Executive Summary

This assignment aims to create a fully functional DDL script for the hotel reservation system database using the final ERD as the reference.

The following are the sections in the script:

1. **Database Cleaning** : Dropping tables and sequences
   a. We are dropping the tables and sequences in this section. Tables are dropped in a manner that maintains the referential integrity of the system. For example: *reservation_details* table is dropped before the *room* table as the *reservation_details* table has a foreign key from the *room* table
2. **Tables creation :**
   a. In this section we have created 8 tables using the final ERD. We have used the exact naming convention for every table, column and constraints such as primary key and foreign key as specified in the final ERD. We have ensured the datatypes of each column are as per the details given in the assignment. Also, we followed the convention of using all the constraints as table constraints. For example : the *email* column in the *customer* table should be unique. We have created this as a table constraint instead of column constraint
   b. While creating the tables, we have made some assumptions apart from the details mentioned in homework1.
      Assumptions:
      We have assumed that a middle name in the customer payment table is optional, as some people might not have a middle name. We have put a check on customer ratings between 1 and 5 to avoid arbitrary values for the ratings. CC_id is defined as a number with 3 digits similar to CVV on credit card numbers. Based on homework 1, we have assumed that the credit card number can not be more than 16 digits.

3. **Creating sequences :**
   a. We have created 6 tables with starting and increment values as specified in the assignment. payment_id, reservation_id, room_id, location_id, and feature_id are starting from 1 and incremented by 1. Only customer_id is starting from 100001 and incremented by 1
4. **Inserting/seeding data into the tables:**
   a. We have created 3 locations namely **South congress, East 7th lofts** and **Balcones Canyonlands** as mentioned in HW1. We have used dummy values for address, phone, and URL details for each location.
   b. We have created 3 features namely 'Free Wi-Fi', 'Free Breakfast' and 'Free Parking'
   c. For each location in section a, we made sure to have 2 unique features from the 3 features created in section b.
      i. South Congress has 'Free Parking' and 'Free Breakfast' features
      ii. East 7th lofts has 'Free Parking' and 'Free Breakfast' features
      iii. Balcones Canyonlands has 'Free Parking' and 'Free Wi-fi' features
   d. We have created 2 rooms for each location using the room_id_seq.nextval as the room_id for each room
   e. To create the reservation, we have first created 2 customer entries into the customer table and 2 entries into the customer_payment table. Details of the customer are mentioned below:
      i. First customer : Soumi Basu
      ii. Second customer (made up) : Richard Parker
   f. As mentioned in the assignment, we have created one reservation under our name and two reservations for dummy customers for different dates. We have used the sequence reservation_id_seq to create reservation_id's. Later used the same reservation_id's to create the reservation details
5. **Creating Index**:
   a. Index have been created for three tables foreign keys where the the foreign key is not a primary key
      i. rom_loc_ix index for location_id in the room table
      ii. reservation_ix for customer_id in the reservation table
      iii. customer_payment_ix for customer_id in customer_payment table
   b. We have created two indexes which are not updated frequently
      i. floor_ix for floor in the room table
         1. this could be helpful in querying the database to find only the rooms on a particular floor
      ii. date_created_ix for date_created in the reservation table
         1. this could be helpful in querying the database to find the bookings on a particular date
6. We checked our tables to see the records after the database creation. lastly, we ran the entire script to make sure there are no errors

Conclusion:

This DDL script created will give a functioning schema for the customer to implement the database for the hotel reservation system.