

Phase-1: Hotel Chain Database Management System

Entities:

1. Hotel

- a. Hotel Branch ID (Pkey)
- b. Hotel branch name
- c. Hotel Manager's employee id (Foreign Key)
- d. Hotel Location (Composite Attribute {Street Address, City, Country})
- e. Hotel stars

2. Employee:

- I. Employee ID (PKey)
- II. Employee Name (Composite Attribute {F.name, M.name, L.name})
- III. Employee Phone Number (candidate key)
- IV. Employee E-mail Address (candidate key)
- V. Employee D.O.B (Composite Attribute {DD, MM, YY})
- VI. Employee Joining date
- VII. Employee Salary
- VIII. Employee Position (Subclass Identifier)
- IX. Employee status
- X. Respective Manager
- XI. Employee branch (Foreign Key)

Subclass:

- 1. Accountant
 - a. Accountant ID
 - b. Account Division
- II. Service Staff
 - a. Service Staff ID
 - b. Service Staff Division ({RC, BC, FC, Reception, Club})
- III. Manager
 - a. Manager ID
 - b. Manager Department

3. Rooms:

- I. Room Number (Primary Key)
- II. Room Type
- III. Room per night rate
- IV. Room status
- V. No of Guests
- VI. Check-in/ Check-out date
- VII. Hotel ID (Foreign Key)
- VIII. Floor no.

4. Members

- a. Member ID (Primary Key)
- b. Member tier
- c. Member Name (Composite Attribute {F.name, M.name, L.name})
- d. Email ID
- e. Member D.O.B (Composite Attribute {DD, MM, YY})
- f. No. of Stays

5. Guests (Weak Entity with PKey = Is Member + Hotel + Room No)

- a. Is Member
- b. Member ID (Can be NULL)
- c. PKey
- d. Hotel ID (Foreign Key)
- e. Room ID
- f. Check in Date
- g. Cost (Derived from Check in – check out * room cost and a discount factor depending on member (count of stays and DOB) , room type, facilities)
- h. Facilities Aailed (Multivalued)

6. Pets (Weak Entity with Pkey = PetID + GuestID)

- a. PKey
- b. GuestID (Foreign Key)
- c. Pet type
- d. Pet food time (Composite {H, M, S})
- e. Caretaker Employee (Foreign Key)

7. Clubs and recreation (Weak Entity with Pkey = HotelID + Type)

- a. Pkey
- b. Type
- c. Service Expenditure
- d. Total Income (Composite: {M, Income})

8. Hotel Finances (Weak Entity Type with Pkey = Hotel ID + Month + Year)

- a. Pkey
- b. Month
- c. Year
- d. Electricity Bill
- e. Water Bill
- d. Total Expenditure (Derived data type: Total Employee salary + Clubs service expenditure + Electricity Bill + Water Bill)
- e. Total Income (Club Income + Room Income)
- f. Profit (Total Income – Total Expenditure)