National University of Computer and Emerging Sciences

Lab Manual 01
Object Oriented Programming

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Objectives

After performing this lab, students shall be able to understand:

- ✓ Develop better understanding of pointers
- ✓ Understand pointer arithmetic
- ✓ Handle constant pointers and pointers to constants.

TASK-1:

Write a C++ program that creates a pointer to an integer and print the following: Square of the integer, cube of the integer, half of the integer

TASK-2:

Create a function **swap** that has two pointer variables in parameter and swap the data of these two variables. This function should not return any value.

Create two variables in the main function and initialize with some values. Call the function swap and pass the addresses of variables x and y in this function as argument. Now print the values of x and y in main function and observe the output.

TASK-3:

Create a float array **InArr** of size 10 and another float array **ResArr** of size 9. Point a constant pointer **myptr** (**float * const myptr**) to InArr. Now perform the operation ResArr[i] = InArr[i] + InArr[i+1]. Once this operation is completed, point myptr to ResArr.

In case you are unable to follow given instructions, figure out the issue and its solution. You should be able to explain the phenomenon that caused the problem.

TASK-4:

Create a static array inside the main function and declare two pointers p and q, **'p'** points to the starting index and **'q'** points to the last index.
Create the functions mentioned below in the program and note that in all functions, the use of subscript notation [ ] to access the array elements is not allowed. You have to use pointers to access the array elements.

1. **void getData( ):** This function should receive only two pointers (p and q) and should be used to fill the array. (Note: Take the input from user to fill the array)

2. **void printData( ):** This function should also receive only two pointers 'p' and 'q' and print the data on the console. This function should not allow 'p' or 'q' to update the contents of the array. These pointers should only be used to read the data from array.

3. **void reverseArr( ):** : It should receive 'p' and 'q' and reverse the contents of the array

4. **void sortData( )**: It should receive 'p' and 'q' and sort the contents of the array in the ascending order.