

Software Engineering - CS4443

Instructor: Dr. Manish Singh

Software Requirement Specification

Group 08

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Software Requirement Specification (SRS) for Hotel Reservation System (HRS)

1 Introduction

1.1 Purpose

Hotel Reservation System (HRS) is a software system that is intended to help the hotel staff and managers to keep account of the rooms and reservations.

This document is meant to delineate the features of HRS and its requirements, to serve as a guide to the developers on one hand and a software validation document for the prospective client on the other.

1.2 Scope

We describe what features are in the scope of the software and what are not in the scope of the software to be developed.

In Scope

- Managing the rooms and their attributes of a single hotel, which would include the room number, room type, room status, room price, room capacity, room availability, room reservation.
- Computation of the total price of a room reservation.
- Manager portal with authentication.
- Customer portal with authentication.
- Giving alerts to the customers when a room is booked or cancelled.

Out of Scope

- Actual check-in and check-out of a room is not in scope of the software.
- Multiple Managers for the hotel.
- Predictions based on data.
- Profits or losses based on data.
- Services to be provided during the clients' stay.
- Booking of multiple rooms in a single reservation

1.3 Definitions, Acronyms and Abbreviations

Acronyms and Abbreviations

- **HRS:** Hotel Reservation System
- **SRS:** Software Requirement Specification
- **WebApp:** Web Application

Definitions

- **Dashboard:** A web application that provides a dashboard for the hotel staff and managers.
- **Customer:** A user of the hotel.
- **Hotel Manager (Manager):** A person who manages everything in the hotel.

1.4 Overview

The rest of this SRS is organized as follows: Section 2 gives an overall description of the software. It gives what level of proficiency is expected of the user, some general constraints while making the software and some assumptions and dependencies that are assumed. Section 3 gives specific requirements which the software is expected to deliver. Functional requirements are given by various use cases. Some performance requirements and design constraints are also given. Section 4 gives some possible future extensions of the system. Section 5 gives the user screens

2 Overall Description

2.1 Product Perspective

HRS is aimed towards hotel managers and potential customers. The software is expected to be used by hotel managers to keep track of the rooms and reservations. It is also expected to be used by potential customers to book a room. HRS should be user-friendly and easy to use. It needs to be reliable and highly secure.

HRS is intended to be used with internet connection. Server software should needs to be deployed for the webapps to work. The webapps for the hotel managers should be accessible from anywhere. The webapps for the clients should be accessible from anywhere.

2.2 Product Functions

HRS should support the following use cases:

Principal actor	Use cases	Description
Manager	Manager Login	Authentication of the manager
	Add room	Add a room to the hotel
	Edit room	Edit a room in the hotel
	Delete room	Delete a room from the hotel
	Room status	Checking the availability and status of a room
	Currently available rooms	List of currently available rooms
	Add customer	Add a customer to the hotel
	Edit customer	Edit a customer in the hotel
	Delete customer	Delete a customer from the hotel
	Add reservation	Add a reservation to the hotel
	Edit reservation	Edit a reservation
	Cancel reservation	Cancel a reservation
	Add cost	Add cost to a reservation
	Total price	Calculate the total price of a reservation
Customer	Customer Login	Authentication of the customer
	Enter details	Enter the details of the customer
	Edit details	Edit the details of the customer
	Available rooms	List of available rooms
	View room	View a room details
	Reserve room	Reserve a room
	View reservations	View the reservations of the customer
	Cancel reservation	Cancel a reservation

2.3 Manager Characteristics

- The hotel manager should be familiar with the hotel's rooms and their attributes.
- He should also be aware of the related terminology.

2.4 Customer Characteristics

- The customer should be familiar with using a web browser.
- He should also be able to understand the basic terminology related.

2.5 Principal Actors

The principal actors in the software are:

- Hotel Manager
- Customer

2.6 General Constraints

- HRS needs internet connectivity to be able to work.
- HRS can only be used for the hotel it is configured for.

2.7 Assumptions and Dependencies

- A fully working HRS is dependent on the availability of the internet.

3 Specific Requirements

We describe the functional requirements by giving various use cases.

3.1 Functional Requirements

Use Case 1: Manager Login

- **Primary Actor:** Manager
- **Pre Condition:** Internet is available.
- **Main Scenario:**
 1. Manager opens the manager portal webapp.
 2. Webapp asks the manager to login using Google account.
 3. Manager logs in using Google account.
 4. Webapp fetches the manager's details.
 5. Redirect to the dashboard.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.

- 3(a) Authorization fails.
 - Retry.
- 4(a) Manager details do not exist.
 - Logout. Toast message 401 Forbidden.

Use Case 2: Add Room

- **Primary Actor:** Manager
- **Pre Condition:** Manager is logged in.
- **Main Scenario:**
 1. Click Room manager in the navigation bar.
 2. Click on Add room button.
 3. Enter the following details of the room: Room number, Suite, Room capacity.
 4. Click on Save button.
 5. Toast message Room added successfully.
 6. Redirect to newly created room.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 4(a) Room number already exists.
 - Toast message Room number already exists.

Use Case 3: Edit Room

- **Primary Actor:** Manager
- **Pre Condition:** Manager is logged in and the room exists.
- **Main Scenario:**
 1. Click Room manager in the navigation bar.
 2. Select the concerned room.
 3. Click on Edit room button.
 4. Enter the following details of the room: Suite, Room capacity.
 5. Click on Save button.
 6. Toast message Room updated successfully.
 7. Redirect to the updated room.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.

Use Case 4: Delete Room

- **Primary Actor:** Manager
- **Pre Condition:** Manager is logged in and the room exists.

- **Main Scenario:**
 1. Click Room manager in the navigation bar.
 2. Select the concerned room.
 3. Click on Delete room button.
 4. Click on Yes button.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 4(a) Room does not exist.
 - Toast message Room does not exist.

Use Case 5: Room Status

- **Primary Actor:** Manager
- **Pre Condition:** Manager is logged in.
- **Main Scenario:**
 1. Click Room manager in the navigation bar.
 2. Select the concerned room.
 3. Show the room details: Room number, Suite, Room price, Estimated price, Floor number, Room capacity.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 2(a) Room does not exist.
 - Toast message Room does not exist.

Use Case 6: Currently Available Rooms

- **Primary Actor:** Manager
- **Pre Condition:** Manager is logged in.
- **Main Scenario:**
 1. Click Room manager in the navigation bar.
 2. Click on Currently available rooms button.
 3. Redirect to the list of currently available rooms.
 4. Filter using various parameters like Suite, Room capacity, Check-in date, Check-out date, etc.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.

Use Case 7: Add Customer

- **Primary Actor:** Manager
- **Pre Condition:** Manager is logged in.
- **Main Scenario:**
 1. Click Customer manager in the navigation bar.
 2. Click on Add customer button.
 3. Enter the following details of the customer: First name, Last name, Email, Phone number, Address, City, State, Zip code, Country.
 4. Enter the guests' details of the customer: Number of guests, and for each guest, select Age group and enter Full name.
 5. Click on Save button.
 6. Toast message Customer added successfully.
 7. Redirect to newly created customer.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 4(a) Email already exists.
 - Toast message Email already exists.
 - 4(b) Phone number already exists.
 - Toast message Phone number already exists.

Use Case 8: Edit Customer

- **Primary Actor:** Manager
- **Pre Condition:** Manager is logged in and the customer exists.
- **Main Scenario:**
 1. Click Customer manager in the navigation bar.
 2. Select the concerned customer.
 3. Click on Edit customer button.
 4. Edit the details of the customer: First name, Last name, Email, Phone number, Address, City, State, Zip code, Country.
 5. Click on Save button.
 6. Toast message Customer updated successfully.
 7. Redirect to the updated customer.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 5(a) Email already exists.
 - Toast message Email already exists.

- 5(b) Phone number already exists.
 - Toast message Phone number already exists.
- 5(c) Customer does not exist.
 - Toast message Customer does not exist.

Use Case 9: Delete Customer

- **Primary Actor:** Manager
- **Pre Condition:** Manager is logged in and the customer exists.
- **Main Scenario:**
 1. Click Customer manager in the navigation bar.
 2. Select the concerned customer.
 3. Click on Delete customer button.
 4. Click on Yes button.
 5. Toast message Customer deleted successfully.
 6. Redirect to the Customer manager.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 4(a) Customer does not exist.
 - Toast message Customer does not exist.

Use Case 10: Add Reservation

- **Primary Actor:** Manager
- **Pre Condition:** Manager is logged in.
- **Main Scenario:**
 1. Click Customer manager in the navigation bar.
 2. Select the concerned customer.
 3. Click on Add reservation button.
 4. Enter the following parameters for room availability search: Check-in date, Check-out date, Suite, Number of guests.
 5. Select a room from the list.
 6. Click on Save button.
 7. Toast message Reservation added successfully.
 8. Redirect to the customer's details.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 6(a) Room is unavailable.

- Toast message Room is unavailable at given check-in and check-out dates.

Use Case 11: Edit Reservation

- **Primary Actor:** Manager
- **Pre Condition:** Manager is logged in and the reservation exists.
- **Main Scenario:**
 1. Click Customer manager in the navigation bar.
 2. Select the concerned customer.
 3. Select the concerned reservation.
 4. Click on Edit reservation button.
 5. Edit the following attributes: Check-in date, Check-out date.
 6. Click on Save button.
 7. Toast message Reservation updated successfully.
 8. Redirect to the customer's details.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 6(a) Room is unavailable.
 - Toast message Room is unavailable at given check-in and check-out dates.
 - 6(b) Reservation is uneditable. (e.g. check-out date is in the past)
 - Toast message Reservation is uneditable.

Use Case 12: Cancel Reservation

- **Primary Actor:** Manager
- **Pre Condition:** Manager is logged in and the reservation exists.
- **Main Scenario:**
 1. Click Customer manager in the navigation bar.
 2. Select the concerned customer.
 3. Select the concerned reservation.
 4. Click on Cancel reservation button.
 5. Click on Yes button.
 6. Toast message Reservation cancelled successfully.
 7. Redirect to the customer's details.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 5(a) Reservation does not exist.

- Toast message Reservation does not exist.
- 5(b) Reservation is uncancelable. (e.g. check-in date is in the past)
 - Toast message Reservation is uncancelable.

Use Case 13: Add cost

- **Primary Actor:** Manager
- **Pre Condition:** Manager is logged in and the reservation exists.
- **Main Scenario:**
 1. Click Customer manager (or Room manager) in the navigation bar.
 2. Select the concerned customer (or room).
 3. Select the concerned reservation.
 4. Click on Add cost button.
 5. Enter the following details: Cost type, Cost amount, Cost date.
 6. Click on Save button.
 7. Toast message Cost added successfully.
 8. Redirect to the customer's details (or room details).
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 6(a) Reservation check-out date is in the past.
 - Toast message Cost cannot be added. Already checked-out.

Use Case 14: Total price

- **Primary Actor:** Manager
- **Pre Condition:** Manager is logged in and the reservation exists.
- **Main Scenario:**
 1. Click Customer manager (or Room manager) in the navigation bar.
 2. Select the concerned customer (or room).
 3. Select the concerned reservation.
 4. Click on Total price button.
 5. Toast message Total price: 🏠 <total price>.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 4(a) Reservation does not exist.
 - Toast message Reservation does not exist.

Use Case 15: Customer Login

- **Primary Actor:** Customer

- **Pre Condition:** Internet connection is available.
- **Main Scenario:**
 1. Customer opens the customer portal webapp.
 2. Webapp asks the customer to login using Google account.
 3. Customer logs in using Google account.
 4. Redirect to the dashboard.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 3(a) Authorization fails.
 - Retry.

Use Case 16: Enter Details

- **Primary Actor:** Customer
- **Pre Condition:** Customer is logged in.
- **Main Scenario:**
 1. Customer enters the following details: First name, Last name, Phone number, Address, City, State, Zip code, Country.
 2. Click on Save button.
 3. Toast message Customer details saved successfully.
 4. Redirect to the dashboard.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 3(a) Phone number already exists.
 - Toast message Phone number already exists.

Use Case 17: Edit Details

- **Primary Actor:** Customer
- **Pre Condition:** Customer is logged in.
- **Main Scenario:**
 1. Customer edits the details: First name, Last name, Phone number, Address, City, State, Zip code, Country.
 2. Click on Save button.
 3. Toast message Customer details saved successfully.
 4. Redirect to the dashboard.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.

- 3(b) Phone number already exists.
 - Toast message Phone number already exists.

Use Case 18: Available Rooms

- **Primary Actor:** Customer
- **Pre Condition:** Customer is logged in.
- **Main Scenario:**
 1. Customer enters the following details: Check-in date, Check-out date, Suite, Number of guests.
 2. Click on Search rooms button.
 3. Show the available rooms and their details: Room number, Suite, Room price, Estimated price, Floor number, Room capacity.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 1(a) Check-in date is in the past.
 - Toast message Check-in date is in the past.
 - 1(b) Check-out date is in the past.
 - Toast message Check-out date is in the past.
 - 1(c) Check-in date is after check-out date.
 - Toast message Check-in date is after check-out date.
 - 2(a) No rooms available.
 - Toast message No rooms available at given parameters.

Use Case 19: Reserve Room

- **Primary Actor:** Customer
- **Pre Condition:** Customer is logged in and the room is selected.
- **Main Scenario:**
 1. The customer clicks on the Reserve button.
 2. Enter the guests' details of the customer: Number of guests, and for each guest, select Age group and enter Full name.
 3. The customer is redirected to a payment portal
 4. Choose the preferred payment method among the available options
 5. Complete the Payment
 6. Toast message Reservation added successfully.
 7. Redirect to the dashboard.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.

- 1(a) Room is unavailable.
 - Toast message Room is unavailable at given check-in and check-out dates.
- 5(a) Payment fails.
 - Toast message Payment failed.
- 5(b) Payment is cancelled.
 - Toast message Payment cancelled.

Use Case 20: View Reservation

- **Primary Actor:** Customer
- **Pre Condition:** Customer is logged in and the reservation exists.
- **Main Scenario:**
 1. Customer clicks on the one of the reservations.
 2. The customer is redirected to the reservation details.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 1(a) Reservation does not exist.
 - Toast message Reservation does not exist.

Use Case 21: Cancel Reservation

- **Primary Actor:** Customer
- **Pre Condition:** Customer is logged in and the reservation exists.
- **Main Scenario:**
 1. Customer clicks on the one of the reservations.
 2. The customer clicks on Cancel reservation button.
 3. The customer clicks on the Yes button.
 4. Toast message Reservation cancelled successfully.
 5. Customer's refund is initiated.
 6. Redirect to the dashboard.
- **Alternate Scenario:**
 - Network failure.
 - Show a network error message.
 - 1(a) Reservation does not exist.
 - Toast message Reservation does not exist.
 - 2(a) Reservation is uncancelable. (e.g. check-in date is in the past)
 - Toast message Reservation is uncancelable.

3.2 Performance Requirements

- The web app should be able to run on the last 10 versions of the latest version of Chromium based browsers like Chrome, Brave, Edge etc.
- The web app should be responsive enough to run on mobile phones.
- All actions are to be completed reasonably fast.

3.3 Design Constraints

- Internet connection is mandatory.
- Manager and Customers should have a Google account.
- All the data is stored in the database.
- The authentication is done using JWT, a state-of-the-art security technology.

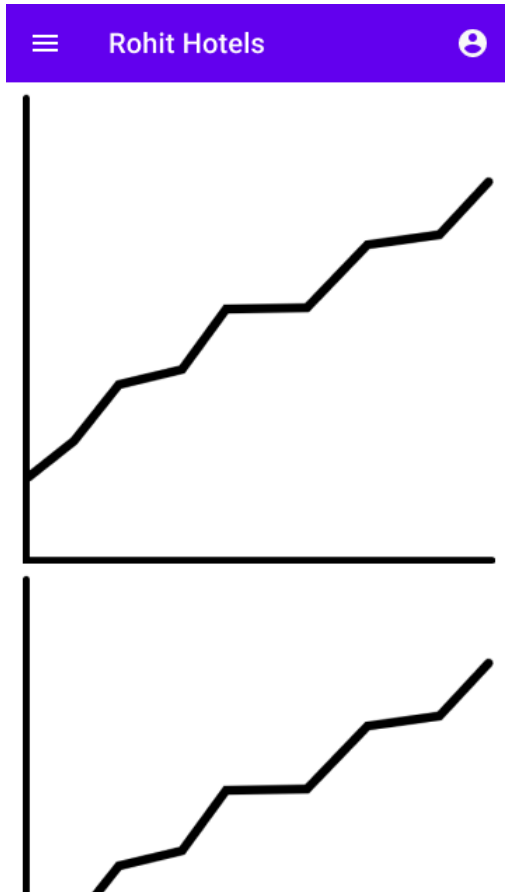
4 Future Extensions

- One of the possible extensions can be the inclusion of a hotel owner and multiple managers.
- In future extensions, room services and other services provided in the hotel can be added to the HRS to make the management completely online and improve the experience of the customer.

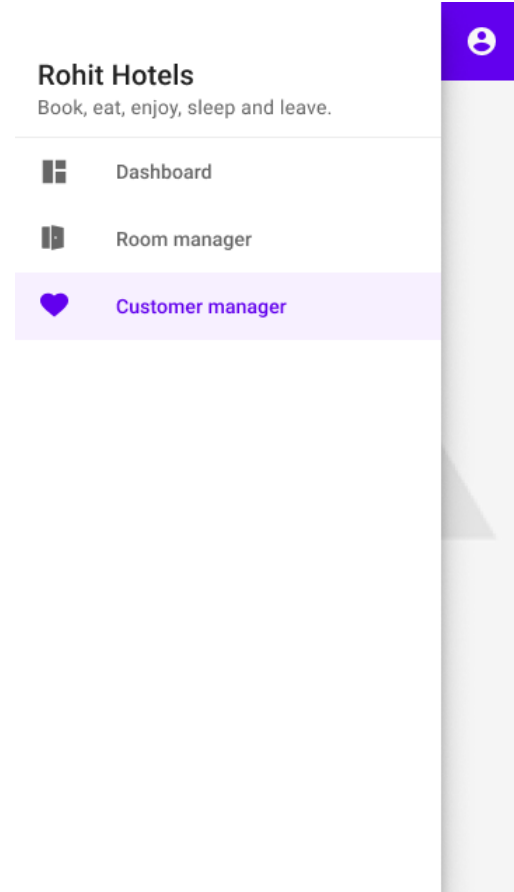
5 Appendix

5.1 User Screens:









Manager Portal Screens:











Manager Dashboard: Contains chart with statistics abouts rooms and customers





Navigation Bar


Rohit Hotels		
Room manager		
	Room no. 0420 Basic Suite	
	Room no. 5969 Hyper Luxury Suite	
	Room no. 1337 Elite Suite	
	Room no. 9696 Luxury Suite	
	Room no. 4200 Basic Suite	
	Room no. 0420 Basic Suite	
	Room no. 6971 Hyper Luxury Suite	
	Room no. 0666	+


Room Manager

Rohit Hotels		
Customer manager		
	John Doe New Jersey, USA	
	Jane Doe New Jersey, USA	
	Adolf Hitler Berlin, Germany	
	Donald Trump Washington, USA	
	Joma NY, USA	
	Emma Watson London, England	
	Tom Holland London, England	
	Karthik Puli	+

Customer Manager


Rohit Hotels




Room no. 6969
Hyper Luxury Suite




Beautiful suite with a spectacular view.
Floor: 9



[EDIT](#)


Reservations



 20-12-2022 to 22-12-2022


 01-01-2023 to 07-01-2024

Room Details page


Rohit Hotels




Rohit Sharma
Telangana, India




Age: 33
Profession: Footballer

[EDIT](#)

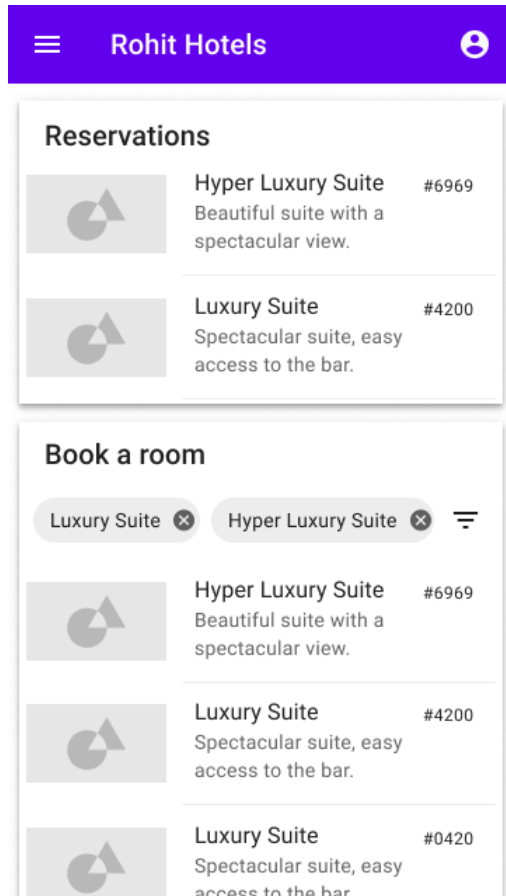
Reservations


 Room no. 4200
20-12-2022 to 22-12-2022

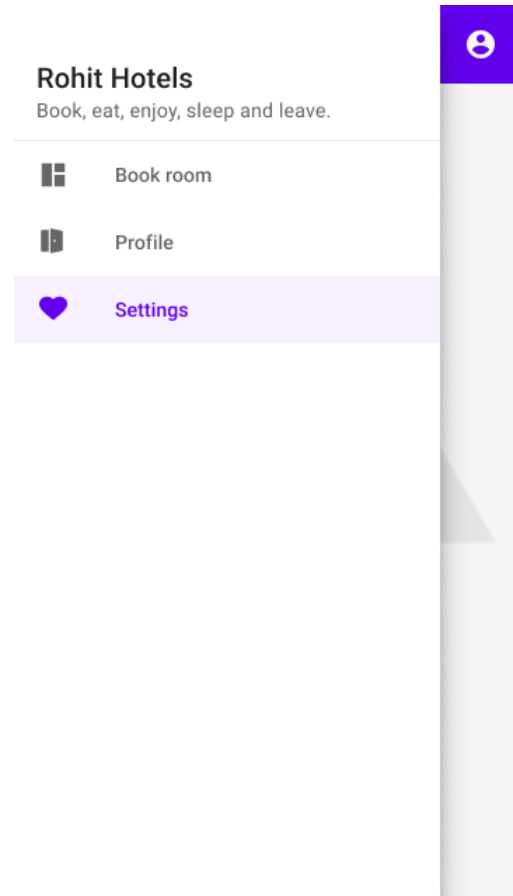

 Room no. 0420
20-12-2022 to 22-12-2022

Customer Details page

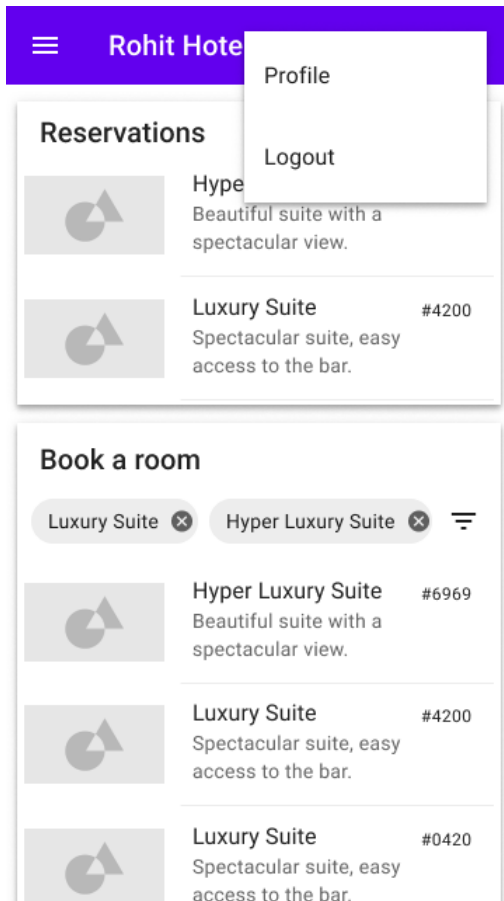
Customer Portal Screens:



Customer Dashboard: Contains reservations of the customer and option to book a room



Navigation Bar



Profile and Logout