1-

CREATE TABLE Guest(

guestNo INTEGER NOT NULL,

guestName nvarchar(50) NOT NULL,

guestAddress nvarchar(50) NOT NULL

PRIMARY KEY (guestNo));

2-

CREATE TABLE Hotel(

hotelNo nvarchar(50) NOT NULL,

hotelName nvarchar(50) NOT NULL,

city nvarchar(50) NOT NULL

PRIMARY KEY(hotelNo));

CREATE TABLE Room(

roomNo INTEGER CHECK( roomNo >= 1 AND roomNo <= 100) NOT NULL,

hotelNo nvarchar(50) NOT NULL,

type nvarchar(50) CHECK(type = 'Single' OR type = 'Double' OR type = 'Family') NOT NULL,

price INTEGER CHECK( price >= 1000 AND price <= 10000) NOT NULL

PRIMARY KEY(roomNo,hotelNo),

FOREIGN KEY(hotelNo) REFERENCES Hotel);

CREATE TABLE Booking (

hotelNo nvarchar(50) NOT NULL,

guestNo INTEGER NOT NULL,

dateFrom date CHECK(dateFrom > GETDATE()) NOT NULL,

dateTo date CHECK(dateTo > GETDATE())NOT NULL,

roomNo INTEGER CHECK( roomNo >= 1 AND roomNo <= 100) NOT NULL

PRIMARY KEY (hotelNo, guestNo, dateFrom),

FOREIGN KEY (guestNo) REFERENCES Guest(guestNo),

FOREIGN KEY (hotelNo) REFERENCES Hotel(hotelNo),

FOREIGN KEY (hotelNo, roomNo) REFERENCES Room(roomNo,hotelNo));

3-

CREATE TABLE Booking\_v2 (

hotelNo nvarchar(50) NOT NULL,

guestNo INTEGER NOT NULL,

dateFrom date CHECK(dateFrom > GETDATE()) NOT NULL,

dateTo date CHECK(dateTo > GETDATE())NOT NULL,

roomNo INTEGER CHECK( roomNo >= 1 AND roomNo <= 100) NOT NULL

INSERT INTO Booking\_V2

SELECT \*

FROM Booking

WHERE dateTo < '2018-03-22';

DELETE

FROM Booking

WHERE dateTo < '2018-03-22';

4-

CREATE VIEW CheapestHotels(hotelName,AveragePrice) AS

SELECT hotelName,SUM(price) / COUNT(hotelName) AS AveragePrice

FROM Hotel h ,Room r

WHERE h.hotelNo = r.hotelNo

GROUP BY hotelName

5-

CREATE VIEW guestsFromBRICS AS

SELECT \*

FROM Guest

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

6-

GRANT ALL PRIVILEGES ON CheapestHotels TO Manager,Director WITH GRANT OPTION;

GRANT ALL PRIVILEGES ON guestsFromBRICS TO Manager,Director WITH GRANT OPTION;

7-

GRANT ALL PRIVILEGES ON CheapestHotels TO Accounts

GRANT ALL PRIVILEGES ON guestsFromBRICS TO Accounts

REVOKE DELETE,REFERENCES,ALTER ON CheapestHotels FROM Accounts

REVOKE DELETE,REFERENCES,ALTER ON guestsFromBRICS FROM Accounts

GRANT SELECT,UPDATE,INSERT ON CheapestHotels TO Accounts

GRANT SELECT,UPDATE,INSERT ON guestsFromBRICS TO Accounts

8-

a)

SELECT h.hotelNo, COUNT(\*) AS bookingCount

FROM Hotel h, Room r, Booking b

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

AND r.roomNo = b.roomNo

GROUP BY h.hotelNo;

b)

SELECT h.hotelNo

FROM Hotel h, Room r, Booking b

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

AND r.roomNo = b.roomNo AND h.hotelNo = 'H001'

GROUP BY h.hotelNo;

c)

Invalid because we can’t use aggregate functions on aggregate functions.

d)

Invalid because we can’t use aggregate functions on aggregate functions.

e)

Invalid because we can’t use WHERE on aggregate functions.

f)

SELECT h.hotelNo ,COUNT(\*) AS bookingCount

FROM Hotel h, Room r, Booking b

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

AND r.roomNo = b.roomNo

GROUP BY h.hotelNo

ORDER BY bookingCount;