**Assignment 6**

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Upload the synopsis for your mini project to be implemented.

The synopsis shall include:

1. **Problem statement** – Hotel management system:

To create a User Friendly and Interactive Hotel Management System using necessary programming languages and Relational Database Model.

1. **Objectives** – The objective of Hotel Management System is to regulate the functioning of a hotel including interaction with customers for booking purposes and with hotel staff for customer data and room data. It facilitates easy storage of the customer details and makes it convenient for the staff to maintain the records. It is a GUI based application implemented in Python.
2. **Functional requirements** –

* 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
* Check-in customers
* The system shall allow reservations to be modified without having to reenter all the customer information
* Checkout customers
* Track all meals purchased in the hotel (restaurant and room service).
* Record payment and payment type for meals
* Accept reservations for the restaurant and room service
* 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).
* 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

1. ER diagram :

Diagram

Description automatically generated

1. **Relational schemas obtained from ER :**

Diagram

Description automatically generated

**FUNCTIONAL DEPENDENCIES:**

1. **Table Name – customer**

CustomerID -> CustName

CustomerID -> Gender

CustomerID -> Contact

CustomerID -> Email

CustomerID -> Address

Contact -> CustomerID

Contact -> CustName

Contact -> Gender

Contact -> Email

Contact -> Address

Email -> CustomerID

Email -> CustName

Email -> Gender

Email -> Contact

Email -> Address

1. **Table Name – room**

(check\_in, check\_out) -> days

1. **Table Name – roomdetails**

RoomNo -> floor

RoomNo -> RoomType

1. **Table Name – restaurant**

(restname, meal) -> mealCost

1. **Table Name – amenities**

amen\_name -> amen\_cost

1. **Table Name – employee**

EmpID -> EmpName

EmpID -> RoomNo

EmpID -> Contact

EmpID -> Desig

Contact -> EmpID

Contact -> EmpName

Contact -> RoomNo

Contact -> Desig

1. **Table Name – feedback**

CustomerID -> CustName

**NORMALIZATION:**

**1NF** - All the tables were already in 1NF form as all the attributes were atomic and single valued.

**Customer :**

**Primary key: CustomerID**

**Prime attributes:** CustomerID, Contact.

**Non- Prime attributes:** CustName, Gender, Email, Address

There is no partial dependency, so the table is in 2NF.

There is no transitive dependency, so the table is in 3NF.

**Employee :**

**Primary key :** EmpID

**Prime attributes :** EmpID, Contact

**Non-Prime attributes:** EmpName, RoomNo, Desig

The table is in 2NF and 3NF as there is no partial and transitive dependency.

**Roomdetails:**

**Primary key :** RoomNo

**Prime attributes :** RoomNo

**Non-Prime attributes –** Floor,RoomType

The table is in 2NF AND 3NF form.

**Restaurant :**

The table is in 2NF and 3NF as there is no partial and transitive dependency.

**Amenities:**

The table is in 2NF and 3NF as there is no partial and transitive dependency.

**Feedback :**

The table is in 2NF and 3NF as there is no partial and transitive dependency.

**Room :**

To normalize room table, we can create a separate table of RoomNo, check\_in, check\_out and days since it contains partial dependency.

Diagram

Description automatically generated with medium confidence