DATABASE CREATION –

```
mysql> create database problemset01;
Query OK, 1 row affected (0.01 sec)

mysql> use problemset01;
Database changed
```

TABLE CREATION –

```
mysql> CREATE TABLE Hotel(Hotel_No VARCHAR(20) PRIMARY KEY,Name
VARCHAR(20),City VARCHAR(20));
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE TABLE Room(Room_No INT PRIMARY KEY,Hotel_No
VARCHAR(20),Type VARCHAR(5),Price FLOAT,FOREIGN KEY(Hotel_No)
REFERENCES Hotel(Hotel_No));
Query OK, 0 rows affected (0.01 sec)

mysql> CREATE TABLE Guest(Guest_No VARCHAR(20) PRIMARY KEY,Name
VARCHAR(20),City VARCHAR(20));
Query OK, 0 rows affected (0.02 sec)

mysql> CREATE TABLE Booking(Hotel_No VARCHAR(20),Guest_No
VARCHAR(20),Date_From DATE,Date_To DATE, Room_No INT,FOREIGN
KEY(Hotel_No) REFERENCES Hotel(Hotel_No),FOREIGN KEY(Guest_No)
REFERENCES Guest(Guest_No),FOREIGN KEY(Room_No) REFERENCES
Room(Room_No));
Query OK, 0 rows affected (0.01 sec)
```

VALUE INSERTION –

```
mysql> INSERT INTO Hotel(Hotel_No,Name,City) VALUES ('H111','Empire
Hotel','New York');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Hotel(Hotel_No,Name,City) VALUES ('H235','Park
Place','New York');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Hotel(Hotel_No,Name,City) VALUES
('H432','Brownstone Hotel','Toronto');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Hotel(Hotel_No,Name,City) VALUES ('H498','James
Plaza','Toronto');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Hotel(Hotel_No,Name,City) VALUES ('H193','Devon
Hotel','Boston');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Hotel(Hotel_No,Name,City) VALUES
('H437','Clairmont Hotel','Boston');
```

```
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Room(Room_No,Hotel_No,Type,Price) VALUES
(313,'H111','S',145.00);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Room(Room_No,Hotel_No,Type,Price) VALUES
(412,'H111','N',145.00);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Room(Room_No,Hotel_No,Type,Price) VALUES
(1267,'H235','N',175.00);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Room(Room_No,Hotel_No,Type,Price) VALUES
(1289,'H235','N',195.00);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Room(Room_No,Hotel_No,Type,Price) VALUES
(876,'H432','S',124.00);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Room(Room_No,Hotel_No,Type,Price) VALUES
(898,'H432','S',124.00);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Room(Room_No,Hotel_No,Type,Price) VALUES
(345,'H498','N',160.00);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Room(Room_No,Hotel_No,Type,Price) VALUES
(467,'H498','N',180.00);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Room(Room_No,Hotel_No,Type,Price) VALUES
(1001,'H193','S',150.00);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Room(Room_No,Hotel_No,Type,Price) VALUES
(1201,'H193','N',175.00);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Room(Room_No,Hotel_No,Type,Price) VALUES
(257,'H437','N',140.00);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Room(Room_No,Hotel_No,Type,Price) VALUES
(223,'H437','N',155.00);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Guest(Guest_No,Name,City) VALUES ('G256','Adam
Wayne','Pittsburgh');
Query OK, 1 row affected (0.00 sec)
```

```
mysql> INSERT INTO Guest(Guest_No,Name,City) VALUES ('G367','Tara
Cummings','Baltimore');
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO Guest(Guest_No,Name,City) VALUES ('G879','Vanessa
Parry','Pittsburgh');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Guest(Guest_No,Name,City) VALUES ('G230','Tom
Hancock','Philadelphia');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Guest(Guest_No,Name,City) VALUES ('G467','Robert
Swift','Atlanta');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO Guest(Guest_No,Name,City) VALUES ('G190','Edward
Cane','Baltimore');
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO
Booking(Hotel_No,Guest_No,Date_From,Date_To,Room_No) VALUES
('H111','G256','1999-08-10','1999-08-15',412);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO
Booking(Hotel_No,Guest_No,Date_From,Date_To,Room_No) VALUES
('H111','G367','1999-08-18','1999-08-21',412);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO
Booking(Hotel_No,Guest_No,Date_From,Date_To,Room_No) VALUES
('H235','G879','1999-09-05','1999-09-12',1267);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO
Booking(Hotel_No,Guest_No,Date_From,Date_To,Room_No) VALUES
('H498','G230','1999-09-15','1999-09-15',467);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO
Booking(Hotel_No,Guest_No,Date_From,Date_To,Room_No) VALUES
('H498','G256','1999-11-30','1999-12-02',345);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO
Booking(Hotel_No,Guest_No,Date_From,Date_To,Room_No) VALUES
('H498','G467','1999-11-03','1999-11-05',345);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO
Booking(Hotel_No,Guest_No,Date_From,Date_To,Room_No) VALUES
('H193','G190','1999-11-15','1999-11-19',1001);
Query OK, 1 row affected (0.01 sec)
```

```
mysql> INSERT INTO
Booking(Hotel_No,Guest_No,Date_From,Date_To,Room_No) VALUES
('H193','G367','1999-09-12','1999-09-14',1001);
Query OK, 1 row affected (0.01 sec)

mysql> INSERT INTO
Booking(Hotel_No,Guest_No,Date_From,Date_To,Room_No) VALUES
('H193','G367','1999-10-01','1999-10-06',1201);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO
Booking(Hotel_No,Guest_No,Date_From,Date_To,Room_No) VALUES
('H437','G190','1999-10-04','1999-10-06',223);
Query OK, 1 row affected (0.00 sec)

mysql> INSERT INTO
Booking(Hotel_No,Guest_No,Date_From,Date_To,Room_No) VALUES
('H437','G879','1999-09-14','1999-09-17',223);
Query OK, 1 row affected (0.01 sec)

mysql> select * from hotel;
+----------+------------------+----------+
| Hotel_No | Name             | City     |
+----------+------------------+----------+
| H111     | Empire Hotel     | New York |
| H193     | Devon Hotel      | Boston   |
| H235     | Park Place       | New York |
| H432     | Brownstone Hotel | Toronto  |
| H437     | Clairmont Hotel  | Boston   |
| H498     | James Plaza      | Toronto  |
+----------+------------------+----------+
6 rows in set (0.00 sec)

mysql> select * from room;
+---------+----------+------+-------+
| Room_No | Hotel_No | Type | Price |
+---------+----------+------+-------+
|     223 | H437     | N    |   155 |
|     257 | H437     | N    |   140 |
|     313 | H111     | S    |   145 |
|     345 | H498     | N    |   160 |
|     412 | H111     | N    |   145 |
|     467 | H498     | N    |   180 |
|     876 | H432     | S    |   124 |
|     898 | H432     | S    |   124 |
|    1001 | H193     | S    |   150 |
|    1201 | H193     | N    |   175 |
|    1267 | H235     | N    |   175 |
|    1289 | H235     | N    |   195 |
+---------+----------+------+-------+
12 rows in set (0.00 sec)

mysql> select * from guest;
```

```
+---------+---------------+--------------+
| Guest_No | Name          | City         |
+---------+---------------+--------------+
| G190    | Edward Cane   | Baltimore    |
| G230    | Tom Hancock   | Philadelphia |
| G256    | Adam Wayne    | Pittsburgh   |
| G367    | Tara Cummings | Baltimore    |
| G467    | Robert Swift  | Atlanta      |
| G879    | Vanessa Parry | Pittsburgh   |
+---------+---------------+--------------+
6 rows in set (0.00 sec)

mysql> select * from booking;
+----------+----------+------------+------------+----------+
| Hotel_No | Guest_No | Date_From  | Date_To    | Room_No  |
+----------+----------+------------+------------+----------+
| H111     | G256     | 1999-08-10 | 1999-08-15 |      412 |
| H111     | G367     | 1999-08-18 | 1999-08-21 |      412 |
| H235     | G879     | 1999-09-05 | 1999-09-12 |     1267 |
| H498     | G230     | 1999-09-15 | 1999-09-15 |      467 |
| H498     | G256     | 1999-11-30 | 1999-12-02 |      345 |
| H498     | G467     | 1999-11-03 | 1999-11-05 |      345 |
| H193     | G190     | 1999-11-15 | 1999-11-19 |     1001 |
| H193     | G367     | 1999-09-12 | 1999-09-14 |     1001 |
| H193     | G367     | 1999-10-01 | 1999-10-06 |     1201 |
| H437     | G190     | 1999-10-04 | 1999-10-06 |      223 |
| H437     | G879     | 1999-09-14 | 1999-09-17 |      223 |
+----------+----------+------------+------------+----------+
11 rows in set (0.00 sec)
```

QUERIES –

1. List full details of all hotels.

```
mysql> select * from hotel;
+----------+-----------------+----------+
| Hotel_No | Name            | City     |
+----------+-----------------+----------+
| H111     | Empire Hotel    | New York |
| H193     | Devon Hotel     | Boston   |
| H235     | Park Place      | New York |
| H432     | Brownstone Hotel | Toronto  |
| H437     | Clairmont Hotel | Boston   |
| H498     | James Plaza     | Toronto  |
+----------+-----------------+----------+
6 rows in set (0.00 sec)
```

2. List full details of all hotels in New York

```
mysql> select * from hotel where City='New York';
+----------+--------------+----------+
| Hotel_No | Name         | City     |
+----------+--------------+----------+
| H111     | Empire Hotel | New York |
```

```
| H235      | Park Place   | New York |
+----------+--------------+----------+
2 rows in set (0.00 sec)
```

3. List the names and cities of all guests , ordered according to
their cities .

```
mysql> select Name, City from guest order by City ;
+---------------+--------------+
| Name          | City         |
+---------------+--------------+
| Robert Swift  | Atlanta      |
| Edward Cane   | Baltimore    |
| Tara Cummings | Baltimore    |
| Tom Hancock   | Philadelphia |
| Adam Wayne    | Pittsburgh   |
| Vanessa Parry | Pittsburgh   |
+---------------+--------------+
6 rows in set (0.00 sec)
```

4. List all details for non-smoking rooms in ascending order of
price

```
mysql> select * from room where Type='N' order by Price;
+---------+----------+------+-------+
| Room_No | Hotel_No | Type | Price |
+---------+----------+------+-------+
|     257 | H437     | N    |   140 |
|     412 | H111     | N    |   145 |
|     223 | H437     | N    |   155 |
|     345 | H498     | N    |   160 |
|    1201 | H193     | N    |   175 |
|    1267 | H235     | N    |   175 |
|     467 | H498     | N    |   180 |
|    1289 | H235     | N    |   195 |
+---------+----------+------+-------+
8 rows in set (0.00 sec)
```

5. List the number of hotels there are

```
mysql> Select count(Hotel_no) from hotel;
+-----------------+
| count(Hotel_no) |
+-----------------+
|               6 |
+-----------------+
1 row in set (0.00 sec)
```

6. List the cities in which guests live. Each city should be listed
only once.

```
mysql> select distinct City from guest;
+--------------+
| City         |
```

```
+--------------+
| Baltimore    |
| Philadelphia |
| Pittsburgh   |
| Atlanta      |
+--------------+
4 rows in set (0.00 sec)
```

7. List the average price of a room.

```
mysql> select avg(Price) as avg_price from room;
+--------------------+
| avg_price          |
+--------------------+
| 155.66666666666666 |
+--------------------+
1 row in set (0.00 sec)
```

8. List hotel names, their room numbers , and the type of that room.

```
mysql> select hotel.Name, room.Room_No, room.Type from hotel , room
where hotel.Hotel_No=room.Hotel_No ;
+------------------+---------+------+
| Name             | Room_No | Type |
+------------------+---------+------+
| Empire Hotel     |     313 | S    |
| Empire Hotel     |     412 | N    |
| Devon Hotel      |    1001 | S    |
| Devon Hotel      |    1201 | N    |
| Park Place       |    1267 | N    |
| Park Place       |    1289 | N    |
| Brownstone Hotel |     876 | S    |
| Brownstone Hotel |     898 | S    |
| Clairmont Hotel  |     223 | N    |
| Clairmont Hotel  |     257 | N    |
| James Plaza      |     345 | N    |
| James Plaza      |     467 | N    |
+------------------+---------+------+
12 rows in set (0.01 sec)
```

9. List the hotel names, booking dates, and room numbers for all
hotels in New York.

```
mysql> select hotel.Name, booking.Room_No, booking.Date_From ,
booking.Date_To  from hotel , booking where
hotel.Hotel_No=booking.Hotel_No and hotel.City='New York';
+--------------+---------+------------+------------+
| Name         | Room_No | Date_From  | Date_To    |
+--------------+---------+------------+------------+
| Empire Hotel |     412 | 1999-08-10 | 1999-08-15 |
| Empire Hotel |     412 | 1999-08-18 | 1999-08-21 |
| Park Place   |    1267 | 1999-09-05 | 1999-09-12 |
+--------------+---------+------------+------------+
3 rows in set (0.00 sec)
```

10. What is the number of bookings that started in the month of September ?

```
mysql> select count(Guest_No) from booking where
month(Date_From)=09;
+-----------------+
| count(Guest_No) |
+-----------------+
|               4 |
+-----------------+
1 row in set (0.00 sec)
```

11. List the names and cities of guests who began a stay in New York in August.

```
mysql> select guest.Name , guest.City from guest join booking on
guest.Guest_No=booking.Guest_No where month(booking.Date_From)>=08
and booking.Hotel_No in ( select hotel.Hotel_No from hotel where
hotel.City='New York');
+----------------+------------+
| Name           | City       |
+----------------+------------+
| Adam Wayne     | Pittsburgh |
| Tara Cummings  | Baltimore  |
| Vanessa Parry  | Pittsburgh |
+----------------+------------+
3 rows in set (0.00 sec)
```

12. List the hotel names and room numbers of any hotel rooms that have not been booked.

```
mysql> select hotel.Name , room.Room_No from room join hotel on
room.Hotel_No=hotel.Hotel_No where room.Room_No not in ( select
booking.Room_No from booking );
+------------------+---------+
| Name             | Room_No |
+------------------+---------+
| Empire Hotel     |     313 |
| Park Place       |    1289 |
| Brownstone Hotel |     876 |
| Brownstone Hotel |     898 |
| Clairmont Hotel  |     257 |
+------------------+---------+
5 rows in set (0.00 sec)
```

13. List the hotel name and city of the hotel with the highest priced room .

```
mysql> select hotel.Name , hotel.City from hotel join room on
hotel.Hotel_No=room.Hotel_No  where room.Price = (select
max(room.Price) from room);
+------------+----------+
| Name       | City     |
```

```
+------------+----------+
| Park Place | New York |
+------------+----------+
1 row in set (0.00 sec)
```

14. List hotel names ,room numbers , cities and price for hotels that have rooms with prices Lower than lowest priced room in Boston hotel.

```
mysql> select hotel.Name , hotel.City , room.Room_No,room.Price from
hotel join room on hotel.Hotel_No=room.Hotel_No  where room.Price <
(select min(room.Price) from room join hotel on
room.Hotel_No=hotel.Hotel_No where hotel.City='Boston');
+------------------+---------+---------+-------+
| Name             | City    | Room_No | Price |
+------------------+---------+---------+-------+
| Brownstone Hotel | Toronto |     876 |   124 |
| Brownstone Hotel | Toronto |     898 |   124 |
+------------------+---------+---------+-------+
2 rows in set (0.00 sec)
```

15. List the average price of a room grouped by city.

```
mysql> select hotel.City , avg(room.Price) from hotel join room on
hotel.Hotel_No=room.Hotel_No group by hotel.City;
+----------+-----------------+
| City     | avg(room.Price) |
+----------+-----------------+
| New York |             165 |
| Boston   |             155 |
| Toronto  |             147 |
+----------+-----------------+
3 rows in set (0.00 sec)
```