# National University

Of Computer & Emerging Sciences Faisalabad-Chiniot Campus

# CL-1004
# Object Oriented Programming
# Lab No 5

**Objectives:**

- Structures within structures
- Class, object and member functions
- Class private data members

**Note: Carefully read the following instructions (*Each instruction contains a weightage*)**

1. There must be a block of comments at start of every question's code by students; the block should contain brief description about functionality of code.
2. Comment on every function about its functionality.
3. Use understandable name of variables.
4. Proper indentation of code is essential
5. Write a C++ statement(s) for each of the following task one after the other, in the same order.
6. Make a Microsoft Word file and paste all of your C++ code with all possible screenshots of every **task output in MS word and submit .cpp file with word file**.
7. Make separate .cpp files for all tasks and use this format **22F-1234_Task1.cpp**.
8. First think about statement problems and then write/draw your logic on copy.
9. After copy pencil work, code the problem statement on MS Studio C++ compiler.
10. At the end when you done your tasks, attached C++ created files in MS word file and make your submission on Google classroom. (Make sure your submission is completed).
11. Please submit your file in this format **22F-1234_L1**.
12. Do not submit your assignment **after deadline**.
13. **Do not copy code from any source otherwise you will be penalized with negative marks.**

**Problem 1: | (dynamic structure, pointers) | 30 Mins**

Write a program that declares a dynamic struct to store the data of a baseball player **(player's name, number of home runs, and number of hits**). Declare an array of 3 components to store the data of 3 baseball players. Your program must contain a function to **input** data and a function to **output** data. Add functions to **search** the array to find the index of a specific player and **update** the data of a player. This function must return the structure. Before the program terminates, delete the dynamic array. Your program should be **menu driven**, giving the user various choices.

**Problem 2: | (Nested structure) | 30 Mins**

In FAST-NU Faisalabad our director wants to make a Data Base system for student of Computer Science Department. The database must contain.

1) Name of Student

2) Address (House #, Street #, City Name, Province Name)

3) Age

4) GPA

Create a structure of **Student** which must has nested structure of **Address**. Take input for as many students as user wants. Then put the final data in proper order.

**Problem 3: | (Enumeration) | 20 Mins**

Write a program to create an enumeration that define the week days. Now create an object of enum week for today and print the value of yesterday and tomorrow.

**Problem 4: | (Class, object and member functions) | 30 Mins**

Design a class called Date. The class should store a date in three integers: month, day, and year. There should be member functions to print the date in the following forms:

12/25/10

December 25, 2010

25 December 2010

Demonstrate the class by writing a complete program implementing it.

**Note:** Do not accept values for the day greater than 31 or less than 1. Do not accept values for the month greater than 12 or less than 1.

Proper code indentation will hold extra marks !

Best of luck ☺

**You are done with your exercise, submit to the classroom at given time.**