

## Assignment 04 – Interface

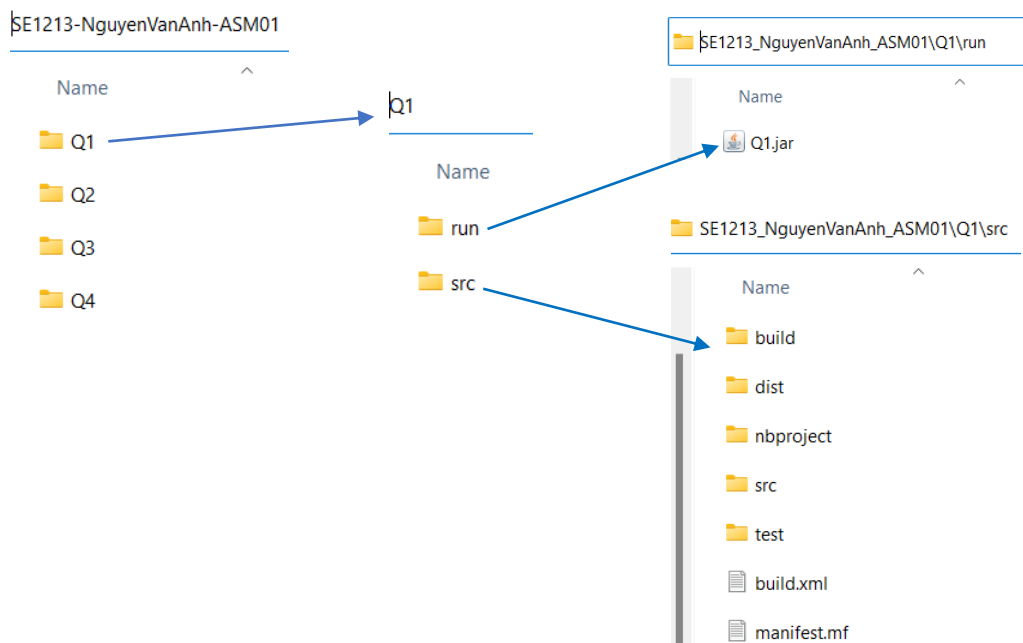
Duration: 70'

### Software Requirements

- Netbean 8.2 or later, JDK 8 or later, 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 \*.jar file into the **run** folder, and the entire project source code file into the **src** folder.
- Step 4: Submit a solution for each question:
  - Create a folder named : RollNumber\_FullName\_ASM0x (x : **1,2,...,6**) that contains folders (created Step 03 ) as the below figure:



- Use WinRAR / WinZip tool to compress the **RollNumber\_FullName\_ASM0x** folder and submit it to LMS

#### ❖ Importance:

- Do not change the *names of the folders specified (or required)* in the exam and *the name of submit folder* in Step 04 must be correct. If you change it (incorrectly), the grading software can not find the execute file (.jar) to score, thus the exam result will be 0.

### Question 04: (10 marks)

Write an interface named **IUtilities** with the following information:

<b>IUtilities</b>
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Where: \_\_\_\_\_

```

+ checkIntegerNumber(value:String, min: int,
max: int):int
+ removeDuplicatedWords(value: String): String
+ checkFormatString(value:String):int
+ sumNumbers(value:String):double

```

- checkIntegerNumber(value:String,min: int, max: int):int – convert value to an integer have 2 to 10 digits between min and max. If value is valid then return an integer, otherwise return the length of the value.
- removeDuplicatedWords (value: String): String:– convert value to title case with duplicated words are removed and each word seperated by a space.
- checkFormatString(value:String): String:– check the value formatted : A.B.C with A is 03 uppercase letters, B is 06 digits, C in [@#\$]. If value is valid then return an integer of B, otherwise return length of the value.
- sumNumbers(value:String):double – extract all digits to integer then sum of them.

Write a class named **MyUtilities**, which implements the interface **IUtilities**. The class **MyUtilities** implements all methods in IProcess as below:

```

+checkIntegerNumber(value:String, min: int, max: int):int
+convertString (value: String): String
+checkFormatString(value:String):int
+sumNumbers(value:String):double

```

Hints: You can use the isDigit() method of Character class to check whether a character is a digit or not and charAt() method to get a character in the string.

The program output might look something like this:

***Do not format the result.***

The program output might look something like this:

```

#Case 1:
1.Test checkIntegerNumber method
2.Test removeDuplicatedWords method
3.Test checkFormatString method
4.Test sumNumbers method
Enter Test Case No.(1 | 2):1
Enter min value:10
Enter max value:100
Enter a string:5
OUTPUT:
1
-----
#Case 2:
1.Test checkIntegerNumber method
2.Test removeDuplicatedWords method
3.Test checkFormatString method
4.Test sumNumbers method
Enter Test Case No.(1 | 2):2
Enter a string:hello    world    hello    hello , how    are you
OUTPUT:
Hello World , How Are You
-----
#Case 3:

```

```
1.Test checkIntegerNumber method
2.Test removeDuplicatedWords method
3.Test checkFormatString method
4.Test sumNumbers method
Enter Test Case No.(1 | 2):3
Enter a string:abc123456@
OUTPUT:
10
```

-----

#Case 4:

```
1.Test checkIntegerNumber method
2.Test removeDuplicatedWords method
3.Test checkFormatString method
4.Test sumNumbers method
Enter Test Case No.(1 | 2):3
Enter a string:ABC.123456.#
OUTPUT:
123456
```

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#Case 5:

```
1.Test checkIntegerNumber method
2.Test removeDuplicatedWords method
3.Test checkFormatString method
4.Test sumNumbers method
Enter Test Case No.(1 | 2):4
abc12 def8.5 kdje
OUTPUT:
20.50
```

-----

#Case 6:

```
1.Test checkIntegerNumber method
2.Test removeDuplicatedWords method
3.Test checkFormatString method
4.Test sumNumbers method
Enter Test Case No.(1 | 2):4
hello world
OUTPUT:
0.00
```