

SOFTWARE REQUIREMENTS SPECIFICATIONS

RESORT CHAIN

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OVERVIEW:

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 resort's 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 is 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.

The 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: $(\text{Check_out_date} - \text{Check_in_Date}) * (\text{Price of staying} + \text{nonmember fee} = 1000\text{Rs})$)

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.

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.