

ASSIGNMENT 02 – PFP191

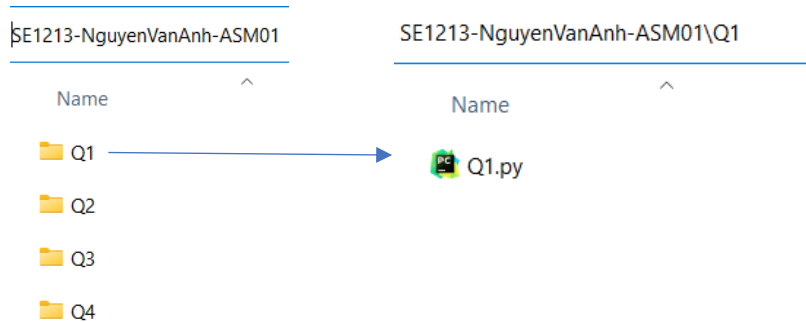
Duration: 90'

Software Requirements

- PyCharm, Notepad, Command Prompt, WinRAR / WinZip (or compress to ZIP file of Windows), 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 copy the *.py files into this folders.
- 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 .py files specified in the assignment. If you change it, the grading software can not find the execute file (.py) 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

Question 1: (2 marks)

The given file Q1.py 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.py already contains statements to input the integer variable named **n**. You should write statements to calculate expression value:

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

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.py 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.py 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:

- *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 = 4, m =6

After processing: gcd = 2, lcm=12

Output for marking:

OUTPUT:

2 ; 12