



# COMSATS University Islamabad, Islamabad Campus

Department of Computer Science

## LAB Assignment 2 - Fall 2025

**Subject:** CSC101 - Applications of Information and Communication Technologies

**Instructor :** Mr. Muhammad Haris

**Total Marks:** 30

(CLO-6: Demonstrate the usage of productivity software, problem solving tool, and web technology by performing appropriate tasks.)

### Question 1: Library Management System (Database Task)

Design and implement a **Library Management System** using MS Access. The system should have following operations.

1. **Database Design and Creation:** Create a new MS Access database named LibraryManagementSystem.accdb. Define and create the following tables for major activities in the library. Ensure each table has a primary key and appropriate data types.

- Books (BookID, Title, Author, Category, Publisher, Price)
- Members (MemberID, Name, Contact, Address, MembershipDate)
- Borrowing (BorrowID, MemberID, BookID, IssueDate, ReturnDate, Status)
- Staff (StaffID, Name, Role, Contact, Shift)

2. **Data Manipulation (SQL Queries):**

Apply the following operations on your tables:

- i. **INSERT:** Insert at least 5–10 sample records in each table using Datasheet View.
- ii. **RETRIEVE :** Create queries in MS Access to retrieve specific information such as but not only limited to:
  - List of all available books.
  - Books issued to a specific member.
  - Members who have overdue books.
  - Staff working in a particular shift.
- iii. **UPDATE:** Create a query or form that performs **update operations**, for example:
  - Update the **book price** or **publisher name**.
  - Change a member's **contact information**.
  - Update the **status** of a borrowed book after it's returned.

3. **Form Creation:** Design **user-friendly / interactive forms** for:

- Book Entry
- Member Registration
- Book Borrowing/Return
- Staff Management

### Evaluation Criteria:

Criteria	Description	Excellent (9–10 Marks)	Good (6–8 Marks)	Needs Improvement (0–5 Marks)	Marks
1. Database Design & Structure	Creation of database, tables, fields, relationships, and proper use of data types.	All required tables are correctly created with primary keys and relationships. Data types are accurate and structure is complete.	Most tables are correctly created; few errors in fields or relationships.	Incomplete or incorrect table structure; missing relationships or wrong data types.	/10
2. Queries and Forms Implementation	Use of queries (insert, retrieve, update) and creation of user-friendly forms for data entry and management.	All queries (insert, retrieve, update) work correctly; forms are well designed, functional, and user-friendly.	Queries and forms are partially functional with minor issues or incomplete features.	Queries/forms missing or non-functional; limited demonstration of understanding.	/10
3. Application of Problem-Solving & Software Skills (CLO Alignment)	Demonstration of practical use of MS Access as a productivity and problem-solving tool.	Effectively applies MS Access features to solve the real-world task; shows strong understanding of database management.	Demonstrates partial understanding; some practical use but lacks full functionality.	Minimal application or poor demonstration of software usage; limited understanding of task.	/10