ASSIGNMENT 02 – PRF192

Duration: 90'

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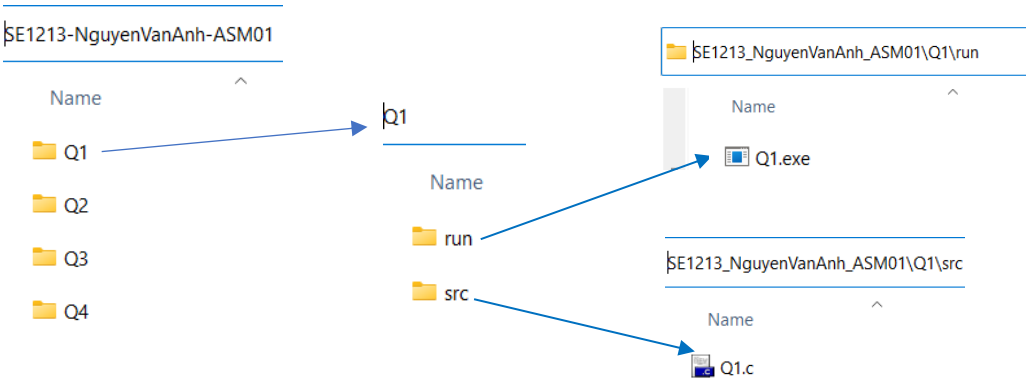
Software Requirements

- Dev C++ 5.11, Notepad, Command Prompt, WinRAR / WinZip with Windows Explorer (File Explorer) on Windows 7 and above.

Instructions

- Step 1: Students download the given materials from LMS.
- Step 2: Students read questions and prepare answers in the given template.
- Step 3: Prepare to submit the answer:
  - For each question (e.g., question **Q1, Q2, Q3,…**), please create two sub-folders: **run** and **src**.
  - Copy the *.**exe** file into the **run** folder, and the *.**c** file into the **src** folder.
- Step 4: Submit a solution for each question:
  - Create a folder formatted: RollNumber_FullName_ASMxx (xx: 01, 02,..) that contains folders (created Step 03) as the below figure:



  - Use WinRAR / WinZip tool to compress the **RollNumber_FullName_ASMxx** folder and submit it to LMS

❖ **Importance:**

- *Do not change the names of the folders, files, and struct (format) of **.c** files specified in the assignment. If you change it, the grading software can not find the execute file (.exe) or the output results to score, thus the mark will be 0*
- *Do not edit given statements in the **main** function. If you change, the grading software can not score and the mark will be 0*

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Question 1: (2 marks)

The given file Q1.c already contains statements to input data for an integer variable named n. You should write statements to print out the average of all the numbers from 1 to n.

Notes:

*- Do not edit given statements in the **main** function*

- You can create new functions if you see it is necessary.

- The output result is formatted in two decimal places

Sample input and output:

Input: n = 6172

After processing: result = 3086.50

Output for marking:

OUTPUT:

3086.50

Question 2: (3 marks)

The given file Q2.c already contains statements to input the integer variable named **n**. You should write statements to calculate expression value:

$$S(n) = 1^2 + 2^2 + 3^2 + \ldots + n^2$$

Notes:

- *Do not edit given statements in the **main** function*

- You can create new functions if you see it is necessary.

Sample input and output:

Input: n = 5

After processing: result = 55

Output for marking:

OUTPUT:

55

Question 3: (2 marks)

The given file Q3.c already contains statements to input the integer variable named **n**. You should write statements to check whether an integer is prime or not. If n is prime then print out the square of n (n*n), otherwise print out n * 2.

Notes:

- *Do not edit given statements in the **main** function*

- You can create new functions if you see it is necessary.

Sample input and output:

-Input: n = 5

After processing: 5^2 = 25

Output for marking:

OUTPUT:

25

-Input: n = 8

After processing: 8 * 2 = 16

Output for marking:

OUTPUT:

16

Question 4: (3 marks)

The given file Q4.c already contains statements to input the integer variables named **n** and **m**. You should write statements to print out their greatest common divisor(gcd) and least common multiple (lcm).

Notes:

- You can create new functions if you see it is necessary.

Sample input and output:

-Input: n = 4, m =6

After processing: gcd = 2, lcm=12

Output for marking:

OUTPUT:

2 ; 12