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CLASS	622-A
SUBJECT	ADBMS

Part A: Simulating a Deadlock Between Two Transactions

Part B: Applying MVCC to Prevent Conflicts During Concurrent Reads/Writes

Part C: Comparing Behavior With and Without MVCC in High-Concurrency

CODE:

DROP TABLE IF EXISTS StudentEnrollments;

**CREATE TABLE StudentEnrollments (
student_id INT PRIMARY KEY,
student_name VARCHAR(100), course_id
VARCHAR(10), enrollment_date DATE
);**

**INSERT INTO StudentEnrollments VALUES
(1, 'Ashish', 'CSE101', '2024-06-01'),
(2, 'Smaran', 'CSE102', '2024-06-01'),
(3, 'Vaibhav', 'CSE103', '2024-06-01');**

START TRANSACTION;

UPDATE StudentEnrollments SET enrollment_date = '2024-07-01' WHERE student_id = 1;

START TRANSACTION;

UPDATE StudentEnrollments SET enrollment_date = '2024-07-02' WHERE student_id = 2;

**UPDATE StudentEnrollments SET enrollment_date = '2024-07-03' WHERE student_id = 2; UPDATE
StudentEnrollments SET enrollment_date = '2024-07-04' WHERE student_id = 1;**

START TRANSACTION;

SELECT * FROM StudentEnrollments WHERE student_id = 1;

START TRANSACTION;

UPDATE StudentEnrollments SET enrollment_date = '2024-07-10' WHERE student_id = 1;

COMMIT;

SELECT * FROM StudentEnrollments WHERE student_id = 1;

COMMIT;

SELECT * FROM StudentEnrollments WHERE student_id = 1;

START TRANSACTION;

SELECT * FROM StudentEnrollments WHERE student_id = 1 FOR UPDATE;

SELECT * FROM StudentEnrollments WHERE student_id = 1;

START TRANSACTION;

UPDATE StudentEnrollments SET enrollment_date = '2024-07-20' WHERE student_id = 1;

START TRANSACTION;

SELECT * FROM StudentEnrollments WHERE student_id = 1;

student_id	student_name	course_id	enrollment_date
1	Ashish	CSE101	2024-07-10T00:00:00.000Z
2	Smaran	CSE102	2024-07-03T00:00:00.000Z
3	Vaibhav	CSE103	2024-06-01T00:00:00.000Z