



## Intro to Java Weeks 3-4 Coding Assignment

**URL to GitHub Repository:**

**URL to Public Link of your Video:**

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### 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.
  - Easy way to Create a video: 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.
  - Easy way to Create a Public Video Link: 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.  
<https://github.com/JakeMustard/Week4Homework>
- The URL of the public link of your video.  
<https://www.youtube.com/watch?v=EHkkRu-ZrBQ>

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.
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# PROMINEO TECH

Intro to Java Weeks 3-4 Coding Assignment



## Intro to Java Weeks 3-4 Coding Assignment

### 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.
  - 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.

```
public static void main(String[] args) {  
    // Create an array of int called ages that contains the following values: 3, 9, 23, 64, 2, 8, 28, 93.  
    int[] ages = {3, 9, 23, 64, 2, 8, 28, 93};  
  
    // a. Programmatically subtract the value of the first element from the last element and print the result.  
    int result = ages[ages.length - 1] - ages[0];  
    System.out.println("Result of subtraction: " + result);  
  
    // b. Add a new age to your array and repeat the step above to ensure it is dynamic.  
    // Add a new age to the end of the array  
    int newAge = 12;  
    int[] newAges = new int[ages.length + 1];  
    for (int i = 0; i < ages.length; i++) {  
        newAges[i] = ages[i];  
    }  
    newAges[ages.length] = newAge;  
    ages = newAges;  
  
    // Subtract the first element from the last element of the new array  
    result = ages[ages.length - 1] - ages[0];  
    System.out.println("Result of subtraction with new age: " + result);  
  
    // c. Use a loop to iterate through the array and calculate the average age.  
    int sum = 0;  
    for (int age : ages) {  
        sum += age;  
    }  
    double averageAge = (double) sum / ages.length;  
    System.out.println("Average age: " + averageAge);  
}
```

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.



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- 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.

```
// Create an array of String called names that contains the following values: "Sam", "Tommy", "Tim", "Sally", "Buck", "Bob";
String[] names = {"Sam", "Tommy", "Tim", "Sally", "Buck", "Bob"};

// a. Use a loop to iterate through the array and calculate the average number of letters per name.
int totalLetters = 0;
for (String name : names) {
    totalLetters += name.length();
}
double averageLetters = (double) totalLetters / names.length;
System.out.println("Average number of letters per name: " + averageLetters);

// 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 allNames = "";
for (String name : names) {
    allNames += name + " ";
}
System.out.println("All names together: " + allNames);
```

3. How do you access the last element of any array?

.length with the thing before length identifying the array then you follow it with -1 [.length-1]

<https://www.geeksforgeeks.org/get-the-first-and-last-item-in-an-array-using-javascript/>

4. How do you access the first element of any array?

.length with the word before .length describing the name of the array and then follow it with 0. [.length-1]

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.

```
// 5. Create a new array of int called nameLengths
int[] nameLengths = new int[names.length];
for (int i = 0; i < names.length; i++) {
    nameLengths[i] = names[i].length();
}
```

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.



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```
// 6. Write a loop to iterate over the nameLengths array and calculate
int sumOfNameLengths = 0;
for (int length : nameLengths) {
    sumOfNameLengths += length;
}
System.out.println("Sum of name lengths: " + sumOfNameLengths);
}
```

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").

```
// 7. Write a method that takes a String, word, and an int, n, as arguments and returns the word concatenated to itself n
public static String repeatWord(String word, int n) {
    String repeatedWord = "";
    for (int i = 0; i < n; i++) {
        repeatedWord += word;
    }
    return repeatedWord;
}
```

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).

```
// 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).
public static String getFullName(String firstName, String lastName) {
    return firstName + " " + lastName;
}
```



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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.

```
// 9. Write a method that takes an array of int and returns
public static boolean isSumGreaterThan100(int[] numbers) {
    int sum = 0;
    for (int number : numbers) {
        sum += number;
    }
    return sum > 100;
}
```

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

```
// 10. Write a method that takes an array of double a
public static double getAverage(double[] numbers) {
    double sum = 0;
    for (double number : numbers) {
        sum += number;
    }
    return sum / numbers.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.

```
// 11. Write a method that takes two arrays of double and returns true if t
public static boolean isAverageGreater(double[] array1, double[] array2) {
    double average1 = getAverage(array1);
    double average2 = getAverage(array2);
    return average1 > average2;
}
```



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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.

```
// 12. Write a method called willBuyDrink that takes a boolean isHotOutside, and a
public static boolean willBuyDrink(boolean isHotOutside, double moneyInPocket) {
    return isHotOutside && moneyInPocket > 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.

```
// 13. Create a method of your own that solves a problem.
// Method to find the maximum number in an array of integers.

//It has taken me a long time to finish this assignment and I just wanted to do something simple.
public static int findMax(int[] numbers) {
    int max = numbers[0];
    for (int i = 1; i < numbers.length; i++) {
        if (numbers[i] > max) {
            max = numbers[i];
        }
    }
    return max;
}
```