Hotel Management System

By

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COMPUTER SCIENCE

DEPARTMENT OF COMPUTER SCIENCE

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2022

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

1.1 General Information

Information to be provided in this section gives a specific name to the project as well as pertinent information about the personal involved.

Project Name: Hotel Management System **Starting Date:** 12/10/2021

Controlling Agency: **Final Date:** 5/1/2022

Prepared By: XYZ **Authorized by:**

1.2 Purpose

This Hotel Management System Software Requirement Specification (SRS) main purpose is to provide a base for the foundation of the project. It gives a understanding view of how the system is supposed to work and what is to be expected by the end users. Client's expectation and requirements are analyzed to produce specific unambiguous functional and non-functional requirements, so they can be used by development team with clear understanding to build a system as per end user needs. This SRS for HMS can also be used for future as basis for detailed understanding on how project was started. It provides a blueprint to upcoming new developers and maintenance teams to assist in maintaining and modifying this project as per required changeability.

1.3 Document Conventions

The document is prepared using Microsoft Word 2013 and has used the font type 'Times New Roman'.
The fixed font size that has been used to type this document is 12pt with 1.5 line spacing. It has used the bold property to set the headings of the document. Use case scenario is written according to Alistair Cockburn's template. UML diagrams have been created according to UML 2.0 standards. Standard IEEE template is the template used to organize the appearance of the document and its flow.

1.4 Project Objective

The project "Hotel Booking Management System" is aimed to develop to maintain the day-to-day state of admission/vacation of residents, List of workers, List of Bills etc.

There are following main objectives of the hotel**:**

- Keeping user satisfaction as at most priority.
- Scheduling the allotment of user with room to make it convenient for user.

- Keeping records of user registration details accurately arranged order so that the treatment of Customers becomes quick and satisfactory.
- Keeping details about the users, their needs and payment detail reports etc.
- Keeping the best hotel facilities.
- Give the user choices from the cheapest rooms between the hotels.
- Keep the user connected by the hotel to receive the confirmation.
- Send the confirmation letter to the user about his bill and date.

1.5 Intended Audience and Reading Suggestions

The intended audience of this document would be owner and specific employees like Manager and Receptionist of Hotel Shan-jahan, and project team with the objective to refer and analyze the information. The SRS document can be used in any case regarding the requirements of the project and the solutions that have been taken. The document would final provide a clear idea about the system that is building.
Brief outline of the document is,

1. Overall Description
2. System Features
3. External Interface Requirements
4. Non Functional Requirements

1.6 Project Scope

This Document plays a vital role in the development life cycle (SDLC) .As it describes the complete requirement of the system. It is meant for use by the developers and will be the basic during testing phase. Any changes made to the requirements in the future will have to go through formal change approval process. The introducing software, Hotel Management System which is going to be implemented for Hotel SHAN-JAHN will automate the major operations of the hotel. The Reservation System is to keep track in room and hall reservation and check availability. The Room Management System is for manage all room types room services. The Inventory Control System will keep track in all inventories of the hotel and guest details will handled by guest management. Administration department will monitor the all .There is three End Users for HMS. The End Users are Owner, Manager and Receptionist. Owner can access to all system functionalities without any restrictions. Manager can access to all system functionalities with limited restrictions. Receptionist can only access to the Reservation management section. To keep restrictions for each End User levels HMS can create different Login functions.

2. Overall Description

2.1 Product Perspective

The introducing software, Hotel Management System which is going to be implemented for Hotel SHAN-JAHN will automate the major operations of the hotel. The Reservation System is to keep track in room and hall reservation and check availability. The Room Management System is for manage all room types room services. The Inventory Control System will keep track in all inventories of the hotel and guest details will handled by guest management. Administration department will monitor the all .There is three End Users for HMS. The End Users are Owner, Manager and Receptionist. Owner can access to all system functionalities without any restrictions. Manager can access to all system functionalities with limited restrictions. Receptionist can only access to the Reservation management section. To keep restrictions for each End User levels HMS can create different Login functions.

2.2 Product Features

- Make Reservations
- Search Rooms
- Add Payment
- Issue Bills
- Manage Guest (Add, Update Guest)
- Manage Room Details (Add, Update, Delete)
- Manage Staff (Add, Update, Delete, View)
- Manage Inventory (Add, Edit, Delete)
- Set Rates
- Retrieve Reports (Staff payment, Income)
- Manage Users (Add, Update, Delete)
- Taking Backups

2.3 User Classes and Characteristics

User Classes:

There are three user levels in Hotel Management System of Hotel ShahJahan

1. Owner
2. Manager
3. Receptionist
4. Customer
5. Waiter
6. Chef

Characteristics of User Classes

1. Owner:

Hotel owner has the privilege of Monitoring and authorization of all the tasks handle by the system. He can access every function performed by the system. Owner of the company as well as the system can access to the administration panel which is consider the core of the system. As the main authorized person of the company owner gets the ability to manage the other users including their user levels and privileges. Taking backups of the system and restoring system can also be done by the Owner. Meanwhile he will be able to take all the kinds of reports available in the system. As the owner of the system and the company he has the power to set room rates as well. Hotel owner has the sole right of deleting a staff member from the system database.

2. Manager:

Manager is responsible for managing resources available in hotel management system. Manager also has most of the privileges mentioned above except the things regarding the payment handling. The reason for using a Manager is to reduce the work load done by the owner that cannot be assigned to the receptionist, as those tasks seem much responsible. The user level, Manager has the authority to take all the reports available in the system but here also except the reports related to financial stuff, hotel income. Manager has other abilities that receptionist, user level has. Such as, adding new staff member to the system, Modifying them or removing them, Adding new guests to the system, Modifying them and removing them from the system, Adding new inventory to the system, Modifying them and removing them. Adding new room types to the system, modifying them and removing them

3. Receptionist:

As a hotel receptionist, he or her role will be to attain the goals of bookings and to ensure that all guests are treated with a high standard of customer service. Hierarchically receptionist role has the least accessibility to the system functions. Receptionist plays the boundary role of the system .He or she can perform limited functions such as registering new guest to the system, make reservations, Sending e-mail reminders to clients for booking confirmation. Management of hotel will prefer to hire receptionist who have a good standard of general education and possibly in subjects such as English, math and IT.

4. Customer

In the Customer profile, people can check the availability of rooms and they can also book a room according to their budget and need. Customer profile contains their name, Contact details, address, and other necessary details, etc. They need to sign-up for booking the hotel, which will make them as well as the manager of the hotel easily interact with each other.They can pay the amount Online and if they need to do payment Offline, they must give some advance amount to confirm their room.

5. Chef

- Lead, mentor, and manage culinary team.
- Develop and plan menus and daily specials.
- Create prep lists for kitchen crew.
- Manage food costing and inventory.
- Maintain standards for food storage, rotation, quality, and appearance.
- Ensure compliance with applicable health codes and regulations.
- Establish maintenance and cleaning schedules for equipment, storage, and work areas.
- Participate in interview process and selection of kitchen staff.
- Schedule staff and assist in human resources processes as needed.

6 .Waiter

- Provide the perfect service experience for restaurant patrons
- Ensure the guest feels important and welcome in the restaurant
- Ensure hot food is hot and cold food is cold
- Adhere to timing standards for products and services
- Look for ways to consolidate service and increase table turns
- Present menu, answer questions, and make menu recommendations
- Serve customers in an accommodating manner
- Must know all food liquor, beer, wine, and retail offered
- Apply positive suggestive sales approach to guide guests
- Pre-bus tables; maintain table cleanliness, bus tables, remove dirty plates
- Look for ways to avoid waste and limit costs
- Assist in keeping the restaurant clean and safe
- Provide responsible service of alcoholic beverages
- Deliver food and beverages to any table as needed
- Must follow all cash handling policies and procedures
- Report to property on time and in proper uniform
- Process payments of food and drink orders with the cash register
- Coordinate with kitchen staff to deliver accurate food orders

2.4 Operating Environment

Hardware:-

1. **Operating System** Supports all known operating systems, such as Windows, Linux
2. **Computer** 512MB+ RAM, monitor with minimum resolution of 1024x768, keyboard, and mouse
3. **Hard Drive** should be in NTFS file-system formatted with minimum 10 GB of free space
4. **A Laser printer** will need to be used to print these reports and notes

Software:-

1. Software is designed to run on any platform above Microsoft Windows 7 (32bit).
2. Microsoft .NET Frameworks 4.0 or above.
3. Microsoft SQL Server Management Studio Express 2010.

2.5 Design and Implementation Constraints

A Constraint of the system is security, with the xml files they will need to be encrypted and is recommended that the company invests in security to ensure that the security of the system is constantly developed as security is vital to protect personal and corporate data. The organization will be responsible for maintaining the software and will receive support from developers with consistent updates to improve and refine the previous version of the code.To ensure constant improvements to the system analytical techniques used to find the strengths and weaknesses of the system and also the threats to its security and the opportunities that it can use to extend and expand the system to improve efficiency.

2.6 User Documentation

User manual provide to the client will give a clear idea in interacting with the system. It will be written in a simple understandable language concealing the inner complexity of the system. A hard copy of the user manual will be delivered to the client with the delivery of system.

2.7 Assumptions and Dependencies

Some software used in implementing the system is with high cost and the client has agreed to afford the amount of money needed to purchase them. It’s assumed that client won’t change that decision on the next phases of the software development. Although we assume that client is using windows 7 or windows 8. Otherwise if client use an open source operating system, there is a need of changing the SRS according.

3 System Features

Correctness:

This system should satisfy the normal regular Hotel Management operations precisely to fulfill the end user objectives.

Efficiency:

Enough resources to be implemented to achieve the particular task efficiently without any hassle.

Flexibility:

System should be flexible enough to provide space to add new features and to handle them conveniently.

Integrity:

System should focus on securing the customer information and avoid data losses as much as possible.

Portability:

The system should run in any Microsoft windows environment.

Usability:

The system should provide user manual to every level of users**.**

3.1 System Feature 1

3.1.1 Description and Priority

Store customer booking details (High)

As standard, the system has to be capable of storing basic customer contact information such as name, phone number, address etc. Most importantly the system needs to be able to details in regards to the customers room preferences/extras, pricing, room status etc. All of which are necessary for most of the functions within the system, hence why this is a high priority feature that needs to be implemented.

Check for payments (High)

User Login

For security purposes, it's necessary for the system to have a user login procedure. This feature will be implemented in

Search for Room availability, room price, registered rooms (High)

- Additional room extras, services (medium)
- Sorting (Room Size, Price, Room Location i.e. Top Floor/Corner room) (High)
- Price calculations (High)
- Produce receipts (Low)
- Room Status

Room status is an essential part of this system, everything from the booking and room registrations will be based on the current status of the room. There are 4 main statuses for each room within the hotel, Reserved, Under Maintenance, available and unavailable.

Maintenance section (medium)

The system will have a section where staff members can check whether rooms are in a condition to be booked, for example, if there's any broken furniture or equipment i.e. windows/doors or light bulbs need changing then the staff members can check for these things and mark it down on the system.

Data Storage

As standard the Hotel Booking System has to be capable of storing basic customer contact information such as name, phone number, address etc. Most importantly the system needs to be able to details in regards to the customers room preferences/extras, pricing, room status etc. All of which are necessary for most of the functions within the system, hence why this is a high priority feature that needs to be implemented.

Payments

The Hotel Booking System needs to be able to check if customers have made payments or not. The implementation of this feature is crucial to the functionality of the entire system, reason being that a lot of the other features and operations within the system (i.e. placing room reservations), thus making this a high priority that is mandatory to the systems design.

User Login

For security purposes it's necessary for the system to have some form of login procedure. This is a feature that might not be in the system when it's first implemented however later on in future its one that may need to be added hence why it is a medium priority feature. There is no real detrimental to the functionality or nature of the system if the login feature is not implemented, but it's a function that is highly recommended to ensure that the system remains secure in the long run.

Search and Sorting

Room searching and sorting are both high level priority features that needs to be implemented within this system in order to for it function as intended. Users should be able to search for specific details on rooms based on availability, price, room size etc. In addition to the room search, the system should be able to sort out the rooms based on several criteria's such as room numbers, size, condition, pricing and many more.

Room Status

Room status is an essential part of this system, everything from the booking and room registrations will be based on the current status of the room. There are 4 main statuses for each room within the system, Reserved, Under Maintenance, available and unavailable.

3.1.2 Stimulus/Response Sequences

Search Room

Stimulus/Response Sequences

Step User Input Response

- User opens View Rooms page RRS shows all rooms in a calendar format
- User edits search fields and submits RRS filters rooms and present rooms in a table

View Room Availability

Stimulus/Response Sequences

- Step User Input Response
- User opens View
- Rooms page
- RRS shows all rooms in a calendar format
- User edits search
- fields and submits
- RRS filters reservations and displays all available time slots for particular room in the week of the given date.

Managing Rooms

Add Room

- Stimulus/Response Sequences
- Step User Input Response
- System Admin opens Add Room form RRS shows Add Room form
- System Admin enters necessary fields and submits RRS adds room to the database.

Functional Requirements

1. Reservation/Booking

- record reservations
- record the customer's first name
- record the customer's last name
- record the number of occupants
- record the room number
- display the default room rate
- record the customer's phone number
- display whether or not the room is guaranteed
- generate a unique confirmation number for each
- record the expected check-in date and time
- The system shall record the expected checkout date and time
- The system shall check-in customers
- The system shall allow reservations to be modified without having to reenter all the customer information
- The system shall checkout customer.
- The system shall charge the customer for an extra night if they checkout after 11:00 pm.The system shall mark guaranteed rooms as "must pay" after 6:00 pm on the check-in date.
- The system shall record customer feedback

2. Food

- The system shall track all meals purchased in the hotel (restaurant and room service).
- The system shall record payment and payment type for meals
- The system shall bill the current room if payment is not made at time of service
- The system shall accept reservations for the restaurant and room service.

3. Management

- Display the hotel occupancy for a specified period of time (days; including past, present, and future dates).
- Display projected occupancy for a period of time (days).
- Display room revenue for a specified period of time (days).
- Display food revenue for a specified period of time (days).
- display an exception report, showing where default room and food prices have been overridden
- allow for the addition of information, regarding rooms, rates, menu items, prices, and user profiles
- allow for the deletion of information, regarding rooms, rates, menu items, prices, and user profiles
- allow for the modification of information, regarding rooms, rates, menu items, prices, and user profiles
- allow managers to assign user passwords

4 External Interface Requirements

4.1 User Interfaces

The user interface (UI) is the point at which human users interact with a computer, website or application. The goal of effective UI is to make the user's experience easy and intuitive, requiring minimum effort on the user's part to receive maximum desired outcome.

UI is created in layers of interaction that appeal to the human senses (sight, touch, auditory and more). They include both input devices like keyboard, mouse, track pad, microphone, touch screen, fingerprint scanner, e-pen and camera and output devices like monitors, speakers and printers. Devices that interact with multiple senses are called "multimedia user interfaces". For example, everyday UI uses a combination of tactile input (keyboard and mouse) and a visual and auditory output (monitor and speakers).

4.2 Hardware Interfaces

Includes the requirements of the desktop computer where the system going to be installed. A specific computer must match with the above mentioned requirements in order to gain the maximum benefits from the system in an efficient manner .Reservation alerts will be sent to the one of the member of hotel staff as an e-mail notification. So there is a need of broadband internet connection. Client should able to keep a stable internet connection. A laser printer will be needed when printing bills and several reports

4.3 Software Interfaces

- The web server
- Apache tomcat server,OS Database server
- Mysql DB, OS (Windows) Development end
- PHP, OS(Windows)

4.4 Communications Interfaces

When a specific reservation reserved at the same time an e-mail notification will be sent to both relevant staff member’s e-mail account and guest’s account. Guest will be notified in the check-out date. To achieve that functionality, it requires having a stable internet connection. Mostly a broadband connection with the client’s computer will provide the efficient service

5 Other Nonfunctional Requirements

5.1 Performance Requirements

Performance requirements define acceptable response times for system functionality. Although the system is developed suiting for the least system performances, the performance of the system will highly depend on the performance of the hardware and software components of the installing computer. When consider about the timing relationships of the system the load time for user interface screens shall take no longer than two seconds. It makes fast access to system functions. The log in information shall be verified within five seconds causes' efficiency of the system. Returning query results within five seconds makes search function more accurate.

5.2 Safety Requirements

There are several user levels in hotel management system, Access to the various subsystems will be protected by a user log in screen that requires a user name and password. This gives different views and accessible functions of user levels through the system. Maintaining backups ensure the system database security. System can be restoring in any case of emergency

5.3 Security Requirements

Customer Service Representatives and Managers and owner will be able to log in to the Hotel Management System. Customer Service Representatives will have access to the Reservation/Booking and subsystems. Managers will have access to the Management subsystem as well as the Reservation/Booking subsystems. Owner has the maximum privilege to all subsystems. Access to the various subsystems will be protected by a user log in screen that requires a user name and password

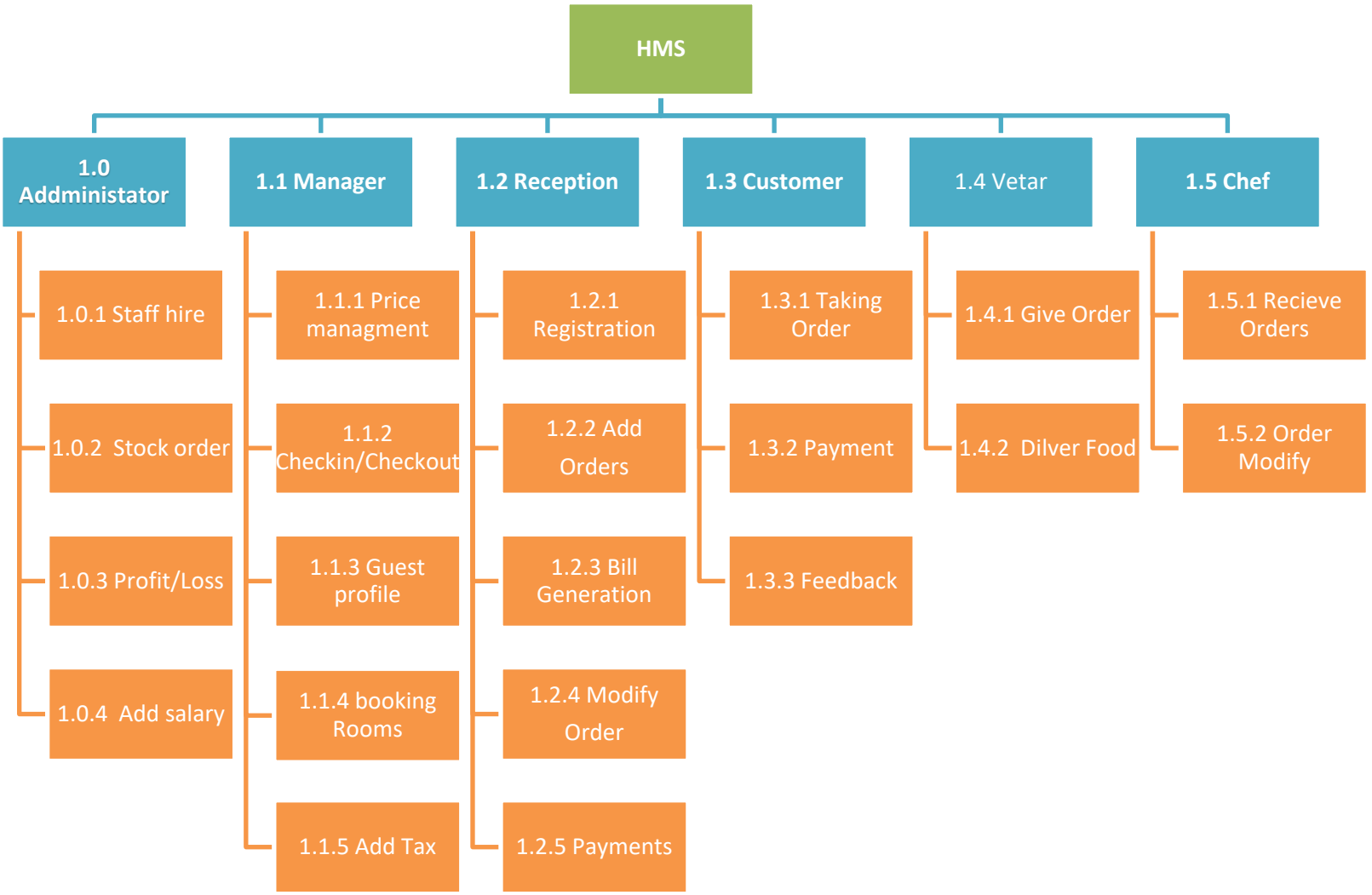
5.4 Software Quality Attributes

- Availability: The system shall be available during normal hotel operating hours
- Correctness: Extent to which program satisfies specifications, fulfills user's mission objectives
- Efficiency: How much less number of resources and time are required to achieve a particular task through the system.
- Flexibility: Ability to add new features to the system and handle them conveniently.
- Integrity: How the system would insecure the information in the system and how it avoids the data losses. Referential integrity in database tables and interfaces
- Maintainability: How easy is to keep the system as it is and correct defects with making changes.
- Portability: The Hotel Management System shall run in any Microsoft Windows environment
- Reliability: Specify the factors required to establish the required reliability of the software system at time of delivery. Mean time between failures and mean time to recovery
- Reusability: What is the ability to use the available components of the system in other systems as well.
- Testability: Effort needed to test to ensure performs as intended
- Usability: How easily a person can be taken the benefits of the system and the user friendliness.

- Robustness: Strength of the system to handle system functions accurately and maintain the database without facing to unexpected failures
- Maintainability: What design, coding standards must be adhered to exclusions created

6 WBS Project Management

Hotel Management System

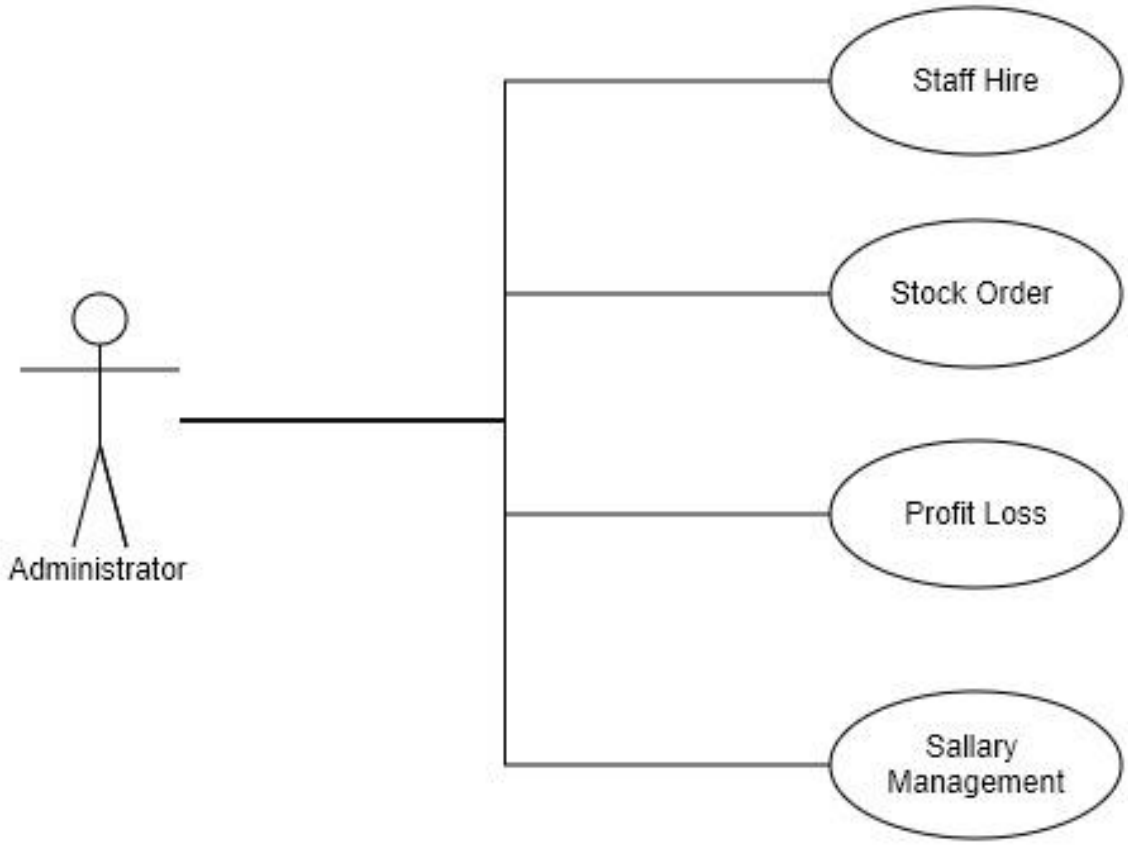


7 Analysis model

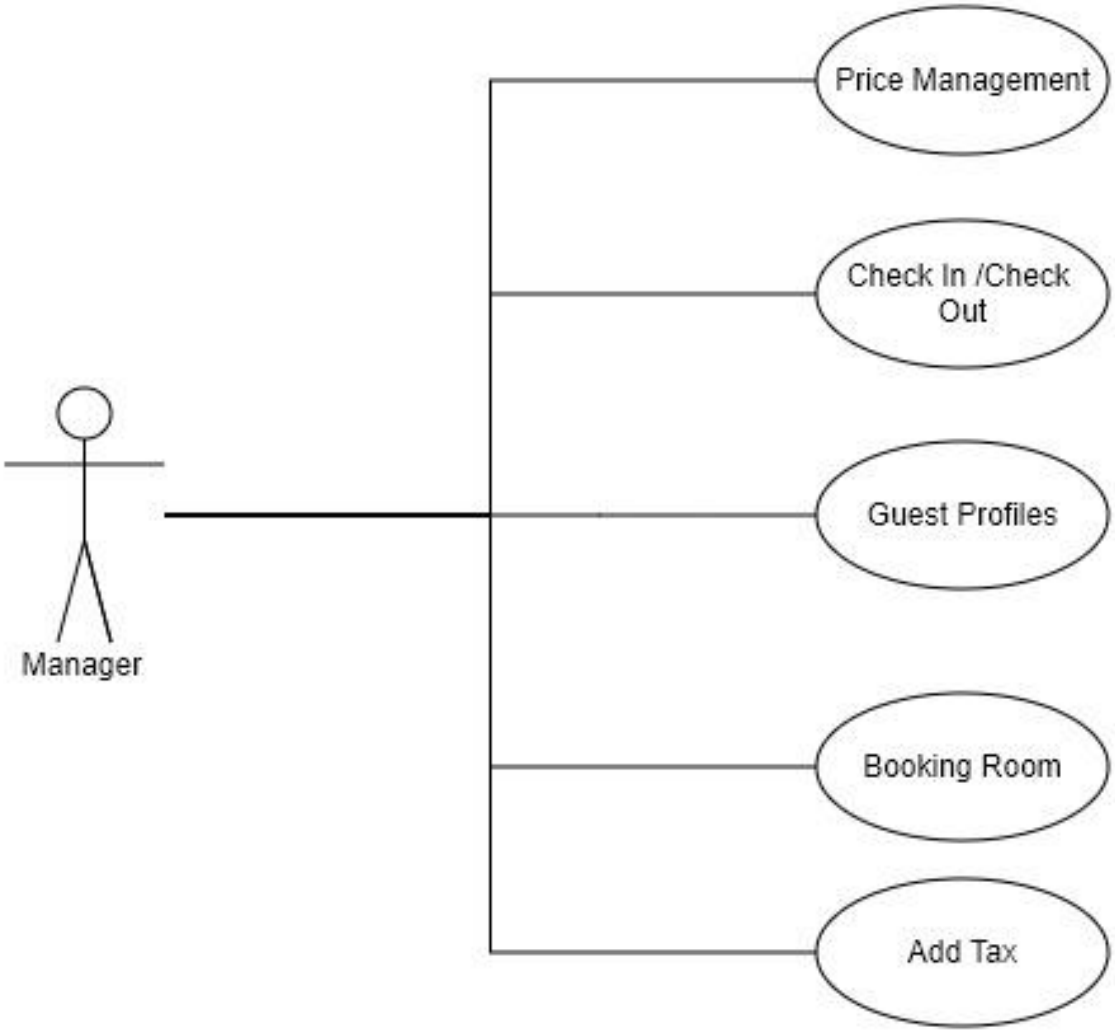
7.1 Use Case Diagram
7.2 Class Diagram
7.3 Object Diagram
7.4 Sequence Diagram
7.5 Activity Diagram
7.6 Collaboration Diagram
7.7 State Transition Diagram
7.8 ERD Diagram

7.1 Use Case Diagram

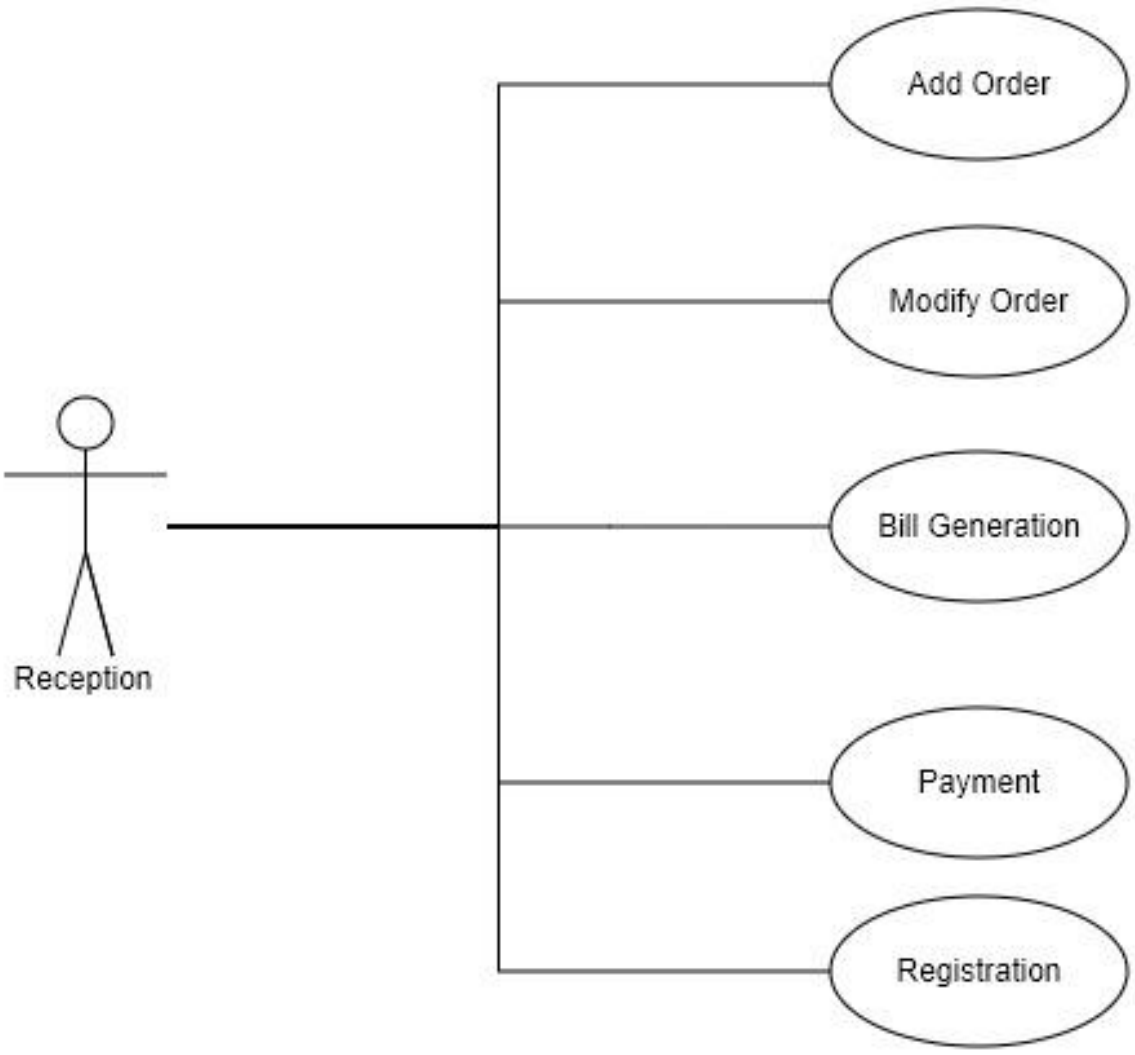
Administrator Use Case Diagram



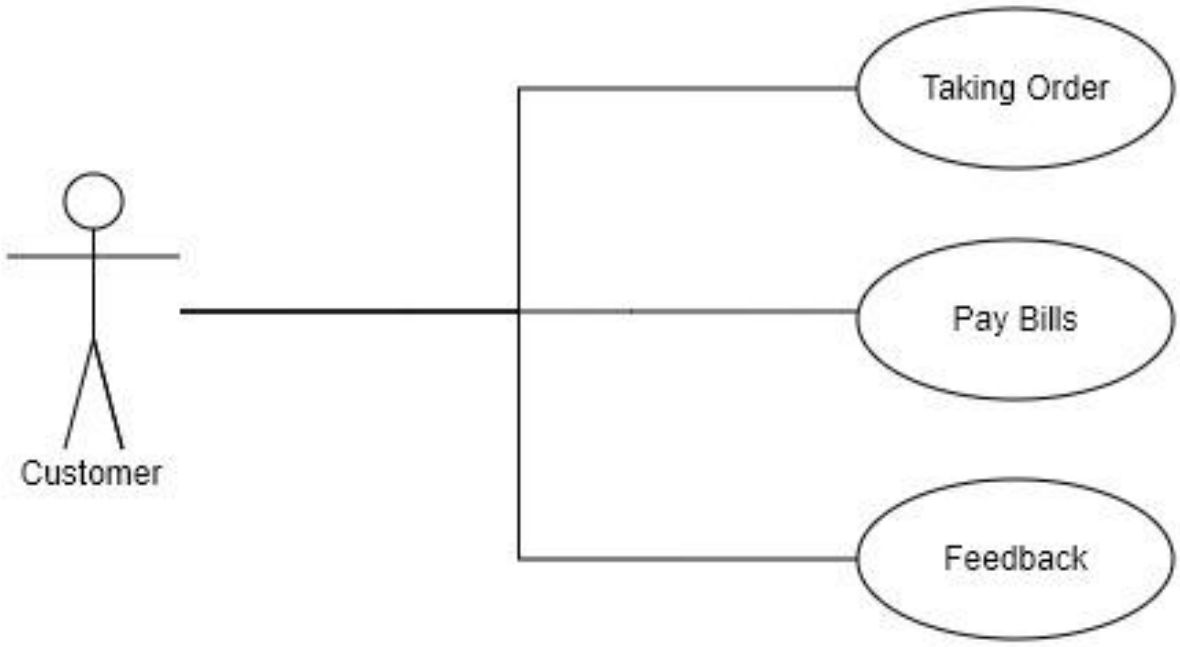
Manager Use Case Diagram



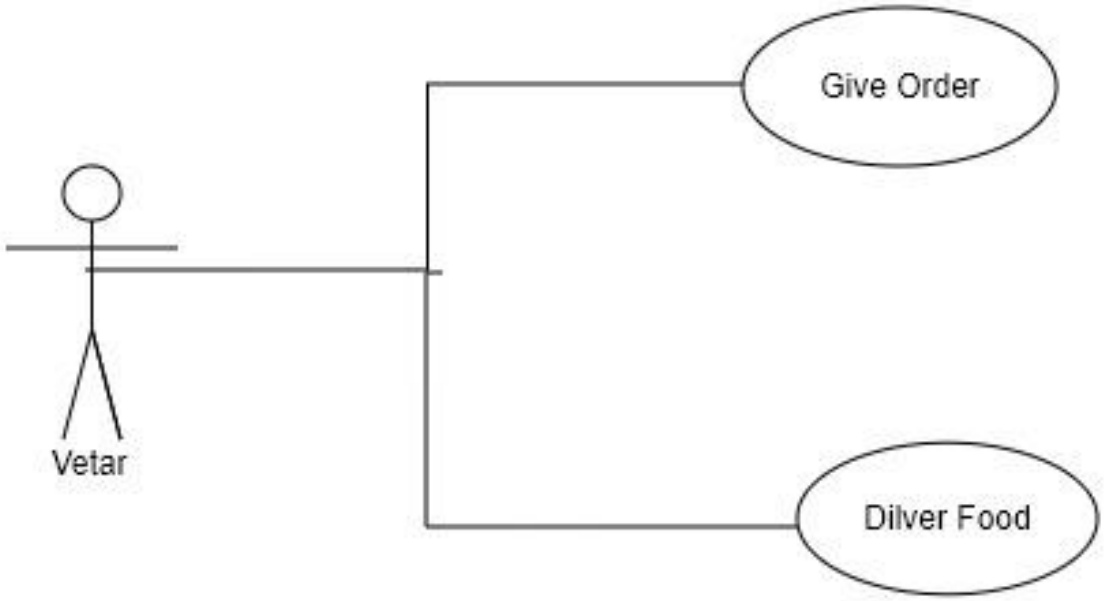
Reception Use Case Diagram



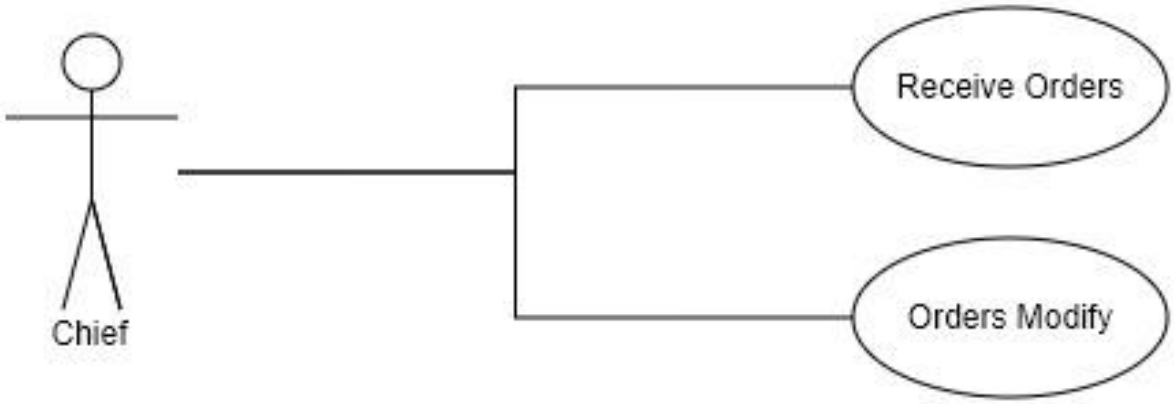
Customer



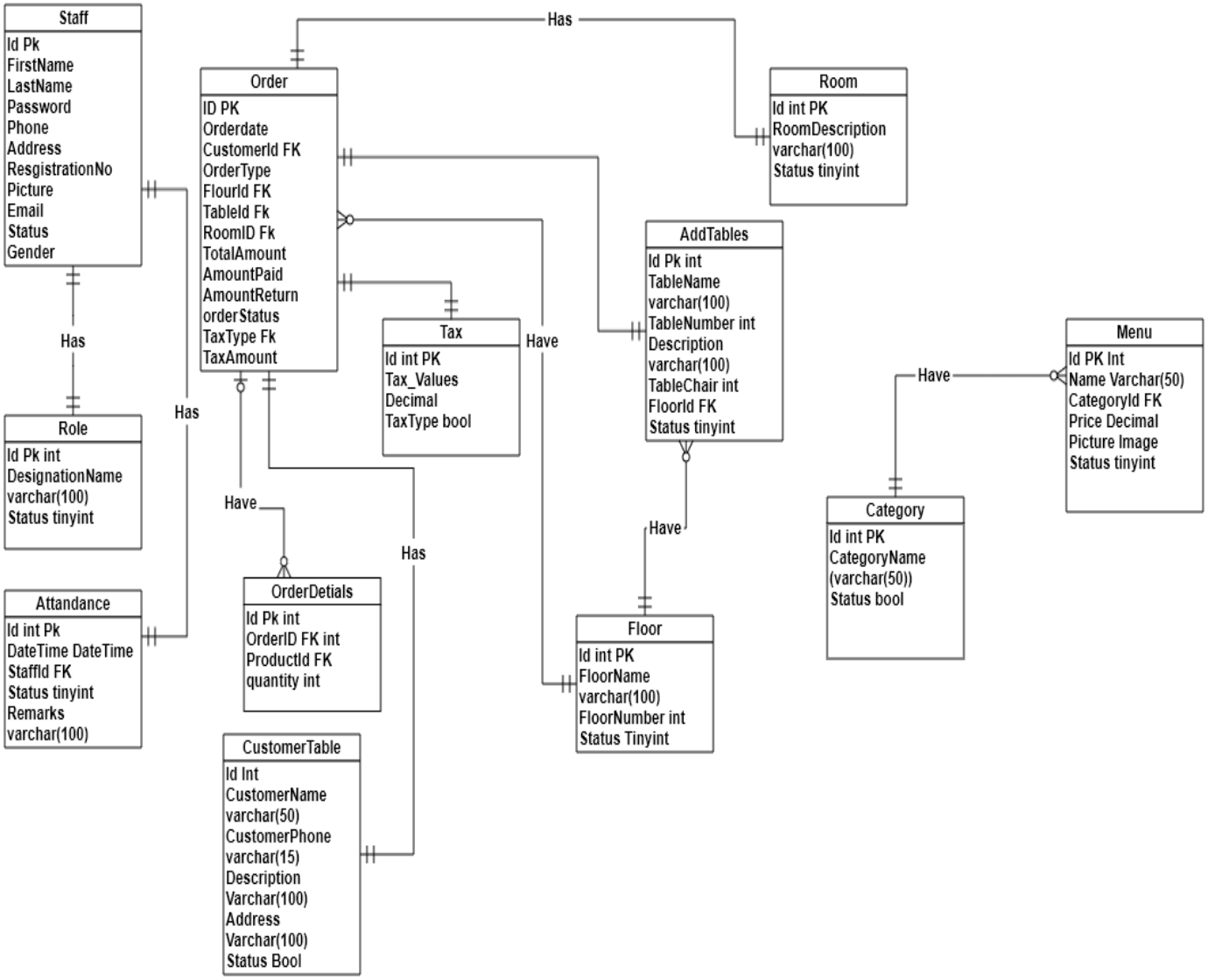
Waiter



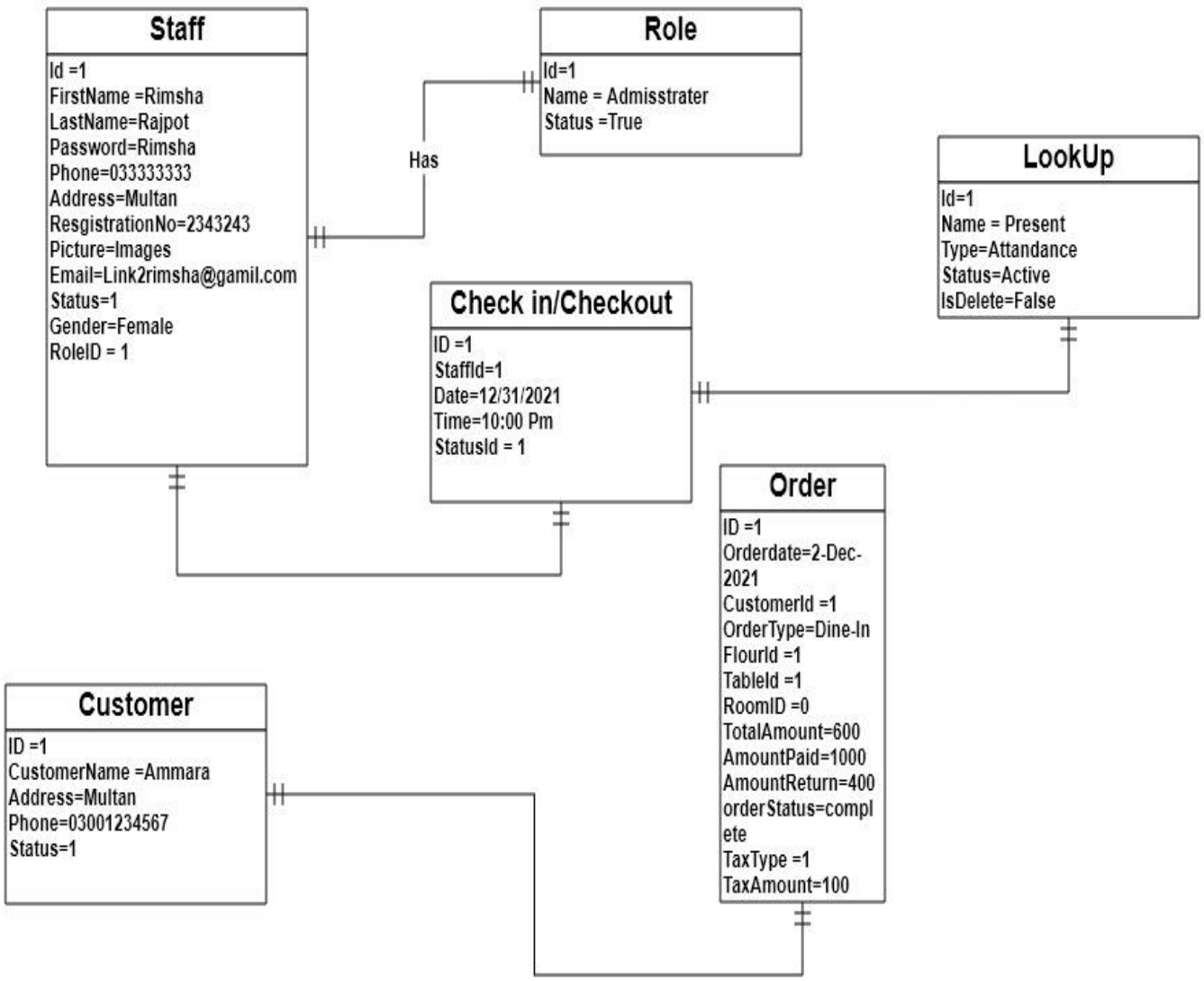
Chef



7.2 Class Diagram

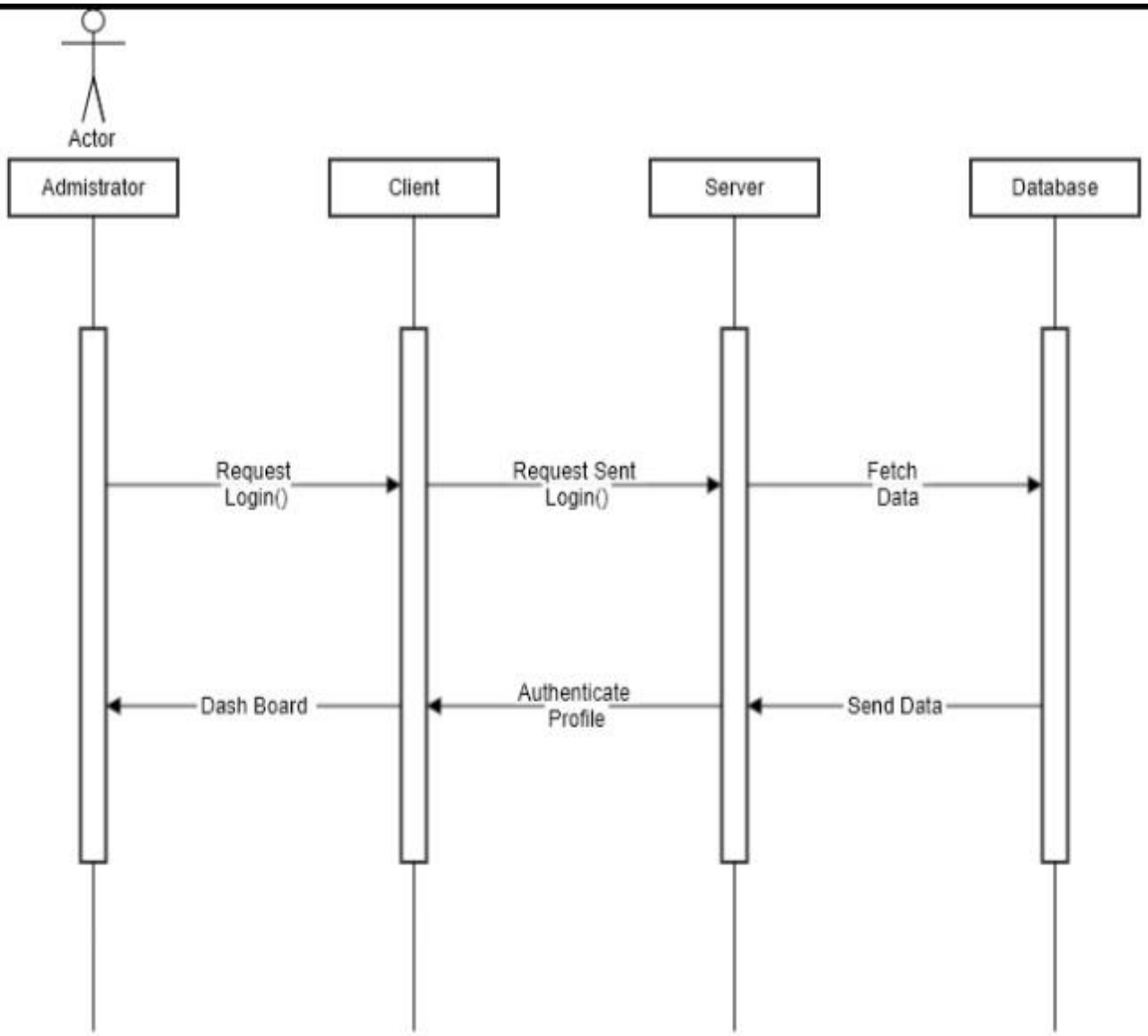


7.3 Object Diagram

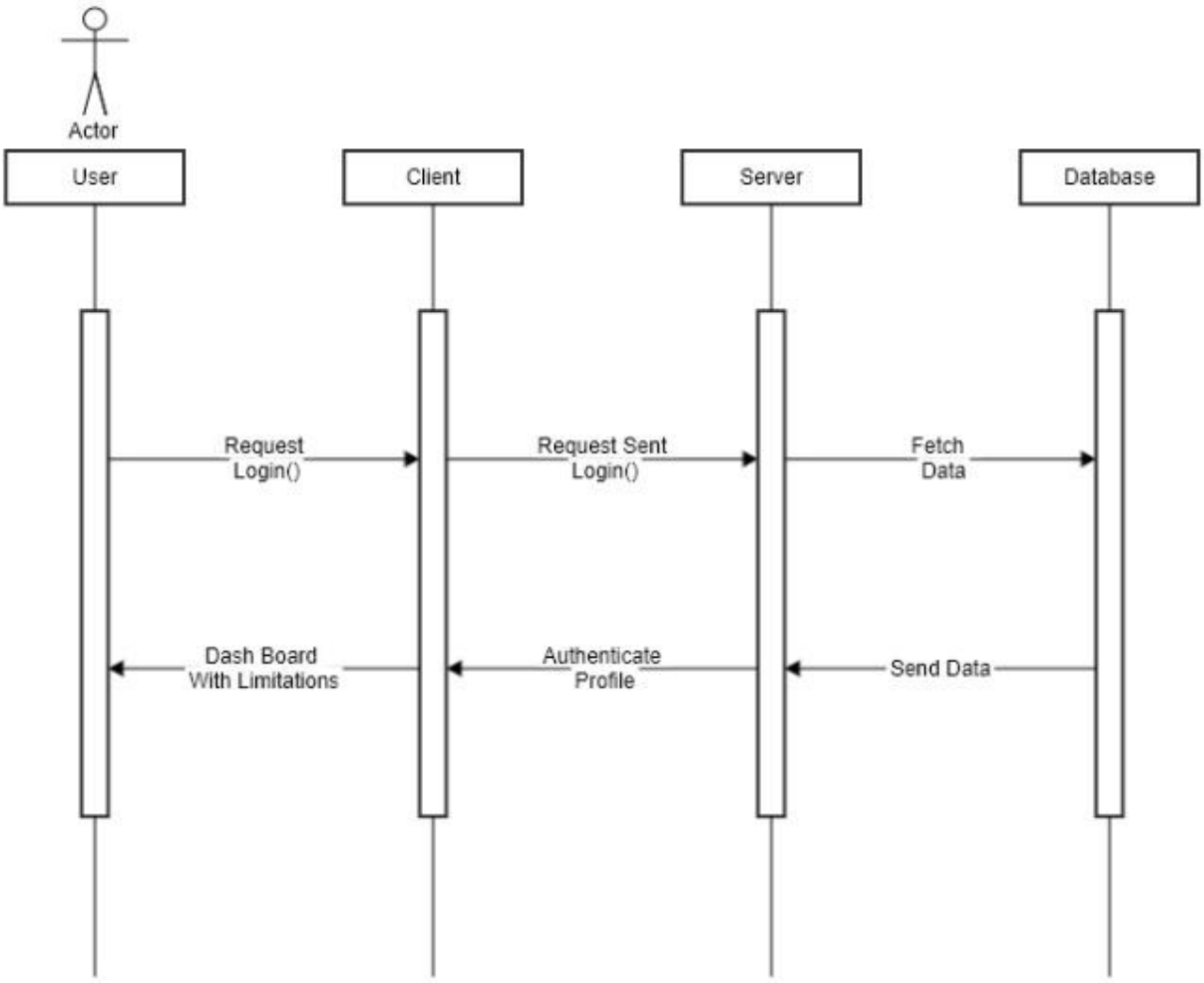


7.4 Sequence Diagram

Administrator

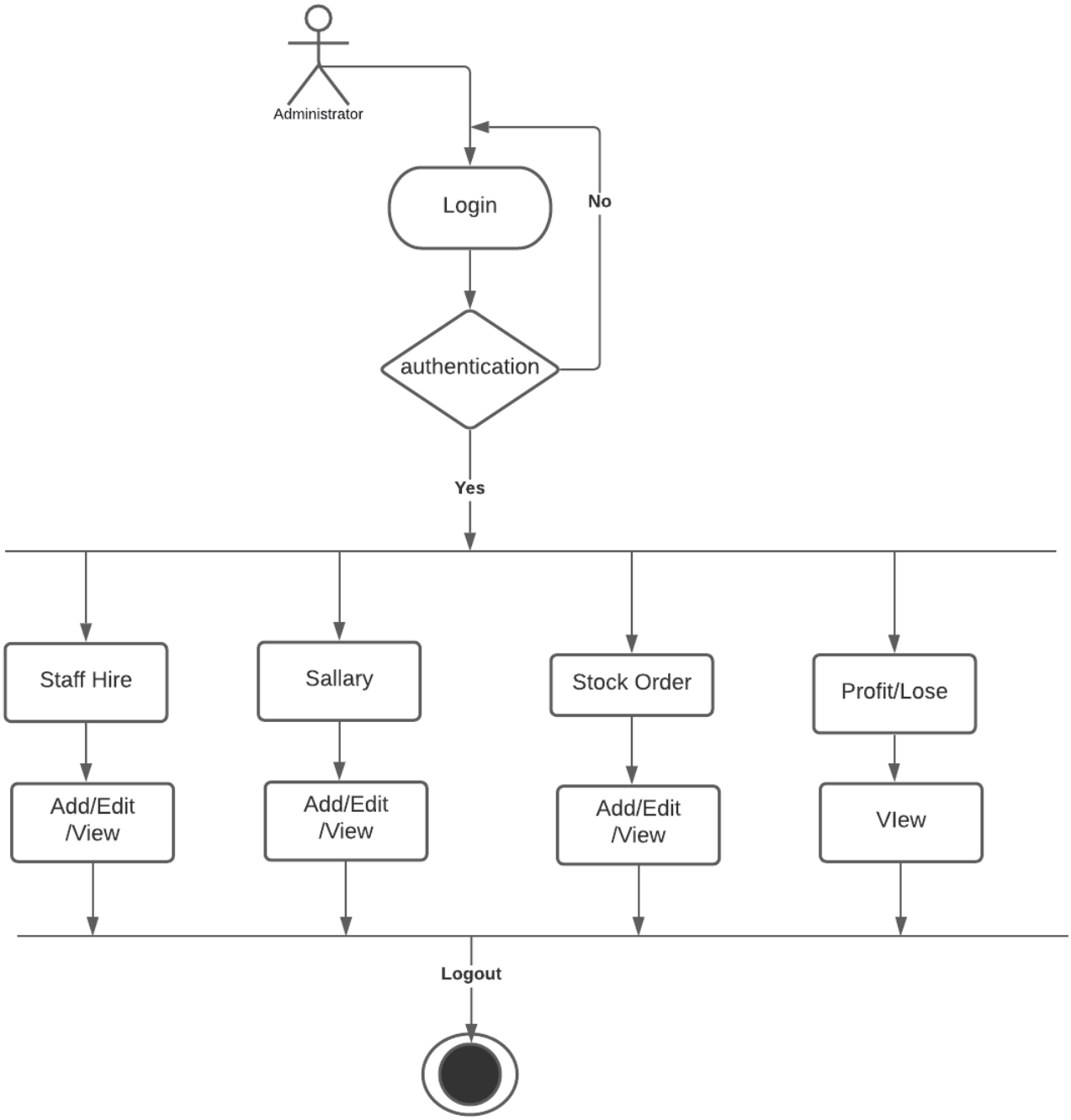


User

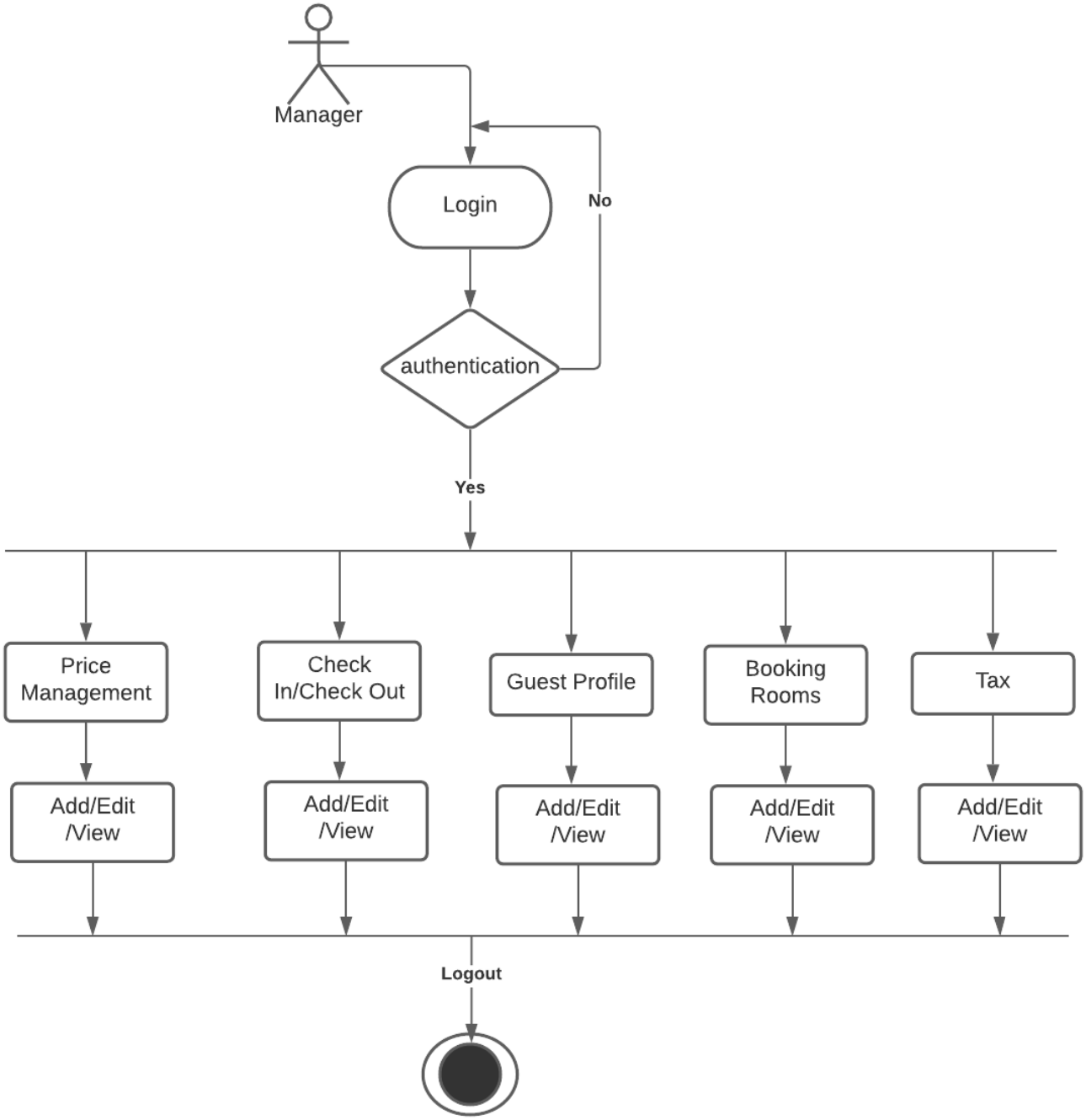

Actor
User
Client
Server
Database
Request
Login()
Request Sent
Login()
Fetch
Data
Dash Board
With Limitations
Authenticate
Profile
Send Data

7.5 Activity Diagrams

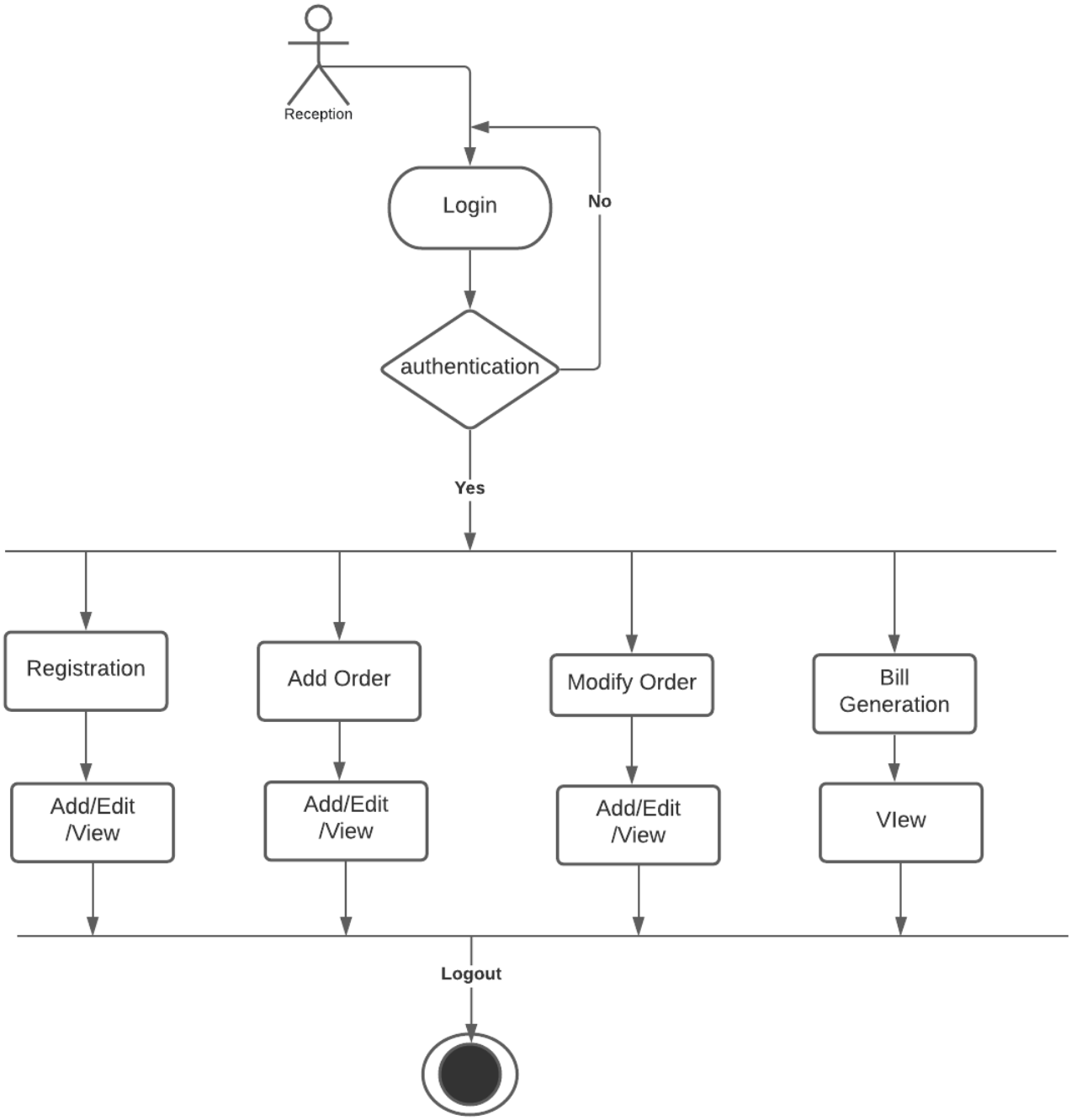
Asministrator



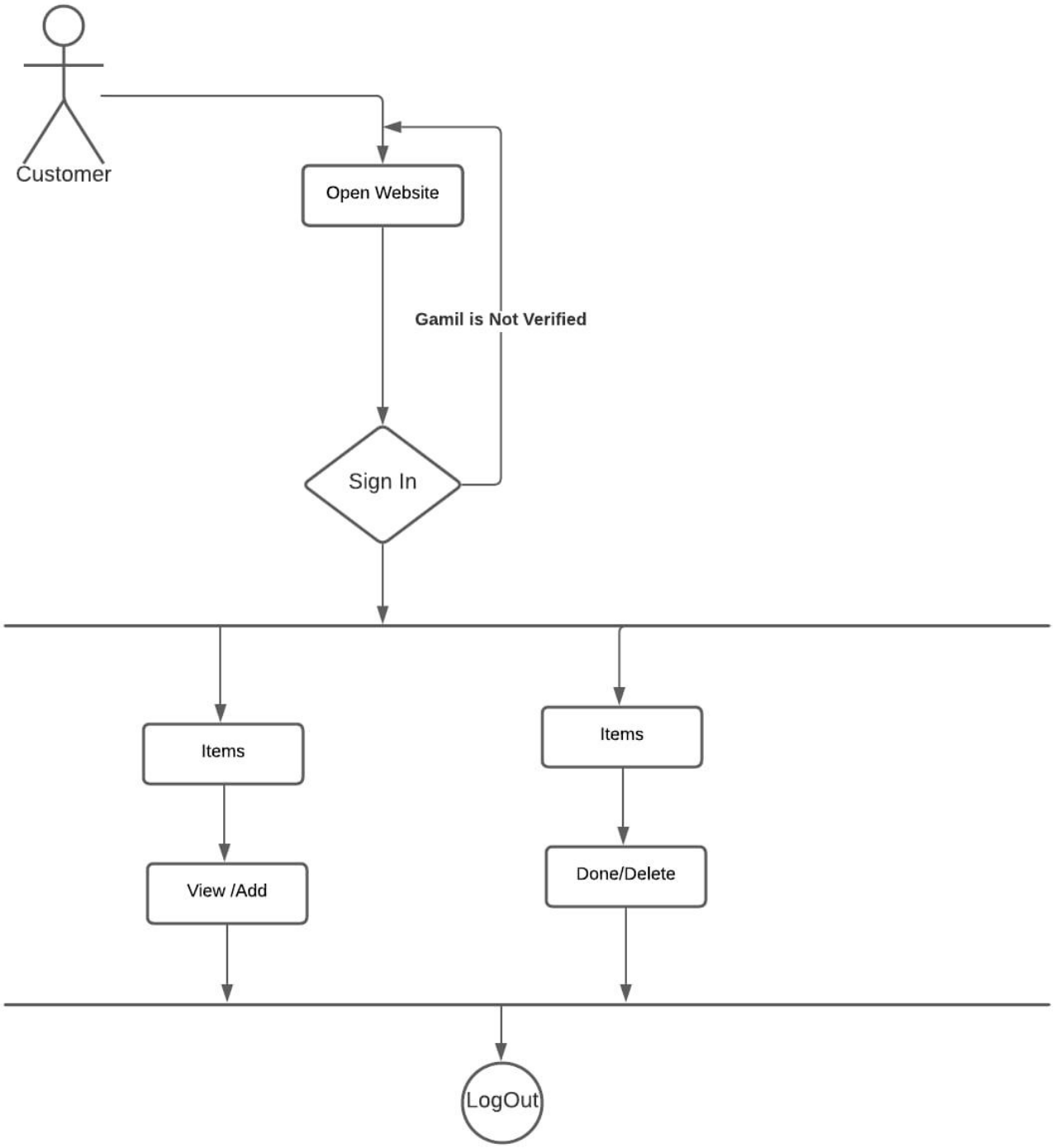
Manager


Manager
Login
No
authentication
Yes
Price Management
Check In/Check Out
Guest Profile
Booking Rooms
Tax
Add/Edit /View
Add/Edit /View
Add/Edit /View
Add/Edit /View
Add/Edit /View
Logout

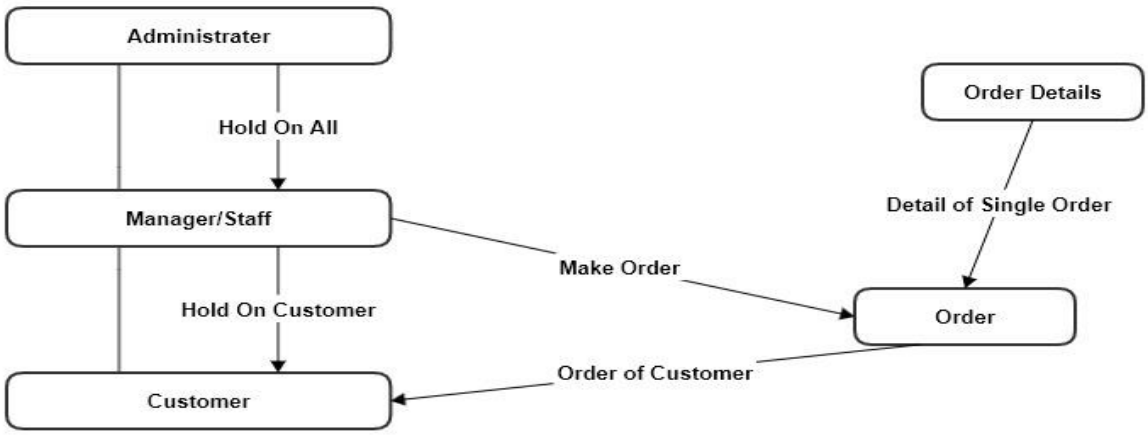
Receptionist:



Customer:

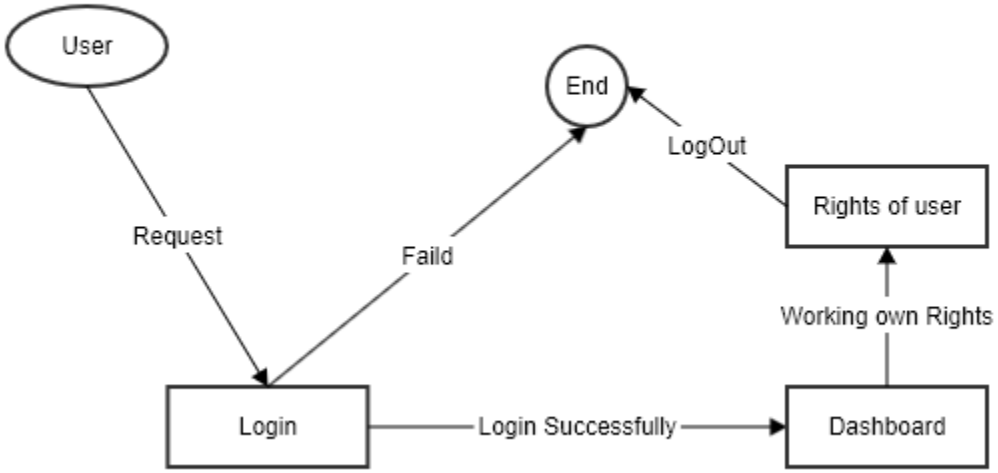

Customer
Open Website
Gamil is Not Verified
Sign In
Items
View /Add
Items
Done/Delete
LogOut

7.6 Collaboration Diagram

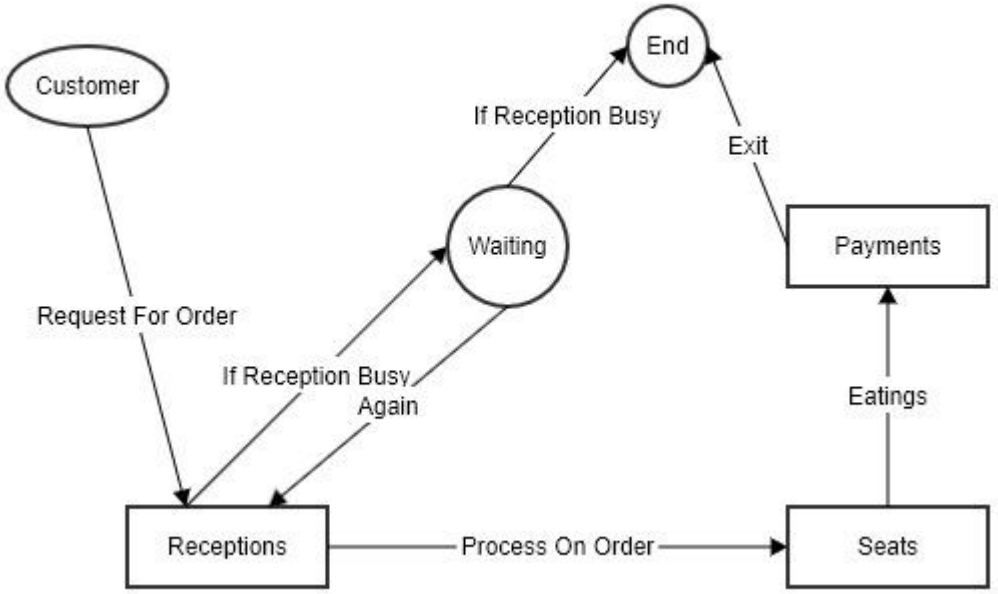


7.7 State Transition diagram

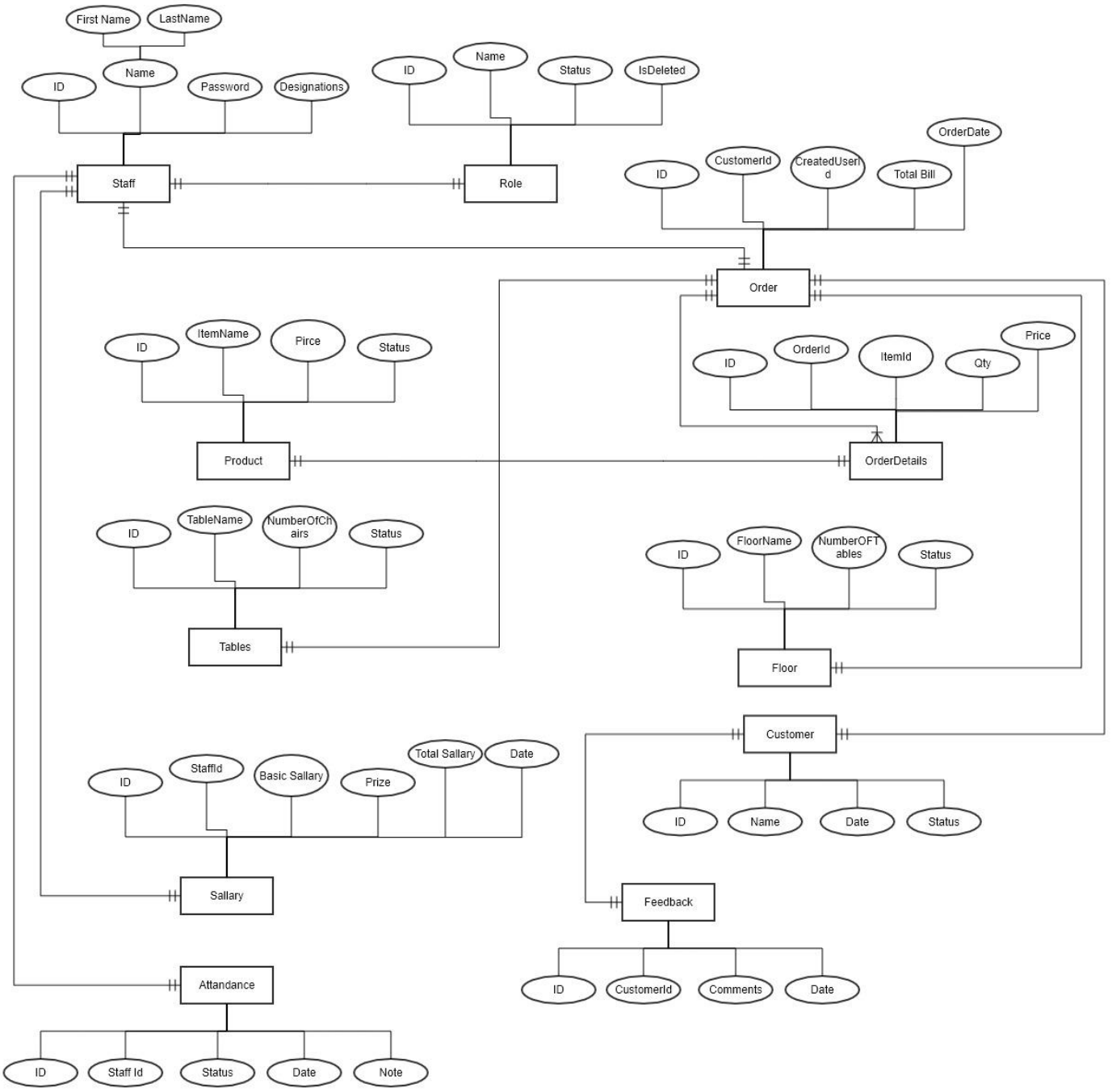
User



Customer



7.8 ERD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Feedback
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CustomerId
Comments
Date
Attandance
ID
Staff Id
Status
Date
Note

Tools & Technologies

7.9 Programming Languages

PHP

7.10 Databases/Data storages

MySQL,

7.11 Operating System

Window 10

Appendix A: Glossary

SRS:

Software Requirements Specification

HMS:

Hotel Management System

RRS:

Room Reservation System

Appendix B: Check List

Check List	Yes	No
I. Starting/Ending Dates	✓	
II. Project Scope	✓	
III. Product modules (covering all aspects of scope)	✓	
IV. System Features (covering scope)	✓	
V. Interface Requirements	✓	
VI. Non-Functional Requirements	✓	
VII. WBS	✓	
VIII. Tools and Technologies Detail (for implementation)	✓	
IX. Plagiarism Report	✓	

Appendix C: Supervisory Committee

For Approval of any two Consultant Teachers	
Teacher Consulted **Name: _____.** **Designation: _____.** **Comments:_____** **_____** **_____** **_____** **_____** **Signature: _____**	**Teacher Consulted** **Name: _____.** **Designation: _____.** **Comments:_____** **_____** **_____** **_____** **_____** **Signature: _____**
