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1 Lab 6

1.1 Common Solution

```
-- 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, 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));

-- Client
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)

-- PrivateOwner
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)

-- 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)
```

-- 4.2 Multiple Rows Example

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

VALUES

```
('B001','H#79 I-10/2','ISB','52000'),
('B002','H#78 Supply','ABT','53000'),
('B003','H#79 I-10/2','ISB','52000'),
('B004','H#78 Mandia','ABT','53000'),
('B005','H#85 Supply','ABT','53000'),
('B006','H#86 G-6','ISB','52000'),
('B007','H#895 Cantt','ABT','53000'),
('B008','H#55 Kalapul','ABT','53000'),
('B009','H#986 Beer','HAR','22620'),
('B010','H#12 Cantt','HAV','22500'),
('B011','H#565 KTS','HAR','22620'),
('B012','H#123 KTS','HAR','22620'),
('B013','H#985 F-9','ISB','52000'),
('B014','H#120 DHA','LHR','54000'),
('B015','H#76 TIP','HAR','22620'),
('B016','H#33 Baldher','HAR','22620'),
('B017','H#22 SALHAD','ABT','53000'),
('B018','H#11 HARNOL','ABT','53000'),
('B019','H#13 H-9','ISB','52000'),
('B020','H#99 FAIZABAD','RWP','44000'),
('B021','H#164 PANIAN','HAR','22620')
```

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

VALUES

```
('SA9','Mary','Howe','Assistant','F','9/11/1988',20000,'B002'),
('SG14','David','Ford','Supervisor','M','11/9/1987',100000,'B003'),
('SG37','An','Beech','Assistant','F','12/8/1986',90000,'B003'),
('SG5','Susa','Brand','Manager','F','5/9/1989',120000,'B003'),
('SL21','Joh','White','Manager','M','2/12/1992',100000,'B004'),
('SL41','Julie','Lee','Assistant','F','8/3/1990',50000,'B002'),
('SP98','Akbar','Shah','Assistant Manager','M','9/8/1996',70000,'B005'),
('SK32','Mahrukh','Bibi','Customer Service','F','10/4/1994',60000,'B010'),
('SB83','Ahmad','Hassan','Clerk','M','4/6/1991',40000,'B009'),
('SR68','Hamid','Ali','Security Guard','M','9/12/1982',10000,'B007'),
('SI12','Akhtar','Rasheed','Security Officer','M','8/9/1989',50000,'B012'),
('SV56','Hajra','Khan','Customer Service','F','3/4/1992',60000,'B006'),
('ST91','Maria','Kareem','Customer Service Manager','M','1/7/1991',80000,'B008'),
('SO61','Kamran','Khan','Salesperson','M','9/2/1987',70000,'B020'),
('SQ19','Khurshid','Akram','Finance Manager','M','12/8/1982',80000,'B011'),
('SJ37','Sara','Majeed','HR Manager','F','12/6/1981',60000,'B019'),
('SD52','Parvaiz','Khan','Security Guard','M','11/12/1985',15000,'B013'),
('ST26','Bushra','Khan','Salesperson','F','5/10/1990',60000,'B017'),
```

('SN99', 'Khalid', 'Kamal', 'Security Guard', 'M', '12/12/1992', 16000, 'B014'),
('SF7', 'Mubashir', 'Naveed', 'Receptionist', 'M', '1/12/1996', 30000, 'B016'),
('SG76', 'Awais', 'Qamar', 'Operations Manager', 'M', '9/4/1988', 80000, 'B015'),
('SW84', 'Muneer', 'Zaman', 'Marketing Manager', 'M', '7/1/1992', 70000, 'B021'),
('SZ34', 'Sana', 'Khan', 'Receptionist', 'F', '5/12/1996', 50000, 'B018')

insert into Client (clientNo , fName, lName, telNo, prefType, maxRent)
VALUES

('A001', 'Imad', 'Ahmad', '03004463173', '1 bed Apartment', '5000'),
('A002', 'Akbar', 'Majeed', '03125648789', 'Shared Apartment', '6000'),
('A003', 'Farukh', 'Javed', '03468965741', 'Townhome', '70000'),
('A004', 'Imran', 'Hashmi', '03034321986', 'Bungalow', '100000'),
('A005', 'Farhat', 'Javed', '03218954219', 'Small Vacation Cottage', '80000'),
('A006', 'Sajjad', 'Babar', '03364512789', 'Multi Family home', '180000'),
('A007', 'Sidhu', 'Moosewala', '03111111111', '3 room apartment', '60000'),
('A008', 'Arshid', 'Khan', '03211236957', 'Double story house', '130000'),
('A009', 'Javed', 'Shiekh', '03489137982', 'Single Family home', '80000'),
('A010', 'Saira', 'Muneer', '03007319654', 'Villa', '500000'),
('A011', 'Poorab', 'Kumar', '03184967852', 'Shared Apartment', '9000'),
('A012', 'Faisal', 'Khan', '03467845123', 'Townhome', '75000'),
('A013', 'Abdus', 'Salam', '03096598753', 'Villa', '500000'),
('A014', 'Rab', 'Nawaz', '03416385951', 'Bungalow', '110000'),
('A015', 'Obaid', 'Sheikh', '03426284759', 'Multi Family Home', '160000'),
('A016', 'Qamar', 'Javed', '03134679169', 'Villa', '600000'),
('A017', 'Jannat', 'Mirza', '03166969969', 'C Condominium', '90000'),
('A018', 'Babu', 'Rao', '03104916872', 'Shared Apartment', '15000'),
('A019', 'Sania', 'Mirza', '03451535985', 'Bungalow', '90000'),
('A020', 'Sham', 'Idrees', '03108020500', '1 bed Apartment', '5000'),
('A021', 'Javed', 'Kazmi', '03165288572', 'Single Family Home', '90000')

insert into PrivateOwner (ownerNo, fName, lName, address, telNo)
values

('K01', 'Javed', 'Aziz', 'H# 85 Mandia, ATD ', '03001245985'),
('K02', 'Sana', 'Bucha', 'H# 21 I-10, ISB', '03368754953'),
('K03', 'Ali', 'Khan', 'H#45 KTS, HAR', '03314915375'),
('K04', 'Ahmed', 'Akhtar', 'H#20 Supply, ATD', '03457296348'),
('K05', 'Kabir', 'Singh', 'H#99 Salhad, ATD', '03348719652'),
('K06', 'Parvaiz', 'Musharraf', 'H#86 G-6, ISB', '03321596548'),
('K07', 'Benazir', 'Shah', 'H#286 DHA, KAR', '03216598174'),
('K08', 'Jaan', 'Raheem', 'H#100 Cantt, LHR', '03012000563'),
('K09', 'Umar', 'Gul', 'H#91 Cantt, HAV', '03485265154'),
('K10', 'Raheem', 'Pardesi', 'H#20 H-6, ISB', '03259826547'),
('K11', 'Hubaib', 'Naeem', 'H#65 G-9, ISB', '03185400163'),
('K12', 'Qaiser', 'Khattak', 'H#156 Saddar, PEW', '03420096050'),
('K13', 'Abdullah', 'Shah', 'H#48 Topi, SWB', '03083032021'),
('K14', 'Babar', 'Khan', 'H#25 TIP, HAR', '03058574321'),
('K15', 'Rehm', 'Nawaz', 'H#87 I-4, ISB', '03065491032'),
('K16', 'Hamza', 'Akbar', 'H#152 Panian, HAR', '03024595687'),
('K17', 'Nasir', 'Khan', 'H#756 Uni road, PEW', '03461289567'),
('K18', 'Alex', 'Bhatti', 'H#301 Bahria Town, KAR', '03487006320'),
('K19', 'Hareem', 'Shah', 'H#186 Cantt, MAN', '03215906903'),
('K20', 'Waqar', 'Zaka', 'H#564 North Nazimabad, KAR', '03237506501'),
('K21', 'Aamir', 'Liaquat', 'H#487 Gulshan Iqbal, KAR', '03196585021')

insert into PropertyForRent (propertyNo, street, city, postcode, [type], rooms, rent, ownerNo, staffNo, branchNo)

values

('P01','S# 10','ISB','52000','Apartment','2','15000','K01','SA9','B010'),
 ('P02','S# 2','KAR','72400','Apartment','3','20000','K19','SG14','B012'),
 ('P03','S# 5','PEW','25000','Single Fam','4','50000','K09','SG37','B001'),
 ('P04','S# 1','HAV','22500','Villa','10','170000','K14','SG5','B002'),
 ('P05','S# 1','HAR','22620','Bungalow','4','70000','K10','SL21','B009'),
 ('P06','S# 2','LHR','54000','Townhome','3','40000','K03','SL41','B015'),
 ('P07','S# 9','SWB','23430','Single Fam','3','45000','K12','SP98','B013'),
 ('P08','S# 6','ATD','53000','Apartment','2','12000','K20','SK32','B003'),
 ('P09','S# 7','MAN','21300','Bungalow','4','60000','K07','SG76','B004'),
 ('P10','S# 8','ISB','52000','Condo','5','50000','K21','SG76','B018'),
 ('P11','S# 5','ISB','52000','2 Story','6','100000','K18','ST26','B016'),
 ('P12','S# 4','ATD','53000','Single Fam','4','45000','K04','SV56','B005'),
 ('P13','S# 5','ISB','52000','Apartment','2','18000','K13','ST91','B021'),
 ('P14','S# 6','KAR','72400','Townhome','3','35000','K11','SO61','B008'),
 ('P15','S# 9','LHR','54000','Apartment','2','16000','K15','SQ19','B014'),
 ('P16','S# 5','HAR','22620','Multi Fam','8','95000','K05','SJ37','B020'),
 ('P17','S# 3','ATD','53000','Apartment','2','10000','K17','SW84','B006'),
 ('P18','S# 7','ATD','53000','Townhome','4','50000','K08','ST26','B019'),
 ('P19','S# 4','ATD','53000','Single Fam','4','35000','K06','ST26','B011'),
 ('P20','S# 10','PEW','25000','2 Story','7','70000','K16','SF7','B017'),
 ('P21','S# 3','ISB','53000','Single Fam','3','30000','K02','SG76','B007')

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

values

('A013','P04','10/10/2020','Status Pending'),
 ('A001','P17','12/25/2018','Rented'),
 ('A014','P09','5/19/2019','Rented'),
 ('A011','P01','7/1/2019','Rented'),
 ('A006','P16','8/8/2020','Rented'),
 ('A019','P05','2/18/2018','Rented'),
 ('A010','P04','10/10/2020','Status Pending'),
 ('A020','P01','5/25/2018','Rented'),
 ('A007','P02','3/8/2019','Rented'),
 ('A017','P10','5/6/2019','Rented'),
 ('A002','P13','2/20/2020','Rented'),
 ('A021','P07','9/9/2019','Rented'),
 ('A009','P03','1/5/2020','Rented'),
 ('A015','P16','10/10/2020','Status Pending'),
 ('A004','P09','10/10/2020','Status Pending'),
 ('A008','P11','8/26/2019','Rented'),
 ('A018','P15','9/22/2018','Rented'),
 ('A003','P06','10/8/2019','Rented'),
 ('A016','P04','11/11/2018','Rented'),
 ('A012','P14','12/25/2019','Rented'),
 ('A005','P09','10/10/2020','Status Pending')

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

values

('A001','B010','SG5','10/5/2018'),
 ('A002','B011','SO61','9/6/2018'),
 ('A003','B005','SW84','7/5/2018'),
 ('A004','B008','SP98','12/9/2018'),


```
( 'A005','B016','ST26','11/25/2018'),
( 'A006','B019','SG5','10/29/2018'),
( 'A007','B001','SW84','5/30/2018'),
( 'A008','B018','SG76','6/12/2018'),
( 'A009','B009','ST26','12/12/2018'),
( 'A010','B012','SW84','6/29/2018'),
( 'A011','B017','SP98','8/16/2018'),
( 'A012','B004','SO61','12/18/2018'),
( 'A013','B021','SG5','11/11/2018'),
( 'A014','B013','ST26','11/15/2018'),
( 'A015','B020','SW84','9/11/2018'),
( 'A016','B003','SG76','1/5/2019'),
( 'A017','B014','SO61','1/25/2019'),
( 'A018','B006','SG76','2/3/2019'),
( 'A019','B015','SO61','1/20/2019'),
( 'A020','B002','ST26','11/8/2018'),
( 'A021','B007','SW84','12/30/2018')
```

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

1.2 Abdul Haseeb Khan (SP19-BCS-001)

-- 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, 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));

-- Client

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)

-- 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)

insert into PropertyForRent (propertyNo, street, city, postcode, [type], rooms,
rent, ownerNo, staffNo, branchNo)

values

('P01','S# 10','ISB','52000','Apartment','2','15000','K01','SA9','B010'),
('P02','S# 2','KAR','72400','Apartment','3','20000','K19','SG14','B012'),
('P03','S# 5','PEW','25000','Single Fam','4','50000','K09','SG37','B001'),
('P04','S# 1','HAV','22500','Villa','10','170000','K14','SG5','B002'),
('P05','S# 1','HAR','22620','Bungalow','4','70000','K10','SL21','B009'),
('P06','S# 2','LHR','54000','Townhome','3','40000','K03','SL41','B015'),
('P07','S# 9','SWB','23430','Single Fam','3','45000','K12','SP98','B013'),
('P08','S# 6','ATD','53000','Apartment','2','12000','K20','SK32','B003'),
('P09','S# 7','MAN','21300','Bungalow','4','60000','K07','SG76','B004'),
('P10','S# 8','ISB','52000','Condo','5','50000','K21','SG76','B018'),
('P11','S# 5','ISB','52000','2 Story','6','100000','K18','ST26','B016')

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

Reviewed by:

Fahad Afzal (SP19-BCS-006)

Comments:

Code Working. Abdul Haseeb provided data for the PropertyForRent table.

Problems:

No problem at all

Rating: 1 - 10

10

1.3 Ashfaq Rahim (SP19-BCS-003)

```
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, 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));

-- Client
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)

-- 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)
```

4.2 Multiple Rows Example

```
INSERT into Branch (branchNo, street, city, postcode)  
VALUES  
( 'B001', 'H#79 I-10/2', 'ISB', '52000'),  
( 'B002', 'H#78 Supply', 'ABT', '53000'),  
( 'B003', 'H#79 I-10/2', 'ISB', '52000'),  
( 'B004', 'H#78 Mandia', 'ABT', '53000'),  
( 'B005', 'H#85 Supply', 'ABT', '53000'),  
( 'B006', 'H#86 G-6', 'ISB', '52000'),  
( 'B007', 'H#895 Cantt', 'ABT', '53000'),  
( 'B008', 'H#55 Kalapul', 'ABT', '53000'),  
( 'B009', 'H#986 Beer', 'HAR', '22620'),  
( 'B010', 'H#12 Cantt', 'HAV', '22500'),  
( 'B011', 'H#565 KTS', 'HAR', '22620'),  
( 'B012', 'H#123 KTS', 'HAR', '22620'),  
( 'B013', 'H#985 F-9', 'ISB', '52000'),  
( 'B014', 'H#120 DHA', 'LHR', '54000'),  
( 'B015', 'H#76 TIP', 'HAR', '22620'),  
( 'B016', 'H#33 Baldher', 'HAR', '22620'),
```

```
('B017','H#22 SALHAD', 'ABT', '53000'),  
('B018','H#11 HARNOL', 'ABT', '53000'),  
('B019','H#13 H-9', 'ISB', '52000'),  
('B020','H#99 FAIZABAD', 'RWP', '44000'),  
('B021','H#164 PANIAN', 'HAR', '22620')
```

Reviewed by:.

Comments:

Problems:

Rating: 1 – 10

1.4 Fahad Afzal (SP19-BCS-006)

```
-- 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, 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));
```

```
-- Client  
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)
```

```

-- PrivateOwner
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)

-- 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)

--this table is for me

-- 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)

```

--work for me in group

--I have make and fill registration table.

```

insert into Registration (clientNo, branchNo, staffNo, datejoined)
values
('A001','B010','SG5','10/5/2018'),
('A002','B011','SO61','9/6/2018'),
('A003','B005','SW84','7/5/2018'),
('A004','B008','SP98','12/9/2018'),
('A005','B016','ST26','11/25/2018'),
('A006','B019','SG5','10/29/2018'),
('A007','B001','SW84','5/30/2018'),
('A008','B018','SG76','6/12/2018'),
('A009','B009','ST26','12/12/2018'),
('A010','B012','SW84','6/29/2018'),
('A011','B017','SP98','8/16/2018'),
('A012','B004','SO61','12/18/2018'),
('A013','B021','SG5','11/11/2018'),
('A014','B013','ST26','11/15/2018'),
('A015','B020','SW84','9/11/2018'),
('A016','B003','SG76','1/5/2019'),

```

```
('A017','B014','SO61','1/25/2019'),  
( 'A018','B006','SG76','2/3/2019'),  
( 'A019','B015','SO61','1/20/2019'),  
( 'A020','B002','ST26','11/8/2018'),  
( 'A021','B007','SW84','12/30/2018')
```

Reviewed by:.

Badar

Comments:

Complete the task according to the requirements.

Problems:

no

Rating: 1 – 10

10

1.5 Hassaan Shahnawaz (SP19-BCS-008)

-- 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)

-- 4.2 Multiple Rows Example

insert into PropertyForRent (propertyNo, street, city, postcode, [type], rooms, rent, ownerNo, staffNo, branchNo)

values

('P12','S# 4','ATD','53000','Single Fam','4','45000','K04','SV56','B005'),
('P13','S# 5','ISB','52000','Apartment','2','18000','K13','ST91','B021'),
('P14','S# 6','KAR','72400','Townhome','3','35000','K11','SO61','B008'),
('P15','S# 9','LHR','54000','Apartment','2','16000','K15','SQ19','B014'),
('P16','S# 5','HAR','22620','Multi Fam','8','95000','K05','SJ37','B020'),
('P17','S# 3','ATD','53000','Apartment','2','10000','K17','SW84','B006'),
('P18','S# 7','ATD','53000','Townhome','4','50000','K08','ST26','B019'),
('P19','S# 4','ATD','53000','Single Fam','4','35000','K06','ST26','B011'),
('P20','S# 10','PEW','25000','2 Story','7','70000','K16','SF7','B017'),
('P21','S# 3','ISB','53000','Single Fam','3','30000','K02','SG76','B007')

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

Reviewed by:

Fahad Afzal (SP19-BCS-006)

Comments:

Code Working. Abdul Haseeb provided data for the PropertyForRent table.

Problems:

No problem at all

Rating: 1 – 10

10

1.6 Hassan Ali Jadoon (SP19-BCS-009)

--Lab 6 Work

```
create database DreamHome;
use Dreamhome;
```

-- 3. Create Tables

-- 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)
```

```
insert into PrivateOwner (ownerNo, fName, lName, address, telNo)
values
```

```
('K01','Javed','Aziz','H# 85 Mandia, ATD ','03001245985'),
('K02','Sana','Bucha','H# 21 I-10, ISB','03368754953'),
('K03','Ali','Khan','H#45 KTS, HAR','03314915375'),
('K04','Ahmed','Akhtar','H#20 Supply, ATD','03457296348'),
('K05','Kabir','Singh','H#99 Salhad, ATD','03348719652'),
('K06','Parvaiz','Musharraf','H#86 G-6, ISB','03321596548'),
('K07','Benazir','Shah','H#286 DHA, KAR','03216598174'),
('K08','Jaan','Raheem','H#100 Cantt, LHR','03012000563'),
('K09','Umar','Gul','H#91 Cantt, HAV','03485265154'),
('K10','Raheem','Pardesi','H#20 H-6, ISB','03259826547'),
('K11','Hibaib','Naeem','H#65 G-9, ISB','03185400163'),
('K12','Qaiser','Khattak','H#156 Saddar, PEW','03420096050'),
('K13','Abdullah','Shah','H#48 Topi, SWB','03083032021'),
('K14','Babar','Khan','H#25 TIP,HAR','03058574321'),
('K15','Rehm','Nawaz','H#87 I-4, ISB','03065491032'),
('K16','Hamza','Akbar','H#152 Panian, HAR','03024595687'),
('K17','Nasir','Khan','H#756 Uni road, PEW','03461289567'),
('K18','Alex','Bhatti','H#301 Bahria Town, KAR','03487006320'),
('K19','Hareem','Shah','H#186 Cantt, MAN','03215906903'),
('K20','Waqar','Zaka','H#564 North Nazimabad,KAR','03237506501'),
('K21','Aamir','Liaqat','H#487 Gulshan Iqbal, KAR','03196585021')
```

Reviewed by:.

Comments:

Problems:

Rating: 1 – 10

1.7 Imad Ahmad (SP19-BCS-011)

Reviewed by:.

Comments:

Problems:

Rating: 1 – 10

1.8 Khanzada Haider Ali (SP19-BCS-013)

-- 1. Create Database

`create database` DreamHome

-- 2. Set My Working Database in Query Editor

`use` DreamHome

-- 3. Create Tables

-- 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));

-- 4.2 Multiple Rows Example

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

VALUES

('SA9', 'Mary', 'Howe', 'Assistant', 'F', '9/11/1988', 20000, 'B002'),
('SG14', 'David', 'Ford', 'Supervisor', 'M', '11/9/1987', 100000, 'B003'),
('SG37', 'An', 'Beech', 'Assistant', 'F', '12/8/1986', 90000, 'B003'),
('SG5', 'Susa', 'Brand', 'Manager', 'F', '5/9/1989', 120000, 'B003'),
('SL21', 'Joh', 'White', 'Manager', 'M', '2/12/1992', 100000, 'B004'),
('SL41', 'Julie', 'Lee', 'Assistant', 'F', '8/3/1990', 50000, 'B002'),
('SP98', 'Akbar', 'Shah', 'Assistant Manager', 'M', '9/8/1996', 70000, 'B005'),

('SK32', 'Mahrukh', 'Bibi', 'Customer Service', 'F', '10/4/1994', 60000, 'B010'),
 ('SB83', 'Ahmad', 'Hassan', 'Clerk', 'M', '4/6/1991', 40000, 'B009'),
 ('SR68', 'Hamid', 'Ali', 'Security Guard', 'M', '9/12/1982', 10000, 'B007'),
 ('SI12', 'Akhtar', 'Rasheed', 'Security Officer', 'M', '8/9/1989', 50000, 'B012'),
 ('SV56', 'Hajra', 'Khan', 'Customer Service', 'F', '3/4/1992', 60000, 'B006'),
 ('ST91', 'Maria', 'Kareem', 'Customer Service Manager', 'M', '1/7/1991', 80000, 'B008'),
 ('SO61', 'Kamran', 'Khan', 'Salesperson', 'M', '9/2/1987', 70000, 'B020'),
 ('SQ19', 'Khurshid', 'Akram', 'Finance Manager', 'M', '12/8/1982', 80000, 'B011'),
 ('SJ37', 'Sara', 'Majeed', 'HR Manager', 'F', '12/6/1981', 60000, 'B019'),
 ('SD52', 'Parvaiz', 'Khan', 'Security Guard', 'M', '11/12/1985', 15000, 'B013'),
 ('ST26', 'Bushra', 'Khan', 'Salesperson', 'F', '5/10/1990', 60000, 'B017'),
 ('SN99', 'Khalid', 'Kamal', 'Security Guard', 'M', '12/12/1992', 16000, 'B014'),
 ('SF7', 'Mubashir', 'Naveed', 'Receptionist', 'M', '1/12/1996', 30000, 'B016'),
 ('SG76', 'Awais', 'Qamar', 'Operations Manager', 'M', '9/4/1988', 80000, 'B015'),
 ('SW84', 'Muneer', 'Zaman', 'Marketing Manager', 'M', '7/1/1992', 70000, 'B021'),
 ('SZ34', 'Sana', 'Khan', 'Receptionist', 'F', '5/12/1996', 50000, 'B018')

Reviewed by:

Badar

Comments:

Nice work

Problems:

No

Rating: 1 – 10

10

1.9 Sardar Badar Saghir (SP19-BCS-022)

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);

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

values

('A013', 'P04', '10/10/2020', 'Status Pending'),

('A001', 'P17', '12/25/2018', 'Rented'),

('A014','P09','5/19/2019','Rented'),
('A011','P01','7/1/2019','Rented'),
('A006','P16','8/8/2020','Rented'),
('A019','P05','2/18/2018','Rented'),
('A010','P04','10/10/2020','Status Pending'),
('A020','P01','5/25/2018','Rented'),
('A007','P02','3/8/2019','Rented'),
('A017','P10','5/6/2019','Rented'),
('A002','P13','2/20/2020','Rented'),
('A021','P07','9/9/2019','Rented'),
('A009','P03','1/5/2020','Rented'),
('A015','P16','10/10/2020','Status Pending'),
('A004','P09','10/10/2020','Status Pending'),
('A008','P11','8/26/2019','Rented'),
('A018','P15','9/22/2018','Rented'),
('A003','P06','10/8/2019','Rented'),
('A016','P04','11/11/2018','Rented'),
('A012','P14','12/25/2019','Rented'),
('A005','P09','10/10/2020','Status Pending');

Reviewed by:

Muhammad Awais(SP19-BCS-033)

Comments:

Code Working: Badar Provided The Data for the for Viewing.

Problems:

No problem at all

Rating: 1 – 10

10

1.10 Muhammad Awais (SP19-BCS-033)

```
create database DreamHome;
use Dreamhome;
```

-- 3. Create Tables

-- 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)
```

```
insert into PrivateOwner (ownerNo, fName, lName, address, telNo)
values
```

```
('K01','Javed','Aziz','H# 85 Mandia, ATD ','03001245985'),
('K02','Sana','Bucha','H# 21 I-10, ISB','03368754953'),
('K03','Ali','Khan','H#45 KTS, HAR','03314915375'),
('K04','Ahmed','Akhtar','H#20 Supply, ATD','03457296348'),
('K05','Kabir','Singh','H#99 Salhad, ATD','03348719652'),
('K06','Parvaiz','Musharraf','H#86 G-6, ISB','03321596548'),
('K07','Benazir','Shah','H#286 DHA, KAR','03216598174'),
('K08','Jaan','Raheem','H#100 Cantt, LHR','03012000563'),
('K09','Umar','Gul','H#91 Cantt, HAV','03485265154'),
('K10','Raheem','Pardesi','H#20 H-6, ISB','03259826547'),
('K11','Hubaib','Naeem','H#65 G-9, ISB','03185400163'),
('K12','Qaiser','Khattak','H#156 Saddar, PEW','03420096050'),
('K13','Abdullah','Shah','H#48 Topi, SWB','03083032021'),
('K14','Babar','Khan','H#25 TIP,HAR','03058574321'),
('K15','Rehm','Nawaz','H#87 I-4, ISB','03065491032'),
('K16','Hamza','Akbar','H#152 Panian, HAR','03024595687'),
('K17','Nasir','Khan','H#756 Uni road, PEW','03461289567'),
('K18','Alex','Bhatti','H#301 Bahria Town, KAR','03487006320'),
('K19','Hareem','Shah','H#186 Cantt, MAN','03215906903'),
('K20','Waqar','Zaka','H#564 North Nazimabad,KAR','03237506501'),
('K21','Aamir','Liaqat','H#487 Gulshan Iqbal, KAR','03196585021')
```

Reviewed by:

Badar

Comments:

He completed His part

Problems:

No

Rating: 1 - 10

10

2 LAB 7

2.1 Common Solution

Q#1 Print the list of postcodes without any repetition

ANS Select distinct(postcode) from Branch;

Q#2 Print all fName from Staff without repetition

ANS Select distinct(fName) from Staff;

Q#3 List all staff with renaming all its columns in results

ANS Select staffNo as ID, fName as FirstName, lName as LastName, [position] as Allocation, sex as Gender, DOB as Birth, salary as Wages, branchNo as Branch from Staff;

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

ANS SELECT clientNo as StakeHolderID, fName as FirstName, lName as LastName, telNo as PhoneNo, prefType as Preference, maxRent as MaximumRent FROM Client;

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

ANS SELECT salary FROM Staff where salary >10000;

Q#6 List all managers and supervisors.

ANS SELECT [position] FROM Staff Where [position] = 'supervisor' OR [position] = 'manager';

2.2 Abdul Haseeb Khan (SP19-BCS-001)

SOLUTION

Q#1 Print the list of postcodes without any repetition

ANS Select distinct(postcode) from Branch;

Q#2 Print all fName from Staff without repetition

ANS Select distinct(fName) from Staff;

Q#3 List all staff with renaming all its columns in results

ANS Select staffNo as ID, fName as FirstName, lName as LastName, [position] as Allocation, sex as Gender, DOB as DateOfBirth, salary as Wages, branchNo as Branch from Staff;

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

ANS SELECT clientNo as StakeHolderID, fName as FirstName, lName as LastName, telNo as PhoneNo, prefType as Preference, maxRent as MaximumRent FROM Client;

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

ANS SELECT salary FROM Staff where salary >10000;

Q#6 List all managers and supervisors.

ANS SELECT [position] FROM Staff Where [position] = 'supervisor' OR [position] = 'manager';

Reviewed by:

Fahad afzal (sp19-bcs-006)

Comments:

Working

Problems:

No problem at all

Rating: 1 - 10

10

2.3 Ashfaq Rahim (SP19-BCS-003)

use DreamHome;

-- 1. Print the list of postcode without any repetition

Select distinct(postcode) from Branch;

--2. Print all fName from Staff without repetition

Select distinct(fame) from Staff;

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

Select staffNo as Id, fName as Father, IName as Employee, [position] as Allocation, sex as Gender, DOB as Birth, salary as Wage, branchNo as Branch from Staff;

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

SELECT clientNo as StockHolderID, fName as FatherName, IName as Name, telNo as phoneNo, prefType as Preference, maxRent as MaximumRent FROM Client;

--5. List all staff with a salary greater than 10,000.
SELECT salary FROM Staff where salary >10000;

--6. List all managers and supervisors.

SELECT [position] FROM Staff Where [position] = 'Supervisor' OR [position] = 'Manager';

Reviewed by:.

Comments:

Problems:

Rating: 1 – 10

2.4 Fahad Afzal (SP19-BCS-006)

Select distinct(postcode) from Branch;

--Print all fName from Staff without repetition

-- COMMAND:

SELECT distinct(fName) FROM Staff;

--List all staff with renaming all its columns in results

-- COMMAND:

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.

-- COMMAND:

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.

-- COMMAND:

SELECT * FROM Staff WHERE salary > 10000;

--List all managers and supervisors.

--COMMAND:

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

Reviewed by:.

Badar

Comments:

Complete the task according to the requirements.

Problems:

no

Rating: 1 - 10

10

2.5 Hassaan Shahnawaz (SP19-BCS-008)

-- lab-7

use DreamHome;

-- 1. Print the list of postcode without any repetition
Select distinct(postcode) from Branch;

--2. Print all fName from Staff without repetition
Select distinct(fName) from Staff;

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

Select staffNo as Id, fName as Father, lName as Employee, [position] as Allocation, sex as Gender,
DOB as Birth, salary as Wage, branchNo as Branch from Staff;

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

SELECT clientNo as StockHolderID, fName as FatherName, lName as Name, telNo as phoneNo, prefType as Preference, maxRent as MaximumRent FROM Client;

--5. List all staff with a salary greater than 10,000.
SELECT salary FROM Staff where salary >10000;

--6. List all managers and supervisors.

SELECT [position] FROM Staff Where [position] = 'Supervisor' OR [position] = 'Manager';

Reviewed by:

Fahad afzal (sp19-bcs-006)

Comments:

Working

Problems:

No problem at all
Rating: 1 – 10
10

2.6 Hassan Ali Jadoon (SP19-BCS-009)

```
--Lab 7
use DreamHome;
--1. Print the list of postcode without any repetition.
select distinct (postcode) from branch;
--2. Print all fName from staff without any repetit.
select distinct (fname) from Staff;
--3. List all staff with re-naming all its columns in results.
--select city as mycity from branch;
--select * from staff;
select staffNo as RegNo, fName as FatherName, lName as lastName, position as postName, sex as gender, DOB as BirthDate, salary
as income, branchNo as officeNo from Staff;
--4. List all clients with re-naming all its columns to synonyms.
--select * from Client;
select clientNo as CustomerNo, fName as FatherNo, lName as lastName, telNo as PhoneNumber, prefType as preference, maxRent as
maximumRent from Client;
--5. List all staff with a salary greater than 10,000.
--select * from Branch;
select salary from staff where salary>10000;
--6. List all the managers and supervisors.
SELECT [position] FROM Staff Where [position] = 'Supervisor' OR [position] = 'Manager';
```

Reviewed by:.

Comments:

Problems:

Rating: 1 – 10

2.7 Khanzada Haider Ali (SP19-BCS-013)

-- lab-7

use DreamHome;

-- 1. Print the list of postcode without any repetition
Select distinct(postcode) from Branch;

--2. Print all fName from Staff without repetition
Select distinct(fName) from Staff;

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

**Select staffNo as Id, fName as Father, IName as Employee,
[position] as Allocation, sex as Gender,
DOB as Birth, salary as Wage, branchNo as Branch
from Staff;**

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

**SELECT clientNo as StockHolderID, fName as FatherName, IName as
Name, telNo as phoneNo, prefType as Preference, maxRent as
MaximumRent FROM Client;**

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

SELECT salary FROM Staff where salary >10000;

--6. List all managers and supervisors.

**SELECT [position] FROM Staff Where [position] = 'Supervisor' OR
[position] = 'Manager';**

Reviewed by:.

Badar

Comments:

Great job

Problems

No:

Rating: 1 - 10

10

2.8 Imad Ahmad (SP19-BCS-011)

-- lab-7

use DreamHome;

-- 1. Print the list of postcode without any repetition

Select distinct(postcode) from Branch;

--2. Print all fName from Staff without repetition

Select distinct(fName) from Staff;

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

**Select staffNo as Id, fName as Father, IName as Employee,
[position] as Allocation, sex as Gender,
DOB as Birth, salary as Wage, branchNo as Branch
from Staff;**

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

**SELECT clientNo as StockHolderID, fName as FatherName, IName as
Name, telNo as phoneNo, prefType as Preference, maxRent as
MaximumRent FROM Client;**

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

SELECT salary FROM Staff where salary >10000;

--6. List all managers and supervisors.

**SELECT [position] FROM Staff Where [position] = 'Supervisor' OR
[position] = 'Manager';**

Reviewed by:.

Badar

Comments:

Great job

Problems

No:

Rating: 1 - 10

2.9 Sardar Badar Saghir (SP19-BCS-022)

Q#1 Print the list of postcodes without any repetition

ANS Select distinct(postcode) from Branch;

Q#2 Print all fName from Staff without repetition

ANS Select distinct(fName) from Staff;

Q#3 List all staff with renaming all its columns in results

ANS Select staffNo as ID, fName as FirstName, IName as LastName, [position] as Allocation, sex as Gender, DOB as Birth, salary as Wages, branchNo as Branch from Staff;

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

ANS SELECT clientNo as StakeHolderID, fName as FirstName, IName as LastName, telNo as PhoneNo, prefType as Preference, maxRent as MaximumRent FROM Client;

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

ANS SELECT salary FROM Staff where salary >10000;

Q#6 List all managers and supervisors.

ANS SELECT [position] FROM Staff Where [position] = 'supervisor' OR [position] = 'manager';

Reviewed by:

Khazada Haider (sp19-bcs-013)

Comments:

Working

Problems:

No problem at all

Rating: 1 – 10

2.10 Muhammad Awais (SP19-BCS-033)

use DreamHome;

1. Print the list of postcode without any repetition

Select distinct(postcode) from Branch;

2. Print all fName from Staff without repetition

Select distinct(fName) from Staff;

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

Select staffNo as IdNumber , fName as FirstName, lName as LastName, [position] as Occupation, sex as Gender, DOB as Birth, salary as Payment, branchNo as BranchId from Staff;

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

SELECT clientNo as StockHolderID, fName as FirstName, lName as Name, telNo as phoneNo, prefType as Preference, maxRent as MaximumRent FROM Client;

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

SELECT salary FROM Staff where salary >10000;

6. List all managers and supervisors.

SELECT [position] FROM Staff Where [position] = 'Supervisor' OR [position] = 'Manager';

Reviewed by:

Badar

Comments:

He did really good job in implementing where clause

Problems:

No

Rating: 1 - 10

10

3 LAB 8

3.1 Common Solution

use DreamHome;

```
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;

--showing 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.

--sorting

```
SELECT branchNo FROM Branch ORDER BY postcode ASC;
```

```
SELECT fName, lName, maxRent FROM Client ORDER BY maxRent DESC;
```

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

--grouping

```
SELECT clientNo, fName, maxRent FROM Client WHERE maxRent < 180000 AND maxRent > 10000; SELECT fName, lName FROM Staff WHERE (SELECT AVG(salary) FROM Staff) < salary;
```

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

--aggregate clauses

```
SELECT COUNT(propertyNo) AS TotalProperty FROM Viewing;
```

```
SELECT avg(salary) AS totalsalary FROM Staff ;
```

```
SELECT max(salary) AS totalsalary FROM Staff ;
```

3.2 Abdul Haseeb Khan (SP19-BCS-001)

Reviewed by:.

Comments:

Problems:

Rating: 1 – 10

3.3 Ashfaq Rahim (SP19-BCS-003)

use DreamHome;

```

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;
--showing 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.
--sorting
SELECT branchNo FROM Branch ORDER BY postcode ASC;
SELECT fName , lName , maxRent FROM Client ORDER BY maxRent DESC;
SELECT fName, salary FROM Staff ORDER BY salary DESC;
--grouping
SELECT clientNo, fName, maxRent FROM Client WHERE maxRent < 180000 AND maxRent >
10000; SELECT fName, lName FROM Staff WHERE (SELECT AVG(salary) FROM Staff) <
salary;
SELECT fName, salary FROM Staff WHERE sex = 'M' AND position = 'Clerk';

--aggregate clauses
SELECT COUNT(propertyNo) AS TotalProperty FROM Viewing;
SELECT avg(salary) AS totalsalary FROM Staff ;
SELECT max(salary) AS totalsalary FROM Staff ;

```

Reviewed by:.

Comments:

Problems:

Rating: 1 – 10

3.4 Fahad Afzal (SP19-BCS-006)

use DreamHome;

```

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.
--sorting
SELECT branchNo FROM Branch ORDER BY postcode ASC;
SELECT fName , lName , maxRent FROM Client ORDER BY maxRent DESC;
SELECT fName, salary FROM Staff ORDER BY salary DESC;
--grouping
SELECT clientNo, fName, maxRent FROM Client WHERE maxRent < 180000 AND maxRent >
10000; SELECT fName, lName FROM Staff WHERE (SELECT AVG(salary) FROM Staff) <
salary;
SELECT fName, salary FROM Staff WHERE sex = 'M' AND position = 'Clerk';

--aggregate clauses
SELECT COUNT(propertyNo) AS TotalProperty FROM Viewing;
SELECT avg(salary) AS totalsalary FROM Staff ;
SELECT max(salary) AS totalsalary FROM Staff ;

```

Reviewed by:.

Comments:

Problems:

Rating: 1 – 10

3.5 Hassaan Shahnawaz (SP19-BCS-008)

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

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

--aggregate clauses
SELECT COUNT(DISTINCT(propertyNo)) AS TotalProperty FROM Viewing
WHERE viewDate BETWEEN '1-May-00' AND '31-May-04';
SELECT propertyNo AS ClientID FROM Viewing WHERE viewDate BETWEEN '1-May-00' AND
'31-May-04';
SELECT clientNo, propertyNo FROM Viewing WHERE viewDate BETWEEN '1-May-00' AND '31-
May-09';

```

Reviewed by:
 Fahad afzal (sp19-bcs-006)
 Comments:
 Working
 Problems:
 No problem at all
 Rating: 1 - 10
 10

3.6 Hassan Ali Jadoon (SP19-BCS-009)

Pending...

Reviewed by:.
 Comments:

Problems:

Rating: 1 – 10

3.7 Khanzada Haider Ali (SP19-BCS-013)

use DreamHome;

```
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.

--sorting

```
SELECT branchNo FROM Branch ORDER BY postcode ASC;
SELECT fName , IName , maxRent FROM Client ORDER BY maxRent DESC;
SELECT fName, salary FROM Staff ORDER BY salary DESC;
```

--grouping

```
SELECT clientNo, fName, maxRent FROM Client WHERE maxRent < 180000 AND maxRent >
10000; SELECT fName, IName FROM Staff WHERE (SELECT AVG(salary) FROM Staff) <
salary;
SELECT fName, salary FROM Staff WHERE sex = 'M' AND position = 'Clerk';
```

--aggregate clauses

```
SELECT COUNT(propertyNo) AS TotalProperty FROM Viewing;
SELECT avg(salary) AS totalsalary FROM Staff ;
SELECT max(salary) AS totalsalary FROM Staff ;
```

Reviewed by:.

Comments:

Problems:

Rating: 1 – 10

3.8 Imad Ahmad (SP19-BCS-011)

use DreamHome;

```
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.

--sorting

```
SELECT branchNo FROM Branch ORDER BY postcode ASC;
SELECT fName , lName , maxRent FROM Client ORDER BY maxRent DESC;
SELECT fName, salary FROM Staff ORDER BY salary DESC;
```

--grouping

```
SELECT clientNo, fName, maxRent FROM Client WHERE maxRent < 180000 AND maxRent >
10000; SELECT fName, lName FROM Staff WHERE (SELECT AVG(salary) FROM Staff) <
salary;
SELECT fName, salary FROM Staff WHERE sex = 'M' AND position = 'Clerk';
```

--aggregate clauses

```
SELECT COUNT(propertyNo) AS TotalProperty FROM Viewing;
SELECT avg(salary) AS totalsalary FROM Staff ;
SELECT max(salary) AS totalsalary FROM Staff ;
```

Reviewed by:.

Comments:

Problems:

Rating: 1 – 10

3.9 Sardar Badar Saghir (SP19-BCS-022)

--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 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

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

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

```
SELECT fName FROM Staff ORDER BY fName DESC;
```

--grouping clauses

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

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

```
SELECT fName, lName FROM Staff WHERE salary = (SELECT AVG(salary) FROM Staff)
```

--aggregate clauses

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

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

```
SELECT clientNo, propertyNo FROM Viewing WHERE viewDate BETWEEN '1-May-00' AND '31-May-09';
```

Reviewed by:

Khaznada Haider (sp19-bcs-013)

Comments:

This class is pending by sir

Problems:

Pending

Rating: 1 – 10

Pending

3.10 Muhammad Awais (SP19-BCS-033)

Reviewed by:.

Comments:

Problems:

Rating: 1 – 10

4 Lab 9

4.1 Common Solution

4.2 Abdul Haseeb Khan (SP19-BCS-001)

4.3 Ashfaq Rahim (SP19-BCS-003)

4.4 Fahad Afzal (SP19-BCS-006)

4.5 Hassaan Shahnawaz (SP19-BCS-008)

4.6 Hassan Ali Jadoon (SP19-BCS-009)

4.7 Khanzada Haider Ali (SP19-BCS-013)

4.8 Imad Ahmad (SP19-BCS-011)

4.9 Sardar Badar Saghir (SP19-BCS-022)

4.10 Muhammad Awais (SP19-BCS-033)

5 Lab 10

5.1 Common Solution

5.2 Abdul Haseeb Khan (SP19-BCS-001)

5.3 Ashfaq Rahim (SP19-BCS-003)

5.4 Fahad Afzal (SP19-BCS-006)

5.5 Hassaan Shahnawaz (SP19-BCS-008)

5.6 Hassan Ali Jadoon (SP19-BCS-009)

5.7 Khanzada Haider Ali (SP19-BCS-013)

5.8 Imad Ahmad (SP19-BCS-011)

5.9 Sardar Badar Saghir (SP19-BCS-022)

5.10 Muhammad Awais (SP19-BCS-033)

6 Lab 11

6.1 Common Solution

6.2 Abdul Haseeb Khan (SP19-BCS-001)

6.3 Ashfaq Rahim (SP19-BCS-003)

6.4 Fahad Afzal (SP19-BCS-006)

6.5 Hassaan Shahnawaz (SP19-BCS-008)

6.6 Hassan Ali Jadoon (SP19-BCS-009)

6.7 Khanzada Haider Ali (SP19-BCS-013)

6.8 Imad Ahmad (SP19-BCS-011)

6.9 Sardar Badar Saghir (SP19-BCS-022)

6.10 Muhammad Awais (SP19-BCS-033)

7 Lab 12

7.1 Common Solution

7.2 Abdul Haseeb Khan (SP19-BCS-001)

7.3 Ashfaq Rahim (SP19-BCS-003)

7.4 Fahad Afzal (SP19-BCS-006)

7.5 Hassaan Shahnawaz (SP19-BCS-008)

7.6 Hassan Ali Jadoon (SP19-BCS-009)

7.7 Khanzada Haider Ali (SP19-BCS-013)

7.8 Imad Ahmad (SP19-BCS-011)

7.9 Sardar Badar Saghir (SP19-BCS-022)

7.10 Muhammad Awais (SP19-BCS-033)

8 Lab 13

8.1 Common Solution

8.2 Abdul Haseeb Khan (SP19-BCS-001)

8.3 Ashfaq Rahim (SP19-BCS-003)

8.4 Fahad Afzal (SP19-BCS-006)

8.5 Hassaan Shahnawaz (SP19-BCS-008)

8.6 Hassan Ali Jadoon (SP19-BCS-009)

8.7 Khanzada Haider Ali (SP19-BCS-013)

8.8 Imad Ahmad (SP19-BCS-011)

8.9 Sardar Badar Saghir (SP19-BCS-022)

8.10 Muhammad Awais (SP19-BCS-033)

9 Lab 14

9.1 Common Solution

9.2 Abdul Haseeb Khan (SP19-BCS-001)

9.3 Ashfaq Rahim (SP19-BCS-003)

9.4 Fahad Afzal (SP19-BCS-006)

9.5 Hassaan Shahnawaz (SP19-BCS-008)

9.6 Hassan Ali Jadoon (SP19-BCS-009)

9.7 Khanzada Haider Ali (SP19-BCS-013)

9.8 Imad Ahmad (SP19-BCS-011)

9.9 Sardar Badar Saghir (SP19-BCS-022)

9.10 Muhammad Awais (SP19-BCS-033)

10 Lab 15

10.1 Common Solution

10.2 Abdul Haseeb Khan (SP19-BCS-001)

10.3 Ashfaq Rahim (SP19-BCS-003)

10.4 Fahad Afzal (SP19-BCS-006)

10.5 Hassaan Shahnawaz (SP19-BCS-008)

10.6 Hassan Ali Jadoon (SP19-BCS-009)

10.7 Khanzada Haider Ali (SP19-BCS-013)

10.8 Imad Ahmad (SP19-BCS-011)

10.9 Sardar Badar Saghir (SP19-BCS-022)

10.10 Muhammad Awais (SP19-BCS-033)

11 Lab 16

11.1 Common Solution

11.2 Abdul Haseeb Khan (SP19-BCS-001)

11.3 Ashfaq Rahim (SP19-BCS-003)

11.4 Fahad Afzal (SP19-BCS-006)

11.5 Hassaan Shahnawaz (SP19-BCS-008)

11.6 Hassan Ali Jadoon (SP19-BCS-009)

11.7 Khanzada Haider Ali (SP19-BCS-013)

11.8 Imad Ahmad (SP19-BCS-011)

11.9 Sardar Badar Saghir (SP19-BCS-022)

11.10 Muhammad Awais (SP19-BCS-033)

12 Lab 17

- 12.1 Common Solution**
- 12.2 Abdul Haseeb Khan (SP19-BCS-001)**
- 12.3 Ashfaq Rahim (SP19-BCS-003)**
- 12.4 Fahad Afzal (SP19-BCS-006)**
- 12.5 Hassaan Shahnawaz (SP19-BCS-008)**
- 12.6 Hassan Ali Jadoon (SP19-BCS-009)**
- 12.7 Khanzada Haider Ali (SP19-BCS-013)**
- 12.8 Imad Ahmad (SP19-BCS-011)**
- 12.9 Sardar Badar Saghir (SP19-BCS-022)**
- 12.10 Muhammad Awais (SP19-BCS-033)**

13 Lab 18

13.1 Common Solution

13.2 Abdul Haseeb Khan (SP19-BCS-001)

13.3 Ashfaq Rahim (SP19-BCS-003)

13.4 Fahad Afzal (SP19-BCS-006)

13.5 Hassaan Shahnawaz (SP19-BCS-008)

13.6 Hassan Ali Jadoon (SP19-BCS-009)

13.7 Khanzada Haider Ali (SP19-BCS-013)

13.8 Imad Ahmad (SP19-BCS-011)

13.9 Sardar Badar Saghir (SP19-BCS-022)

13.10 Muhammad Awais (SP19-BCS-033)

14 Lab 19

14.1 Common Solution

14.2 Abdul Haseeb Khan (SP19-BCS-001)

14.3 Ashfaq Rahim (SP19-BCS-003)

14.4 Fahad Afzal (SP19-BCS-006)

14.5 Hassaan Shahnawaz (SP19-BCS-008)

14.6 Hassan Ali Jadoon (SP19-BCS-009)

14.7 Khanzada Haider Ali (SP19-BCS-013)

14.8 Imad Ahmad (SP19-BCS-011)

14.9 Sardar Badar Saghir (SP19-BCS-022)

14.10 Muhammad Awais (SP19-BCS-033)

15 Lab 20

15.1 Common Solution

15.2 Abdul Haseeb Khan (SP19-BCS-001)

15.3 Ashfaq Rahim (SP19-BCS-003)

15.4 Fahad Afzal (SP19-BCS-006)

15.5 Hassaan Shahnawaz (SP19-BCS-008)

15.6 Hassan Ali Jadoon (SP19-BCS-009)

15.7 Khanzada Haider Ali (SP19-BCS-013)

15.8 Imad Ahmad (SP19-BCS-011)

15.9 Sardar Badar Saghir (SP19-BCS-022)

15.10 Muhammad Awais (SP19-BCS-033)