# ASSIGNMENT 01 – PRF192

**Duration: 90'**

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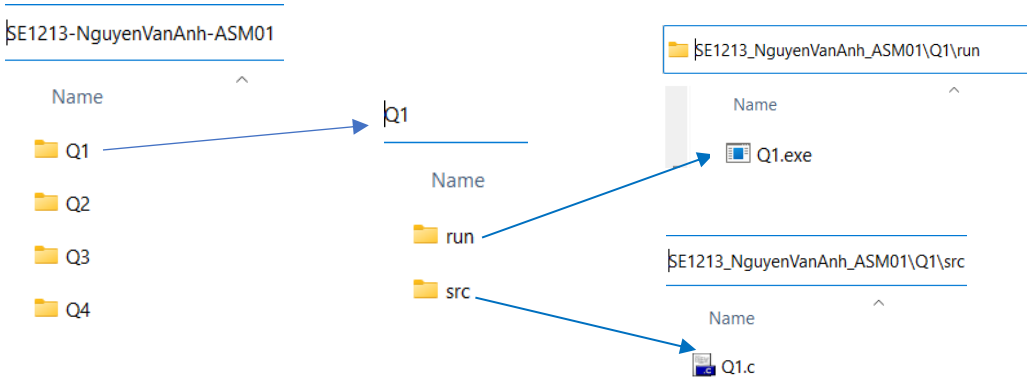
**Software Requirements**

- 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 integer variables named **number01, number02,** and a char variable named **op** (**op** is one of four operators +, -, *, / ). You should write statements to print out the result of one of four the operators. If the **number02** is 0 and **op** is the '/' operator or **op** is an invalid operator then print out 0.00

**Notes**:

- Do not edit given statements in the **main** function
- You can create more functions if you see it is necessary.
- The output result is formatted in two decimal places

**Sample input and output**:

| | |
|---|---|
| **#Case 01**<br>Input: number01 : 8, number02 : 3, op : /<br>After processing: result = 8 / 3 = 2.67<br>*Output for marking:*<br>**OUTPUT:**<br>2.67 | **#Case 02**<br>Input: number01 = 8, number02 = 0, op : /<br>After processing: result = 0.00<br>*Output for marking:*<br>**OUTPUT:**<br>0.00 |
| **#Case 03**<br>Input: number01 : 8, number02 : 4, op : &<br>After processing: result = 0.00<br>*Output for marking:*<br>**OUTPUT:**<br>0.00 | **#Case 04**<br>Input: number01 : 8, number02 : 4, op : *<br>After processing: result = 8 * 4 = 32<br>*Output for marking:*<br>**OUTPUT:**<br>32 |
| **#Case 05**<br>Input: number01 : 8, number02 : 4, op : +<br>After processing: result = 8+4 = 12<br>*Output for marking:*<br>**OUTPUT:**<br>**12** | **#Case 06**<br>Input: number01 : 8, number02 : 4, op : -<br>After processing: result = 8 - 4 = 4<br>*Output for marking:*<br>**OUTPUT:**<br>**4** |

**Question 2: (3 marks)**

The given file Q2.c already contains statements to input mark of the three subjects: math, physics and chemistry. You should write statements to calculate the average of the subjects (avg) and rating by the following formula:

1. If avg >= 8 and avg <= 10 then print out "1"
2. If avg >= 6.5 and avg < 8 then print out "2"
3. If avg >= 5 and avg < 6.5 then print out "3"
4. If avg >= 0 and avg < 5 then print out "4"

**Notes**:

- Do not edit given statements in the **main** function
- You can create new more functions if you see it is necessary.

**Sample input and output**:

Input: math = 8, physics = 6.5 , chemistry = 5.5

After processing: result = 2

*Output for marking:*

**OUTPUT:**

2

**Question 3: (2 marks)**

The given file Q3.c already contains statements to print out value of an integer variable named **sumEvens** . You should write statements to calculate the sum of evens inputted from the keyboard until the value 0 is inputted , the result will be stored in the **sumEvens** variable.

**Notes**:

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

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

**Sample input and output**:

-Input:

2

3

4

5

0

After processing: 2+4= 6

*Output for marking:*

**OUTPUT:**

6

**Question 4: (3 marks)**

The given file Q4.c already contains statements to input characters from the keyboard until the character '#' is inputted . You should write statements to count the number of characters are vowels then the result will be stored in an integer variable named **numberOfVowels**.

**Notes**:

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

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

- You can use toupper(ch) function to convert a character to uppercase ( in ctype.h)

- You can use isalpha(ch) function to check whether a character is an alphabet or not. ( in ctype.h)

**Sample input and output**:

Input:

A

d

a

E

#

After processing: number of vowels = 3

*Output for marking:*

**OUTPUT:**

3