

# Hotel Reservation Management System – Functionalities

## 1. Guest Management

- Add guests with basic personal and contact details
- View a list of currently registered guests
- Edit or update information about guests
- Delete guests – only when their stay is over

## 2. Room Management

- Add new room
- View a list of all rooms the hotel has
- Storing information about a room
- Update the room's price per night
- Automatic change of the room's status to "free" after the annulment of active reservation
- Prevention of double booking a room that is already booked
- Automatic change of availability of the room

## 3. Reservation Management

- Adding a reservation which checks the availability of the room, calculates the cost of the reservation and handles exceptions (when there are no rooms available for example)
- Annulment of the reservation
- Validation of the dates of the reservation (to check that the dates are not from the past)
- Storing the data of the reservations

## 4. Service Management

- Add and update additional services
- The services can be assigned to the reservation

## 5. Reservation Services Management

- Identifiers are used to calculate total price of the reservation
- Ability to extend each reservation with additional services

## 6. Payment Processing

- Register of payments related with reservations
- Ability to include the tax while reporting the income of the hotel

## 7. Business Rules and Data Violation

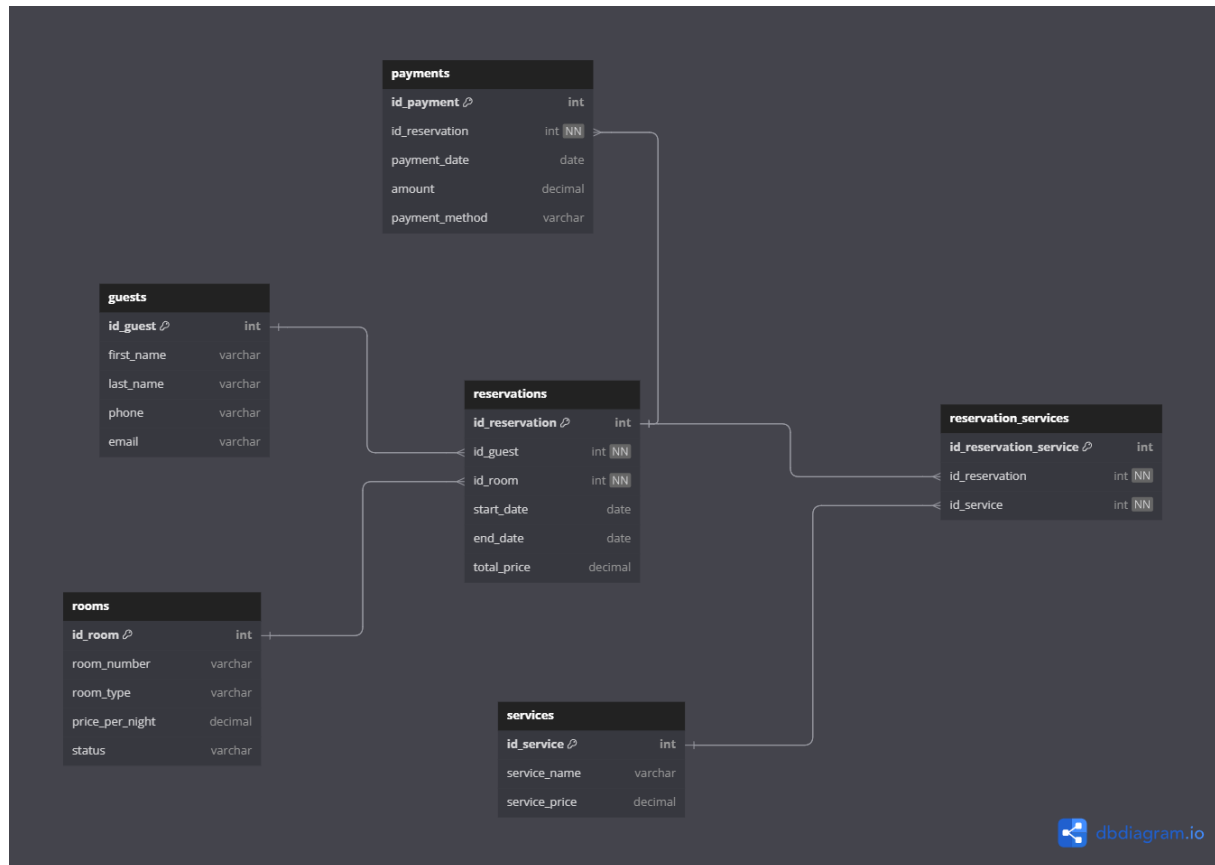
- Prevent bookings on unavailable rooms
- Forbidden deletion of guests with pending or unpaid stay

## 8. Admin Panel

- Ability to access all key features

- Can manage guests, rooms, services, reservations and payments

# UML



## Functions

### calculate\_total\_price:

This function returns the total price of the reservation. It takes two IN arguments as an input:

- id\_services as an table of reservation services ids to calculate their total price.
- Id\_room as an integer to calculate total price using the formula  $\text{price\_per\_day} \times \text{days}$

### is\_room\_available

This function returns a boolean true or false depending on the availability of the room in a certain date. It takes two IN arguments as an input.

- Stay\_date as the date of stay
- Room\_id as the id of the room that is going to be checked.

### calculate\_tax\_or\_no\_tax\_income

This function returns an income from a certain date. It takes two arguments:

- Is\_taxed as a Boolean describing wheather the calculated income should be taxed
- Income\_date as a date of the day which income is going to be calculated.

## Procedures

### add\_reservation\_with\_services

This procedure adds a reservation to a database. It takes five arguments:

- Id\_guest - id of a guest making a reservation
- Id\_room – id of a room that is being booked
- Start\_date – date of the beginning of the stay
- End\_date – date of the end of the stay
- id\_services as an table of reservation services.

This procedure also handles possible exceptions (e.g - the room is unavailable) and sets total\_price attribute using calculate\_total\_price function.

### cancel\_reservation

This procedure cancels the reservation and reservation services related to it. It takes one argument:

- id\_reservation – the id of the reservation that is going to be canceled.

### update\_room\_price

This procedure updates the room price. It uses two arguments:

- id\_room – the id of the room that is going to have its price changed
- new\_price \_per\_night – the new value of the attribute 'price\_per\_night'

## Triggers

### Prevent\_double\_booking

It throws an exception when the administrator is trying to book already booked room.

## free\_room\_on\_cancellation

It sets room status to 'free' when the book is CURRENTLY occupied and the reservation is cancelled.

## validate\_reservation\_dates

It prevents from inserting a reservation with date earlier than todays date.

**DATABASE WILL HAVE DBMS\_SCHEDULER WHICH WILL SET THE ROOM AVAILABILITY ACCORDING TO CURRENT DATE.**