**CPSC 2221 Assignment 2 – Tomas Gonzalez Ortega 100266942**

Question 1.

1. SELECT type

FROM Room

WHERE type='double'

OR type='family'

AND price < 40.00

ORDER BY type ASC;

1. SELECT \*

FROM Booking

WHERE dateTo IS NULL;

1. SELECT SUM(price)

FROM Room

WHERE type='double';

1. SELECT DISTINCT r.price, r.type

FROM Room r, Hotel h

WHERE h.hotelNo = r.hotelNo

AND hotelName='Grosvenor';

1. SELECT DISTINCT guestName

FROM Hotel h, Booking b, Guest g

WHERE h.hotelNo = b.hotelNo

AND b.guestNo = g.guestNo

AND b.dateTo > CURRENT\_DATE

AND b.dateFrom < CURRENT\_DATE

AND hotelName='Grosvenor';

1. SELECT \*

FROM Room r

WHERE RoomNo NOT IN (

SELECT RoomNo

FROM Booking b, hotel h

WHERE (dateFrom <= CURRENT\_DATE

AND dateTo >= CURRENT\_DATE)

AND h.hotelNo = b.hotelNo

AND hotelName='Grosvenor';

1. SELECT COUNT(r.roomNo)

AS Count

FROM Hotel h, Room r

GROUP BY r.hotelNo

WHERE h.hotelNo = r.hotelNo

AND city='London';

1. SELECT type

FROM (

SELECT type, COUNT(type) AS CommonlyBooked

FROM Booking b, Hotel h, Room r

WHERE r.RoomNo = b.RoomNo

AND r.HotelNo = h.HotelNo

AND b.HotelNo = h.HotelNo

AND h.City = 'London'

GROUP BY type;

Question 2.

1. RA -> Πtitle(Book)  
   TUPLE -> {B.title|Book(b)}  
   DOMAIN -> {b|Book(abcd)}
2. RA -> Π borrowerNo, borrowerName, borrowerAddress(Borrower)  
   TUPLE -> {b.borrowerNo, b.borrowerName, b.borrowerAddress| Borrower(b)  
   DOMAIN -> {x y z|Borrower(xyz)}
3. RA -> σyear=2012(πtitle(Book))  
   TUPLE -> {b.title|Book(b) AND year=2012}  
   DOMAIN ->{b|Book(abcd) AND d=”2012”}
4. RA -> σavailable=”yes”(πcopyNo(Book⨝Book.IBSN=BookCopy.IBSNBookCopy))  
   TUPLE -> {b.copyNo|BookCopy(b) AND Book(a) AND b.ISBN = a.ISBN AND b.available = “yes”}  
   DOMAIN ->{x|Book(abcd) AND BookCopy(xyz) AND z=”yes” AND y=a}
5. RA -> σtitle=”Lord of The Rings” AND available=”yes”(πcopyNo(Book⨝Book.IBSN=BookCopy.IBSNBookCopy))  
   TUPLE -> {b.copyNo|BookCopy(b) AND Book(a) AND b.ISBN=a.ISBN AND a.title = “Lord of The Rings”}  
   DOMAIN -> {x|BookCopy(xyz) AND Book(abcd) AND b=”Lord of The Rings” AND z=”Yes” AND y=a}

Question 3.

1. In Relational Calculus, there is no order in the flow of syntax of operations but the specification of what information it retrieve, while Relational Algebra groups the tables and then based on a set of constraints we approach to retrieve the query.
2. Basically both use information from a database based on the tables and conditions you give it to get what you need.