



**Fatima Jinnah Women University**  
Department of Software Engineering

# LAB 3

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**Reg. no:** 2020-BSE-024

**Section:** A

**Semester:** Fourth

**Course:** Data Base (LAB)

## EXAMPLES:

```
SQL*Plus: Release 11.2.0.1.0 Production on Fri Apr 15 19:21:11 2022

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Enter user-name: scott
Enter password:

Connected to:
Oracle Database 11g Enterprise Edition Release 11.2.0.1.0 - Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options

SQL> _
```

### *Selecting User Tables:*

```
SQL> select table_name from user_tables;

TABLE_NAME
-----
SALGRADE
BONUS
EMP
DEPT
```

### *Describing Table Schema:*

```
SQL> desc dept

Name                               Null?      Type
-----
DEPTNO                             NOT NULL   NUMBER(2)
DNAME                               V           VARCHAR2(14)
LOC                                 V           VARCHAR2(13)
SQL>
```

*Selecting all Columns:*

```
SQL> select * from dept;
```

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

*Selecting Specific Columns:*

```
SQL> select dname, deptno from dept;
```

DNAME	DEPTNO
ACCOUNTING	10
RESEARCH	20
SALES	30
OPERATIONS	40

*Selecting Individual Columns:*

```
SQL> select deptno, dname from dept;
```

DEPTNO	DNAME
10	ACCOUNTING
20	RESEARCH
30	SALES
40	OPERATIONS

```
SQL> select dname from dept;
```

DNAME
ACCOUNTING
RESEARCH
SALES
OPERATIONS

### *Queries with Distinction:*

```
SQL> select sal from emp;

      SAL
-----
      800
     1600
     1250
     2975
     1250
     2850
     2450
     3000
     5000
     1500
     1100

      SAL
-----
      950
     3000
     1300

14 rows selected.

SQL> select distinct sal from emp;

      SAL
-----
     2450
     5000
     1300
     1250
     2850
     2975
     1100
     3000
      800
     1600
     1500

      SAL
-----
      950
```

### *The WHERE Clause:*

```
SQL> select deptno, dname from dept where deptno=10;

DEPTNO DNAME
-----
     10 ACCOUNTING

SQL> select * from dept where dname='SALES';

DEPTNO DNAME      LOC
-----
     30 SALES      CHICAGO
```

*Arithmetic Expressions:*

```
SQL> select ename, sal, sal+3000 from emp;
```

ENAME	SAL	SAL+3000
SMITH	800	3800
ALLEN	1600	4600
WARD	1250	4250
JONES	2975	5975
MARTIN	1250	4250
BLAKE	2850	5850
CLARK	2450	5450
SCOTT	3000	6000
KING	5000	8000
TURNER	1500	4500
ADAMS	1100	4100

ENAME	SAL	SAL+3000
JAMES	950	3950
FORD	3000	6000
MILLER	1300	4300

14 rows selected.

```
SQL> select ename, sal, 12*(sal+3000) from emp;
```

ENAME	SAL	12*(SAL+3000)
SMITH	800	45600
ALLEN	1600	55200
WARD	1250	51000
JONES	2975	71700
MARTIN	1250	51000
BLAKE	2850	70200
CLARK	2450	65400
SCOTT	3000	72000
KING	5000	96000
TURNER	1500	54000
ADAMS	1100	49200

ENAME	SAL	12*(SAL+3000)
JAMES	950	47400
FORD	3000	72000
MILLER	1300	51600

14 rows selected.

### *Defining Column Alias:*

```
SQL> select ename as Name, sal as Salary from emp;
```

NAME	SALARY
SMITH	800
ALLEN	1600
WARD	1250
JONES	2975
MARTIN	1250
BLAKE	2850
CLARK	2450
SCOTT	3000
KING	5000
TURNER	1500
ADAMS	1100

  

NAME	SALARY
JAMES	950
FORD	3000
MILLER	1300

```
14 rows selected.
```

### *Concatenation Operator:*

```
SQL> select empno || ename as Employees from emp;
```

EMPLOYEES
7369SMITH
7499ALLEN
7521WARD
7566JONES
7654MARTIN
7698BLAKE
7782CLARK
7788SCOTT
7839KING
7844TURNER
7876ADAMS

EMPLOYEES
7900JAMES
7902FORD
7934MILLER

```
14 rows selected.
```

*Literal String:*

```
SQL> select ename || ' is a ' || job as Employee from emp;

EMPLOYEE
-----
SMITH is a CLERK
ALLEN is a SALESMAN
WARD is a SALESMAN
JONES is a MANAGER
MARTIN is a SALESMAN
BLAKE is a MANAGER
CLARK is a MANAGER
SCOTT is a ANALYST
KING is a PRESIDENT
TURNER is a SALESMAN
ADAMS is a CLERK

EMPLOYEE
-----
JAMES is a CLERK
FORD is a ANALYST
MILLER is a CLERK

14 rows selected.
```

## TASKS

1. Do the following statements return the same or different output:

**SELECT \* FROM DEPT;**

**select \* from dept;**

They return same output

```
SQL> SELECT * FROM DEPT;
```

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

```
SQL> select * from dept;
```

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

2. The following queries do not work. Why not?

a. **Select \***

b. **Select \* from emp**

c. **Select empno ename FROM emp;**

Both a and b don't work because their format is wrong.

```
SQL> Select empno ename FROM emp;
```

ENAME
-------

7369
7499
7521
7566
7654
7698
7782
7788
7839
7844
7876

ENAME
-------

7900
7902
7934

14 rows selected.



3. Which of the following SQL statements will work?

- a. `select *`  
`from salgrade;`
- b. `select * from salgrade;`
- c. `select * from salgrade`

Only statement b will work.

```
SQL> select * from salgrade;
```

GRADE	LOSAL	HISAL
1	700	1200
2	1201	1400
3	1401	2000
4	2001	3000
5	3001	9999

4. There are four coding errors in this statement. Can you identify them?

```
SELECT empno, ename  
Sal X 12 ANNUAL SALARY  
FROM emp;
```

Answer: The errors are ‘;’, ‘,’ , ‘\*’

5. Show the structure of the emp table. Select all data from the table.

```
SQL> select* from emp;
```

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM
-----						
DEPTNO						
-----						
7369 20	SMITH	CLERK	7902	17-DEC-80	800	
7499 30	ALLEN	SALESMAN	7698	20-FEB-81	1600	300
7521 30	WARD	SALESMAN	7698	22-FEB-81	1250	500
-----						
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM
-----						
DEPTNO						
-----						
7566 20	JONES	MANAGER	7839	02-APR-81	2975	
7654 30	MARTIN	SALESMAN	7698	28-SEP-81	1250	1400
7698 30	BLAKE	MANAGER	7839	01-MAY-81	2850	
-----						
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM
-----						
DEPTNO						
-----						
7782 10	CLARK	MANAGER	7839	09-JUN-81	2450	
7788 20	SCOTT	ANALYST	7566	19-APR-87	3000	
7839 10	KING	PRESIDENT		17-NOV-81	5000	

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM
-----						
DEPTNO						
-----						
7844 30	TURNER	SALESMAN	7698	08-SEP-81	1500	0
7876 20	ADAMS	CLERK	7788	23-MAY-87	1100	
7900 30	JAMES	CLERK	7698	03-DEC-81	950	
-----						
EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM
-----						
DEPTNO						
-----						
7902 20	FORD	ANALYST	7566	03-DEC-81	3000	
7934 10	MILLER	CLERK	7782	23-JAN-82	1300	
-----						
14 rows selected.						

```
14 rows selected.
```

6. Show the structure of the bonus table. Select all data from the table.

```
SQL> desc bonus
Name                               Null?   Type
-----
ENAME                             VARCHA2(10)
JOB                               VARCHA2(9)
SAL                               NUMBER
COMM                             NUMBER
```

7. Create a query to display the empno, hiredate, salary from the employee table

```
SQL> select ename,empno,hiredate,sal from emp;

ENAME          EMPNO HIREDATE          SAL
-----
SMITH           7369 17-DEC-80          800
ALLEN           7499 20-FEB-81         1600
WARD            7521 22-FEB-81         1250
JONES           7566 02-APR-81         2975
MARTIN          7654 28-SEP-81         1250
BLAKE           7698 01-MAY-81         2850
CLARK           7782 09-JUN-81         2450
SCOTT           7788 19-APR-87         3000
KING            7839 17-NOV-81         5000
TURNER          7844 08-SEP-81         1500
ADAMS           7876 23-MAY-87         1100

ENAME          EMPNO HIREDATE          SAL
-----
JAMES           7900 03-DEC-81          950
FORD            7902 03-DEC-81         3000
MILLER          7934 23-JAN-82         1300

14 rows selected.
```

8. Create a query to display the unique manager id from the employee table

```
SQL> select distinct mgr from emp;

MGR
-----
7839

7782
7698
7902
7566
7788

7 rows selected.
```

9. Create a query to display the empno, hiredate, salary and rename column as Emp #, Joining Date, Salary from the employee table

```
SQL> select ename as emp#,hiredate as joining,sal as salary from emp;
```

EMP#	JOINING	SALARY
SMITH	17-DEC-80	800
ALLEN	20-FEB-81	1600
WARD	22-FEB-81	1250
JONES	02-APR-81	2975
MARTIN	28-SEP-81	1250
BLAKE	01-MAY-81	2850
CLARK	09-JUN-81	2450
SCOTT	19-APR-87	3000
KING	17-NOV-81	5000
TURNER	08-SEP-81	1500
ADAMS	23-MAY-87	1100

EMP#	JOINING	SALARY
JAMES	03-DEC-81	950
FORD	03-DEC-81	3000
MILLER	23-JAN-82	1300

14 rows selected.

10. Create a query to display all the data from the emp table. Separate each column by a comma.

```
SQL> select ename,job,mgr,hiredate,sal,comm,deptno from emp;
```

ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
SMITH	CLERK	7902	17-DEC-80	800		20
ALLEN	SALESMAN	7698	20-FEB-81	1600	300	30
WARD	SALESMAN	7698	22-FEB-81	1250	500	30
JONES	MANAGER	7839	02-APR-81	2975		20
MARTIN	SALESMAN	7698	28-SEP-81	1250	1400	30
BLAKE	MANAGER	7839	01-MAY-81	2850		30
CLARK	MANAGER	7839	09-JUN-81	2450		10
SCOTT	ANALYST	7566	19-APR-87	3000		20
KING	PRESIDENT		17-NOV-81	5000		10
TURNER	SALESMAN	7698	08-SEP-81	1500	0	30
ADAMS	CLERK	7788	23-MAY-87	1100		20

ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
JAMES	CLERK	7698	03-DEC-81	950		30
FORD	ANALYST	7566	03-DEC-81	3000		20
MILLER	CLERK	7782	23-JAN-82	1300		10

14 rows selected.

11. Create a query that display the salary of employee with increment of 10%.

```
SQL> select sal,sal+(sal*10/100)from emp;
```

SAL	SAL+(SAL*10/100)
800	880
1600	1760
1250	1375
2975	3272.5
1250	1375
2850	3135
2450	2695
3000	3300
5000	5500
1500	1650
1100	1210
950	1045
3000	3300
1300	1430

```
14 rows selected.
```

12. Display the employee name concatenated with the job tile and hires date and names the column "Employee Details".

```
SQL> select ename || job || hiredate AS "Employee Detail" from emp;
```

Employee Detail

```
-----  
SMITHCLERK17-DEC-80  
ALLENSALESMAN20-FEB-81  
WARDSALESMAN22-FEB-81  
JONESMANAGER02-APR-81  
MARTINSALESMAN28-SEP-81  
BLAKEMANAGER01-MAY-81  
CLARKMANAGER09-JUN-81  
SCOTTANALYST19-APR-87  
KINGPRESIDENT17-NOV-81  
TURNERSALESMAN08-SEP-81  
ADAMSCLERK23-MAY-87
```

Employee Detail

```
-----  
JAMESCLERK03-DEC-81  
FORDANALYST03-DEC-81  
MILLERCLERK23-JAN-82
```

```
14 rows selected.
```

13. Create a query that display the employee details of all employees whose designation is “CLERK”.

```
SQL> select ename,job from emp where job='CLERK';
```

ENAME	JOB
SMITH	CLERK
ADAMS	CLERK
JAMES	CLERK
MILLER	CLERK

14. Create a query that display the location of the department “OPERATIONS”

```
SQL> select* from dept where DNAME='OPERATIONS';
```

DEPTNO	DNAME	LOC
40	OPERATIONS	BOSTON