Software Requirements Specifications
For
Hotel Management System (HMS)

Introduction

Purpose

- **Hotel Management System (HMS)**: is a crucial software app that streamlines reservation, check-in/check-out, and administrative processes, serving as the digital backbone of a hotel to enhance operational efficiency and elevate the guest experience.

➢ **Efficient Operations**: Streamlines reservation, check-in/check-out, and administrative processes, reducing manual workloads and potential errors.

➢ **Enhanced Guest Experience**: Facilitates personalized services, ensuring a seamless and positive stay for guests through automation and real-time data processing.

➢ **Smart Resource Use:** Optimizes room assignments, tracks inventory, and manages billing efficiently.

➢ **Financial Management:** Facilitates accurate and timely financial reporting, aiding in budgeting, forecasting, and overall financial management for the hotel.

➢ **Time Savings:** Minimizes time spent on manual tasks, allowing staff to focus on more critical guest interactions and service improvements.

Problem definition

- A problem in a Hotel Management System is any obstacle or issue that disrupts the system's smooth operation, affecting tasks like reservations, check-ins, or data accuracy. These challenges may involve software glitches, user interface difficulties, security concerns, or integration issues with other systems, necessitating resolution for efficient hotel management.

Scope

- We aim to streamline and modernize our operations by transitioning from traditional paper-based workflows to a sophisticated software application. This strategic move not only enhances efficiency but also significantly reduces costs and saves valuable time. By embracing digital transformation, we anticipate increased productivity, improved accuracy, and a more seamless workflow, ultimately leading to a more agile and competitive business environment

Glossary

Acronyms, definitions, and abbreviations.

- **HMS**
  - Hotel Management System
- **SW**
  - Software
- **DB**
  - Data Base

System Requirements

Functional Requirements

- Login and Registration
- Reservation
- Show the available offers
- Add offers on Reservation
- Show requests
- Payment methods (visa-cash-master card)
- Add Rates
- checkout

Non-Functional Requirements

- **Performance**: The system should be responsive and efficient.
- **Reliability**: It must operate consistently and dependably.
- **Security**: Ensure protection against unauthorized access or tampering.
- **Maintenance**: Keep maintenance requirements low.
- **Availability** : The system should be available for use by hotel staff and guests 24/7, with scheduled maintenance periods communicated in advance.
- **Usability:** The user interface should be intuitive and user-friendly, requiring minimal training for hotel staff.

Constraints

- **Budget Constraints** :The development, deployment, and maintenance of the HMS must adhere to a predetermined budget, restricting the allocation of financial resources for the project.
- **Resource Limitations**:
  - Human Resources: Limited availability of skilled personnel for system development, implementation, and ongoing support may impact project timelines and success.
  - Time Constraints: Time limitations may restrict the speed of system development, testing, and deployment, affecting the overall project schedule.

System Users

- **Administrator**
- **Manger**
- **Customers**
- **Employees :**
  - housekeeper
  - Receptionist

System Architecture

Presentation Layer

- The presentation layer in a desktop app consists of the graphical user interface (GUI) elements.
- It handles user input, displays information, and communicates with the application layer.
- Components:
  - Desktop UI Components: Windows, forms, controls for login, reservation, offers, checkout, etc.

Application Layer

- The application layer contains the core logic of the Hotel Management System.
- It processes user input, manages data, and interacts with the data layer.
- Components:
  - Reservation Management Module: Handles reservation logic and availability.
  - User Authentication Module: Manages user login, registration, and authentication.
  - Offers and Rates Module: Manages promotional offers, rates, and their application to reservations.
  - Payment Processing Module: Integrates with payment services for transactions.
  - Request Management Module: Manages and displays reservation requests.

Data Layer (Database)

- The data layer stores and retrieves data related to users, reservations, offers, rates, and other entities.
- Components:
  - Local Database: Stores data locally on the user's machine.

System Architecture (conti)

Security Layer

- The security layer ensures the security of sensitive data within the desktop application.
- It includes authentication, authorization, and encryption mechanisms.
- Components:
  - Authentication Service: Manages user authentication and authorization within the desktop app.

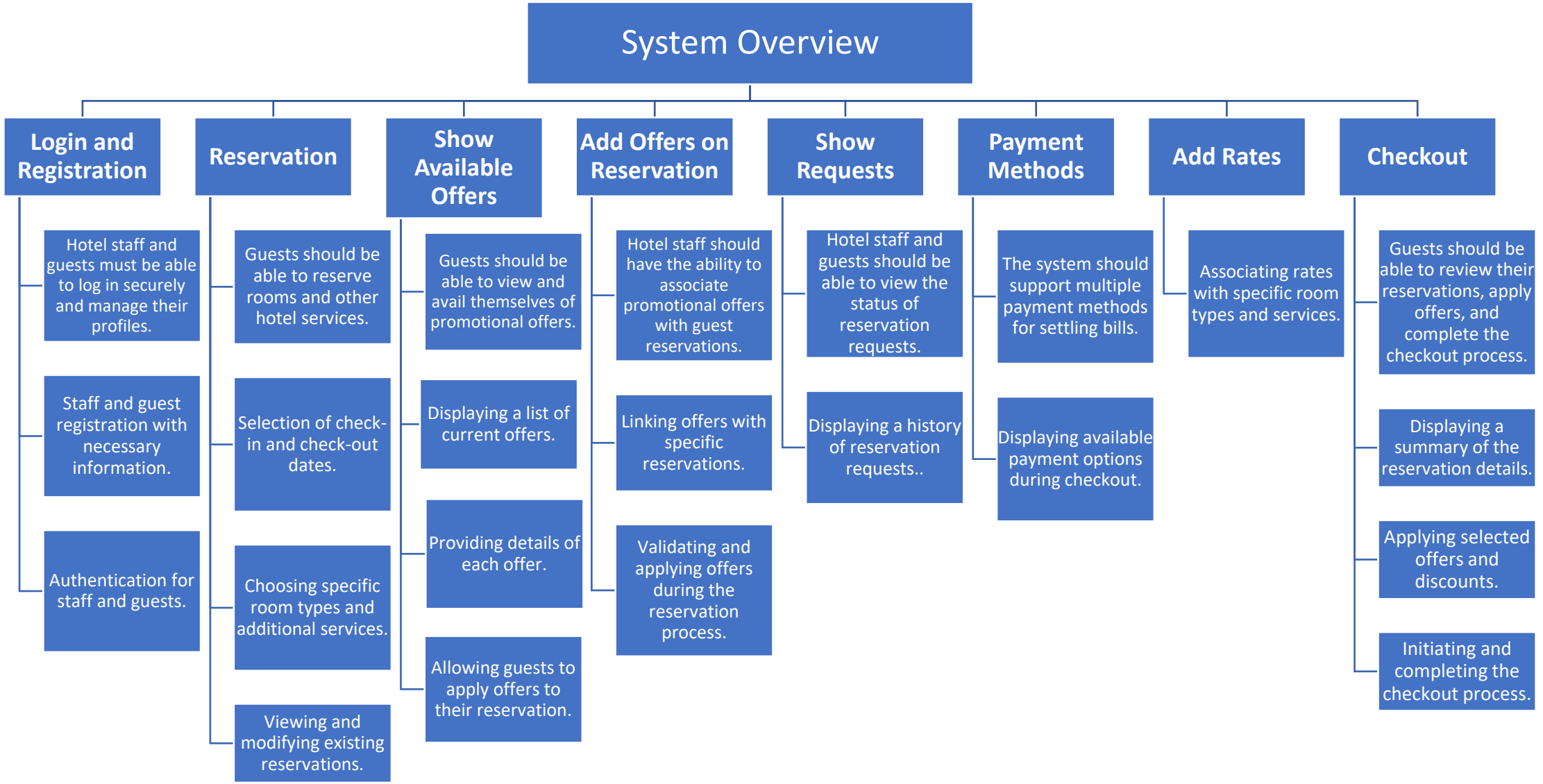
Admin Console

- An administrative console allows authorized personnel to manage system configurations within the desktop app.
- Admin Interface: GUI components for administrators to manage system settings.

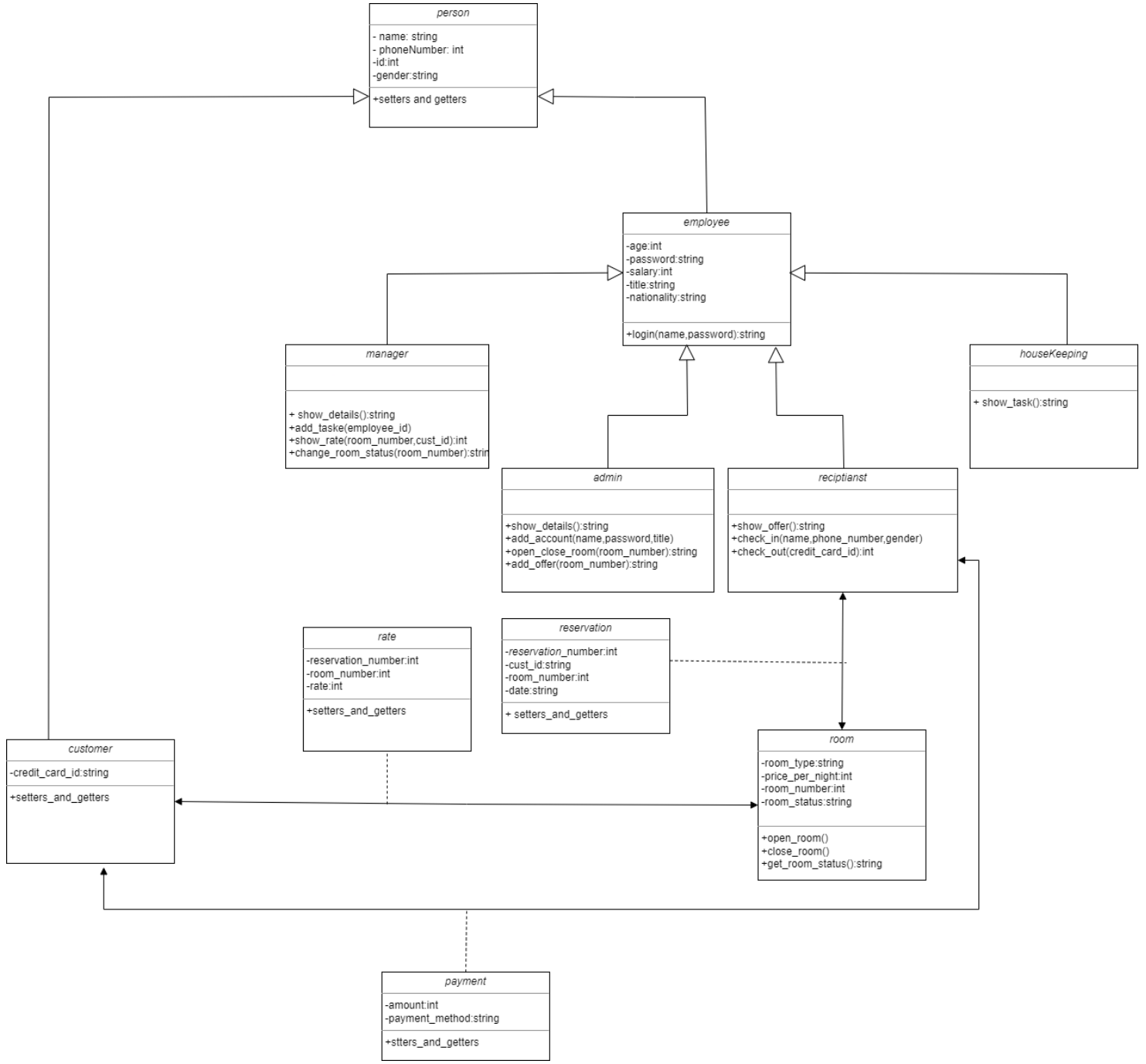
Infrastructure Layer

- The infrastructure layer includes the necessary hardware and software components to support the desktop application.
- Components:
  - Local Machine: Where the desktop application is installed.
  - Local Database Server: Manages data storage and retrieval locally.

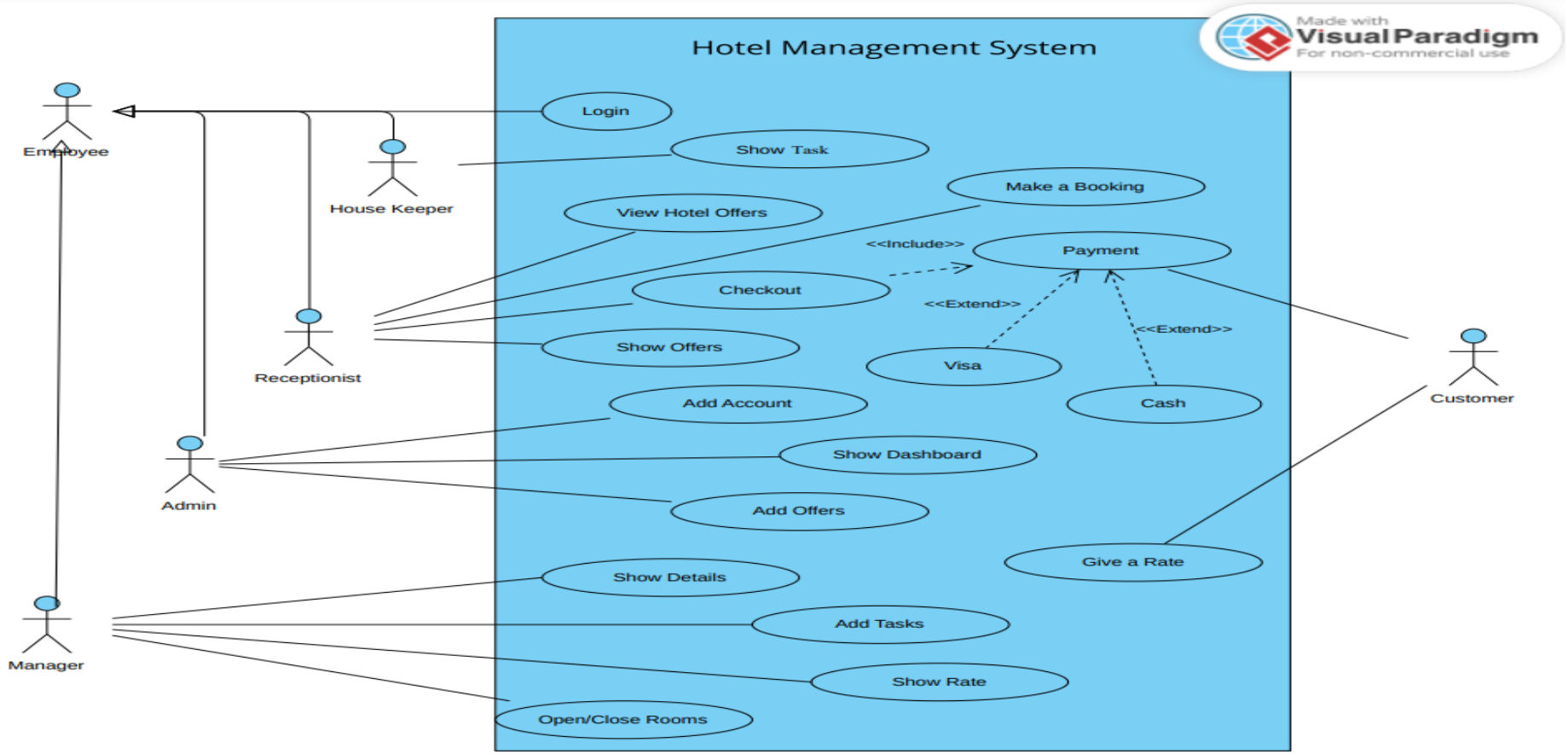
Software Requirements an specifications



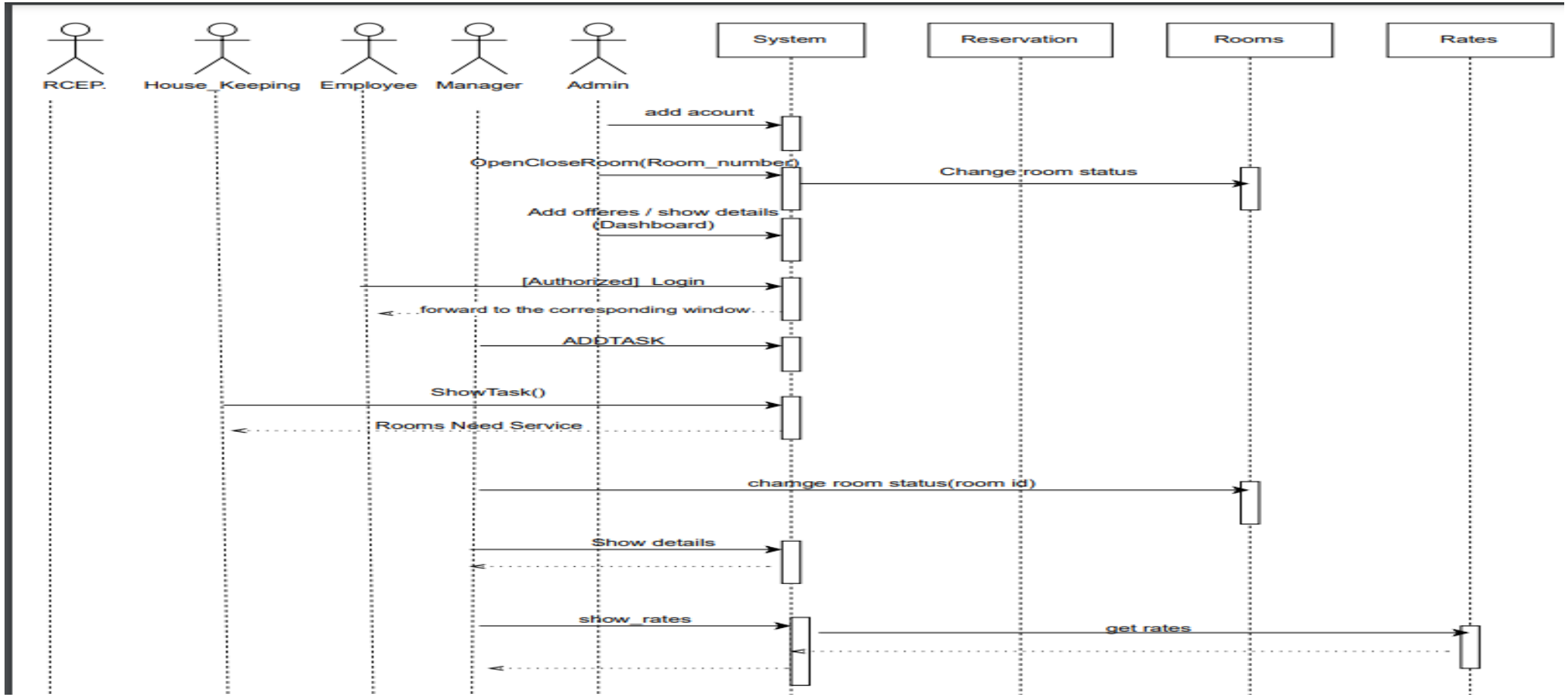
Class Diagram



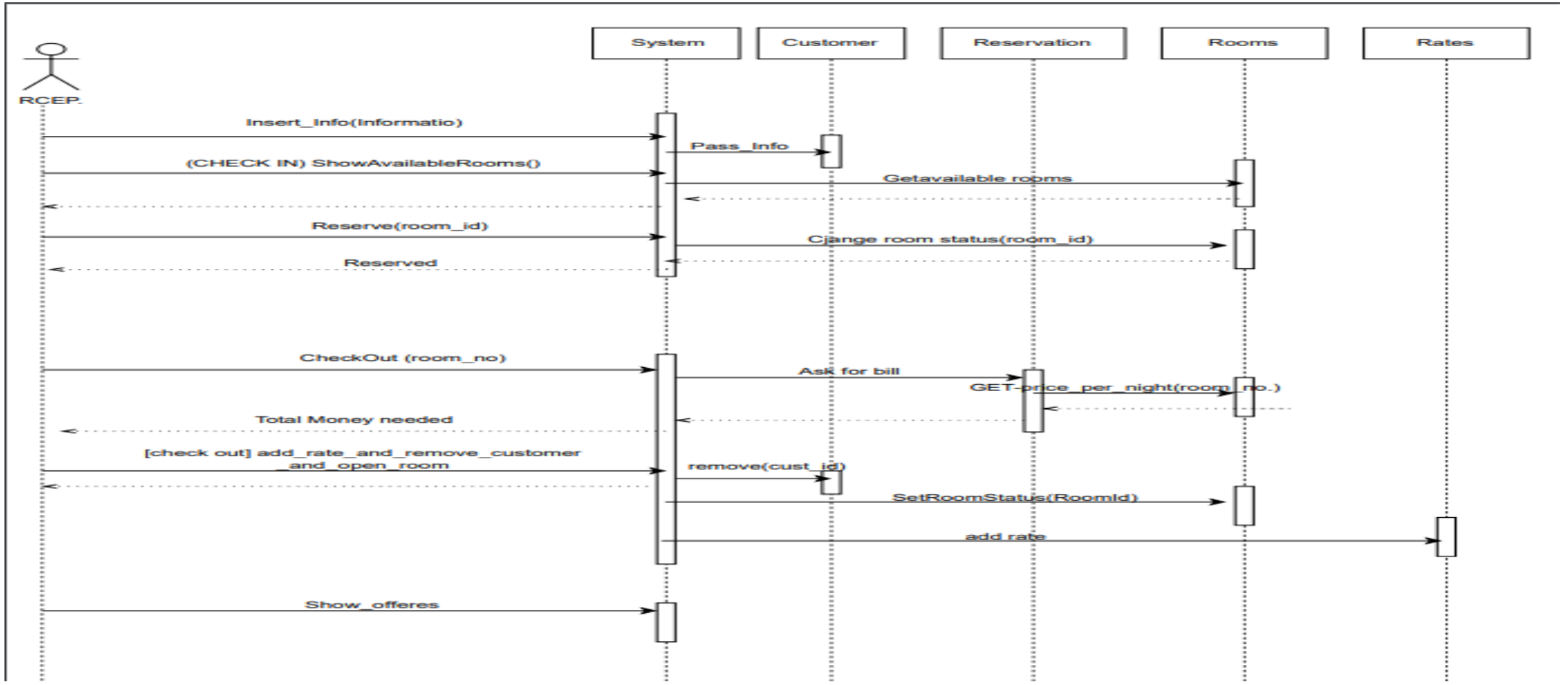
Use Case Diagram



Sequence Diagram

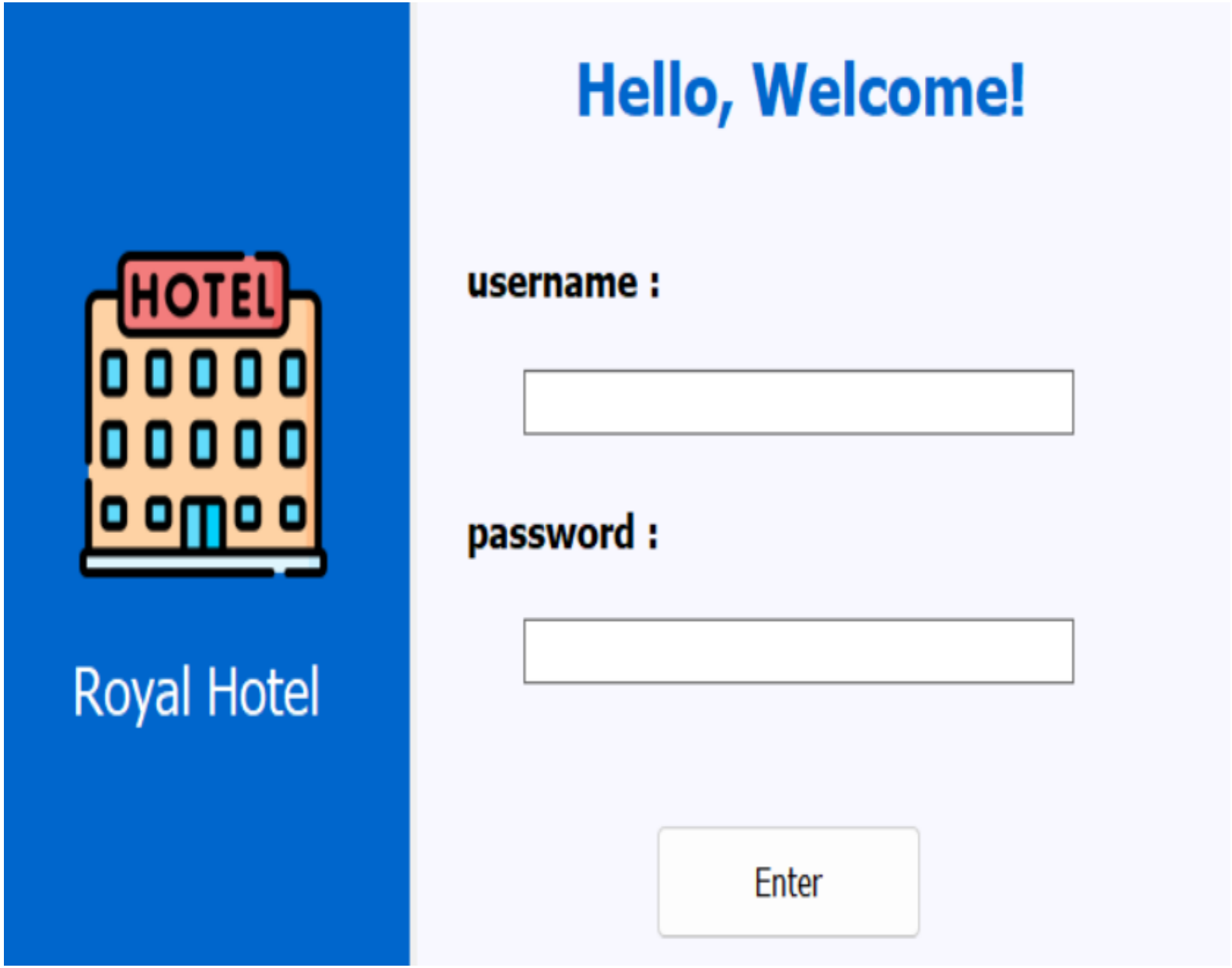


Sequence Diagram(Conti)



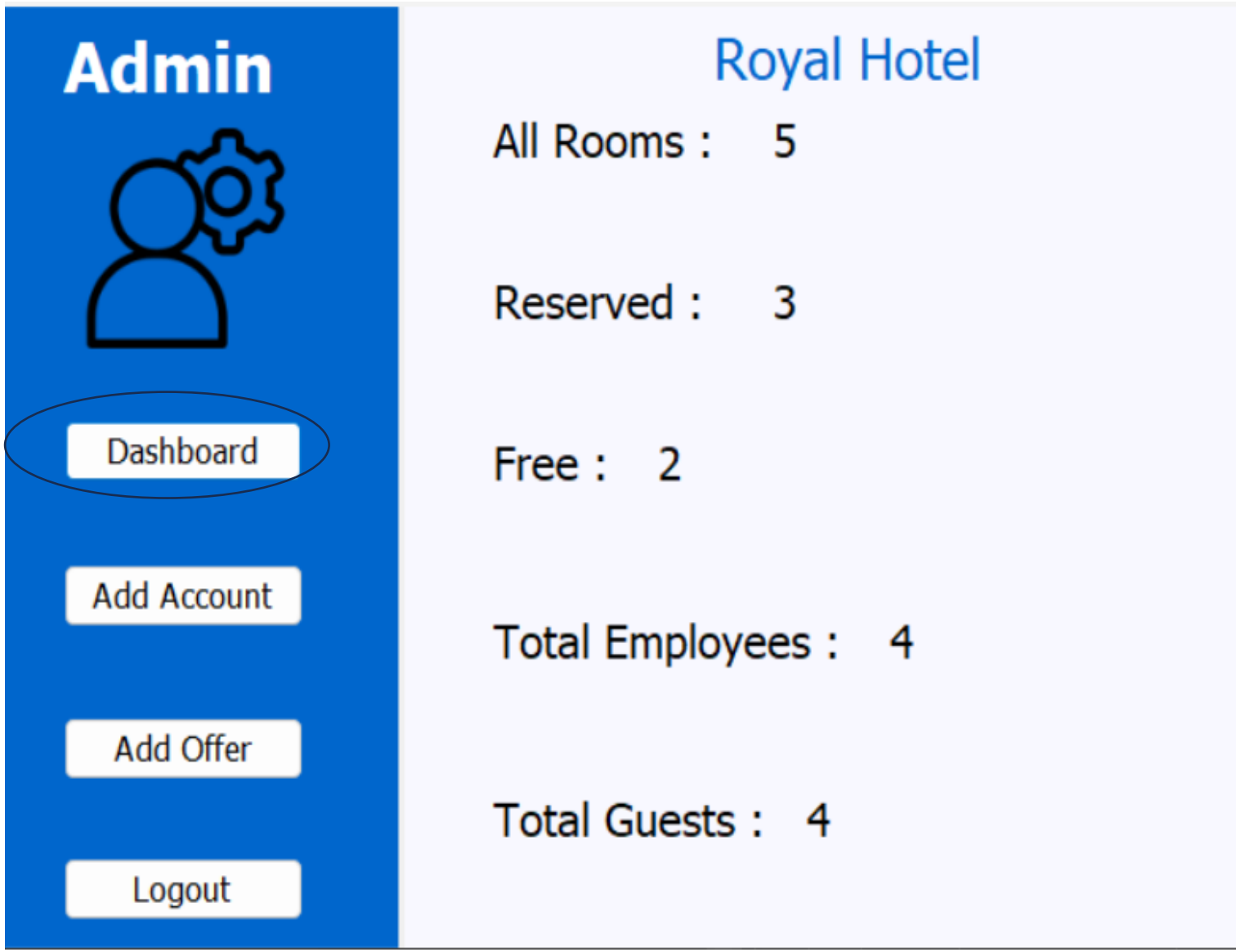
Login page

- Each of administrator, manager, and other employees have individual accounts to access and log in to our system.



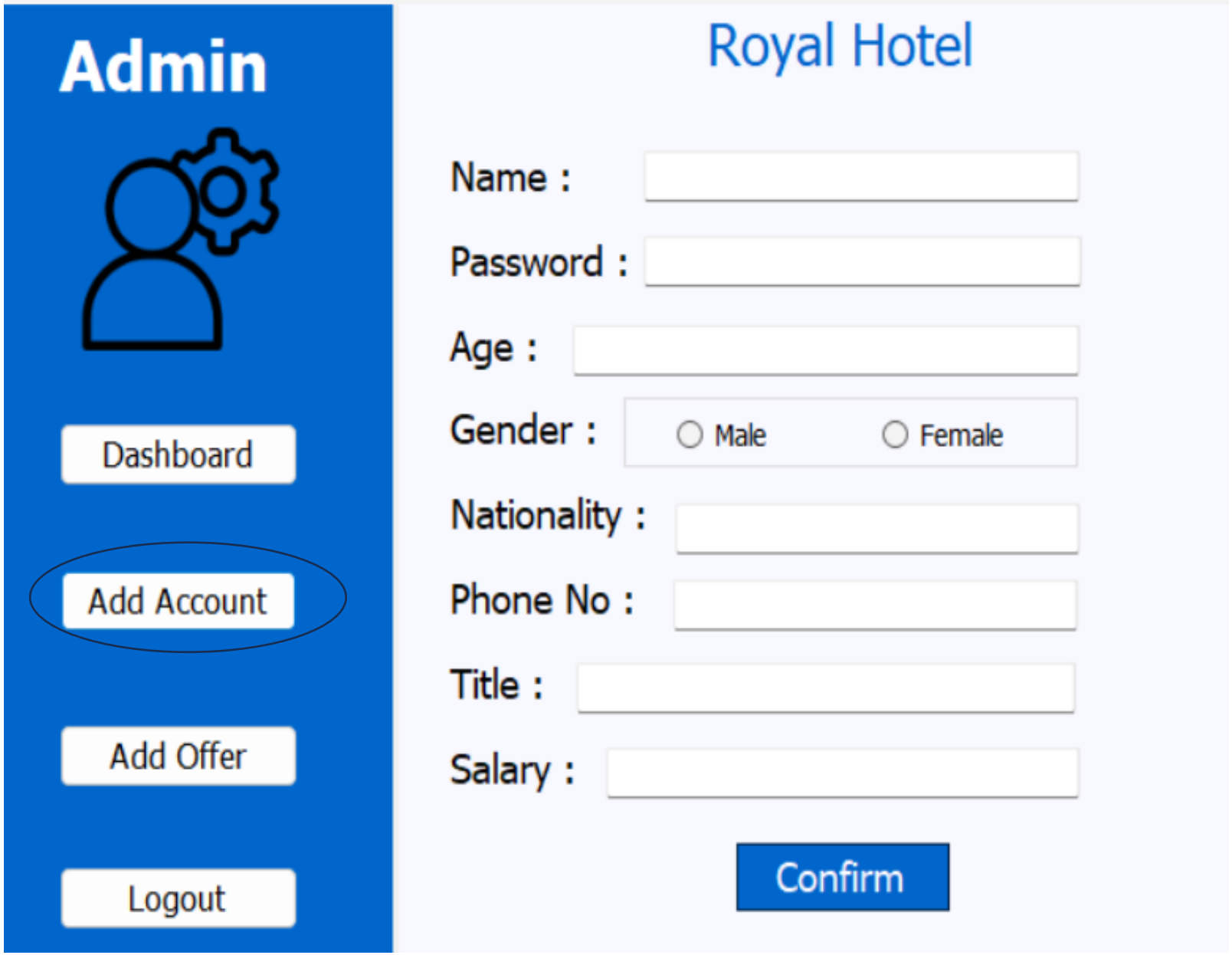
ADMIN

- The administrator has the capability to showcase dashboards encompassing client, employee, and guest information, as well as an overview of the total number of rooms



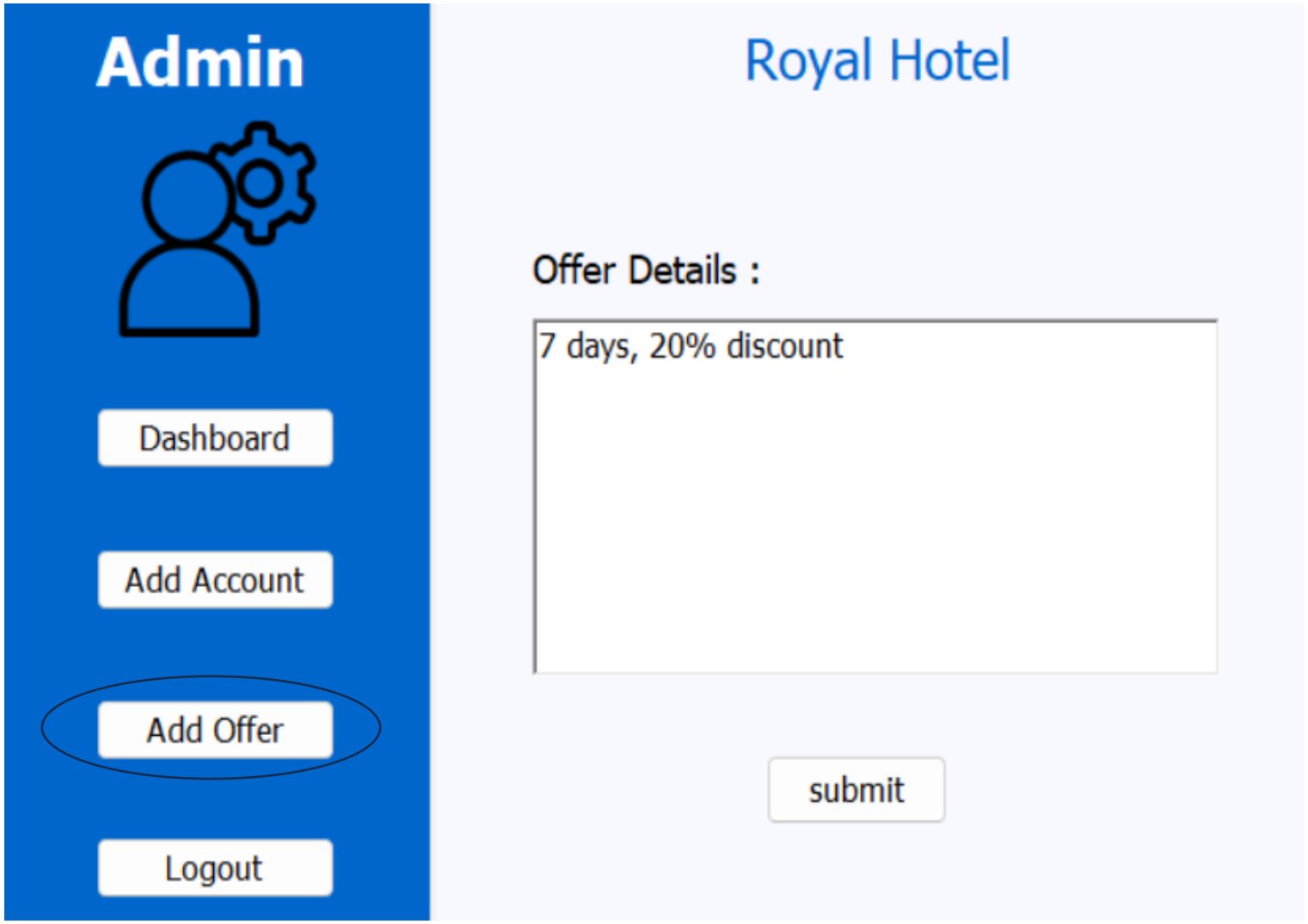
ADMIN

- The administrator is authorized to create a new account for a new employee.



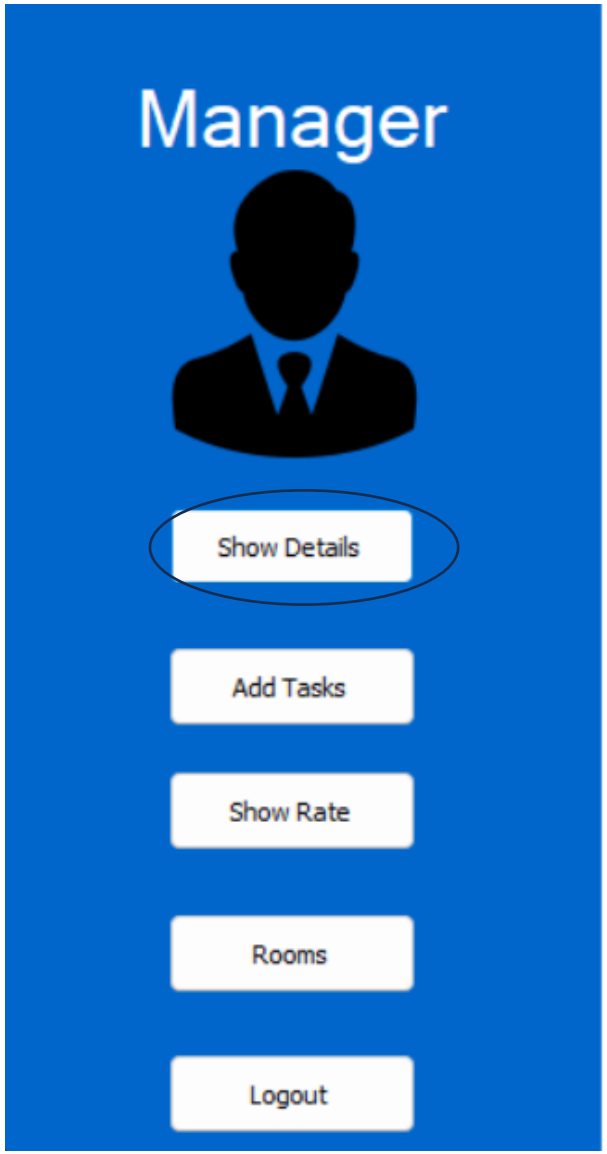
ADMIN

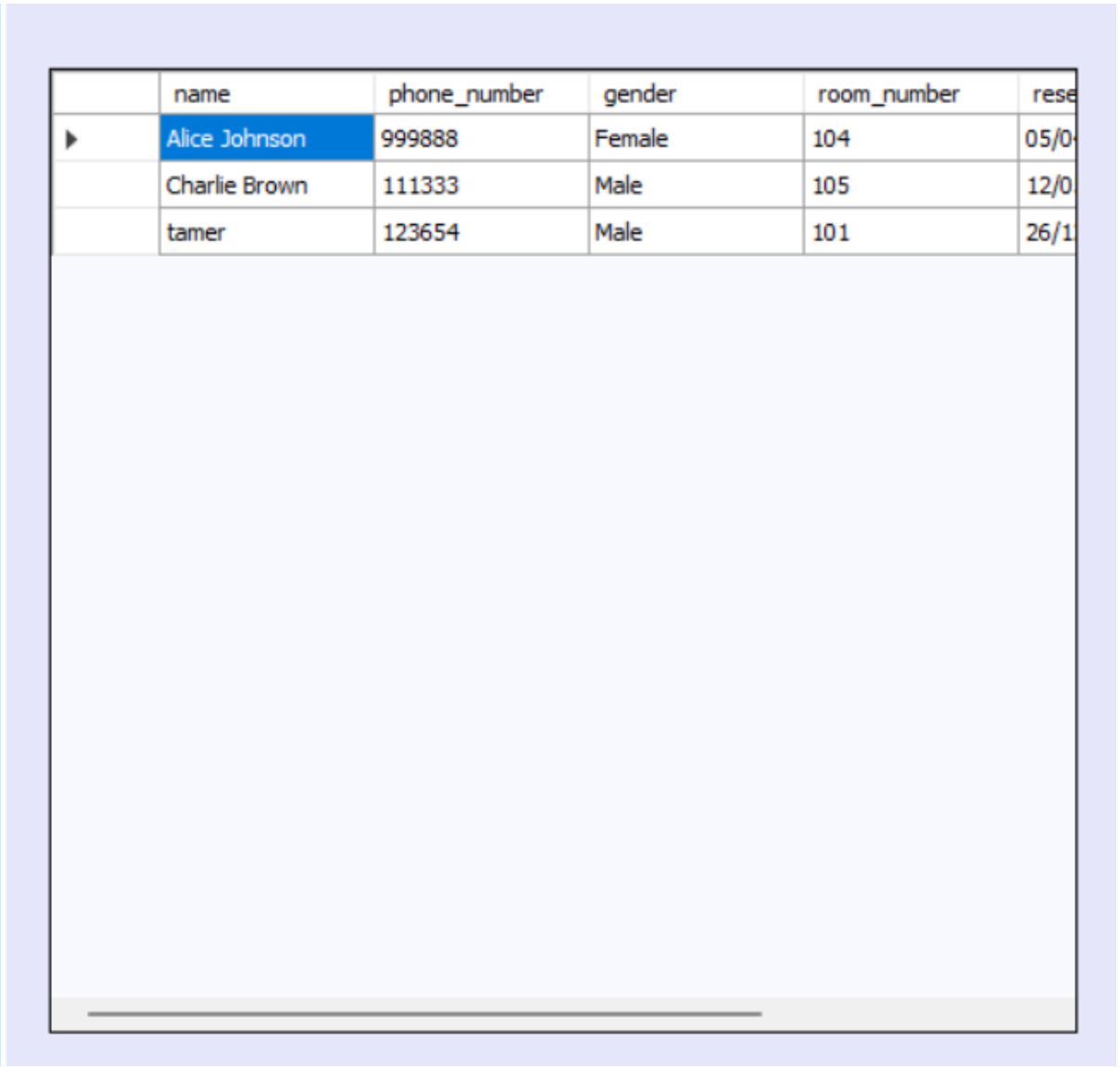
- The administrator has the authority to add offers to reservations.



Manager

- Show Current Customer Details

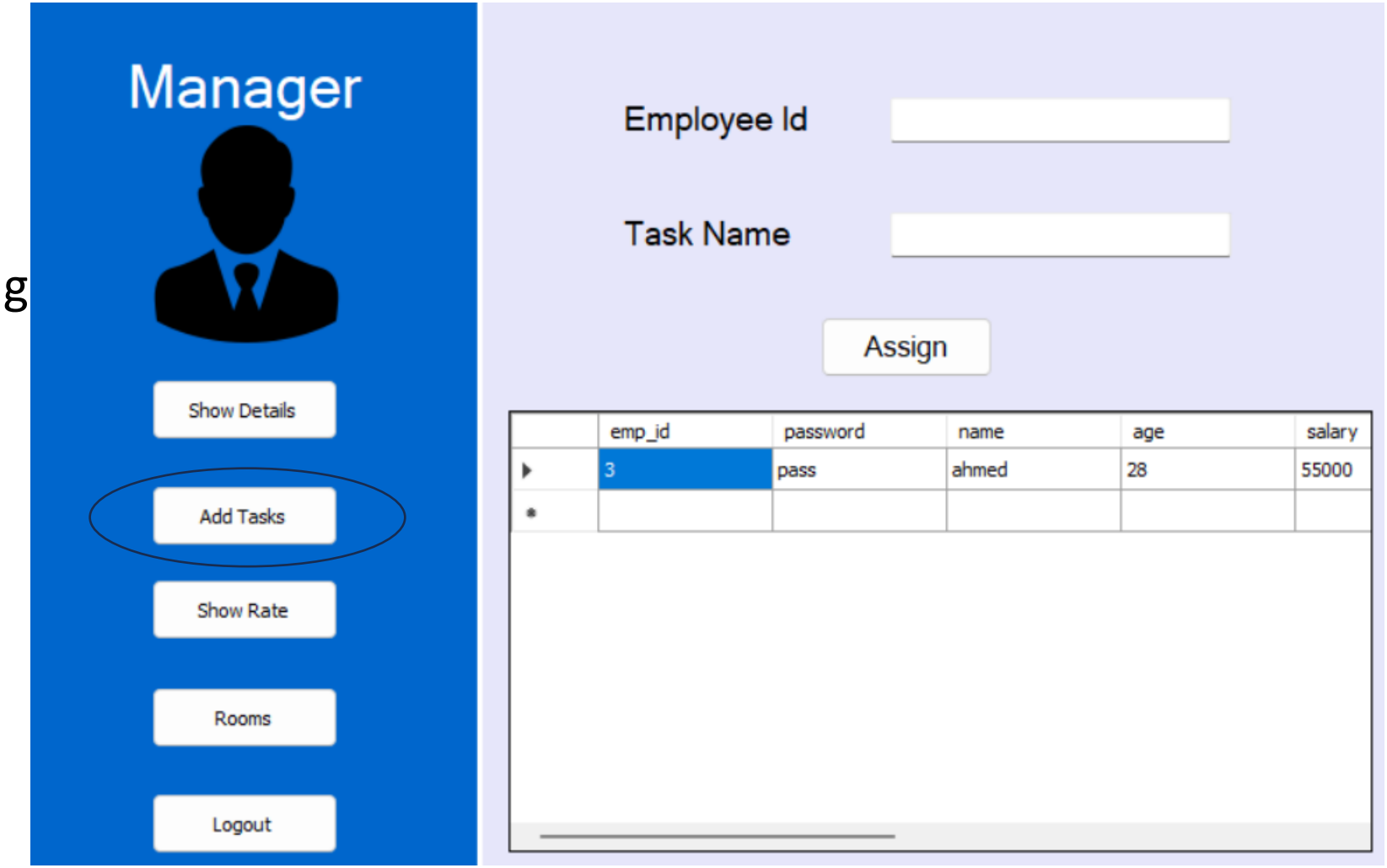




	name	phone_number	gender	room_number	rese
▶	Alice Johnson	999888	Female	104	05/0
	Charlie Brown	111333	Male	105	12/0
	tamer	123654	Male	101	26/1

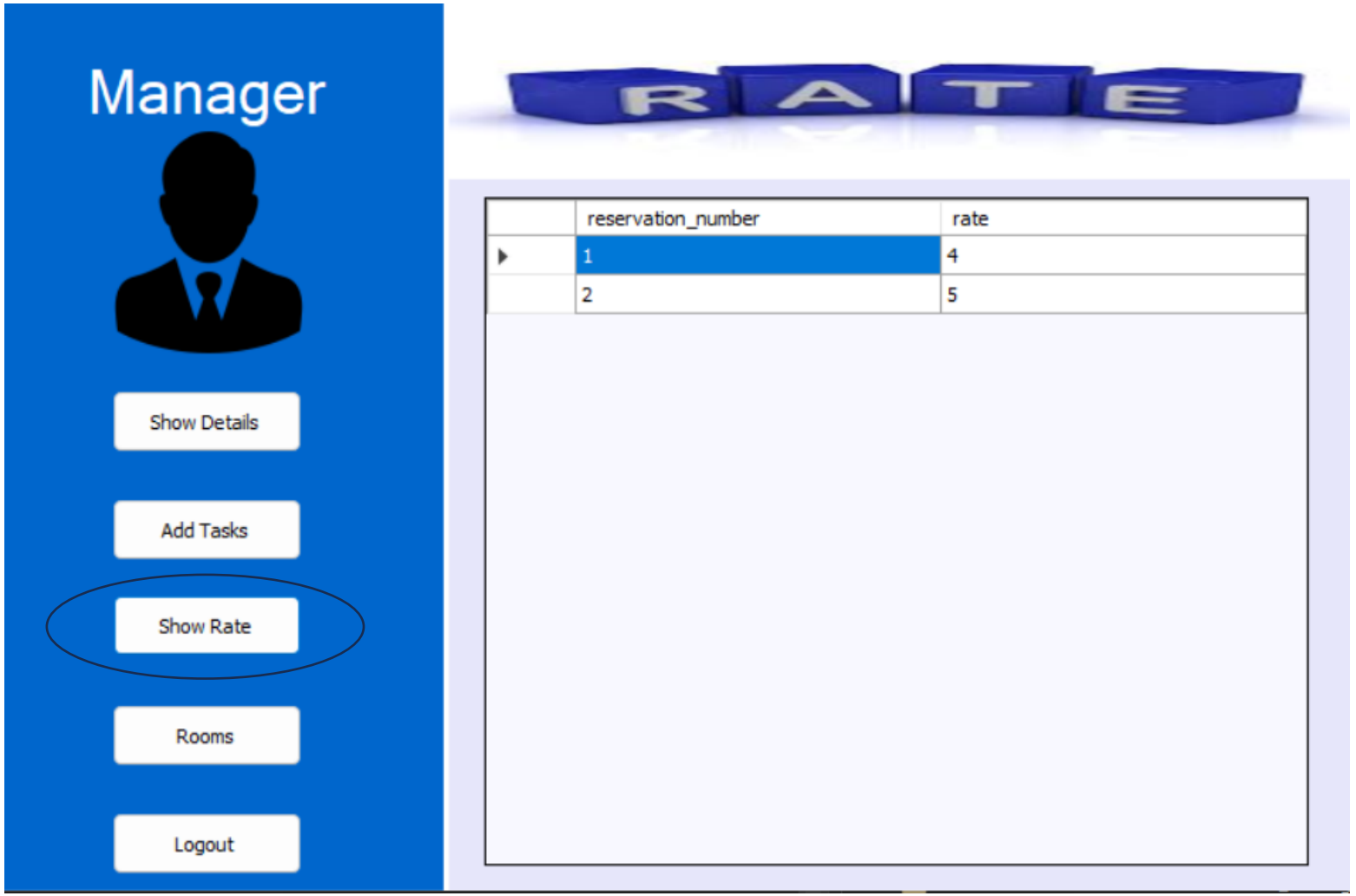
Manager

- The manager is capable of assigning tasks to housekeepers.



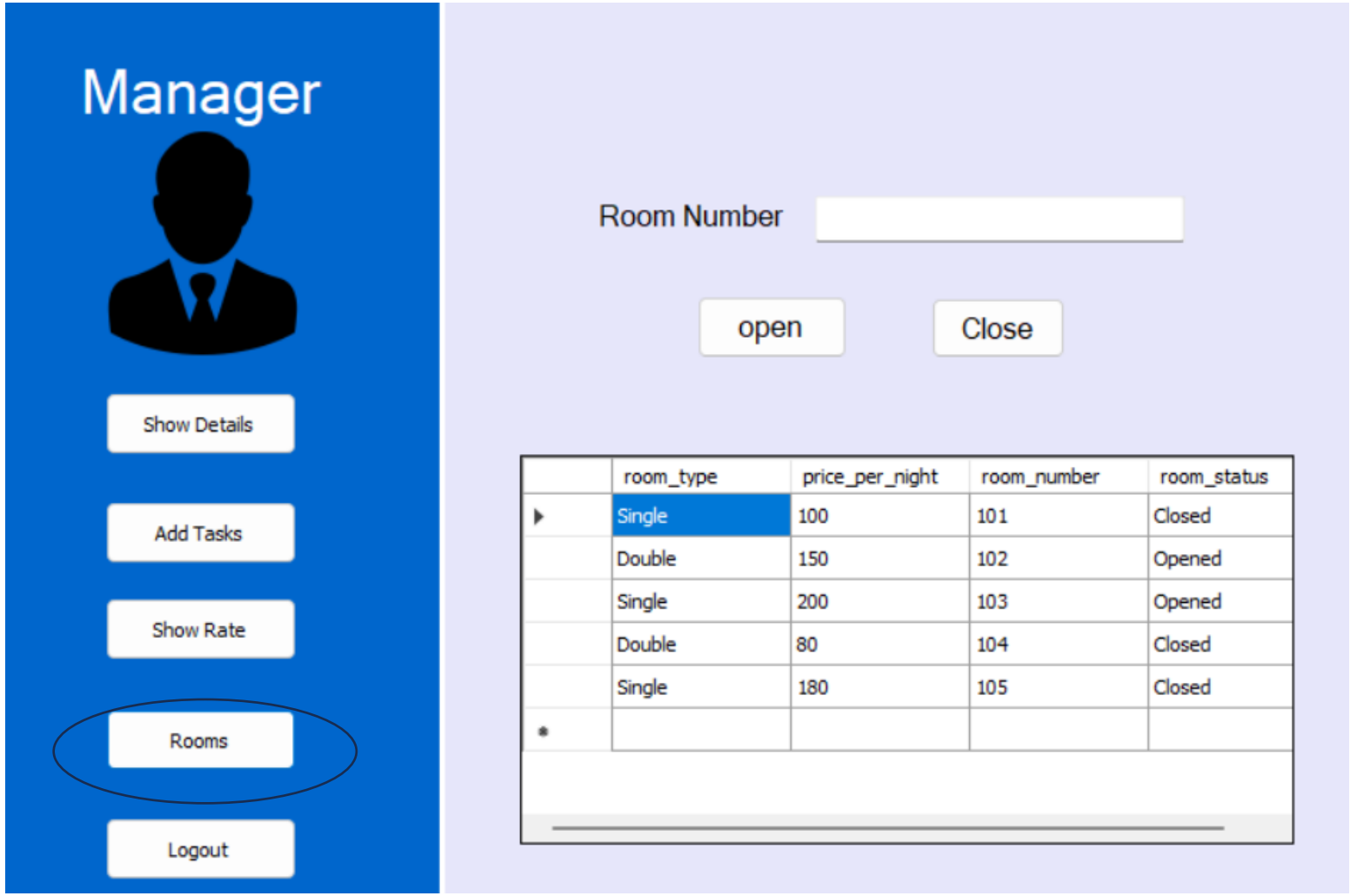
Manager

- The manager is able to display the rates provided by our customers



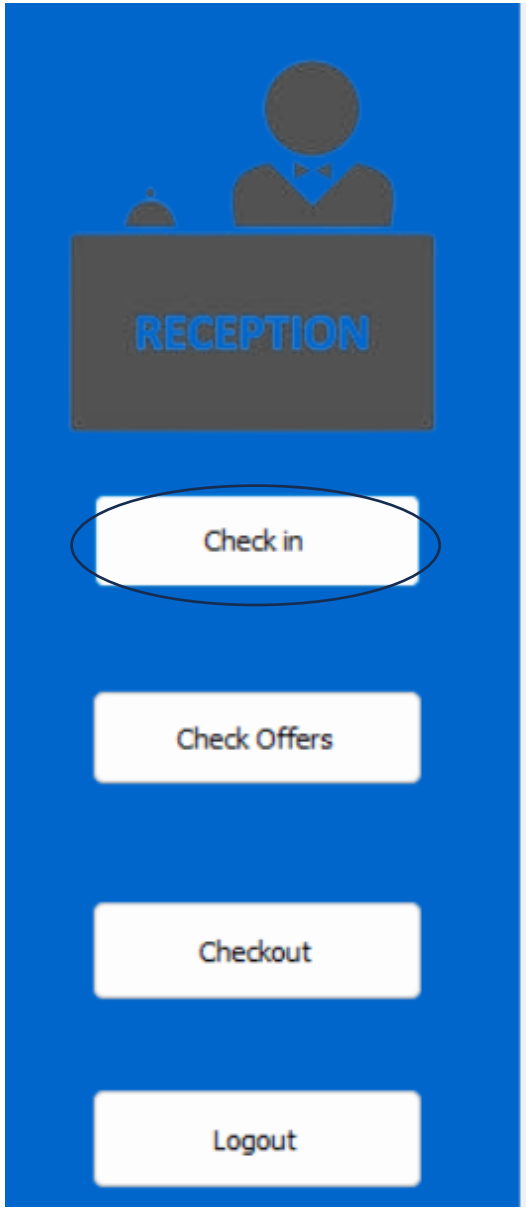
Manager

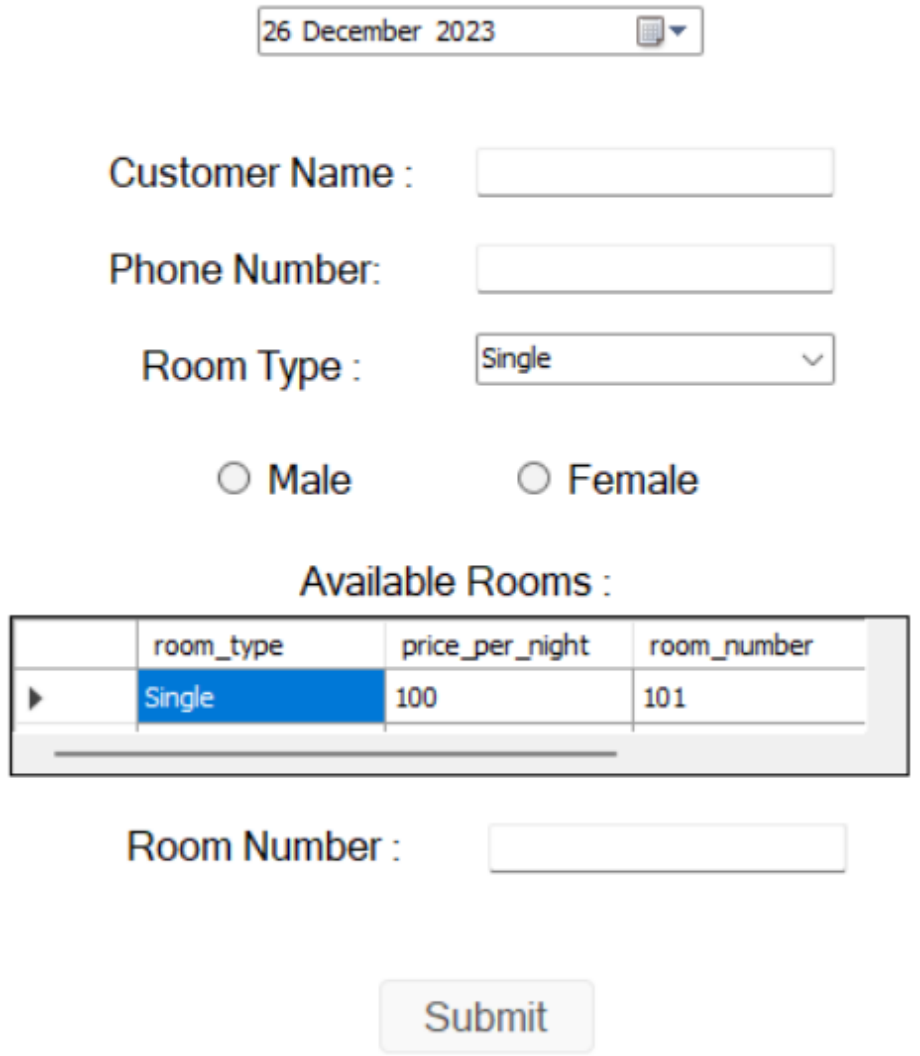
- The manager is authorized to access and secure any hotel rooms as needed for maintenance purposes, including opening or closing rooms for repairs or upkeep



Receptionist

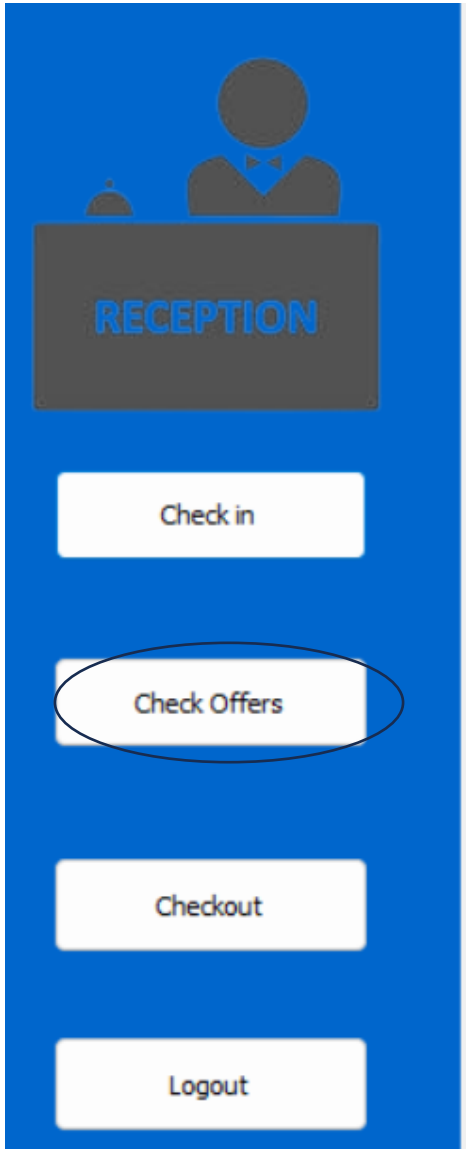
- The receptionist is empowered to create new reservations for customers, including the check-in process.

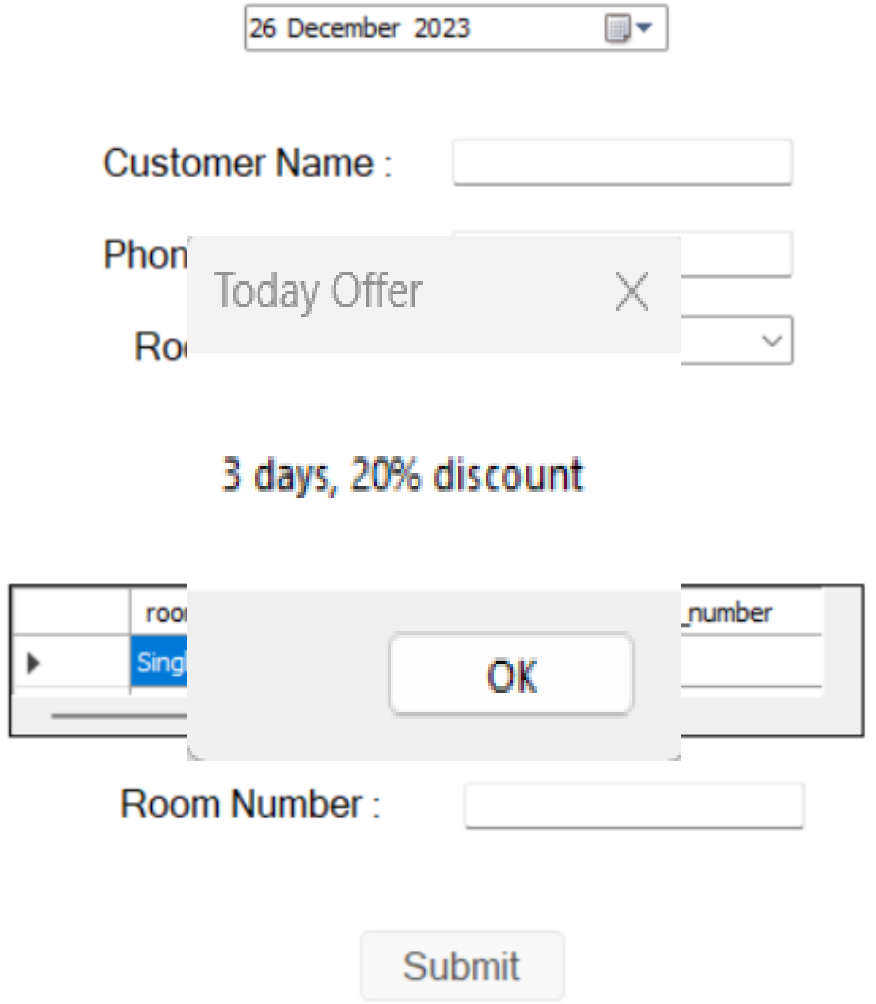




Receptionist

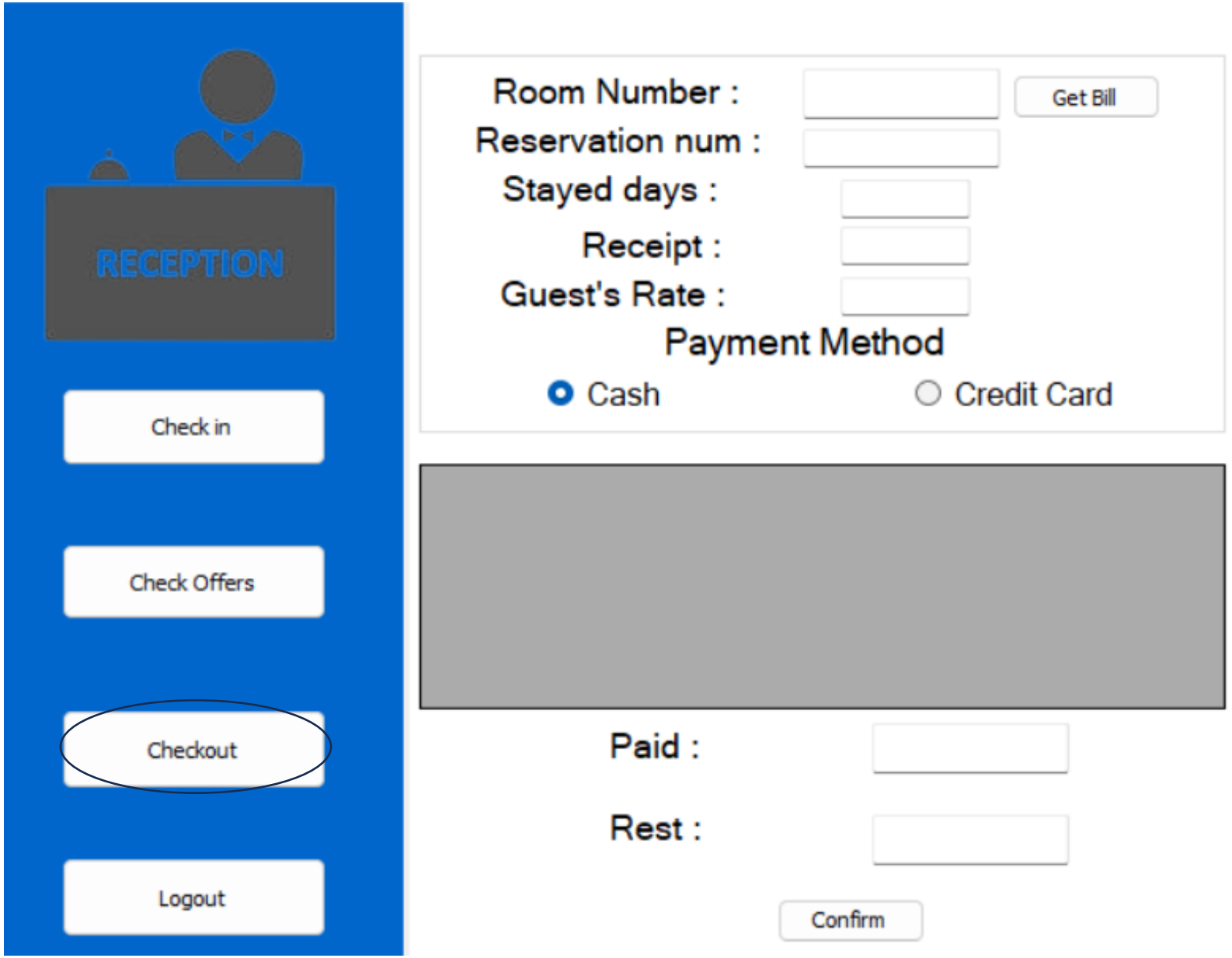
- The receptionist has the ability to check and apply offers.





Receptionist

- The receptionist is responsible for processing check-outs for customers.



GitHub Link

https://github.com/AhmedAbdElgleel/hotel_management

Team Members

- Eng.Loay Tamer Mohamed
- Eng.Ahmed Abd Elgleel Saeed
- Eng.Ahmed Hassan Ibrahim
- Eng.Mohamed Osama Amer
- Eng.Mohamed Hassan Mohamed Ahmed Yousef