

PROGRAM 2: IMPLEMENTATION OF TRANSACTION CONTROL STATEMENTS**Aim :**

Create a table EMP with following fields EMPNO, ENAME, JOB, MGR, HIREDATE, SAL, COMM, DEPTNO. Store 5 records and use ROLLBACK, SAVEPOINT and COMMIT commands

Program :

```
SQL> Create table EMP(EMPNO number(4) primary key,ENAME varchar(10),JOB Varchar(9),
MGR number(4),Hiredate date,SAL number(7,2),Comm Number(7,2),Deptno number(2));
```

Table created.

SQL> -- Sturcture of the table

```
SQL> DESC EMP
```

Name	Null?	Type
EMPNO	NOT NULL	NUMBER(4)
ENAME		VARCHAR2(10)
JOB		VARCHAR2(9)
MGR		NUMBER(4)
HIREDATE		DATE
SAL		NUMBER(7,2)
COMM		NUMBER(7,2)
DEPTNO		NUMBER(2)

SQL> -- To Store Records

```
SQL> insert into EMP values(7369,'SMITH','CLERK',7902,'17-Dec-80',800,null,20);
```

1 row created.

```
SQL> insert into EMP values(7499,'ALLEN','SALESMAN',7698,'2-FEB-81',1600,300,30);
```

1 row created.

SQL> -- To Save the Record

```
SQL> Commit;
```

Commit complete.

SQL> -- To Read the Records

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

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	800		20
7499	ALLEN	SALESMAN	7698	02-FEB-81	1600	300	30

SQL> insert into emp values(1234,'Miller','Manager',7778,'12-Dec-90',10000,null,10);

1 row created.

SQL> -- To Read the records

SQL> -- Display Committed & Uncommitted Records

SQL>

SQL> select * from emp;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	800		20
7499	ALLEN	SALESMAN	7698	02-FEB-81	1600	300	30
1234	Miller	Manager	7778	12-DEC-90	10000		10

SQL> -- To UNDO the changes

SQL> Rollback;

Rollback complete.

SQL> -- Display Committed Records

SQL> select * from emp;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	800		20
7499	ALLEN	SALESMAN	7698	02-FEB-81	1600	300	30

SQL> insert into emp values(7521,'WARD','SALESMAN',7698,'22-FEB-81',1250,500,30);

1 row created.

SQL> select * from emp;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	800		20
7499	ALLEN	SALESMAN	7698	02-FEB-81	1600	300	30

7521 WARD	SALESMAN	7698	22-FEB-81	1250	500	30
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SQL> -- 3rd record is uncommitted

SQL>

SQL> SAVEPOINT A;

Savepoint created.

SQL> insert into emp values(1251,'MILLER','PRESIDENT',7499, '31-dec-90',10000,null,10);

1 row created.

SQL> -- 4th Record is Uncommitted

SQL> select * from emp;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	800	20	
7499	ALLEN	SALESMAN	7698	02-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30
1251	MILLER	PRESIDENT	7499	31-DEC-90	10000		10

SQL> -- Have to Save 3rd Record & Undo the 4th Record

SQL>

SQL> Rollback to A;

Rollback complete.

SQL> select * from emp;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK	7902	17-DEC-80	800	20	
7499	ALLEN	SALESMAN	7698	02-FEB-81	1600	300	30
7521	WARD	SALESMAN	7698	22-FEB-81	1250	500	30

SQL> -- 4th Record not listed

SQL>

SQL> -- Save the the 3rd Record

SQL>

SQL> commit;

Commit complete.

SQL> select * from emp;

EMPNO	ENAME	JOB	MGR	HIREDATE	SAL	COMM	DEPTNO
7369	SMITH	CLERK		7902 17-DEC-80	800	20	
7499	ALLEN	SALESMAN		7698 02-FEB-81	1600	300	30
7521	WARD	SALESMAN		7698 22-FEB-81	1250	500	30

SQL>
SQL> insert into emp values(&EMPNO,'&ENAME','&JOB','&HIREDATE','&SAL,&COMM,&DEPTNO)
2
SQL> insert into emp
values(&EMPNO,'&ENAME','&JOB','&MGR,'&HIREDATE','&SAL,&COMM,&DEPTNO);
Enter value for empno: 7566
Enter value for ename: JONES
Enter value for job: MANAGER
Enter value for mgr: 7839
Enter value for hiredate: 02-APR-81
Enter value for sal: 2975
Enter value for comm: null
Enter value for deptno: 20
old 1: insert into emp
values(&EMPNO,'&ENAME','&JOB','&MGR,'&HIREDATE','&SAL,&COMM,&DEPTNO)
new 1: insert into emp values(7566,'JONES','MANAGER',7839,'02-APR-81',2975,null,20)

1 row created.

SQL> /
Enter value for empno: 7654
Enter value for ename: MARTIN
Enter value for job: SALESMAN
Enter value for mgr: 7698
Enter value for hiredate: 28-SEP-81
Enter value for sal: 1250
Enter value for comm: 1400
Enter value for deptno: 30
old 1: insert into emp
values(&EMPNO,'&ENAME','&JOB','&MGR,'&HIREDATE','&SAL,&COMM,&DEPTNO)
new 1: insert into emp values(7654,'MARTIN','SALESMAN',7698,'28-SEP-81',1250,1400,30)

1 row created.

```
SQL> /  
Enter value for empno: 7698  
Enter value for ename: BLAKE  
Enter value for job: MANAGER  
Enter value for mgr: 7839  
Enter value for hiredate: 01-MAY-81  
Enter value for sal: 2450  
Enter value for comm: null  
Enter value for deptno: 30  
old 1: insert into emp  
values(&EMPNO,'&ENAME','&JOB',&MGR,'&HIREDATE',&SAL,&COMM,&DEPTNO)  
new 1: insert into emp values(7698,'BLAKE','MANAGER',7839,'01-MAY-81',2450,null,30)
```

1 row created.

```
SQL> /  
Enter value for empno: 7782  
Enter value for ename: CLARK  
Enter value for job: MANAGER  
Enter value for mgr: 7839  
Enter value for hiredate: 09-JUN-81  
Enter value for sal: 2850  
Enter value for comm: null  
Enter value for deptno: 10  
old 1: insert into emp  
values(&EMPNO,'&ENAME','&JOB',&MGR,'&HIREDATE',&SAL,&COMM,&DEPTNO)  
new 1: insert into emp values(7782,'CLARK','MANAGER',7839,'09-JUN-81',2850,null,10)
```

1 row created.

```
SQL> /  
Enter value for empno: 7788  
Enter value for ename: SCOTT  
Enter value for job: ANALYST  
Enter value for mgr: 7566  
Enter value for hiredate: 19-APR-87  
Enter value for sal: 3000  
Enter value for comm: null  
Enter value for deptno: 20  
old 1: insert into emp  
values(&EMPNO,'&ENAME','&JOB',&MGR,'&HIREDATE',&SAL,&COMM,&DEPTNO)  
new 1: insert into emp values(7788,'SCOTT','ANALYST',7566,'19-APR-87',3000,null,20)  
1 row created.
```

```
SQL> commit;
```

SQL> SELECT * FROM EMP;

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