Vidyavardhini's College of Engineering and Technology, Vasai



AY: 2024-25

Class:	SE	Semester:	IV
Course Code:	CSL402	Course Name:	DBMS Lab

Name of Student:	Shravani Sandeep Raut
Roll No.:	48
Experiment No.:	7
Title of the Experiment:	Perform DCL and TCL commands
Date of Performance:	19/03/2025
Date of Submission:	26/03/2025

Evaluation

Performance Indicator	Max. Marks	Marks Obtained
Performance	5	
Understanding	5	
Journal work and timely submission	10	
Total	20	

Performance Indicator	Exceed Expectations (EE)	Meet Expectations (ME)	Below Expectations (BE)
Performance	4-5	2-3	1
Understanding	4-5	2-3	1
Journal work and timely submission	8-10	5-8	1-4

Checked by

Name of Faculty: Ms. Neha Raut

Signature:

Date:

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Aim :- Write a query to implement Data Control Language(DCL) and Transaction Control Language(TCL) commands

Objective :- To learn DCL commands like Grant and Revoke privileges to the user and TCL commands to commit the transactions and recover it using rollback and save points.

Theory:

Data Control Language:

DCL commands are used to grant and take back authority from any database user.

- o Grant
- o Revoke
- a. Grant: It is used to give user access privileges to a database.

Example

- GRANT SELECT, UPDATE ON MY_TABLE TO SOME_USER, ANOTHER USER;
- b. Revoke: It is used to take back permissions from the user.

Example

1. REVOKE SELECT, UPDATE ON MY TABLE FROM USER1, USER2;

Transaction Control Language

TCL commands can only use with DML commands like INSERT, DELETE and UPDATE only.

These operations are automatically committed in the database that's why they cannot be used while creating tables or dropping them.

Here are some commands that come under TCL:

- COMMIT
- o ROLLBACK
- SAVEPOINT

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a. Commit: Commit command is used to save all the transactions to the database.

Syntax:

1. COMMIT;

Example:

- 1. DELETE FROM CUSTOMERS
- 2. WHERE AGE = 25;
- 3. COMMIT;
- b. Rollback: Rollback command is used to undo transactions that have not already been saved to the database.

Syntax:

1. ROLLBACK;

Example:

- 1. DELETE FROM CUSTOMERS
- 2. WHERE AGE = 25;
- 3. ROLLBACK;
- c. SAVEPOINT: It is used to roll the transaction back to a certain point without rolling back the entire transaction.

Syntax:

2. SAVEPOINT SAVEPOINT_NAME;

Implementation:

1. Data Control Language:

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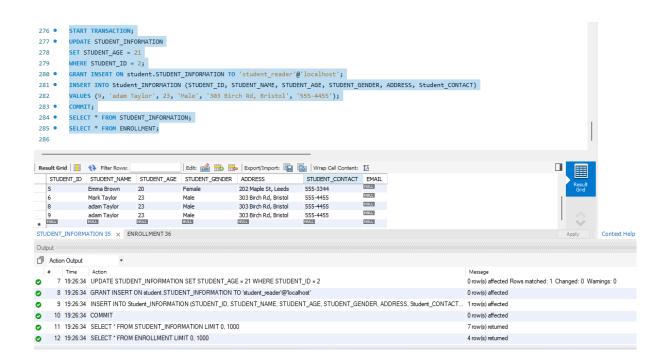


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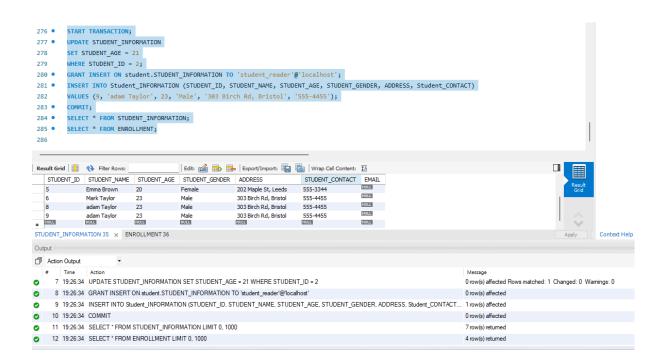
Department of Artificial Intelligence & Data Science

```
CREATE USER 'student_admin'@'localhost' IDENTIFIED BY 'admin123';
 266 • CREATE USER 'student_reader'@'localhost' IDENTIFIED BY 'reader123';
 267
 268 • GRANT ALL PRIVILEGES ON student.* TO 'student_admin'@'localhost';
269 • FLUSH PRIVILEGES;
 270 • GRANT SELECT ON student.* TO 'student_reader'@'localhost';
271 • GRANT insert ON student.* TO 'student admin'@'localhost';
272 • INSERT INTO STUDENT_INFORMATION (STUDENT_ID, STUDENT_NAME, STUDENT_AGE, STUDENT_GENDER, ADDRESS, Student_CONTACT)
        VALUES (5, 'Emma Brown', 20, 'Female', '202 Maple St, Leeds', '555-3344');
274 • REVOKE INSERT ON student.STUDENT_INFORMATION FROM 'student_admin'@'localhost';
Output ::::
Action Output
57 18:43:57 CREATE TABLE ENROLLMENT ( ENROLLMENT_ID INT PRIMARY KEY, Student_ID INT, QUANTITY INT, FOREIGN KEY (Student_ID).... Orw(s) affected
58 18.44:15 INSERT INTO ENROLLMENT (ENROLLMENT_ID, Student_ID, QUANTITY) VALUES (1, 1, 5), — John Doe is enrolled in 5 activities/courses (2, 2, 2),.... 3 row(s) affected Records: 3 Duplicates: 0 Warnings: 0
9 18.44.31 SELECT s.STUDENT_NAME, s.STUDENT_AGE, s.STUDENT_GENDER, e.QUANTITY FROM STUDENT_INFORMATION s INNER JOI... 3 row(s) returned
60 18:54:02 CREATE USER 'student_admin'@¹ocalhost' IDENTIFIED BY 'admin123'
                                                                                                                                0 row(s) affected
61 18:54:02 CREATE USER 'student_reader'@localhost' IDENTIFIED BY 'reader123'
                                                                                                                                 0 row(s) affected
62 18:54:37 GRANT ALL PRIVILEGES ON student.* TO 'student_admin'@¹localhost'
                                                                                                                                0 row(s) affected
```

2. Transaction Control Language:







Conclusion:

A) Explain about issues faced during rollback in mysql and how it got resolved.

Rollback issues in MySQL often arise due to autocommit being enabled, non-transactional storage engines like MyISAM, or improper transaction handling. When a rollback is attempted under these conditions, changes may not revert, causing data inconsistency. This was resolved by ensuring the use of transactional engines like InnoDB, explicitly disabling autocommit, and enclosing SQL operations within START TRANSACTION and COMMIT/ROLLBACK. Proper error handling and constraints were also implemented to manage failures efficiently. These measures ensured reliable rollback and data integrity during unexpected failures or manual intervention.

B) Explain how to create a user in sql.

To create a user in SQL, the CREATE USER statement is used. Issues may arise if the user already exists or if proper privileges are missing. The syntax is:

CREATE USER 'username'@'host' IDENTIFIED BY 'password';

For example:

CREATE USER 'shravani'@'localhost' IDENTIFIED BY 'pass123';

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This command creates a new user 'shravani' who can connect from localhost. To resolve errors like "access denied," make sure the admin account has enough privileges. After creation, use GRANT to assign permissions, ensuring the user can access and modify data as needed.

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