

Name: Sarthak Jain  
Programme: B.Tech CSE (Spec. AI&ML)  
Course: Advanced Database Management Systems

---

## LAB 5

**Title:** Use of different SQL clauses and join

**Objective:** To understand the use of group by and having clause and execute the SQL commands using JOIN

1. Write the SQL Queries for the following queries (use emp\_table and dept\_table of Experiment 4).

```
CREATE TABLE EMP(  
    EMPNO integer,  
    ENAME varchar(18),  
    JOB varchar(12),  
    MGR integer,  
    HIREDATE date,  
    SAL integer,  
    COMM integer,  
    DEPTNO integer  
);
```

The screenshot displays the 'Live SQL' web application interface. On the left is a dark sidebar with navigation links: Home, SQL Worksheet (highlighted), My Session, Schema, Quick SQL, My Scripts, My Tutorials, and Code Library. The main area is titled 'SQL Worksheet' and contains a text editor with the following SQL code:

```
1 CREATE TABLE EMP (  
2     EMPNO integer,  
3     ENAME varchar(18),  
4     JOB varchar(12),  
5     MGR integer,  
6     HIREDATE date,  
7     SAL integer,  
8     COMM integer,  
9     DEPTNO integer  
10 );
```

Below the editor, a message states 'Table created.' The top right of the interface includes links for Feedback, Help, and a user profile. At the bottom, there is a footer with Oracle and Integrated Cloud logos, copyright information (© 2020 Oracle Corporation), and links to the Oracle Learning Library and Twitter.

```
CREATE TABLE DEPT(  
  DEPTNO integer,  
  DNAME varchar(16),  
  LOC varchar(16)  
);
```

≡

Live SQL

Feedback Help thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

Clear Find Actions Save Run

```
1 CREATE TABLE DEPT(  
2   DEPTNO integer,  
3   DNAME varchar(16),  
4   LOC varchar(16)  
5 );
```

Table created.

ORACLE Integrated Cloud  
Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.5.0.0.0 Built with ♥ using Oracle APEX

↑

\* Inserting values \*

```
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
VALUES (7369, 'SMITH', 'CLERK', 7902, '17-DEC-80', 500, 800, 20);
```

```
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
VALUES (7499, 'ALLEN', 'SALESMAN', 7698, '20-FEB-81', 1600, 300, 30);
```

```
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
VALUES (7521, 'WARD', 'SALESMAN', 7698, '22-FEB-81', 1250, 500, 30);
```

```
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
VALUES (7566, 'JONES', 'MANAGER', 7839, '02-APR-81', 2975, 20);
```

```
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
VALUES (7654, 'MARTIN', 'SALESMAN', 7698, '28-SEP-81', 1250, 1400, 30);
```

```
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
VALUES (7698, 'BLAKE', 'MANAGER', 7839, '01-MAY-81', 2850, 30);
```

```
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
VALUES (7782, 'CLARK', 'MANAGER', 7839, '09-JUN-81', 2450, 10);
```

```
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
VALUES (7788, 'SCOTT', 'ANALYST', 7566, '09-DEC-82', 3000, 20);
```

```
INSERT INTO EMP (EMPNO, ENAME, JOB, HIREDATE, SAL, DEPTNO)
VALUES (7839, 'KING', 'PRESIDENT', '17-NOV-81', 5000, 10);
```

```
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
VALUES (7844, 'TURNER', 'SALESMAN', 7698, '08-SEP-81', 1500, 0, 30);
```

```
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
VALUES (7876, 'ADAMS', 'CLERK', 7788, '12-JAN-83', 1100, 20);
```

```
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
VALUES (7900, 'JAMES', 'CLERK', 7698, '03-DEC-81', 950, 30);
```

```
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
VALUES (7902, 'FORD', 'ANALYST', 7566, '03-DEC-81', 3000, 20);
```

```
INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
VALUES (7934, 'MILLER', 'CLERK', 7782, '23-JAN-82', 1300, 10);
```

≡

Live SQL

FeedbackHelp🔍 thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

ClearFindActionsSaveRun

```
22 INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
23 VALUES (7369, 'SCOTT', 'ANALYST', 7566, '09-DEC-82', 3000, 20);
24
25 INSERT INTO EMP (EMPNO, ENAME, JOB, HIREDATE, SAL, DEPTNO)
26 VALUES (7369, 'KING', 'PRESIDENT', '17-NOV-81', 5000, 10);
27
28 INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO)
29 VALUES (7369, 'TURNER', 'SALESMAN', 7698, '08-SEP-81', 1500, 0, 30);
30
31 INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
32 VALUES (7369, 'ADAMS', 'CLERK', 7788, '12-JAN-83', 1100, 20);
33
34 INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
35 VALUES (7369, 'JAMES', 'CLERK', 7698, '03-DEC-81', 950, 30);
36
37 INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
38 VALUES (7369, 'FORD', 'ANALYST', 7566, '03-DEC-81', 950, 30);
39
40 INSERT INTO EMP (EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, DEPTNO)
41 VALUES (7369, 'MILLER', 'CLERK', 7782, '23-JAN-82', 1300, 10);
42
```

1 row(s) inserted.

ORACLE

Integrated Cloud  
Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use  
Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter  
Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.5.0.0.0 Built with ♥ using Oracle APEX

⬆

≡Live SQL

FeedbackHelp🔍 thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

ClearFindActionsSaveRun

```
1 SELECT * FROM EMP;
2
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	500	800	20
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7566	JONES	MANAGER	7839	02-APR-81	2975	-	20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850	-	30
7782	CLARK	MANAGER	7839	09-JUN-81	2450	-	10
7788	SCOTT	ANALYST	7566	09-DEC-82	3000	-	20
7839	KING	PRESIDENT	-	17-NOV-81	5000	-	10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7876	ADAMS	CLERK	7788	12-JAN-83	1100	-	20
7900	JAMES	CLERK	7698	03-DEC-81	950	-	30
7902	FORD	ANALYST	7566	03-DEC-81	3000	-	20
7934	MILLER	CLERK	7782	23-JAN-82	1300	-	10

Download CSV  
14 rows selected.

ORACLE

Integrated Cloud  
Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use  
Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter  
Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.5.0.0.0 Built with ♥ using Oracle APEX

⬆

INSERT INTO DEPT (DEPTNO, DNAME, LOC)  
VALUES (10, 'ACCOUNTING', 'NEWYORK');

INSERT INTO DEPT (DEPTNO, DNAME, LOC)  
VALUES (20, 'RESEARCH', 'DALLAS');

INSERT INTO DEPT (DEPTNO, DNAME, LOC)  
VALUES (30, 'SALES', 'CHICAGO');

INSERT INTO DEPT (DEPTNO, DNAME, LOC)  
VALUES (40, 'OPERATIONS', 'BOSTON');

≡

Live SQL

Feedback

Help

thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

ClearFindActionsSaveRun

```
1 INSERT INTO DEPT (DEPTNO, DNAME, LOC)
2 VALUES (10, 'ACCOUNTING', 'NEWYORK');
3
4 INSERT INTO DEPT (DEPTNO, DNAME, LOC)
5 VALUES (20, 'RESEARCH', 'DALLAS');
6
7 INSERT INTO DEPT (DEPTNO, DNAME, LOC)
8 VALUES (30, 'SALES', 'CHICAGO');
9
10 INSERT INTO DEPT (DEPTNO, DNAME, LOC)
11 VALUES (40, 'OPERATIONS', 'BOSTON');
12
```

```
1 row(s) inserted.

1 row(s) inserted.

1 row(s) inserted.
```

ORACLEIntegrated Cloud

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.5.0.0.0

Built with using Oracle APEX

≡

Live SQL

Feedback

Help

thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

ClearFindActionsSaveRun

```
1 SELECT * FROM DEPT;
2
```

DEPTNO	DNAME	LOC
10	ACCOUNTING	NEWYORK
20	RESEARCH	DALLAS
30	SALES	CHICAGO
40	OPERATIONS	BOSTON

Download CSV  
4 rows selected.

ORACLEIntegrated Cloud

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.5.0.0.0

Built with using Oracle APEX

### 1.1. List the Deptno where there are no emps.

Answer 1.1:

```
SELECT * FROM (  
    SELECT DEPT.DNAME, COUNT(EMP.DEPTNO) C  
    FROM DEPT  
    LEFT OUTER JOIN EMP  
    ON EMP.DEPTNO = DEPT.DEPTNO  
    GROUP BY DEPT.DNAME  
)  
WHERE C = 0;
```

≡

Live SQL

Feedback Help thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

Clear Find Actions Save Run

```
1 SELECT * FROM (  
2     SELECT DEPT.DNAME, COUNT(EMP.DEPTNO) C  
3     FROM DEPT  
4     LEFT OUTER JOIN EMP  
5     ON EMP.DEPTNO = DEPT.DEPTNO  
6     GROUP BY DEPT.DNAME  
7 )  
8 WHERE C = 0;  
9
```

DNAME	C
OPERATIONS	0

Download CSV

ORACLE Integrated Cloud  
Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.8.0.0.0 Built with ♥ using Oracle APEX

^

## 1.2. List the No.of emp's and Avg salary within each department for each job.

Answer 1.2:

```
SELECT D, J, COUNT(J), AVG(S) FROM (  
    SELECT DEPT.DNAME D, EMP.JOB J, EMP.SAL S  
    FROM EMP  
    LEFT OUTER JOIN DEPT  
    ON EMP.DEPTNO = DEPT.DEPTNO  
)  
GROUP BY D, J  
ORDER BY D;
```

≡

Live SQL

Feedback

Help

thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

ClearFindActionsSaveRun

```
1 SELECT D, J, COUNT(J), AVG(S) FROM (  
2     SELECT DEPT.DNAME D, EMP.JOB J, EMP.SAL S  
3     FROM EMP  
4     LEFT OUTER JOIN DEPT  
5     ON EMP.DEPTNO = DEPT.DEPTNO  
6 )  
7 GROUP BY D, J  
8 ORDER BY D;
```

D	J	COUNT (J)	AVG (S)
ACCOUNTING	CLERK	1	1300
ACCOUNTING	MANAGER	1	2450
ACCOUNTING	PRESIDENT	1	5000
RESEARCH	ANALYST	2	3000
RESEARCH	CLERK	2	800
RESEARCH	MANAGER	1	2975
SALES	CLERK	1	950
SALES	MANAGER	1	2850
SALES	SALESMAN	4	1400

Download CSV  
9 rows selected.

ORACLE

Integrated Cloud  
Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.8.0.0.0

Built with using Oracle APEX

^

### 1.3. Find the maximum average salary drawn for each job except for 'President'.

Answer 1.3:

```
SELECT D, MAX(S) FROM (  
    SELECT DEPT.DNAME D, EMP.JOB J, AVG(EMP.SAL) S  
    FROM EMP  
    LEFT OUTER JOIN DEPT  
    ON EMP.DEPTNO = DEPT.DEPTNO  
    WHERE EMP.JOB != 'PRESIDENT'  
    GROUP BY DEPT.DNAME, EMP.JOB  
)  
GROUP BY D;
```

The screenshot shows the Live SQL web interface. The top navigation bar includes a hamburger menu, the 'Live SQL' logo, and links for Feedback, Help, and a user profile. The left sidebar contains navigation options: Home, SQL Worksheet (selected), My Session, Schema, Quick SQL, My Scripts, My Tutorials, and Code Library. The main area is titled 'SQL Worksheet' and contains a text editor with the following SQL query:

```
1 -- Find the maximum average salary drawn for each job except for 'President'.  
2 SELECT D, MAX(S) FROM (  
3     SELECT DEPT.DNAME D, EMP.JOB J, AVG(EMP.SAL) S  
4     FROM EMP  
5     LEFT OUTER JOIN DEPT  
6     ON EMP.DEPTNO = DEPT.DEPTNO  
7     WHERE EMP.JOB != 'PRESIDENT'  
8     GROUP BY DEPT.DNAME, EMP.JOB  
9 )  
10 GROUP BY D;
```

Below the editor, the results are displayed in a table:

D	MAX(S)
RESEARCH	3000
SALES	2850
ACCOUNTING	2450

Below the table, there is a 'Download CSV' link and the text '3 rows selected.' The footer of the interface includes the Oracle logo, 'Integrated Cloud Applications & Platform Services', copyright information for 2020 Oracle Corporation, and links to the Oracle Learning Library, Ask Tom, Dev Gym, and Database Doc. It also mentions the version of Live SQL (20.3.1) and the Oracle Database (19c Enterprise Edition - 19.8.0.0.0), and notes that it is built with Oracle APEX.



#### 1.4. List the department details where at least two emps are working.

Answer 1.4:

```
SELECT DEPT.*, S Employees FROM (  
    SELECT DEPT.DNAME D, COUNT(*) S  
    FROM EMP  
    LEFT OUTER JOIN DEPT  
    ON EMP.DEPTNO = DEPT.DEPTNO  
    WHERE EMP.JOB != 'PRESIDENT'  
    GROUP BY DEPT.DNAME  
)  
RIGHT OUTER JOIN DEPT  
ON D = DEPT.DNAME  
WHERE S >= 2;
```

≡

Live SQL

Feedback Help thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

Clear Find Actions Save Run

```
1 SELECT DEPT.*, S Employees FROM (  
2     SELECT DEPT.DNAME D, COUNT(*) S  
3     FROM EMP  
4     LEFT OUTER JOIN DEPT  
5     ON EMP.DEPTNO = DEPT.DEPTNO  
6     WHERE EMP.JOB != 'PRESIDENT'  
7     GROUP BY DEPT.DNAME  
8 )  
9 RIGHT OUTER JOIN DEPT  
10 ON D = DEPT.DNAME  
11 WHERE S >= 2;
```

DEPTNO	DNAME	LOC	EMPLOYEES
30	SALES	CHICAGO	6
10	ACCOUNTING	NEWYORK	2
20	RESEARCH	DALLAS	5

Download CSV  
3 rows selected.

ORACLE Integrated Cloud  
Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.8.0.0.0 Built with ♥ using Oracle APEX

⬆

1.5. List the no. of emps in each department where the no. is more than 3.

Answer 1.5:

```
SELECT D Department, S Employees FROM (  
    SELECT DEPT.DNAME D, COUNT(*) S  
    FROM EMP  
    LEFT OUTER JOIN DEPT  
    ON EMP.DEPTNO = DEPT.DEPTNO  
    WHERE EMP.JOB != 'PRESIDENT'  
    GROUP BY DEPT.DNAME  
)  
WHERE S >= 3;
```

The screenshot shows the Oracle Live SQL interface. On the left is a dark sidebar with navigation links: Home, SQL Worksheet (selected), My Session, Schema, Quick SQL, My Scripts, My Tutorials, and Code Library. The main area is titled 'SQL Worksheet' and contains a text editor with the following SQL query:

```
1 SELECT D Department, S Employees FROM (  
2     SELECT DEPT.DNAME D, COUNT(*) S  
3     FROM EMP  
4     LEFT OUTER JOIN DEPT  
5     ON EMP.DEPTNO = DEPT.DEPTNO  
6     WHERE EMP.JOB != 'PRESIDENT'  
7     GROUP BY DEPT.DNAME  
8 )  
9 WHERE S >= 3;
```

Below the editor, the results are displayed in a table:

DEPARTMENT	EMPLOYEES
RESEARCH	5
SALES	6

Below the table, it says 'Download CSV' and '2 rows selected.' At the bottom of the interface, there is a footer with Oracle branding, copyright information (© 2020 Oracle Corporation), and links to the Oracle Learning Library, Ask Tom, Dev Gym, and Database Doc. It also mentions 'Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.8.0.0.0' and 'Built with ❤️ using Oracle APEX'.

1.6. List the names of the emps who are getting the highest sal dept wise.

Answer 1.6:

```
SELECT EMP.ENAME, D DEPARTMENT, SALARY FROM (
    SELECT DEPT.DNAME D, MAX(EMP.SAL) SALARY
    FROM EMP
    LEFT OUTER JOIN DEPT
    ON EMP.DEPTNO = DEPT.DEPTNO
    GROUP BY DEPT.DNAME
)
LEFT OUTER JOIN EMP
ON EMP.SAL = SALARY;
```

≡

Live SQL

Feedback

Help

thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

ClearFindActionsSaveRun

```
1 -- . List the names of the emps who are getting the highest sal dept wise.
2 SELECT EMP.ENAME, D DEPARTMENT, SALARY FROM (
3     SELECT DEPT.DNAME D, MAX(EMP.SAL) SALARY
4     FROM EMP
5     LEFT OUTER JOIN DEPT
6     ON EMP.DEPTNO = DEPT.DEPTNO
7     GROUP BY DEPT.DNAME
8 )
9 LEFT OUTER JOIN EMP
10 ON EMP.SAL = SALARY;
```

ENAME	DEPARTMENT	SALARY
BLAKE	SALES	2850
SCOTT	RESEARCH	3000
KING	ACCOUNTING	5000
FORD	RESEARCH	3000

Download CSV

4 rows selected.

ORACLE

Integrated Cloud

Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.8.0.0.0

Built with ❤️ using Oracle APEX

⬆

1.7. List the Deptno and their average salaries for dept with the average salary less than the averages for all departments.

Answer 1.7:

```
SELECT EMP.DEPTNO, EMP.ENAME, D DEPARTMENT, EMP.SAL FROM (
    SELECT DEPT.DNAME D, DEPT.DEPTNO DNO, AVG(EMP.SAL) AVGSAL
    FROM EMP
    LEFT OUTER JOIN DEPT
    ON EMP.DEPTNO = DEPT.DEPTNO
    GROUP BY DEPT.DNAME, DEPT.DEPTNO
)
LEFT OUTER JOIN EMP
ON EMP.DEPTNO = DNO
WHERE EMP.SAL < AVGSAL;
```

Live SQL

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

ClearFindActionsSaveRun

```
1 -- List the Deptno and their average salaries for dept with the average salary less than the averages for all departments.
2 SELECT EMP.DEPTNO, EMP.ENAME, D DEPARTMENT, EMP.SAL FROM (
3     SELECT DEPT.DNAME D, DEPT.DEPTNO DNO, AVG(EMP.SAL) AVGSAL
4     FROM EMP
5     LEFT OUTER JOIN DEPT
6     ON EMP.DEPTNO = DEPT.DEPTNO
7     GROUP BY DEPT.DNAME, DEPT.DEPTNO
8 )
9 LEFT OUTER JOIN EMP
10 ON EMP.DEPTNO = DNO
11 WHERE EMP.SAL < AVGSAL;
```

DEPTNO	ENAME	DEPARTMENT	SAL
20	SMITH	RESEARCH	500
30	WARD	SALES	1250
30	MARTIN	SALES	1250
10	CLARK	ACCOUNTING	2450
30	TURNER	SALES	1500
20	ADAMS	RESEARCH	1100
30	JAMES	SALES	950
10	MILLER	ACCOUNTING	1300

Download CSV  
8 rows selected.

ORACLE

Integrated Cloud  
Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.8.0.0.0

Built with ❤️ using Oracle APEX

Question 2. Execute the experiment 4 using sql join.

2.1. List the details of the emps whose Salaries more than the employee BLAKE.

Answer 2.1:

```
SELECT * FROM EMP a_emp, EMP b_emp
WHERE a_emp.SAL > b_emp.SAL
AND b_emp.ENAME = 'BLAKE';
```

≡

Live SQL

Feedback

Help

thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

ClearFindActionsSaveRun

1SELECT \* FROM EMP a\_emp, EMP b\_emp

2WHERE a\_emp.SAL > b\_emp.SAL

3AND b\_emp.ENAME = 'BLAKE';

4

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7566	JONES	MANAGER	7839	02-APR-81	2975	-	20	7698	BLAKE	MANAGER	7839	01-MAY-81	2850	-	30
7788	SCOTT	ANALYST	7566	09-DEC-82	3000	-	20	7698	BLAKE	MANAGER	7839	01-MAY-81	2850	-	30
7839	KING	PRESIDENT	-	17-NOV-81	5000	-	10	7698	BLAKE	MANAGER	7839	01-MAY-81	2850	-	30
7902	FORD	ANALYST	7566	03-DEC-81	3000	-	20	7698	BLAKE	MANAGER	7839	01-MAY-81	2850	-	30

Download CSV

4 rows selected.

ORACLEIntegrated Cloud

Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.5.0.0.0

Built with using Oracle APEX

2.2. List the emps whose Jobs are the same as ALLEN.

Answer 2.2:

```
SELECT * FROM EMP a_emp, EMP b_emp
WHERE a_emp.JOB = b_emp.JOB
AND b_emp.ENAME = 'ALLEN';
```

≡

Live SQL

Feedback Help thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

Clear Find Actions Save Run

1 SELECT \* FROM EMP a\_emp, EMP b\_emp

2 WHERE a\_emp.JOB = b\_emp.JOB

3 AND b\_emp.ENAME = 'ALLEN';

4

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30

Download CSV

4 rows selected.

ORACLE Integrated Cloud Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.5.0.0.0 Built with using Oracle APEX

⬆

### 2.3. List the Emps whose Sal is the same as FORD or SMITH in desc order of Names.

Answer 2.3:

```
SELECT * FROM EMP a_emp, EMP b_emp
WHERE a_emp.SAL = b_emp.SAL
AND a_emp.ENAME != b_emp.ENAME
AND (b_emp.ENAME = 'FORD' OR b_emp.ENAME = 'SMITH');
ORDER BY a_emp.ENAME DESC;
```

≡

Live SQL

Feedback ? Help thelazycrazywizard@gmail.com

SQL Worksheet

Clear Find Actions Save Run

```
1 SELECT * FROM EMP a_emp, EMP b_emp
2 WHERE a_emp.SAL = b_emp.SAL
3 AND a_emp.ENAME != b_emp.ENAME
4 AND (b_emp.ENAME = 'FORD' OR b_emp.ENAME = 'SMITH');
5 ORDER BY a_emp.ENAME DESC;
6
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7788	SCOTT	ANALYST	7566	09-DEC-82	3000	-	20	7902	FORD	ANALYST	7566	03-DEC-81	3000	-	20

Download CSV

ORACLE | Integrated Cloud  
Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.5.0.0.0

Built with ❤️ using Oracle APEX

^

2.4. List the emps Whose Jobs are the same as MILLER or Sal is more than ALLEN.  
Answer 2.4:

```
SELECT * FROM EMP a_emp, EMP b_emp
WHERE (a_emp.JOB = b_emp.JOB AND b_emp.ENAME = 'MILLER')
OR (a_emp.SAL > b_emp.SAL AND b_emp.ENAME = 'ALLEN');
```

≡

Live SQL

Feedback

Help

thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

Clear

Find

Actions

Save

Run

1 SELECT \* FROM EMP a\_emp, EMP b\_emp

2 WHERE (a\_emp.JOB = b\_emp.JOB AND b\_emp.ENAME = 'MILLER')

3 OR (a\_emp.SAL > b\_emp.SAL AND b\_emp.ENAME = 'ALLEN');

4 -- List the emps Whose Jobs are same as MILLER or Sal is more than ALLEN.

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO	EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	500	800	20	7934	MILLER	CLERK	7782	23-JAN-82	1300	-	10
7876	ADAMS	CLERK	7788	12-JAN-83	1100	-	20	7934	MILLER	CLERK	7782	23-JAN-82	1300	-	10
7900	JAMES	CLERK	7698	03-DEC-81	950	-	30	7934	MILLER	CLERK	7782	23-JAN-82	1300	-	10
7934	MILLER	CLERK	7782	23-JAN-82	1300	-	10	7934	MILLER	CLERK	7782	23-JAN-82	1300	-	10
7566	JONES	MANAGER	7839	02-APR-81	2975	-	20	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850	-	30	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7782	CLARK	MANAGER	7839	09-JUN-81	2450	-	10	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7788	SCOTT	ANALYST	7566	09-DEC-82	3000	-	20	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7839	KING	PRESIDENT	-	17-NOV-81	5000	-	10	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7902	FORD	ANALYST	7566	03-DEC-81	3000	-	20	7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30

Download CSV

10 rows selected.

ORACLE

Integrated Cloud

Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.5.0.0.0

Built with using Oracle APEX

⬆



2.5. Find the highest paid employee of the sales department.

Answer 2.5:

```
SELECT * FROM EMP
WHERE SAL = (SELECT MAX(SAL) FROM EMP WHERE JOB = 'SALESMAN');
```

≡

Live SQL

Feedback ? Help thelazycrazywizard@gmail.com

SQL Worksheet

Clear Find Actions Save Run

1 SELECT \* FROM EMP

2 WHERE SAL = (SELECT MAX(SAL) FROM EMP WHERE JOB = 'SALESMAN');

3

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30

Download CSV

ORACLE Integrated Cloud Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c , 18c , 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.5.0.0.0 Built with ♥ using Oracle APEX

↑

## 2.6. List the employees who are senior to the most recently hired employee working under King.

Answer 2.6:

- Everyone works under King since he is the president
- Seniors will have more salary then juniors\

```
SELECT * FROM EMP
WHERE EMPNO IN (
    SELECT a_emp.EMPNO from EMP a_emp, EMP b_emp
    WHERE a_emp.SAL > b_emp.SAL
    AND b_emp.HIREDATE = (SELECT MAX(HIREDATE) from EMP)
);
```

Live SQL

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

ClearFindActionsSaveRun

```
1 SELECT * FROM EMP
2 WHERE EMPNO IN (
3     SELECT a_emp.EMPNO from EMP a_emp, EMP b_emp
4     WHERE a_emp.SAL > b_emp.SAL
5     AND b_emp.HIREDATE = (SELECT MAX(HIREDATE) from EMP)
6 );
7 -- List the employees who are senior to most recently hired employee working under king.
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7566	JONES	MANAGER	7839	02-APR-81	2975	-	20
7654	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
7698	BLAKE	MANAGER	7839	01-MAY-81	2850	-	30
7782	CLARK	MANAGER	7839	09-JUN-81	2450	-	10
7788	SCOTT	ANALYST	7566	09-DEC-82	3000	-	20
7839	KING	PRESIDENT	-	17-NOV-81	5000	-	10
7844	TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
7902	FORD	ANALYST	7566	03-DEC-81	3000	-	20
7934	MILLER	CLERK	7782	23-JAN-82	1300	-	10

Download CSV  
11 rows selected.

ORACLE | Integrated Cloud

© 2020 Oracle Corporation - Privacy - Terms of Use  
Oracle Learning Library - Ask Tom - Dev Gym - Database Doc 19c, 18c, 12c - Follow on Twitter  
Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.5.0.0.0 Built with ♥ using Oracle APEX

## 2.7. List the names of the emps who are getting the highest sal dept wise.

Answer 2.7:

```
SELECT EMP.ENAME, D DEPARTMENT, SALARY FROM (  
    SELECT DEPT.DNAME D, MAX(EMP.SAL) SALARY  
    FROM EMP  
    LEFT OUTER JOIN DEPT  
    ON EMP.DEPTNO = DEPT.DEPTNO  
    GROUP BY DEPT.DNAME  
)  
LEFT OUTER JOIN EMP  
ON EMP.SAL = SALARY;
```

≡

Live SQL

Feedback Help thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

Clear Find Actions Save Run

```
1 -- . List the names of the emps who are getting the highest sal dept wise.  
2 SELECT EMP.ENAME, D DEPARTMENT, SALARY FROM (  
3     SELECT DEPT.DNAME D, MAX(EMP.SAL) SALARY  
4     FROM EMP  
5     LEFT OUTER JOIN DEPT  
6     ON EMP.DEPTNO = DEPT.DEPTNO  
7     GROUP BY DEPT.DNAME  
8 )  
9 LEFT OUTER JOIN EMP  
10 ON EMP.SAL = SALARY;
```

ENAME	DEPARTMENT	SALARY
BLAKE	SALES	2850
SCOTT	RESEARCH	3000
KING	ACCOUNTING	5000
FORD	RESEARCH	3000

Download CSV  
4 rows selected.

ORACLE Integrated Cloud  
Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.8.0.0.0 Built with ♥ using Oracle APEX

^

## 2.8. List the emps whose sal is equal to the average of max and minimum

Answer 2.8:

```
SELECT * FROM EMP
WHERE SAL = (
    SELECT AVG(SAL) FROM emp
    WHERE SAL = (
        SELECT MAX(SAL) FROM EMP
        OR SAL = (SELECT MIN(SAL) FROM EMP
        )
    )
);
```

The screenshot shows the 'Live SQL' web interface. At the top, there's a navigation bar with a hamburger menu, the 'Live SQL' logo, and links for 'Feedback', 'Help', and a user profile 'thelazycrazywizard@gmail.com'. Below this is a sidebar with icons for home, SQL Worksheet, and other tools. The main area is titled 'SQL Worksheet' and contains a text editor with the following SQL query:

```
1 SELECT * FROM EMP
2 WHERE SAL = (
3     SELECT AVG(SAL) FROM emp
4     WHERE SAL = (
5         SELECT MAX(SAL) FROM EMP
6         OR SAL = (SELECT MIN(SAL) FROM EMP
7         )
8     )
9 );
```

Below the editor, there are buttons for 'Clear', 'Find', 'Actions', 'Save', and a green 'Run' button. The result area below the query shows 'no data found'. At the bottom, there's a footer with the Oracle logo, 'Integrated Cloud Applications & Platform Services', copyright information '© 2020 Oracle Corporation · Privacy · Terms of Use', and links to 'Oracle Learning Library', 'Ask Tom', 'Dev Gym', and 'Database Doc 19c, 18c, 12c'. It also mentions 'Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.5.0.0.0' and 'Built with ❤️ using Oracle APEX'.

2.9. List the emps who joined the company on the same date.

Answer 2.9:

```
SELECT * FROM EMP a_emp
WHERE a_emp.HIREDATE IN (
    SELECT HIREDATE FROM EMP b_emp
    WHERE a_emp.EMPNO != b_emp.EMPNO
);
```

≡

Live SQL

Feedback

Help

thelazycrazywizard@gmail.com

SQL Worksheet

Clear

Find

Actions

Save

Run

1

2

3

4

5

SELECT \* FROM EMP a\_emp

WHERE a\_emp.HIREDATE IN (

SELECT HIREDATE FROM EMP b\_emp

WHERE a\_emp.EMPNO != b\_emp.EMPNO

) ;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7902	FORD	ANALYST	7566	03-DEC-81	3000	-	20
7900	JAMES	CLERK	7698	03-DEC-81	950	-	30

Download CSV

2 rows selected.

## 2.10. Find out the emps who joined in the company before their Managers.

Answer 2.10:

```
SELECT a_emp.* FROM EMP a_emp, EMP b_emp
WHERE a_emp.HIREDATE < b_emp.HIREDATE
AND a_emp.MGR = b_emp.EMPNO;
```

≡

Live SQL

Feedback

Help

thelazycrazywizard@gmail.com

Home

SQL Worksheet

My Session

Schema

Quick SQL

My Scripts

My Tutorials

Code Library

SQL Worksheet

ClearFindActionsSaveRun

```
1 SELECT a_emp.* FROM EMP a_emp, EMP b_emp
2 WHERE a_emp.HIREDATE < b_emp.HIREDATE
3 AND a_emp.MGR = b_emp.EMPNO;
4
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7499	ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
7566	JONES	MANAGER	7839	02-APR-81	2975	-	20
7698	BLAKE	MANAGER	7839	01-MAY-81	2850	-	30
7782	CLARK	MANAGER	7839	09-JUN-81	2450	-	10
7369	SMITH	CLERK	7902	17-DEC-80	500	800	20

Download CSV  
6 rows selected.

ORACLE

Integrated Cloud  
Applications & Platform Services

© 2020 Oracle Corporation · Privacy · Terms of Use

Oracle Learning Library · Ask Tom · Dev Gym · Database Doc 19c, 18c, 12c · Follow on Twitter

Live SQL 20.3.1, running Oracle Database 19c Enterprise Edition - 19.5.0.0.0

Built with ❤️ using Oracle APEX

⬆