Programming Fundamentals Lab

Lab 12   **Marks 100**

Instructions

Work on this lab individually. You can use your books, notes, handouts etc. but you are not allowed to borrow anything from your peer student.

Submission

Put all the files of your solution in a zipped folder labeled with your roll number.
Upload the zipper file solution(s) folder at Google classroom (https://classroom.google.com) by Saturday, May 16, 2020 before 05:00 PM. No submission will be accepted after this deadline.

Please use your email account at PUCIT domain and the following code to join the class:

Code: 2oosi22

What you have to do

Program the following tasks in your C++ compiler and then compile and execute them. The name of your files will be according to the task given in this lab.

Task 1   [25]

Write a program that performs the following tasks

1. Declare **float variables** named **f** and **t** and initialize them with **2.5** and **8.9** respectively.
2. Declare **pointer** variables **ptrF** and **ptrT** and initialize them with the **addresses** of **f** and **t** respectively.

Now print the following information:

1. The address of **f** and the value of **f**.
2. The address of **ptrF**, value of **ptrF** and the value of **memory location** where it points to.
3. The address of **t** and the value of **t**.
4. The address of **ptrT**, value of **ptrT** and the value of **memory location** where it points to.

Task 2   [25]

Write a **function** named **subtractByPointer** that accept **three pointers to double**. The function should **calculate the difference** of the **contents of memory locations** pointed by the **first two pointers** and store the **difference** in third one and returns nothing.

Demonstrate the function in a program that **asks the user to input two doubles** and then **passes them to the function**. The **result of subtraction** should be **displayed** on the screen.

Task 3   [50]

Write a program that declares **two integer type arrays** of **size 10** in **main** and **subtract** their contents **element by element** and **places the result** in the **third array** having same size. The program calls the following **functions**, which you have to implement:

getData – accept a **pointer to array** with its **size** and **fill** it with the data entered by the user.

display – accept a **pointer to array** with its **size** and **display** its contents on the screen.

addArrays – accepts the **addresses (pointer to arrays)** of **three arrays as arguments**; and a **fourth parameter** to hold the **size of arrays**; **subtract** the contents of **first two arrays** together, element by element; and **places the result in the third array**.

Test the functionality of your program by calling each of the functions implemented above and **display the contents of resulting array on the screen**.

☺ ☺ ☺ **BEST OF LUCK** ☺ ☺ ☺