Experiment 1

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Subject: ADBMS Lab **Subject Code: CSP-396**

1. **Aim/Overview of the practical:**
   To study and understand TCL commands in SQL, implement the commit, savepoint, rollback command.
2. **Task to be done: -**

   Transaction Control Language(TCL) commands are used to manage transactions in the database.

   COMMIT command

   ROLLBACK command

   SAVEPOINT command
3. **Steps for experiment/practical:**

   i. First, we have to create a table in the database.

   ii. After that we have to insert the data into the table.

   iii. We have to implement the commit command in SQL as it is used to save the data.

   iv. We have to implement the rollback command in SQL.

v. We have to implement the savepoint command.

vi. We have to implement rollback to savepoint commands.

vii. We can see the data using select statement to display changes.

4. Commands used:

```
SQL> create table exp (rollnum int, stud_name varchar2(50));

SQL > INSERT INTO exp values (1,'vaibhav');

SQL > COMMIT;

SQL > UPDATE exp SET stud_name = 'saksham' WHERE rollnum = '1';

SQL > INSERT INTO exp values (2,'kshitij');

SQL > select * from exp;

SQL > ROLLBACK;

SQL > select * from exp;

SQL > INSERT INTO exp values (2,'ayush');

SQL > SAVEPOINT A;

SQL > INSERT INTO exp values (3,'kshitij');

SQL > select * from exp;

SQL > rollback to A;

SQL > select * from exp;
```

5. Observations/Discussions:

i. Transaction Control Language commands are used to manage transactions in the database.

ii. **SQL COMMIT**: COMMIT command is used to permanently save any transaction into the database.

iii. **SQL Rollback**: Rollback command restores the database to the last committed state. ROLLBACK also
used with the savepoint.

iv. **SAVEPOINT**: command save the transaction into a point so that we can refer that point to rollback

6. Result/Output/Writing Summary:

Created a table StudentsEligible

With Coloums Names : UID, Student_name, backlogs
To the Table
Operations Implemented :

Insert→update→ commit→update→ rollback→ Savepoint a → rollback to a

Run SQL Command Line

```
SQL> create table StudentsEligible(Student_UID int,Student_name varchar2(50),Backlogs int);

Table created.

SQL> insert into StudentsEligible values(1,'Bhagath',0);

1 row created.

SQL> commit;

Commit complete.

SQL> insert into StudentsEligible values(2,'Asif',2);

1 row created.

SQL> insert into StudentsEligible values(3,'Sai',0);

1 row created.

SQL> commit;

Commit complete.

SQL> select * from StudentsEligible;

STUDENT_UID STUDENT_NAME                                           BACKLOGS
----------- -------------------------------------------------- ----------
          1 Bhagath                                                     0
          2 Asif                                                        2
          3 Sai                                                         0

SQL> update students_eligible set Backlogs = '0' Where Student_name ='Asif';

1 row updated.

SQL> commit;

Commit complete.

SQL> insert into StudentsEligible values(4,'Shikha',0);

1 row created.

SQL> select * from StudentsEligible;

STUDENT_UID STUDENT_NAME                                           BACKLOGS
----------- -------------------------------------------------- ----------
          1 Bhagath                                                     0
          2 Asif                                                        2
          3 Sai                                                         0
          4 Shikha                                                      0
```

Run SQL Command Line

```
SQL> rollback;

Rollback complete.

SQL> select * from StudentsEligible;

STUDENT_UID STUDENT_NAME                                           BACKLOGS
----------- ---------------------------------------------------- ----------
          1 Bhagath                                                       0
          2 Asif                                                          2
          3 Sai                                                           0

SQL> insert into StudentsEligible values(4,'Shikha',4);

1 row created.

SQL> savepoint a;

Savepoint created.

SQL> select * from StudentsEligible;

STUDENT_UID STUDENT_NAME                                           BACKLOGS
----------- ---------------------------------------------------- ----------
          1 Bhagath                                                       0
          2 Asif                                                          2
          3 Sai                                                           0
          4 Shikha                                                        4

SQL> update studentsEligible set Backlogs = '0' Where Student_name ='Shikha';

1 row updated.

SQL> select * from StudentsEligible;

STUDENT_UID STUDENT_NAME                                           BACKLOGS
----------- ---------------------------------------------------- ----------
          1 Bhagath                                                       0
          2 Asif                                                          2
          3 Sai                                                           0
          4 Shikha                                                        0

SQL> rollback to a;

Rollback complete.

SQL> select * from StudentsEligible;

STUDENT_UID STUDENT_NAME                                           BACKLOGS
----------- ---------------------------------------------------- ----------
          1 Bhagath                                                       0
          2 Asif                                                          2
          3 Sai                                                           0
          4 Shikha                                                        4
```

7. Learning outcomes (What I have learnt):

1. Learnt about the TCL commands in SQL.

2. implement the commit, savepoint, rollback command.

3. Learnt about SQL and Advance DBMS.