ESS101 : Programming 1 (C Programming)
LAB - 10

Due: 10-Nov-2019, 5 pm

Problem 1 (Usage of command line arguments): Write a (C) program that takes variable number of integer arguments to be passed from command line. Print the number of arguments passed to your program and their sum. NOTE: IF YOU DO NOT USE argc, argv YOU WILL NOT GET MARKS.
Example 1: Input: 1 2 3 4, Output: 4 10
Example 2: Input: 10 20, Output: 2 30

Problem 2 (Usage of variable arguments): The (C) `printf, scanf` functions take a variable number of arguments. Implement a minimal functionality `minprint` function that will take variable number of arguments just like `printf` and support printing of integer and char by calling the `putchar` function. Write a (C) program to call your function. NOTE: DO NOT CALL printf IN YOUR PROGRAM, IF YOU DO YOU WILL NOT GET MARKS.
Example 1: Input: 10, Output: 10
Example 2: Input: a, Output: a

Problem 3 (Usage of `system()`): `date` is an UNIX command to print the system date and time. Write a (C) program to store output of the `date` command into a file say `file1`. Make another call to `date` after 5 seconds and store its output in another file say `file2`. Next read the contents of these two files and output the same. NOTE: You need to figure out how to "spend" 5 seconds between the two calls.
Example output:

Sat Nov 2 08:15:50 CET 2019
Sat Nov 2 08:15:55 CET 2019

Problem 4 (Usage of FILE pointers:) Using the two files created in Problem 3, write a (C) program that will read the contents of the two files and creates a new file containing the contents of the of first file followed by the second file. NOTE: This is similar to `cat` command in UNIX.

Problem 5: Write a (C) program to read two polynomials, first the degree (max 10) followed by their respective coefficients (of type double) and perform polynomial add and multiplication. Print out the result with the coefficient followed by the list of coefficients.
Example :
2 2 1 0
2 1 1 1
Addition: 2 3 2 1
Multiplication: 4 2 3 3 1 0