Create database 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 a table named hotel

create table room(

roomno numeric(5),

hotelno varchar(10),

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('ch02', 10002, '04-04-25', '04-05-06', 801);

insert into booking values('dc01', 10007, '04-05-13', '04-05-15', 1001);

insert into booking values('dc01', 10003, '04-05-20', null, 1001);

select \* from booking

select \* from guest

select \* from hotel

select \* from room

/Q1/

select guestname, guestaddress

from guest

where guestaddress LIKE '%London%'

order by guestname;

/Q2/

select hotelname, COUNT(\*) AS num\_rooms

from room

JOIN hotel ON room.hotelno = hotel.hotelno

group by hotelname;

/Q3/

select hotelname, AVG(price) AS avg\_price

from room

JOIN hotel ON room.hotelno = hotel.hotelno

where city = 'London'

group by hotelname;

/Q4/

select hotelname, type, MAX(price) AS max\_price

from room

JOIN hotel ON room.hotelno = hotel.hotelno

group by hotelname, type;

/Q5/

select hotelname, city, COUNT(DISTINCT type) AS num\_room\_types

from room

JOIN hotel ON room.hotelno = hotel.hotelno

group by hotelname, city;

/Q6/

SELECT DISTINCT hotel.hotelname, hotel.city

FROM booking

JOIN hotel ON booking.hotelno = hotel.hotelno

JOIN guest ON booking.guestno = guest.guestno

WHERE guest.guestaddress LIKE '%London%';

/Q7/

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

FROM booking

JOIN hotel ON booking.hotelno = hotel.hotelno

GROUP BY hotelname, city

ORDER BY num\_reservations DESC;

/Q8/

SELECT guestname

FROM booking

JOIN guest ON booking.guestno = guest.guestno

WHERE dateto IS NULL;

/Q9/

SELECT h.hotelname, b.roomno, b.guestno, YEAR(b.datefrom) AS year\_reserved

FROM booking b

JOIN hotel h ON h.hotelno = b.hotelno

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

ORDER BY year\_reserved;

/Q10/

SELECT h.hotelname, h.city

FROM hotel h

LEFT JOIN booking b ON b.hotelno = h.hotelno

WHERE b.hotelno IS NULL;

/Q11/

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

FROM hotel h

LEFT JOIN room r ON r.hotelno = h.hotelno AND r.type = 'family';

/Q12/

SELECT COUNT(DISTINCT guestno) AS num\_guests

FROM booking where dateto<('2015/5/31')