Transaction and Isolation Levels in MySQL- Exp-12

Aim

To demonstrate the use of transactions, row locking, and isolation levels (REPEATABLE READ) in MySQL using the StudentEnrollments table.\

Code

```
-- Step 1: Create Table
CREATE TABLE StudentEnrollments (
    student_id INT PRIMARY KEY,
    student_name VARCHAR(100) NOT NULL,
    course_id VARCHAR(10) NOT NULL,
    enrollment_date DATE NOT NULL
);

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

-- Step 3: Start Transaction and Update
START TRANSACTION;
UPDATE StudentEnrollments SET enrollment_date = '2024-07-01' WHERE student_id = 1;
UPDATE StudentEnrollments SET enrollment_date = '2024-07-01' WHERE student_id = 2;

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

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

START TRANSACTION;
SELECT * FROM StudentEnrollments WHERE student_id = 1 FOR UPDATE;

START TRANSACTION ISOLATION LEVEL REPEATABLE READ;
UPDATE StudentEnrollments SET enrollment_date = '2024-07-10' WHERE student_id = 1;

START TRANSACTION ISOLATION LEVEL REPEATABLE READ;
SELECT * FROM StudentEnrollments WHERE student_id = 1;
```

Expected Output

student_id	student_name	course_id	enrollment_date
1	Ashish	CSE101	2024-06-01 → 2024-07-01 → 2024-07-10
2	Smaran	CSE102	2024-06-01 → 2024-07-01 → 2024-07-02
3	Vaibhav	CSE103	2024-06-01