Seneca College of Applied Arts & Technology **May 24, 2021**

SCHOOL OF INFORMATION & COMMUNICATION TECHNOLOGY

JAC444 **Due date: June 1, 2021**

Workshop 1

Description:

The first assignment lets you practice basic concepts such as encapsulation and abstraction.

A *palindrome* is a word, phrase, number, or other sequence of characters which reads the same backward or forward. *Stack* is a simple data structure/container which acts as LIFO (last element in, would be the first element out.)

In this assignment, first, develop a **`Stack`** class. Second, develop a second Java class named **`Palindrome`** that in its **`main`** method, receives a string as a command-line argument, and then uses a **`Stack`** object to check whether the given string is a palindrome or not.

Please note the following regarding doing this workshop:

1 - You should implement **your version of `Stack` class** (Use this link if you need) first. **You should not use `Stack` class in Java API**. Objects based off our `Stack` class just know how to **push and pop characters, one at a time**. Your `Stack` class should be a reusable entity and doesn't need to know any of the logic that you are going to put in the second class.

2- Based on the specs for this workshop, your solution should be dealing with a sequence of characters and thus, **backed by a `char` array (as its storage.)** Please note that since we have not yet talked about `ArrayLists`, **you should use an array**. In case you like to new/initialize your array based on the size of the command-line argument's size, you could do it so through a constructor in your `Stack` class.

Marking Criteria and Task:

Please note that you should:

a- have appropriate indentation.
b- have proper file structures and modularization.
c- follow Java naming conventions.
d- document all the classes properly.
e- not have debug/useless code and/or file(s) left in assignment.
f- have good intra and/or inter class designs.

in your code!

- Task: Developing and running the desired solution: **(you should submit your source code - just individual .java files and screenshots which demonstrate the way your code runs in different scenarios): 5 marks.**

Deliverables and Important Notes:

- You are supposed to **submit your solution online on BB by the end of the day on Tuesday, 1st of June, 2021.)**

- Please note that you would be allowed to **submit just once**, so please **be super careful and double check before you hit submit.**

- **There would be a 20% penalty for each day (or part of it,) in case you submit late!**

- Remember that you are encouraged to talk to each other, to the instructor, or to anyone else about any of the assignments, **but the final solution may not be copied from any sources**.