

ECEN428

Hotel Reservation System

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Table of Contents

4
4
4
4
4
5
5
5
5
5
6
6
6
6
6
6
6
7 7
7
7
7
7
7 7
8
8
8
8
8
9
9 9
9

Check In	10
Check Out	10
	10
Cancel Booking.	11
Rooms	11
Guests	12
Account Management:	12
Add user	
View Users	14
6. Diagrams	15
6.1. Use case Diagram	15
6.1.1. Use case scenarios:	15
6.2. Class Diagram:	22
6.3. Sequence Diagram:	23
7. Testing	24
8. Links	24
8.1. Github Link	24
8.2.Gitlab Link	24

1. Introduction

1.1. Purpose

The purpose of this document is to outline the functionalities and specifications of the hotel reservation system. It aims to define the system's features, user interface, and overall purpose, including testing criteria, performance expectations, and constraints.

1.2. Project Scope

The hotel reservation system application provides an easy and efficient way to reserve in a hotel. All of the user's data are registered and stored which makes it easier for further reservations. The application contain features such as check in, checkout, rooms, room booking and many more.. The application's primary goal is to allow easy, fixed and reliable reservations for the users.

1.3. Used Technologies

Desktop Application to Manage the reservations and Guest Check-in or Check-Out Using JavaFX and SQL Database.

1.4. Intended Audience

- Customers: To book accommodation, view available options, and experience a user-friendly reservation process.
- Hotel staff: To streamline booking processes, manage reservations efficiently, and enhance guest experience.
- Software Tester: To implement, maintain, and troubleshoot the hotel reservation system, ensuring seamless functionality.
- Project Manager: To oversee system performance, assess analytics, and make strategic decisions based on reservation date

2. Overall Description

2.1 Product Perspective

The hotel reservation system is a software application designed to facilitate booking and managing hotel accommodations. It provides a centralized platform for both customers and hotel staff to efficiently handle reservations, check-ins, check-outs, room assignments, and other related tasks.

2.1.1. Product Function

The primary function of the hotel reservation system is to facilitate the booking process for guests.

This includes features such as room availability checks, booking management, payment processing. The system also supports room inventory management, reporting, and analytics to assist hotel staff in optimizing occupancy rates and revenue generation.

2.2. User Characteristics

- Staff: have the knowledge to use the application efficiently to fulfill the scope and assist the customers to reserve his desired room.
- Admin: have the ability to register new staff into the application and delete users.

2.3. Constraints

- Sign-in and password will be required to identify whether the user is an admin or a staff user.
- Room Inventory Management: The availability of rooms is constrained by factors such as existing bookings and reservations.
- Room Configuration: Each room has specific configurations and features, such as bed types.
- The staff user can't access things that the admin user can access

2.4. Assumptions and Dependencies

- Internet Connectivity: Users require internet access to interact with the system through web browsers or mobile applications.
- Accurate Inventory: Availability of rooms and rates depends on timely updates from the hotel's property management system or central reservation system.
- Payment Processing: Integration with secure payment gateways is assumed for handling financial transactions.
- User Training: Users, particularly front desk staff, require training and support to utilize the system effectively and address common issues.

3. Functional Requirements:

3.1. User Class 1: Staff

3.1.1. Functional Requirements

User Registration:

Staff members should be able to create accounts for Guests on the hotel reservation system. They should provide necessary information such as personal details, contact information.

3.1.2. Functional Requirements

Room Management:

Staff should be able to manage room availability and details within the system. This includes adding new rooms, updating room information (e.g., availability, rates), and removing rooms from inventory when necessary.

3.1.3. Functional Requirements

Reservation Management:

Staff should have access to view and manage reservations made by users. This includes checking reservation details, modifying bookings (e.g., changing dates, room type), and canceling reservations as needed.

3.1.4. Functional Requirements

Check-in/Check-out:

Staff should be able to process check-ins and check-outs efficiently. This involves verifying guest information, assigning rooms, collecting payments, and issuing receipts.

3.1.5. Functional Requirements

Payment Processing:

Staff should be able to process payments for reservations made by users. This includes entering payment details, authorizing transactions, and handling any payment-related issues that may arise.

3.1.7. Functional Requirements

View Guest report:

Staff should have access to see Guest reports. This includes reports on Guest info.

4. Non-Functional Requirements

4.1. Usability:

The reservation system should provide a simple as well as an easy-to-use interface for the staff to make the reservation process efficient and simple.

4.2. Performance:

The system should be fast in response and without having any response delays, especially at peak and crowded hours. The efficient and fast response is required to quickly access and manage reservations, check rooms, check the guest's information and to process the transactions without any delays or errors.

4.3. Scalability:

The system should be scalable to accommodate an increasing number of staff users and reservation requests over time. It should handle growing data volumes and user interactions without compromising performance or responsiveness, ensuring seamless operation as the hotel business expands.

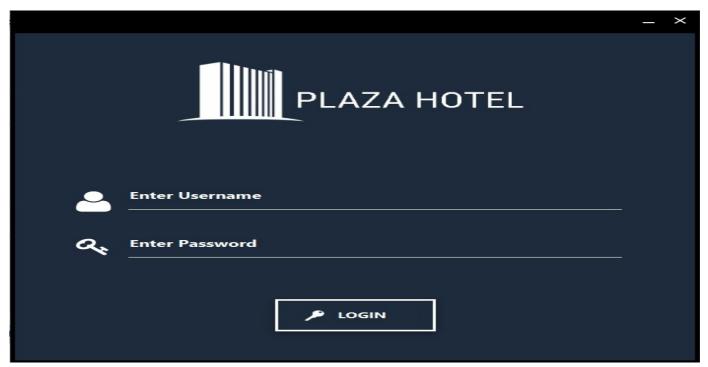
4.4. Availability:

The reservation system must be always available to staff members that need to access it at any time. The system's availability is important and required to ensure the guests satisfaction and provide the staff with reliable access whenever is needed.

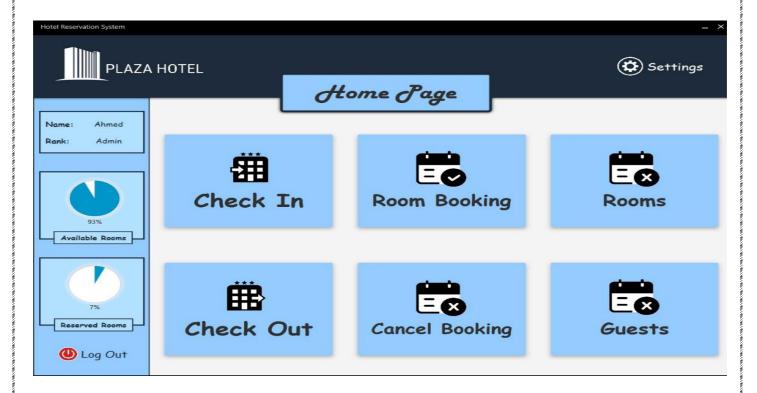
5.Interface

5.1 System Interface

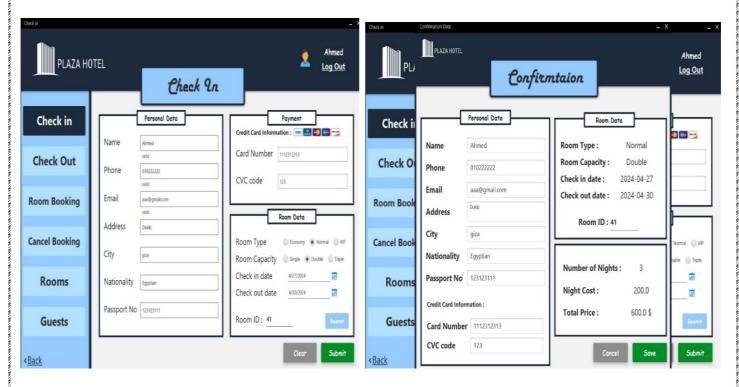
Login Page: the staff opens log in page to sign in his account.



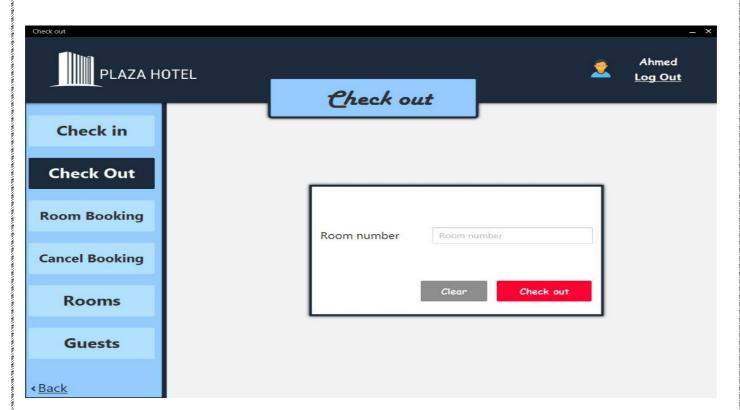
Home Page: The home page acts as a menu to all options and features that the application offers.



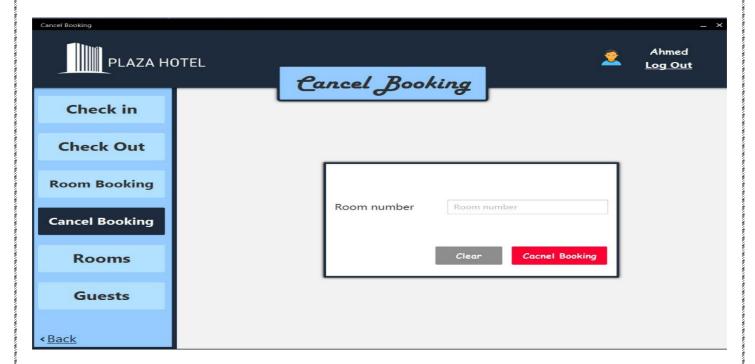
Check In: In the check in page, the staff is required to enter all the information regarding the user as well as the billing information. After successful registration the room ID will be available for the user.



Check Out: The checkout page used for customers leaving the hotel.



Cancel Booking: We cancel the booking for the guest.



Rooms: In the rooms page it shows the all the details regarding the room class, the room number, room date, and availability.



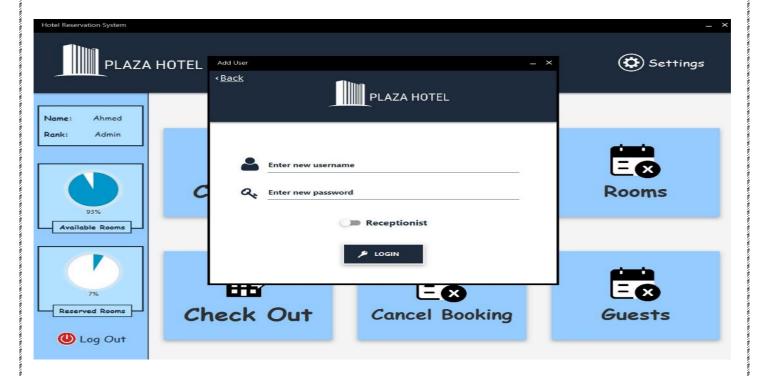
Guests: Here is the guest's full information after he/she books.



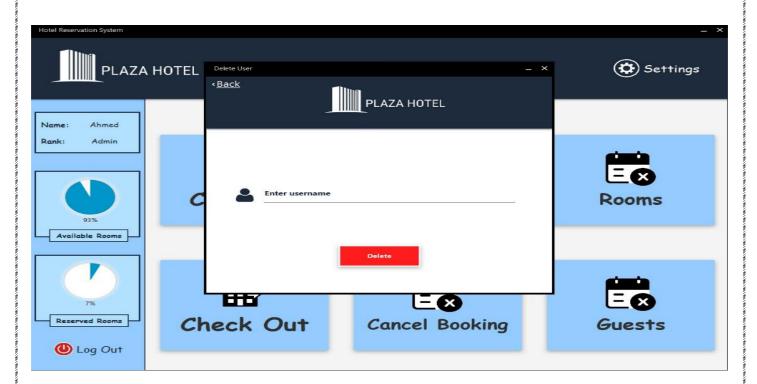
Account Management:



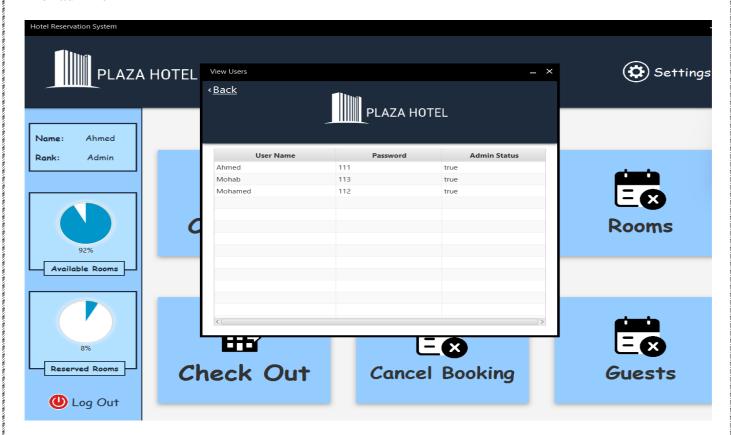
Add user: In the "add user page" it shows the authority of the hotel admins or application admins to add and recruit new staff or to add a new admin.



Delete User: In the delete user page it also shows the authority of admins to remove existing staff from the system.

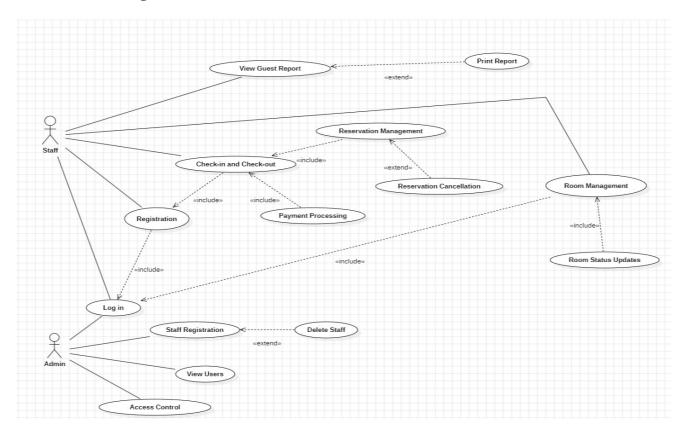


View Users: In the view user page, it show all the staff members and their ranks between staff or admin.

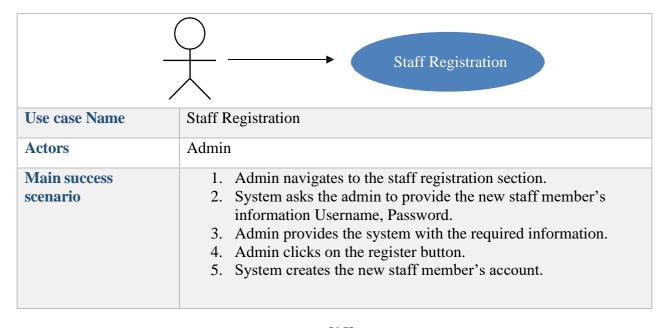


6. Diagrams

6.1. Use case Diagram

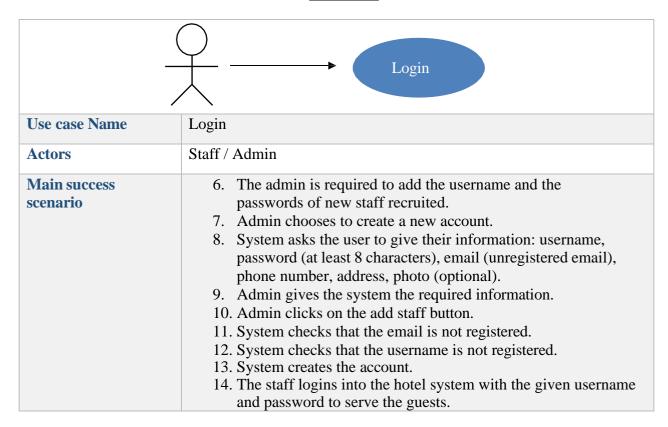


6.1.1. Use case scenarios:

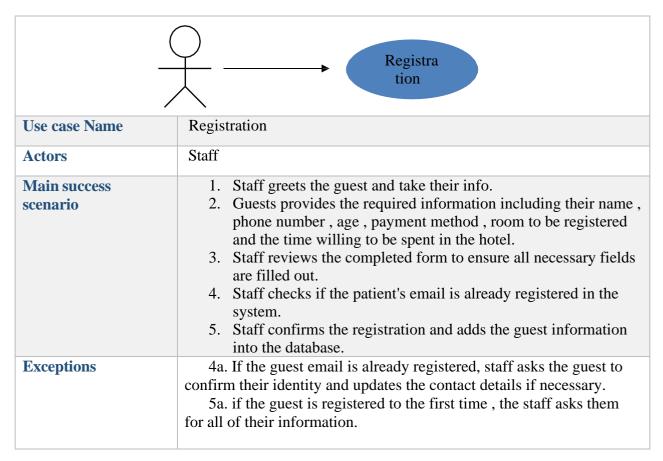


Exceptions	3a. Admin clicks on the register button without filling in all the required information.4a. username is already registered.
Actions	 3.1. System displays to the admin an alert "Please fill in all the required fields". 3.2. Admin fills out the missing information. 4.1. System displays a message to the admin: "Username exists." 4.2. Admin enters another username.
Pre-Condition	 Admin is logged into the system and has the necessary permissions to register a new staff member.
Post Condition	 Another staff member is added to the system. Staff members are successfully registered. Staff member's information is stored in the database.

Use case 2



Exceptions	5a. Admin clicks on the add staff button without filling all of the required information.6a. Email is already registered.7a. Username is already registered.			
Actions	 5.1. System display to the admin an alert "Please fill in all the required fields". 5.2. Admin fills the missing information. 6.1. System display to the Admin "Email already registered". 7.1. System display to the Admin "Username already exist". 7.2. Admin enters another username. 			
Pre-Condition	Staff has to access the hotel application.			
Post Condition	 Another guest is added to the system. Guest is successfully registered. Guest information is stored in the database. 			



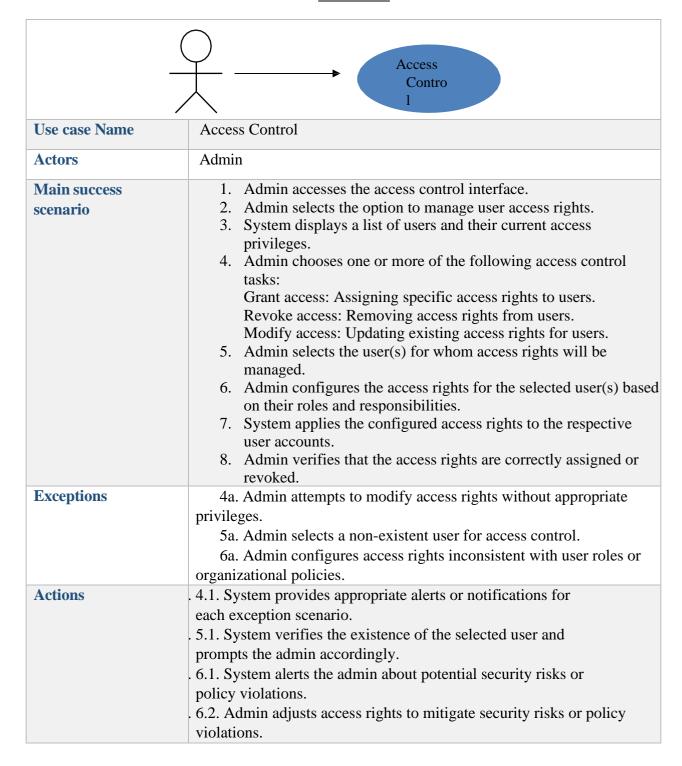
Actions	4.1.Staff searches for the patient's email in the practice					
	management software.					
	5.1.Staff enters all new guest information to the database and records it.					
Pre-Condition	Guest has completed the new guest registration form					
Post Condition	A new guest record is created in the hotel application.					

	checkin/chec kout					
Use case Name Check-in/check-out						
Actors Staff						
Main success scenario	 Guest arrives at the hotel to check in. Receptionist logs into the hotel management system using secure credentials. Staff searches for the guest's reservation by entering their reservation number, or other identifying information. System displays the guest's reservation details, including retype, check-in and check-out dates, and any special requestype, check-in and check-out dates, and any special requestype preferences. Receptionist confirms the reservation details with the guest completes the check-in process. Staff updates the hotel management system to mark the guesthecked in, ensuring room availability is accurately reflect. Guest checks out at the end of their stay. Staff logs into the hotel management system and retrievesty guest's billing information. Staff reviews the charges with the guest and processes pay 10. Staff updates the hotel management system to mark the room checked out and ready for cleaning. 					
Exceptions	4a. f the patient's record is not found in the system, receptionist asks the patient for additional identifying information. 6a. If the requested information is sensitive or confidential, receptionist consults with the practice manager or physician before releasing it					
Actions	3a. If the guest's reservation is not found in the system, receptionist asks the guest for additional identifying information. 5a. If the guest arrives early and the room is not ready,					

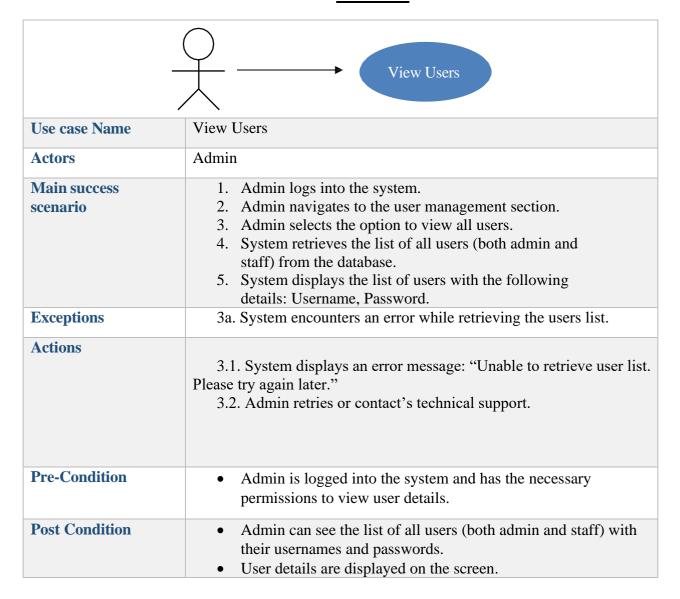
	receptionist offers alternatives such as storing luggage or access to hotel amenities until the room is available. 9a. If the guest disputes any charges, receptionist consults with the hotel manager or relevant department before finalizing the bill.			
Pre-Condition	 Receptionist has the necessary permissions and access rights to view and manage all guests' reservations in the hotel's management system. 			
Post Condition	 Guest is successfully checked in or out, ensuring accurate and up-to-date room availability and billing information is maintained in the hotel management system. 			

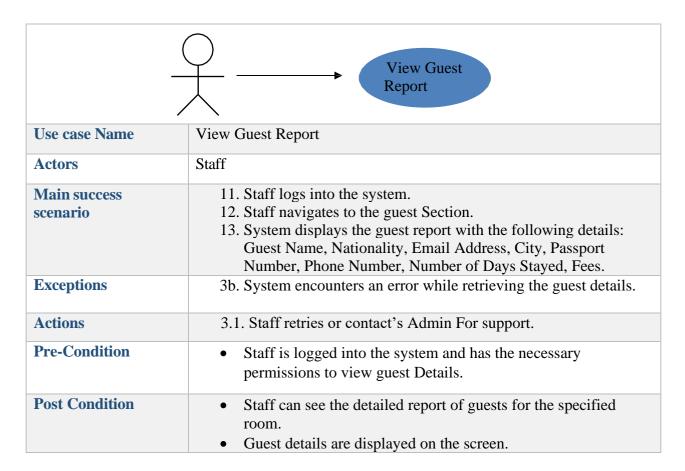
	Room Management
Use case Name	Room Management
Actors	Staff
Main success scenario	 Staff logs into the system. Staff navigates to the room management section. Staff views the list of available rooms. Staff selects a room to manage. Staff performs one or more of the following actions: Assign room to a guest Mark room as unavailable Update room details Staff saves the changes made.
Exceptions	4a. Staff attempts to add a new room without providing all required information.4b. Staff tries to update room information for a non-existing room.4c. Staff attempts to remove a room that is currently booked
Actions	 4.1. System displays appropriate alerts or notifications for each exception scenario. 4.2. Staff provides necessary information or confirms actions as per the exception scenario.
Pre-Condition	Staff is logged in to the system and has access to the room

	management.
Post Condition	 Room inventory is updated according to the actions performed by the staff. Staff can view the updated room information in the system. Any changes made are reflected in the hotel's reservation and booking system.

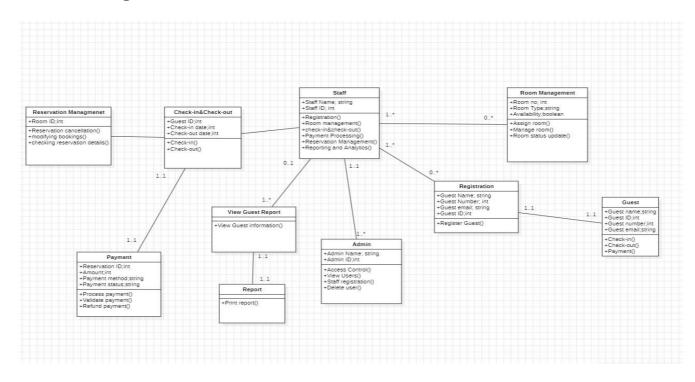


Pre-Condition	Admin has privileged access to the access control interface.
Post Condition	 Access rights are accurately configured for users based on their roles and responsibilities. Users can access only the resources and functionalities appropriate for their roles. Admin receives confirmation of successful access rights configuration.

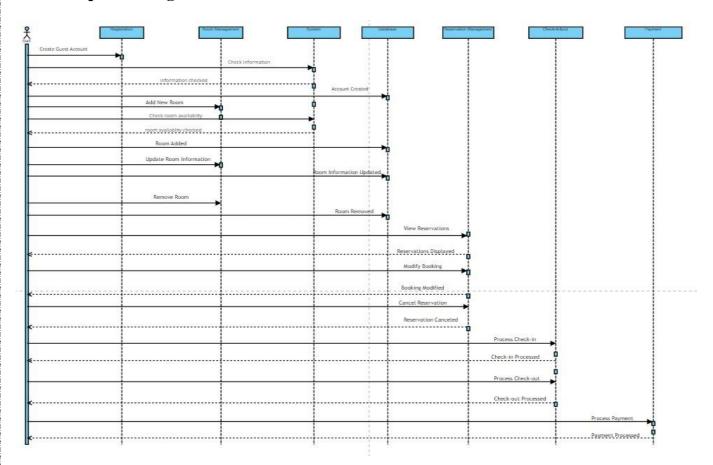


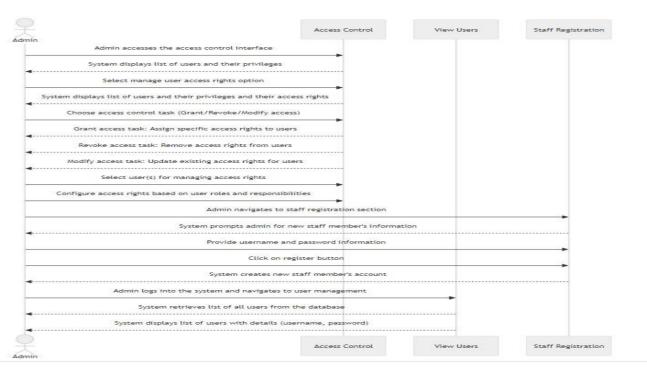


6.2. Class Diagram:



6.3. Sequence Diagram:





7. Testing

Project Name: Hotel Reservation System

Test Case Template

Test Case ID: Hotel_1 Test Designed by: Mohamed Shawky

Test Priority (Low/Medium/High): High

Test Designed date: 25/4/2024

Module Name: Staff registration Test Executed by: Mohamed Shawky

Test Title: Staff registration Process **Test Execution date:** 27/4/2024

Description: register guests into the hotel

Pre-conditions: Guest has completed the new guest registration form

Dependencies: the application must be deployed and running correctly on the target environment.

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
				Home page is		
			Able to see home	displayed	Pass	
1	Open The App		page			
				Registration page		
	Navigate to the		Registration page	is accessible	Pass	
2	registration page		should be accessible			
		Name: jane	User should be able	User enters all		
		smith,	to enter all	registration details	Pass	
	Fill in the guest	email:jane@gmai	registration details			
3	details	l.com				
		Username: jane	User should be able	User creates a		
		smith	to create username	username and a	Pass	
	Create username	Password:	and password	password		
4	and password	jane123	_			
			User should be able	User accepts terms		
	Accept terms and		to accept terms and	and conditions	Pass	
5	conditions		conditions			

Post-conditions:

A new guest record is created in the hotel application.

Test Case ID: Hotel_2

Test Designed by: Ahmed Ayman

Test Priority (Low/Medium/High): High

Test Designed date: 25/4/2024

Module Name: guest check in and check out Test Executed by: Ahmed Ayman

Test Title: guest checking in and out **Test Execution date:** 27/4/2024

Description: guests reserving and leaving

Pre-conditions: Receptionist has the necessary permissions and access rights to view and manage all guests' reservat **Dependencies:** The hotel management application must be deployed, running correctly, and accessible.

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/I
				Home page is	
1	Open The App		Able to see home page	displayed	Pass
				Module opens	
	Navigate to the check		1	<u> </u>	Pass
2	in/check out module		and ready for interaction		N. 1900. 1 Was
	Search for guest	Name: john williams,	Reservation details	Reservation details are	
3	reservation	reservation ID: 98465	should be displayed	displayed	Pass
	Confirm reservation		Guest should be checked	Guest checked in and	W. (186.)
4	and check in guest	Room number: 101	in and room assigned	room assigned	Pass
		Name: john Williams	Billing information	Billing information	B.V. B.V. B.V. B.V. B.V. B.V. B.V. B.V.
5	Process guest check out	Room number: 101	should be retrieved	retrieved	Pass

Post-conditions:

Guest is successfully checked in or out, ensuring accurate and up-to-date room availability and billing information is maintained in the hotel management system.

Test Case ID: Hotel_3

Test Designed by: Ahmed Ayman

Test Priority (Low/Medium/High): High Test Designed date: 25/4/2024

Module Name: Staff Login Test Executed by: Ahmed Ayman

Test Title: Staff Login Process **Test Execution date:** 25/4/2024

Description: Test the App login page

Pre-conditions: User has valid username and password

Dependencies: Backend validation to ensure uniqueness and correctness of the provided email during

registration.

			Expected Result	Actual Result	Status	Notes
Step	Test Steps	Test Data			(Pass/Fail)	
				As expected,		
			Able to see login		Pass	
1	Open The App		Page			
				User is navigated		
		Staff User=	User should be able	to the login page	Pass	
	Click on login	example@gmail.	to see the login			
2	page	<u>com</u>	page			
			User should be able	User fills in the		
	Fill in valid user		to fill in the login	details	Pass	
3	details	Password: 1234	details			
			User should be	User is navigated		
			logged in and	to the dashboard	Pass	
	Click on Login		navigated to the			
4	button		dashboard			
			Application should	Application opens		
			open and be ready	successfully	Pass	
5	Open App		for user interaction			

Post-conditions:

The staff user is successfully logged into the system and can access all functionalities available on the staff dashboard.

Test Case ID: Hotel_4

Test Designed by: Mohab Mohamed Ali

Test Priority (Low/Medium/High): Medium

Test Designed date: 25/4/2024

Module Name: Staff View Guest Report

Test Executed by: Mohab Mohamed Ali

Test Title: Staff View Guest Report **Test Execution date:** 25/4/2024

Description: Test the if staff can view the guest report.

Pre-conditions: Guest data must be present in the database and Staff user has the necessary permissions to view guest **Dependencies:** Database must be updated with relevant guest information.

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
				As expected,	Pass	
		User:	User should be	_		
	Login to the	example@gmail.	logged in and			
	system as a staff	<u>com</u>	navigated to the			
1	user	Password: 1234	staff dashboard			
				As expected,		
	Navigate to the		User should be able		Pass	
	Guest Report		to see the Guest			
2	section		Report option			
			User should be	As expected,		
	Click on Guest		navigated to the		Pass	
3	Report		Guest Report page			
			Guest information	As expected,		
4	See Guest Report		should be displayed	_	Pass	
				As expected,		
	Verify guest		Guest details should		Pass	
	information		match the data in			
5	displayed		the database			

Post-conditions:

The staff user can view all details related to the guest information such as name, nationality, email, address, city, passport, phone number, number of days stayed, and fees are displayed accurately.

Test Case ID: Hotel_5 Test Designed by: Mohab Mohamed Ali

Test Priority (Low/Medium/High): High Test Designed date: 25/4/2024

Module Name: Admin View Users Test Executed by: Mohab Mohamed Ali

Test Title: Admin View Users Accounts **Test Execution date:** 25/4/2024

Description: Test if the admin attempts to view users

is valid

Pre-conditions: Admin user has the necessary permissions to view user information.

Dependencies: Database must be accessible to retrieve user details.

Step	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
		User:	User should be	As expected,	Pass	
	Login to the		logged in and			
<i>f</i>	system as an		navigated to the			
$\lfloor \frac{1}{2} \rfloor$	admin user	Password: 1234	admin dashboard	A 1		
	Navigate to the View Users section		User should be able to see the View Users option	As expected,	Pass	
3	Click on View Users		User should be navigated to the View Users page	As expected,	Pass	
4	System retrieves user data			No error message displayed	Fail	
			System should display users: Username and	No Data Appears	Fail	
5	See all users data		Password.			

Post-conditions:

Ensure that the database connectivity is working fine.

8.Links

8.1.GitHub Link:

https://github.com/MoShawky10/ECEN428-Project

8.2.Gitlab Link:

https://gitlab.com/uzumaki2722608/ecen428-project