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Semester: 4

Date: June 19, 2022

**Practical 11: Commit, Rollback and Savepoint SQL commands**

**Objective:**  Study & Implementation of Rollback, Commit, Savepoint.

1. **COMMIT command**

COMMIT command is used to permanently save any transaction into the database.

When we use any DML command like INSERT, UPDATE or DELETE, the changes made by these commands are not permanent, until the current session is closed, the changes made by these commands can be rolled back.

To avoid that, we use the COMMIT command to mark the changes as permanent.

**syntax:** COMMIT;

1. **ROLLBACK command**

This command restores the database to last commited state. It is also used with SAVEPOINT command to jump to a savepoint in an ongoing transaction.

If we have used the UPDATE command to make some changes into the database, and realise that those changes were not required, then we can use the ROLLBACK command to rollback those changes, if they were not commited using the COMMIT command.

**Syntax**: ROLLBACK TO savepoint\_name;

1. **SAVEPOINT command**

SAVEPOINT command is used to temporarily save a transaction so that you can rollback to that point whenever required.

**Syntax**: SAVEPOINT savepoint\_name;

In short, using this command we can name the different states of our data in any table and then rollback to that state using the ROLLBACK command whenever required.

mysql> select \* from class;

+------+-----------+

| id | name |

+------+-----------+

| 1 | Abhi |

| 2 | Adam |

| 4 | Alex |

| 5 | Abhijit |

| 6 | Chris |

| 7 | Bravo |

| 6 | Chris |

| 7 | Bravo |

| 10 | Deepankar |

| 11 | AMAN |

| 11 | ajay |

+------+-----------+

11 rows in set (0.02 sec)

mysql> start transaction;

Query OK, 0 rows affected (0.00 sec)

mysql> insert into class values(20, 'Dean');

Query OK, 1 row affected (0.01 sec)

mysql> savepoint A;

Query OK, 0 rows affected (0.00 sec)

mysql> insert into class values(21, 'ram');savepoint B;

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

mysql> insert into class values(21, 'ram aman');savepoint c;

Query OK, 1 row affected (0.00 sec)

Query OK, 0 rows affected (0.00 sec)

mysql> select \* from class;

+------+-----------+

| id | name |

+------+-----------+

| 1 | Abhi |

| 2 | Adam |

| 4 | Alex |

| 5 | Abhijit |

| 6 | Chris |

| 7 | Bravo |

| 6 | Chris |

| 7 | Bravo |

| 10 | Deepankar |

| 11 | AMAN |

| 11 | ajay |

| 20 | Dean |

| 21 | ram |

| 21 | ram aman |

+------+-----------+

14 rows in set (0.01 sec)

mysql> rollback to A;

Query OK, 0 rows affected (0.00 sec)

mysql> select \* from Class;

+------+-----------+

| id | name |

+------+-----------+

| 1 | Abhi |

| 2 | Adam |

| 4 | Alex |

| 5 | Abhijit |

| 6 | Chris |

| 7 | Bravo |

| 6 | Chris |

| 7 | Bravo |

| 10 | Deepankar |

| 11 | AMAN |

| 11 | ajay |

| 20 | Dean |

+------+-----------+

12 rows in set (0.00 sec)

mysql> commit;

Query OK, 0 rows affected (0.10 sec)

mysql>