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.:	10
Title of the Experiment:	Implementation and demonstration of Transaction and Concurrency control techniques using locks.
Date of Performance:	02/04/2025
Date of Submission:	09/04/2025

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:

Aim :- Write a query to lock and unlock a table for transaction and concurrency control.

Objective :- To learn locking of tables for transaction processing and concurrency control.

Theory:

A lock is a mechanism associated with a table used to restrict the unauthorized access of the data in a table. MySQL allows a client session to acquire a table lock explicitly to cooperate with other sessions to access the table's data. MySQL also allows table locking to prevent unauthorized modification into the same table during a specific period.

Table Locking in MySQL is mainly used to solve concurrency problems. It will be used while running a transaction, i.e., first read a value from a table (database) and then write it into the table (database).

MySQL provides two types of locks onto the table, which are:

READ LOCK: This lock allows a user to only read the data from a table.

WRITE LOCK: This lock allows a user to do both reading and writing into a table.

The following is the syntax that allows us to acquire a table lock explicitly:

LOCK TABLES table name [READ WRITE];

The following is the syntax that allows us to release a lock for a table in MySQL:

UNLOCK TABLES;

Conclusion: Locking and unlocking of tables is achieved and verified using insert command in the same table of a database system.

1.   Explain Transaction and Concurrency control techniques using locks.

 Transactions ensure that a series of database operations are executed as a single unit of work, either all succeed or none do. Concurrency control techniques using locks manage access to shared resources in a multi-user environment. Locks can be applied at various levels, such as database, table, or row, to prevent conflicts between transactions.

In short, transactions ensure atomicity, consistency, isolation, and durability of database operations, while concurrency control techniques using locks prevent data inconsistency and ensure data integrity by managing concurrent access to shared resources.