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## **GROUP**

### **Members:**

ABDULLAH JAVED (SP19-BCS-002)  
HAMZA MUSHTAQ (SP19-BCS-007)  
MUHAMMAD ADIL MEHMOOD (SP19-BCS-014)  
SAIF UR REHMAN (SP19-BCS-021)  
SYED HUZAIFA ABID (SP19-BCS-025)  
ZULKIFIL REHMAN (SP19-BCS-027)  
ADNAN KHURSHID (SP19-BCS-029)  
AYESHA LATIF (SP19-BCS-030)

### **MUHAMMAD ADIL MEHMOOD (SP19-BCS-014)**

#### **Lab Number 6:**

create database DreamHome  
use DreamHome

create table Branch (branchNo varchar(20) NOT NULL Primary Key, street  
varchar(100) NOT NULL, city varchar(50) NOT NULL,  
postcode varchar(20) NOT NULL);  
create table Staff (staffNo varchar(20) NOT NULL PRIMARY KEY, fName  
varchar(50) NOT NULL, IName varchar(50) NOT NULL,  
position varchar(50) NOT NULL, sex varchar(1) NOT NULL, DOB DateTime NOT  
NULL, salary DECIMAL NOT NULL,  
branchNo varchar(20) NOT NULL References Branch(branchNo));

create table Client (clientNo varchar(20) NOT NULL PRIMARY KEY, fName  
varchar(50) NOT NULL, IName varchar(50) NOT NULL,  
telNo varchar(20) NOT NULL, prefType varchar(50) NOT NULL, maxRent  
DECIMAL NOT NULL)

create table PrivateOwner (ownerNo varchar(20) NOT NULL PRIMARY KEY,  
fName varchar(50) NOT NULL, IName varchar(50) NOT NULL,  
[address] varchar(50) NOT NULL, telNo varchar(20) NOT NULL)

```
create table PropertyForRent (propertyNo varchar(20) NOT NULL PRIMARY
KEY, street varchar(100) NOT NULL, city varchar(50) NOT NULL,
postcode varchar(20) NOT NULL, type varchar(10) NOT NULL, rooms int NOT
NULL, rent DECIMAL NOT NULL,
ownerNo varchar(20) References PrivateOwner(ownerNo), staffNo varchar(20)
NOT NULL References Staff(staffNo),
branchNo varchar(20) NOT NULL References Branch(branchNo));
```

```
create table Viewing (clientNo varchar(20) NOT NULL References
Client(clientNo),
propertyNo varchar(20) NOT NULL References PropertyForRent(propertyNo),
viewDate DateTime NOT NULL, comment varchar(200) NOT NULL)
```

```
create table Registration(clientNo varchar(20) NOT NULL References
Client(clientNo),
branchNo varchar(20) NOT NULL References Branch(branchNo),staffNo
varchar(20) NOT NULL References Staff(staffNo),dateJoined DateTime NOT
NULL)
```

```
INSERT into Branch (branchNo, street, city, postcode)
VALUES
```

```
('AD1','3rd Street Satellite Town', 'SGD', '40100'),
('AD2', '1st Block', 'FSD', '38000'),
('AD3', '4th Street Urdu bazar', 'SGD', '40100'),
('AD4','5th Block', 'FSD', '38000'),
('AD5','3rd Street Urdu bazar', 'SGD', '40100'),
('AD6','Sixth Road', 'RWP', '43600'),
('AD7','Saadaar', 'RWP', '43600'),
('AD8','Deput', 'RWP', '43600'),
('AD9','3rd street University Road', 'SGD', '40100'),
('AD10','2nd street Queens Chock', 'SGD', '40100');
```

```
insert into Staff (staffNo, fName, lName, position, sex, DOB, salary, branchNo)
VALUES ('AD01', 'Adil', 'Mehmood', 'Assistant', 'M', CAST(0x0000641000000000
AS DateTime), CAST(9000 AS Decimal(18, 0)), 'A001'),
('AD02', 'Abdullah', 'Javed', 'Manager', 'M',CAST(0x0000531200000000 AS
DateTime), CAST(18000 AS Decimal(18,0)), 'A002'),
```

```
( 'AD03', 'Hamza', 'Mushtaq', 'Assistant', 'M', CAST(0x000056D400000000 AS
DateTime), CAST(12000 AS Decimal(18,0)), 'A003'),
( 'AD04', 'Huzaifa', 'Abid', 'Assistant', 'M', CAST(0x0000C85800000000 AS
DateTime), CAST(24000 AS Decimal(18,0)), 'A004'),
( 'AD05', 'Ayesha', 'Latif', 'Assistant', 'F', CAST(0x0000CFF200000000 AS
DateTime), CAST(30000 AS Decimal(18,0)), 'A005'),
( 'AD06', 'Komal', 'Mushtaq', 'Assistant', 'F', CAST(0x00005D6000000000 AS
DateTime), CAST(9000 AS Decimal(18, 0)), 'A006'),
( 'AD07', 'Rafiya', 'Siddique', 'Assistant', 'F', CAST(0x00005D6000000000 AS
DateTime), CAST(9000 AS Decimal(18, 0)), 'A007'),
( 'AD08', 'Alina', 'Mukhtiar', 'Assistant', 'F', CAST(0x00005D6000000000 AS
DateTime), CAST(9000 AS Decimal(18, 0)), 'A008'),
( 'AD09', 'Kamran', 'Ali', 'Supervisor', 'M', CAST(0x00005D6000000000 AS
DateTime), CAST(9000 AS Decimal(18, 0)), 'A009'),
( 'AD010', 'Khurram', 'Shehzad', 'Supervisor', 'M', CAST(0x00005D6000000000
AS DateTime), CAST(9000 AS Decimal(18, 0)), 'A0010');
```

```
insert into client (clientNo, fName, lName, telNo, prefType, maxRent)
values ('AD001', 'Muhammad', 'Hamza', '0341-3487431', 'Apartment', '160000'),
( 'AD002', 'Muhammad', 'Ali', '0341-3412312', 'Apartment', '180000'),
( 'AD003', 'Asim', 'Azhar', '0347-2346553', 'House', '24000'),
( 'AD004', 'Adil', 'Mehmood', '0341-3123565', 'Apartment', '5000'),
( 'AD005', 'Atif', 'Aslam', '0320-3983493', 'House', '3000'),
( 'AD006', 'Touqeef', 'Rehman', '0312-9817818', 'Room', '2000'),
( 'AD007', 'Haseeb', 'Khan', '0300-9182713', 'Room', '1400'),
( 'AD008', 'Sharjeel', 'Khan', '0344-3912399', 'House', '2000'),
( 'AD009', 'Ahmed', 'Shah', '0340-1908761', 'Apartment', '20000'),
( 'AD0010', 'Hamza', 'Javed', '0331-7096413', 'House', '2000');
```

```
insert into privateowner (ownerNo, fName, lName, address, telNO)
values('AD0001','Huzaifa','Abid','G-13', '0331-132326543'),
( 'AD0002','Hamza','Khalid','l#78 Supply', '0332-913268'),
( 'AD0003','Adeel','Waraich','l#79 l-10/2', '0330-978323223'),
( 'AD0004','Zeeshan','Akhtar','l#78 Mandia', '0336-248789'),
( 'AD0005','Asif','Niazi','l#85 Supply', '0344-12373466'),
( 'AD0006','Shan','Shahd','l#86 Supply', '0324-22145538'),
( 'AD0007','Hanzala','Maqsood','l#895 Cantt', '0314-7787672'),
```

```
('AD0008','Ahmed','Ali','I#55 Kalapul', '0304-5591231'),  
( 'AD0009','Zain','Farooq','I#986 Beer', '0334-322448123'),  
( 'AD00010','Ibrahim','Uziar','I#12 Cantt', '0314-91442234');
```

```
insert into propertyforrent ( propertyNo, street, city, postcode, type, rooms, rent,  
ownerNo, staffNo, branchNo)  
values ('AD101','I#38 G-13', 'ISB','8092','Room','1','12000','13456','AD01','AD1'),  
( 'AD102','I#78 Mandia', 'ABT','1278','Apartment','2','10000','19283','AD02','AD2'),  
( 'AD103','I#85 Mirpur', 'ISB','3987','Aparment','3','14000','23456','AD03','AD3'),  
( 'AD104','I#12 Cantt', 'ABT','2576','Room','1','8000','87362','AD04','AD4'),  
( 'AD105','I#78 Mandia', 'ISB','9087','Apartment','2','10000','12098','AD05','AD5'),  
( 'AD106','I#55 Kalapul', 'ABT','1265','Apartment','3','15000','90876','AD06','AD6'),  
( 'AD107','I#12 Cantt', 'ABT','3489','Apartment','4','18000','78635','AD07','AD7'),  
( 'AD108','I#86 Supply', 'ISB','1265','House','4','24000','17865','AD08','AD8'),  
( 'AD109','I#38 G-13', 'ISB','9087','House','3','22000','87268','AD09','AD9'),  
( 'AD1010','I#86 Supply',  
'ABT','5431','Apartment','2','14000','AD10','SR68','AD10');
```

```
insert into registration ( clientNo, branchNo,staffNo ,dateJoined )  
values ('AD1101','AD1','AD01','1999/12/24'),  
( 'AD1102','AD2','AD02','1991/11/18'),  
( 'AD1103','AD3','AD03','1994/04/12'),  
( 'AD1104','AD4','AD04','1989/01/07'),  
( 'AD1105','AD5','AD05','1995/07/29'),  
( 'AD1106','AD6','AD06','2000/08/19'),  
( 'AD1107','AD7','AD07','1996/11/01'),  
( 'AD1108','AD8','AD08','1986/04/12'),  
( 'AD1109','AD9','AD09','1990/10/05'),  
( 'AD11010','AD10','AD10','1990/05/14');
```

```
insert into viewing(clientNo, propertyNo, viewDate, comment)  
values('AD001','A110','2000/05/14','GOOD'),  
( 'AD002','B110','2001/11/21','GOOD'),  
( 'AD003','A111','2001/04/04','GOOD'),  
( 'AD004','C065','2000/01/01','GOOD'),  
( 'AD005','D124','2004/06/19','GOOD'),  
( 'AD006','G116','1999/08/02','GOOD'),
```

```
('AD007','A140','2005/07/09','GOOD'),  
( 'AD008','H180','2000/02/26','GOOD'),  
( 'AD009','A230','1997/10/12','GOOD'),  
( 'AD0010','B210','2003/12/24','GOOD');
```

Select distinct(city) from Branch order by city desc;

### **LAB Number 7:**

Print the list of postcode without any repetition

#### **Solution:**

Select distinct(postcode) from Branch;

Print all fName from Staff without repetition

#### **Solution:**

SELECT distinct(fName) FROM Staff;

List all staff with renaming all its columns in results

#### **Solution:**

Select staffNo As MyStaffNo, fName As MyFirstName, lName As MyLastName, position As MyPosition, DOB As MYDOB, salary As MySalary, branchNo As MyBranchNO from Staff;

List all clients with re-naming all its columns to synonyms.

#### **Solution:**

Select clientNo As clientId, fName As firstName, lName As lastName, telNo As contactNo, prefType As priorityType, maxRent As totalRent from Client;

List all staff with a salary greater than 10,000.

#### **Solution:**

SELECT \* FROM Staff WHERE salary > 10000;

List all managers and supervisors.

#### **Solution:**

SELECT \* FROM Staff WHERE position = 'manager' OR position = 'supervisor';

### **Lab Number 8:**

Perform all the examples in this lab.

### Solution:

```
SELECT staffNo, fName, IName, salary FROM Staff ORDER BY salary DESC;
SELECT propertyNo, type, rooms, rent FROM PropertyForRent ORDER BY type;
SELECT propertyNo, type, rooms, rent FROM PropertyForRent ORDER BY type, rent DESC;
SELECT COUNT(DISTINCT propertyNo) AS myCount FROM Viewing WHERE viewDate
BETWEEN '1-May-04' AND '31-May-04';
SELECT COUNT(staffNo) AS myCount, SUM(salary) AS mySum FROM Staff WHERE position
= 'Manager';
SELECT MIN(salary) AS myMin, MAX(salary) AS myMax, AVG(salary) AS myAvg FROM Staff;
SELECT staffNo, COUNT(salary) FROM Staff; --shwoing error that no aggregate or group
clause
SELECT staffNo, fName, IName, position, salary FROM Staff WHERE salary > SOME
(SELECT salary FROM Staff WHERE branchNo = 'B003');
SELECT staffNo, fName, IName, position, salary FROM Staff WHERE salary > ALL (SELECT
salary FROM Staff WHERE branchNo = 'B003');
```

For DreamHome case study write at least 3 examples of each category for sorting, grouping and aggregate operations. Share your exercises as advised in the lab.

### Sorting clauses

#### Solution:

```
SELECT staffNo, fName, IName, position FROM Staff ORDER BY fName ASC;
SELECT staffNo, fName, position, salary FROM Staff ORDER BY salary DESC;
SELECT fName, salary FROM Staff ORDER BY IName DESC;
```

### Grouping clauses

#### Solution:

```
SELECT staffNo, fName, sex, salary FROM Staff WHERE position = 'Assistant' AND salary <
10000;
SELECT fName, position FROM Staff WHERE sex = 'M' AND position = 'Manager';
SELECT fName, IName, position FROM Staff WHERE (SELECT AVG(salary) FROM Staff) <
salary;
```

### Aggregate clauses

#### Solution:

```
SELECT COUNT(DISTINCT(propertyNo)) AS myCount FROM Viewing WHERE viewDate
BETWEEN '1-May-00' AND '31-May-04';
```



```
SELECT clientNo, propertyNo AS ClientID, PropertyNo FROM Viewing WHERE viewDate  
BETWEEN '1-May-00' AND '31-May-04';  
SELECT clientNo, comment FROM Viewing WHERE viewDate BETWEEN '1-May-00' AND '31-  
May-04';
```

### **SYED HUZAIFA ABID (SP19-BCS-025)**

#### **Lab Number 6:**

use dreamhome;

INSERT into branch (branchNo, street, city, postcode)

VALUES

```
('C001','I#38 G-13', 'ISB','8092'),  
('C002', 'I#78 Supply', 'ABT', '1278'),  
('C003', 'I#79 I-10/2', 'ISB', '3987'),  
('C004','I#78 Mandia', 'ABT', '2576'),  
('C005','I#85 Mirpur', 'ABT', '9087'),  
('C006','I#86 Supply', 'ISB', '1265'),  
('C007','I#895 Cantt', 'ABT', '3489'),  
('C008','I#55 Kalapul', 'ABT', '9871'),  
('C009','I#986 Beer', 'HAR', '9087'),  
('C010','I#12 Cantt', 'HAV', '5431');
```

```
insert into staff (staffNo, fName, lName, position, sex, DOB, salary, branchNo)  
values (' SG5', 'Mary', 'Howe', 'Assistant', 'F', '1988/08/23', 20000, 'C002'),  
(' SL21', 'David', 'Ford', 'Assistant', 'M', '1987/11/9', 100000, 'C003'),  
('SG37', 'Anna', 'Bleech', 'Supervisor', 'F', '1986/12/8', 90000, 'C003'),  
('SA9', 'Susa', 'Brand', 'Receptionist', 'F', '1989/5/9', 120000, 'C003'),  
('SG14', 'Joh', 'White', 'Manager', 'M', '1992/2/12', 100000, 'C004'),  
('SL41', 'Julie', 'Lee', 'Assistant', 'F', '1990/8/3', 50000, 'C002'),  
(' SR68', 'Akbar', 'Shoaib', 'Assistant Manager', 'M', '1996/9/8', 70000, 'C005'),  
('SK32', 'Mahrukh', 'Khan', 'Customer Service', 'F', '1994/9/8', 60000, 'C010'),  
('SB83', 'Ali', 'Hassan', 'Receptionist', 'M', '1991/4/6', 40000, 'C009'),  
(' SP98', 'Hamid', 'Qazi', 'Security Guard', 'M', '1982/9/12', 10000, 'C007');
```

```
insert into client (clientNo, fName, lName, telNo, prefType, maxRent)
```

values ('1', 'Hamza', 'Muhstaq', '0341-3487431', 'Apartment', '16000'),  
 ('2', 'Hamza', 'Abid', '0341-3412312', 'Apartment', '18000'),  
 ('3', 'Imad', 'Ahmad', '0347-2346553', 'House', '24000'),  
 ('4', 'Adil', 'Mehmood', '0341-3123565', 'Apartment', '15000'),  
 ('5', 'Zullkif', 'Rehman', '0320-3983493', 'House', '30000'),  
 ('6', 'Huzaifa', 'Abid', '0312-9817818', 'Room', '12000'),  
 ('7', 'Haseeb', 'Khan', '0300-9182713', 'Room', '14000'),  
 ('8', 'Sharjeel', 'Khan', '0344-3912399', 'House', '22000'),  
 ('9', 'Ahmed', 'Shah', '0340-1908761', 'Apartment', '20000'),  
 ('10', 'Hamza', 'Javed', '0331-7096413', 'House', '24000');

insert into privateowner (ownerNo, fName, lName, address, telNO)

values('13456','Huzaifa','Abid','G-13', '0331-1006543'),  
 ('19283','Hamza','Abid', 'I#78 Supply', '0332-9123768'),  
 ('23456','Adeel','Khan', 'I#79 I-10/2', '0330-9786523'),  
 ('87362','Zeeshan','Saleem','I#78 Mandia', '0336-1238789'),  
 ('12098','Asif','Khan','I#85 Supply', '0344-1237686'),  
 ('90876','Shan','Ali','I#86 Supply', '0324-2214598'),  
 ('78635','Hanzala','Tahir','I#895 Cantt', '0314-9887672'),  
 ('17865','Ahmed','Hassan','I#55 Kalapul', '0304-9991231'),  
 ('87268','Zain','Asim','I#986 Beer', '0334-3228123'),  
 ('12876','Ibrahim','Saqib','I#12 Cantt', '0314-9122234');

insert into propertyforrent ( propertyNo, street, city, postcode, type, rooms,  
 rent, ownerNo, staffNo, branchNo)

values ('A110','I#38 G-13', 'ISB','8092','Room','1','12000','13456','SA9','C001'),  
 ('B110','I#78 Mandia', 'ABT','1278','Apartment','2','10000','19283','SG14','C002'),  
 ('A111','I#85 Mirpur', 'ISB','3987','Apartment','3','14000','23456','SG37','C003'),  
 ('C065','I#12 Cantt', 'ABT','2576','Room','1','8000','87362','SG5','C004'),  
 ('D124','I#78 Mandia', 'ISB','9087','Apartment','2','10000','12098','SL21','C005'),  
 ('G116','I#55 Kalapul', 'ABT','1265','Apartment','3','15000','90876','SL41','C006'),  
 ('A140','I#12 Cantt', 'ABT','3489','Apartment','4','18000','78635','SP98','C007'),  
 ('H180','I#86 Supply', 'ISB','1265','House','4','24000','17865','SK32','C008'),  
 ('A230','I#38 G-13', 'ISB','9087','House','3','22000','87268','SB83','C009'),  
 ('H210','I#86 Supply', 'ABT','5431','Apartment','2','14000','12876','SR68','C010');

```
insert into registration ( clientNo, branchNo,staffNo ,dateJoined )
values ('1','C001','SG14','1999/12/24'),
('2','C002','SA9','1991/11/18'),
('3','C003','SG37','1994/04/12'),
('4','C004','SG5','1989/01/07'),
('5','C005','SL21','1995/07/29'),
('6','C006','SL41','2000/08/19'),
('7','C007','SP28','1996/11/01'),
('8','C008','SK32','1986/04/12'),
('9','C009','SB83','1990/10/05'),
('10','C010','SR68','1990/05/14');
```

```
insert into viewing(clientNo, propertyNo, viewDate, comment)
values('1','A110','2000/05/14','GOOD'),
('2','B110','2001/11/21','GOOD'),
('3','A111','2001/04/04','GOOD'),
('4','C065','2000/01/01','GOOD'),
('5','D124','2004/06/19','GOOD'),
('6','G116','1999/08/02','GOOD'),
('7','A140','2005/07/09','GOOD'),
('8','H180','2000/02/26','GOOD'),
('9','A230','1997/10/12','GOOD'),
('10','B210','2003/12/24','GOOD');
```

Lab number 7:

```
select distinct(postcode) from branch;
```

```
select distinct(fName) from staff;
```

```
select staffNo as ID,fName as FirstName, lName as LastName, position as
Position, sex as Gender, DOB as DateofBirth, salary as Salary, branchNO as
BranchNumber from staff;
```

```
select clientNo as ClientNumber, fName as FirstName, IName as LastName,  
telNo as TelliPhone, prefType as Preference, maxRent as MaximumRent from  
client;
```

```
select * from staff where salary > 20000;
```

```
select * from staff where position = 'manager' or position = 'supervisor';
```

### LAB NUMBER 8:

-- Examples

```
SELECT staffNo, fName, IName, salary FROM staff ORDER BY salary DESC;
```

```
SELECT propertyNo, type, rooms, rent FROM propertyforrent ORDER BY type;
```

```
SELECT propertyNo, type, rooms, rent FROM propertyforrent ORDER BY type, rent DESC;
```

```
SELECT staffNo, COUNT(salary) FROM staff;
```

```
SELECT COUNT(*) AS myCount FROM propertyforrent WHERE rent <=10000;
```

```
SELECT COUNT(DISTINCT propertyNo) AS myCount FROM Viewing WHERE viewDate BETWEEN '1997-10-  
12' AND '2003-12-24';
```

```
SELECT COUNT(staffNo) AS myCount, SUM(salary) AS mySum FROM Staff WHERE position = 'Manager';
```

```
SELECT MIN(salary) AS myMin, MAX(salary) AS myMax, AVG(salary) AS myAvg FROM staff;
```

```
SELECT staffNo, COUNT(salary) FROM staff;
```

```
SELECT staffNo, fName, IName, position, salary FROM staff WHERE (SELECT AVG(salary) FROM staff) <  
salary;
```

```
SELECT staffNo, fName, IName, position, salary FROM staff WHERE salary > SOME (SELECT salary FROM  
staff WHERE branchNo = 'C003');
```

```
SELECT staffNo, fName, IName, position, salary FROM staff WHERE salary > ALL (SELECT salary FROM  
staff WHERE branchNo = 'C003');
```

-- Sorting

```
SELECT staffNo, fName, IName, salary FROM staff ORDER BY salary ASC;
```

```
SELECT salary FROM staff ORDER BY salary DESC;
```

```
SELECT salary FROM staff ORDER BY salary ASC;
```

-- Grouping

```
SELECT staffNo, fName,lName, sex, salary FROM Staff WHERE position = 'Receptionist' AND salary < 40000;
```

```
SELECT fName,lName,branchNo FROM Staff WHERE sex = 'M' AND position = 'Manager';
```

```
SELECT fName, lName,salary, position FROM Staff WHERE (SELECT AVG(salary) FROM Staff) < salary;
```

-- Aggregate

```
SELECT COUNT(DISTINCT(propertyNo)) AS myCount FROM Viewing WHERE viewDate BETWEEN '1999-08-02' AND '2004-06-19';
```

```
SELECT COUNT(salary) AS myCount FROM staff WHERE salary BETWEEN '20000' AND '60000';
```

```
SELECT clientNo, propertyNo AS ClientID, PropertyNo FROM Viewing WHERE viewDate BETWEEN '2001-04-04' AND '2004-06-19';
```

### **AYESHA LATIF (SP19-BCS-030)**

#### **Lab Number 6:**

Use dream home

Solution:

```
insert into staff (staffNo,fName,lName,position,sex,DOB,salary,branchNo
```

```
Values(' Sh4' 'saba','Howe' 'Assistant','F','1999/08/23',30000,'f002'),
```

```
('Sk21','julie', Ford,'Assistant' 'M','1985/11/9',50000,'f003'),
```

```
('Sh37','Anna', 'Bleech', 'Supervisor','F','1987/12/8',80000,'f003'),
```

```
('Sh89','Sana','Brand' 'Receptionist','F','2000/5/9',100000,'f003'),
```

```
('Sk14', 'Jon', 'White', 'Manager', 'M', '1993/2/12', 300000, 'f004'),
```

```
('Sk41','Julie','Lee','Assistant', 'F','1988/3/12' 50000 'f002'),
```

('Sl68','Arham','Shoaib', 'Assistant Manager','M' '1996/9/8',70000,'f005'),  
('SK92','Mushk','Khan','Customer Service','F','1994/9/8',60000,'f010'),  
('Sh83', 'Ali', 'Hassan', 'Receptionist', 'M', '1991/4/6', 40000, 'f009'),  
('So88', 'Hira', 'Qazi', 'Security Guard"M','1982/9/12',10000,'f007');  
insert into client (clientNo, fName, lName, telNo, prefType, maxRent)

values ('11', 'kinza', 'Muhstaq','0341-3487431','house','16200'),

('12', 'Hina','saad', '0341-3443312','Apartment','12000'),

('13', 'Arham', 'latif', '0347-5646553', 'House','28000'),

('14', 'Ali', ' ', '0341-3123556', 'Apartment','1900'),

('15', 'Zoya', 'nawaz', '0324-3983493','house','20000'),

('16', 'Hira', 'mehmood', '0312-9854818', 'Room','14000'),

('17', 'Haseeb', 'muhshtaq', '0300-9452713', 'house','15000'),

('18', 'Sharjeel', 'Khan', '0344-3954399', 'House', '27000'),

('19', 'Ahmed', 'Shah', '0340-1905661', 'Apartment', '25000'),

('20', 'komal', 'Javed', '0331-7056413', 'House', '26000');

insert into privateowner (ownerNo, fName, lName, address, telNO)

values ('13346','ayesha','latif','f-12', '0331-1436543'),

('20283','Hafsa','Abid', 'I#78 cantt', '0332-91234568'),

('25456','Adil','Khan', 'I#79 cantt', '0330-9756565'),

('56362','Zanib','saqib','k#78 Mughal pura', '0336-12789'),

('11298','Asif','Kamal', 'k#30 h-1', '0344-1237686'),  
('56876','Sara','Ali','L-20 maddar', '0324-2214598'),  
('43635','Hina','mujahid','k#895 Cantt', '0314-98887672'),  
('15665','Ahmed','Hassan','k#55 Kalapul', '0304-9991231'),  
('85468','zoya','abid','k#986 Beer', '0334-3228123'),  
('17876','ayesha','Saqib','k#12 Cantt', '0314-9122234')

insert into propertyforrent ( propertyNo, street, city, postcode, type, rooms, rent, ownerNo, staffNo, branchNo)

values ('A1230','h#38 G-13', 'LHR','8092','Room','1','12000','13456','SA9','G001'),  
('c110','h#78 Mandia', 'ABT','1278','Apartment','4','10000','19283','SG14','G002'),  
('c411','h#85 ', 'ISB','3987','Aparment','3','14000','23456','SG37','G003'),  
('f4365','h#12 Cantt', 'KAR','2576','Room','8','8000','87362','SGF5','G004'),  
('Df44','k#78 Mandia', 'ABT','9087','Apartment','2','1000','12098','SLD21','G005'),  
('f516','k#55 Kalapul', 'LHR','1265','Apartment','3','1500','90876','SLS41','G006'),  
('f430','f#12 Cantt', 'SKP','3489','Apartment','4','1800','78635','SP9S8','G007'),  
('H30','k#86 khan pur', 'SKP','1265','House','4','24000','17865','SKW32','C008'),  
('u730','If#38 G-12', 'LHR','9087','House','3','22000','87268','SB8W3','H009'),  
('d540','k#86 cantt', 'LHR','5431','Apartment','2','14000','12Q876','SR6W8','J010');

insert into viewing(clientNo, propertyNo, viewDate, comment)

values('11','F110','2002/03/16','Good')

('12','LB00','2010/11/21','Good'),  
('13','KG00','2003/04/05','Good'),  
('14','HG04','2004/01/03','Good'),  
('15','D012','2006/05/19','EXCELLENT'),  
('16','GSW43','1999/03/04','V.Good'),  
('17','Q2340','2001/02/04','Good'),  
('18','J280','2007/02/23','Good'),  
('19','C3430','1965/11/12','V.Good'),  
('20','K710','2003/12/24','Good');

insert into registration ( clientNo, branchNo,staffNo ,dateJoined )

values ('11','f002','Sh4','1998/11/20'),  
('12','f003','Sk21','1992/10/12'),  
('13','f003','Sh37','1989/04/15'),  
('14','f003','Sh89','1991/11/17'),  
('15','f004','Sk41','1986/10/29'),  
('16','f002','sl68','2005/09/29'),  
('17','f005','SK92','1995/10/05'),  
('18','f010','Sh83','1987/03/22'),  
('19','f007','So88','1990/10/05'),  
('20','f006','so34','1990/05/14');



## Lab Number 7

1. Print the list of postcode without any repetition

Solution:

```
Select distinct(postcod) from Branch;
```

2. Print all fName from Staff without repetition

Solution:

```
SELECT distinct(fName) FROM Staff;
```

3. List all staff with renaming all its columns in results

Solution:

```
Select staffNo As StaffNo, fName As FirstName, lName As LastName, position  
As Position, sex as Gender, salary As income, branchNo As BranchNO from  
Staff;
```

4. List all clients with re-naming all its columns to synonyms

Solution:

```
Select clientNo As clientId, fName As MYfirstName, lName As MYlastName,  
telNo As phonenumber, prefType As precedenceType, maxRent As MYtotalRent  
from Client;
```

5.List all staff with a salary greater than 10,000

Solution:

```
SELECT salary FROM Staff WHERE salary >10000;
```

6.List all managers and supervisors

Solution:

```
SELECT position FROM Staff WHERE position IN ('Manager', 'Supervisor');
```

### **Lab Number 8**

Perform all the examples in this lab.

Solution

```
SELECT staffNo, fName, lName, salary FROM Staff ORDER BY salary DESC;
```

```
SELECT propertyNo, type, rooms, rent FROM PropertyForRent ORDER BY  
type;
```

```
SELECT propertyNo, type, rooms, rent FROM PropertyForRent ORDER BY  
type, rent DESC;
```

```
SELECT COUNT(DISTINCT propertyNo) AS myCount FROM Viewing  
WHERE viewDate BETWEEN '2004-12-2' AND '2005-12-5';
```

```
SELECT COUNT(staffNo) AS myCount, SUM(salary) AS mySum FROM Staff  
WHERE position = 'Manager';
```

```
SELECT MIN(salary) AS myMin, MAX(salary) AS myMax, AVG(salary) AS  
myAvg FROM Staff;
```

```
SELECT staffNo, COUNT(salary) FROM Staff;
```

```
SELECT staffNo, fName, lName, position, salary FROM Staff WHERE salary >
SOME (SELECT salary FROM Staff WHERE branchNo = 'f004');
```

```
SELECT staffNo, fName, lName, position, salary FROM Staff WHERE salary >
ALL (SELECT salary FROM Staff WHERE branchNo = 'f005');
```

For DreamHome case study write at least 3 examples of each category for sorting, grouping and aggregate operations. Share your exercises as advised in the lab.

Sorting clauses

```
SELECT staffNo, fName, lName, position FROM Staff ORDER BY fName ASC;
```

```
SELECT staffNo, fName, position, salary FROM Staff ORDER BY salary DESC;
```

```
SELECT fName, salary FROM Staff ORDER BY lName DESC;
```

Grouping clause

```
SELECT staffNo, fName, sex, salary FROM Staff WHERE position = 'Assistant'
AND salary < 30000;
```

```
SELECT fName, position FROM Staff WHERE sex = 'F' AND position =
'Manager';
```

```
SELECT fName, lName, position FROM Staff WHERE (SELECT AVG(salary)
FROM Staff) < salary;
```

Aggregate clauses

```
SELECT COUNT(DISTINCT(propertyNo)) AS myCount FROM Viewing
WHERE viewDate BETWEEN '1999-03-04 ' AND '2004-01-03';
```

```
SELECT clientNo, propertyNo AS ClientID, PropertyNo FROM Viewing  
WHERE viewDate BETWEEN '2006-05-19 ' AND '2007-02-23';
```

```
SELECT clientNo, comment FROM Viewing WHERE viewDate BETWEEN  
'2002-03-16 ' AND '2010-11-21';
```

### **ADNAN KHURSHID (SP19-BCS-029)**

#### **Lab Number 6:**

```
create database DreamHome  
use DreamHome
```

```
create table Branch (branchNo varchar(20) NOT NULL Primary Key, street  
varchar(100) NOT NULL, city varchar(50) NOT NULL,  
postcode varchar(20) NOT NULL);  
create table Staff (staffNo varchar(20) NOT NULL PRIMARY KEY, fName  
varchar(50) NOT NULL, IName varchar(50) NOT NULL,  
position varchar(50) NOT NULL, sex varchar(1) NOT NULL, DOB DateTime NOT  
NULL, salary DECIMAL NOT NULL,  
branchNo varchar(20) NOT NULL References Branch(branchNo));
```

```
create table Client (clientNo varchar(20) NOT NULL PRIMARY KEY, fName  
varchar(50) NOT NULL, IName varchar(50) NOT NULL,  
telNo varchar(20) NOT NULL, prefType varchar(50) NOT NULL, maxRent  
DECIMAL NOT NULL)
```

```
create table PrivateOwner (ownerNo varchar(20) NOT NULL PRIMARY KEY,  
fName varchar(50) NOT NULL, IName varchar(50) NOT NULL,  
[address] varchar(50) NOT NULL, telNo varchar(20) NOT NULL)
```

```
create table PropertyForRent (propertyNo varchar(20) NOT NULL PRIMARY  
KEY, street varchar(100) NOT NULL, city varchar(50) NOT NULL,  
postcode varchar(20) NOT NULL, type varchar(10) NOT NULL, rooms int NOT  
NULL, rent DECIMAL NOT NULL,
```

ownerNo varchar(20) References PrivateOwner(ownerNo), staffNo varchar(20)  
NOT NULL References Staff(staffNo),  
branchNo varchar(20) NOT NULL References Branch(branchNo));

create table Viewing (clientNo varchar(20) NOT NULL References  
Client(clientNo),  
propertyNo varchar(20) NOT NULL References PropertyForRent(propertyNo),  
viewDate DateTime NOT NULL, comment varchar(200) NOT NULL);

create table Registration(clientNo varchar(20) NOT NULL References  
Client(clientNo),  
branchNo varchar(20) NOT NULL References Branch(branchNo), staffNo  
varchar(20) NOT NULL References Staff(staffNo), dateJoined DateTime NOT  
NULL)

INSERT into Branch (branchNo, street, city, postcode)  
VALUES

('C1','3rd Street Satellite Town', 'SGD', '40100'),  
('C2', '1st Block', 'FSD', '38000'),  
('C3', '4th Street Urdu bazar', 'SGD', '40100'),  
('C4','5th Block', 'FSD', '38000'),  
('C5','3rd Street Urdu bazar', 'SGD', '40100'),  
('C6','Sixth Road', 'RWP', '43600'),  
('C7','Saadaar', 'RWP', '43600'),  
('C8','Deput', 'RWP', '43600'),  
('C9','3rd street University Road', 'SGD', '40100'),  
('C10','2nd street Queens Chock', 'SGD', '40100');

insert into Staff (staffNo, fName, lName, position, sex, DOB, salary, branchNo)  
VALUES ('CD01', 'Adil', 'Mehmood', 'Assistant', 'M', CAST(0x0000641000000000  
AS DateTime), CAST(9000 AS Decimal(18, 0)), 'C1'),  
('CD02', 'Abdullah', 'Javed', 'Manager', 'M', CAST(0x0000531200000000 AS  
DateTime), CAST(18000 AS Decimal(18,0)), 'C2'),  
('CD03', 'Hamza', 'Mushtaq', 'Assistant', 'M', CAST(0x000056D400000000 AS  
DateTime), CAST(12000 AS Decimal(18,0)), 'C3'),  
('CD04', 'Huzaifa', 'Abid', 'Assistant', 'M', CAST(0x0000C85800000000 AS  
DateTime), CAST(24000 AS Decimal(18,0)), 'C4'),

('CD05', 'Ayesha', 'Latif', 'Assistant', 'F', CAST(0x0000CFF200000000 AS  
DateTime), CAST(30000 AS Decimal(18,0)), 'C5'),

('CD06', 'Komal', 'Mushtaq', 'Assistant', 'F', CAST(0x00005D6000000000 AS  
DateTime), CAST(9000 AS Decimal(18, 0)), 'C6'),

('CD07', 'Rafiya', 'Siddique', 'Assistant', 'F', CAST(0x00005D6000000000 AS  
DateTime), CAST(9000 AS Decimal(18, 0)), 'C7'),

('CD08', 'Alina', 'Mukhtiar', 'Assistant', 'F', CAST(0x00005D6000000000 AS  
DateTime), CAST(9000 AS Decimal(18, 0)), 'C8'),

('CD09', 'Kamran', 'Ali', 'Supervisor', 'M', CAST(0x00005D6000000000 AS  
DateTime), CAST(9000 AS Decimal(18, 0)), 'C9'),

('CD010', 'Khurram', 'Shehzad', 'Supervisor', 'M', CAST(0x00005D6000000000  
AS DateTime), CAST(9000 AS Decimal(18, 0)), 'C10');

insert into client (clientNo, fName, lName, telNo, prefType, maxRent)  
values ('CD001', 'Muhammad', 'Hamza', '0341-3487431', 'Apartment', '160000'),  
('CD002', 'Muhammad', 'Ali', '0341-3412312', 'Apartment', '180000'),  
('CD003', 'Asim', 'Azhar', '0347-2346553', 'House', '24000'),  
('CD004', 'Adil', 'Mehmood', '0341-3123565', 'Apartment', '5000'),  
('CD005', 'Atif', 'Aslam', '0320-3983493', 'House', '3000'),  
('CD006', 'Touqeeb', 'Rehman', '0312-9817818', 'Room', '2000'),  
('CD007', 'Haseeb', 'Khan', '0300-9182713', 'Room', '1400'),  
('CD008', 'Sharjeel', 'Khan', '0344-3912399', 'House', '2000'),  
('CD009', 'Ahmed', 'Shah', '0340-1908761', 'Apartment', '20000'),  
('CD0010', 'Hamza', 'Javed', '0331-7096413', 'House', '2000');

insert into privateowner (ownerNo, fName, lName, address, telNO)  
values('CD0001','Huzaifa','Abid','G-13', '0331-132326543'),  
('CD0002','Hamza','Khalid', 'I#78 Supply', '0332-913268'),  
('CD0003','Adeel','Waraich', 'I#79 I-10/2', '0330-978323223'),  
('CD0004','Zeeshan','Akhtar','I#78 Mandia', '0336-248789'),  
('CD0005','Asif','Niazi','I#85 Supply', '0344-12373466'),  
('CD0006','Shan','Shahd','I#86 Supply', '0324-22145538'),  
('CD0007','Hanzala','Maqsood','I#895 Cantt', '0314-7787672'),  
('CD0008','Ahmed','Ali','I#55 Kalapul', '0304-5591231'),  
('CD0009','Zain','Farooq','I#986 Beer', '0334-322448123'),

('CD00010','Ibrahim','Uziar','I#12 Cantt', '0314-91442234');

insert into propertyforrent ( propertyNo, street, city, postcode, type, rooms, rent, ownerNo, staffNo, branchNo)

values ('CD101','I#38 G-13', 'ISB','8092','Room','1','12000','CD0001','CD01','C1'),  
('CD102','I#78 Mandia', 'ABT','1278','Apartment','2','10000','CD0002','CD02','C2'),  
('CD103','I#85 Mirpur', 'ISB','3987','Aparment','3','14000','CD0003','CD03','C3'),  
('CD104','I#12 Cantt', 'ABT','2576','Room','1','8000','CD0004','CD04','C4'),  
('CD105','I#78 Mandia', 'ISB','9087','Apartment','2','10000','CD0005','CD05','C5'),  
('CD106','I#55 Kalapul', 'ABT','1265','Apartment','3','15000','CD0006','CD06','C6'),  
('CD107','I#12 Cantt', 'ABT','3489','Apartment','4','18000','CD0007','CD07','C7'),  
('CD108','I#86 Supply', 'ISB','1265','House','4','24000','CD0008','CD08','C8'),  
('CD109','I#38 G-13', 'ISB','9087','House','3','22000','CD0009','CD09','C9'),  
('CD1010','I#86 Supply',  
'ABT','5431','Apartment','2','334010','CD00010','CD010','C10');

insert into registration ( clientNo, branchNo,staffNo ,dateJoined )

values ('CD001','C1','CD01','1999/12/24'),  
('CD002','C2','CD02','1991/11/18'),  
('CD003','C3','CD03','1994/04/12'),  
('CD004','C4','CD04','1989/01/07'),  
('CD005','C5','CD05','1995/07/29'),  
('CD006','C6','CD06','2000/08/19'),  
('CD007','C7','CD07','1996/11/01'),  
('CD008','C8','CD08','1986/04/12'),  
('CD009','C9','CD09','1990/10/05'),  
('CD0010','C10','CD010','1990/05/14');

insert into viewing(clientNo, propertyNo, viewDate, comment)

values('CD001','CD101','2000/05/14','GOOD'),  
('CD002','CD102','2001/11/21','GOOD'),  
('CD003','CD103','2001/04/04','GOOD'),  
('CD004','CD104','2000/01/01','GOOD'),  
('CD005','CD105','2004/06/19','GOOD'),  
('CD006','CD106','1999/08/02','GOOD'),  
('CD007','CD107','2005/07/09','GOOD'),

('CD008','CD108','2000/02/26','GOOD'),  
('CD009','CD109','1997/10/12','GOOD'),  
('CD0010','CD1010','2003/12/24','GOOD');

### **LAB Number 7:**

Print the list of postcode without any repetition

#### **Solution:**

Select distinct(postcode) from Branch;

Print all fName from Staff without repetition

#### **Solution:**

SELECT distinct(fName) FROM Staff;

List all staff with renaming all its columns in results

#### **Solution:**

Select staffNo As MyStaffNo, fName As MyFirstName, lName As MyLastName, position As MyPosition, DOB As MYDOB, salary As MySalary, branchNo As MyBranchNO from Staff;

List all clients with re-naming all its columns to synonyms.

#### **Solution:**

Select clientNo As clientId, fName As firstName, lName As lastName, telNo As contactNo, prefType As priorityType, maxRent As totalRent from Client;

List all staff with a salary greater than 10,000.

#### **Solution:**

SELECT \* FROM Staff WHERE salary > 10000;

List all managers and supervisors.

#### **Solution:**

SELECT \* FROM Staff WHERE position = 'manager' OR position = 'supervisor';

### **Lab Number 8:**

Perform all the examples in this lab.

#### **Solution:**

SELECT staffNo, fName, lName, salary FROM Staff ORDER BY salary DESC;  
SELECT propertyNo, type, rooms, rent FROM PropertyForRent ORDER BY type;



```

SELECT propertyNo, type, rooms, rent FROM PropertyForRent ORDER BY type, rent DESC;
SELECT COUNT(DISTINCT propertyNo) AS myCount FROM Viewing WHERE viewDate
BETWEEN '1-May-04' AND '31-May-04';
SELECT COUNT(staffNo) AS myCount, SUM(salary) AS mySum FROM Staff WHERE position
= 'Manager';
SELECT MIN(salary) AS myMin, MAX(salary) AS myMax, AVG(salary) AS myAvg FROM Staff;
SELECT staffNo, COUNT(salary) FROM Staff; --shwoing error that no aggregate or group
clause
SELECT staffNo, fName, lName, position, salary FROM Staff WHERE salary > SOME
(SELECT salary FROM Staff WHERE branchNo = 'B003');
SELECT staffNo, fName, lName, position, salary FROM Staff WHERE salary > ALL (SELECT
salary FROM Staff WHERE branchNo = 'B003');

```

For DreamHome case study write at least 3 examples of each category for sorting, grouping and aggregate operations. Share your exercises as advised in the lab.

### Sorting clauses

#### Solution:

```

SELECT staffNo, fName, lName, position FROM Staff ORDER BY fName ASC;
SELECT staffNo, fName, position, salary FROM Staff ORDER BY salary DESC;
SELECT fName, salary FROM Staff ORDER BY lName DESC;

```

### Grouping clauses

#### Solution:

```

SELECT staffNo, fName, sex, salary FROM Staff WHERE position = 'Assistant' AND salary <
10000;
SELECT fName, position FROM Staff WHERE sex = 'M' AND position = 'Manager';
SELECT fName, lName, position FROM Staff WHERE (SELECT AVG(salary) FROM Staff) <
salary;

```

### Aggregate clauses

#### Solution:

```

SELECT COUNT(DISTINCT(propertyNo)) AS myCount FROM Viewing WHERE viewDate
BETWEEN '1-May-00' AND '31-May-04';
SELECT clientNo, propertyNo AS ClientID, PropertyNo FROM Viewing WHERE viewDate
BETWEEN '1-May-00' AND '31-May-04';

SELECT clientNo, comment FROM Viewing WHERE viewDate BETWEEN '1-May-00' AND '31-
May-04';

```

COMMON SOLUTION:

```
create database DreamHome;
```

```
use DreamHome;
```

```
--creating branch table
```

```
create table Branch (branchNo varchar(20) NOT NULL Primary Key, street  
varchar(100) NOT NULL, city varchar(50) NOT NULL,  
  
postcode varchar(20) NOT NULL);
```

```
--creating staff table
```

```
create table Staff (staffNo varchar(20) NOT NULL PRIMARY KEY, fName  
varchar(50) NOT NULL, lName varchar(50) NOT NULL,  
  
position varchar(50) NOT NULL, sex varchar(1) NOT NULL, DOB DateTime NOT  
NULL, salary DECIMAL NOT NULL,  
  
branchNo varchar(20) NOT NULL References Branch(branchNo));
```

```
--creating client table
```

```
create table Client (clientNo varchar(20) NOT NULL PRIMARY KEY, fName  
varchar(50) NOT NULL, lName varchar(50) NOT NULL,  
  
telNo varchar(20) NOT NULL, prefType varchar(50) NOT NULL, maxRent  
DECIMAL NOT NULL);
```

--creating privateowner table

```
create table PrivateOwner (ownerNo varchar(20) NOT NULL PRIMARY KEY,  
fName varchar(50) NOT NULL, IName varchar(50) NOT NULL,  
[address] varchar(50) NOT NULL, telNo varchar(20) NOT NULL);
```

--creating PropertyForRent table

```
create table PropertyForRent (propertyNo varchar(20) NOT NULL PRIMARY  
KEY, street varchar(100) NOT NULL, city varchar(50) NOT NULL,  
postcode varchar(20) NOT NULL, type varchar(10) NOT NULL, rooms int NOT  
NULL, rent DECIMAL NOT NULL,  
ownerNo varchar(20) References PrivateOwner(ownerNo), staffNo varchar(20)  
NOT NULL References Staff(staffNo),  
branchNo varchar(20) NOT NULL References Branch(branchNo));
```

--creating viewing table

```
create table Viewing (clientNo varchar(20) NOT NULL References  
Client(clientNo),  
propertyNo varchar(20) NOT NULL References PropertyForRent(propertyNo),  
viewDate DateTime NOT NULL, comment varchar(200) NOT NULL)
```

--creating registration table

```
create table Registration(clientNo varchar(20) NOT NULL References  
Client(clientNo),  
branchNo varchar(20) NOT NULL References Branch(branchNo),staffNo  
varchar(20) NOT NULL References Staff(staffNo),dateJoined DateTime NOT  
NULL);
```

--inserting data into branch table

```
INSERT into Branch (branchNo, street, city, postcode)  
VALUES  
( 'C001','I#38 G-13', 'ISB','8092'),
```

('C002', 'I#78 Supply', 'ABT', '1278'),  
 ('C003', 'I#79 I-10/2', 'ISB', '3987'),  
 ('C004', 'I#78 Mandia', 'ABT', '2576'),  
 ('C005', 'I#85 Mirpur', 'ABT', '9087'),  
 ('C006', 'I#86 Supply', 'ISB', '1265'),  
 ('C007', 'I#895 Cantt', 'ABT', '3489'),  
 ('C008', 'I#55 Kalapul', 'ABT', '9871'),  
 ('C009', 'I#986 Beer', 'HAR', '9087'),  
 ('C010', 'I#12 Cantt', 'HAV', '5431'),  
 ('A001', '3rd Street Satellite Town', 'SGD', '40100'),  
 ('A002', '1st Block', 'FSD', '38000'),  
 ('A003', '4th Street Urdu bazar', 'SGD', '40100'),  
 ('A004', '5th Block', 'FSD', '38000'),  
 ('A005', '3rd Street Urdu bazar', 'SGD', '40100'),  
 ('A006', 'Sixth Road', 'RWP', '43600'),  
 ('A007', 'Saadaar', 'RWP', '43600'),  
 ('A008', 'Deput', 'RWP', '43600'),  
 ('A009', '3rd street University Road', 'SGD', '40100'),  
 ('A010', '2nd street Queens Chock', 'SGD', '40100'),  
 ('f002', 'H#38 G-13', 'ISB', '8092'),  
 ('f089', 'L-20 maddar ', 'ABT', '1278'),  
 ('f003', 'k#308 h-1', 'LHR', '3987'),  
 ('f004', 'k#980 Mirpur', 'LHR', '2576'),  
 ('f005', 'I#85 kott', 'ABT', '9087'),  
 ('f006', 'k#986 Beer', 'ISB', '1265'),  
 ('f007', 'k#5895 Kahan pour', 'LHR', '3489'),  
 ('f008', 'K#806 Mughal Pura', 'ABT', '9871');

--inserting data into staff table

insert into Staff (staffNo, fName, lName, position, sex, DOB, salary, branchNo)  
 VALUES ('AD0001', 'Adil', 'Mehmood', 'Assistant', 'M',  
 CAST(0x0000641000000000 AS DateTime), CAST(9000 AS Decimal(18, 0)),  
 'A001'),  
 ('AD0002', 'Abdullah', 'Javed', 'Manager', 'M', CAST(0x0000531200000000 AS  
 DateTime), CAST(18000 AS Decimal(18,0)), 'A002'),  
 ('AD0003', 'Hamza', 'Mushtaq', 'Assistant', 'M', CAST(0x000056D400000000 AS  
 DateTime), CAST(12000 AS Decimal(18,0)), 'A003'),

('AD0004', 'Huzaifa', 'Abid', 'Assistant', 'M', CAST(0x0000C85800000000 AS  
 DateTime), CAST(24000 AS Decimal(18,0)), 'A004'),  
 ('AD0005', 'Ayesha', 'Latif', 'Assistant', 'F', CAST(0x0000CFF200000000 AS  
 DateTime), CAST(30000 AS Decimal(18,0)), 'A005'),  
 ('AD0006', 'Komal', 'Mushtaq', 'Assistant', 'F', CAST(0x00005D6000000000 AS  
 DateTime), CAST(9000 AS Decimal(18, 0)), 'A006'),  
 ('AD0007', 'Rafiya', 'Siddique', 'Assistant', 'F', CAST(0x00005D6000000000 AS  
 DateTime), CAST(9000 AS Decimal(18, 0)), 'A007'),  
 ('AD0008', 'Alina', 'Mukhtiar', 'Assistant', 'F', CAST(0x00005D6000000000 AS  
 DateTime), CAST(9000 AS Decimal(18, 0)), 'A008'),  
 ('AD0009', 'Kamran', 'Ali', 'Supervisor', 'M', CAST(0x00005D6000000000 AS  
 DateTime), CAST(9000 AS Decimal(18, 0)), 'A009'),  
 ('AD00010', 'Khurram', 'Shehzad', 'Supervisor', 'M', CAST(0x00005D6000000000  
 AS DateTime), CAST(9000 AS Decimal(18, 0)), 'A0010')  
 ('SG5', 'Mary', 'Howe', 'Assistant', 'F', '1988/08/23', 20000, 'C002'),  
 ('SL21', 'David', 'Ford', 'Assistant', 'M', '1987/11/9', 100000, 'C003'),  
 ('SG37', 'Anna', 'Bleech', 'Supervisor', 'F', '1986/12/8', 90000, 'C003'),  
 ('SA9', 'Susa', 'Brand', 'Receptionist', 'F', '1989/5/9', 120000, 'C003'),  
 ('SG14', 'Joh', 'White', 'Manager', 'M', '1992/2/12', 100000, 'C004'),  
 ('SL41', 'Julie', 'Lee', 'Assistant', 'F', '1990/8/3', 50000, 'C002'),  
 ('SR68', 'Akbar', 'Shoaib', 'Assistant Manager', 'M', '1996/9/8', 70000, 'C005'),  
 ('SK32', 'Mahrukh', 'Khan', 'Customer Service', 'F', '1994/9/8', 60000, 'C010'),  
 ('SB83', 'Ali', 'Hassan', 'Receptionist', 'M', '1991/4/6', 40000, 'C009'),  
 ('SP98', 'Hamid', 'Qazi', 'Security Guard', 'M', '1982/9/12', 10000, 'C007'),  
 ('Sh4', 'Saba', 'Howe', 'Assistant', 'F', '1999/08/23', 30000, 'f002'),  
 ('Sk21', 'Julie', 'Ford', 'Assistant', 'M', '1985/11/9', 50000, 'f003'),  
 ('Sh37', 'Anna', 'Bleech', 'Supervisor', 'F', '1987/12/8', 80000, 'f003'),  
 ('Sh89', 'Sana', 'Brand', 'Receptionist', 'F', '2000/5/9', 100000, 'f003'),  
 ('Sk14', 'Jon', 'White', 'Manager', 'M', '1993/2/12', 300000, 'f004'),  
 ('Sk41', 'Julie', 'Lee', 'Assistant', 'F', '1988/3', 50000, 'f002'),  
 ('Sl68', 'Arham', 'Saqib', 'Assistant Manager', 'M', '1996/9/8', 70000, 'f005'),  
 ('SK92', 'Mushk', 'Khan', 'Customer Service', 'F', '1994/9/8', 60000, 'f010'),  
 ('Sh83', 'Ali', 'Hassan', 'Receptionist', 'M', '1991/4/6', 40000, 'f009'),  
 ('So88', 'Hira', 'Qazi', 'Security Guard', 'M', '1982/9/12', 10000, 'f007');

--inserting into client table

insert into client (clientNo, fName, lName, telNo, prefType, maxRent)

values ('AD001', 'Muhammad', 'Hamza', '0341-3487431', 'Apartment', '160000'),  
 ('AD002', 'Muhammad', 'Ali', '0341-3412312', 'Apartment', '180000'),  
 ('AD003', 'Asim', 'Azhar', '0347-2346553', 'House', '24000'),  
 ('AD004', 'Adil', 'Mehmood', '0341-3123565', 'Apartment', '5000'),  
 ('AD005', 'Atif', 'Aslam', '0320-3983493', 'House', '3000'),  
 ('AD006', 'Touqeeb', 'Rehman', '0312-9817818', 'Room', '2000'),  
 ('AD007', 'Haseeb', 'Khan', '0300-9182713', 'Room', '1400'),  
 ('AD008', 'Sharjeel', 'Khan', '0344-3912399', 'House', '2000'),  
 ('AD009', 'Ahmed', 'Shah', '0340-1908761', 'Apartment', '20000'),  
 ('AD0010', 'Hamza', 'Javed', '0331-7096413', 'House', '2000')  
 ('1', 'Hamza', 'Muhstaq', '0341-3487431', 'Apartment', '16000'),  
 ('2', 'Hamza', 'Abid', '0341-3412312', 'Apartment', '18000'),  
 ('3', 'Imad', 'Ahmad', '0347-2346553', 'House', '24000'),  
 ('4', 'Adil', 'Mehmood', '0341-3123565', 'Apartment', '15000'),  
 ('5', 'Zullkif', 'Rehman', '0320-3983493', 'House', '30000'),  
 ('6', 'Huzaifa', 'Abid', '0312-9817818', 'Room', '12000'),  
 ('7', 'Haseeb', 'Khan', '0300-9182713', 'Room', '14000'),  
 ('8', 'Sharjeel', 'Khan', '0344-3912399', 'House', '22000'),  
 ('9', 'Ahmed', 'Shah', '0340-1908761', 'Apartment', '20000'),  
 ('10', 'Hamza', 'Javed', '0331-7096413', 'House', '24000');

--inserting into privateowner table

insert into privateowner (ownerNo, fName, lName, address, telNO)  
 values('AD0001', 'Huzaifa', 'Abid', 'G-13', '0331-132326543'),  
 ('AD0002', 'Hamza', 'Khalid', 'l#78 Supply', '0332-913268'),  
 ('AD0003', 'Adeel', 'Waraich', 'l#79 l-10/2', '0330-978323223'),  
 ('AD0004', 'Zeeshan', 'Akhtar', 'l#78 Mandia', '0336-248789'),  
 ('AD0005', 'Asif', 'Niazi', 'l#85 Supply', '0344-12373466'),  
 ('AD0006', 'Shan', 'Shahd', 'l#86 Supply', '0324-22145538'),  
 ('AD0007', 'Hanzala', 'Maqsood', 'l#895 Cantt', '0314-7787672'),  
 ('AD0008', 'Ahmed', 'Ali', 'l#55 Kalapul', '0304-5591231'),  
 ('AD0009', 'Zain', 'Farooq', 'l#986 Beer', '0334-322448123'),  
 ('AD00010', 'Ibrahim', 'Uziar', 'l#12 Cantt', '0314-91442234')  
 ('13346', 'ayasha', 'latif', 'f-12', '0331-1436543'),  
 ('20283', 'Hafsa', 'Abid', 'l#78 cantt', '0332-91234568'),  
 ('25456', 'Adil', 'Khan', 'l#79 cantt', '0330-9756565'),  
 ('56362', 'Zanib', 'saqib', 'k#78 Mughal Pura', '0336-12789'),

('11298','Asif','Kamal', 'k#30 h-1', '0344-1237686'),  
('56876','Sara','Ali','L-20 maddar', '0324-2214598'),  
('43635','Hina','mujahid','k#895 Cantt', '0314-98887672'),  
('15665','Ahmed','Hassan','k#55 Kalapul', '0304-9991231'),  
('85468','zoya','abid','k#986 Beer', '0334-3228123'),  
('17876','ayesha','Saqib','k#12 Cantt', '0314-9122234');

--inserting into propertyforrent table

insert into propertyforrent ( propertyNo, street, city, postcode, type, rooms, rent, ownerNo, staffNo, branchNo)  
values ('AD101','I#38 G-13', 'ISB','8092','Room','1','12000','13456','AD01','AD1'),  
('AD102','I#78 Mandia', 'ABT','1278','Apartment','2','10000','19283','AD02','AD2'),  
('AD103','I#85 Mirpur', 'ISB','3987','Aparment','3','14000','23456','AD03','AD3'),  
('AD104','I#12 Cantt', 'ABT','2576','Room','1','8000','87362','AD04','AD4'),  
('AD105','I#78 Mandia', 'ISB','9087','Apartment','2','10000','12098','AD05','AD5'),  
('AD106','I#55 Kalapul', 'ABT','1265','Apartment','3','15000','90876','AD06','AD6'),  
('AD107','I#12 Cantt', 'ABT','3489','Apartment','4','18000','78635','AD07','AD7'),  
('AD108','I#86 Supply', 'ISB','1265','House','4','24000','17865','AD08','AD8'),  
('AD109','I#38 G-13', 'ISB','9087','House','3','22000','87268','AD09','AD9'),  
('AD1010','I#86 Supply',  
'ABT','5431','Apartment','2','14000','AD10','SR68','AD10'),  
('A110','I#38 G-13', 'ISB','8092','Room','1','12000','13456','SA9','C001'),  
('B110','I#78 Mandia', 'ABT','1278','Apartment','2','10000','19283','SG14','C002'),  
('A111','I#85 Mirpur', 'ISB','3987','Aparment','3','14000','23456','SG37','C003'),  
('C065','I#12 Cantt', 'ABT','2576','Room','1','8000','87362','SG5','C004'),  
('D124','I#78 Mandia', 'ISB','9087','Apartment','2','10000','12098','SL21','C005'),  
('G116','I#55 Kalapul', 'ABT','1265','Apartment','3','15000','90876','SL41','C006'),  
('A140','I#12 Cantt', 'ABT','3489','Apartment','4','18000','78635','SP98','C007'),  
('H180','I#86 Supply', 'ISB','1265','House','4','24000','17865','SK32','C008'),  
('A230','I#38 G-13', 'ISB','9087','House','3','22000','87268','SB83','C009'),  
('H210','I#86 Supply', 'ABT','5431','Apartment','2','14000','12876','SR68','C010');

--inserting into registration

insert into registration ( clientNo, branchNo,staffNo ,dateJoined )  
values ('AD1101','AD1','AD01','1999/12/24'),  
('AD1102','AD2','AD02','1991/11/18'),  
('AD1103','AD3','AD03','1994/04/12'),

```
(
'AD1104','AD4','AD04','1989/01/07'),
'AD1105','AD5','AD05','1995/07/29'),
'AD1106','AD6','AD06','2000/08/19'),
'AD1107','AD7','AD07','1996/11/01'),
'AD1108','AD8','AD08','1986/04/12'),
'AD1109','AD9','AD09','1990/10/05'),
'AD11010','AD10','AD10','1990/05/14'),
('1','C001','SG14','1999/12/24'),
('2','C002','SA9','1991/11/18'),
('3','C003','SG37','1994/04/12'),
('4','C004','SG5','1989/01/07'),
('5','C005','SL21','1995/07/29'),
('6','C006','SL41','2000/08/19'),
('7','C007','SP28','1996/11/01'),
('8','C008','SK32','1986/04/12'),
('9','C009','SB83','1990/10/05'),
('10','C010','SR68','1990/05/14');
```

--inserting into viewing

insert into viewing(clientNo, propertyNo, viewDate, comment)

```
values('AD001','A110','2000/05/14','GOOD'),
('AD002','B110','2001/11/21','GOOD'),
('AD003','A111','2001/04/04','GOOD'),
('AD004','C065','2000/01/01','GOOD'),
('AD005','D124','2004/06/19','GOOD'),
('AD006','G116','1999/08/02','GOOD'),
('AD007','A140','2005/07/09','GOOD'),
('AD008','H180','2000/02/26','GOOD'),
('AD009','A230','1997/10/12','GOOD'),
('AD0010','B210','2003/12/24','GOOD'),
('1','A110','2000/05/14','GOOD'),
('2','B110','2001/11/21','GOOD'),
('3','A111','2001/04/04','GOOD'),
('4','C065','2000/01/01','GOOD'),
('5','D124','2004/06/19','GOOD'),
('6','G116','1999/08/02','GOOD'),
('7','A140','2005/07/09','GOOD'),
```



```
('8','H180','2000/02/26','GOOD'),  
( '9','A230','1997/10/12','GOOD'),  
( '10','B210','2003/12/24','GOOD');
```

Select distinct(city) from Branch order by city desc;

## HAMZA MUSHTAQ (SP19-BCS-007)

### LAB 6

use dreamhome;

INSERT into branch (branchNo, street, city, postcode)

VALUES

```
('C011','I#38 BYPASS', 'ISB','8092'),  
( 'C012', 'I#78 HASSAN ROAD', 'ABT', '1278'),  
( 'C013', 'I#79 G-10/2', 'ISB', '3987'),  
( 'C014', 'I#78 MANILA ROAD', 'ABT', '2576'),  
( 'C015', 'I#85 CANTT', 'ABT', '9087'),  
( 'C016', 'I#86 I-9/2', 'ISB', '1265'),  
( 'C017', 'I#895 I-8/4', 'ISB', '3489'),  
( 'C018', 'I#55 G-8/4', 'ISB', '9871'),  
( 'C019', 'I#986 MANDI ROAD', 'HAR', '9087'),  
( 'C020', 'I#12 F-8/2', 'ISB', '5431');
```

insert into staff (staffNo, fName, lName, position, sex, DOB, salary, branchNo)

values ('SA49', 'Alex', 'Howe', 'Assistant', 'F', '1988/08/23', 20000, 'C002'),

('SJ14', 'Daeis', 'Ford', 'Assistant', 'M', '1987/11/9', 100000, 'C003'),  
('SK37', 'Annabelis', 'Bleech', 'Supervisor', 'F', '1986/12/8', 90000, 'C003'),  
('SL5', 'Sushab', 'Brand', 'Receptionist', 'F', '1989/5/9', 120000, 'C003'),  
('SS21', 'Johnny', 'White', 'Manager', 'M', '1992/2/12', 100000, 'C004'),  
('SB41', 'Judie', 'Lee', 'Assistant', 'F', '1990/8/3', 50000, 'C002'),  
('SM98', 'Ahmed', 'Shoaib', 'Assistant Manager', 'M', '1996/9/8', 70000, 'C005'),  
('SL32', 'Meerukh', 'Khan', 'Customer Service', 'F', '1994/9/8', 60000, 'C010'),  
('SE83', 'Hamza', 'Hassan', 'Receptionist', 'M', '1991/4/6', 40000, 'C009'),  
('SX68', 'Hammas', 'Qazi', 'Security Guard', 'M', '1982/9/12', 10000, 'C007');

insert into client (clientNo, fName, lName, telNo, prefType, maxRent)  
values ('1', 'Hamza', 'Khalid', '0341-3412312', 'Apartment', '18000'),  
('2', 'Hamid', 'Muhstaq', '0341-3412312', 'Apartment', '18000'),  
('3', 'Imdadullah', 'Ahmad', '0347-2346553', 'House', '24000'),  
('4', 'Ameer', 'Mehmood', '0341-3123565', 'Apartment', '15000'),  
('5', 'Zumeer', 'Rehman', '0320-3983493', 'House', '30000'),  
('6', 'Humsa', 'Abid', '0312-9817818', 'Room', '12000'),  
('7', 'Hafeez', 'Khan', '0300-9182713', 'Room', '14000'),  
('8', 'Sher', 'Khan', '0344-3912399', 'House', '22000'),  
('9', 'Ahmaz', 'Shah', '0340-1908761', 'Apartment', '20000'),  
('10', 'Hamis', 'Kiyani', '0331-7096413', 'House', '24000');

insert into privateowner (ownerNo, fName, lName, address, telNO)  
values ('13456', 'Zeeshan', 'Abid', 'G-13', '0331-1006543'),  
('19283', 'Shakeel', 'Abid', 'I#78 Supply', '0332-9123768'),

('23456','Adnan','Khan','I#79 I-10/2','0330-9786523'),  
('87362','Ahmed','Saleem','I#78 Mandia','0336-1238789'),  
('12098','Asfi','Khan','I#85 Supply','0344-1237686'),  
('90876','Shanawaz','Ali','I#86 Supply','0324-2214598'),  
('78635','Haneez','Tahir','I#895 Cantt','0314-9887672'),  
('17865','Ahmer','Hassan','I#55 Kalapul','0304-9991231'),  
('87268','Zagyam','Asim','I#986 Beer','0334-3228123'),  
('12876','Ibrar','Saqib','I#12 Cantt','0314-9122234');

insert into propertyforrent ( propertyNo, street, city, postcode, type, rooms, rent, ownerNo, staffNo, branchNo)

values ('A110','I#38 H-13','ISB','8092','Room','1','12000','13456','SA9','C001'),  
('B110','I#78 Cantt','ABT','1278','Apartment','2','10000','19283','SG14','C002'),  
('A111','I#85 I-9/3','ISB','3987','Aparment','3','14000','23456','SG37','C003'),  
('C065','I#12 Gurdawara','ABT','2576','Room','1','8000','87362','SG5','C004'),  
('D124','I#78 Kalapull','ISB','9087','Apartment','2','10000','12098','SL21','C005'),  
('G116','I#55 Nawasher',  
'ABT','1265','Apartment','3','15000','90876','SL41','C006'),  
('A140','I#12 Supply','ABT','3489','Apartment','4','18000','78635','SP98','C007'),  
('H180','I#86 PMA Road','ISB','1265','House','4','24000','17865','SK32','C008'),  
('A230','I#38 F-8/3','ISB','9087','House','3','22000','87268','SB83','C009'),  
('H210','I#86 Adda','ABT','5431','Apartment','2','14000','12876','SR68','C010');

insert into registration ( clientNo, branchNo,staffNo ,dateJoined )

values ('1','C001','SG14','1999/12/24'),  
('2','C002','GA9','1991/11/18'),

```
('3','C003','HG37','1994/04/12'),  
('4','C004','IG5','1989/01/07'),  
('5','C005','JL21','1995/07/29'),  
('6','C006','KL41','2000/08/19'),  
('7','C007','BP28','1996/11/01'),  
('8','C008','DK32','1986/04/12'),  
('9','C009','YB83','1990/10/05'),  
('10','C010','LR68','1990/05/14');
```

```
insert into viewing(clientNo, propertyNo, viewDate, comment)  
values('1','Y110','2000/05/14','GOOD'),  
('2','H110','2001/11/21','GOOD'),  
('3','U111','2001/04/04','GOOD'),  
('4','K065','2000/01/01','GOOD'),  
('5','S124','2004/06/19','AVERAGE'),  
('6','C116','1999/08/02','SATISFACTORY'),  
('7','I140','2005/07/09','GOOD'),  
('8','L180','2000/02/26','AVERAGE'),  
('9','S230','1997/10/12','GOOD'),  
('10','L210','2003/12/24','GOOD');
```

## LAB 7

```
select distinct(postcode) from branch;  
select distinct(fName) from staff;
```

```
select staffNo as ID,fName as FirstName, lName as LastName, position as  
Position, sex as Gender, DOB as DateofBirth, salary as Salary, branchNO as  
BranchNumber from staff;
```

```
select clientNo as ClientNumber, fName as FirstName, lName as LastName, telNo  
as TelliPhone, prefType as Preference, maxRent as MaximumRent from client;
```

```
select * from staff where salary > 7630;
```

```
select * from staff where position = 'manager' or position = 'manager';
```

## LAB 8

-- Few examples for better understanding the concepts of sorting, grouping and aggregating.

```
SELECT staffNo, fName, lName, salary FROM staff ORDER BY salary DESC;
```

```
SELECT propertyNo, type, rooms, rent FROM propertyforrent ORDER BY type;
```

```
SELECT propertyNo, type, rooms, rent FROM propertyforrent ORDER BY type,  
rent DESC;
```

```
SELECT staffNo, COUNT(salary) FROM staff;
```

```
SELECT COUNT(*) AS myCount FROM propertyforrent WHERE rent <=55000;
```

```
SELECT COUNT(DISTINCT propertyNo) AS myCount FROM Viewing  
WHERE viewDate BETWEEN '2001-03-03' AND '2012-02-02';
```

```
SELECT COUNT(staffNo) AS myCount, SUM(salary) AS mySum FROM Staff  
WHERE position = 'Manager';
```

```
SELECT MIN(salary) AS myMin, MAX(salary) AS myMax, AVG(salary) AS  
myAvg FROM staff;
```

```
SELECT staffNo, COUNT(salary) FROM staff;
```

```
SELECT staffNo, fName, lName, position, salary FROM staff WHERE (SELECT  
AVG(salary) FROM staff) > salary;
```

```
SELECT staffNo, fName, lName, position, salary FROM staff WHERE salary >
SOME (SELECT salary FROM staff WHERE branchNo = 'C003');
```

```
SELECT staffNo, fName, lName, position, salary FROM staff WHERE salary >
ALL (SELECT salary FROM staff WHERE branchNo = 'C003');
```

### **-- Aggregate**

```
SELECT COUNT(DISTINCT(propertyNo)) AS myCount FROM Viewing
WHERE viewDate BETWEEN '2003-05-02' AND '2004-03-19';
```

```
SELECT COUNT(salary) AS myCount FROM staff WHERE salary BETWEEN
'12000' AND '55000';
```

```
SELECT clientNo, propertyNo AS ClientID, PropertyNo FROM Viewing
WHERE viewDate BETWEEN '1997-04-04' AND '2004-06-19';
```

### **-- Grouping**

```
SELECT staffNo, fName, lName, sex, salary FROM Staff WHERE position =
'Receptionist' AND salary < 32000;
```

```
SELECT fName, lName, branchNo FROM Staff WHERE sex = 'M' AND position =
'Manager';
```

```
SELECT fName, lName, salary, position FROM Staff WHERE (SELECT
AVG(salary) FROM Staff) < salary;
```

### **-- Sorting**

```
SELECT staffNo, fName, lName, salary FROM staff ORDER BY salary ASC;
```

```
SELECT salary FROM staff ORDER BY salary DESC;
```

```
SELECT salary FROM staff ORDER BY salary ASC;
```

ABDULLAH JAVED SP19-BCS-002

LAB 6

-- 1. Create Database

create database DreamHome

-- 2. Set My Working Database in Query Editor

use DreamHome

-- 3. Create Tables

-- Branch

create table Branch (branchNo varchar(20) NOT NULL Primary Key, street varchar(100) NOT NULL, city varchar(50) NOT NULL, postcode varchar(20) NOT NULL);

-- Staff

create table Staff (staffNo varchar(20) NOT NULL PRIMARY KEY, fName varchar(50) NOT NULL, lName varchar(50) NOT NULL, position varchar(50) NOT NULL, sex varchar(1) NOT NULL, DOB DateTime NOT NULL, salary DECIMAL NOT NULL, branchNo varchar(20) NOT NULL References Branch(branchNo));

-- Client

create table Client (clientNo varchar(20) NOT NULL PRIMARY KEY, fName varchar(50) NOT NULL, lName varchar(50) NOT NULL, telNo varchar(20) NOT NULL, prefType varchar(50) NOT NULL, maxRent DECIMAL NOT NULL)

-- PrivateOwner

create table PrivateOwner (ownerNo varchar(20) NOT NULL PRIMARY KEY, fName varchar(50) NOT NULL, lName varchar(50) NOT NULL, [address] varchar(50) NOT NULL, telNo varchar(20) NOT NULL)

-- PropertyForRent

create table PropertyForRent (propertyNo varchar(20) NOT NULL PRIMARY KEY, street varchar(100) NOT NULL, city varchar(50) NOT NULL, postcode varchar(20) NOT NULL, type varchar(10) NOT NULL, rooms int NOT NULL, rent DECIMAL NOT NULL, ownerNo varchar(20) References PrivateOwner(ownerNo), staffNo varchar(20) NOT NULL References Staff(staffNo),

```
branchNo varchar(20) NOT NULL References Branch(branchNo));
```

```
-- Viewing
```

```
create table Viewing (clientNo varchar(20) NOT NULL References Client(clientNo),  
propertyNo varchar(20) NOT NULL References PropertyForRent(propertyNo),  
viewDate DateTime NOT NULL, comment varchar(200) NOT NULL)
```

```
-- Registration
```

```
create table Registration(clientNo varchar(20) NOT NULL References Client(clientNo),  
branchNo varchar(20) NOT NULL References Branch(branchNo),staffNo varchar(20)  
NOT NULL References Staff(staffNo),dateJoined DateTime NOT NULL)
```

```
-- 4. Add Sample Data
```

```
-- 4.1 Single Row Example
```

```
INSERT into Branch (branchNo, street, city, postcode) VALUES ('AB0', 'H#79 I-10/2',  
'ISB', '52000');
```

```
-- 4.2 Multiple Rows Example
```

```
INSERT into Branch(branchNo, street, city, postcode)  
VALUES  
( 'AB1', 'H#114 iqbal park', 'SGD', '40100'),  
( 'AB2', 'H#32 COLONY', 'RWP', '54900'),  
( 'AB3', 'H#71 SHAHEEN PARK', 'FSD', '48800'),  
( 'AB4', 'H#18 ABDULLAH TOWN', 'JHG', '32400'),  
( 'AB5', 'H#12 REHMAN TOWN', 'ISB', '32300'),  
( 'AB6', 'H#42 REHAN TOWN', 'SGD', '40100'),  
( 'AB7', 'H#40 ADIL TOWN ', 'FSD', '23500'),  
( 'AB8', 'H#70 ASAD PARK', 'DIK', '43560'),  
( 'AB9', 'H#12 REMANABAD', 'RWP', '78800'),  
( 'AB10', 'H#230 NEW CANTT', 'PSW', '34987')
```

```
insert into Staff (staffNo, fName, lName, position, sex, DOB, salary, branchNo)
```

```
VALUES
```

```
( 'AB21', 'Steve', 'Jobs', 'Director', 'M', CAST(03161998 AS DateTime), CAST(1000000  
AS Decimal(10, 0)), 'AB505'),  
( 'AB22', 'Bill', 'Gates', 'Assistant', 'M', CAST(16121998 AS DateTime), CAST(1000000  
AS Decimal(10, 0)), 'AB570'),
```



('AB23', 'Annie', 'Thomson', 'Manager', 'F', CAST(16121998 AS DateTime),  
 CAST(1000000 AS Decimal(10, 0)), 'AB320'),  
 ('AB24', 'Sand', 'Wood', 'Assistant', 'M', CAST(16121998 AS DateTime), CAST(1000000  
 AS Decimal(10, 0)), 'AB200'),  
 ('AB25', 'John', 'Duo', 'Director', 'M', CAST(16121998 AS DateTime), CAST(1000000  
 AS Decimal(10, 0)), 'AB571'),  
 ('AB26', 'Penzy', 'Werth', 'Supervisor', 'F', CAST(16121998 AS DateTime),  
 CAST(1000000 AS Decimal(10, 0)), 'AB230'),  
 ('AB27', 'Rozi', 'Mith', 'Manager', 'F', CAST(16121998 AS DateTime), CAST(1000000  
 AS Decimal(10, 0)), 'AB231'),  
 ('AB28', 'Bint', 'Lamo', 'Manager', 'F', CAST(16121998 AS DateTime), CAST(1000000  
 AS Decimal(10, 0)), 'AB123'),  
 ('AB29', 'Ender', 'Genero', 'Manager', 'F', CAST(16121998 AS DateTime),  
 CAST(1000000 AS Decimal(10, 0)), 'AB576'),  
 ('AB30', 'Lord', 'Curzen', 'Assistant', 'M', CAST(16121998 AS DateTime),  
 CAST(1000000 AS Decimal(10, 0)), 'AB340')

insert into Client (clientNo, fName, lName, prefType, telNo, maxRent)  
 VALUES ('AB11', 'Armed', 'Goar', 'social media', '03001234567', '20000'),  
 ('AB12', 'Mint', 'Margaret', 'online', '03201234567', '18000'),  
 ('AB13', 'Randi', 'Otan', 'social media', '03101234567', '13000'),  
 ('AB14', 'Gorge', 'Bush', 'call', '03111234567', '30000'),  
 ('AB15', 'Donald', 'Trump', 'Media', '03021234567', '50000'),  
 ('AB16', 'Helry', 'Klinton', 'social media', '03001234567', '160000'),  
 ('AB17', 'Lord', 'Curzen', 'network', '03031234567', '45000'),  
 ('AB18', 'Real', 'Mont', 'Media', '03001234567', '34000'),  
 ('AB19', 'Anthony', 'Broad', 'social media', '03041234567', '78000'),  
 ('AB20', 'Tom', 'Cruze', 'social media', '03001234567', '20000')

insert into PrivateOwner (ownerNo, fName, lName, [address], telNo)  
 VALUES ('AB31', 'Orthor', 'Due', 'lahore', '03001234567'),  
 ('AB32', 'Triple', 'H', 'rawalpindi', '03201234567'),  
 ('AB33', 'Randi', 'Otan', 'islamabad', '03101234567'),  
 ('AB34', 'Gorge', 'Bush', 'sargodha', '03111234567'),  
 ('AB35', 'Donald', 'Trump', 'faislabad', '03021234567'),  
 ('AB36', 'Helry', 'Klinton', 'karachi', '03001234567'),

('AB37', 'Lord', 'Curzen', 'jhang', '03031234567'),  
('AB38', 'Real', 'Mont', 'taxila', '03001234567'),  
('AB39', 'Anthony', 'Broad', 'abbotabad', '03041234567'),  
('AB40', 'Tom', 'Cruze', 'murree', '03001234567')

insert into propertyforrent ( propertyNo, street, city, postcode, type, rooms, rent,  
ownerNo, staffNo, branchNo)

values ('AB41','St#114', 'SGD','40100','4','house','13000','42372','AB001','AB1'),  
('AB42','St#114', 'RWP','38900','Apartment','2','10000','45678','AB002','AB2'),  
('AB43','St#03', 'ISB','45600','Aparment','3','14000','42347','AB003','AB3'),  
('AB44','St#14', 'KAR','12567','Room','1','8000','87362','AB004','AB4'),  
('AB45','St#11', 'FSD','35900','Apartment','2','10000','12098','AB005','AB5'),  
('AB46','St#18', 'PSW','23800','Apartment','3','15000','90876','AB006','AB6'),  
('AB47','St#42', 'LHR','41750','Apartment','4','18000','78635','AB007','AB7'),  
('AB48','St#56', 'JHG','28600','House','4','24000','17865','AB008','AB8'),  
('AB49','St#32', 'MUL','67700','House','3','22000','87268','AB009','AB9'),  
('AB50','St#21', 'SGD','40100','Apartment','2','21000','42300','AB010','AB10');

INSERT INTO Viewing(clientNo, propertyNo, viewDate, comment)

Values('AB51','AB111','2000/05/14','GOOD'),  
('AB52','AB222','2000/12/12','GOOD'),  
('AB53','AB333','2001/04/04','GOOD'),  
('AB54','AB444','2002/01/01','GOOD'),  
('AB55','AB555','2003/06/19','GOOD'),  
('AB56','AB666','1998/08/02','GOOD'),  
('AB57','AB777','2004/07/09','GOOD'),  
('AB58','AB888','2005/02/26','GOOD'),  
('AB59','AB999','1999/10/12','GOOD'),  
('AB60','AB000','2006/12/24','GOOD');

insert into registration ( clientNo, branchNo,staffNo ,dateJoined )

values ('AB61','AB1','AB01','1998/12/12'),  
  
('AB62','AB2','AB02','1999/11/18'),  
('AB63','AB3','AB03','1994/04/12'),  
('AB64','AB4','AB04','1989/01/07'),

```
('AB65','AB5','AB05','1996/07/29'),  
( 'AB66','AB6','AB06','2001/08/19'),  
( 'AB67','AB7','AB07','1997/11/01'),  
( 'AB68','AB8','AB08','1986/04/12'),  
( 'AB69','AB9','AB09','2002/10/05'),  
( 'AB70','AB10','AB010','2000/05/14');
```

Select distinct(city) from Branch order by city desc;

## LAB 7

```
select distinct(postcode) from branch;
```

```
select distinct(fName) from staff;
```

```
select staffNo as ID,fName as FirstName, lName as LastName, position as Position, sex  
as Gender, DOB as DateofBirth, salary as Salary, branchNO as BranchNumber from  
staff;
```

```
select clientNo as ClientNumber, fName as FirstName, lName as LastName, telNo as  
TelliPhone, prefType as Preference, maxRent as MaximumRent from client;
```

```
select * from staff where salary > 13000;
```

```
select * from staff where position = 'DIRECTOR' or position = 'MANAGER';
```

## LAB 8

```
SELECT staffNo, fName, lName, salary FROM staff ORDER BY Staffno DESC;
```

```
SELECT propertyNo, type, rooms, rent FROM propertyforrent ORDER BY rooms;
```

```
SELECT propertyNo, type, rooms, rent FROM propertyforrent ORDER BY rooms, type;
```

```
SELECT staffNo, COUNT(salary) FROM staffname;
```

```
SELECT COUNT(*) AS myCount FROM propertyforrent WHERE rent <=12000;
```

```
SELECT COUNT(DISTINCT propertyNo) AS myCount FROM Viewing WHERE viewDate BETWEEN '1998-12-  
16' AND '2004-12-23';
```

```
SELECT COUNT(staffNo) AS myCount, SUM(salary) AS mySum FROM Staff WHERE position = 'director';
```

```
SELECT MIN(salary) AS myMin, MAX(salary) AS myMax, AVG(salary) AS myAvg FROM staff;
```

```
SELECT staffNo, COUNT(salary) FROM staff;
```

```
SELECT staffNo, fName, lName, position, salary FROM staff WHERE (SELECT AVG(salary) FROM staff) <  
salary;
```

```
SELECT staffNo, fName, lName, position, salary FROM staff WHERE salary > SOME (SELECT salary FROM staff WHERE branchNo = 'AB02');
```

```
SELECT staffNo, fName, lName, position, salary FROM staff WHERE salary > ALL (SELECT salary FROM staff WHERE branchNo = 'AB01');
```

-- Sorting

```
SELECT staffNo, fName, lName, salary FROM staff ORDER BY salary ASC;
```

```
SELECT salary FROM staff ORDER BY salary DESC;
```

```
SELECT salary FROM staff ORDER BY salary ASC;
```

-- Grouping

```
SELECT staffNo, fName, lName, sex, salary FROM Staff WHERE position = 'Receptionist' AND salary < 10000;
```

```
SELECT fName, lName, branchNo FROM Staff WHERE sex = 'F' AND position = 'Manager';
```

```
SELECT fName, lName, salary, position FROM Staff WHERE (SELECT AVG(salary) FROM Staff) < salary;
```

-- Aggregate

```
SELECT COUNT(DISTINCT(propertyNo)) AS myCount FROM Viewing WHERE viewDate BETWEEN '2000-01-01' AND '2005-05-20';
```

```
SELECT COUNT(salary) AS myCount FROM staff WHERE salary BETWEEN '12000' AND '80000';
```

```
SELECT clientNo, propertyNo AS ClientID, PropertyNo FROM Viewing WHERE viewDate BETWEEN '2000-02-16' AND '2005-12-16';
```

[Zulkifil Rehman \(SP19-BCS-027\)](#)

## Lab 6:

use dreamhome;

INSERT into branch (branchNo, street, city, postcode)

VALUES

('C001','I#38 G-13', 'ISB','8092'),  
('C002', 'I#78 Supply', 'ABT', '1278'),  
('C003', 'I#79 I-10/2', 'ISB', '3987'),  
('C004','I#78 Mandia', 'ABT', '2576'),  
('C005','I#85 Mirpur', 'ABT', '9087'),  
('C006','I#86 Supply', 'ISB', '1265'),  
('C007','I#895 Cantt', 'ABT', '3489'),  
('C008','I#55 Kalapul', 'ABT', '9871'),  
('C009','I#986 Beer', 'HAR', '9087'),  
('C010','I#12 Cantt', 'HAV', '5431');

insert into staff (staffNo, fName, lName, position, sex, DOB, salary, branchNo)

values (' SG5', 'Mary', 'Howe', 'Assistant', 'F', '1988/08/23', 20000, 'C002'),  
(' SL21', 'David', 'Ford', 'Assistant', 'M','1987/11/9', 100000, 'C003'),  
('SG37', 'Anna', 'Bleech', 'Supervisor', 'F','1986/12/8', 90000, 'C003'),  
('SA9', 'Susa', 'Brand', 'Receptionist', 'F', '1989/5/9', 120000, 'C003'),  
('SG14', 'Joh', 'White', 'Manager', 'M', '1992/2/12', 100000, 'C004'),  
('SL41', 'Julie', 'Lee', 'Assistant', 'F', '1990/8/3', 50000, 'C002'),  
(' SR68', 'Akbar', 'Shoaib', 'Assistant Manager', 'M', '1996/9/8', 70000, 'C005'),  
('SK32', 'Mahrukh', 'Khan', 'Customer Service', 'F', '1994/9/8', 60000, 'C010'),  
('SB83', 'Ali', 'Hassan', 'Receptionist', 'M', '1991/4/6', 40000, 'C009'),  
(' SP98', 'Hamid', 'Qazi', 'Security Guard', 'M', '1982/9/12', 10000, 'C007');

insert into client (clientNo, fName, lName, telNo, prefType, maxRent)  
values ('1', 'Hamza', 'Muhstaq', '0341-3487431', 'Apartment', '16000'),  
( '2', 'Hamza', 'Abid', '0341-3412312', 'Apartment', '18000'),  
( '3', 'Imad', 'Ahmad', '0347-2346553', 'House', '24000'),  
( '4', 'Adil', 'Mehmood', '0341-3123565', 'Apartment', '15000'),  
( '5', 'Zullkif', 'Rehman', '0320-3983493', 'House', '30000'),  
( '6', 'Huzaifa', 'Abid', '0312-9817818', 'Room', '12000'),  
( '7', 'Haseeb', 'Khan', '0300-9182713', 'Room', '14000'),  
( '8', 'Sharjeel', 'Khan', '0344-3912399', 'House', '22000'),  
( '9', 'Ahmed', 'Shah', '0340-1908761', 'Apartment', '20000'),  
( '10', 'Hamza', 'Javed', '0331-7096413', 'House', '24000');

insert into privateowner (ownerNo, fName, lName, address, telNO)  
values('13456','Huzaifa','Abid','G-13', '0331-1006543'),  
( '19283','Hamza','Abid', 'I#78 Supply', '0332-9123768'),  
( '23456','Adeel','Khan', 'I#79 I-10/2', '0330-9786523'),  
( '87362','Zeeshan','Saleem','I#78 Mandia', '0336-1238789'),  
( '12098','Asif','Khan','I#85 Supply', '0344-1237686'),  
( '90876','Shan','Ali','I#86 Supply', '0324-2214598'),  
( '78635','Hanzala','Tahir','I#895 Cantt', '0314-9887672'),  
( '17865','Ahmed','Hassan','I#55 Kalapul', '0304-9991231'),  
( '87268','Zain','Asim','I#986 Beer', '0334-3228123'),  
( '12876','Ibrahim','Saqib','I#12 Cantt', '0314-9122234');

```
insert into propertyforrent ( propertyNo, street, city, postcode, type, rooms,  
rent, ownerNo, staffNo, branchNo)
```

```
values ('A110','I#38 G-13', 'ISB','8092','Room','1','12000','13456','SA9','C001'),  
('B110','I#78 Mandia', 'ABT','1278','Apartment','2','10000','19283','SG14','C002'),  
('A111','I#85 Mirpur', 'ISB','3987','Aparment','3','14000','23456','SG37','C003'),  
('C065','I#12 Cantt', 'ABT','2576','Room','1','8000','87362','SG5','C004'),  
('D124','I#78 Mandia', 'ISB','9087','Apartment','2','10000','12098','SL21','C005'),  
('G116','I#55 Kalapul', 'ABT','1265','Apartment','3','15000','90876','SL41','C006'),  
('A140','I#12 Cantt', 'ABT','3489','Apartment','4','18000','78635','SP98','C007'),  
('H180','I#86 Supply', 'ISB','1265','House','4','24000','17865','SK32','C008'),  
('A230','I#38 G-13', 'ISB','9087','House','3','22000','87268','SB83','C009'),  
('H210','I#86 Supply', 'ABT','5431','Apartment','2','14000','12876','SR68','C010');
```

```
insert into registration ( clientNo, branchNo,staffNo ,dateJoined )
```

```
values ('1','C001','SG14','1999/12/24'),  
('2','C002','SA9','1991/11/18'),  
('3','C003','SG37','1994/04/12'),  
('4','C004','SG5','1989/01/07'),  
('5','C005','SL21','1995/07/29'),  
('6','C006','SL41','2000/08/19'),  
('7','C007','SP28','1996/11/01'),  
('8','C008','SK32','1986/04/12'),  
('9','C009','SB83','1990/10/05'),  
('10','C010','SR68','1990/05/14');
```

```
insert into viewing(clientNo, propertyNo, viewDate, comment)
```

```
values('1','A110','2000/05/14','GOOD'),
```

```
('2','B110','2001/11/21','GOOD'),  
('3','A111','2001/04/04','GOOD'),  
('4','C065','2000/01/01','GOOD'),  
('5','D124','2004/06/19','GOOD'),  
('6','G116','1999/08/02','GOOD'),  
('7','A140','2005/07/09','GOOD'),  
('8','H180','2000/02/26','GOOD'),  
('9','A230','1997/10/12','GOOD'),  
('10','B210','2003/12/24','GOOD');
```

## Lab 7:

```
select distinct(postcode) from branch;
```

```
select distinct(fName) from staff;
```

```
select staffNo as ID,fName as FirstName, lName as LastName, position as Position, sex as  
Gender, DOB as DateofBirth, salary as Salary, branchNO as BranchNumber from staff;
```

```
select clientNo as ClientNumber, fName as FirstName, lName as LastName, telNo as  
TelliPhone, prefType as Preference, maxRent as MaximumRent from client;
```

```
select * from staff where salary > 20000;
```

```
select * from staff where position = 'manager' or position = 'supervisor';
```

## LAB 8:

```
-- Examples
```

```
SELECT staffNo, fName, lName, salary FROM staff ORDER BY salary DESC;
```



```

SELECT propertyNo, type, rooms, rent FROM propertyforrent ORDER BY type;

SELECT propertyNo, type, rooms, rent FROM propertyforrent ORDER BY type, rent DESC;

SELECT staffNo, COUNT(salary) FROM staff;

SELECT COUNT(*) AS myCount FROM propertyforrent WHERE rent <=10000;

SELECT COUNT(DISTINCT propertyNo) AS myCount FROM Viewing WHERE viewDate
BETWEEN '1997-10-12' AND '2003-12-24';

SELECT COUNT(staffNo) AS myCount, SUM(salary) AS mySum FROM Staff WHERE position =
'Manager';

SELECT MIN(salary) AS myMin, MAX(salary) AS myMax, AVG(salary) AS myAvg FROM
staff;

SELECT staffNo, COUNT(salary) FROM staff;

SELECT staffNo, fName, lName, position, salary FROM staff WHERE (SELECT AVG(salary)
FROM staff) < salary;

SELECT staffNo, fName, lName, position, salary FROM staff WHERE salary > SOME (SELECT
salary FROM staff WHERE branchNo = 'C003');

SELECT staffNo, fName, lName, position, salary FROM staff WHERE salary > ALL (SELECT
salary FROM staff WHERE branchNo = 'C003');


-- Sorting

SELECT staffNo, fName, lName, salary FROM staff ORDER BY salary ASC;

SELECT salary FROM staff ORDER BY salary DESC;

SELECT salary FROM staff ORDER BY salary ASC;


-- Grouping

SELECT staffNo, fName, lName, sex, salary FROM Staff WHERE position = 'Receptionist' AND
salary < 40000;

SELECT fName, lName, branchNo FROM Staff WHERE sex = 'M' AND position = 'Manager';

SELECT fName, lName, salary, position FROM Staff WHERE (SELECT AVG(salary) FROM
Staff) < salary;


-- Aggregate

```

```
SELECT COUNT(DISTINCT(propertyNo)) AS myCount FROM Viewing WHERE viewDate  
BETWEEN '1999-08-02' AND '2004-06-19';
```

```
SELECT COUNT(salary) AS myCount FROM staff WHERE salary BETWEEN '20000' AND  
'60000';
```

```
SELECT clientNo, propertyNo AS ClientID, PropertyNo FROM Viewing WHERE viewDate  
BETWEEN '2001-04-04' AND '2004-06-19';
```

[SAIF UR REHMAN \(SP19-BCS-021\)](#)

## Lab 6

```
create database DreamHome
```

```
use DreamHome
```

```
create table Branch (branchNo varchar(20) NOT NULL Primary Key, street  
varchar(100) NOT NULL, city varchar(50) NOT NULL,  
postcode varchar(20) NOT NULL);
```

```
create table Staff (staffNo varchar(20) NOT NULL PRIMARY KEY, fName  
varchar(50) NOT NULL, IName varchar(50) NOT NULL,  
position varchar(50) NOT NULL, sex varchar(1) NOT NULL, DOB DateTime NOT  
NULL, salary DECIMAL NOT NULL,  
branchNo varchar(20) NOT NULL References Branch(branchNo));
```

```
create table Client (clientNo varchar(20) NOT NULL PRIMARY KEY, fName  
varchar(50) NOT NULL, IName varchar(50) NOT NULL,  
telNo varchar(20) NOT NULL, prefType varchar(50) NOT NULL, maxRent  
DECIMAL NOT NULL)
```

```
create table PrivateOwner (ownerNo varchar(20) NOT NULL PRIMARY KEY,  
fName varchar(50) NOT NULL, IName varchar(50) NOT NULL,  
[address] varchar(50) NOT NULL, telNo varchar(20) NOT NULL)
```

```
create table PropertyForRent (propertyNo varchar(20) NOT NULL PRIMARY
KEY, street varchar(100) NOT NULL, city varchar(50) NOT NULL,
postcode varchar(20) NOT NULL, type varchar(10) NOT NULL, rooms int NOT
NULL, rent DECIMAL NOT NULL,
ownerNo varchar(20) References PrivateOwner(ownerNo), staffNo varchar(20)
NOT NULL References Staff(staffNo),
branchNo varchar(20) NOT NULL References Branch(branchNo));
```

```
create table Viewing (clientNo varchar(20) NOT NULL References
Client(clientNo),
propertyNo varchar(20) NOT NULL References PropertyForRent(propertyNo),
viewDate DateTime NOT NULL, comment varchar(200) NOT NULL)
```

```
create table Registration(clientNo varchar(20) NOT NULL References
Client(clientNo),
branchNo varchar(20) NOT NULL References Branch(branchNo),staffNo
varchar(20) NOT NULL References Staff(staffNo),dateJoined DateTime NOT
NULL)
```

```
INSERT into Branch (branchNo, street, city, postcode)
```

```
VALUES
```

```
('AD1','3rd Street Satellite Town', 'SGD','40100'),
```

```
('AD2', '1st Block', 'FSD', '38000'),
```

```
('AD3', '4th Street Urdu bazar', 'SGD', '40100'),
```

```
('AD4','5th Block', 'FSD', '38000'),
```

```
('AD5','3rd Street Urdu bazar', 'SGD', '40100'),
```

```
('AD6','Sixth Road', 'RWP', '43600'),
```

```
('AD7','Saadaar', 'RWP', '43600'),
```

```
('AD8','Deput', 'RWP', '43600'),
```

```
('AD9','3rd street University Road', 'SGD', '40100'),
```

```
('AD10','2nd street Queens Chock', 'SGD', '40100');
```

```

insert into Staff (staffNo, fName, lName, position, sex, DOB, salary, branchNo)
VALUES ('AD01', 'Adil', 'Mehmood', 'Assistant', 'M', CAST(0x0000641000000000
AS DateTime), CAST(9000 AS Decimal(18, 0)), 'A001'),
('AD02', 'Abdullah', 'Javed', 'Manager', 'M', CAST(0x0000531200000000 AS
DateTime), CAST(18000 AS Decimal(18,0)), 'A002'),
('AD03', 'Hamza', 'Mushtaq', 'Assistant', 'M', CAST(0x000056D400000000 AS
DateTime), CAST(12000 AS Decimal(18,0)), 'A003'),
('AD04', 'Huzaifa', 'Abid', 'Assistant', 'M', CAST(0x0000C85800000000 AS
DateTime), CAST(24000 AS Decimal(18,0)), 'A004'),
('AD05', 'Ayesha', 'Latif', 'Assistant', 'F', CAST(0x0000CFF200000000 AS
DateTime), CAST(30000 AS Decimal(18,0)), 'A005'),
('AD06', 'Komal', 'Mushtaq', 'Assistant', 'F', CAST(0x00005D6000000000 AS
DateTime), CAST(9000 AS Decimal(18, 0)), 'A006'),
('AD07', 'Rafiya', 'Siddique', 'Assistant', 'F', CAST(0x00005D6000000000 AS
DateTime), CAST(9000 AS Decimal(18, 0)), 'A007'),
('AD08', 'Alina', 'Mukhtiar', 'Assistant', 'F', CAST(0x00005D6000000000 AS
DateTime), CAST(9000 AS Decimal(18, 0)), 'A008'),
('AD09', 'Kamran', 'Ali', 'Supervisor', 'M', CAST(0x00005D6000000000 AS
DateTime), CAST(9000 AS Decimal(18, 0)), 'A009'),
('AD010', 'Khurram', 'Shehzad', 'Supervisor', 'M', CAST(0x00005D6000000000
AS DateTime), CAST(9000 AS Decimal(18, 0)), 'A0010');

```

```

insert into client (clientNo, fName, lName, telNo, prefType, maxRent)
values ('AD001', 'Muhammad', 'Hamza', '0341-3487431', 'Apartment', '160000'),
('AD002', 'Muhammad', 'Ali', '0341-3412312', 'Apartment', '180000'),
('AD003', 'Asim', 'Azhar', '0347-2346553', 'House', '24000'),
('AD004', 'Adil', 'Mehmood', '0341-3123565', 'Apartment', '5000'),
('AD005', 'Atif', 'Aslam', '0320-3983493', 'House', '3000'),

```

('AD006', 'Touqeef', 'Rehman', '0312-9817818', 'Room', '2000'),  
('AD007', 'Haseeb', 'Khan', '0300-9182713', 'Room', '1400'),  
('AD008', 'Sharjeel', 'Khan', '0344-3912399', 'House', '2000'),  
('AD009', 'Ahmed', 'Shah', '0340-1908761', 'Apartment', '20000'),  
('AD0010', 'Hamza', 'Javed', '0331-7096413', 'House', '2000');

insert into privateowner (ownerNo, fName, lName, address, telNO)

values('AD0001','Huzaifa','Abid','G-13', '0331-132326543'),  
('AD0002','Hamza','Khalid', 'I#78 Supply', '0332-913268'),  
('AD0003','Adeel','Waraich', 'I#79 I-10/2', '0330-978323223'),  
('AD0004','Zeeshan','Akhtar','I#78 Mandia', '0336-248789'),  
('AD0005','Asif','Niazi','I#85 Supply', '0344-12373466'),  
('AD0006','Shan','Shahd','I#86 Supply', '0324-22145538'),  
('AD0007','Hanzala','Maqsood','I#895 Cantt', '0314-7787672'),  
('AD0008','Ahmed','Ali','I#55 Kalapul', '0304-5591231'),  
('AD0009','Zain','Farooq','I#986 Beer', '0334-322448123'),  
('AD00010','Ibrahim','Uziar','I#12 Cantt', '0314-91442234');

insert into propertyforrent ( propertyNo, street, city, postcode, type, rooms, rent, ownerNo, staffNo, branchNo)

values ('AD101','I#38 G-13', 'ISB','8092','Room','1','12000','13456','AD01','AD1'),  
('AD102','I#78 Mandia', 'ABT','1278','Apartment','2','10000','19283','AD02','AD2'),  
('AD103','I#85 Mirpur', 'ISB','3987','Aparment','3','14000','23456','AD03','AD3'),  
('AD104','I#12 Cantt', 'ABT','2576','Room','1','8000','87362','AD04','AD4'),  
('AD105','I#78 Mandia', 'ISB','9087','Apartment','2','10000','12098','AD05','AD5'),  
('AD106','I#55 Kalapul', 'ABT','1265','Apartment','3','15000','90876','AD06','AD6'),  
('AD107','I#12 Cantt', 'ABT','3489','Apartment','4','18000','78635','AD07','AD7'),

```
('AD108','I#86 Supply', 'ISB','1265','House','4','24000','17865','AD08','AD8'),  
('AD109','I#38 G-13', 'ISB','9087','House','3','22000','87268','AD09','AD9'),  
('AD1010','I#86 Supply',  
'ABT','5431','Apartment','2','14000','AD10','SR68','AD10');
```

```
insert into registration ( clientNo, branchNo,staffNo ,dateJoined )  
values ('AD1101','AD1','AD01','1999/12/24'),  
('AD1102','AD2','AD02','1991/11/18'),  
('AD1103','AD3','AD03','1994/04/12'),  
('AD1104','AD4','AD04','1989/01/07'),  
('AD1105','AD5','AD05','1995/07/29'),  
('AD1106','AD6','AD06','2000/08/19'),  
('AD1107','AD7','AD07','1996/11/01'),  
('AD1108','AD8','AD08','1986/04/12'),  
('AD1109','AD9','AD09','1990/10/05'),  
('AD11010','AD10','AD10','1990/05/14');
```

```
insert into viewing(clientNo, propertyNo, viewDate, comment)  
values('AD001','A110','2000/05/14','GOOD'),  
('AD002','B110','2001/11/21','GOOD'),  
('AD003','A111','2001/04/04','GOOD'),  
('AD004','C065','2000/01/01','GOOD'),  
('AD005','D124','2004/06/19','GOOD'),  
('AD006','G116','1999/08/02','GOOD'),  
('AD007','A140','2005/07/09','GOOD'),  
('AD008','H180','2000/02/26','GOOD'),  
('AD009','A230','1997/10/12','GOOD'),
```

('AD0010','B210','2003/12/24','GOOD');

Select distinct(city) from Branch order by city desc;

LAB 7:

Print the list of postcode without any repetition

Solution:

Select distinct(postcode) from Branch;

Print all fName from Staff without repetition

Solution:

SELECT distinct(fName) FROM Staff;

List all staff with renaming all its columns in results

Solution:

Select staffNo As MyStaffNo, fName As MyFirstName, lName As MyLastName, position As MyPosition, DOB As MYDOB, salary As MySalary, branchNo As MyBranchNO from Staff;

List all clients with re-naming all its columns to synonyms.

Solution:

Select clientNo As clientId, fName As firstName, lName As lastName, telNo As contactNo, prefType As priorityType, maxRent As totalRent from Client;

List all staff with a salary greater than 10,000.

Solution:

SELECT \* FROM Staff WHERE salary > 10000;

List all managers and supervisors.

### Solution:

```
SELECT * FROM Staff WHERE position = 'manager' OR position = 'supervisor';
```

## Lab 8:

### Perform all the examples in this lab.

### Solution:

```
SELECT staffNo, fName, IName, salary FROM Staff ORDER BY salary DESC;
```

```
SELECT propertyNo, type, rooms, rent FROM PropertyForRent ORDER BY type;
```

```
SELECT propertyNo, type, rooms, rent FROM PropertyForRent ORDER BY type, rent DESC;
```

```
SELECT COUNT(DISTINCT propertyNo) AS myCount FROM Viewing WHERE viewDate  
BETWEEN '1-May-04' AND '31-May-04';
```

```
SELECT COUNT(staffNo) AS myCount, SUM(salary) AS mySum FROM Staff WHERE position  
= 'Manager';
```

```
SELECT MIN(salary) AS myMin, MAX(salary) AS myMax, AVG(salary) AS myAvg FROM Staff;
```

```
SELECT staffNo, COUNT(salary) FROM Staff; --shwoing error that no aggregate or group  
clause
```

```
SELECT staffNo, fName, IName, position, salary FROM Staff WHERE salary > SOME  
(SELECT salary FROM Staff WHERE branchNo = 'B003');
```

```
SELECT staffNo, fName, IName, position, salary FROM Staff WHERE salary > ALL (SELECT  
salary FROM Staff WHERE branchNo = 'B003');
```

For DreamHome case study write at least 3 examples of each category for sorting, grouping and aggregate operations. Share your exercises as advised in the lab.

### Sorting clauses

### Solution:

```
SELECT staffNo, fName, IName, position FROM Staff ORDER BY fName ASC;
```

```
SELECT staffNo, fName, position, salary FROM Staff ORDER BY salary DESC;
```

```
SELECT fName, salary FROM Staff ORDER BY IName DESC;
```

### Grouping clauses



### Solution:

```
SELECT staffNo, fName, sex, salary FROM Staff WHERE position = 'Assistant' AND salary < 10000;
```

```
SELECT fName, position FROM Staff WHERE sex = 'M' AND position = 'Manager';
```

```
SELECT fName, lName, position FROM Staff WHERE (SELECT AVG(salary) FROM Staff) < salary;
```

### Aggregateclauses

### Solution:

```
SELECT COUNT(DISTINCT(propertyNo)) AS myCount FROM Viewing WHERE viewDate BETWEEN '1-May-00' AND '31-May-04';
```

```
SELECT clientNo, propertyNo AS ClientID, PropertyNo FROM Viewing WHERE viewDate BETWEEN '1-May-00' AND '31-May-04';
```

```
SELECT clientNo, comment FROM Viewing WHERE viewDate BETWEEN '1-May-00' AND '31-May-04';
```