Documentation and Structure

Programming Projects:

1) Improving Code

- Start Eclipse and create a new Java project called ‘lab3’
- Download the associated **Stats.java** and **Driver.java** files (also shown below)
- Add those two files to the project you have created, and ensure you can execute the driver class. (output should be shown in the console).
- Examine the program code, and improve it by doing the following -

    1. Correct the indentation of both the Stats.java and Driver.java class.
    2. Add **Javadoc** comments to the classes, attributes and methods (remember to include @param and @return information).
    3. Add single line comments within the methods that have anything other than a trivial line of code.
    4. Ensure the ‘public’ and ‘private’ modifiers are included where appropriate.
    5. Change the names of any methods within the Stats.java class which would make the purpose of the operation clearer
    6. Change the names of any variables that would make the code easier to understand.

```
//  Stats.java file
import java.util.Arrays;

public class Stats {

int[] numbers;
	int count;


	public void addValue(int value) {
numbers[count] = value;
count++;}

	public int getCount() {
return numbers.length;
	}

	public int getA() {

		int max = numbers[0];

		for (int i = 1; i < numbers.length; i++) {
if (numbers[i] > max)			max = numbers[i];		}

		return max;
	}

	public int getB() {int min = numbers[0];

	for (int i = 1; i < numbers.length; i++) {

if (numbers[i] < min)
			min = numbers[i];
		}

		return min;
	}


	public int getTotal() {


		int total = 0;


		// total all values within the array
		for (int i = 0; i < numbers.length; i++) {
			total += numbers[i];
		}		return total;
	}


public double get() {


		int x = 0;
				for (int i = 0; i < numbers.length; i++) {
			x += numbers[i];
		}


		double y = x/(double)numbers.length;


return y;
	}

	@Override
	public String toString() {return Arrays.toString(numbers);
	}
```

```
        public Stats(int capacity) {
numbers = new int[capacity];
        }}
//  Driver.java file

import java.util.Random;


public class Driver {
        public static void main(String[] args) {final int VALUES = 10;

                Stats stats = new Stats(VALUES);

Random random = new Random();


                for (int i = 0; i < VALUES; i++) {


stats.addValue(random.nextInt(100));
                }

System.out.println("Numbers stored : ");
                System.out.println(stats);


System.out.println("Average = " + stats.getAverage());
                System.out.println("Count = " + stats.getCount());
        System.out.println("Total = " + stats.getTotal());
                System.out.println("Minimum value = " + stats.getB());
System.out.println("Maximum value = " + stats.getA());
        }}
```