Homework 5 Java Programming

Due 8:00 am October 27

October 17, 2016

This homework is designed improve your proficiency in writing a simple Java program that manipulate arrays. To complete this exercise you will use the correct Java syntax to write a series of methods that perform some specified type of array manipulation. Your program must compile correctly with no errors. Submit this homework on Blackboard by the due time-date as a `.java` file.

1 Array Manipulation

All arrays should be of length 5.

1.1 Calculate Array Range

Create a method that accepts a `double` array and returns the difference between the maximum element and the minimum element.

```
EXAMPLE: A = {1,2,3,4,5} returns 4
```

1.2 Calculate Array Average

Create a method that accepts an `double` array and returns the average of its elements.

```
EXAMPLE: A = {1,2,3,4,5} returns 3
```

1.3 Random Array Output

Create a method that accepts a `double` array and randomly returns one of its elements each time the method is called.

```
EXAMPLE: A = {1,2,3,4,5} returns one of the array values at random
```

Hint: utilize the `Math class`

1.4 Display Even Values

Create a method that accepts a `double` array and prints to the console all elements that are evenly divisible by 2.

```
EXAMPLE: A = {1,2,3,4,5} prints 2 4 to the console
```

1.5 Reverse Array

Create a method that accepts a `String` array and returns another `String` array which is in reverse order of the first one.

```
EXAMPLE: A = {"A","B","C","D","E"} returns B = {"E","D","C","B","A"}
```

1.6 Return Below Average Array

Create a method that accepts a `double` array and returns all elements in the array that are below the average value in the array as an array.

```
EXAMPLE: A = {1,2,3,4,5} returns B = {1,2}
```

1.7 Removes Duplicates

Create a method that accepts a `double` array and returns a new array that has any duplicates in the first array removed.

```
EXAMPLE: A = {"A","B","B","D","D"} returns B = {"A","B","D"}
```