Lab 9

Self Practice Activity Solution

Task: Explain and demonstrate CRUD operations.

You are provided with a simple database schema consisting of two tables: **students** and **courses**. Your task is to perform the CRUD operations:

**Solution:**

**Part 1: Create (C)**

-- Insert records into the "students" table

INSERT INTO students (student\_id, student\_name, contact\_number)

VALUES

(1, 'John Doe', '123-456-7890'),

(2, 'Jane Smith', '987-654-3210'),

(3, 'Alice Johnson', '555-555-5555');

-- Insert records into the "courses" table

INSERT INTO courses (course\_id, course\_title)

VALUES

(101, 'Mathematics'),

(102, 'History'),

(103, 'Computer Science');

**Part 2: Read (R)**

-- Retrieve details of all students

SELECT \* FROM students;

-- Retrieve names of all courses

SELECT course\_title FROM courses;

-- Retrieve students enrolled in a specific course (e.g., Mathematics)

SELECT students.student\_name

FROM students

JOIN enrollments ON students.student\_id = enrollments.student\_id

JOIN courses ON enrollments.course\_id = courses.course\_id

WHERE courses.course\_title = 'Mathematics';

**Part 3: Update (U)**

-- Update contact number of a specific student (e.g., Jane Smith)

UPDATE students

SET contact\_number = '555-123-4567'

WHERE student\_name = 'Jane Smith';

-- Change course title of a specific course (e.g., Mathematics to Algebra)

UPDATE courses

SET course\_title = 'Algebra'

WHERE course\_title = 'Mathematics';

**Part 4: Delete (D)**

-- Delete a student record (e.g., Alice Johnson)

DELETE FROM students

WHERE student\_name = 'Alice Johnson';

-- Delete a course record (e.g., Computer Science)

DELETE FROM courses

WHERE course\_title = 'Computer Science';

This task allows you to practice the fundamental CRUD operations in a database using SQL statements. It covers creating records, reading data, updating existing records, and deleting records from tables.