

## Assignment A6 (25 marks)

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### Focus: ArrayLists

Q1. [10 marks] Write a method with the following header

```
public static ArrayList<Integer> noDuplicates(ArrayList<Integer> list)
```

The method returns a new array list that contains the non-duplicate elements of `list`.

Write a test program that prompts the user to enter 5 integers to a list and displays the distinct integers.

#### Sample run

```
Enter five integers: 5 1 3 5 5
Your list without duplicates: [5, 1, 3]
```

Q2. [15 marks] Write a method that has the following header:

```
public static void printShuffled(String filename)
```

The method reads a text file, `filename`, sentence by sentence into an array list, shuffles the sentences, and then prints out the shuffled contents. Assume sentences end with one of these characters: ".", ":", "!" and "?". Your method should create an array list for storing the sentences. The array list should be created with approximately the correct number of sentences, instead of being gradually expanded as the file is read in.

Write a test program that reads the attached `story.txt` file and prints its contents using your method.

Hints:

- To read sentences instead of lines or words, use the method `useDelimiter("[. : ! ?]")` of the `Scanner` class.
- To determine the approximate number of sentences, divide the *file length*, representing the size of the file, by an assumed average size of a sentence (let's say 50 characters).

#### Sample output

```
Now, the sons understood the meaning of the treasure. On his deathbed, the farmer
told his sons that there was a great treasure buried in the vineyard. He wanted his
sons to be just like him. They could not find a buried treasure. At harvest time, the
vineyard produced the best grapes ever. After the farmer died, the sons went to the
vineyard and dug up the soil. A farmer worked in a vineyard and became rich.
```

## Grading

- 15 % for logic explanation
- 70 % for proper code structure and logic
- 15 % for correct syntax and formatting

## Submission Instructions

For programming questions, explain in few, simple sentences **the algorithm you used to tackle the problem**. Add these sentences as a **block comment at the beginning of your program**. For coding questions, make sure to use appropriate code formatting and structure (e.g., indentation, brackets, etc.).

For this assignment, you need to do the following:

- 1- Create a Java project of which name consists of **your student number followed by the assignment number**, e.g., "1234567\_A6".
- 2- Create one class for each question and write your answer inside that class. Your classes should have the same name as the question number (e.g., Q1)
- 3- After solving all questions, open Windows Explorer (or any other file explorer).
- 4- Navigate to your Java project folder (can be found inside your Eclipse workspace folder).
- 5- Locate the "src" folder for this project (the folder that includes the source code for all questions).
- 6- Zip the "src" folder and rename the zipped file to match your project name (e.g., 1234567\_A2.zip).
- 7- Submit the zipped file **to Canvas**.

Note that you can resubmit an assignment, but the new submission overwrites the old submission and receives a new timestamp.