Homework assignment 03

Complete the following 2 programs for this week's homework.

Programming assignments

Count Those Digits! (50 points)

- Write a program that generates 20 random digits (0-9) and stores them in an array. Use another array to count and store how many times each digit appears in the first array. Finally, print out clearly (see below) how many times each digit was generated.
- *Note* the special cases where 0 or 1 digit was generated below and make sure your program responds gramatically correctly to each of the 3 cases (0, 1, or more than 1 generated)

Example output:

```
There were 2 0's
There were no 1's
There were 4 2's
There was 1 3
There were 3 4's
There were 2 5's
There were 2 6's
There were 3 7's
There were 2 8's
There was 1 9
```

DUPE ELIMINATOR (50 points)

- Write a program that includes 2 methods - the main method, and a method that will take in an array of integers. This method should find any duplicates in the array, and return another integer array without those duplicate values.
- *Note*: Do not modify the existing array or remove values. Return another, shorter array if there are values removed. Do not use an arraylist or anything we haven't covered yet.

example input array:

```
[4,5,5,5,2,3,1]
```

example output:

```
[4, 5, 2, 3, 1]
```

- Tips:
  - think about how you might keep track of the length of array to return
  - using a temporary array to store the unique values could be helpful

Grading

Does the program compile? If it doesn't, you will get 0 points for that problem.

Is the program properly documented? (*worth ~20% of the problem*)
Proper documentation includes:

- preamble with the name of the author, date of creation and brief description of the program.
- comments inside the code describing what the code does, especially for sections that may be unclear.
- appropriate formatting, indentation and use of white space to make the code readable.
- variables names are properly chosen and descriptive.

Remember that the code is read by humans and it should be easy to read for people who were not involved in its development.

Is the program well written? (*worth ~30% of the problem*) Programs should be written as clearly and simply as possible to perform the necessary tasks. Variables should be well named and use the appropriate types. User prompts should have easy-to-follow instructions.

Is the program correct? (*worth ~50% of the problem*), Make sure that your program produces results as specificed above.

How to submit

Homework should be submitted through NYU Classes. It should be submitted by 11:55pm on the day listed on the course website or it will marked as late.

To submit homework, upload a single zip file of the 2 java class files to the NYU Classes site.