Programming Fundamentals LAB – BSDSF24

(Both Morning and Afternoon)

Lab 06 – 25-10-2024

use notepad++ and developer command prompt for the following tasks

Task 01 (20 marks each)

1. Code a function that takes an integer as parameter and returns sum of its digits. It means if integer value received in the parameter is 76214, it returns sum of 7,6,2,1, and 4. Later create/edit, compile and test the program using above mentioned function.

2. Code a function that takes an integer (octal number) as parameter and returns its decimal equivalent. Later create/edit, compile and test the program using above mentioned function. The process of converting an octal number to decimal is to multiply its digits with eight power their position in the octal number and sum all of them. E.g., 7603 is an octal number, $7 \times 8^3 + 6 \times 8^2 + 0 \times 8^1 + 3 \times 8^0$ is its equivalent decimal number. Later create/edit, compile and test the program using above mentioned function.

Task 02 (20 marks each)

1. Create a program that creates array of 20 real numbers, then input 20 +ve and -ve mixed values from into it which are in range -10000 to +10000. At the end, it counts the values whose absolute value is above 7000, and out that number as rejected values count.

2. Create a function with declaration **int search(array<int, 50> ar, int n, int v)**, where **n** is the size of data in the array **ar** and **v** is the integer that may or may not present in the array at its **0 .. n-1** indices. The function should return the index of the first occurrence of **v** in the data stored in array (at its **0 .. n-1** indices). Think and implement by yourself that what it should return when **v** is not present in the data stored in the array. You must discuss it with me in the coming class. Later create/edit, compile and test the program using above mentioned function.

3. Write a program that creates 3 arrays to store percent marks for PF, FE, and QT courses for 5 students. Later using loop, output these arrays in columns (may not be perfectly aligned) with 4^{th} column as their average percentage of above mentioned three subjects. The program also outputs the heading as PF, FE, QT and AVG and at the end subject wise average.

-- End of Lab --