

Points possible: 75

URL to GitHub Repository:

URL to Public Link of your Video:

https://studio.youtube.com/channel/UCR5qmkd4v1Wx8qUKizDRyKA/videos/upload?filter=%5B%5D&sort=%7B%22columnType%22%3A%22date%22%2C%22sortOrder%22%3A%22DESCENDING%22%7D

Instructions:

1. Follow the **Coding Steps** below to complete this assignment.

- 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.
- Create a new repository on GitHub for this week's assignment and push your completed code to this dedicated repo.
- Create a video showcasing your work:
 - In this video: record and present your project verbally while showing the results of the working project.
 - <u>Easy way to Create a video</u>: Start a meeting in Zoom, share your screen, open Eclipse with
 the code and your Console window, start recording & record yourself describing and running
 the program showing the results.
 - Your video should be a maximum of 5 minutes.
 - Upload your video with a public link.
 - <u>Easy way to Create a Public Video Link</u>: Upload your video recording to YouTube with a
 public link.
- 2. In addition, please include the following in your Coding Assignment Document:
 - The URL for this week's GitHub repository.
 - The URL of the public link of your video.
- 3. Save the Coding Assignment Document as a .pdf and do the following:
 - Push the .pdf to the GitHub repo for this week.
 - Upload the .pdf to the LMS in your Coding Assignment Submission.



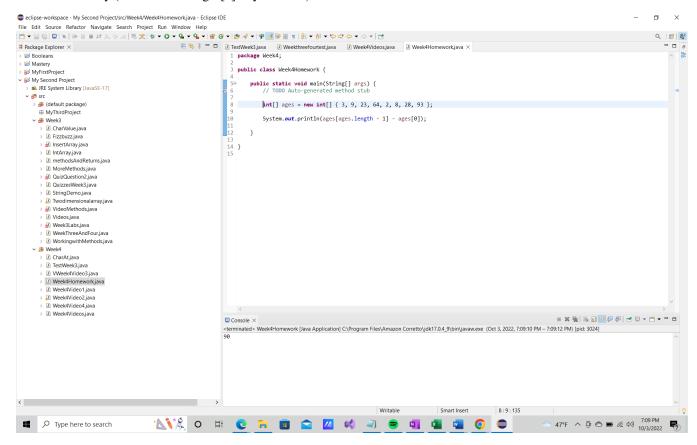


Coding Steps — Arrays and Methods

1. Create an array of int called ages that contains the following values: 3, 9, 23, 64, 2, 8, 28, 93.

```
int[] ages = new int[]{3,9,23,64,2,8,28,93};
// for (int i = 0; i < ages.length; i++) {
//System.out.println(ages[i]);</pre>
```

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).

i.

```
eclipse-workspace - My Second Project/src/Week4/Week4Homework.java - Eclipse IDE
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                                                                                                                              🕒 🕃 🖇 📟 🔟 🛽 TestWeek3.java 🔝 Weekthreefourtest.java 🔝 Week4Videos.java 🔝 Week4Homework.java
    1 package Week4;
   3 public class Week4Homework {
 public static void main(String[] args) {
      > M JRE System Library [JavaSE-17]
    int[] ages = new int[] { 3, 9, 23, 64, 2, 8, 28, 93, 12 };

⊕ MyThirdProject

                                                                                                                                                                                                         for (int i = 0; i < ages.length; i++) {
          ✓ # Week3

> ② CharValue.java
                                                                                                                                                                                                                System.out.println(ages[i]);
                  > 🗓 Fizzbuzz.java
                  > InsertArray,java
> IntArray,java
> IntArray,java
> Interpretary in the interpretary 
                     MoreMethods.iava
                     QuizQuestion2.java
QuizzesWeek3.java
                  >  StringDemo.java
                  > 🗓 Twodimensionalarray.java
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    WeekThreeAndFour.java
    WorkingwithMethods.java

            ∨ Æ Week4
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CharAt.iava
                      ☐ TestWeek3.java
☐ VWeek4Video3.java

☑ Week4Video4.iava

☑ Week4Videos.iava

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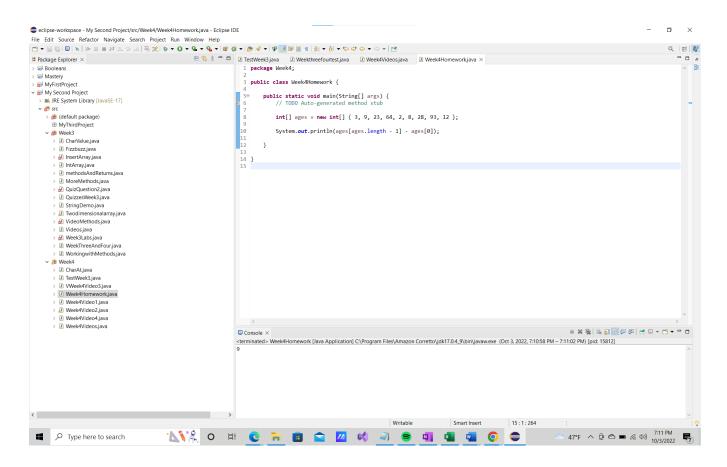
```
int[] ages = new int[]{3,9,23,64,2,8,28,93,12};
for (int i = 0; i < ages.length; i++) {
    System.out.println(ages[i]);

Result Console
3
9
23
64
2
8
28</pre>
```



93 12

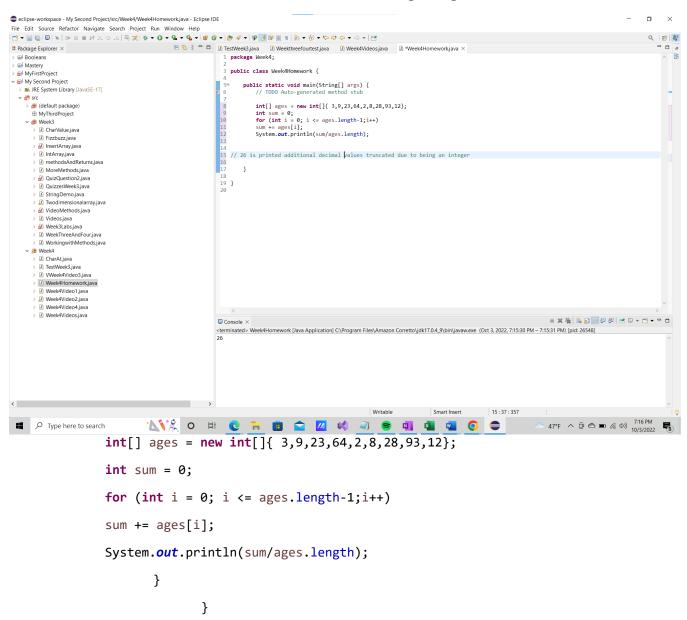
ii.



```
int[] ages = new int[]{3,9,23,64,2,8,28,93,12};
System.out.println(ages[ages.length-1] - ages[0]);
Result Console
9
```

c. Use a loop to iterate through the array and calculate the average age. Print the result to the console.

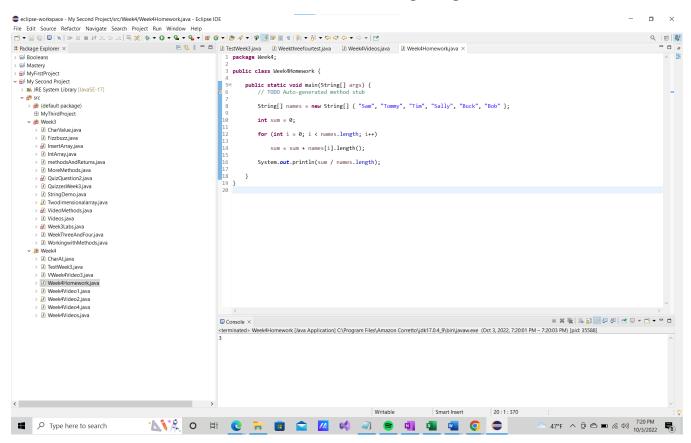




result Console 26 //value is set at integer, decimals will not print

- 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.





```
String[] names = new String[]{"Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"};
int sum = 0;
for( int i=0; i <names.length; i++)
sum = sum + names[i].length();
System.out.println(sum /names.length);</pre>
```

result Console 3 //value is set at integer, decimals will not print

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.

```
String[] names = new String[]{ "Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"};
String concatName= names[0];
```



- 3. How do you access the last element of any array? lastElement = array[array.length-1];
- 4. How do you access the first element of any array? firstElement = numbers[0];
- 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.



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eclipse-workspace - My Second Project/src/Week4/Week4Homework.java - Eclipse IDE
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    Booleans
                                                                                                                                                                  package Week4;
  > 😂 Mastery
> 💕 MyFirstProject
                                                                                                                                                                  import java.util.Arrays;
 5 public class Week4Homework {
     > M JRE System Library [JavaSE-17]

✓ ಈ src

→ # (default package)
                                                                                                                                                                          public static void main(String[] args) {

⊕ MyThirdProject

              # Week3
> D CharValue.java
                                                                                                                                                                                     String[] names = new String[] { "Sam", "Tommy", "Tim", "Sally", "Buck", "Bob" };
                                                                                                                                                                                     int[] nameLengths = new int[names.length];
                 > II Fizzbuzz.iava
                                                                                                                                                                                        for(int i = 0; i < names.length; i++){
    nameLengths[i] = names[i].length();</pre>
                 > InsertArray.java
> IntArray.java
> IntArray.java
> methodsAndReturns.java
                                                                                                                                                                                        System.out.println(Arrays.toString(nameLengths));
                  MoreMethods.iava
                  }
                  >  StringDemo.iava
                   > / Videos.java

WeekThreeAndFour.java
WorkingwithMethods.java
            ∨ Æ Week4
                    ☐ CharAt.java
☐ TestWeek3.java
☐ VWeek4Video3.java

Week4Video3.java

Week4Video1.java

Week4Video2.java
                  Week4Video4.iava
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    Type here to search
```

```
String[] names = new String[] { "Sam", "Tommy", "Tim", "Sally", "Buck", "Bob" };

int[] nameLengths = new int[names.length];
    for(int i = 0; i < names.length; i++){
        nameLengths[i] = names[i].length();
    }
    System.out.println(Arrays.toString(nameLengths));
}</pre>
```

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.



```
eclipse-workspace - My Second Project/src/Week4/Week4Homework.java - Eclipse IDE
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  Booleans
                                                                                                 package Week4;
 > 😂 Mastery
> 🔂 MyFirstProject
                                                                                                 import java.util.Arrays;
public class Week4Homework {
   > M JRE System Library [JavaSE-17]

✓ ಈ src

→ # (default package)
                                                                                                       public static void main(String[] args) {

⊕ MyThirdProject

                                                                                                             String[] names = new String[] { "Sam", "Tommy", "Tim", "Sally", "Buck", "Bob" };
      ✓ ## Week3

> ② CharValue.java
                                                                                                            int[] nameLengths = new int[names.length];
          > II Fizzbuzz.java
                                                                                                               for(int i = 0; i < names.length; i++){
    nameLengths[i] = names[i].length();</pre>
          > ② InsertArray,java
> ② IntArray,java
> ② methodsAndReturns,java
> ② MoreMethods,java
                                                                                                              System.out.println(Arrays.toString(nameLengths));
           QuizQuestion2.java
                                                                                                              int sum = 0;
           >  StringDemo.iava
                                                                                                                  for ( int i = 0; i < nameLengths.length; i++)</pre>
            sum = sum + nameLengths[i];
           > / Videos.java
                                                                                                                  System.out.println(sum);

WeekThreeAndFour.java
WorkingwithMethods.java
                                                                                                       }
       ∨ Æ Week4
            ☐ CharAt.java
☐ TestWeek3.java
☐ VWeek4Video3.java
                                                                                                       }

Week4Homeworkjava

Week4Test.java

Week4Video1.java
           Week4Video2.iava
          <a href="https://doi.org/10.49/bin/javaw.exe"><a href="https://doi.org/10.49/bin/javaw.exe">https://doi.org/10.49/bin/javaw.exe</a></a> (Oct 3, 2022, 92804 PM – 92805 PM) [pid: 32780] [3, 5, 3, 5, 4, 3]</a>
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```

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 expect the method to return "HelloHelloHello").



```
□ Package Explorer ×
 Booleans
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> 
MyFirstProject

> 
My Second Project
                                                                   public class Question7 {
                                                                        public static void main(String[] args) {
  > M JRE System Library [JavaSE-17]
                                                                                   Write a method that takes a String, word, and an <u>int</u>, n, as arguments and returns the word concatenated to itself n number of times. (i.e. if I pass in "Hello" and 3, I expect the method to return "HelloHello").

    package-info,java
    Question1.java

         Question10.java
                                                                            String color = multiplyString("Purple", 5);
System.out.println(color);
         Ouestion11.iava
         Question12.java

Question13.java
        > 

Question2.java
         ② Question3.java
                                                                        public static String multiplyString(String str, int num) {
        >   Question5.java
                                                                            String result = "";
for (int i = 0; i < num; i++) {</pre>
         Ouestion6 java
         Question7.java
                                                                                result += str;
         Question8.java

✓ In Ouestion9.iava

                                                                                 return result;

    ✓ Q Question9
    ✓ main(String[]): void

⊞ MyThirdProject

     ✓ # Week3
→ I CharValue.java
        Fizzbuzz.java
         ☐ InsertArray.java
☐ IntArray.java
☐ methodsAndReturns.java
                                                                                                                                                                                                     MoreMethods.iava
                                                               <terminated> Question7 [Java Application] C:\Program Files\Amazon Corretto\jdk17.0.4_9\bin\javaw.exe (Oct 4, 2022, 9:22:11 PM – 9:22:12 PM) [pid: 10428]
         StringDemo.java
         > I Videos.java
        > • Week3Labs.iava

    WeekThreeAndFour.java
    WorkingwithMethods.java

     ∨ # Week4
        > 🗓 CharAt.iava
```

String color = *multiplyString*("Purple", 5); System.*out*.println(color);

// method is below Note method is to be written outside the main

```
public static String multiplyString(String str, int num) {
   String result = "";
   for (int i = 0; i < num; i++) {
      result += str;
   }
   return result;</pre>
```

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).

```
String firstName = "Brittany";
String lastName = "Hilton";
```

System.out.println(firstName.concat(" " + lastName));



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.

```
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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    - - -
                                                                                                              3 public class Week4Videos {
    Booleans
    public static void main(String[] args) {
  int[] over100 = new int[3];
      > M JRE System Library [JavaSE-17]
                                                                                                                                      over100[0] = 7;
over100[1] = 44;
over100[2] = 2;
               ⊕ MyThirdProject
          // int sum = greaterThan100(over100);
// System.out.println(sum);
                 > 🔊 InsertArrav.iava
                  IntArray.java

Interpretation in the second 
                 QuizQuestion2.java
QuizzesWeek3.java
                                                                                                                            public static boolean greaterThan100(int[] numbers) {
                                                                                                                                    // methods will return values of return unless it is a void
                 > 

StringDemo.java
                 > 🔊 Twodimensionalarrav.java
                   for (int number : numbers) {

ℳ Week3Labs.iava

WeekThreeAndFour.java
WorkingwithMethods.java
                                                                                                                                               sum += number:
                                                                                                            29
30
31
32
33
34
35
36
37
38
             ∨ # Week4
                                                                                                                                     if (sum > 100) {
                 ☐ TestWeek3.java
☐ VWeek4Video3.java
                                                                                                                                               return true:
                                                                                                                                      } else {
                    Week4Video1.java
                   return false;
                 ■ X ¾ | № 1 B F F | → □ → □ → □
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                                                                                                   Type here to search
```

```
int[] over100 = new int[3];

over100[0] = 7;
over100[1] = 44;
over100[2] = 2;

System.out.println(greaterThan100(over100));
}

public static boolean greaterThan100(int[] numbers) {
    // methods will return values of return unless it is a void
    int sum = 0;
```



```
for (int number : numbers) {
     sum += number;
}
if (sum > 100) {
     return true;
} else {
     return false;
```

10. Write a method that takes an array of double and returns the average of all the elements in the array.

```
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Package Explorer ×
> 🗃 Booleans
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                                                                      import java.util.Arrays;
> # MyFirstProject
                                                                      public class Week4Homework {

    ✓ 
    ✓ My Second Project
    → My Second Project
    → My JRE System Library [JavaSE-17]
                                                                           public static void main(String[] args) {
    // TODO Auto-generated method stub

⇒ ∰ (default package)

⊕ MyThirdProject

→ ∰ Week3
                                                                               //10. Write a method that takes an array of double and returns the average of all the elements in the array.
       >    CharValue.iava
                                                                            double[] myArray = new dbuble[3];

    Fizzbuzz.java
    InsertArray.java

                                                                               myArray[0] = 7.14;
myArray[1] = 9.23;
myArray[2] = 2.99;
        > IntArrav.iava
        methodsAndReturns.java

    MoreMethods.java

        QuizQuestion2.java
         OuizzesWeek3.iava
                                                                               System.out.println(averageDouble(myArray));
         ☑ StringDemo.java
☑ Twodimensionalarray.java

> M VideoMethods.java

☑ Videos.java
☑ Week3Labs.java

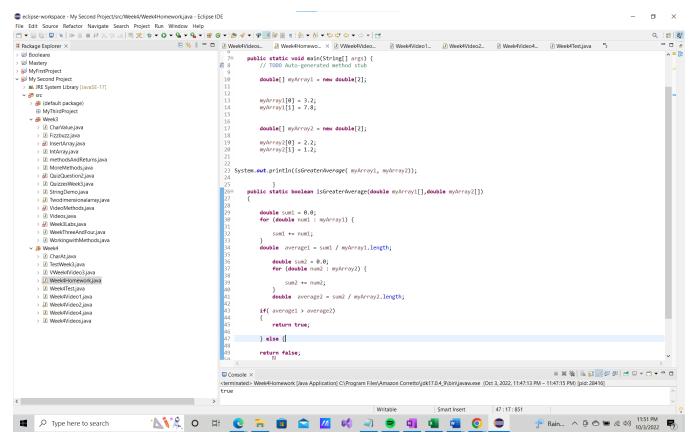
                                                                           public static double averageDouble(double arr[])
        WeekThreeAndFour.java
        > 

WorkingwithMethods.java
      TestWeek3.iava
                                                                                ,
return sum/arr.length;
        Week4Test.java
        Week4Video1.iava
         <terminated> Week4Homework [Java Application] C:\Program Files\Amazon Corretto\jdk17.0.4_9\bin\javaw.exe (Oct 3, 2022, 10:33:35 PM - 10:33:37 PM) [pid: 9128]
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```



```
System.out.println(averageDouble(myArray));
}
public static double averageDouble(double arr[])
{
    double sum = 0.0;
    for (double num : arr) {
        sum+= num;
    }
    return sum/arr.length;
```

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.



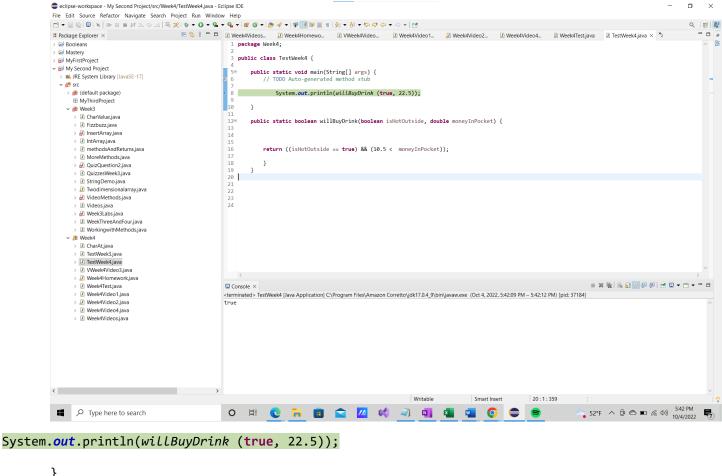
double[] myArray1 = new double[2];



```
myArray1[0] = 3.2;
             myArray1[1] = 7.8;
             double[] myArray2 = new double[2];
             myArray2[0] = 2.2;
             myArray2[1] = 1.2;
System.out.println(isGreaterAverage( myArray1, myArray2));
      public static boolean isGreaterAverage(double myArray1[],double myArray2[])
      {
             double sum1 = 0.0;
             for (double num1 : myArray1) {
                    sum1 += num1;
             }
             double average1 = sum1 / myArray1.length;
                    double sum2 = 0.0;
                    for (double num2 : myArray2) {
                           sum2 += num2;
                    }
                                 average2 = sum2 / myArray2.length;
                    double
             if( average1 > average2)
             {
                    return true;
             } else {
             return false;
                    }
      }
             }
```

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.





Console true

```
}
public static boolean willBuyDrink(boolean isHotOutside, double moneyInPocket) {
      return ((isHotOutside == true) && (10.5 < moneyInPocket));</pre>
       }
```

13. Create a method of your own that solves a problem. In comments, write what the method does and why you created it.



Create a method that will multiply TWO integers and give a result. The method multiplies two integers together. It was created as a way to sum multiple quantities.

```
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Package Explorer ×
                                                                        package Week4;
> 📂 Booleans
> B Mastery
> # MyFirstProject
public class Week4Homework {
                                                                             public static void main(String[] args) {
    // TODO Auto-generated method stub
    > # (default package)
# MyThirdProject
                                                                                 //10. Write a method that takes an array of double and returns the average of all the elements in the array.
     ∨ # Week3
       > D CharValue.iava
       > Prizzbuzz.java
> InsertArray.java
                                                                                  multiply(5, 7);
multiply(2, 4);
       > IntArray.java

    ☑ methodsAndReturns.java
    ☑ MoreMethods.java

                                                                                     public static void multiply (int x, int y) {
    System.out.println(x*y);

    QuizQuestion2.java

        QuizzesWeek3.java
StringDemo.java

→ WideoMethods.iava

☑ Videos.java
☑ Week3Labs.java

        WeekThreeAndFour.java
        WorkingwithMethods.java
     ∨ # Week4

> ☐ CharAt.java
       > I TestWeek3.iava

☑ VWeek4Video3.java
        Week4Test.iava
        >   Week4Video1.iava
         Week4Video4.java
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       <a href="https://deexaftonework.gov/regram-piles/Amazon Corretto\jdk17.04_9\bin\javaw.exe">https://deexaftonework.gov/regram-piles/Amazon Corretto\jdk17.04_9\bin\javaw.exe</a> (Oct 3, 2022, 1043:22 PM – 1043:23 PM) [pid: 12204] 35
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```

Console print

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