Seneca College
Applied Arts & Technology
SCHOOL OF COMPUTER STUDIES

JAC444 **Submission date:** **Jan 31, 2021**

Workshop 1

Description:
The first Assignment lets you practice basic java coding techniques, creating classes, methods and using arrays.

Task 1:
Write a program that partitions the array of the elements using the first element, called a ***pivot***.

After the partition, the elements in the array are rearranged so that all the elements before the pivot are less than or equal to the pivot and the elements after the pivot are greater than the pivot.
You should design a separate method that returns the index where the pivot is located in the new list. For example, suppose the list is {5, 2, 9, 3, 6, 8}. After the partition, the list becomes {3, 2, 5, 9, 6, 8}.
Implement the method in a way that takes at most your array.length comparisons.
Write a test program in a separate class that prompts the user to enter a list and displays the list after the partition.
Note that the first number in the input indicates the number of the elements in the list.
This number is not part of the list.
Here is a sample run:

```
Enter list: 8 10 1 5 16 51 9 11 1
After the partition, the list is: 9 1 5 1 10 61 11 16
```

Students can change the output look as required to make it better in more understandable way.

Task 2:

This task is required to create Craps, which is a popular dice game played in casinos. You are supposed to write a program to play a variation of the game, as follows:

- Roll two dice. (Each roll should produce two random numbers between 1 to 6)
- Each die has six faces representing values 1, 2, …, and 6, respectively.
- Check the sum of the two dice. If the sum is 2, 3, or 12 (your program should display *craps*), you lose the game.
- If the sum of the two dice is 7 or 11 (your program should display *naturals*), you win the game.
- If the sum of two dice is any value (i.e., 4, 5, 6, 8, 9, or 10), your program should establish a point in the game (meaning store that sum). Continue to roll the dice until the sum is either a 7 or the same point value which was established. If rolled sum is 7, you lose the game. Otherwise, if the rolled sum is equal to established point you win.

Your program acts as a single player.

```
You rolled 5 + 6 = 11
Congratulations, You win
```

```
You rolled 1 + 2 = 3
Craps, Better Luck Next Time, You lose
```

```
You rolled 4 + 4 = 8
Point is (established) set to 8
You rolled 5 + 1 = 6
You rolled 1 + 1 = 2
You rolled 6 + 2 = 8
Congratulations, You Win
```

```
You rolled 5 + 1 = 6
Point is (established) set to 6
You rolled 2 + 5 = 7
Craps, Better Luck Next Time, You Lose
```

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Workshop Header

/**
Workshop #
Course:*<subject type> - Semester*
Last Name:*<student last name>*
First Name:*<student first name>*
ID:*<student ID>*
Section:*<section name>*
This assignment represents my own work in accordance with Seneca Academic Policy.
Signature
Date:*<submission date>*
**/

Code Submission Criteria:

Please note that you should have:

- Appropriate indentation.
- Proper file structure
- Follow java naming convention
- Document all the classes properly
- Do Not have any debug/ useless code and/ or files in the assignment

Deliverables and Important Notes:

All these deliverables are supposed to be uploaded on the blackboard once done.

- You are supposed to create video/ record voice/ detailed document of your running solution. **(40%)**
  - Screen Video captured file should state your last name and id, like Ali_123456.mp4 (or whatever the extension of the file is)
  - Record voice clip should also include a separate word file with the screen shots of your program's output, state your last name and id, like Ali_123456.mp3 (or whatever the extension of the file is)
  - Detailed document should include screen shots of your output, have your name and id on the top of the file and save the file with your last name and id, like Ali_123456.docx (or whatever the extension of the file is)
- A word/ text file which will reflect on learning of your concepts in this workshop. (Also include the instructions on how to run your code. Which is only required if you have any special instructions for me on how to run your code.) **(30%)**

  - Should state your Full name and Id on the top of the file and save the file with your last name and id, like Ali_123456.txt
- Submission of working code. **(30%)**
  - Make sure your follow the "**Code Submission Criteria"** mentioned above.
  - You should zip your whole working project to a file named after your Last Name followed by the first 3 digits of your student ID. For example, **Ali123.**zip.
- Your marks will be deducted according to what is missing from the above-mentioned submission details.
- Late submissions would result in additional 10% penalties for each day or part of it.
- 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 source.