National University of Computer and Emerging Sciences

Lab Manual # 8

Programming Fundamentals

(Section BCS-H1 and H2)

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Objectives

The objectives of this lab are to cover the following:
- user-defined functions
- parameter passing to functions by reference
- Single- dimensional static arrays

Question No 1:

Write a function named check palindrome that takes an integer parameter number and displays the corresponding output.

Palindrome: A palindrome is a word, number, phrase, or other sequence of characters which reads the same backward as forward, such as madam or racecar or the number 10201

For example:

11211 is palindrome

1222 is not a palindrome.

4444 is a palindrome.

Question No 2:

Write a function named **rectangle** which takes two integers **height and width** as parameters of the function. That function is responsible to draw the rectangular pattern shown below in the Sample Cases.

Note:

- If user enters a non-positive number, display "**Rectangle printing is not possible**."
- Use of Nested Loops is Mandatory

Question No 3 (array):

Write a program that takes up to 10 integers from the user in an array. Further your program should identify the distinct elements and store them in an array named as DistinctArray and then display the elements of the DistinctArray. Distinct elements of an array are such that if an element appears more than once, then it should be printed once only.

Sample Input:

20　11　12　20　16　15　12　16　8　12

Sample Output:

Distinct Element in Sorted (Increasing order) are:　8　11　12　15　16　20

Question No 4:

Write a program using the C++ programming language to print all the prime numbers between two given numbers by creating a function.

Question No 5:

Write a program that inputs a sequence of non-negative numbers terminated by a negative value and show the sum, average, maximum and minimum of the non-negative numbers

Sample Input	Sample Output
10 20 30 40 50 -10	Sum = 150 Average = 30 Maximum = 50 Minimum = 10
13 2 15 5 30 -10	Sum = 65 Average = 13 Maximum = 30 Minimum = 2