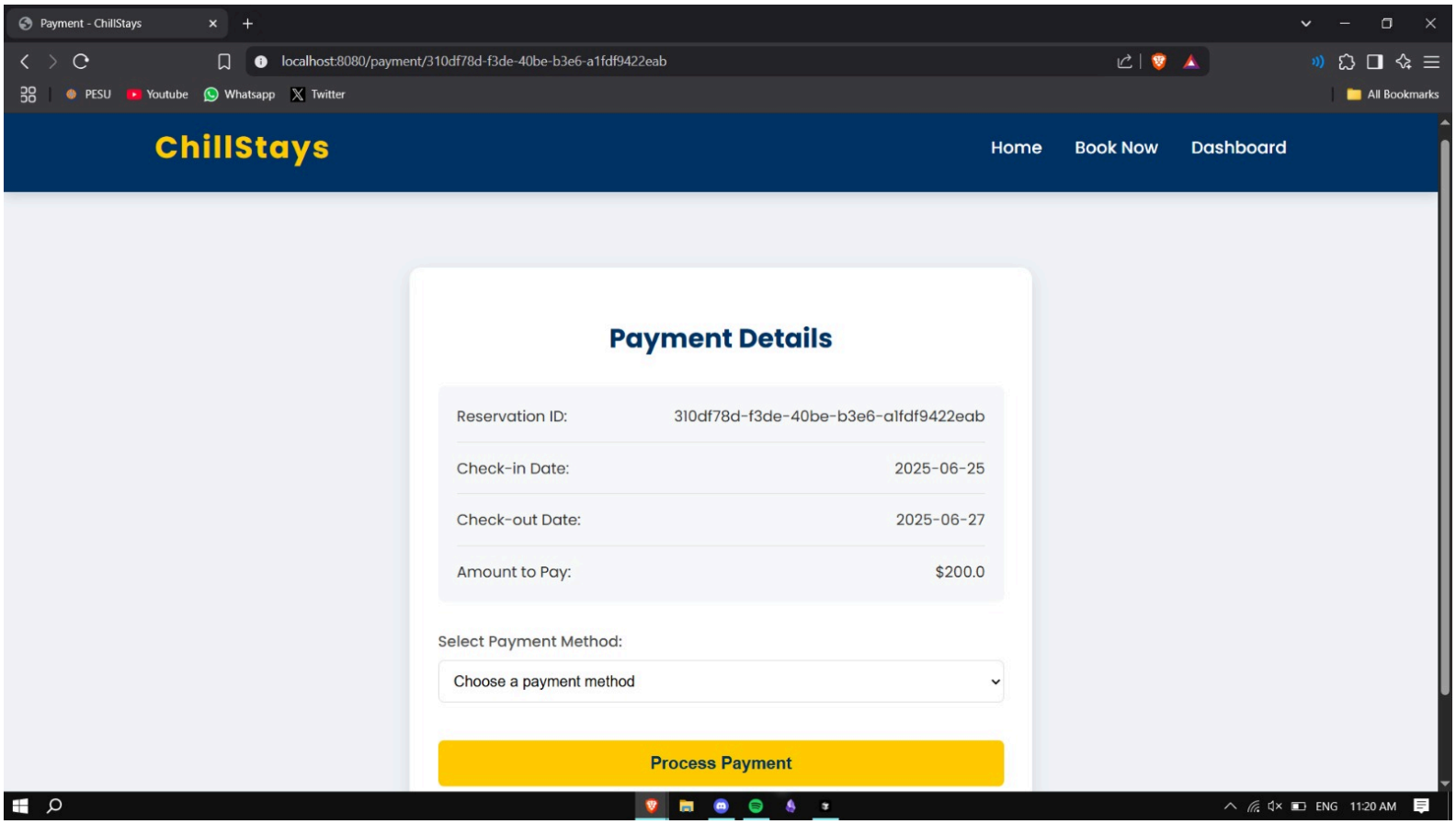

Booking Confirmation
localhost:8080/bookRoom/submit
PESU
Youtube
Whatsapp
Twitter
All Bookmarks
ChillStays
Home
Book Now
Dashboard
Booking Confirmed!
Thank you for choosing ChillStays. Your booking has been successfully processed.
Reservation ID:
310df78d-f3de-40be-b3e6-a1fdf9422eab
Guest Name:
ooad
Check-in Date:
2025-06-25
Check-out Date:
2025-06-27
Proceed to Payment
View Bookings
ENG
11:20 AM


Payment - ChillStays
localhost:8080/payment/310df78d-f3de-40be-b3e6-a1fdf9422eab
PESU
Youtube
Whatsapp
Twitter
All Bookmarks
ChillStays
Home
Book Now
Dashboard
Payment Details
Reservation ID:
310df78d-f3de-40be-b3e6-a1fdf9422eab
Check-in Date:
2025-06-25
Check-out Date:
2025-06-27
Amount to Pay:
$200.0
Select Payment Method:
Choose a payment method
Process Payment
ENG
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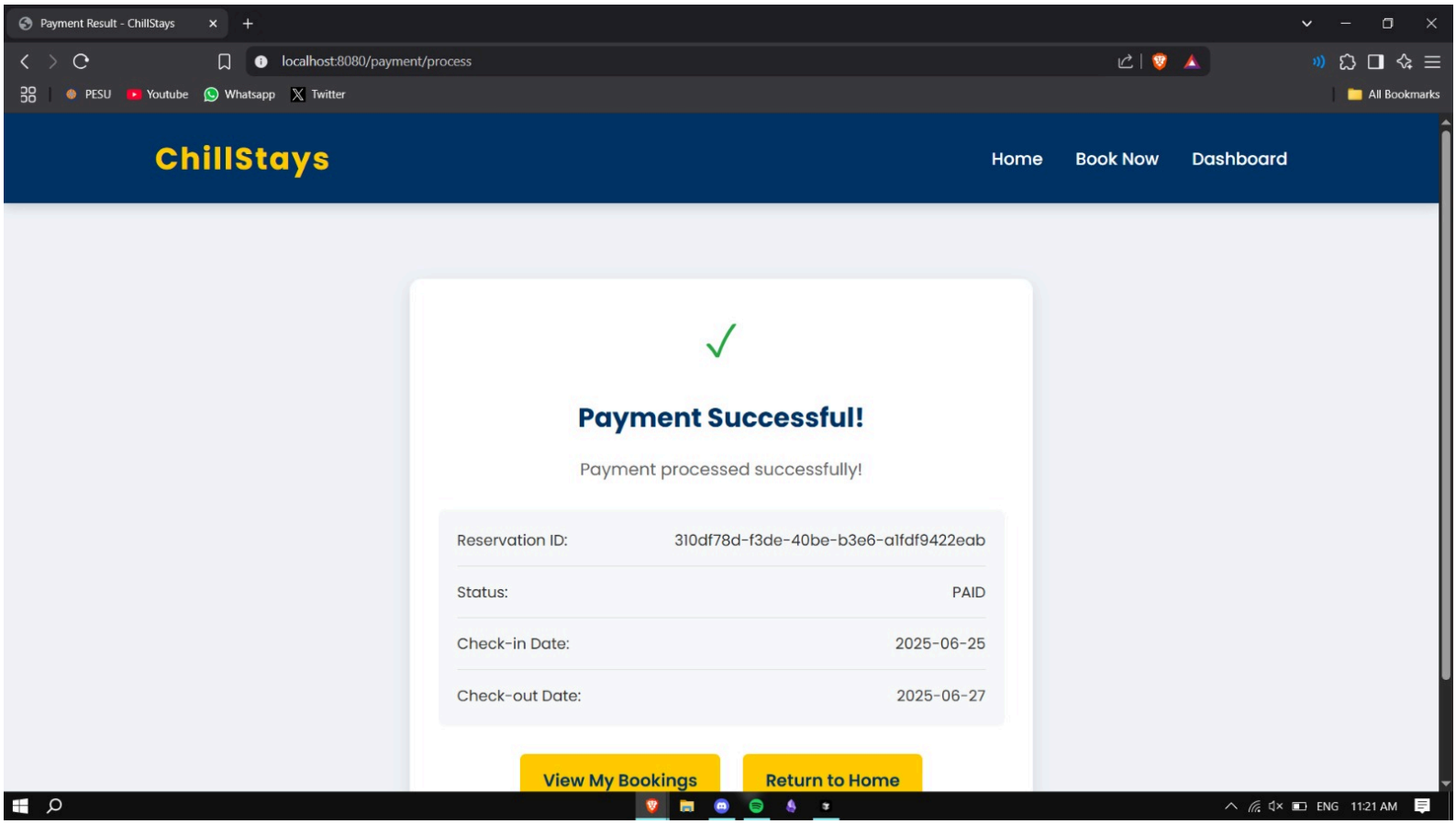
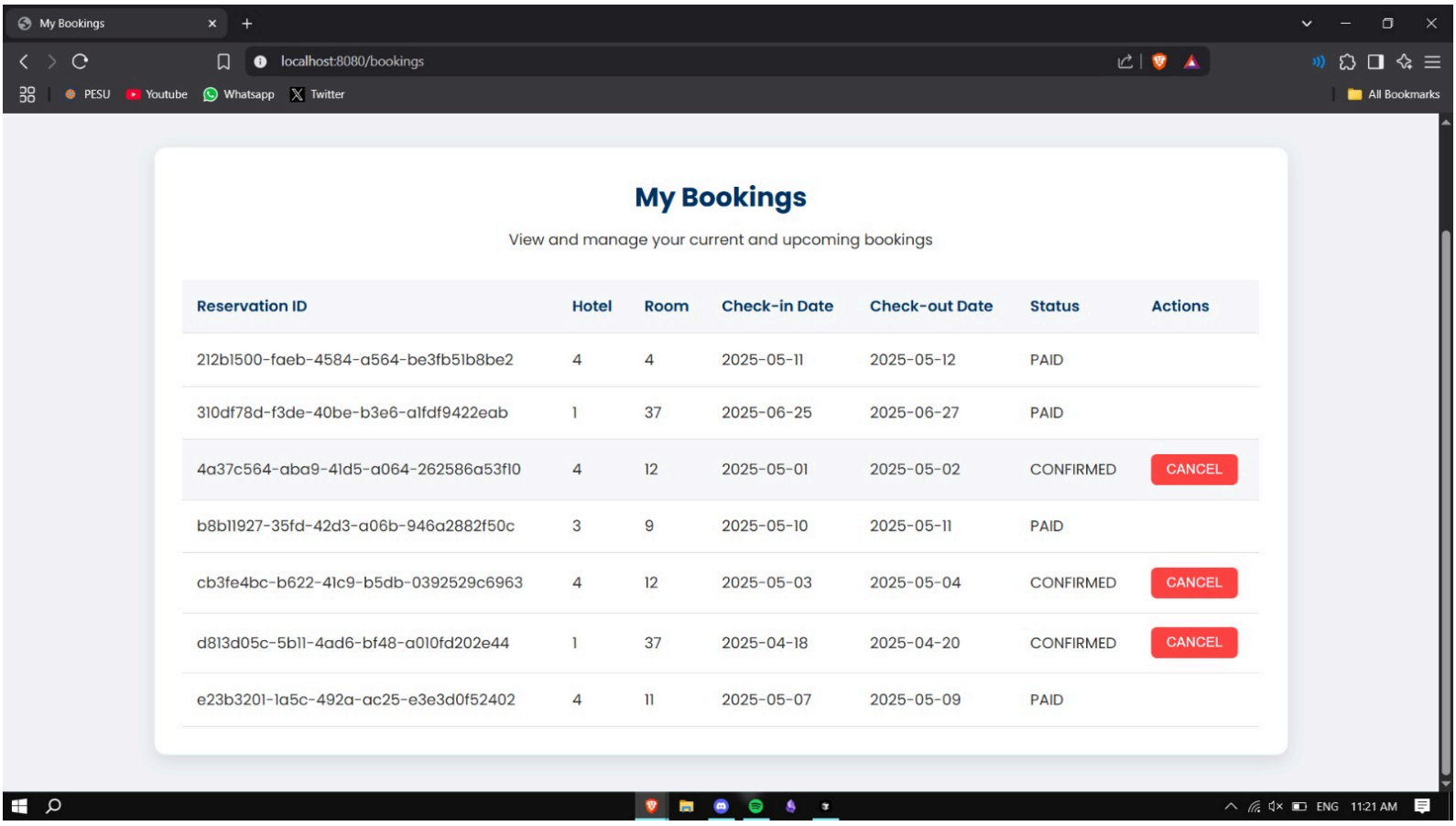

Payment Result - ChillStays
localhost:8080/payment/process
PESU
Youtube
Whatsapp
Twitter
All Bookmarks
ChillStays
Home
Book Now
Dashboard
Payment Successful!
Payment processed successfully!
Reservation ID: 310df78d-f3de-40be-b3e6-a1fdf9422eab
Status: PAID
Check-in Date: 2025-06-25
Check-out Date: 2025-06-27
View My Bookings
Return to Home
ENG 11:21 AM


My Bookings
localhost:8080/bookings
PESU
Youtube
Whatsapp
Twitter
All Bookmarks
My Bookings
View and manage your current and upcoming bookings
Reservation ID | Hotel | Room | Check-in Date | Check-out Date | Status | Actions
212b1500-faeb-4584-a564-be3fb51b8be2 | 4 | 4 | 2025-05-11 | 2025-05-12 | PAID
310df78d-f3de-40be-b3e6-a1fdf9422eab | 1 | 37 | 2025-06-25 | 2025-06-27 | PAID
4a37c564-aba9-41d5-a064-262586a53f10 | 4 | 12 | 2025-05-01 | 2025-05-02 | CONFIRMED | CANCEL
b8b11927-35fd-42d3-a06b-946a2882f50c | 3 | 9 | 2025-05-10 | 2025-05-11 | PAID
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d813d05c-5b11-4ad6-bf48-a010fd202e44 | 1 | 37 | 2025-04-18 | 2025-04-20 | CONFIRMED | CANCEL
e23b3201-1a5c-492a-ac25-e3e3d0f52402 | 4 | 11 | 2025-05-07 | 2025-05-09 | PAID
ENG 11:21 AM

Individual contributions of the team members:

Name	Module worked on
Om Basavaraj Kolur	Payment Implementation
Navyashree.P	Room Searching
Pooja M N	Room Booking
Nikhil N Patil	View Booking History, User Authentication