EX.NO:02 25.01.2025	**DATA MANIPULATION LANGUAGE AND TCL COMMANDS**

AIM:

To execute DML, TCL commands using SQL.

CREATING THE TABLE:

```
SQL> create table mentor(mid number(2) primary key,mname varchar2(20) not
null unique,salary number(5),experience number(2) check(experience>5));


Table created.
```

TO SEE DATA DICTIONARY:

```
TNAME                          TABTYPE  CLUSTERID
------------------------------ ------- ----------
MENTOR                         TABLE
SQLPLUS_PRODUCT_PROFILE        TABLE
PRODUCT_PRIVS                  VIEW
PRODUCT_USER_PROFILE           SYNONYM
HELP                           TABLE
EMP                            TABLE
STU1                           TABLE
STU2                           TABLE
STU3                           TABLE
STU4                           TABLE
STUDENT                        TABLE
168 rows selected.
```

INSERTING RECORD INTO THE TABLE:

MANUAL INPUT:

```
SQL>  insert into mentor values(01,'YAZHU',90000,9);
1 row created.
```

SYSTEM INPUT:

```
SQL> insert into mentor(mid,mname) values(&mid,'&mname');

Enter value for mid: 05

Enter value for mname: shivani

old   1: insert into mentor(mid,mname) values(&mid,'&mname')

new   1: insert into mentor(mid,mname) values(05,'shivani')
```

INSERT WITH LIMITED ATTRIBUTES:

```
 INSERT INTO mentor (mid, mname) VALUES (8, 'RAJI');

 1 row created.
```

TO SEE THE STRUCTURE OF THE TABLE:

```
SQL> desc mentor;

 Name                                      Null?    Type

 ---------------------------------- ------- --------

 MID                                       NOT NULL NUMBER(2)

 MNAME                                     NOT NULL VARCHAR2(20)

 SALARY                                              NUMBER(5)

 EXPERIENCE                                          NUMBER(2)
```

SELECT:

TO VIEW ENTIRE TABLE:

```
SQL> select * from mentor;

       MID MNAME                    SALARY EXPERIENCE

---------- -------------------- ---------- ----------

         1 YAZHU                 90000          9

         2 ASHA                  80000         12

         3 RANI                  90000         17

         4 THIYAGU               80000         10

         5 shivani

         6 ramya

         7 msd

         8 RAJI
```

TO VIEW THE TABLE WITH ALL ATTRIBUTES:

```
SQL> select mid,mname,salary,experience from mentor;

       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         1 YAZHU                     90000          9
         2 ASHA                      80000         12
         3 RANI                      90000         17
         4 THIYAGU                   80000         10
         5 shivani
         6 ramya
         7 msd
         8 RAJI

8 rows selected.
```

TO VIEW THE TABLE WITH LIMITED ATTRIBUTES:

```
SQL> select mid,mname from mentor;
       MID MNAME
---------- --------------------
         2 ASHA
         8 RAJI
         3 RANI
         4 THIYAGU
         1 YAZHU
         7 msd
         6 ramya
         5 shivani
8 rows selected.
```

TO VIEW WITH WHERE CONDITION:

```
SQL> select mname from mentor where salary>40000;

MNAME

--------------------

YAZHU

ASHA

RANI

THIYAGU
```

TO VIEW THE RECORDS IN THE TABLE WHOSE VALUES ARE NULL AND NOT NULL:

USING NULL WITH “is null” and “is not null” KEYWORD:

```
SQL> select * from mentor where salary is null;

       MID MNAME                    SALARY EXPERIENCE

---------- -------------------- ---------- ----------

         5 shivani

         6 ramya

         7 msd

         8 RAJI
```

```
SQL> select * from mentor where salary is not null;


    MID MNAME                    SALARY EXPERIENCE

---------- -------------------- ---------- ----------

         1 YAZHU                     90000          9

         2 ASHA                      80000         12

         3 RANI                      90000         17

         4 THIYAGU                   80000         10
```

TO VIEW WITH ARITHMETIC OPERATOR :

ARITHMETIC OPERATOR (+,-,*,/):

```
SQL> select salary+500 from mentor;

SALARY+500

----------

     90500

     80500

     90500

     80500

SQL> select salary-0 from mentor;

  SALARY-0

----------

     90000

     80000

     90000

     80000


SQL> select salary*2 from mentor;

  SALARY*2

----------

    180000

    160000

    180000

    160000
```

```
SQL> select salary/2 from mentor;

  SALARY/2

----------

     45000

     40000

     45000

     40000
```

WITH AS KEYWORD:

```
SQL> select salary+20 as increased_Sal from mentor;

INCREASED_SAL

-------------

        90020

        80020

        90020

        80020
```

TO VIEW USING LOGICAL OPERATOR:

OR operator:

```
SSQL> select * from mentor where mname like 'r%' or mname like 'A%';

       MID MNAME                    SALARY EXPERIENCE

---------- -------------------- ---------- ----------

         2 ASHA                      80000         12

         6 ramya
```

And operator:

```
SQL> select * from mentor where mname like 'r%' and mname like 'A%';

no rows selected
```

Not operator:

```
SQL> select * from mentor where mname not like 'r%' and mname not like
'A%';
```

```
       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         1 YAZHU                     90000          9
         3 RANI                      90000         17
         4 THIYAGU                   80000         10
         5 shivani
         7 msd
         8 RAJI
6 rows selected.
```

TO VIEW WITH BETWEEN AND KEYWORD:

```
SQL> select * from mentor where mid between 3 and 7;
       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         3 RANI                 90000         17
         4 THIYAGU              80000         10
         5 shivani
         6 ramya
         7 msd
```

TO VIEW THE TABLE WITH RELATIONAL OPERATORS:

(> operator):

```
SQL> select * from mentor where mid>2;


       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         3 RANI                 90000         17
         4 THIYAGU              80000         10
         5 shivani
         6 ramya
         7 msd
         8 RAJI
```

(>=operator):

```
SQL> select * from mentor where salary>=90000;

       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         1 YAZHU                  90000          9
         3 RANI                   90000         17
```

(< operator):

```
SQL> select * from mentor where salary<90000;
       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         2 ASHA                      80000         12
         4 THIYAGU               80000         10
```

(<= operator):

```
SQL> select * from mentor where experience<=9;

       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         1 YAZHU                     90000          9
```

(= operator):

```
SQL> select * from mentor where mname='RAJI';

       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         8 RAJI
```

(!= operator):

```
SQL> select * from mentor where mname!='RAJI';
       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         1 YAZHU                   90000          9
         2 ASHA                     80000         12
         3 RANI                      90000         17
         4 THIYAGU              80000         10
         5 shivani
         6 ramya
         7 msd

7 rows selected.
```

UPDATE:

```
SQL> update mentor set mname='YAZHINI'where mid=1;
1 row updated.
SQL> select * from mentor where mid=1;

       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         1 YAZHINI                   90000          9
```

BEFORE ADDING MISSING RECORDS:

```
  SQL> select * from mentor;

       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         1 YAZHINI              90000          9
         2 ASHA                 80000         12
         3 RANI                 90000         17
         4 THIYAGU              80000         10
         5 shivani
         6 ramya
         7 msd
         8 RAJI
8 rows selected.
```

AFTER ADDING MISSING RECORDS:

```
SQL> update mentor set salary=20000 where mname='shivani';
1 row updated.
SQL> update mentor set salary=50000 where mname='RAJI';
1 row updated.
SQL> update mentor set salary=80000 where mname='msd';
1 row updated.
   SQL> select * from mentor;

       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         1 YAZHINI                90000          9
         2 ASHA                   80000         12
         3 RANI                   90000         17
         4 THIYAGU                80000         10
         5 shivani                20000
         6 ramya
         7 msd                    80000
         8 RAJI                   50000
```

UPDATE SALARY WITHOUT CASE KEYWORD:

```
SQL> update mentor set salary=salary*1.03 where salary<=50000;
2 rows updated.
SQL> select * from mentor;
```

```
       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         1 YAZHINI                 90000          9
         2 ASHA                    80000         12
         3 RANI                    90000         17
         4 THIYAGU                 80000         10
         5 shivani                 20600
         6 ramya
         7 msd                      80000
         8 RAJI                     51500
8 rows selected.

SQL> update mentor set salary=salary*1.05 where salary>50000;
6 rows updated.

SQL> select * from mentor;

       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         1 YAZHINI                94500          9
         2 ASHA                   84000         12
         3 RANI                   94500         17
         4 THIYAGU                84000         10
         5 shivani                20600
         6 ramya
         7 msd                     84000
         8 RAJI                    54075
8 rows selected.
```

UPDATING THE SALARY USING CASE KEYWORD:

```
SQL> update mentor set salary = case when salary<60000 then salary*1.03
else salary*1.05 end;
8 rows updated.
```

```
SQL> select * from mentor;

       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         1 YAZHINI                   99225          9
         2 ASHA                      88200         12
         3 RANI                      99225         17
         4 THIYAGU                   88200         10
         5 shivani                   21218
         6 ramya
         7 msd                       88200
         8 RAJI                      55697

8 rows selected.
```

ROLL BACK:

```
SQL> select * from mentor;

       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         1 YAZHINI                   99225          9
         2 ASHA                      88200         12
         3 RANI                      99225         17
         4 THIYAGU                   88200         10
         5 shivani                   21218
         6 ramya
         7 msd                       88200
         8 RAJI                      55697

8 rows selected.


SQL> delete from mentor where mid=7 or mid=8;

2 rows deleted.
```

```
SQL> select * from mentor;
       MID MNAME                    SALARY EXPERIENCE
---------- -------------------- ---------- ----------
         1 YAZHINI                   99225          9
         2 ASHA                      88200         12
         3 RANI                      99225         17
         4 THIYAGU                   88200         10
         5 shivani                   21218
         6 ramya
6 rows selected.

SQL> roll back;
Rollback complete.



SQL> select * from faculty;
No rows selected
```

COMMIT:

```
SQL> commit;
Commit complete.
```

SAVEPOINT:

```
SQL> create table roll(rno number(2),name varchar2(20),clg varchar2(20));
Table created.

SQL> insert into roll values(1,'ASHA','KEC');
1 row created.

SQL> insert into roll values(2,'YAZHU','KEC');
1 row created.
```

```
SQL> insert into roll values(3,'RANI','PSG');
1 row created.

SQL> savepoint s1;
Savepoint created.

SQL> insert into roll values(4,'SRI','CIT');
1 row created.

SQL> insert into roll values(5,'MONA','MIT');
1 row created.

SQL> savepoint s2;
Savepoint created.

SQL> insert into roll values(6,'DHAN','GCE');
1 row created.

SQL> insert into roll values(7,'SHIV','KCE');
1 row created.

SQL> delete from roll where rno=4;
1 row deleted.

SQL> select * from roll;
       RNO NAME                 CLG
---------- -------------------- --------------------
         1 ASHA                 KEC
         2 YAZHU                KEC
         3 RANI                 PSG
         5 MONA                 MIT
         6 DHAN                 GCE
         7 SHIV                 KCE
6 rows selected.

SQL> rollback to s1;
Rollback complete.

SQL> select * from roll;
       RNO NAME                 CLG
---------- -------------------- --------------------
         1 ASHA                 KEC
         2 YAZHU                KEC
         3 RANI                 PSG
SQL> delete from roll where rno=3;
1 row deleted.

SQL> select * from roll;
       RNO NAME                 CLG
---------- -------------------- --------------------
         1 ASHA                 KEC
         2 YAZHU                KEC
SQL> rollback to s2;
Rollback complete.

SQL> select * from roll;
       RNO NAME                 CLG
---------- -------------------- --------------------
         1 ASHA                 KEC
         2 YAZHU                KEC
```

MARK SPLIT UP:

CONTENTS	MARKS ALLOTED	MARKS OBTAINED
Aim,algorithm,SQL,PL/SQL	30	
Execution and Result	20	
Viva	10	
Total	60	

RESULT

Thus the Data manipulation language and TCL commands were executed.