GROUP & FILTERING

GROUPING : GROUP BY Clause

Group by clause is used to *group the records* .

SYNTAX:

```
SELECT  group_by_expression / group_function
FROM table_name
[WHERE <filter_condition>]
GROUP BY column_name/expression ;
```

ORDER OF EXECUTION:

1-FROM
2-WHERE(if used) [ROW-BY-ROW]
3-GROUP BY [ROW-BY-ROW]
4-SELECT [GROUP-BY-GROUP]

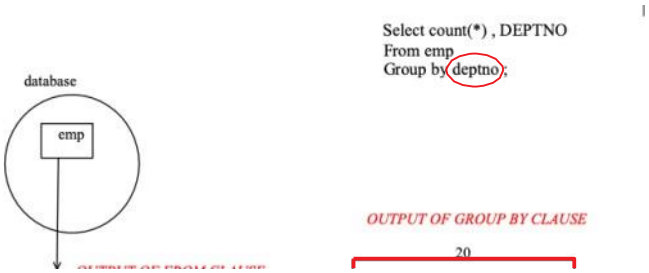
EMP

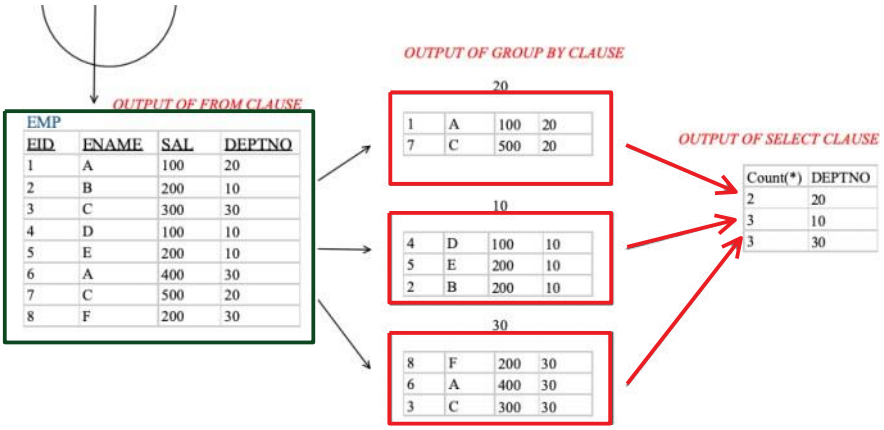
EID	ENAME	SAL	DEPTNO
1	A	100	20
2	B	200	10
3	C	300	30
4	D	100	10
5	E	200	10
6	A	400	30
7	C	500	20
8	F	200	30

Example :

- WAQTD number of employees working in each dept .

```
SELECT COUNT(*)
FROM EMP
GROUP BY DEPTNO ;
```





NOTE :

- Group By clause is used to group the records .
- Group By clause executes row by row .
- After the execution of Group By clause we get Groups .
- Therefore any clause that executes after group by must execute Group By Group .
- The Column_Name or expression used for grouping can be used In select clause .
- Group By clause can be used without using Where clause .

Questions :

1. WAQTD number of employees working in each dept except the Employee working as analyst .

```
SELECT DEPTNO , COUNT(*)
FROM EMP
WHERE JOB NOT IN 'ANALYST'
GROUP BY DEPTNO ;
```

2. WAQTD maximum salary given to each job .

```
SELECT JOB , MAX( SAL )
FROM EMP
GROUP BY JOB ;
```

3. WAQTD number of employees working in each job if the employees Have character 'A' in their names .

```
SELECT JOB , COUNT(*)
FROM EMP
WHERE ENAME LIKE '%A%'
GROUP BY JOB ;
```

4. WAQTD number of employees getting commission in each dept .

```
SELECT DEPTNO , COUNT( COMM )
```

FROM EMP
GROUP BY DEPTNO ;

ASSIGNMENT QUESTIONS ON GROUP BY

1. WAQTD NUMBER OF EMPLOYEES WORKING IN EACH DEPARTEMENT EXCEPT PRESIDENT.
2. WAQTD TOTAL SALARY NEEDED TO PAY ALL THE EMPLOYEES IN EACH JOB.
3. WAQTD NUMBER OF EMPLOYEEES WORKING AS MANAGER IN EACH DEPARTMENT .
4. WAQTD AVG SALARY NEEDED TO PAY ALL THE EMPLOYEES IN EACH DEPARTMENT EXCLUDING THE EMPLOYEES OF DEPTNO 20.
5. WAQTD NUMBER OF EMPLOYEES HAVING CHARACTER 'A' IN THEIR NAMES IN EACH JOB .
6. WAQTD NUMBER OF EMPLOYEES AND AVG SALARY NEEDED TO PAY THE EMPLOYEES WHO SALARY IN GREATER THAN 2000 IN EACH DEPT.
7. WAQDTD TOTAL SALARY NEEDED TO PAY AND NUMBER OF SALESMANS IN EACH DEPT.
8. WAQTD NUMBER OF EMPLOYEES WITH THEIR MAXIMUM SALARIES IN EACH JOB.
9. WAQTD MAXIMUM SALARIES GIVEN TO AN EMPLOYEE WORKING IN EACH DEPT.
10. WAQTD NUMBER OF TIMES THE SALARIES PRESENT IN EMPLOYEE TABLE .

FILTERING : HAVING Clause

" Having Clause is used to Filter the Group "

SYNTAX:

```
SELECT  group_by_expression / group_function
FROM table_name
[WHERE <filter_condition>]
GROUP BY column_name/expression
HAVING  <group_filter_condition>
```

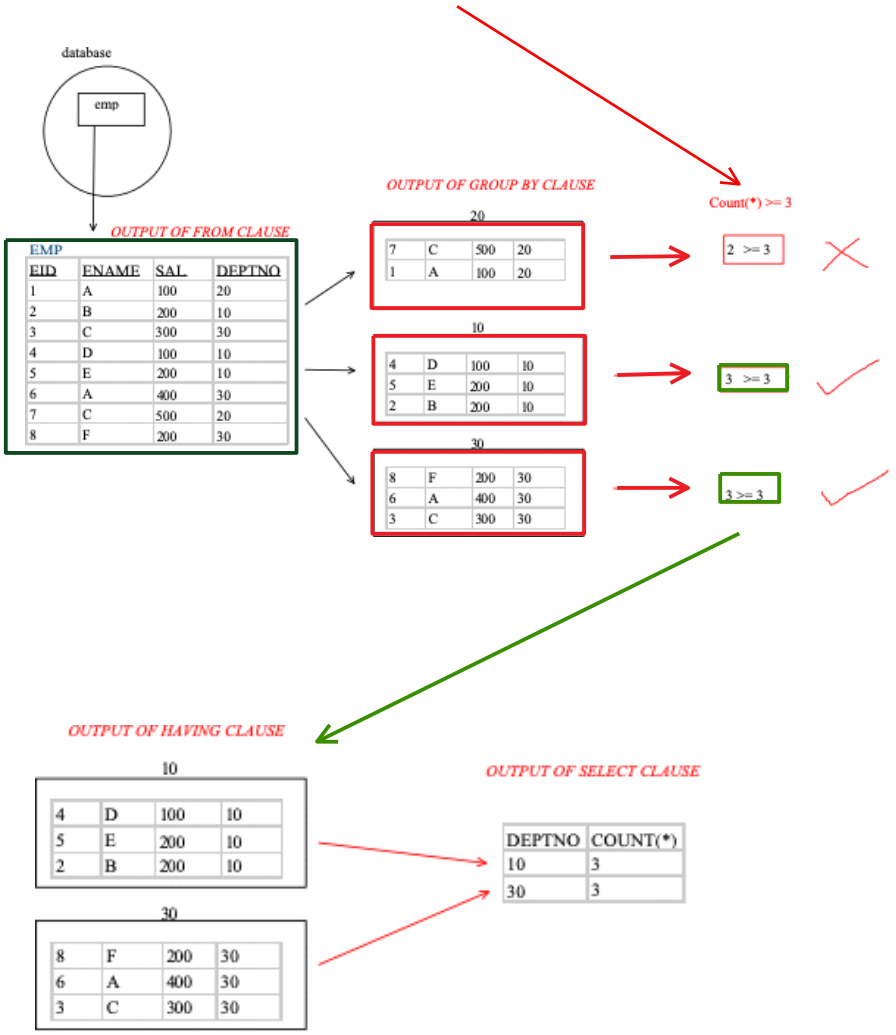
ORDER OF EXECUTION:

1-FROM
2-WHERE(if used) *[ROW-BY-ROW]*
3-GROUP BY(if used) *[ROW-BY-ROW]*
4-HAVING (if used) *[GROUP-BY-GROUP]*
5-SELECT *[GROUP-BY-GROUP]*

Example :

- WAQTD to find number of employees working in each Dept if there are at least 3 employees in each dept .

```
SELECT DEPTNO , COUNT(*)
FROM EMP
GROUP BY DEPTNO
HAVING COUNT(*)>=3 ;
```



Questions :

1. WAQTD the designations in which there are at lest 2 employees Present .

   ```
   SELECT JOB , COUNT(*)
   FROM EMP
   GROUP BY JOB
   HAVING COUNT(*)>=2 ;
   ```

2. WAQTD the names that are repeated .

   ```
   SELECT ENAME , COUNT(*)
   FROM EMP
   GROUP BY ENAME
   HAVING COUNT(*) > 1 ;
   ```

3. WAQTD names that are repeated exactly twice .

```
SELECT ENAME , COUNT(*)
FROM EMP
GROUP BY ENAME
HAVING COUNT(*)  = 2  ;
```

4. WAQTD the salary that is repeated .

```
SELECT SAL, COUNT(*)
FROM EMP
GROUP BY SAL
HAVING COUNT(*) > 1 ;
```

5. WAQTD number of employees working in each dept having
   At least 2 emp's Character 'A' or 'S' in their names .

```
SELECT DEPTNO , COUNT(*)
FROM EMP
WHERE ENAME LIKE '%A%' OR ENAME LIKE '%S%'
GROUP BY DEPTNO
HAVING COUNT(*)>=2 ;
```

6. WAQTD job and total salary of each job , if the total salary
   Of each job is greater than 3450 .

```
SELECT JOB , SUM( SAL )
FROM EMP
GROUP BY JOB
HAVING SUM( SAL ) > 3450 ;
```

7. WAQTD job and total salary of the employees if the employees
   Are earning more than 1500.

```
SELECT JOB , SUM( SAL )
FROM EMP
WHERE SAL > 1500
GROUP BY JOB ;
```

NOTE :

Differentiate between Where and Having .

WHERE	**HAVING**
➢ Where clause is used to Filter the records	➢ Having clause is used to Filter the groups .
➢ Where clause executes row By row .	➢ Having clause executes Group by group
➢ In Where Clause we cannot Use MRF( )	➢ Can use MRF( ).
➢ Where clause executes before Group by clause .	➢ Having clause executes After group by clause .

8. WAQTD Job wise maximum salary if the maximum salary Of each job exceeds 2000 .

```
SELECT JOB , MAX( SAL )
FROM EMP
GROUP BY JOB
HAVING MAX( SAL ) > 2000 ;
```

9. WAQTD number of emp earning sal more than 1200 in each job and the total sal needed to pay emp of each job must exceeds 3800.

```
SELECT JOB , COUNT(*) , SUM( SAL )
FROM EMP WHERE SAL > 1200
GROUP BY JOB
HAVING SUM( SAL ) > 3800 ;
```

ASSIGNMENT QUESTIONS ON HAVING CLAUSE

1. WAQTD DNO AND NUMBER OF EMP WORKING IN EACH DEPT IF THERE ARE ATLEAST 2 CLERKS IN EACH DEPT
2. WAQTD DNO AND TOTAL SAALARYNEEDED TO PAY ALL EMP IN EACH DEPT IF THERE ARE ATLEAST 4 EMP IN EACH DEPT
3. WAQTD NUMBER OF EMP EARNING SAL MORE THAN 1200 IN EACH JOB AND THE TOTAL SAL NEEDED TO PAY EMP OF EACH JOB MUST EXCEES 3800
4. WAQTD DEPTNO AND NUMBER OF EMP WORKING ONLY IF THERE ARE 2 EMP WORKING IN EACH DEPT AS MANAGER .
5. WAQTD JOB AND MAX SAL OF EMP IN EACH JOB IF THE MAX SAL EXCEEDS 2600
6. WAQTD THE SALARIES WHICH ARE REPEATED IN EMP TABLE
7. WAQTD THE HIREDATE WHICH ARE DUPLICATED IN EMP TABLE
8. WAQTD AVG SALARY OF EACH DEPT IF AVG SAL IS LESS THAN 3000
9. WAQTD DEPTNO IF THERE ARE ATLEAST 3 EMP IN EACH DEPT WHOS NAME HAS CHAR 'A' OR 'S' .
10. WAQTD MIN AND MAX SALARIES OF EACH JOB IF MIN SAL IS MORE THAN 1000 AND MAX SAL IS LESS THAN 5000 .

ANSWERS :

1. WAQTD NUMBER OF EMPLOYEES WORKING IN EACH DEPARTEMENT EXCEPT PRESIDENT

```
SELECT DEPTNO, COUNT(*)
FROM EMP
WHERE JOB NOT IN 'PRESIDENT'
GROUP BY DEPTNO;
```

2. WAQTD TOTAL SALARY NEEDED TO PAY ALL THE EMPLOYEES IN EACH JOB

```
SELECT JOB , SUM(SAL)
FROM EMP
GROUP BY JOB
```

3. WAQTD NUMBER OF EMPLOYEEES WORKING AS MANAGER IN EACH DEPARTMENT

```
SELECT DEPTNO, COUNT(*)
FROM EMP
WHERE JOB='MANAGER'
GROUP BY DEPTNO;
```

4. WAQTD AVG SALARY NEEDED TO PAY ALL THE EMPLOYEES IN EACH DEPARTMENT EXCLUDING THE EMPLOYEES OF DEPTNO 20

```
SELECT DEPTNO, AVG(SAL)
FROM EMP
WHERE DEPTNO NOT IN 20
GROUP BY DEPTNO;
```

5. WAQTD NUMBER OF EMPLOYEES HAVING CHARACTER 'A' IN THEIR NAMES IN EACH JOB

```
SELECT JOB, COUNT(*)
FROM EMP
WHERE ENAME LIKE '%A%'
GROUP BY JOB;
```

6. WAQTD NUMBER OF EMPLOYEES AND AVG SALARY NEEDED TO PAY THE EMPLOYEES WHO SALARY IN GREATER THAN 2000 IN EACH DEPT

```
SELECT DEPTNO, COUNT(*) , AVG(SAL)
FROM EMP
WHERE SAL > 2000
GROUP BY DEPTNO;
```

7. WAQDTD TOTAL SALARY NEEDED TO PAY AND NUMBER OF SALESMANS IN EACH DEPT

```
SELECT DEPTNO, COUNT(*) , SUM(SAL)
FROM EMP
WHERE JOB='SALESMAN'
GROUP BY DEPTNO;
```

8. WAQTD NUMBER OF EMPLOYEES WITH THEIR MAXIMUM

SALARIES IN EACH JOB

```
SELECT JOB, COUNT(*) , MAX(SAL)
FROM EMP
GROUP BY JOB;
```

9. WAQTD MAXIMUM SALARIES GIVEN TO AN EMPLOYEE WORKING IN EACH DEPT

```
SELECT DEPTNO, MAX(SAL)
FROM EMP
GROUP BY DEPTNO;
```

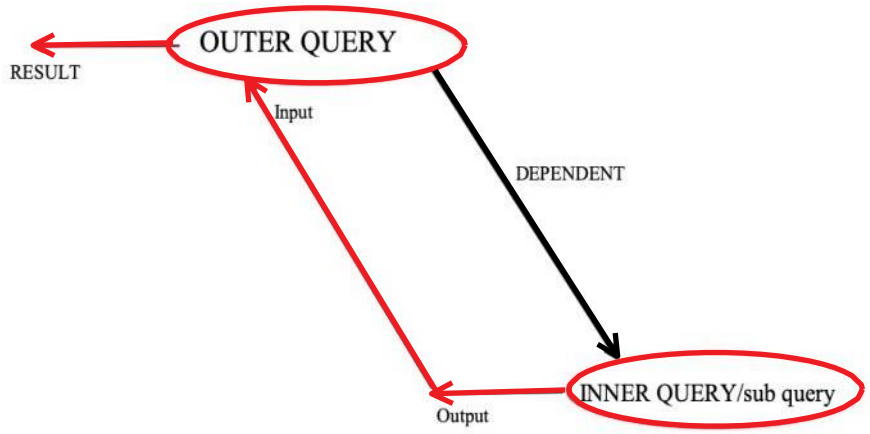
10. WAQTD NUMBER OF TIMES THE SALARIES PRESENT IN EMPLOYEE TABLE

```
SELECT SAL , COUNT(*)
FROM EMP
GROUP BY SAL;
```

SUB-QUERY

" A QUERY WRITTEN INSIDE ANOTHER QUERY IS KNOWN AS SUB QUERY "

Working Principle :



Let us consider two queries Outer Query and Inner Query .

- Inner Query executes first and produces an Output .
- The Output of Inner Query is given / fed as an Input to Outer Query .
- The Outer Query generates the Result.
- Therefore we can state that 'the Outer Query is dependent on Inner Query' and this is the Execution Principle of Sub Query .

Why / When Do we use SUB QUERY :

Case 1 : Whenever we have Unknowns present in the Question We use sub query to find the Unknown .

Example :

EMP

EID	ENAME	SAL	DEPTNO
1	ALLEN	1000	20
2	BLAKE	2000	10
3	CLARK	3000	30
4	MILLER	1500	10
5	SMITH	2500	10

1. WAQTD names of the employees earning more than 2500 .

   SELECT ENAME
   FROM EMP

```
WHERE SAL > 2500 ;
```

2. WAQTD names of the employees earning less than MILLER .

```
SELECT ENAME
FROM EMP
WHERE SAL < ( SELECT SAL
              FROM EMP
              WHERE ENAME = 'MILLER'  );
```

3. WAQTD name and deptno of the employees working in the same Dept as SMITH .

```
SELECT ENAME , DEPTNO
FROM EMP
WHERE DEPTNO = ( SELECT DEPTNO
                 FROM EMP
                 WHERE ENAME ='SMITH' ) ;
```

4. WAQTD name and hiredate of the employees if the employee Was hired after JONES .

```
SELECT ENAME , HIREDATE
FROM EMP
WHERE HIREDATE > ( SELECT HIREDATE
                   FROM EMP
                   WHERE ENAME ='JONES' ) ;
```

5. WAQTD all the details of the employee working in the same Designation as KING .

```
SELECT *
FROM EMP
WHERE JOB = ( SELECT JOB
              FROM EMP
              WHERE ENAME ='KING' );
```

6. WAQTD name , sal , deptno of the employees if the employees Earn more than 2000 and work in the same dept as JAMES .

```
SELECT ENAME , SAL , DEPTNO
FROM EMP
WHERE SAL > 2000 AND DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE ENAME ='JAMES' ) ;
```

7. WAQTD all the details of the employees working in the Same designation as MILLER and earning more than 1500.

```
SELECT *
FROM EMP
WHERE SAL > 1500 AND JOB = ( SELECT JOB
                             FROM EMP
                             WHERE ENAME ='MILLER' ) ;
```

```
SELECT *
FROM EMP
WHERE  JOB = ( SELECT JOB
FROM EMP
WHERE ENAME ='MILLER' )  AND SAL > 1500  ;
```

8. WAQTD details of the employees earning more than SMITH
   But less than KING .

```
SELECT *
FROM EMP
WHERE SAL > ( SELECT SAL
FROM EMP
WHERE ENAME ='SMITH' ) AND SAL < ( SELECT SAL
FROM EMP
WHERE ENAME ='KING' ) ;
```

9. WAQTD name , sal and deptno of the employees if the employee Is
   earning commission in dept 20 and earning salary more than Scott .

```
SELECT ENAME , SAL , DEPTNO
FROM EMP
WHERE COMM IS NOT NULL AND DEPTNO = 20 AND
SAL > ( SELECT SAL
FROM EMP
WHERE ENAME ='SCOTT' ) ;
```

10. WAQTD name and hiredate of the employees who's name ends with
    'S' and hired after James .

```
SELECT ENAME , HIREDATE
FROM EMP
WHERE ENAME LIKE '%S' AND
HIREDATE > ( SELECT HIREDATE
FROM EMP
WHERE ENAME ='JAMES' ) ;
```

11. WAQTD names of the employees working in the same dept as
    JAMES and earning salary more than ADAMS and working in the
    same job role as MILLER and hired after MARTIN .

```
SELECT ENAME
FROM EMP
WHERE DEPTNO=(SELECT DEPTNO
 FROM EMP
WHERE ENAME='JAMES') AND
SAL>(SELECT SAL
FROM EMP
WHERE ENAME='ADAMS') AND
JOB=(SELECT JOB
FROM EMP
WHERE ENAME='MILLER') AND
```

```
HIREDATE>(SELECT HIREDATE
FROM EMP
WHERE ENAME='MARTIN');
```

12. WAQTD all the details of the employees working as salesman in the dept 20 and earning commission more than Smith and hired after KING .

```
SELECT *
FROM EMP
WHERE JOB ='SALESMAN' AND
DEPTNO = 20 AND
COMM > ( SELECT COMM
FROM EMP
WHERE ENAME ='SMITH' ) AND
HIREDATE > ( SELECT HIREDATE
FROM EMP
WHERE ENAME ='KING' ) ;
```

13. WAQTD number of employees earning more than SMITH and less than MARTIN .

```
SELECT COUNT(*)
FROM EMP
WHERE SAL > ( SELECT SAL
FROM EMP
WHERE ENAME ='SMITH') AND
SAL < ( SELECT SAL
FROM EMP
WHERE ENAME ='MARTIN' )
```

14. WAQTD Ename and SAL for all the employees earning more than JONES .

```
SELECT ENAME , SAL
FROM EMP
WHERE SAL > ( SELECT SAL
FROM EMP
WHERE ENAME =JONES' ) ;
```

15. WAQTD all the details of the employees working as a manager .

```
SELECT *
FROM EMP
WHERE JOB ='MANAGER' ;
```

NOTE :

- In the Inner Query / Sub Query we cannot select more than One column .
- The corresponding columns need not be same , but the datatypes of those has to be same .

ASSIGNMENT ON CASE 1

1. WAQTD NAME OF THE EMPLOYEES EARNING MORE THAN ADAMS
2. WAQTD NAME AND SALARY OF THE EMPLOYEES EARNING LESS THAN KING
3. WAQTD NAME AND DEPTNO OF THE EMPLOYEES IF THEY ARE WORKING IN THE SAME DEPT AS JONES
4. WAQTD NAME AND JOB OF ALL THE EMPLOYEES WORKING IN THE SAME DESIGNATION AS JAMES
5. WAQTD EMPNO AND ENAME ALONG WITH ANNUAL SALARY OF ALL THEEMPLOYEES IF THEIR ANNUAL SALARY IS GREATER THAN WARDS ANNUAL SALARY.
6. WAQTD NAME AND HIREDATE OF THE EMPLOYEES IF THEY ARE HIRED BEFORE SCOTT
7. WAQTD NAME AND HIREDATE OF THE EMPLOYEES IF THEY ARE HIRED AFTER THE PRESIDENT
8. WAQTD NAME AND SAL OF THE EMPLOYEE IF THEY ARE EARNING SAL LESS THAN THE EMPLOYEE WHOS EMPNO IS 7839
9. WAQTD ALL THE DETAILS OF THE EMPLOYEES IF THE EMPLOYEES ARE HIRED BEFORE MILLER
10. WAQTD ENAME AND EMPNO OF THE EMPLOYEES IF EMPLOYEES ARE EARNING MORE THAN ALLEN
11. WAQTD ENAME AND SALARY OF ALL THE EMPLOYEES WHO ARE EARNING MORE THAN MILLER BUT LESS THAN ALLEN .
12. WAQTD ALL THE DETAILS OF THE EMPLOYEES WORKING IN DEPT 20 AND WORKING IN THE SAME DESIGNATION AS SMITH
13. WAQTD ALL THE DETAILS OF THE EMPLOYEES WORKING AS MANAGER IN THE SAME DEPT AS TURNER
14. WAQTD NAME AND HIREDATE OF THE EMPLOYEES HIRED AFTER 1980 AND BEFORE KING
15. WAQTD NAME AND SAL ALONG WITH ANNUAL SAL FOR ALL EMPLOYEES WHOS SAL IS LESS THAN BLAKE AND MORE THAN 3500
16. WAQTD ALL THE DETAILS OF EMPLOYEES WHO EARN MORE THAN SCOTT BUT LESS THAN KING
17. WAQTD NAME OF THE EMPLOYEES WHOS NAME STARTS WITH 'A' AND WORKS IN THE SAME DEPT AS BLAKE
18. WAQTD NAME AND COMM IF EMPLOYEES EARN COMISSION AND WORK IN THE SAME DESIGNATION AS SMITH
19. WAQTD DETAILS OF ALL THE EMPLOYEES WORKING AS CLERK IN THE SAME DEPT AS TURNER .
20. WAQTD ENAME, SAL AND DESIGNATION OF THE EMPLOYEES WHOS ANNUAL SALARY IS MORE THAN SMITH AND LESS THAN KING.

1. WAQTD NAME OF THE EMPLOYEES EARNING MORE THAN ADAMS

```
SELECT ENAME
FROM EMP
WHERE SAL > ( SELECT SAL
FROM EMP
WHERE ENAME ='ADAMS' );
```

2. WAQTD NAME AND SALARY OF THE EMPLOYEES EARNING LESS
THAN KING

```
SELECT ENAME , SAL
FROM EMP
WHERE SAL < ( SELECT SAL
FROM EMP
WHERE ENAME ='KING' );
```

3. WAQTD NAME AND DEPTNO OF THE EMPLOYEES IF THEY ARE WORKING
IN THE SAME DEPT AS JONES

```
SELECT ENAME , DEPTNO
FROM EMP
WHERE DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE ENAME =JONES');
```

4. WAQTD NAME AND JOB OF ALL THE EMPLOYEES WORKING IN THE SAME
DESIGNATION AS JAMES

```
SELECT ENAME , JOB
FROM EMP
WHERE JOB = ( SELECT JOB
FROM EMP
WHERE ENAME ='JAMES' );
```

5. WAQTD EMPNO AND ENAME ALONG WITH ANNUAL SALARY OF ALL THE
EMPLOYEES IF THEIR ANNUAL SALARY IS GREATER THAN WARDS
ANNUAL SALARY.

```
SELECT EMPNO , ENAME . SAL*12
FROM EMP
WHERE SAL * 12 > ( SELECT SAL*12
FROM EMP
WHERE ENAME = 'WARD' );
```

6. WAQTD NAME AND HIREDATE OF THE EMPLOYEES IF THEY ARE HIRED
BEFORE SCOTT

```
SELECT ENAME , HIREDATE
FROM EMP
WHERE HIREDATE < ( SELECT HIREDATE
FROM EMP
WHERE ENAME ='SCOTT' );
```

7. WAQTD NAME AND HIREDATE OF THE EMPLOYEES IF THEY ARE HIRED
AFTER THE PRESIDENT

```
SELECT ENAME , HIREDATE
FROM EMP
WHERE HIREDATE > ( SELECT HIREDATE
FROM EMP
```

WHERE JOB = 'PRESIDENT');

8. WAQTD NAME AND SAL OF THE EMPLOYEE IF THEY ARE EARNING SAL
LESS THAN THE EMPLOYEE WHOS EMPNO IS 7839

```
SELECT ENAME , SAL
FROM EMP
WHERE SAL < ( SELECT SAL
FROM EMP
WHERE EMPNO = 7839 );
```

9. WAQTD ALL THE DETAILS OF THE EMPLOYEES IF THE EMPLOYEES ARE
HIRED BEFORE MILLER

```
SELECT *
FROM EMP
WHERE HIREDATE < ( SELECT HIREDATE
FROM EMP
WHERE ENAME ='MILLER' );
```

10. WAQTD ENAME AND EMPNO OF THE EMPLOYEES IF EMPLOYEES ARE
EARNING MORE THAN ALLEN

```
SELECT ENAME , EMPNO
FROM EMP
WHERE SAL > ( SELECT SAL
FROM EMP
WHERE ENAME ='ALLEN' );
```

11. WAQTD ENAME AND SALARY OF ALL THE EMPLOYEES WHO ARE EARNING
MORE THAN MILLER BUT LESS THAN ALLEN

```
SELECT ENAME , SAL
FROM EMP
WHERE SAL > ( SELECT SAL
FROM EMP
WHERE ENAME ='MILLER ) AND  SAL < ( SELECT SAL
FROM EMP
WHERE ENAME ='ALLEN' );
```

12. WAQTD ALL THE DETAILS OF THE EMPLOYEES WORKING IN DEPT 20
AND WORKING IN THE SAME DESIGNATION AS SMITH

```
SELECT *
FROM EMP
WHERE DEPTNO = 20 AND JOB = ( SELECT JOB
FROM EMP
WHERE ENAME ='SMITH');
```

13. WAQTD ALL THE DETAILS OF THE EMPLOYEES WORKING AS MANAGER
IN THE SAME DEPT AS TURNER

```
SELECT *
FROM EMP
```

WHERE JOB ='MANAGER' AND DEPTNO = (SELECT DEPTNO
FROM EMP
WHERE ENAME ='TURNER') ;

14. WAQTD NAME AND HIREDATE OF THE EMPLOYEES HIRED AFTER 1980
AND BEFORE KING

SELECT ENAME , HIREDATE
FROM EMP
WHERE HIREDATE > '31-DEC-1980 ' AND HIREDATE < (SELECT HIREDATE
FROM EMP
WHERE ENAME ='KING');

15. WAQTD NAME AND SAL ALONG WITH ANNUAL SAL FOR ALL EMPLOYEES
WHOS SAL IS LESS THAN BLAKE AND MORE THAN 3500

*SELECT ENAME , SAL , SAL*12*
FROM EMP
WHERE SAL > 3500 AND SAL < (SELECT SAL
FROM EMP
WHERE ENAME ='BLAKE);

16. WAQTD ALL THE DETAILS OF EMPLOYEES WHO EARN MORE THAN SCOTT
BUT LESS THAN KING

*SELECT **
FROM EMP
WHERE SAL > (SELECT SAL
FROM EMP
WHERE ENAME ='SCOTT') AND SAL < (SELECT SAL
FROM EMP
WHERE ENAME ='KING');

17. WAQTD NAME OF THE EMPLOYEES WHOS NAME STARTS WITH ‘A’ AND
WORKS IN THE SAME DEPT AS BLAKE

SELECT ENAME
FROM EMP
WHERE ENAME LIKE 'A%' AND DEPTNO = (SELECT DEPTNO
FROM EMP
WHERE ENAME ='BLAKE') ;

18. WAQTD NAME AND COMM IF EMPLOYEES EARN COMISSION AND WORK IN
THE SAME DESIGNATION AS SMITH

SELECT ENAME , COMM
FROM EMP
WHERE COMM IS NOT NULL AND JOB = (SELECT JOB
FROM EMP
WHERE ENAME ='SMITH');

19. WAQTD DETAILS OF ALL THE EMPLOYEES WORKING AS

CLERK IN THE
SAME DEPT AS TURNER

```
SELECT *
FROM EMP
WHERE JOB ='CLERK'  AND DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE ENAME ='TURNER' ) ;
```

20. WAQTD ENAME, SAL AND DESIGNATION OF THE EMPLOYEES WHOS
ANNUAL SALARY IS MORE THAN SMITH AND LESS THAN KING

```
SELECT ENAME , SAL , JOB
FROM EMP
WHERE SAL*12 > ( SELECT SAL *12
FROM EMP
WHERE ENAME ='SMITH') AND  SAL < ( SELECT SAL *12
FROM EMP
WHERE ENAME ='KING' );
```

CASE-2 : Whenever the data to be selected and the condition to be executed are present in different tables we use Sub Query .

Example :

Emp

EID	ENAME	SAL	DEPTNO
1	ALLEN	1000	20
2	BLAKE	2000	10
3	CLARK	3000	30
4	MILLER	1500	10
5	ADAMS	2500	20

DEPT

DEPTNO	DNAME	LOC
10	D1	L1
20	D2	L2
30	D3	L3

1. WAQTD deptno of the employee whose name is Miller .

```
SELECT DEPTNO
FROM EMP
WHERE ENAME ='MILLER' ;
```

2. WAQTD **dname** of the employee whose name is **Miller** .

```
SELECT DNAME
FROM DEPT
WHERE DEPTNO = ( SELECT DEPTNO
                 FROM EMP
                 WHERE ENAME ='MILLER' ) ;
```

3. WAQTD Location of ADAMS

```
SELECT LOC
FROM DEPT
WHERE DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE ENAME ='ADAMS' ) ;
```

4. WAQTD names of the employees working in Location L2.

```
SELECT ENAME
FROM EMP
WHERE DEPTNO = ( SELECT DEPTNO
FROM DEPT
WHERE LOC ='L2' ) ;
```

5. WAQTD number of employees working in dept D3 .

```
SELECT COUNT(*)
FROM EMP
WHERE DEPTNO = ( SELECT DEPTNO
```

```
FROM DEPT
WHERE DNAME ='D3' ) ;
```

6. WAQTD ename , sal of all the employee earning more than Scott and working in dept 20 .

```
SELECT ENAME , SAL
FROM EMP
WHERE DEPTNO = 20 AND SAL > ( SELECT SAL
FROM EMP
WHERE ENAME ='SCOTT' ) ;
```

7. WAQTD all the details of the employee working as a Manager In the dept Accounting .

```
SELECT *
FROM EMP
WHERE JOB ='MANAGER' AND
DEPTNO = ( SELECT DEPTNO
FROM DEPT
WHERE DNAME ='ACCOUNTING' )  ;
```

8. WAQTD all the details of the employee working in the same designation as Miller and works in location New York .

```
SELECT *
FROM EMP
WHERE JOB = ( SELECT JOB
FROM EMP
WHERE ENAME ='MILLER' )  AND DEPTNO = ( SELECT
DEPTNO FROM DEPT WHERE LOC ='NEW YORK' ) ;
```

9. WAQTD number of employees working as a clerk in the same deptno as SMITH and earning more than KING hired after MARTIN in the location BOSTON .

```
SELECT COUNT(*)
FROM EMP
WHERE JOB ='CLERK' AND
DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE ENAME ='SMITH') AND
SAL > ( SELECT SAL
FROM EMP
WHERE ENAME ='KING' ) AND
HIREDATE > ( SELECT HIREDATE
FROM EMP
WHERE ENAME ='MARTIN' ) AND
DEPTNO = ( SELECT DEPTNO
FROM DEPT
WHERE LOC ='BOSTON' ) ;
```

10. WAQTD maximum salary given to a person working in

DALLAS .

```
SELECT MAX( SAL )
FROM EMP
WHERE DEPTNO = ( SELECT DEPTNO
FROM DEPT
WHERE LOC ='DALLAS' ) ;
```

ASSIGNMENT ON CASE 2 :

21. WAQTD DNAME OF THE EMPLOYEES WHOS NAME IS SMITH
22. WAQTD DNAME AND LOC OF THE EMPLOYEE WHOS ENAME IS KING
23. WAQTD LOC OF THE EMP WHOS EMPLOYEE NUMBER IS 7902
24. WAQTD DNAME AND LOC ALONG WITH DEPTNO OF THE EMPLOYEE WHOS NAME ENDS WITH 'R' .
25. WAQTD DNAME OF THE EMPLOYEE WHOS DESIGNATION IS PRESIDENT
26. WAQTD NAMES OF THE EMPLOYEES WORKING IN ACCOUNTING DEPARTMENT
27. WAQTD ENAME AND SALARIES OF THE EMPLOYEES WHO ARE WORKING IN THE LOCATION CHICAGO
28. WAQTD DETAILS OF THE EMPLOYEES WORKING IN SALES
29. WAQTD DETAILS OF THE EMP ALONG WITH ANNUAL SALARY IF EMPLOYEES ARE WORKING IN NEW YORK
30. WAQTD NAMES OF EMPLOYEES WORKING IN OPERATIONS DEPARTMENT

ASSIGNMENT ON CASE 1 & 2

31. WAQTD NAMES OF THE EMPLOYEES EARNING MORE THAN SCOTT IN ACCOUNTING DEPT
32. WAQTD DETAILS OF THE EMPLOYEES WORKING AS MANAGER IN THE LOCATION CHICAGO
33. WAQTD NAME AND SAL OF THE EMPLOYEES EARNING MORE THAN KING IN THE DEPT ACCOUNTING
34. WAQTD DETAILS OF THE EMPLOYEES WORKING AS SALESMAN IN THE DEPARTEMENT SALES
35. WAQTD NAME , SAL , JOB , HIREDATE OF THE EMPLOYEES WORKING IN OPERATIONS DEPARTMENT AND HIRED BEFORE KING
36. DISPLAY ALL THE EMPLOYEES WHOSE DEPARTMET NAMES ENDING 'S'.
37. WAQTD DNAME OF THE EMPLOYEES WHOS NAMES HAS CHARACTER 'A' IN IT .
38. WAQTD DNAME AND LOC OF THE EMPLOYEES WHOS SALARY IS RUPEES 800 .
39. WAQTD DNAME OF THE EMPLOYEES WHO EARN COMISSION
40. WAQTD LOC OF THE EMPLOYEES IF THEY EARN COMISSION IN DEPT 40

MAX & MIN :

EID	ENAME	SAL	DEPTNO
1	ALLEN	1000	20
2	BLAKE	2000	10
3	CLARK	3000	30
4	MILLER	1500	10
5	ADAMS	2500	20

1. WAQTD maximum salary of an employee .

   SELECT MAX(SAL)
   FROM EMP ;

2. WAQTD name of the employee getting maximum salary .

   SELECT **ENAME** , MAX(SAL)
   FROM EMP ;

   SELECT ENAME
   FROM EMP
   WHERE SAL = **MAX(SAL)** ;

   SELECT ENAME
   FROM EMP
   WHERE SAL = (SELECT MAX(SAL)
   FROM EMP) ;

3. WAQTD name and salary earned by the employee getting Minimum salary .

   SELECT ENAME , SAL
   FROM EMP
   WHERE SAL = (SELECT MIN(SAL)
   FROM EMP) ;

ASSIGNMENT ON MAX & MIN :

41. WAQTD NAME OF THE EMPLOYEE EARNING MAXIMUM SALARY
42. WAQTD NAME OF THE EMPLOYEE EARNING MINIMUM SALARY
43. WAQTD NAME AND HIREDATE OF THE EMPLOYEE HIRED BEFORE ALL THE EMPLOYEES (FIRST EMP)
44. WAQTD NAME AND HIREDATE OF THE EMPLOYEES HIRED AT THE LAST
45. WAQTD NAME, COMM OF THE EMPLOYEE WHO EARNS MIN COMISSION
46. WAQTD NAME, SAL AND COMM OF THE EMPLOYEE EARNING MAXIMUM COMISSION

47. WAQTD DETAILS OF THE EMPLOYEE WHO HAS GREATEST EMPNO
48. WAQTD DETAILS OF THE EMPLOYEES HAVING THE LEAST HIREDATE
49. WAQTD DETAILS OF THE EMPLOYEES EARNING LEAST ANNUAL SALARY
50. WAQTD NAME , ANNUAL SALARY OF THE EMPLOYEES IF THEIR ANNUAL SALARY IS MORE THAN ALL THE SALESMAN

ASSIGNMENT ANSWERS ON CASE 2 :

21. WAQTD DNAME OF THE EMPLOYEES WHOS NAME IS SMITH

```
SELECT DNAME
FROM DEPT
WHERE DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE ENAME ='SMITH' ) ;
```

22. WAQTD DNAME AND LOC OF THE EMPLOYEE WHOS ENAME IS KING

```
SELECT DNAME ,LOC
FROM DEPT
WHERE DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE ENAME =''KING' ) ;
```

23. WAQTD LOC OF THE EMP WHOS EMPLOYEE NUMBER IS 7902

```
SELECT LOC
FROM DEPT
WHERE DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE EMPNO=7902 ) ;
```

24. WAQTD DNAME AND LOC ALONG WITH DEPTNO OF THE EMPLOYEE WHO'S NAME ENDS WITH 'R'.

```
SELECT DNAME , LOC
FROM DEPT
WHERE DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE ENAME LIKE '%R' ) ;
```

25. WAQTD DNAME OF THE EMPLOYEE WHOS DESIGNATION IS PRESIDENT

```
SELECT DNAME
FROM DEPT
WHERE DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE JOB = 'PRESIDENT'  ) ;
```

26. WAQTD NAMES OF THE EMPLOYEES WORKING IN

ACCOUNTING DEPARTMENT

```
SELECT ENAME
FROM EMP
WHERE DEPTNO = ( SELECT DEPTNO
FROM DEPT
WHERE  DNAME = 'ACCOUNTING' );
```

27. WAQTD ENAME AND SALARIES OF THE EMPLOYEES WHO ARE WORKING IN
THE LOCATION 'CHICAGO'

```
SELECT ENAME ,SAL
FROM EMP
WHERE DEPTNO = ( SELECT DEPTNO
FROM DEPT
WHERE  LOC = 'CHICAGO' );
```

28. WAQTD DETAILS OF THE EMPLOYEES WORKING IN SALES

```
SELECT *
FROM EMP
WHERE DEPTNO = ( SELECT DEPTNO
FROM DEPT
WHERE  DNAME ='SALES' );
```

29. WAQTD DETAILS OF THE EMP ALONG WITH ANNUAL SALARY IF EMPLOYEES
ARE WORKING IN NEW YORK

```
SELECT EMP.* , SAL*12
FROM EMP
WHERE DEPTNO = ( SELECT DEPTNO
FROM DEPT
WHERE  LOC ='NEW YORK' );
```

30. WAQTD NAMES OF EMPLOYEES WORKING IN OPERATIONS DEPARTMENT

```
SELECT ENAME
FROM EMP
WHERE DEPTNO = ( SELECT DEPTNO
FROM DEPT
WHERE  DNAME ='OPERATIONS' );
```

ANSWERS ON CASE 1 & 2 :

31. WAQTD NAMES OF THE EMPLOYEES EARNING MORE THAN SCOTT IN
ACCOUNTING DEPT

```
SELECT ENAME
FROM EMP
WHERE SAL > ( SELECT SAL
FROM EMP
WHERE ENAME ='SCOTT' )  AND DEPTNO = ( SELECT DEPTNO
                                       FROM DEPT
```

WHERE DNAME = 'ACCOUNTING');

32. WAQTD DETAILS OF THE EMPLOYEES WORKING AS MANAGER IN THE
LOCATION CHICAGO

```
SELECT *
FROM EMP
WHERE JOB ='MANAGER'  AND DEPTNO = ( SELECT DEPTNO
                                     FROM DEPT
                                     WHERE  LOC
='CHICAGO');
```

33. WAQTD NAME AND SAL OF THE EMPLOYEES EARNING MORE THAN KING
IN THE DEPT ACCOUNTING

```
SELECT ENAME ,SAL
FROM EMP
WHERE SAL > ( SELECT SAL
FROM EMP
WHERE ENAME ='KING' )  AND DEPTNO = ( SELECT DEPTNO
                                      FROM DEPT
                                      WHERE  DNAME =
'ACCOUNTING');
```

34. WAQTD DETAILS OF THE EMPLOYEES WORKING AS SALESMAN IN THE
DEPARTEMENT SALES

```
SELECT *
FROM EMP
WHERE JOB ='SALESMAN'  AND DEPTNO = ( SELECT DEPTNO
                                      FROM DEPT
                                      WHERE  DNAME
='SALES');
```

35. WAQTD NAME , SAL , JOB , HIREDATE OF THE EMPLOYEES WORKING IN OPERATIONS DEPARTMENT AND HIRED BEFORE KING

```
SELECT ENAME  ,SAL , JOB , HIREDATE
FROM EMP
WHERE HIREDATE < ( SELECT HIREDATE
FROM EMP
WHERE ENAME ='KING')  AND DEPTNO = ( SELECT DEPTNO
                                     FROM DEPT
                                     WHERE  DNAME
='OPERATIONS');
```

36. DISPLAY ALL THE EMPLOYEES WHOSE DEPARTMET NAMES ENDING 'S'.

```
SELECT ENAME
FROM EMP
WHERE DEPTNO = ( SELECT DEPTNO
FROM DEPT
WHERE  DNAME LIKE '%S' );
```

37. WAQTD DNAME OF THE EMPLOYEES WHOS NAMES HAS CHARACTER ‘A’ IN IT .

```
SELECT DNAME
FROM DEPT
WHERE DEPTNO IN( SELECT DEPTNO
FROM EMP
WHERE ENAME LIKE '%A%' ) ;
```

38. WAQTD DNAME AND LOC OF THE EMPLOYEES WHOS SALARY IS RUPEES 800 .

```
SELECT DNAME , LOC
FROM DEPT
WHERE DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE SAL = 800) ;
```

39. WAQTD DNAME OF THE EMPLOYEES WHO EARN COMISSION

```
SELECT DNAME
FROM DEPT
WHERE DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE COMM IS NOT NULL );
```

40. WAQTD LOC OF THE EMPLOYEES IF THEY EARN COMISSION IN DEPT 40

```
SELECT LOC
FROM DEPT
WHERE DEPTNO = 40 AND DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE COMM IS NOT NULL ) ;
```

```
SELECT LOC
FROM DEPT
WHERE  DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE COMM IS NOT NULL AND DEPTNO = 40 ) ;
```

ANSWERS ON MAX & MIN :

41. WAQTD NAME OF THE EMPLOYEE EARNING MAXIMUM SALARY

```
SELECT ENAME
FROM EMP
WHERE SAL = ( SELECT MAX(SAL)
FROM EMP );
```

42. WAQTD NAME OF THE EMPLOYEE EARNING MINIMUM SALARY

```
SELECT ENAME
FROM EMP
WHERE SAL = ( SELECT MIN(SAL)
FROM EMP );
```

43. WAQTD NAME AND HIREDATE OF THE EMPLOYEE HIRED BEFORE
ALL THE EMPLOYEES (FIRST EMP)

```
SELECT ENAME , HIREDATE
FROM EMP
WHERE HIREDATE = ( SELECT MIN(HIREDATE)
FROM EMP );
```

44. WAQTD NAME AND HIREDATE OF THE EMPLOYEES HIRED AT THE LAST

```
SELECT ENAME , HIREDATE
FROM EMP
WHERE HIREDATE = ( SELECT MAX(HIREDATE)
FROM EMP );
```

45. WAQTD NAME, COMM OF THE EMPLOYEE WHO EARNS MIN COMISSION

```
SELECT ENAME , COMM
FROM EMP
WHERE COMM= ( SELECT MIN(COMM)
FROM EMP );
```

46. WAQTD NAME, SAL AND COMM OF THE EMPLOYEE EARNING MAXIMUM COMISSION

```
SELECT ENAME ,SAL, COMM
FROM EMP
WHERE COMM= ( SELECT MAX(COMM)
FROM EMP );
```

47. WAQTD DETAILS OF THE EMPLOYEE WHO HAS GREATEST EMPNO

```
SELECT *
FROM EMP
WHERE EMPNO= ( SELECT MAX(EMPNO)
FROM EMP );
```

48. WAQTD DETAILS OF THE EMPLOYEES HAVING THE LEAST HIREDATE

```
SELECT *
FROM EMP
WHERE EMPNO= ( SELECT MIN(EMPNO)
FROM EMP );
```

49. WAQTD DETAILS OF THE EMPLOYEES EARNING LEAST ANNUAL SALARY

```
SELECT ENAME
FROM EMP
WHERE SAL*12= ( SELECT MIN(SAL*12)
FROM EMP );
```

50. WAQTD NAME , ANNUAL SALARY OF THE EMPLOYEES IF

THEIR ANNUAL
SALARY IS MORE THAN ALL THE SALESMAN

```
SELECT ENAME , SAL*12
FROM EMP
WHERE SAL*12 >  ( SELECT MAX(SAL*12)
FROM EMP
WHERE JOB ='SALESMAN' );
OR
SELECT ENAME , SAL*12
FROM EMP
WHERE SAL*12 > ALL ( SELECT SAL*12
FROM EMP
WHERE JOB ='SALESMAN' );
```

TYPES OF SUB - QUERY :

1. **SINGLE ROW SUB QUERY**
2. **MULTI ROW SUB QUERY**

Example :

Emp

EID	ENAME	SAL	DEPTNO
1	ALLEN	1000	20
2	BLAKE	2000	10
3	CLARK	3000	30
4	MILLER	1500	10
5	SMITH	2500	10

DEPT

DEPTNO	DNAME	LOC
10	D1	L1
20	D2	L2
30	D3	L3

1. WAQTD dname of ALLEN .

```
SELECT DNAME
FROM DEPT
WHERE DEPTNO    =   ( SELECT DEPTNO
                      FROM EMP
                      WHERE ENAME = 'ALLEN' ) ;
```

20

2. WAQTD dnames of allen and smith .

```
SELECT DNAME
FROM DEPT
WHERE DEPTNO    =   ( SELECT DEPTNO
                      FROM EMP
                      WHERE ENAME IN
                      ( 'ALLEN' ,'SMITH' )  ) ;
```

20
10

DEPTNO
20
10
30
10
10

Here , since the sub query returns 2 records we cannot use '=' Op . We've to use IN Op .

1. SINGLE ROW SUB QUERY :

- If the sub query returns exactly 1 record / value we call it as Single Row Sub Query .
- *If it returns only 1 value then we can use the normal operators Or the Special Operators to compare the values .*

2. MULTI ROW SUB QUERY :

- If the sub query returns more than1 record / value we call it as Multi Row Sub Query .
- *If it returns more than 1 value then we **cannot use the normal operators** We have to use only Special Operators to compare the values .*

Note : *It is difficult to identify whether a query Belongs Single or Multi row So , it is always recommended to use Special Operators to Compare The values .*

1. WAQTD ename and salary of the employees earning *more than* Employees of dept 10 .

EID	ENAME	SAL	DEPTNO
1	ALLEN	1000	20
2	BLAKE	2000	10
3	CLARK	3000	30
4	MILLER	1500	10
5	SMITH	2500	10

2000
1500
2500

```
SELECT ENAME , SAL
FROM EMP
WHERE SAL  >   ( SELECT SAL
                 FROM EMP
                 WHERE DEPTNO = 10 ) ;
```

Here we cannot use > symbol to compare Multiple values .

We cant use IN or. NOT IN as well because It is used for = and != symbols .

*Therefore we have to use **Sub Query Operators** For Comparing Relational Operators such as (> , < , >= , <=) .*

Sub Query Operators :

1. **ALL :**

"It is special Op used along with a relational Op (> , < , > = , <=) to compare the values present at the RHS ".

- *ALL Op returns true if all the values at the RHS have satisfied the condition .*

Example :

2000

Example :

CLARK ,3000

2000
1500
2500

SELECT ENAME , SAL
FROM EMP
WHERE SAL **> ALL** (SELECT SAL
FROM EMP
WHERE DEPTNO = 10) ;

SAL
1000
2000
3000
1500
2500

1000 > ALL (2000 , 1500 , 2500)

1000 > 2000	False
1000 > 1500	False
1000 > 2500	False

2000 > ALL (2000 , 1500 , 2500)

2000 > 2000	False
2000 > 1500	True
2000 > 2500	False

3000 > ALL (2000 , 1500 , 2500)

3000 > 2000	True
3000 > 1500	True
3000 > 2500	True

1500 > ALL (2000 , 1500 , 2500)

1500 > 2000	False
1500 > 1500	False
1500 > 2500	False

2500 > ALL (2000 , 1500 , 2500)

2500 > 2000	True
2500 > 1500	True
2500 > 2500	False

2. **ANY :**

"It is special Op used along with a relational Op (> , < , > = , <=) to compare the values present at the RHS ".

- *ANY Op returns true if one of the values at the RHS have satisfied the condition .*

Example :

2000
1500
2500

```
SELECT ENAME , SAL
FROM EMP
WHERE SAL   > ANY   ( SELECT SAL
                      FROM EMP
                      WHERE DEPTNO = 10 ) ;
```

SAL
1000
2000
3000
1500
2500

1000 > ANY (2000 , 1500 , 2500)

1000 > 2000	False
1000 > 1500	False
1000 > 2500	False

2000 > ANY (2000 , 1500 , 2500)

2000 > 2000	False
2000 > 1500	True
2000 > 2500	False

3000 > ANY (2000 , 1500 , 2500)

3000 > 2000	True
3000 > 1500	True
3000 > 2500	True

1500 > ANY (2000 , 1500 , 2500)

1500 > 2000	False
1500 > 1500	False
1500 > 2500	False

2500 > ANY (2000 , 1500 , 2500)

2500 > 2000	True
2500 > 1500	True
2500 > 2500	False

1. WAQTD name of the employee if the employee earns less than The employees working as salesman .

```
SELECT ENAME
FROM EMP
WHERE SAL < ALL ( SELECT SAL
```

```
FROM EMP
WHERE JOB='SALESMAN' ) ;
```

2. WAQTD name of the employee if the employee earns less than At least a salesman .

```
SELECT ENAME
FROM EMP
WHERE SAL < ANY ( SELECT SAL
FROM EMP
WHERE JOB ='SALESMAN' ) ;
```

3. WAQTD names of the employees earning more than ADAMS .

```
SELECT ENAME
FROM EMP
WHERE SAL > ALL  ( SELECT SAL
FROM EMP
WHERE ENAME ='ADAMS' ) ;
```

ASSIGNMENT ON TYPES OF SUB QUERY .

51. WAQTD NAME OF THE EMPLOYEES EARNING SALARY MORE THAN THE SALESMAN
52. WAQTD DETAILS OF THE EMPLOYEES HIRED AFTER ALL THE CLERKS
53. WAQTD NAME AND SALARY FOR ALL THE EMPLOYEES IF THEY ARE EARNING LESS THAN ATLEST A MANAGER
54. WAQTD NAME AND HIREDATE OF EMPLOYEES HIRED BEFORE ALL THE MANAGERS
55. WAQTD NAMES OF THE EMPLOYEES HIRED AFTER ALL THE MANAGERS AND EARNING SALARY MORE THAN ALL THE CLERKS
56. WAQTD DETAILS OF THE EMPLOYEES WORKING AS CLERK AND HIRED BEFORE ATLEST A SALESMAN
57. WAQTD DETAILS OF EMPLOYEES WORKING IN ACCOUNTING OR SALES DEPT
58. WAQTD DEPARTMENT NAMES OF THE EMPOYEES WITH NAME SMITH , KING AND MILLER
59. WAQTD DETAILS OF EMPLOYEES WORKING NEWYORK OR CHICAGO
60. WAQTD EMP NAMES IF EMPLOYEES ARE HIRED AFTER ALL THE EMPLOYEES OF DEPT 10

NESTED SUB QUERY :

" A sub query written inside a sub query is known as Nested Subquery "

SAL
1000

- WE CAN NEST ABOUT **255** SUB QUERIES

1000
2000
4000
3000
5000

1. WAQTD maximum salary given to an employee .

   SELECT MAX(SAL) **5000**
   FROM EMP ;

2. WAQTD second maximum salary given to an employee .

   4000
   SELECT MAX(SAL)
   FROM MP **5000**

   WHERE SAL < (SELECT MAX(SAL)
   FROM EMP) ;

SAL
1000
2000
4000
3000
5000

3. WAQTD 3rd maximum salary .

   SELECT MAX(SAL) 3000
   FROM EMP
   WHERE SAL < (SELECT MAX(SAL) 4000
   FROM EMP
   WHERE SAL < (SELECT MAX(SAL) 5000
   FROM EMP))

4. WAQTD 4th maximum salary .

   SELECT MAX(SAL) 2000
   FROM EMP
   WHERE SAL < (SELECT MAX(SAL) 3000
   FROM EMP
   WHERE SAL < (SELECT MAX(SAL) 4000
   FROM EMP
   WHERE SAL < (SELECT MAX(SAL) 5000
   FROM EMP)))

5. WAQTD 3 minimum salary .

   SELECT MIN(SAL)

```
FROM EMP
WHERE SAL > ( SELECT MIN(SAL )
            FROM EMP
            WHERE SAL > ( SELECT MIN ( SAL )
                        FROM EMP ) ) ;
```

6. WAQTD Dept name of the employee getting 2nd Minimum salary .

```
SELECT DNAME
FROM DEPT
WHERE DEPTNO = ( SELECT DEPTNO
FROM EMP
WHERE SAL = (SELECT MIN( SAL )
FROM EMP
WHERE SAL > ( SELECT MIN( SAL )
FROM EMP ) ) );
```

REMEMBER :

MAXIMUM	**MAX( )**	**<**
MINIMUM	**MIN( )**	**>**

ASSIGNMENT ON NESTED SUB QUERY :

61. WAQTD 2ND MINIMUM SALARY
62. WAQTD 5TH MAXIMUM SALARY
63. WAQTD NAME OF THE EMPLOYEE EARNING 3RD MAXIMUM SALARY
64. WAQTD EMPNO OF THE EMPLOYEE EARNING 2D MAXIMUM SALARY
65. WAQTD DEPARTMENT NAME OF AN EMPLOYEE GETTING 4TH MAX SAL
66. WAQTD DETAILS OF THE EMPLOYEE WHO WAS HIRED 2nd
67. WAQTD NAME OF THE EMPLOYEE HIRED BEFORE THE LAST EMPLOYEE
68. WAQTD LOC OF THE EMPLOYEE WHO WAS HIRED FIRST
69. WAQTD DETAILS OF THE EMPLOYEE EARNING 7TH MINIMUM SALARY
70. WAQTD DNAME OF EMPLOYEE GETTING 2ND MAXIMUM SALARY