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.

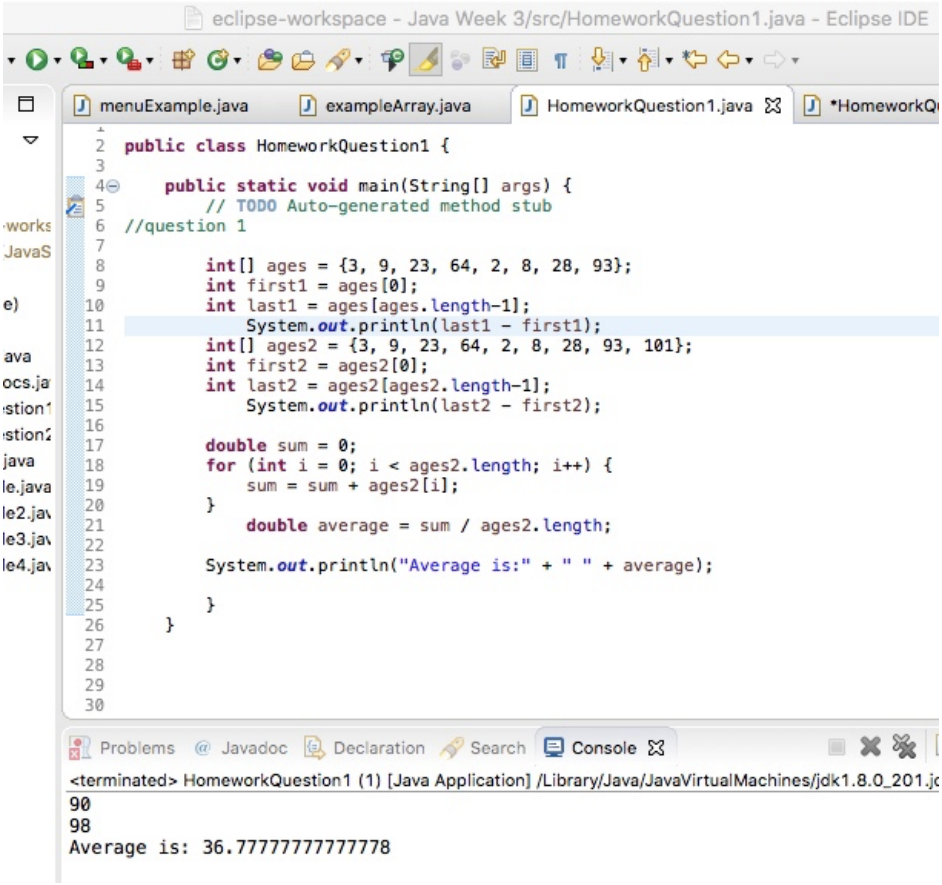
Coding Steps:

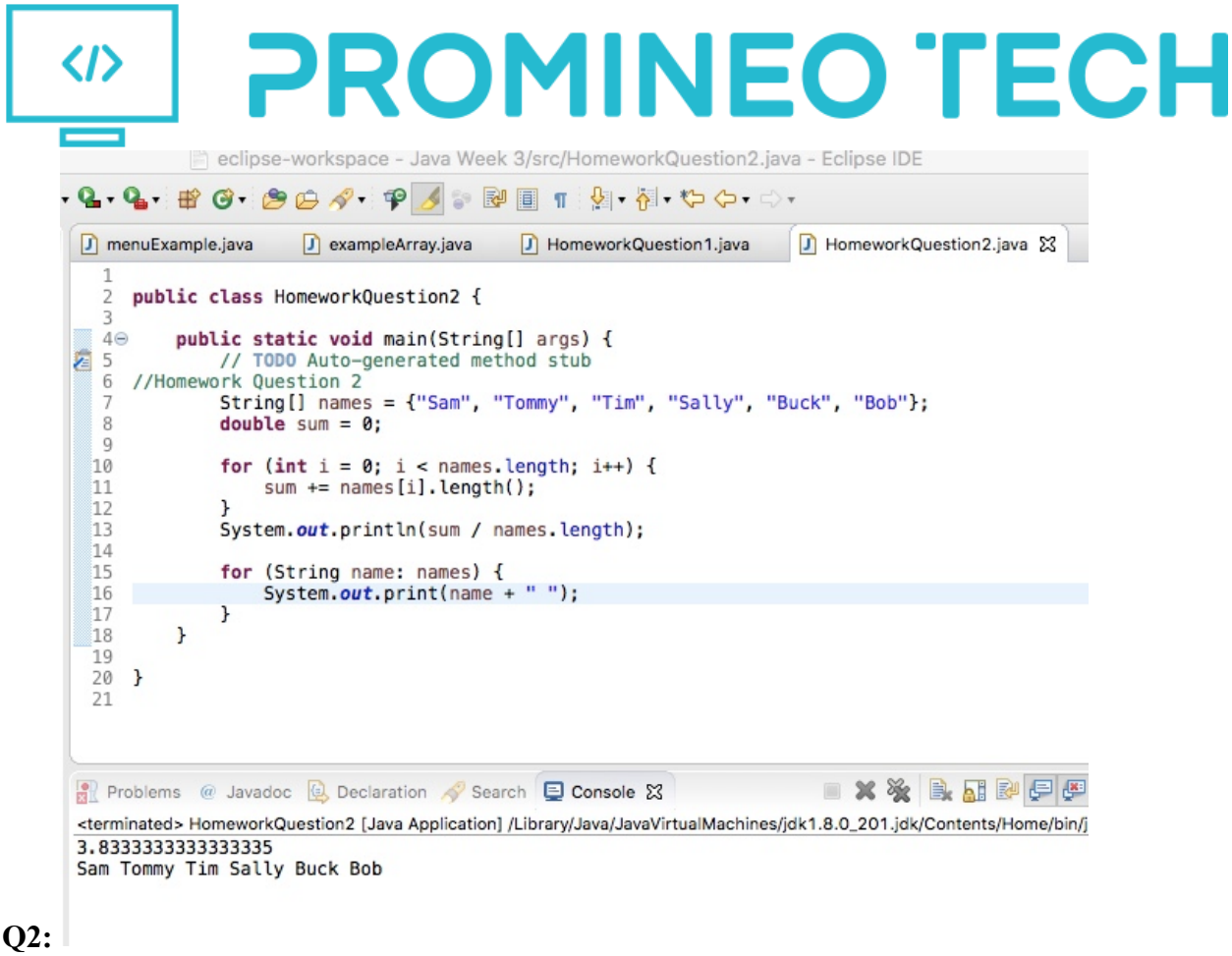
1. Create an array of int called ages that contains the following values: 3, 9, 23, 64, 2, 8, 28, 93.
    a. Programmatically subtract the value of the first element in the array from the value in the last element of the array (do not type ANY numbers in the operation, ages[7] – ages[0] is not allowed). 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 / Running Application:
Q1:

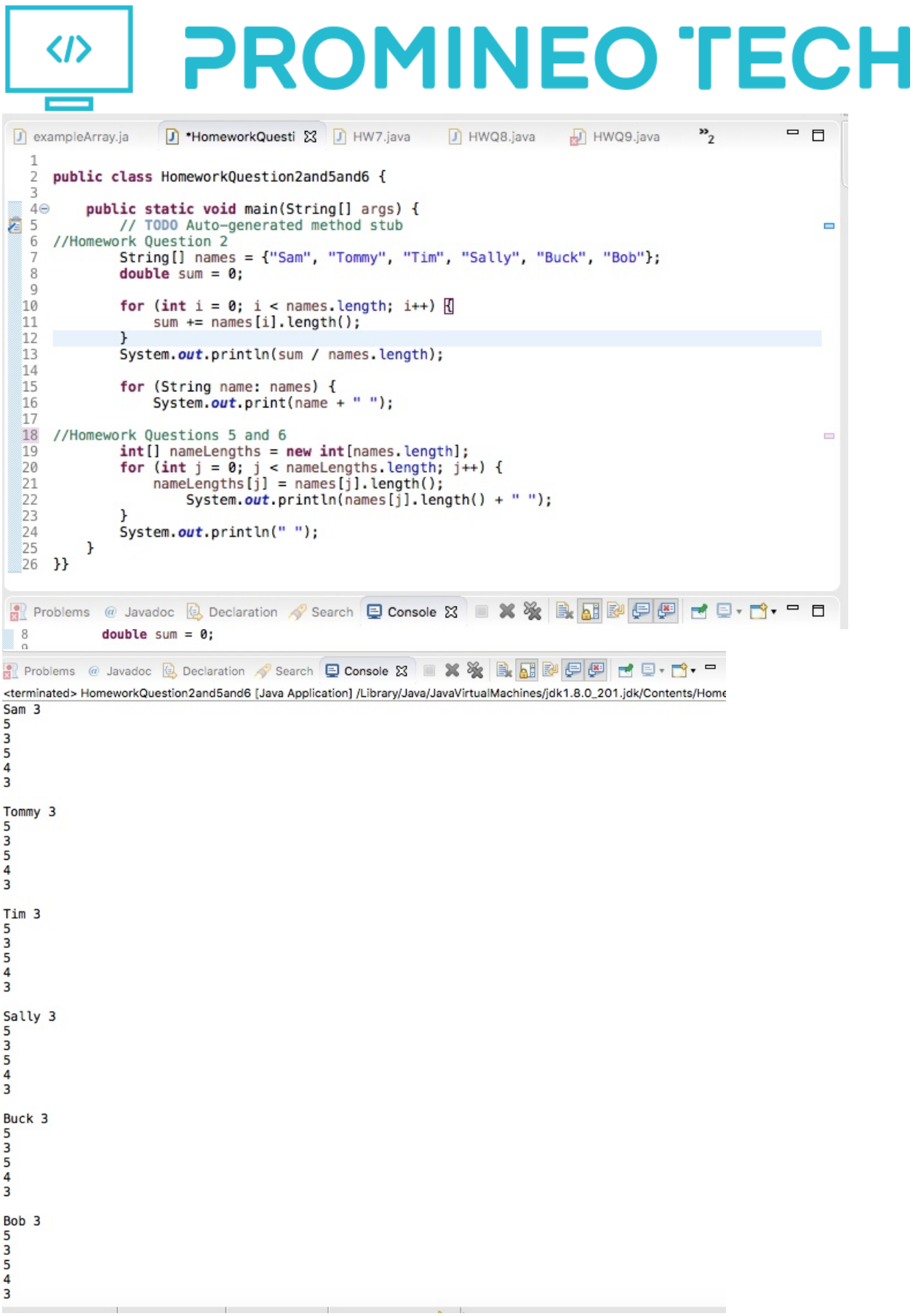
PROMINEO TECH




eclipse-workspace - Java Week 3/src/HomeworkQuestion2.java - Eclipse IDE
menuExample.java
exampleArray.java
HomeworkQuestion1.java
HomeworkQuestion2.java
public class HomeworkQuestion2 {
public static void main(String[] args) {
// TODO Auto-generated method stub
//Homework Question 2
String[] names = {"Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"};
double sum = 0;
for (int i = 0; i < names.length; i++) {
sum += names[i].length();
}
System.out.println(sum / names.length);
for (String name: names) {
System.out.print(name + " ");
}
}
}
Problems
Javadoc
Declaration
Search
Console
<terminated> HomeworkQuestion2 [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_201.jdk/Contents/Home/bin/j
3.8333333333333335
Sam Tommy Tim Sally Buck Bob

Q2:

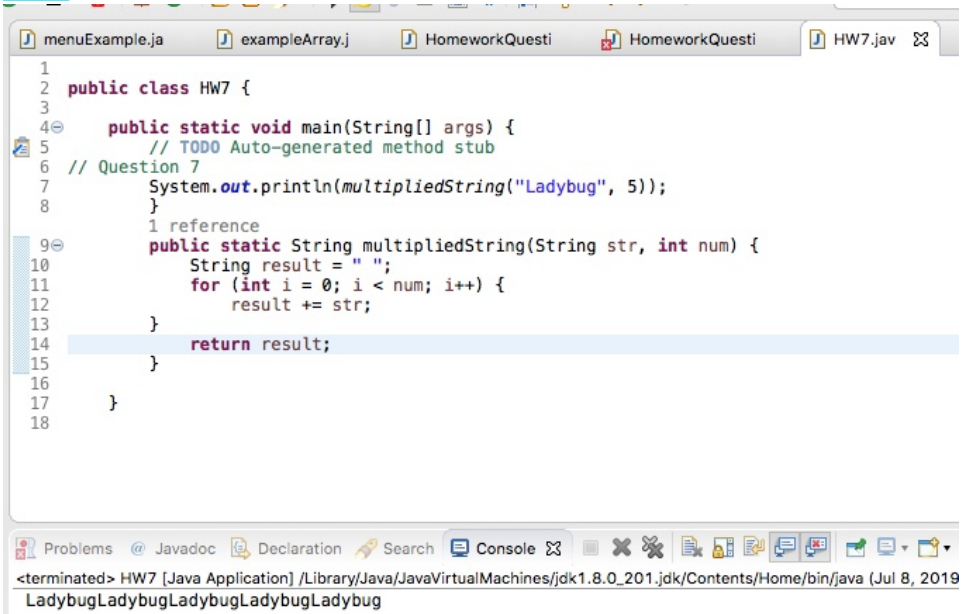
Q5 & Q6:



```
exampleArray.ja  *HomeworkQuesti  HW7.java  HWQ8.java  HWQ9.java

1
2  public class HomeworkQuestion2and5and6 {
3
4      public static void main(String[] args) {
5          // TODO Auto-generated method stub
6  //Homework Question 2
7          String[] names = {"Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"};
8          double sum = 0;
9
10         for (int i = 0; i < names.length; i++) {
11             sum += names[i].length();
12         }
13         System.out.println(sum / names.length);
14
15         for (String name: names) {
16             System.out.print(name + " ");
17
18 //Homework Questions 5 and 6
19         int[] nameLengths = new int[names.length];
20         for (int j = 0; j < nameLengths.length; j++) {
21             nameLengths[j] = names[j].length();
22                 System.out.println(names[j].length() + " ");
23         }
24         System.out.println(" ");
25     }
26 }}

Problems  Javadoc  Declaration  Search  Console

8          double sum = 0;

Problems  Javadoc  Declaration  Search  Console

<terminated> HomeworkQuestion2and5and6 [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_201.jdk/Contents/Home

Sam 3
5
3
5
4
3

Tommy 3
5
3
5
4
3

Tim 3
5
3
5
4
3

Sally 3
5
3
5
4
3

Buck 3
5
3
5
4
3

Bob 3
5
3
5
4
3
```

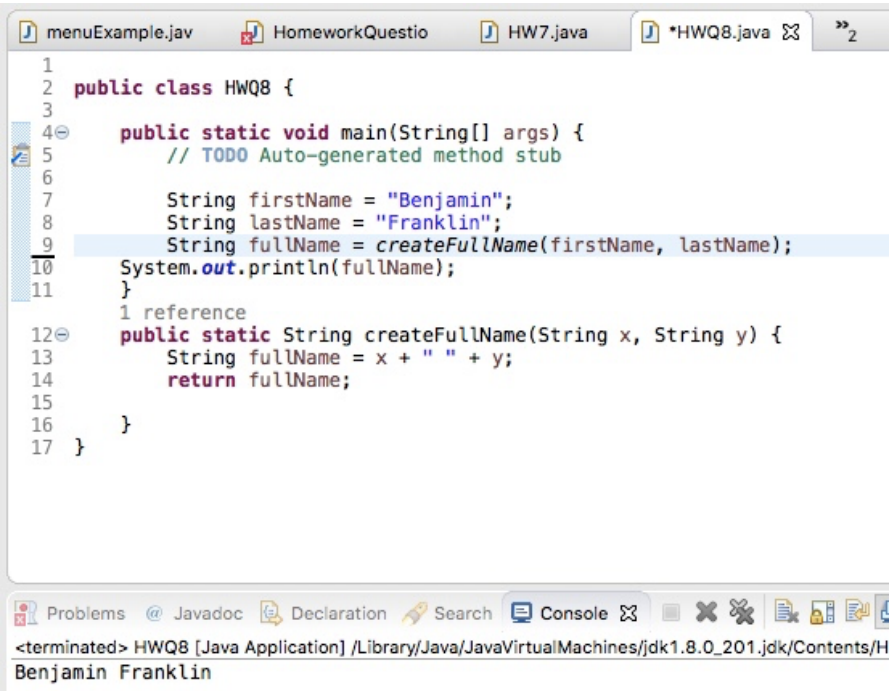
PROMINEO TECH

Q7:



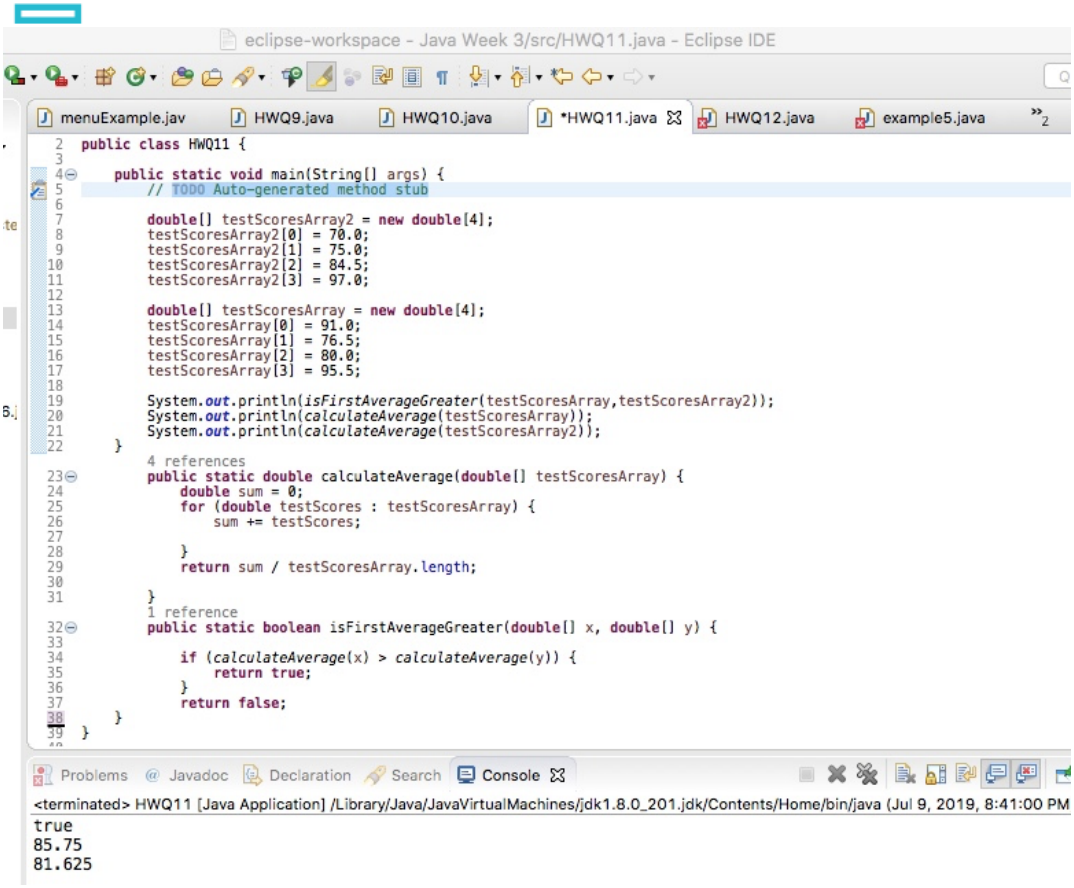
```
menuExample.ja  exampleArray.j  HomeworkQuesti  HomeworkQuesti  HW7.jav

1
2  public class HW7 {
3
4      public static void main(String[] args) {
5          // TODO Auto-generated method stub
6  // Question 7
7          System.out.println(multipliedString("Ladybug", 5));
8          }
           1 reference
9          public static String multipliedString(String str, int num) {
10             String result = " ";
11             for (int i = 0; i < num; i++) {
12                 result += str;
13         }
14             return result;
15         }
16
17     }
18

Problems  Javadoc  Declaration  Search  Console
<terminated> HW7 [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_201.jdk/Contents/Home/bin/java (Jul 8, 2019
LadybugLadybugLadybugLadybugLadybug
```

Q8:

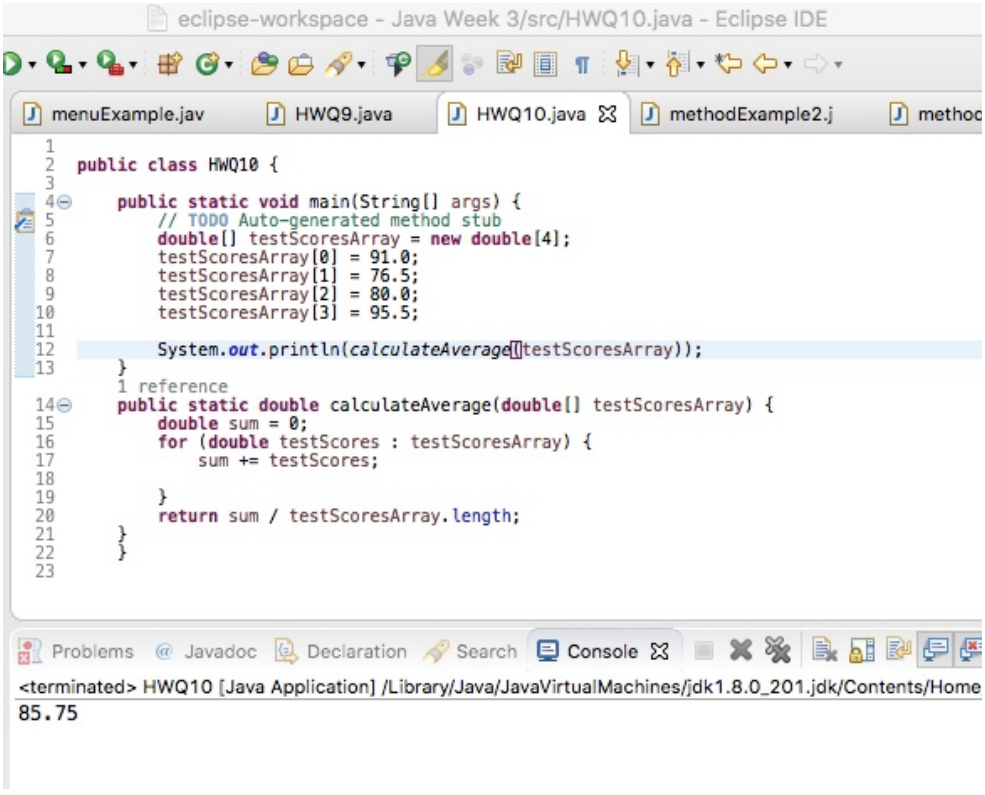


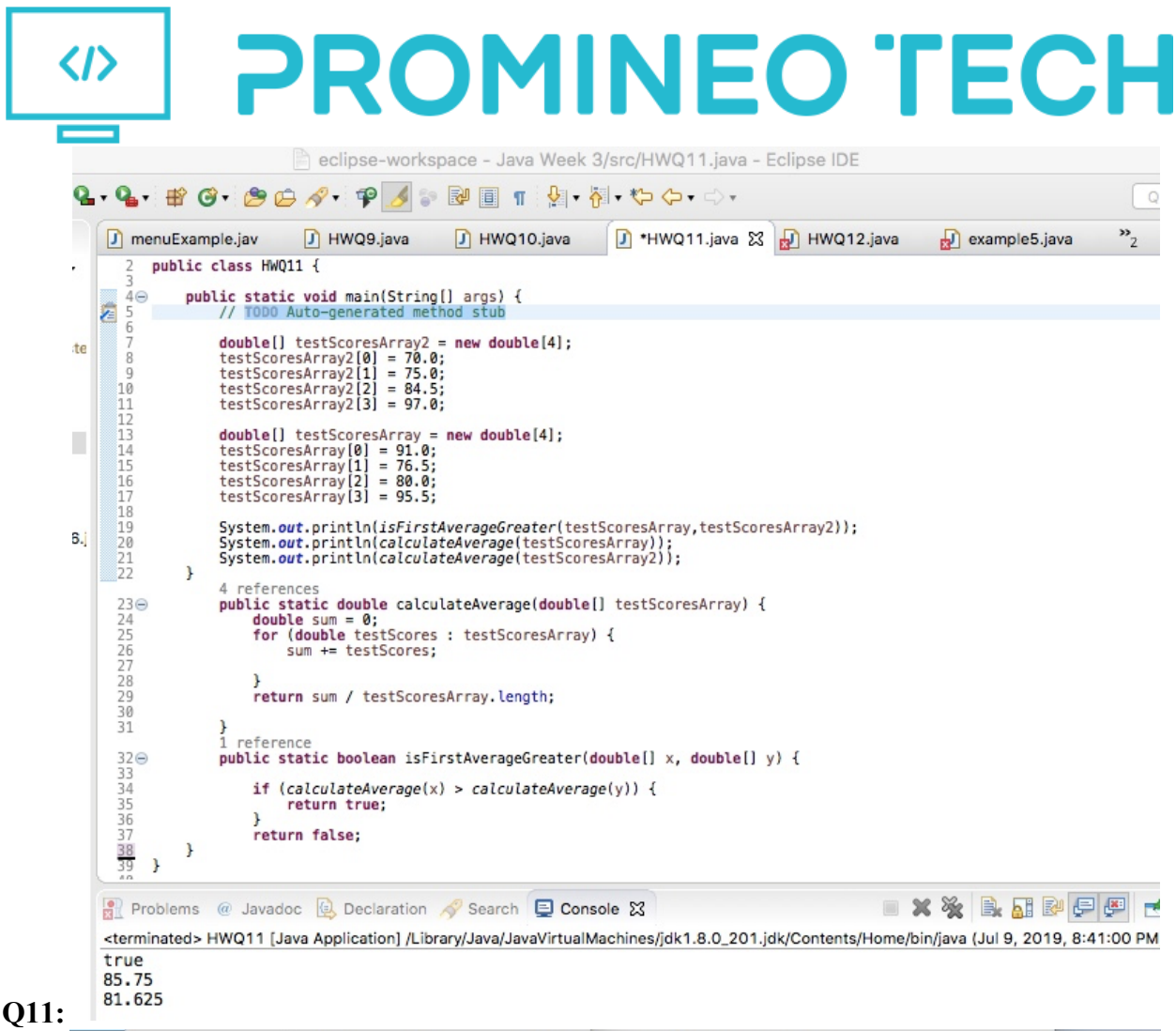
```
menuExample.jav  HomeworkQuestio  HW7.java  *HWQ8.java

1
2  public class HWQ8 {
3
4      public static void main(String[] args) {
5          // TODO Auto-generated method stub
6
7          String firstName = "Benjamin";
8          String lastName = "Franklin";
9          String fullName = createFullName(firstName, lastName);
10     System.out.println(fullName);
11     }
       1 reference
12     public static String createFullName(String x, String y) {
13         String fullName = x + " " + y;
14         return fullName;
15
16     }
17 }

Problems  Javadoc  Declaration  Search  Console
<terminated> HWQ8 [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_201.jdk/Contents/H
Benjamin Franklin
```

Q9


eclipse-workspace - Java Week 3/src/HWQ11.java - Eclipse IDE
menuExample.jav
HWQ9.java
HWQ10.java
*HWQ11.java
HWQ12.java
example5.java
public class HWQ11 {
public static void main(String[] args) {
// TODO Auto-generated method stub
double[] testScoresArray2 = new double[4];
testScoresArray2[0] = 70.0;
testScoresArray2[1] = 75.0;
testScoresArray2[2] = 84.5;
testScoresArray2[3] = 97.0;
double[] testScoresArray = new double[4];
testScoresArray[0] = 91.0;
testScoresArray[1] = 76.5;
testScoresArray[2] = 80.0;
testScoresArray[3] = 95.5;
System.out.println(isFirstAverageGreater(testScoresArray,testScoresArray2));
System.out.println(calculateAverage(testScoresArray));
System.out.println(calculateAverage(testScoresArray2));
}
4 references
public static double calculateAverage(double[] testScoresArray) {
double sum = 0;
for (double testScores : testScoresArray) {
sum += testScores;
}
return sum / testScoresArray.length;
}
1 reference
public static boolean isFirstAverageGreater(double[] x, double[] y) {
if (calculateAverage(x) > calculateAverage(y)) {
return true;
}
return false;
}
}
Problems
Javadoc
Declaration
Search
Console
<terminated> HWQ11 [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_201.jdk/Contents/Home/bin/java (Jul 9, 2019, 8:41:00 PM
true
85.75
81.625

Q10:


eclipse-workspace - Java Week 3/src/HWQ10.java - Eclipse IDE
menuExample.jav
HWQ9.java
HWQ10.java
methodExample2.j
public class HWQ10 {
public static void main(String[] args) {
// TODO Auto-generated method stub
double[] testScoresArray = new double[4];
testScoresArray[0] = 91.0;
testScoresArray[1] = 76.5;
testScoresArray[2] = 80.0;
testScoresArray[3] = 95.5;
System.out.println(calculateAverage(testScoresArray));
}
1 reference
public static double calculateAverage(double[] testScoresArray) {
double sum = 0;
for (double testScores : testScoresArray) {
sum += testScores;
}
return sum / testScoresArray.length;
}
}
Problems
Javadoc
Declaration
Search
Console
<terminated> HWQ10 [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_201.jdk/Contents/Home
85.75



eclipse-workspace - Java Week 3/src/HWQ11.java - Eclipse IDE

menuExample.jav | HWQ9.java | HWQ10.java | *HWQ11.java | HWQ12.java | example5.java

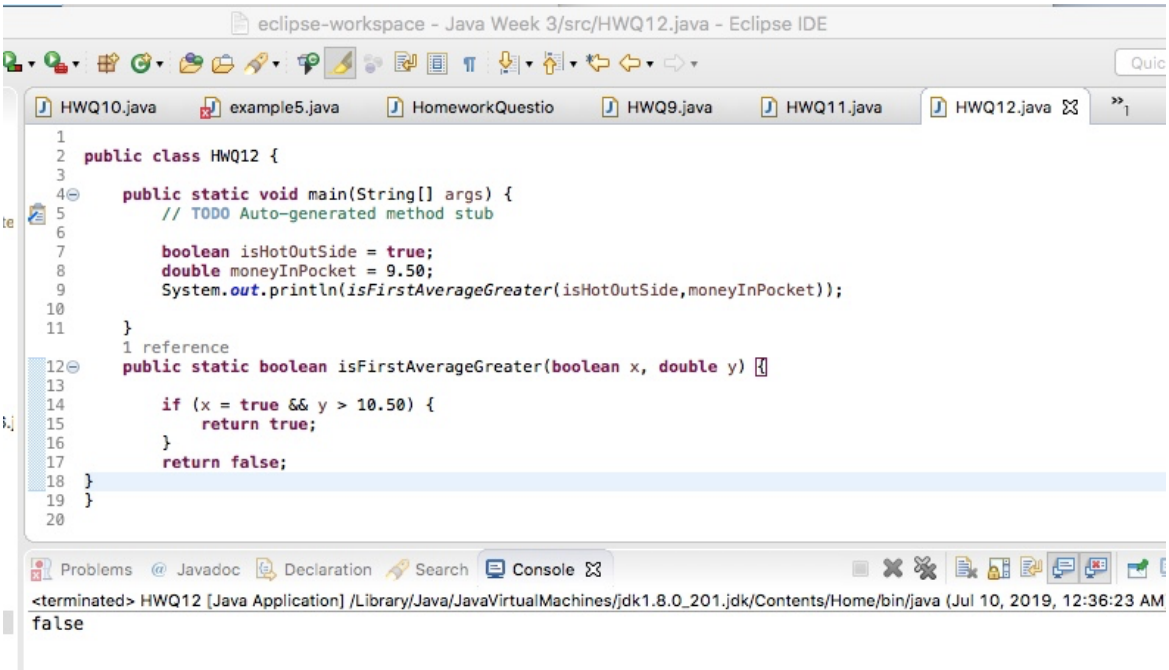
```
public class HWQ11 {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

        double[] testScoresArray2 = new double[4];
        testScoresArray2[0] = 70.0;
        testScoresArray2[1] = 75.0;
        testScoresArray2[2] = 84.5;
        testScoresArray2[3] = 97.0;

        double[] testScoresArray = new double[4];
        testScoresArray[0] = 91.0;
        testScoresArray[1] = 76.5;
        testScoresArray[2] = 80.0;
        testScoresArray[3] = 95.5;

        System.out.println(isFirstAverageGreater(testScoresArray,testScoresArray2));
        System.out.println(calculateAverage(testScoresArray));
        System.out.println(calculateAverage(testScoresArray2));
    }
        4 references
        public static double calculateAverage(double[] testScoresArray) {
            double sum = 0;
            for (double testScores : testScoresArray) {
                sum += testScores;

            }
            return sum / testScoresArray.length;

        }
        1 reference
        public static boolean isFirstAverageGreater(double[] x, double[] y) {

            if (calculateAverage(x) > calculateAverage(y)) {
                return true;
            }
            return false;
    }
}
```

Problems | Javadoc | Declaration | Search | Console

<terminated> HWQ11 [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_201.jdk/Contents/Home/bin/java (Jul 9, 2019, 8:41:00 PM

```
true
85.75
81.625
```

Q11:



eclipse-workspace - Java Week 3/src/HWQ12.java - Eclipse IDE

HWQ10.java | example5.java | HomeworkQuestio | HWQ9.java | HWQ11.java | HWQ12.java

```
public class HWQ12 {

    public static void main(String[] args) {
        // TODO Auto-generated method stub

        boolean isHotOutSide = true;
        double moneyInPocket = 9.50;
        System.out.println(isFirstAverageGreater(isHotOutSide,moneyInPocket));

    }
    1 reference
    public static boolean isFirstAverageGreater(boolean x, double y) {

        if (x = true && y > 10.50) {
            return true;
        }
        return false;
}
}
```

Problems | Javadoc | Declaration | Search | Console

<terminated> HWQ12 [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_201.jdk/Contents/Home/bin/java (Jul 10, 2019, 12:36:23 AM

```
false
```

Q12:

Q13:

HWQ12.java | HWQ13.java

```
1
2  public class HWQ13 {
3
4      public static void main(String[] args) {
5          // TODO Auto-generated method stub
6  //Use a method to show that if you are over 20 years old and you have bills to pay or less than 40 dollars in wallet
7  //then it will print true to cook at home Question: Are you going to cook at home today?
8          int age = 30;
9          boolean billsToPay = true;
10         double moneyInWallet = 30.00;
11         System.out.println(willCookAtHome(age,billsToPay,moneyInWallet));
12     }
13
           1 reference
14         public static boolean willCookAtHome(int age, boolean billsToPay, double moneyInWallet) {
15             return (age > 20 && (billsToPay || moneyInWallet < 40.00));
16         }
17     }
18
```

Problems | Javadoc | Declaration | Search | Console

```
<terminated> HWQ13 [Java Application] /Library/Java/JavaVirtualMachines/jdk1.8.0_201.jdk/Contents/Home/bin/java (Jul 10, 2019, 1:17:59 AM)
true
```

URL to GitHub Repository: https://github.com/danielleyokley/homeworkWeek3