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

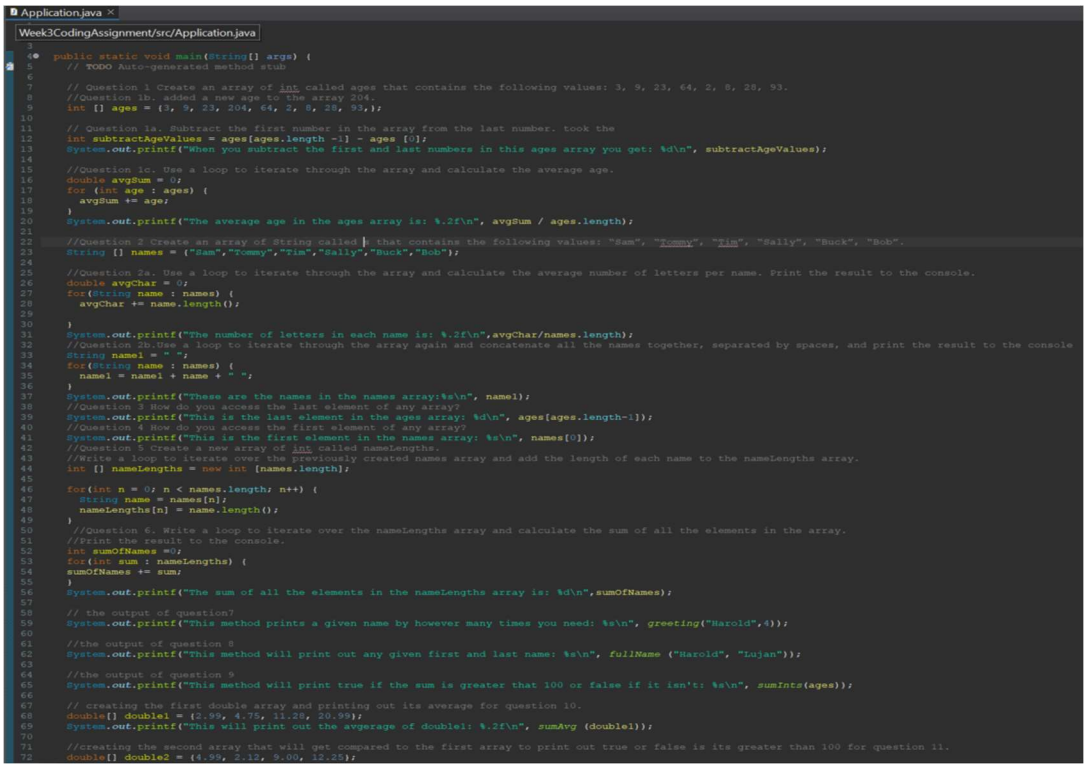
Instructions: In Eclipse, or an IDE of your choice, write the code that accomplishes the objectives listed below. Ensure that the code compiles and runs as directed. Take screenshots of the code and of the running program (make sure to get screenshots of all required functionality) and paste them in 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:

1. Create an array of int called ages that contains the following values: 3, 9, 23, 64, 2, 8, 28, 93.
    a. 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.
    b. Add a new age to your array and repeat the step above to ensure it is dynamic (works for arrays of different lengths).
    c. Use a loop to iterate through the array and calculate the average age. Print the result to the console.
2. Create an array of String called names that contains the following values: "Sam", "Tommy", "Tim", "Sally", "Buck", "Bob".
    a. Use a loop to iterate through the array and calculate the average number of letters per name. Print the result to the console.
    b. 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.

3. How do you access the last element of any array?
4. How do you access the first element of any array?
5. 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.
6. 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.
7. 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”).
8. 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).
9. 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.
10. Write a method that takes an array of double and returns the average of all the elements in the array.
11. 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.
12. 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.
13. Create a method of your own that solves a problem. In comments, write what the method does and why you created it.

Screenshots of Code:



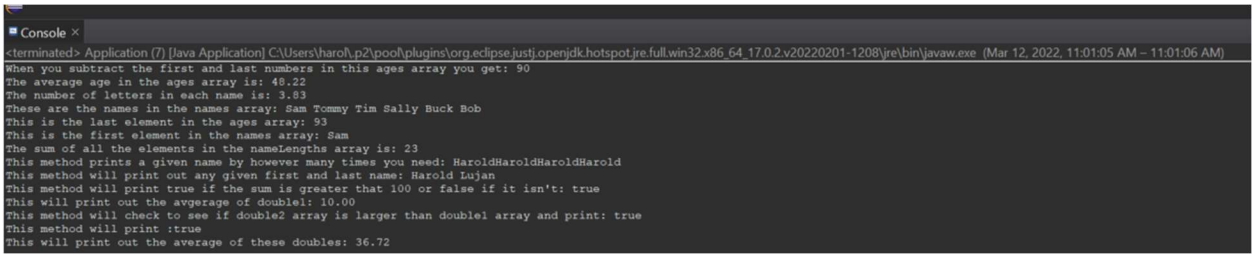
Screenshots of Code Continued:

Application.java

```
73      System.out.printf("This method will check to see if double2 array is larger than double1 array and print: %s\n",sumAvgDouble(double1,double2));
74
75      //this is the output for question 12
76      boolean isHotOutside = true;
77      double moneyInPocket = 10.50;
78      System.out.printf("This method will print :%s\n", willBuyDrink(isHotOutside, moneyInPocket));
79
80      //this is the output for question 13.
81      double x = 29.75;
82      double y = 34.50;
83      double z = 45.90;
84      System.out.printf("This will print out the average of these doubles: %.2f", doubleAvg(x,y,z));
85    } // end of main method
86
87      //Question7.  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.
88      //(i.e. if I pass in "Hello" and 3, I would expect the method to return "HelloHelloHello").
89      public static String greeting(String word, int n) {
90        String wordConcant = "";
91        for(int i = 0; i< n; i++) {
92          wordConcant += word;
93      }
94        return wordConcant;
95
96    }
97      //Question 8 Write a method that takes two Strings, firstName and lastName, and returns a full name.
98      //(the full name should be the first and the last name as a String separated by a space).
99      public static String fullName(String firstName, String lastName){
100       return firstName +" "+ lastName;
101   }// end of fullName method
102
103     //Question 9 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.
104     public static boolean sumInts(int[] num) {
105     int total =0;
106     for(int num1 : num) {
107       total += num1;
108
109      }
110
111      if (total >100) {
112      return true;
113      }
114      else {
115        return false;
116      }
117     }//end of sumInts method
118
119       //Question 10 Write a method that takes an array of double and returns the average of all the elements in the array.
120       public static double sumAvg(double[] double1) {
121       double total =0;
122       for(double num1 : double1) {
123         total += num1;
124
125         }
126       return total/double1.length;
127       }
128       //Question 11 Write a method that takes two arrays of double
129       //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.
130       public static boolean sumAvgDouble(double[] firstDouble, double[] secondDouble) {
131         if(sumAvg(firstDouble) > sumAvg (secondDouble)) {
132           return true;
133         }
134           return false;
135      }//end of sumAvgDouble method
136
137       //Question 12 Write a method called willBuyDrink that takes a boolean isHotOutside, and a double moneyInPocket,
138       //and returns true if it is hot outside and if moneyInPocket is greater than 10.50.
139       public static boolean willBuyDrink(boolean isHotOutside, double moneyInPocket) {
140       if(isHotOutside && moneyInPocket >= 10.50) {
141       return true;
142       }
143       return false;
144       }//end of willBuyDrink method
```

```
145
146       //Question 13 Create a method of your own that solves a problem. In comments, write what the method does and why you created it.
147       // please see added java doc for information on what this method does.
148       /***
149        * takes the sum of 3 doubles and returns the average.
150        * @param x   the first double
151        * @param y   the second double
152        * @param z   the third double
153        * @return    takes the sum of all 3 doubles and divides them by 3.
154        */
155       public static double doubleAvg(double x, double y, double z) {
156         return (x + y +z)/3;
157       }
158     }// end of application
```

Screenshots of Running Application:



URL to GitHub Repository:

https://github.com/HaroldLujan/Week-3-Coding-Assignment.git