COMSATS University Islamabad, Lahore Campus
Block–B, Department of Electrical and Computer Engineering
COMSATS Institute of Information Technology, 1.5KM Defence Road, Off Raiwind Road, Lahore

Lab Project

1	**Course Code and Title**	CSC108 Programming Fundamentals [FA22-BCE-A & B]
2	**Credit Hours**	3+1
3	**Assessment Type**	Lab Project
5	**Semester**	2nd
6	**Resource Person**	M. Hassan Aslam
7	**Course Supervisor**	Dr. Taimoor Naeem
8	**Assessment Details**	Semester Final Project

No.	Code and Name of Course	Name of Instructor	Lab Project Implementation details (Assignment, Project, Lab work title etc.)	Evaluation regime (how and when Lab Project is evaluated)
1	CSC-108 Lab	M. Hassan Aslam	Lab project is mapped on 20% of lab terminal marks	1. Lab Project evaluation is based on the following part and marks of project are uploaded in lab terminal exam (20%). a. Project Software Demo (Software Performance Rubric)

Lab Project Question Statement:

Design a small practical oriented lab project using the knowledge of C++ Programming language. **(CLO5-PLO5-P5)**

Note: You are required to submit the lab project as per the following guidelines. The deadline for submission of lab project is as follows:
1. For **FA22-BCE A** deadline is **Thursday 8th June 2023**.
2. For **FA22-BCE-B** deadline is **Wednesday 7th June 2023**.

Instructions for Lab Project Code submission:

You are required to fill out the attached documents (Annex-1 and Annex-II) and submit along with your lab project code. Moreover, your lab project code must be well commented on as per the attached example (Annex-III).

Program Specifications

Application/ Program name:	EMPLOYEE XPERT
Written by:	Muhammad Faizan Shurjeel

Purpose or problem definition:

The purpose of this code is the implementation of a command-line interface (CLI) program that simulates a Human Resource DBMS to provide organized management of storing/retrieving/maintaining Employee Data.

Program Procedures:

- Function To Add,Search,Edit,Delete & Display An Employee(s)
- Function To Manipulate Employee Data
- Function To Get Input and validate it's value as an Integer
- Function To Clear The Console Screen

Algorithm/Processing/Conditions:

Inputs:

Integer Based Option Selector, Strings, Numbers and Keystrokes

Processes:

File handling, I/O manipulation, Pointers, Boolean Logic, Logical Operators, Conditional Statements

Outputs:

Console output, File Output

Notes & Restriction:

- This program is supposed to be run in the Windows command prompt ONLY. It will run in other OS's but errors may occur. Additional Files Generated Must Be In the same Directory As Of The Code File.
- Editing/removal of the program code/files will result in errors that cannot be handled by the program code.

Comments:

- This Code Is a basic level and Standard Implementation Of a simple Database In C++ Language Without using any database specific Technique such as SQL.
- Chunks of code have been copy-pasted multiple times when loops were making The Code Complex, making the code Repetitive.

Use Case Definition

Program Name:	Developer:	Date:
Employee Xpert	*M.FAIZAN SHURJEEL*	*June 6, 2023*

1. Launch the "EMPLOYEE XPERT" program on your computer.

2. The program will present a command-line interface (CLI) for interacting with the Human Resource DBMS. The CLI will display an ASCII art logo and menu options.

3. Use the keyboard to navigate the menu and select the desired action. Available options may include adding a new employee, searching for an employee by CNIC, editing employee data, and deleting an employee.

4. If you choose to add a new employee, the program will prompt you to enter the employee's details, including name, CNIC, pay scale, and attendance. Follow the instructions on the screen and provide the required information.

5. If you select the option to search for an employee by CNIC, enter the CNIC number when prompted. The program will search the employee database for a match and display the employee's details if found. This includes their name, pay scale, attendance, and monthly income.

6. To edit an employee's data, choose the corresponding option from the menu and enter the CNIC of the employee whose data you want to modify. The program will prompt you to enter the updated employee details, such as name, pay scale, and attendance. Follow the on-screen instructions to make the necessary changes.

7. If you wish to delete an employee from the database, select the delete option from the menu and provide the CNIC of the employee you want to remove. The program will locate the employee in the database and delete their record.

8. Throughout the program, the screen will be cleared before displaying new information, providing a clean and organized interface for user interaction.

9. After performing the desired actions, you can continue using the program by selecting another menu option or exit the program if you have finished.

By following these step-by-step instructions, you can effectively utilize the "EMPLOYEE XPERT" program to manage and maintain employee data in a Human Resource DBMS.