Programming Fundamentals (CS-1002)

Assignment 01

Deadline: March 15, 2023 (11:50 PM) (Submit on Google ClassRoom)

Points: 110 | Wtg: 03

Instructions:

1. Assignment submit only on slate not via Email acceptable.
2. **ZIP all your codes in a folder with your Student ID like (21K-XXXX) where XXXX is your 4-digit student ID.**
3. Solve each problem in separate file, Name the code file with problem no (01.c, 02.c,…..)
4. Make sure your folder contains only .c file**. DON'T put the .EXE file in the .ZIP FOLDER**

Question_no_1:

Write a C program to find out the maximum difference between any two elements such that larger element appears after the smaller number (using 1D array).

Question_no_2:

Write a function that takes 2 arguments an array(linear) and a variable to determine how to sort array ascending or descending. After sorting print that array in main() function.

Question_no_3:

Write a C program to update every array element by multiplication of next and previous values of a given array of integers (using 1D array).

Question_no_4:

Take a 4-digit integer as an input also confirm that the number is not less than and greater than of a 4 -digit number. After confirming that CALCULATE the SUM of that number and PRINT it on screen.

Suppose: X=1354 and the sum of its sum=13

NOTE: YOU ARE NOT ALLOWED TO USE ARRAY.

Question_no_5:

3. Suppose you have a 4-digit pocket money like 5813 PKR in total. You have different currency notes. i-e; 500, 100, 50, 10 and one rupee. You need to calculate that how many and different currency notes will accumulate it.

NOTE: You program should work for any 4-digit number (Pocket money

Question_no_6:

Write a program in C that swaps two numbers without using third variable.

Question_no_7:

Write a program in C that swaps the digits in a number. Suppose you have a 5-digit integer i-e: 54832.
You need to swap these digits in a number. The new number would be like that 23845.
[Hint: You can use mode and divide operator to swap].

Question_no_8:

Write a program that checks a number is prime or not. If a number is prime then print that number in reverse order upto to -3.
Expected input: 3

Expected Output: 7 is a prime number
7,6,5,4,3,2,1,0,-1,-2,-3

Question_no_9:
Asks the user to enter a character.
If a user enters an alphabet, then saves in a character variable (a-z) or (A-Z).
If user enters a number, then saves it to an integer type variable.
If user doesn't enter other than that, then ask again until he/she doesn't enter a character or number

Question_no_10:
Write a program that takes an integer of 8-decimal places. Also make sure that the number must be in combination of 1 and 0. Now you need to convert that binary number into a decimal number
Expected Input: 10110101

(1*2^7) + (1*2^6) + (1*2^5) + (1*2^4) + (1*2^3) + (1*2^2) + (1*2^1) + (1*2^0)
Expected Output: 181

Question_no_11:
Write a program to generate a series for N=3 to 10 elements. Where F(0)=2 and F(1)=3.
Series: 2, 3, _ , _ , _ , _ , _ , _ , _ , _