Intro to Java Week 3 Coding Assignment

Points possible: 70

Category	Criteria	% of Grade
Functionality	Does the code work?	25
Organization	Is the code clean and organized? Proper use of white space, syntax, and consistency are utilized. Names and comments are concise and clear.	25
Creativity	Student solved the problems presented in the assignment using creativity and out of the box thinking.	25
Completeness	All requirements of the assignment are complete.	25

Instructions: In Eclipse, or an IDE of your choice, write the code that accomplishes the objectives listed below. Ensure that the code compiles and runs as directed. Take screenshots of the code and of the running program (make sure to get screenshots of all required functionality) and paste them in this document where instructed below. Create a new repository on GitHub for this week's assignments and push this document, with your Java project code, to the repository. Add the URL for this week's repository to this document where instructed and submit this document to your instructor when complete.

Coding Steps:

- Create an array of int called ages that contains the following values: 3, 9, 23, 64, 2, 8, 28, 93.
- Programmatically subtract the value of the first element in the array from the value in the last element of the array (i.e. do not use ages[7] in your code). Print the result to the console.
- Add a new age to your array and repeat the step above to ensure it is dynamic (works for arrays of different lengths).
- Use a loop to iterate through the array and calculate the average age. Print the result to the console.

- Create an array of String called names that contains the following values: "Sam", "Tommy", "Tim", "Sally", "Buck", "Bob".
- Use a loop to iterate through the array and calculate the average number of letters per name. Print the result to the console.
- Use a loop to iterate through the array again and concatenate all the names together, separated by spaces, and print the result to the console.
- How do you access the last element of any array?
- How do you access the first element of any array?
- Create a new array of int called nameLengths. Write a loop to iterate over the previously created names array and add the length of each name to the nameLengths array.
- Write a loop to iterate over the nameLengths array and calculate the sum of all the elements in the array. Print the result to the console.

- Write a method that takes a String, word, and an int, n, as arguments and returns the word concatenated to itself n number of times. (i.e. if I pass in “Hello” and 3, I would expect the method to return “HelloHelloHello”).
- Write a method that takes two Strings, firstName and lastName, and returns a full name (the full name should be the first and the last name as a String separated by a space).
- Write a method that takes an array of int and returns true if the sum of all the ints in the array is greater than 100.
- Write a method that takes an array of double and returns the average of all the elements in the array.
- Write a method that takes two arrays of double and returns true if the average of the elements in the first array is greater than the average of the elements in the second array.
- Write a method called willBuyDrink that takes a boolean isHotOutside, and a double moneyInPocket, and returns true if it is hot outside and if moneyInPocket is greater than 10.50.
- Create a method of your own that solves a problem. In comments, write what the method does and why you created it.

Write a methode which count all of characters at the String array and compare this with the number (58).

Problem: to count every letters of our String[] Array.

```
        String[] textArray = {"one", "two", "three", "four", "five", "six"};
int num = 58;
          System.out.println(count);
}
public static int countCharacters(String[] textArray, int num) {
  int count = 0;
  for (String text: textArray) {
  count += text.length();
 }
  return count;
 }
// But it doesn't work((
```

Screenshots of Code:

```
224
225             System.out.println("Average value " + (3+9+23+64+2+8+28+93)/8);
226
227             int[] ages = {3, 9, 23, 64, 2, 8, 28, 93};
228                     System.out.println(ages[ages.length-1] - ages[0]);
229
230             int[] ages2 = {3, 9, 23, 64, 2, 8, 28, 93, 6};
231                     System.out.println(ages2[ages2.length-1] - ages2[0]);
232
233             double sum= 0;
234                  for(int age: ages) {
235                   sum += age;
236             }
237             double average = sum / ages.length;
238                     System.out.println("Average age " + average);
239
240
241
242
```

Problems Javadoc Declaration Console Debug

```
<terminated> Javaloop [Java Application] C:\Program Files\Java\jdk-17.0.3.1\bin\javaw.exe  (Jul 15, 2022, 7:40:26 PM – 7:40:26 PM) [pid: 8748]
Average value 28
90
3
Average age 28.75
```

```
240
241         String[] names = {"Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"};
242         double sumOfLetters = 0;
243           for(String name: names) {
244               sumOfLetters+=name.length();
245        }
246         System.out.println("Average numbers of litters per name " + sumOfLetters/names.length);
247
248         for(String name: names) {
249             System.out.print(name+ " ");
250
251        }
252
253
```

Problems Javadoc Declaration Console Debug

```
<terminated> Javaloop [Java Application] C:\Program Files\Java\jdk-17.0.3.1\bin\javaw.exe  (Jul 15, 2022, 8:04:48 PM – 8:04:48 PM) [pid: 6920]
Average numbers of litters per name 3.8333333333333335
Sam Tommy Tim Sally Buck Bob
```

```
235
236         String[] names = {"Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"};
237         double sumOfLetters = 0;
238           for(String name: names) {
239               sumOfLetters+=name.length();
240         }
241            System.out.println("The sum of all litters is " + sumOfLetters);
242     //   System.out.println("Average numbers of litters per name " + sumOfLetters/names.length);
243         for(String name: names) {
244     //       System.out.print(name+ " ");
245         }
246
247          int[] array = {3, 9, 28, 64, 32, 8, 25, 7};
248          System.out.println("The last element of any array is " + array[array.length-1]);
249          System.out.println("The first element of any array is " + array[0]);
250
251          int[] nameLengths = {25, 4, 48};
252                  double sum = 0;
253                       for(int nameLength: nameLengths) {
254                    sum += nameLength;
255                       }
256                       double averSum = sum + sumOfLetters;
257                       System.out.println("The sum of nameLength array is " + sum);
258                       System.out.println("The previously created names array and add the length of "
259                            + "each name to the nameLengths array is " + averSum);
260
261
```

Problems Javadoc Declaration Console Debug

<terminated> Javaloop [Java Application] C:\Program Files\Java\jdk-17.0.3.1\bin\javaw.exe (Jul 15, 2022, 9:02:45 PM – 9:02:45 PM) [pid: 4700]

```
The sum of all litters is 23.0
The last element of any array is 7
The first element of any array is 3
The sum of nameLength array is 77.0
The previously created names array and add the length of each name to the nameLengths array is 100.0
```

```
299
300         System.out.println(willBuyDrink(true, 10.51));
301
302
303     }
304
305     public static boolean willBuyDrink(boolean isHotOutside, double moneyInPocket) {
306         if (isHotOutside == true && moneyInPocket > 10.50) {
307             return true;
308         }
309     return isHotOutside == true && moneyInPocket > 10.50;
310     }
311
312
313
314
```

Problems Javadoc Declaration Console Debug

<terminated> Javaloop [Java Application] C:\Program Files\Java\jdk-17.0.3.1\bin\javaw.exe (Jul 16, 2022, 5:36:30 PM – 5:36:31 PM) [pid: 10592]

```
false
true
```

```
235
236         String[] names = {"Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"};
237         double sumOfLetters = 0;
238           for(String name: names) {
239               sumOfLetters+=name.length();
240         }
241            System.out.println("The sum of all litters is " + sumOfLetters);
242     //   System.out.println("Average numbers of litters per name " + sumOfLetters/names.length);
243         for(String name: names) {
244     //        System.out.print(name+ " ");
245         }
246
247          int[] array = {3, 9, 28, 64, 32, 8, 25, 7};
248          System.out.println("The last element of any array is " + array[array.length-1]);
249          System.out.println("The first element of any array is " + array[0]);
250
251          int[] nameLengths = {25, 4, 48};
252                  double sum = 0;
253                       for(int nameLength: nameLengths) {
254                    sum += nameLength;
255                       }
256                       double averSum = sum + sumOfLetters;
257                       System.out.println("The sum of nameLength array is " + sum);
258                       System.out.println("The previously created names array and add the length of "
259                            + "each name to the nameLengths array is " + averSum);
260
261
```

Problems Javadoc Declaration Console Debug

```
<terminated> Javaloop [Java Application] C:\Program Files\Java\jdk-17.0.3.1\bin\javaw.exe (Jul 15, 2022, 9:02:45 PM – 9:02:45 PM) [pid: 4700]
The sum of all litters is 23.0
The last element of any array is 7
The first element of any array is 3
The sum of nameLength array is 77.0
The previously created names array and add the length of each name to the nameLengths array is 100.0
```

```
240
241         String[] names = {"Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"};
242         double sumOfLetters = 0;
243           for(String name: names) {
244               sumOfLetters+=name.length();
245         }
246          System.out.println("Average numbers of litters per name " + sumOfLetters/names.length);
247
248          for(String name: names) {
249              System.out.print(name+ " ");
250
251         }
252
253
```

Problems Javadoc Declaration Console Debug

```
<terminated> Javaloop [Java Application] C:\Program Files\Java\jdk-17.0.3.1\bin\javaw.exe (Jul 15, 2022, 8:04:48 PM – 8:04:48 PM) [pid: 6920]
Average numbers of litters per name 3.8333333333333335
Sam Tommy Tim Sally Buck Bob
```

```
        int[] arrays = {5, 8, 4, 13, 71};
        int sum = arrayTrue(arrays);
        boolean greaterHundred = sum > 100;
        System.out.println(greaterHundred);
    }
      public static int arrayTrue(int[] sumGreater) {
          int sum = 0;
          for (int array: sumGreater) {
              sum += array;
              }
          return sum;
```

Problems Javadoc Declaration Console Debug

```
<terminated> Javaloop [Java Application] C:\Program Files\Java\jdk-17.0.3.1\bin\javaw.exe  (Jul 16, 2022, 4:25:58 PM – 4:25:59 PM) [pid: 15124]
true
```

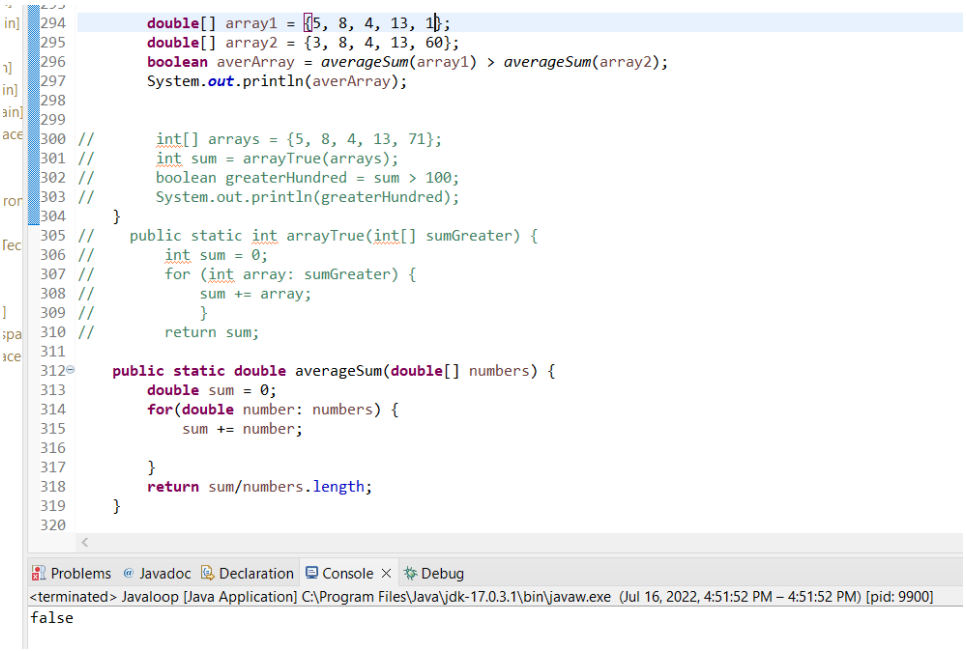
```
        double[] array = {5, 8, 4, 13, 60};
        System.out.println(averageSum(array));
    }

    public static double averageSum(double[] numbers) {
        double sum = 0;
        for(double number: numbers) {
            sum += number;

        }
        return sum/numbers.length;
    }
```

Problems Javadoc Declaration Console Debug

```
<terminated> Javaloop [Java Application] C:\Program Files\Java\jdk-17.0.3.1\bin\javaw.exe  (Jul 16, 2022, 4:38:13 PM – 4:38:13 PM) [pid: 5260]
18.0
```



```
        double[] array1 = {5, 8, 4, 13, 1};
        double[] array2 = {3, 8, 4, 13, 60};
        boolean averArray = averageSum(array1) > averageSum(array2);
        System.out.println(averArray);


//       int[] arrays = {5, 8, 4, 13, 71};
//       int sum = arrayTrue(arrays);
//       boolean greaterHundred = sum > 100;
//       System.out.println(greaterHundred);
    }
//    public static int arrayTrue(int[] sumGreater) {
//        int sum = 0;
//        for (int array: sumGreater) {
//            sum += array;
//            }
//        return sum;

    public static double averageSum(double[] numbers) {
        double sum = 0;
        for(double number: numbers) {
            sum += number;

        }
        return sum/numbers.length;
    }
```

Problems Javadoc Declaration Console Debug

<terminated> Javaloop [Java Application] C:\Program Files\Java\jdk-17.0.3.1\bin\javaw.exe (Jul 16, 2022, 4:51:52 PM – 4:51:52 PM) [pid: 9900]

```
false
```

Screenshots of Running Application:

URL to GitHub Repository:

https://github.com/KsuLip2022/Week-3-Assignment

Public key: git@github.com:KsuLip2022/Week-3-Assignment.git