Assignment III

Submit all the programs separately against each assignment in the Moodle System. Provide the result in a separate output file (named, result_<assgn><no>.txt). Use standard output redirection feature to generate the output file.

Hints. If you run the program with the following command

./a.out >result.txt

Output of your program (generated by printf(.) function) will be written in the file result.txt. You need to provide input from your keyboard, by remembering the sequence of inputs to be given or writing them in a text file in the same sequence.

Otherwise you may use the redirection for the standard input file, such as,

./a.out <input.txt

For the above all your printing by printf(.) function would be displayed on your monitor.

For both reading from a file and writing to a file use the following.

./a.out <input.txt >result.txt

If you execute the program multiple times, you may concatenate the outputs in a single file by using the following redirection command:

./a.out >>result.txt

or

./a.out <input.txt >> result.txt

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1. Read the value of an integer number *N*, and compute the sum *S*.

$$S = 1 + 1/2 + 2/3 + 3/4 + 4/5 + 5/6 + \ldots \text{ to } N \text{ terms}$$

Note that the sum *S* must be a floating-point number (float or double). Provide outputs for N=5, 10, 15 and 20.

2. Write a program, which reads an integer *N* and prints *N* rows in the form of triangle with '*' in the following manner (shown for *N=10*) , such that *i* th row (*i=1,2, ..N*) prints i '*' consecutively.

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Provide outputs for N=6, and 15.

3. Write a program that reads an integer N, and prints the sum of prime numbers, which are less than N. Compute the values for N=2, 4, 8, 16, 32, 64 and 128, and provide the result in a separate output file (named result.txt). Use standard output redirection feature to generate the output file.