Hotel Management System

POC

Low Level Design (LLD)

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1.0 Document Purpose

The document will provide a detailed description of the requirements for the Hotel Management System (HMS). This will allow for a complete understanding of what is to be expected from the newly introduced system which is to be constructed. The clear understanding of the system and its functionality will allow for the correct software to be developed for the end user and will be used for the development of the future stages of the project. This will provide the foundation for the project. From this document, the Hotel Management System can be designed, constructed, and finally tested.

This document will be used by the system development team which is constructing the HMS and the hotel end users. The Project team will use the document to fully understand the expectations of this HMS to construct the appropriate software. The hotel end users will be able to use this document as a "test" to see if the construction team will be constructing the system to their expectations. If it is not to their expectations the end users can specify how it is not to their liking and the team will change the document to fit the end users' needs.

2.0 Product Scope

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

The system will be able to handle many services to take care of all customers in a quick manner. As a solution to the large amount of file handling happening at the hotel, this software will be used to overcome those drawbacks. Safety, ease of use and most importantly the efficiency of information retrieval are some benefits the development team is going to present with this system. The system should be user appropriate, easy to use, provide easy recovery of errors and have an overall end user high subjective satisfaction.

3.0 Intended Audience

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

There are three user levels in the Hotel Management System of a Hotel.

I. Owner
II. Manager
III. Receptionist

Characteristics of User Classes

Owner:

Hotel owner have the privilege of Monitoring and authorization of all the tasks handled by the system. The Owner can access every function performed by the system. Owner of the company as well as the system can access the administration panel which is considered the core of the system. As the main authorized person of the company, the owner gets the ability to manage the other users including their user levels and privileges. Meanwhile he will be able to take all the kinds of reports available in the system i.e. reports of staff, reports of rooms, reports of guests. As the owner of the system and the company he has the power to set room rates as well. Hotel owner have the right to delete the staff member from the system database.

Manager:

The Manager is responsible for managing resources available in the hotel management system. The 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 workload done by the owner that cannot be assigned to the receptionist, as those tasks seem much more 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. The Manager has abilities such as, adding new staff members 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.

Receptionist:

As a hotel receptionist, his/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. The Receptionist plays the boundary role of the system. He or she can perform limited functions such as registering new guests to the system. They can see the bookings of customers and have the powers to add, update and delete the guest details. They can book rooms for the customers and generate bill Sending email reminders to clients for booking confirmation and if customers don't come in 24 hrs, the booking is canceled by the receptionist.

4.0 Background, Objectives

4.1 Project Background

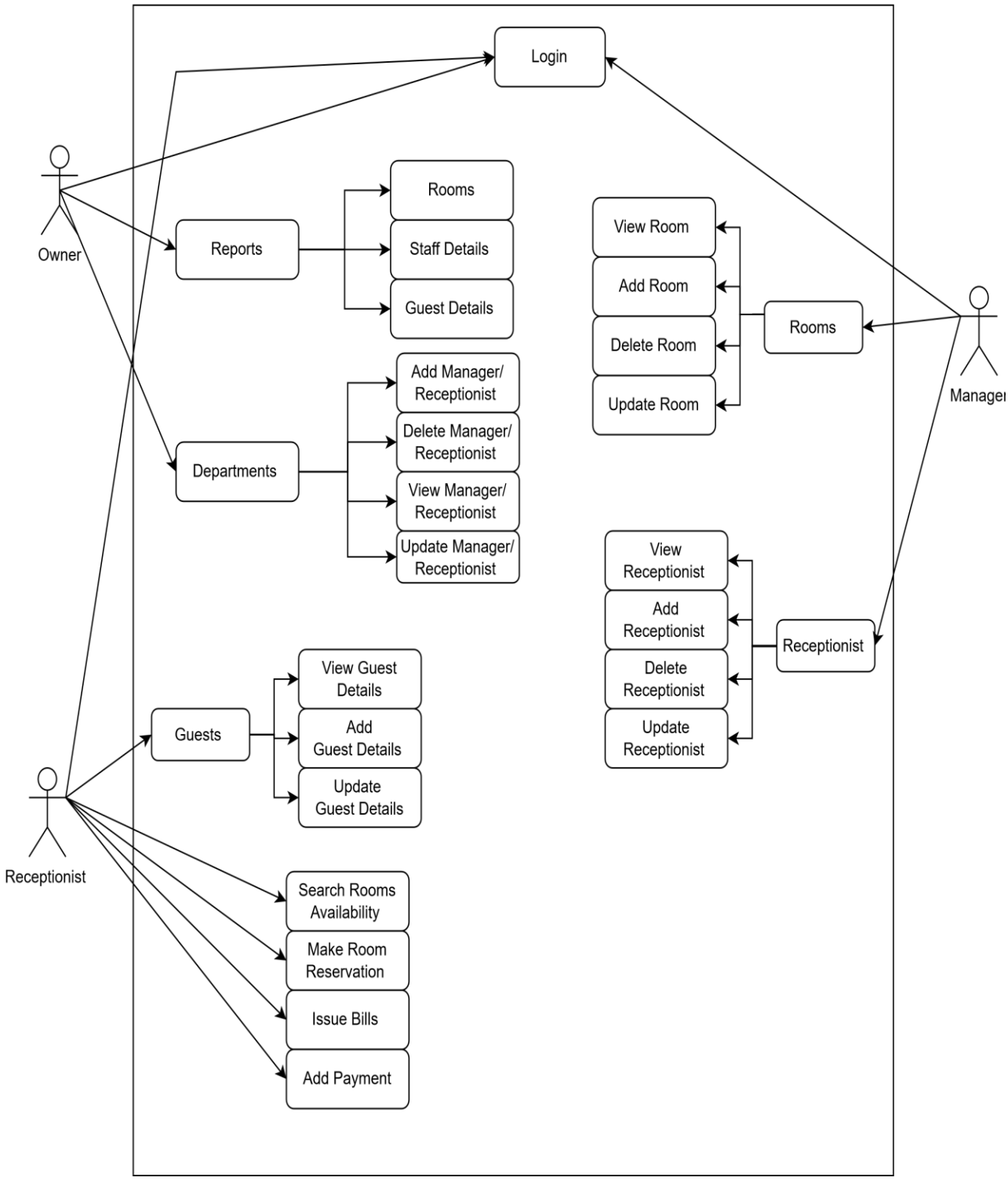
A hotel is a hive of operations that include front desk, booking and reservations, finance, inventory management, quality management, Room Services, and others. All these operations occur at the same time, making manual management impossible.

4.2 Project Objective

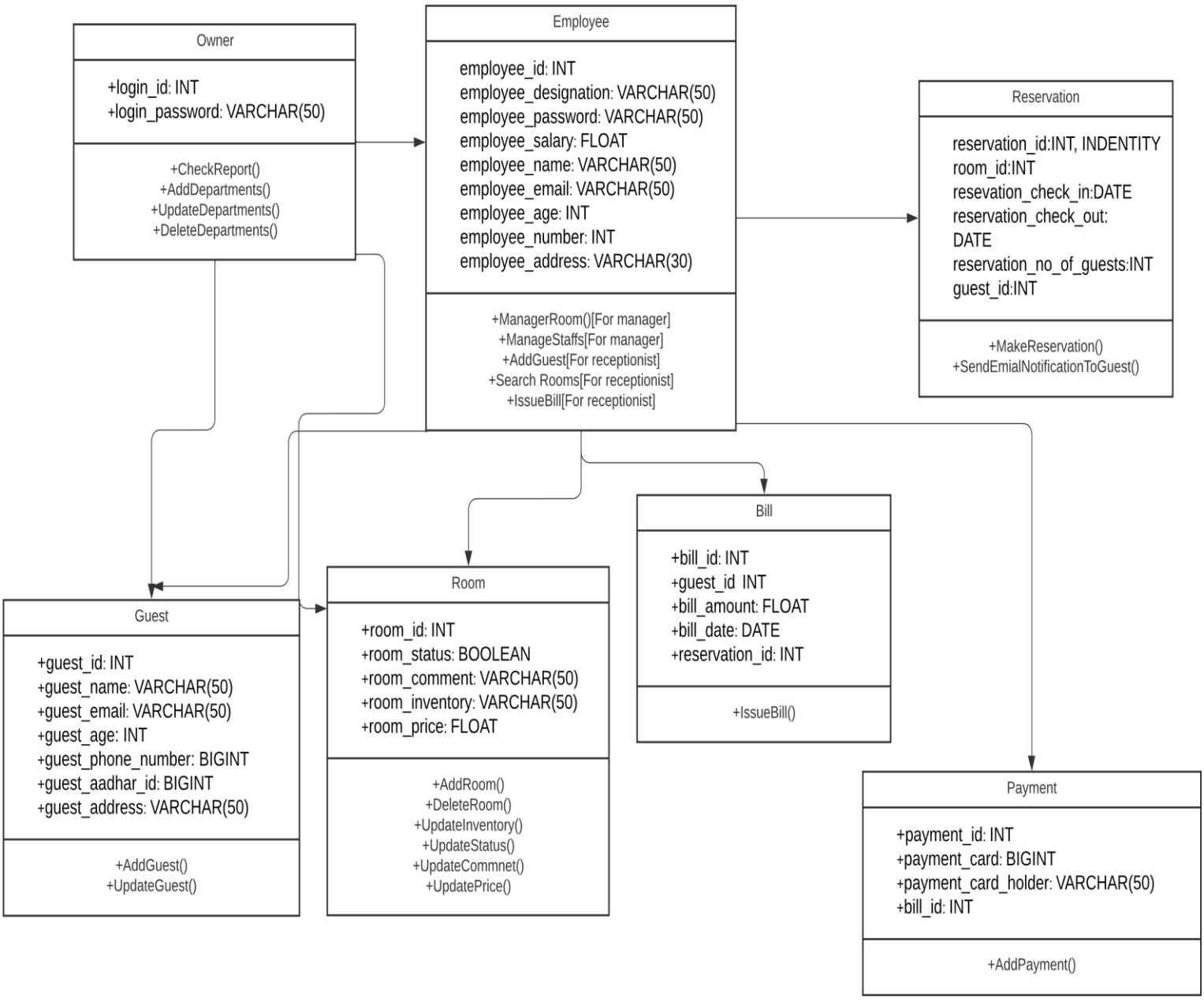
In this Hotel Management System, we are making a system which can ease the hive of operations happening in the hotel like booking and reservation, salary/finance management, Room Services, and others. Now to have a neat and clear way of management we have deduced that there will be three main end users. The hierarchical flow from top to bottom would be Owner, Manager, Receptionist.
Their functionalities would be: -

Owner	**Manager**	**Receptionists**
Reports (Room booked/vacant/canceled)	All Room Details	Search Room
Reports (Staff)	Room (Add/Update/Delete	Make Reservations
Reports (Guests Details)	Receptionists [Staff] (Add/Update/Delete)	Guest Details (View/Add/Update)
Department (View/Add/Update/Delete) of Manager and Receptionist	Inventory - Room facilities (Add/Update/Delete/view)	Issue of bill
		Add Payment

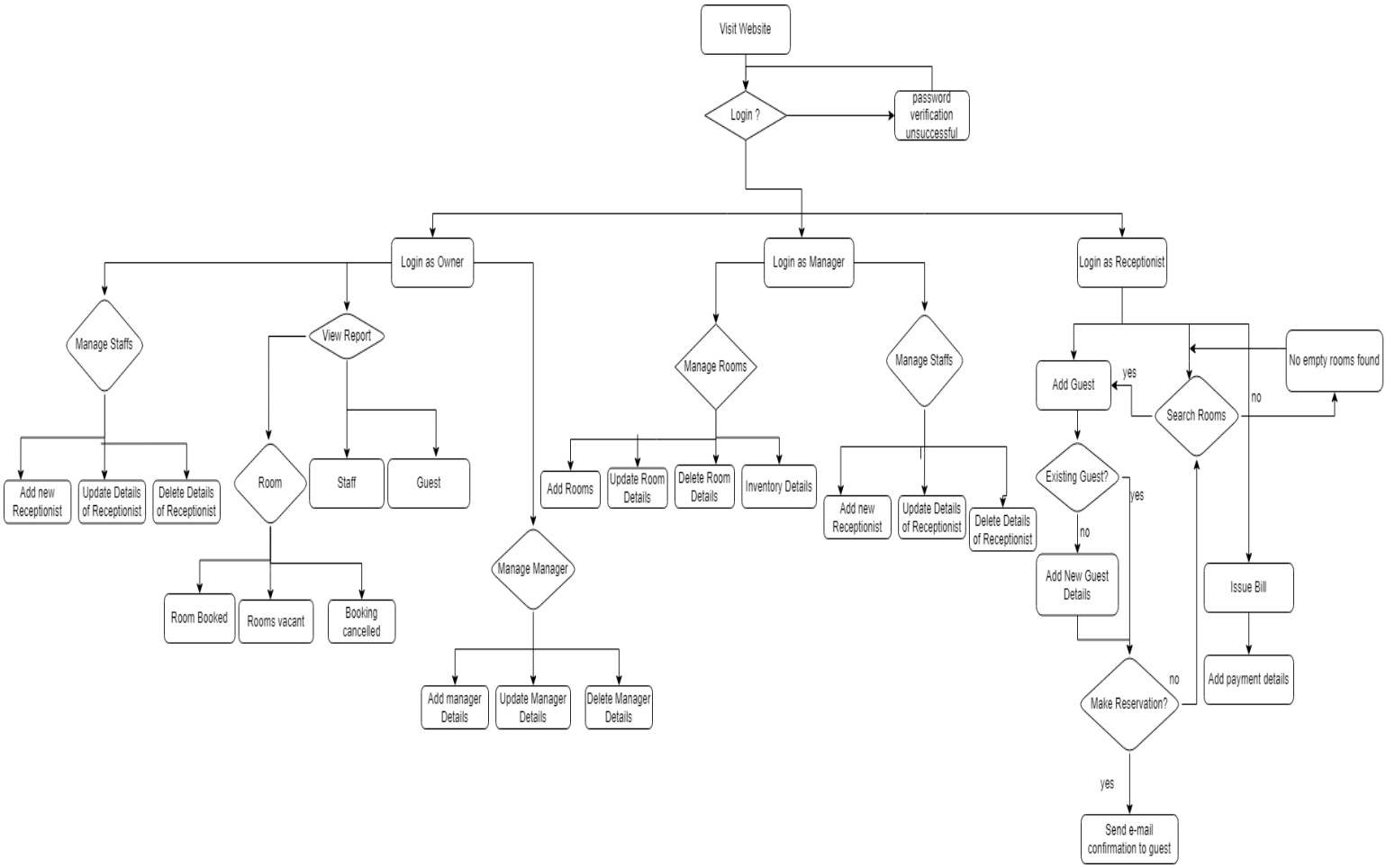
5.0 Use-Case Diagram



6.0 Class Diagram



7.0 Flow Chart



8.0 Data Models

T_Owner

Login id, Login Pass

PK	login_id	INT
	login_password	VARCHAR(50)

T_Employee

ECode[auto], Name, Email, Age, Phone Number, Aadhaar ID, Address, Salary, Password

PK	employee_id	INT, IDENTITY
	employee_designation	VARCHAR(50)
	employee_password	VARCHAR(50)
	employee_salary	FLOAT
	employee_name	VARCHAR(50)
	employee_email	VARCHAR(50)
	employee_age	INT
	employee_number	INT
	employee_address	VARCHAR(100)

T_Room

Room Id[Auto], Status, Comment, Inventory, Price

PK	room_id	INT, IDENTITY
	room_status	BOOLEAN
	room_comment	VARCHAR(50)
	room_inventory	VARCHAR(50)
	room_price	FLOAT

T_Room_Reservation

Reservation Id[auto], Room Id, No. Of rooms, Check In, Check Out, No. of Guests

PK	reservation_id	INT, IDENTITY
FK	room_id	INT
	reservation_check_in	DATE
	reservation_check_out	DATE
	reservation_no_of_guests	INT
FK	guest_id	INT

T_Guest

Member ID[Auto], Name, Email, Age, Phone Number, Aadhaar ID, Address

PK	guest_id	INT, IDENTITY
	guest_name	VARCHAR(50)
	guest_email	VARCHAR(50)
	guest_age	INT
	guest_phone_number	INT
	guest_aadhaar_id	INT
	guest_address	VARCHAR(100)

T_Bill

Bill Id[auto], Member ID, Amount, Date of billing, Reservation Id

PK	bill_id	INT, IDENTITY
FK	guest_id	INT
	bill_amount	FLOAT
	bill_date	DATE
FK	reservation_id	INT

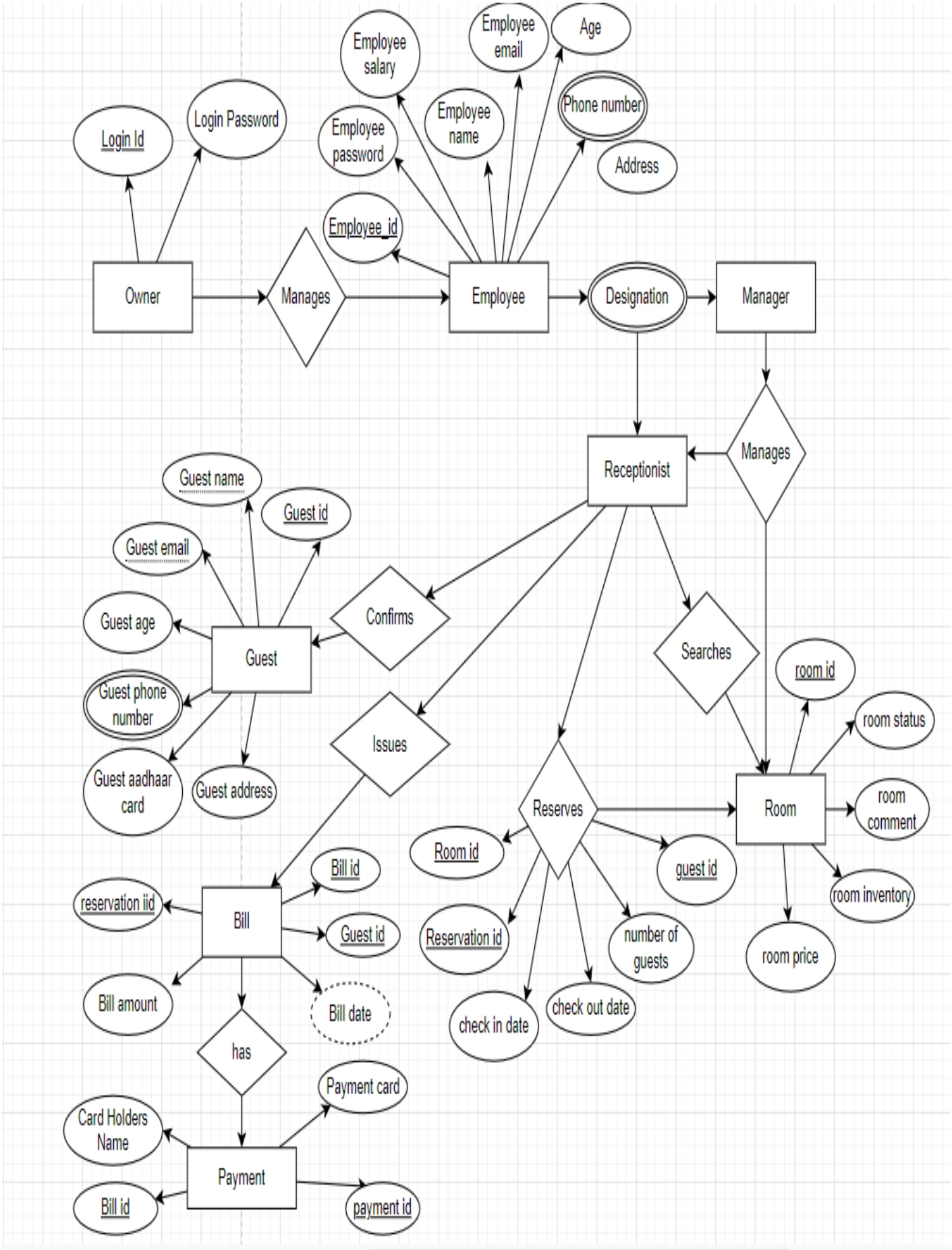
T_Payment_Details

Bill Id, Card No, Holder Name

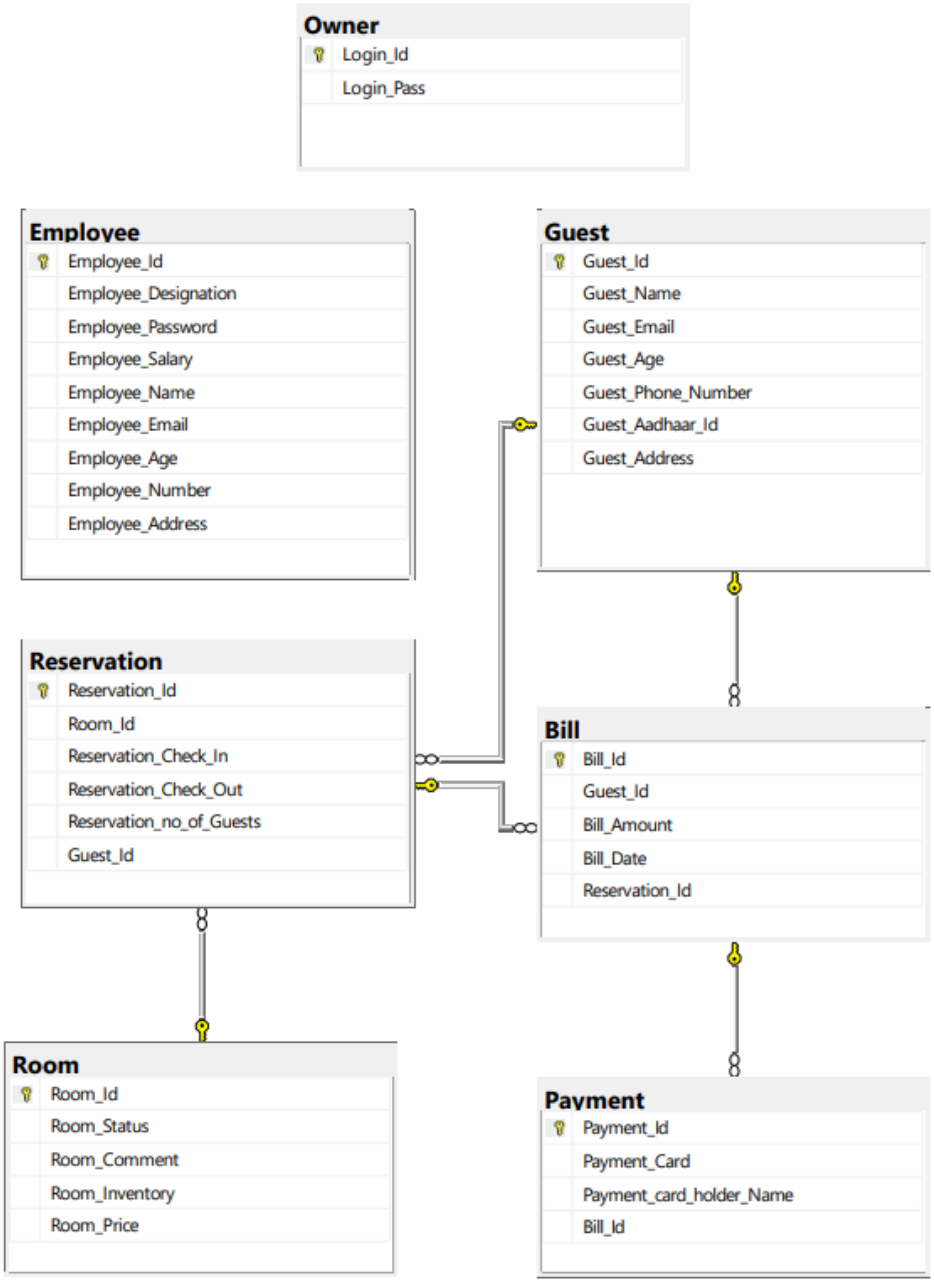
PK	payment_id	INT, IDENTITY
	payment_card	INT
	payment_card_holderName	VARCHAR(50)
FK	bill_id	INT

*PK - Primary Key,
FK - Foreign Key

9.0 ER Diagram



10.0 Database Diagram



11.0 API Canvas

Management Services	Path	Verb	API Description	Role	Auth
hotel-mgmt-svcs	/departments/manager	POST	Manager Registration	Owner	True
hotel-mgmt-svcs	/departments/receptionist	POST	Receptionist Registration	Owner	True
hotel-mgmt-svcs	/receptionist	POST	Receptionist Registration	Manager	True
hotel-mgmt-svcs	/departments/manager	PUT	Update Manager	Owner	True
hotel-mgmt-svcs	/departments/receptionist	PUT	Update Receptionist	Owner	True
hotel-mgmt-svcs	/receptionist	PUT	Update Receptionist	Receptionist	True
hotel-mgmt-svcs	/departments/manager	DELETE	Delete Manager	Owner	True
hotel-mgmt-svcs	/departments/receptionist	DELETE	Delete Receptionist	Owner	True
hotel-mgmt-svcs	/receptionist	DELETE	Delete Receptionist	Receptionist	True
hotel-mgmt-svcs	/room	POST	Add Room	Manager	True
hotel-mgmt-svcs	/room	PUT	Update Room	Manager	True
hotel-mgmt-svcs	/room	DELETE	Delete Room	Manager	True
hotel-mgmt-svcs	/room	POST	Add Room	Receptionist	True
hotel-mgmt-svcs	/room	PUT	Update Room	Receptionist	True
hotel-mgmt-svcs	/guest	POST	Add Guest	Receptionist	True
hotel-mgmt-svcs	/guest	PUT	Update Guest	Receptionist	True
hotel-mgmt-svcs	/payment	POST	Add Payment	Receptionist	True
hotel-mgmt-svcs	/payment	PUT	Update Payment	Receptionist	True
hotel-mgmt-svcs	/reservations	POST	Add Reservation	Receptionist	True
hotel-mgmt-svcs	/reservations	PUT	Update Reservation	Receptionist	True
hotel-mgmt-svcs	/reservations	DELETE	Delete Reservation	Receptionist	True
hotel-mgmt-svcs	/search/room	GET	Search Room	Receptionist	True
hotel-mgmt-svcs	/bill generate	GET	Generate Bill	Receptionist	True
hotel-mgmt-svcs	/login	POST	User Login	Owner	True
hotel-mgmt-svcs	/login	POST	User Login	Manager	True

hotel-mgmt-svcs	/login	POST	User Login	Receptionist	True
hotel-mgmt-svcs	/get reports/guest	GET	Guest Details	Owner	True
hotel-mgmt-svcs	/get reports/employee	GET	Employee Details	Owner	True
hotel-mgmt-svcs	/get reports/rooms	GET	Room Details	Owner	True