**Object Oriented Paradigm**



Session: Fall 2021

Faculty of Information Technology

UCP Lahore, Pakistan

Lab 3: Concept OF OOP Classes (constructors (deep copy, shall ow copy), destructors, setter, getter, encapsulation)

Instructions**:**

* Indent your code
* Comment your code
* Use meaningful variable names
* Plan your code carefully on a piece of paper before you implement it.
* Name of the program should be same as the task name. i.e. the first program should be Task\_1\_01.cpp

Lab Tasks:1

Define a class **“Car”** having attributes

* char \*regNo;
* char \*owner;
* double price;
* char color\*;

functions for deep copy

* int xStringSize(char\* arr);
* char\* xStringCopy(char\* arr);
* void xDelete(char\*& arr);

Now do the following operations on above mentioned class:

* 1. Write a **default** and a **parameterized** constructor.
  2. Write separate **setter** functions for each attributes to set values.
  3. Write separate **getter** functions for each attributes to get values.
  4. Write a ‘**Display**’ function to display cat’s all data on screen.
  5. Write a **destructor** to release all allocated memories

Now write a main function to declare different objects of class. For some, call default constructor and for others call parameterized. Then use setter and getters randomly and call Display function frequently to see information stored.

**Task 2:**

Write a class named Employee that has the following Data Members:  
Employee ID (integer)

Name (Char\*)

Designation (Char\*)

Working\_Hours (integer)

SalaryPerHour (integer)

Class should have getters and setters for all data members. Keep data members private.

Input: takes ID, name, designation and Working\_Hours as input

Output: display ID, name, designation and Working\_Hours of current employee.

* Find the total Salary of Employee using the Function named **Final\_Salary**

**Final\_Salary= Working\_Hours \* SalaryPerHour**

**Task 3:**

Write a class named Rectangle that has the following Data Members:

Length (int or float)

Breadth (int or float)

Class should have getters and setters, Default and Parameterized constructor for all data members. Keep data members private.

**Input**: takes Length, breadth as input

**Function** named ‘Area’ which returns the area of the rectangle.

**AREA=LENGTH\*BREADTH**

**Function** named ‘Perimeter’ which returns the Perimeter of the rectangle

**PERIMETER=2(LENGTH+BREADTH)**

**Function** named ‘Display’ which Display the length and breadth of rectangle.