

Lab # 6

Course: Programming Fundamental Lab

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Section: BCS

Q1. Write a C++ program in which you will take range as input from user and print the sequence from +ve to -ve (**MUST USE WHILE LOOP**)

i.e if user enters 5 the output should be

5 4 3 2 1 0 -1 -2 -3 -4 -5

i.e if user enters 7 the output should be

7 6 5 4 3 2 1 0 -1 -2 -3 -4 -5 -6 -7

Q2. Write a C++ program in which user will keep on inputting a CHAR data. The program should count the occurrences of both vowel (A,E,I,O,U) and consonants (All others letter except vowels) . The program should terminate if user enters any other characters other than A-Z or a-z. Program should run for any English letter either in upper or lowercase (**USE WHILE LOOP ONLY**).

Q3.(FOR LOOP ONLY) You need to develop a small guessing game in C++. You have 5 attempts to guess correct number generated randomly by computer generated between range 1 to 20. Your program should also give user hint by telling him if the number is greater than 10 or not and if the the number is even or odd. For each successful guess, increment the score by 1. At the end display the score to user. Display the final message in following format

Score ==5 =>output: Perfect Score

Score ==4 =>output: Nice Effort

Score ==3 =>output: Good Score

Score ==2 =>output: Need Improvement

Score ==1 =>output: Bad Play

Score ==0 =>output: You loss

Q4. (DO WHILE LOOP ONLY). Write a program to calculate the sum of following series where n is input by user.

$$1 + 1/4 + 1/9 + 1/16 + 1/25 + \dots 1/n^2$$

User will only input a positive n integer. **(You cannot use any built-in function to compute power)**

Q5 : Write a C++ program to separate the digits of an integer in sequential order

i.e if user enters 89765 then output should be 8 9 7 6 5

Q6 : write a program to calculate coin change of an inputted amount in terms of 5 rupee coin , 2 rupee coins and 1 rupee coins. Assume the you have unlimited supply of coins but you have to give priority to highest coin first to calculate change

For example

If user enters 29 then output should be

5 rupee coins : 5

2 rupee coins : 2

1 rupee coins: 1

If user enters 31 then output should be

5 rupee coins : 6

2 rupee coins : 0

1 rupee coins: 1

Q7 Write a c++ program that takes a decimal and base and convert decimal into that base number system for example

If user enters decimal : 10

Base: 2

Output : 0101

If user enters 100

Base : 8

Then output should be 441

