Team Members

Mitesh Desai, Anjali Jain

**HOTEL ROOM GUEST MANAGEMENT**

**Group 1 Assignment P3**

**Database Design Document**

**Database Purpose**

The purpose of the database is to maintain the data used to support guest management of a hotel. More generally, our database will empower a hotel to more efficiently manage day-to-day records and workflow operations which can include adding, updating, and deleting guest information and IPL 2021 team’s logistics, food preferences and environment preferences.

**Business Problems addressed**

* Allow Hotel staff to coordinate and facilitate logistics arrangements for the normal guests and IPL players.
* Allow Hotel staff to coordinate and facilitate Room Environment preferences and Food preferences for the normal guests and IPL players.
* Allow Hotel Accounts department to prepare consolidated account statements to be charged to the IPL event organizers reservations and group booking.
* Allow Hotel Staff to coordinate with Guests for early check-ins and late check outs.
* Allow Hotel management to coordinate with IPL team management to keep the track of match schedule for further arrangements and reservations.

**Business Rules**

* Each guest can request for one or more rooms.
* Rooms cannot be shared across different reservations.
* Each booking must have a date associated with it.
* Each rent must belong to one Room Type.
* Each bill should include at least one mode of payment.
* Historical records from the payment table can never be deleted.
* One Guest cannot see the details of another guest/ reservation.

**Design Requirements**

* Using Crow-foot notations for Entity-Relationship Diagram.
* Specified primary key, foreign key and composite key for the tables by specifying PK and FK besides the fields.
* Established relationships between the fields with the help of lines. The lines are pointing directly to the fields in each table that are used to form a relationship.
* Specify the table on the one side of the relationship by placing dash and dash (Minimum one, maximum one (mandatory)) symbols next to the field where the line starts.
* Specify the table on the one side of the relationship by placing ring and dash (Minimum zero, maximum one(optional)) symbols next to the field where the line starts.
* Specified the table on the many sides of the relationship by placing a crow’s feet symbol next to the field where the line ends.
* Specified identifying and non-identifying relations with the help of solid and dashed lines.

**Data Decisions:**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **TABLE NUMBER** | **ENTITY NAME** | **ALIAS** | **WHY ENTITY INCLUDED** | **POSSIBLE ATTRIBUTES** | **RELATION TO OTHER ENTITIES** |
| 1. | Guest of Hotel | Guest | Starting with guests, this entity is included to keep track of the people who are booking the rooms. | GuestID(PK)  AddressID( FK )  GuestFName  GuestLName  GuestType  ContactNumber | This is one of the key components of the systems and will be connected to reservation, meal preferences, gym usage and payment. |
| 2. | Reservation of rooms | Reservation | This entity is included to book the rooms for guests, be it IPL players or common people. It stores the information of check-in and check-out of guests. | ReservationID(PK)  GuestID(PK,FK)  RoomNumber(PK,FK)  CheckInDate  CheckOutDate  NumberOfGuests | At the time of reservation, guests can book the facilities in advance like FoodType, GymUsage or preferences like roomtype etc. Guests can also opt for pickup and drop service from the airport in advance. Other facilities they can select after check-in also. |
| 3. | Food for guests | FoodPreference | Different guests have different preferences, considering their diet and veg or non-veg. This entity can help the guests in making the choice easily in terms of food. It maintains the data of food preferences of all the guests. | ReservationID(Pk)  FoodType | This entity is related to guests, reservation bill and payment as guests can make their preferences at the time of reservation and for they can be charged accordingly which will be considered in bill and at the time of payment. Also, it also depends on the room type, as in some room types the food preferences are free of cost. |
| 4. | Gym facility | GymUsage | Fitness is one of the important aspects of life hence its essential for hotels to provide gym services to the guests. This entity will basically track the number of hours one spends in the gym and also pay for movies/subscriptions used by guests during the workout time. | ReservationID(PK,FK)  InTime  OutTime | GymUsage is connected to guest, IPL, reservation, Bill, and Payment. For normal guests, it’s up to them if they want to include in their reservation in advance. This is the only facility which can be booked in advance and if they want to book later after check-in, they have to pay extra and they get their bill accordingly. |
| 5. | Facility to pick and drop for guests | PickupAndDropService | This facility is included for guests who are new to the place and wanted to use the pickup and drop service. For IPL teams it's included in the package. Stores information about guest itinerary. | ReservationID(PK, FK)  PickupTime  DropTime | This entity is related to guests as this service is optional for them if they want to book this at the time of reservation, so connected with the reservation table. Also, with Bill and payment. With the IPL table it is connected but without charging extra. |
| 6. | Rooms selected by guests | Room | Room entity is included for the type of room guests want to select, for instance a room with single bed, a room with double bed or a deluxe room or a suite including all the facilities for free. It stores data of guest reservation details and itinerary. | RoomNumber(PK)  RoomType(PK,FK)  IsReserved | Room entity is connected with reservation, bill and payment so at the time of billing admin should know what type of room the guest booked and does it include the extra facilities or guest needs to pay extra for that. |
| 7. | Type of room | RoomType | This will describe all details of the room selected like does it have AC, WIFI, microwave, refrigerator, mini bar and number of beds. | RoomType(PK)  NumberOfBeds  IsWifiAvailable  IsRefrigeratorAvailable  IsACAvailable  FoodAvailable  IsTelevisionAvailable  IsIPTVAvailable  Rent | It will be connected to the room since that will become part of the reservation. |
| 8. | Bill for payment | Bill/Invoice | Bill is included for the guests for using the extra amenities such as bar, pickup/drop, gym etc. Also, one bill per person should be maintained for the room they reserved. It keeps track of the rooms or extra facilities used by the guests. | BillID(PK)  ReservationID(FK)  BarPackageID(FK)  RoomType(FK)  FromDate  ToDate  GymCharge  PickupAndDropCharge  TotalAmount | Bill is connected directly to the reservation, and other extra facility usage and payment so that guests must pay the charges of everything they used. |
| 9. | Payment for the rooms and extra amenities | Payment | Payment entity is included for all the guests so they must pay the charges for whatever they used before check-out. It stores data of guest itinerary and bills. | PaymentID(PK)  BillID(FK)  PaymentType  PaymentDate | Payment entity is connected with reservation, bill and room type so that it can keep the record of what facilities are included in room type or what the guest needs to pay extra for. |
| 10. | Usage of Bar according to guests | BarUsage | Bar usage should include the cost of different alcohols and other beverages consumed by guests. | ReservationID(PK, FK)  PackageName  Charge | This needs to be connected with room and reservation. |
| 11. | Details of team participating in Indian Premier League | IPL | This entity is included to store the data of teams participating in the Indian Premier League and to provide extra amenities and support. | IPLTeam(PK)  GuestID(FK)  ExtraAmenities | IPL is connected to MatchSchedule in order to keep track of the schedule of each team. |
| 12. | Scheduling of different matches | MatchSchedule | MatchSchedule is included to keep track of matches and practice sessions of the teams to provide them pickup/drop service and this will also help in checking room availability. | MatchNumber(PK)  MatchDateAndTime  PracticeDateAndTime  Team1  Team2 | Match Schedule is only connected to IPL entities so that it can be mapped with the provided extra amenities, pickup/drop details and team information. |
| 13. | Feedbacks from guests | Feedback | Feedback can store the suggestions from the guests for improvement and providing better services in future. | FeedBackID(PK)  GuestID(FK)  FeedBackDescription  Feedback Date | Feedback is connected directly to the guest table so that each suggestion can be mapped with the GuestID. |
| 14. | Addressdetails | Address | Addressdetails can store Street No, Area, Phone | AddressID(PK )  Street  City  State  Zip Code  Phone | Guest table already has foreign key reference to Address table. |