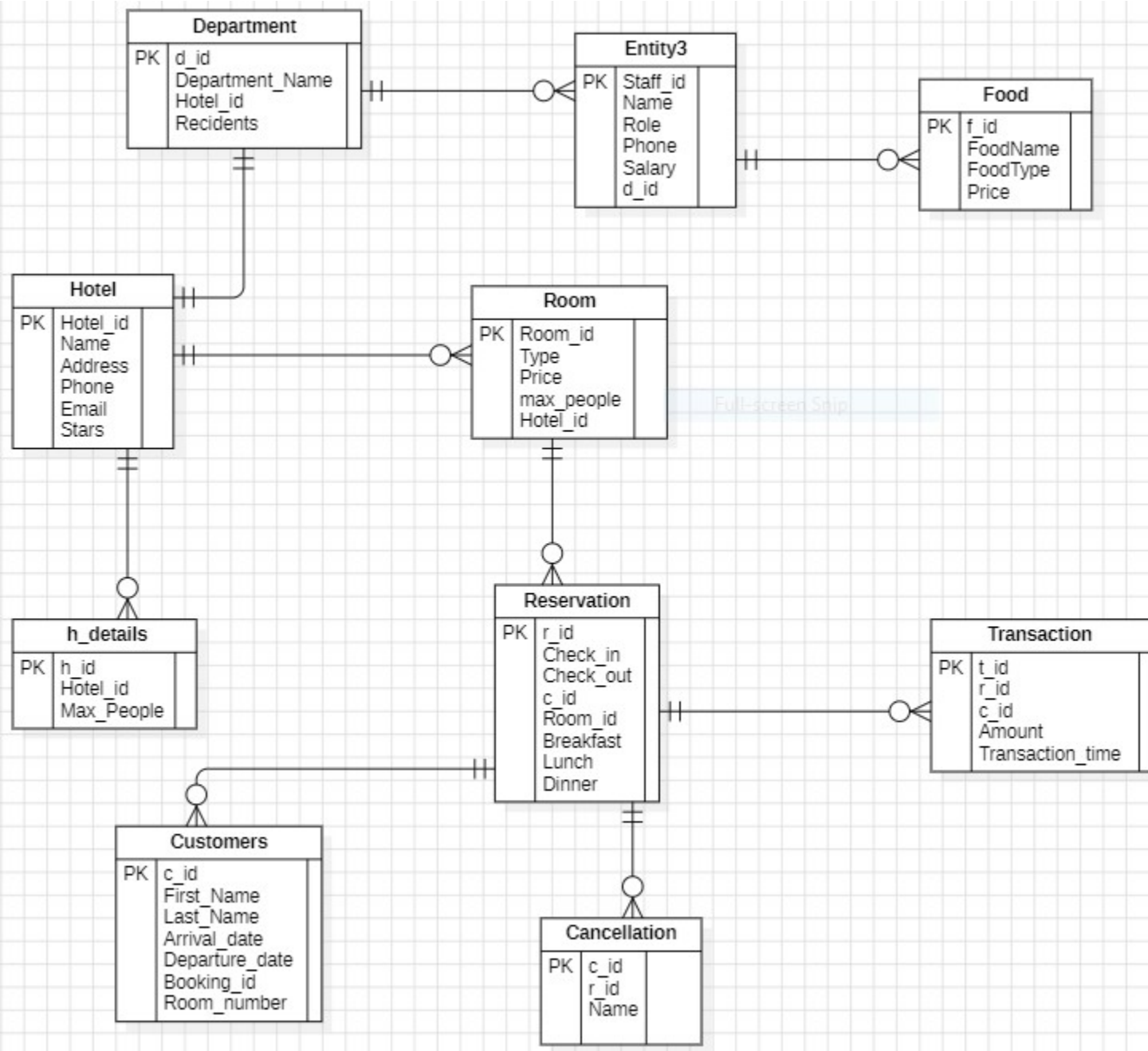
Hotel Management System Project Using SQL

A hotel management system typically involves managing various aspects of hotel operations, such as guest reservations, room assignments, billing, staff management, and inventory control. Implementing a hotel management system using only SQL would require designing a relational database schema and writing SQL queries to perform CRUD (Create, Read, Update, Delete) operations on the database tables. Below is a description of the key components and tables that could be included in such a project:



Department Table :

This table likely represents the departments within a hotel or a similar organization, where each department has a unique ID, a name, and is associated with a particular hotel. Additionally, it tracks the number of residents within each department.

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+-----------------------------+------------+------+-----+---------+------------+
| Field                       | Type       | Null | Key | Default | Extra      |
+-----------------------------+------+----+------+------+----------+---------+
| d_id                        | int(11)    | NO   | PRI | NULL    |            |
| Department_Name             |char(20)    | NO   |     | NULL    |            |
| Hotel_id                    | int(11)    | NO   |     | NULL    |            |
| Recidents                   | int(11)    | NO   |     | NULL    |            |
+-----------------------------+-----------+-------+------+----------+---------+
```

Staff Table :

The "staff" table contains information about employees. Each employee is assigned a unique identifier (staff_id) that auto-increments for each new entry. Other fields include the employee's name, role, phone number, salary, and the department ID they belong to. The department ID (d_id) serves as a foreign key linking to the corresponding department in the "Department" table.

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+----------+-------------------+-------+--------+---------+----------------------+
| Field    |     Type          | Null | Key     | Default |   Extra              |
+----------+-------------------+-------+--------+---------+----------------------+
| staff_id | int(11)           | NO   | PRI    | NULL    | auto_increment       |
| name     | varchar(25)       | NO   |        | NULL    |                      |
| role     | varchar(25)       | NO   |        | NULL    |                      |
| phone    | varchar(20)       | YES  |        | NULL    |                      |
| salary   | decimal(10,2)     | NO   |        | NULL    |                      |
| d_id     | int(11)           | YES  | MUL    | NULL    |                      |
+----------+-------------------+-------+--------+----------+--------------------- --+
```

Food Table :

The "food" table contains details about various food items available. It includes a unique identifier (f_id) for each food item, which auto-increments for new entries. Other fields include the name of the food (food_name), the type of food (food_type), and the price of the food item.

Field	Type	Null	Key	Default	Extra
f_id	int(11)	NO	PRI	NULL	auto_increment
food_name	varchar(25)	NO		NULL	
food_type	varchar(30)	NO		NULL	
price	decimal(10,2)	NO		NULL	

Hotel Table :

The "hotel" table records essential details about hotels, such as their ID, name, address, phone number, email, and star rating. It serves as a central repository for information related to various hotels in the system.

Field	Type	Null	Key	Default	Extra
hotel_id	int(11)	NO	PRI	NULL	auto_increment
name	varchar(25)	NO		NULL	
address	varchar(30)	NO		NULL	
phone	int(11)	NO		NULL	
gmail	varchar(30)	YES		NULL	
stars	int(11)	YES		NULL	

Room Table :

The "room" table manages information regarding different rooms available in hotels, storing details such as room ID, type, price, maximum occupancy, and the corresponding hotel ID. This table facilitates the organization and allocation of rooms within the system.

Field	Type	Null	Key	Default	Extra
room_id	int(11)	NO	PRI	NULL	
room_type	varchar(25)	YES		NULL	
price	decimal(10,2)	YES		NULL	
max_people	int(11)	YES		NULL	
hotel_id	int(11)	YES	MUL	NULL	

H_Details Table :

The "h_details" table contains information related to hotel details, including the hotel ID, maximum number of people allowed, and a unique identifier for each hotel (h_id). This table helps manage and organize data about hotels and their capacity within the system.

Field	Type	Null	Key	Default	Extra
h_id	int(11)	NO	PRI	NULL	
hotel_id	int(11)	YES	MUL	NULL	
max_people	int(11)	YES		NULL	

Reservation Table :

The "reservation" table stores data about reservations, including reservation ID (r_id), check-in and check-out dates, guest ID (g_id), room ID (room_id), and meal preferences (breakfast, lunch, dinner). It helps manage bookings and meal arrangements for guests staying at the hotel.

Field	Type	Null	Key	Default	Extra
r_id	int(11)	NO	PRI	NULL	auto_increment
check_in	date	NO		NULL	
check_out	date	NO		NULL	
g_id	int(11)	YES		NULL	
room_id	int(11)	YES	MUL	NULL	
breakfast	tinyint(1)	YES		NULL	
lunch	tinyint(1)	YES		NULL	
dinner	tinyint(1)	YES		NULL	

Customers Table :

The "customers" table contains information about hotel guests, including customer ID (c_id), first name, last name, phone number, arrival date, departure date, booking ID (booking_id), and room number. It helps in managing guest details and room assignments during their stay at the hotel.

Field	Type	Null	Key	Default	Extra
c_id	int(11)	NO	PRI	NULL	auto_increment
first_name	varchar(50)	NO		NULL	
last_name	varchar(50)	NO		NULL	
phone_no	int(11)	YES		NULL	

| arrival_date | date | NO | | NULL | |

| departure_date | date | NO | | NULL | |

| booking_id | int(11) | NO | | NULL | |

| room_number | int(11) | NO | | NULL | |

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Transaction Table :

The "transaction" table stores records of financial transactions within the hotel system. It includes transaction ID (t_id), reservation ID (r_id) and customer ID (c_id) if applicable, transaction amount, and timestamp of the transaction. This table facilitates tracking of payments and financial activities associated with reservations and customer transactions.

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| Field | Type | Null | Key | Default | Extra |

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| t_id | int(11) | NO | PRI | NULL | auto_increment |

| r_id | int(11) | YES | MUL | NULL | |

| c_id | int(11) | YES | MUL | NULL | |

| amount | decimal(10,2) | YES | | NULL | |

|transaction_time|timestamp | NO | current_timestamp() | on update current_timestamp() |

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Cancellation Table :

The "cancellation" table tracks cancellations made within the hotel system. It contains a unique cancellation ID (cancellation_id) for each cancellation record, along with the associated reservation ID (r_id) and the name of the person who canceled (name). This table allows for the management and recording of canceled reservations.

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| Field | Type | Null | Key | Default | Extra |

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| cancellation_id | int(11) | NO | PRI | NULL | auto_increment |

| r_id | int(11) | YES | MUL | NULL | |

| name | char(25) | YES | | NULL | |

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