1-

CREATE TABLE Guest(

guestNo INT NOT NULL,

guestName VARCHAR(45),

guestAddress VARCHAR(45),

PRIMARY KEY(guestNo) );

2-

CREATE TABLE Hotel (

hotelNo INT NOT NULL,

hotelName VARCHAR(45),

city VARCHAR(45),

PRIMARY KEY(hotelNo)

);

CREATE TABLE Room (

roomNo INT NOT NULL, CHECK(roomNo BETWEEN 1 AND 100),

hotelNo INT NOT NULL,

type VARCHAR(45), CHECK(type IN('Single', 'Double','Family')),

price int, CHECK(price BETWEEN 10 AND 100),

PRIMARY KEY(roomNo, hotelNo)

);

CREATE TABLE Booking (

hotelNo INT NOT NULL,

guestNo INT NOT NULL,

dateFrom DATE NOT NULL,

dateTo DATE ,

roomNo INT CHECK(roomNo BETWEEN'1' AND '100'),

PRIMARY KEY(hotelNo, guestNo, dateFrom)

);

3-

CREATE TABLE archiveRecords(

hotelNo INT NOT NULL,

guestNo INT NOT NULL,

dateFrom DATE NOT NULL,

dateTo DATE,

roomNo INT,

PRIMARY KEY(hotelNo, guestNo, dateFrom)

);

INSERT INTO archiveRecords

SELECT \* FROM Booking b

WHERE (b.dateTo < '2018-03-22');

DELETE FROM Booking b

WHERE (b.dateTo < '2018-03-22');

4-(I calculated average price for every hotel and I sorted them by ascending order)

SELECT sub3.hotelNo

FROM(SELECT hotelNo, sum(sub2.totalPriceByType)/sum(sub2.count) AS avgPrice

FROM(SELECT sub1.hotelNo, sub1.price \* sub1.count AS totalPriceByType, sub1.count AS count

FROM(SELECT hotelNo, price, COUNT(\*) AS count

FROM room

GROUP BY type, price) sub1) sub2

GROUP BY hotelNo

ORDER BY avgPrice) sub3

5-

CREATE VIEW bricsCountries

AS SELECT \*

FROM Guest

WHERE guestAddress IN ("Brazil","Russia","India","China","South Africa");

6-

GRANT ALL PRIVILEGES

ON bricsCountries

TO Manager, Director WITH GRANT OPTION;

GRANT ALL PRIVILEGES

ON cheapestCountries

TO Manager, Director WITH GRANT OPTION;

7-

GRANT ALL PRIVILEGES

ON bricscountries

TO Accounts;

REVOKE DELETE, REFERENCES, USAGE

ON bricscountries

FROM Accounts;

GRANT ALL PRIVILEGES

ON cheapestHotels

TO Accounts;

REVOKE DELETE, REFERENCES, USAGE

ON cheapestHotels

FROM Accounts;

GRANT SELECT, UPDATE, INSERT

ON bricscountries

TO Accounts;

GRANT SELECT, UPDATE, INSERT

ON cheapestHotels

TO Accounts;

8-

a)

SELECT h.hotelNo AS hotelNo , COUNT(b.hotelNo) AS bookingCount

FROM Hotel h, Booking b, Room r

WHERE h.hotelNo = b.hotelNo AND r.roomNo = b.roomNo AND r.hotelNo = h.hotelNo

GROUP BY b.hotelNo

b)

SELECT h.hotelNo

FROM Hotel h, Room r, Booking b

WHERE h.hotelNo = r.hotelNo AND r.roomNo = b.roomNo AND h.hotelNo = "H001"

GROUP BY h.hotelNo;

c)

SELECT MIN(sub.bookingCount)

FROM(SELECT COUNT(b.hotelNo) AS bookingCount

FROM Hotel h, Booking b, Room r

WHERE h.hotelNo = b.hotelNo AND r.roomNo = b.roomNo AND r.hotelNo = h.hotelNo

GROUP BY b.hotelNo) sub

d)

SELECT COUNT(\*)

FROM(SELECT h.hotelNo AS hotelNo , COUNT(b.hotelNo) AS bookingCount

FROM Hotel h, Booking b, Room r

WHERE h.hotelNo = b.hotelNo AND r.roomNo = b.roomNo AND r.hotelNo = h.hotelNo

GROUP BY b.hotelNo) sub

e)

SELECT sub.hotelNo

FROM(SELECT h.hotelNo AS hotelNo , COUNT(b.hotelNo) AS bookingCount

FROM Hotel h, Booking b, Room r

WHERE h.hotelNo = b.hotelNo AND r.roomNo = b.roomNo AND r.hotelNo = h.hotelNo

GROUP BY b.hotelNo) sub

WHERE sub.bookingCount > 1000

f)

SELECT sub.hotelNo

FROM(SELECT h.hotelNo AS hotelNo , COUNT(b.hotelNo) AS bookingCount

FROM Hotel h, Booking b, Room r

WHERE h.hotelNo = b.hotelNo AND r.roomNo = b.roomNo AND r.hotelNo = h.hotelNo

GROUP BY b.hotelNo ORDER BY bookingCount)sub