

CREATE VIEW: Creating a new table (virtual table: view) based on existing table

Q57. Create a table so that the manager at branch B5 can see all the details for staff who work in his or her branch office.

(Simple view that can use to update the existing table for any branch)

```
CREATE OR REPLACE VIEW B5Manager AS
```

```
SELECT *
```

```
FROM Staff
```

```
WHERE Bno ='B5';
```

```
SELECT * FROM B5Manager;
```

```
INSERT INTO B5Manager (Sno, FName, LName, Position, Sex, Salary, Bno)
```

```
VALUES('SS01', 'Raymond', 'Alvin', 'Technician', 'M', 2500.00, 'B2');
```

(Simple view that can use to update the existing table for B5 branch only)

```
CREATE OR REPLACE VIEW B5Manager AS
```

```
SELECT *
```

```
FROM Staff
```

```
WHERE Bno ='B5'
```

```
WITH CHECK OPTION CONSTRAINT check_condition;
```

```
INSERT INTO B5Manager (Sno, FName, LName, Position, Sex, Salary, Bno)
```

```
VALUES('SS02', 'Raymond', 'Alvin', 'Technician', 'M', 2500.00, 'B2');
```

ERROR at line 1:

ORA-01402: view WITH CHECK OPTION where-clause violation

(Simple view that cannot use to update the existing table: read only)

```
CREATE OR REPLACE VIEW B5Manager AS
```

```
SELECT *
```

```
FROM Staff
```

```
WHERE Bno ='B5'
```

```
WITH READ ONLY CONSTRAINT read_only;
```

```
INSERT INTO B5Manager (Sno, FName, LName, Position, Sex, Salary, Bno)
```

```
VALUES('SS03', 'Raymond', 'Alvin', 'Technician', 'M', 2500.00, 'B5');
```

ERROR at line 1:

ORA-42399: cannot perform a DML operation on a read-only view

CREATE VIEW: Creating a new view based on another view table

Q58. Create a view so that the staff at branch B5 can see only some of the staff details who work in the same branch office.

```
CREATE OR REPLACE VIEW B5Staff AS
```

```
SELECT Sno, FName, LName, Position, Tel_No
```

```
FROM B5Manager;
```

Branch (**Bno**, Street, Area, City, Pcode, Tel_No, Fax_No)

Staff (**Sno**, FName, LName, Address, Tel_No, Position, Sex, DOB, Salary, NIN, Bno)

Property_For_Rent (**Pno**, Street, Area, City, Pcode, Type, Rooms, Rent, Ono, Sno, Bno)

Renter (**Rno**, FName, LName, Address, Tel_No, Pref_Type, Max_Rent, Bno)

Owner (**Ono**, FName, LName, Address, Tel_No)

Viewing (**Rno**, **Pno**, VDate, VComment)

DROP VIEW: Removing the view

Q59. Delete the B5Staff view.

DROP VIEW B5Staff;

Retrieving Records with the JOIN - ON clause (2 tables)

Q60. List the names of all renters who have viewed a property along any comment supplied.

```
SELECT R.Rno, FName, LName, Pno, VComment  
FROM Renter R JOIN Viewing V ON R.Rno = V.Rno;
```

```
SELECT R.Rno, FName, LName, Pno, VComment  
FROM Renter R, Viewing V  
WHERE R.Rno = V.Rno;
```

Retrieving Records with the JOIN - ON clause (3 tables)

Q61. For each branch, list the staff who manage properties, including the city in which the branch is located and the properties they manage. Arrange the branch number, staff number and property number in ascending order.

```
SELECT B.Bno, B.City, S.Sno, FName, LName, Pno  
FROM Branch B JOIN Staff S ON B.Bno = S.Bno  
JOIN Property_For_Rent P ON S.Sno = P.Sno  
ORDER BY B.Bno, S.Sno, Pno;
```

```
SELECT B.Bno, B.City, S.Sno, FName, LName, Pno  
FROM Branch B, Staff S, Property_For_Rent P  
WHERE B.Bno = S.Bno AND S.Sno = P.Sno  
ORDER BY B.Bno, S.Sno, Pno;
```

Branch (Bno, Street, Area, City, Pcode, Tel_No, Fax_No)
Staff (Sno, FName, LName, Address, Tel_No, Position, Sex, DOB, Salary, NIN, Bno)
Property_For_Rent (Pno, Street, Area, City, Pcode, Type, Rooms, Rent, Ono, Sno, Bno)
Renter (Rno, FName, LName, Address, Tel_No, Pref_Type, Max_Rent, Bno)
Owner (Ono, FName, LName, Address, Tel_No)
Viewing (Rno, Pno, VDate, VComment)

Recursive Join

Staff1 : Table						
	Sno	FName	LName	Position	Bno	MGR_Sno
	SA12	Eric	Heng	Manager	B7	
	SA9	Mary	Howe	Assistant	B7	SA12
	SG14	David	Ford	Deputy	B3	SG5
	SG23	Alex	Lim	Assistant	B3	SG5
	SG37	Ann	Beech	Snr Asst	B3	SG5
	SG5	Susan	Brand	Manager	B3	
	SL18	Esther	Goh	Snr Asst	B5	SL21
	SL21	John	White	Manager	B5	
	SL41	Julie	Lee	Assistant	B5	SL21

Q62. Generate a list of all staff together with their managers' names.

```

SELECT      S.Sno, S.FName, S.LName, S.MGR_Sno, M.FName, M.LName
FROM        Staff1 S, Staff1 M
WHERE       S.MGR_Sno = M.Sno
ORDER BY    S.MGR_Sno;

```

Run SQL Command Line					
SNO	FNAME	LNAME	MGR_SNO	FNAME	LNAME
SA9	Mary	Howe	SA12	Eric	Heng
SG37	Ann	Beech	SG5	Susan	Brand
SG23	Alex	Lim	SG5	Susan	Brand
SG14	David	Ford	SG5	Susan	Brand
SL41	Julie	Lee	SL21	John	White
SL18	Esther	Goh	SL21	John	White
6 rows selected.					

Branch (**Bno**, Street, Area, City, Pcode, Tel_No, Fax_No)

Staff (**Sno**, FName, LName, Address, Tel_No, Position, Sex, DOB, Salary, NIN, Bno)

Property_For_Rent (**Pno**, Street, Area, City, Pcode, Type, Rooms, Rent, Ono, Sno, Bno)

Renter (**Rno**, FName, LName, Address, Tel_No, Pref_Type, Max_Rent, Bno)

Owner (**Ono**, FName, LName, Address, Tel_No)

Viewing (**Rno**, **Pno**, VDate, VComment)

Outer JOIN (include the unmatched data)

LEFT

Branch1 : Table		
	Bno	City
	B2	London
	B3	Glasgow
	B4	Bristol
	B5	London
	B7	Aberdeen

RIGHT

Property_For_Rent1 : Table			
	Pno	City	Bno
	PA10	Aberdeen	B1
	PA14	Aberdeen	B7
	PA9	Aberdeen	B6
	PG16	Glasgow	B3
	PG21	Glasgow	B3
	PG36	Glasgow	B3
	PG4	Glasgow	B3
	PL94	London	B5

RIGHT Outer Join

Q63. List the branch offices and properties that are in the same branch number along with any unmatched properties.

```
SELECT    B.*, P.*
FROM      Branch1 B RIGHT OUTER JOIN Property_For_Rent1 P
ON B.Bno = P.Bno;
```

BNO	CITY	PNO	CITY	BNO
B3	Glasgow	PG4	Glasgow	B3
B3	Glasgow	PG36	Glasgow	B3
B3	Glasgow	PG21	Glasgow	B3
B3	Glasgow	PG16	Glasgow	B3
B5	London	PL94	London	B5
B7	Aberdeen	PA14	Aberdeen	B7
		PA9	Aberdeen	B6
		PA10	Aberdeen	B1

8 rows selected.

LEFT Outer Join

Q64. List the branch offices and properties that are in the same branch number along with any unmatched branches.

```
SELECT    B.*, P.*
FROM      Branch1 B LEFT OUTER JOIN Property_For_Rent1 P
ON B.Bno = P.Bno;
```

BNO	CITY	PNO	CITY	BNO
B7	Aberdeen	PA14	Aberdeen	B7
B3	Glasgow	PG16	Glasgow	B3
B3	Glasgow	PG21	Glasgow	B3
B3	Glasgow	PG36	Glasgow	B3
B3	Glasgow	PG4	Glasgow	B3
B5	London	PL94	London	B5
B4	Bristol			
B2	London			

8 rows selected.

Branch (Bno, Street, Area, City, Pcode, Tel_No, Fax_No)

Staff (Sno, FName, LName, Address, Tel_No, Position, Sex, DOB, Salary, NIN, Bno)

Property_For_Rent (Pno, Street, Area, City, Pcode, Type, Rooms, Rent, Ono, Sno, Bno)

Renter (Rno, FName, LName, Address, Tel_No, Pref_Type, Max_Rent, Bno)

Owner (Ono, FName, LName, Address, Tel_No)

Viewing (Rno, Pno, VDate, VComment)

FULL Outer Join

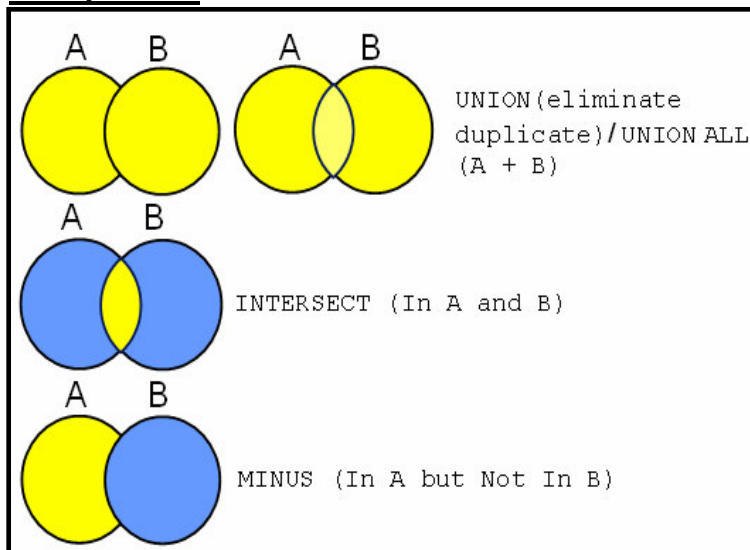
Q65. List the branch offices and properties that are in the same branch number along with any unmatched branches and unmatched properties.

```
SELECT    B.*, P.*
FROM      Branch1 B FULL OUTER JOIN Property_For_Rent1 P
ON B.Bno = P.Bno;
```

BNO	CITY	PNO	CITY	BNO
B7	Aberdeen	PA10	Aberdeen	B1
		PA14	Aberdeen	B7
		PA9	Aberdeen	B6
B3	Glasgow	PG16	Glasgow	B3
B3	Glasgow	PG21	Glasgow	B3
B3	Glasgow	PG36	Glasgow	B3
B3	Glasgow	PG4	Glasgow	B3
B5	London	PL94	London	B5
B4	Bristol			
B2	London			

10 rows selected.

Set Operators



Staff_Code	Staff_Name	Position
M01	John Tan	Manager
M02	Gopal	Supervisor
M03	Ahmad	Executive

Staff_Code	Staff_Name	Position
M03	Ahmad	Executive
M04	Stephen	General Manager
M05	Julia	Clerk

Branch (Bno, Street, Area, City, Pcode, Tel_No, Fax_No)

Staff (Sno, FName, LName, Address, Tel_No, Position, Sex, DOB, Salary, NIN, Bno)

Property_For_Rent (Pno, Street, Area, City, Pcode, Type, Rooms, Rent, Ono, Sno, Bno)

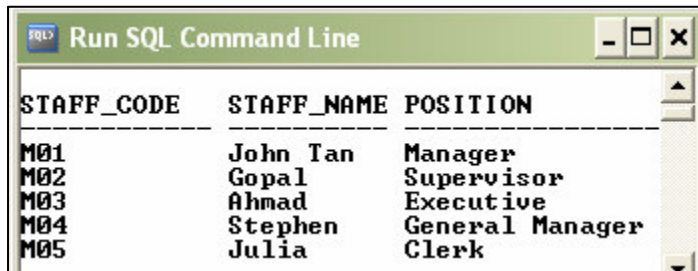
Renter (Rno, FName, LName, Address, Tel_No, Pref_Type, Max_Rent, Bno)

Owner (Ono, FName, LName, Address, Tel_No)

Viewing (Rno, Pno, VDate, VComment)

Q66. SET OPERATOR: UNION

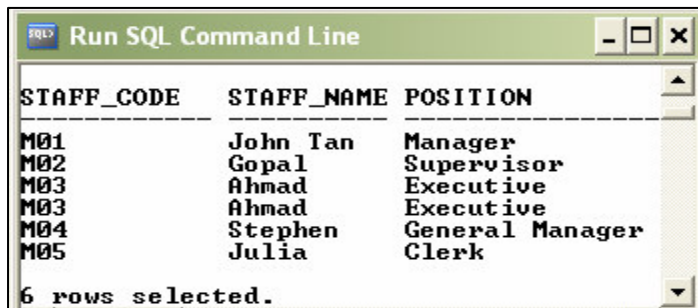
(SELECT * FROM StaffA)
UNION
(SELECT * FROM StaffB);



STAFF_CODE	STAFF_NAME	POSITION
M01	John Tan	Manager
M02	Gopal	Supervisor
M03	Ahmad	Executive
M04	Stephen	General Manager
M05	Julia	Clerk

Q67. SET OPERATOR: UNION ALL

(SELECT * FROM StaffA)
UNION ALL
(SELECT * FROM StaffB);

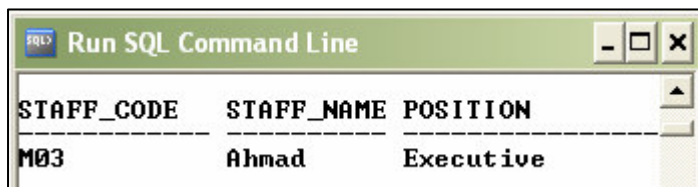


STAFF_CODE	STAFF_NAME	POSITION
M01	John Tan	Manager
M02	Gopal	Supervisor
M03	Ahmad	Executive
M03	Ahmad	Executive
M04	Stephen	General Manager
M05	Julia	Clerk

6 rows selected.

Q68. SET OPERATOR: INTERSECT

(SELECT * FROM StaffA)
INTERSECT
(SELECT * FROM StaffB);



STAFF_CODE	STAFF_NAME	POSITION
M03	Ahmad	Executive

Q69. SET OPERATOR: MINUS

(SELECT * FROM StaffA)
MINUS
(SELECT * FROM StaffB);



STAFF_CODE	STAFF_NAME	POSITION
M01	John Tan	Manager
M02	Gopal	Supervisor

Branch (Bno, Street, Area, City, Pcode, Tel_No, Fax_No)

Staff (Sno, FName, LName, Address, Tel_No, Position, Sex, DOB, Salary, NIN, Bno)

Property_For_Rent (Pno, Street, Area, City, Pcode, Type, Rooms, Rent, Ono, Sno, Bno)

Renter (Rno, FName, LName, Address, Tel_No, Pref_Type, Max_Rent, Bno)

Owner (Ono, FName, LName, Address, Tel_No)

Viewing (Rno, Pno, VDate, VComment)