SOFTWARE REQUIREMENTS SPECIFICATIONS

RESORT CHAIN

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OVERVIEW:

The mini world chosen for this project is a RESORT CHAIN.

This is a database for a resort chain of 4 resorts. All information pertaining to the functioning of the resorts is stored in the database. The entire database model represents real time booking of rooms and doesn't store pre booking of rooms by guests. This means that if a guest is in the database, then he/she is staying in the resort at that instant.

Some examples include the employees working in all the resort branches, the guests staying in each resort at a particular instant of time, the rooms in each resort, the financial record of each resort, members who have registered, service providers for extra services including spas, restaurants, entertainment and gaming.

The users of the database include the hotel management staff. Some examples include:

- Whenever a new guest arrives at a particular resort, a query is made to the database wherein that resorts rooms are checked to see the availability of a room. The "Members" entity is then queried to check whether or not the guest is an existing member. Accordingly the entity are updated. Once the guest leaves that particular record is deleted.

- The Finance department is another user of the database. In order to generate monthly/annual reports of the profit/sales/income of the resorts they use the various

parameters (Employee salaries, Profit from service providers, Income from guests, discount provided to guests etc.) to calculate the same.

Our database accounts for all the human interactions that take place with the resorts. That is, the guests, employees, the external companies/service providers affiliated to the resorts.

Any other factors like infrastructural requirements (Furniture, Electrical equipment etc) is not included.

DATABASE REQUIREMENTS:

(* represents the primary key)

1. **Five entity types:**

    a. Destination
        i. Hotel ID*
        ii. Hotel Name
        iii. Location
        iv. Hotel Manager
    b. Members
        i. Member ID*
        ii. First Name
        iii. Last Name
        iv. Package
        v. Address
        vi. Phone Number
        vii. Email ID
        viii. D.O.B
        ix. Date of Registration
        x. Monthly Registration Fee
    c. Employee
        i. Employee ID*
        ii. Working in Hotel
        iii. First Name
        iv. Last Name
        v. Phone Number

vi. Email Address
vii. Address
viii. Salary
ix. D.O.B
x. Manager ID

d. Hotel {1,2,3,4}
    i. Room Number*
    ii. Room Type
    iii. Price of Staying per day
    iv. Occupied or Not
    v. Is Member or Not
    vi. Checkout Date
e. Members guests:
    i. Member ID*
    ii. Hotel ID
    iii. Room Number
    iv. Check-In Date
    v. Check-Out Date
    vi. Cost of Staying (Derived: (Check_out_date - Check_in_Date)*Price of staying per day)
    vii. Facilities Used (Multivalued attribute)

2. Weak Entity Types:

a. Non Members guests: (Primary Key = Hotel ID + Room Number)
    i. First Name
    ii. Last Name
    iii. Hotel ID (Foreign Key)
    iv. Room Number
    v. Check-In Date
    vi. Check-Out Date
    vii. Cost of Staying (Derived: (Check_out_date - Check_in_Date)*(Price of staying + nonmember fee= 1000Rs))

b. Finance (Hotel ID + Month)
    i. Hotel ID (Foreign Key)
    ii. Month
    iii. Expenditure (Derived : Total salaries + Service provider + Misc)
    iv. Income

v. Profit (Derived attribute)

c. Recreational Facilities (Primary Key = Hotel ID + Service Provider)
   i. Hotel ID (Foreign Key)
   ii. Service Description
   iii. Service Provider
   iv. Profit Received
   v. Supervisor ID (Employee ID of the employee who supervises this facility)

3. **Relationships:**
   There exist multiple relationships amongst the entities. Some examples are as follows:
   a. Non Member Guests → Destination : Common attribute - HOTEL ID
   b. Recreational Facilities → Destination : Common attribute - HOTEL ID
   c. Employee → Destination : Common attribute - HOTEL ID
   d. Member Guests → Destination : Common attribute - HOTEL ID

4. **N > 3 Relationship:**

   The Member guests **staying** in a particular hotel **use** a recreational facility that is **supervised** by an employee.

   Here the relationship exists between the entities

   Member guests → Hotel {1,2,3,or 4} → Recreational Facilities → Employee

5. **Sub Class :**

   Each Hotel i (entity 1.d)) is a subclass of the entity Destination (entity 1.a))

   Each hotel inherits the properties Location, Manager, Name and Hotel ID from the parent entity.

6. **Multivalued Attributes:**
   a. Package type for members : RED, BLUE, GREEN,

      RED: Restaurant Benefits

      BLUE: Recreational Facility benefits

      GREEN: Access to duplex rooms

Any member can have one or more packages at a time.

b. Address : Includes Street Number, Block Number, Area, City, State.

7. **Derived Attributes :**

   Mentioned Above against the attributes.

8. **Composite attributes :**
   a. Employee Names
   b. Member Names

FUNCTIONAL REQUIREMENTS:

1. Insertion Data : Insertions in the Non member guests, Member guests (for every new guest that arrives), New members who register, New Employees, Finance records for each month
2. Modify Operations : Salary Increments for Employees, Package Upgrade for Members
3. Deletion Data : Non member / Member guests who have vacated. Employees who have resigned. Members who have cancelled their registration.
4. Reports generated: Financial reports at the end of every month, List of guests staying at a particular hotel. New Members who have registered in a particular month.