

National University of Computer and Emerging Sciences



Lab Manual
for
Object Oriented Programming

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Lab Manual 2

Objectives:

After performing this lab, students shall be able to:

- ✓ Static array using pointer
- ✓ Constant Pointers
- ✓ Dynamic Memory Allocation using pointer (1D array)

Problem 1

A C++ program where you create an integer array of **size 10**. Your program will add 5 to each element of the array. You have to add to the elements using pointer only. Array subscript notation cannot be used (neither in addition nor while printing resultant array).

Problem 2

Write a program that takes two integers from user and pass their addresses to swap function.

```
void swap(int* , int*);
```

Problem 3

Write a C++ program that creates a constant pointer to an integer and print the following:

Square of the integer, cube of the integer, half of the integer.

Problem 4

Write a C++ program that keeps taking character input from the user until user enters q and displays the data in reverse order. Your program should save the input in a dynamically allocated array. Initially create a dynamic array of five characters. Each time the array gets filled your program should double the size of array and continue taking the input. After receiving q (i.e. end of data input) your program should print the characters in the reverse order as entered by the user. You have to make use of the following functions for this task:

- void Input (char * & arr, int & size); //why is size passed by reference for this?
- void reverse (char * arr, int size);
- void Output (char * arr, int size);

Problem 5

Take size input from the user and create an array of that size. Now populate the array as well by taking input from the user.

- First Implement void copyArray(int* arr, int *&arr1, int size) that copies arr into arr1.
- Now implement another function int reduceArray(int *arr, int *&arr1, int size) that sort array and remove the duplicates element from this array. Use copyArray function to copy.

For Example:

Input:

Please enter array size: 8

Please enter elements:

91

5

91

40

5

7

5

642

Output:

Array after reduction is:

5

7

40

91

