SLIIT UNI
THE KNOWLEDGE UNIVERSITY

Faculty of Computing

Year 2 Semester 1 (2025)

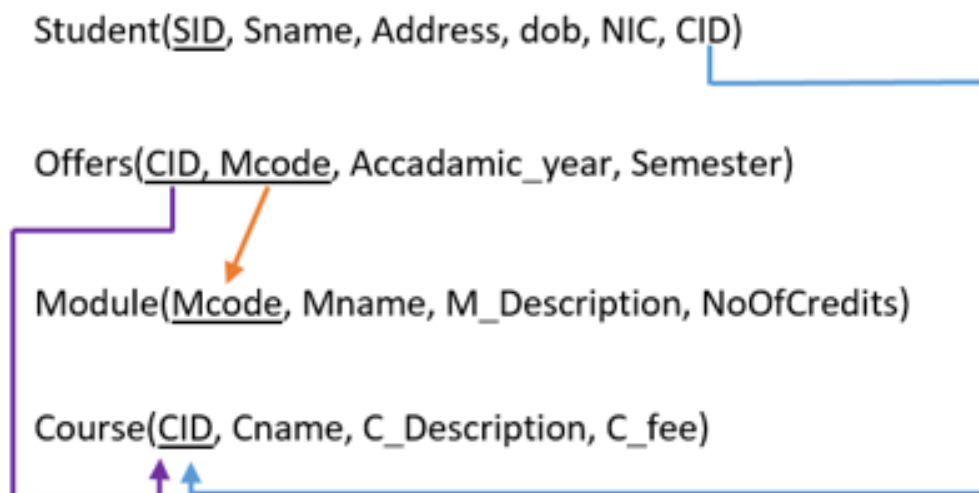IT2140- Database Design and Development   Lab Sheet 04

Lab Sheet 04: Database Connectivity and Data Manipulation in SQL Server

Objective

By the end of this lab session, you will be able to:

- Connect a JavaFX desktop application with a Microsoft SQL Server database,

- Capture user inputs via the form,

- Perform basic data manipulation operations including INSERT, UPDATE, and DELETE on the database through the application interface,

- Provide user feedback through the application's UI for successful or failed database operations.

You have already created the following schema representing a university database. (from LabSheet 03)

Student(SID, Sname, Address, dob, NIC, CID)

Offers(CID, Mcode, Accadamic_year, Semester)

Module(Mcode, Mname, M_Description, NoOfCredits)

Course(CID, Cname, C_Description, C_fee)

Part 1: Insert Data into Tables

Important: Due to foreign key constraints, insert data following the order of table creation to avoid errors.

1. Insert the following records into the Course table:

CID	Cname	C_Description	C_fee
IT	Information Technology	The programme is designed for technically focused students who capabilities in programming	175000
SE	Software Engineering	Software engineering is the discipline of designing, creating and maintaining	185000
CSNE	Computer Systems And Network Engineering	The programme aims to provide students with the knowledge, skills, planning, and designing	155000
DS	Data Scinece	The meticulous curriculum focuses on the fundamentals of computer science, statistics, and applied mathematics	170000

2. Insert the following records into the Student table:

SID	Sname	Address	Dob	NIC	CID
CN18384756	Kamal	No122, Rose street, matale	1994-05-02	946785467v	CSNE
DS18234876	Pubudu	No678 , 3rd new lane, Maharahgama	1994-11-08	948763759v	DS
IT18234568	Ann	No12, Kings street, colombo	1996-11-11	961234587v	IT
SE19238567	Malith	No08, st.thomas street, Kandy	1992-12-20	922356785v	SE

3. Insert the following records into the Module table:

Mcode	Mname	M_Description	NoOfCredits
SE3050	User Experience Engineering	subject under SE	3
IT1010	Introduction to Programming	subject under IT	4
IT2050	Computer Networks	subject under IT	4
IT3051	Fundamentals of Data Mining	subject under DS	4

4. Insert the following records into the CourseModule (or relevant relationship) table:

CID	Mcode	Accadamic_year	Semester
SE	SE3050	Y3	2
IT	IT1010	Y1	2
IT	IT2050	Y2	1
DS	IT3051	Y3	2

Part 2: Update Data
Update the address of the student named **Ann**:

Part 3: Delete Data
Remove the module **'User Experience Engineering'** from the Module table:

Submission Requirement:

Complete the **JavaFx desktop application** of this lab sheet and upload your all project files to the **Git repository** provided by your instructor **before next week**.

File Naming Guidelines:

- Name your submission file as:

    Lab_4_CRUD.sql

Additional Instructions:

- Check for errors and resolve foreign key violations by proper insert ordering.

- Verify your changes by querying the respective tables.

- Submit a screenshot of successful insert, update, and delete operations.