CREATE DATABASE myDB;

USE myDB;

CREATE TABLE hotel(

hotelno varchar(10) primary key,

hotelname varchar(20),

city varchar(20),

)

INSERT INTO hotel VALUES('fb01', 'Grosvenor', 'London');

INSERT INTO hotel VALUES('fb02', 'Watergate', 'Paris');

INSERT INTO hotel VALUES('ch01', 'Omni Shoreham', 'London');

INSERT INTO hotel VALUES('ch02', 'Phoenix Park', 'London');

INSERT INTO hotel VALUES('dc01', 'Latham', 'Berlin');

CREATE TABLE room(

roomno NUMERIC(5),

hotelno VARCHAR(10),

room\_type VARCHAR(10),

price DECIMAL(5,2),

PRIMARY KEY(roomno, hotelno),

FOREIGN KEY(hotelno) REFERENCES hotel(hotelno)

)

INSERT INTO room VALUES(501, 'fb01', 'single', 19);

INSERT INTO room VALUES(601, 'fb01', 'double', 29);

INSERT INTO room VALUES(701, 'fb01', 'family', 39);

INSERT INTO room VALUES(1001, 'fb02', 'single', 58);

INSERT INTO room VALUES(1101, 'fb02', 'double', 86);

INSERT INTO room VALUES(1001, 'ch01', 'single', 29.99);

INSERT INTO room VALUES(1101, 'ch01', 'family', 59.99);

INSERT INTO room VALUES(701, 'ch02', 'single', 10);

INSERT INTO room VALUES(801, 'ch02', 'double', 15);

INSERT INTO room VALUES(901, 'dc01', 'single', 18);

INSERT INTO room VALUES(1001, 'dc01', 'double', 30);

INSERT INTO room VALUES(1101, 'dc01', 'family', 35);

CREATE TABLE guest(

guestno NUMERIC(5),

guestname VARCHAR(20),

guestaddress VARCHAR(50),

PRIMARY KEY(guestno)

)

INSERT INTO guest VALUES(10001, 'John Kay', '56 High St, London');

INSERT INTO guest VALUES(10002, 'Mike Ritchie', '18 Tain St, London');

INSERT INTO guest VALUES(10003, 'Mary Tregear', '5 Tarbot Rd, Aberdeen');

INSERT INTO guest VALUES(10004, 'Joe Keogh', '2 Fergus Dr, Aberdeen');

INSERT INTO guest VALUES(10005, 'Carol Farrel', '6 Achray St, Glasgow');

INSERT INTO guest VALUES(10006, 'Tina Murphy', '63 Well St, Glasgow');

INSERT INTO guest VALUES(10007, 'Tony Shaw', '12 Park Pl, Glasgow');

CREATE TABLE booking(

hotelno VARCHAR(10),

guestno NUMERIC(5),

datefrom DATETIME,

dateto DATETIME,

roomno NUMERIC(5),

PRIMARY KEY(hotelno, guestno, datefrom),

FOREIGN KEY(roomno, hotelno) REFERENCES room(roomno, hotelno),

FOREIGN KEY(guestno) REFERENCES guest(guestno)

)

INSERT INTO booking VALUES('fb01', 10001, '04-04-01', '04-04-08', 501);

INSERT INTO booking VALUES('fb01', 10004, '04-04-15', '04-05-15', 601);

INSERT INTO booking VALUES('fb01', 10005, '04-05-02', '04-05-07', 501);

INSERT INTO booking VALUES('fb01', 10001, '04-05-01', null, 701);

INSERT INTO booking VALUES('fb02', 10003, '04-04-05', '10-04-04', 1001);

INSERT INTO booking VALUES('ch01', 10006, '04-04-21', null, 1101);

INSERT INTO booking VALUES('dc01', 10007, '04-05-13', '04-05-15', 1001);

INSERT INTO booking VALUES('dc01', 10003, '04-05-20', null, 1001);

-------------q1-----------------

-------------q2--------------

SELECT hotel.hotelname, COUNT(room.roomno) AS num\_rooms

FROM hotel

JOIN room ON hotel.hotelno = room.hotelno

GROUP BY hotel.hotelname;

-----------q3----------------

SELECT hotel.hotelname, (

SELECT AVG(room.price)

FROM room

WHERE room.hotelno = hotel.hotelno

) AS avg\_price

FROM hotel

WHERE hotel.city = 'London';

-----------q4----------------

SELECT

(SELECT TOP 1 roomno FROM room WHERE room\_type = 'Double' ORDER BY price DESC) AS EXP\_Double,

(SELECT TOP 1 roomno FROM room WHERE room\_type = 'Single' ORDER BY price DESC) AS EXP\_Single,

(SELECT TOP 1 roomno FROM room WHERE room\_type = 'Family' ORDER BY price DESC) AS EXP\_Family;

-----------q5----------------

SELECT h.hotelname, h.city, COUNT(DISTINCT r.room\_type) AS num\_room\_types

FROM hotel h

JOIN room r ON h.hotelno = r.hotelno

GROUP BY h.hotelname, h.city;

-----------q6----------------

SELECT DISTINCT h.hotelname, h.city

FROM hotel h, room r, booking b, guest g

WHERE h.hotelno = r.hotelno

AND r.roomno = b.roomno

AND b.guestno = g.guestno

AND g.guestaddress LIKE '%London%';

-----------q7----------------

SELECT h.hotelname, h.city, COUNT(\*) AS num\_reservations

FROM hotel h

JOIN room r ON h.hotelno = r.hotelno

JOIN booking b ON r.roomno = b.roomno

GROUP BY h.hotelname, h.city

ORDER BY num\_reservations DESC;

-----------q8----------------

SELECT g.guestname

FROM guest g

JOIN booking b ON g.guestno = b.guestno

WHERE b.dateto IS NULL;

-----------q9----------------

SELECT h.hotelname, r.roomno, b.guestno

FROM hotel h

JOIN room r ON h.hotelno = r.hotelno

JOIN booking b ON r.roomno = b.roomno

WHERE YEAR(b.datefrom) IN (2001, 2002);

-----------q10----------------

SELECT h.hotelname, h.city

FROM hotel h

LEFT JOIN booking b

ON h.hotelno = b.hotelno

WHERE b.hotelno IS NULL;

-----------q11----------------

SELECT h.hotelname, h.hotelno, r.roomno, r.price AS FamilyPrice

FROM hotel h

LEFT JOIN room r ON h.hotelno = r.hotelno

WHERE r.room\_type = 'Family' OR r.room\_type IS NULL

-----------q12----------------

SELECT COUNT(DISTINCT guestno) AS num\_guests

FROM booking

WHERE dateto <= '2015-05-31';

SELECT \* FROM booking

SELECT \* FROM guest

SELECT \* FROM hotel

SELECT \* FROM room

DROP TABLE booking

DROP TABLE guest

DROP TABLE hotel

DROP TABLE room