

# Submission Worksheet

## Submission Data

**Course:** IT114-450-M2025

**Assignment:** IT114 Java Problems

**Student:** Graham B. (gb373)

**Status:** Submitted | **Worksheet Progress:** 100+%

**Potential Grade:** 11.00/10.00 (110.00%)

**Received Grade:** 0.00/10.00 (0.00%)

**Started:** 6/2/2025 3:40:35 PM

**Updated:** 6/2/2025 5:57:27 PM

**Grading Link:** <https://learn.ethereallab.app/assignment/v3/IT114-450-M2025/it114-java-problems/grading/gb373>

**View Link:** <https://learn.ethereallab.app/assignment/v3/IT114-450-M2025/it114-java-problems/view/gb373>

## Instructions

- Overview Link: <https://youtu.be/Mrahk6SEYao>
- 1. Ensure you read all instructions and objectives before starting.
- 2. Create a new branch from main called M2-Homework
  - 1. `git checkout main` (ensure proper starting branch)
  - 2. `git pull origin main` (ensure history is up to date)
  - 3. `git checkout -b M2-Homework` (create and switch to branch)
- 3. Copy the template code from here: [GitHub Repository - M2 Homework](#)
  - It includes Problems 1-4 and a BaseClass. Put all into an M2 folder or similar (adjust package reference at the top if you chose a different folder name).
  - Immediately record to history
    - `git add .`
    - `git commit -m "adding M2 HW baseline files"`
    - `git push origin M2-Homework`
    - Create a Pull Request from M2-Homework to main and keep it open
- 4. Fill out the below worksheet
  - Each Problem requires the following as you work
    - Ensure there's a comment with your UCID, date, and brief summary of how the problem was solved
    - Initial outline/plan of how you'll solve it via comments (add/commit after this stage)
    - Code solution (add/commit periodically as needed)
- 5. Once finished, click "Submit and Export"
- 6. Locally add the generated PDF to a folder of your choosing inside your repository folder and move it to Github
  - 1. `git add .`
  - 2. `git commit -m "adding PDF"`
  - 3. `git push origin M2-Homework`
  - 4. On Github merge the pull request from M2-Homework to main
- 7. Upload the same PDF to Canvas
- 8. Sync Local
  - 1. `git checkout main`

# Section #1: ( 2 pts.) Problem 1 - Odds

Progress: 100%

≡ Task #1 ( 2 pts.) - Edit the `printOdds` method to output odd values of the array

Progress: 100%

## Part 1:

Progress: 100%

### Details:

Two screenshots are expected

1. Snippet of relevant code showing solution (with ucid/date comment)
2. Full output of executing the program



Code of how I solved Problem 1

```
Running Problem 1 for [gb373] [2025-06-02T15:40:07.968578Z]
Objective: Print out only odd values in a single line separate by commas
Problem 1: Original Array: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
Output Array: 1, 3, 5, 7, 9

Problem 2: Original Array: [0, 8, 7, 6, 5, 4, 3, 2, 1, 0]
Output Array: 9, 7, 5, 3, 1

Problem 3: Original Array: [0, 0, 1, 1, 2, 2, 3, 3, 4, 4, 5, 5, 6, 6, 7, 7, 8, 8, 9, 9]
Output Array: 1, 1, 3, 3, 5, 5, 7, 7, 9, 9

Problem 4: Original Array: [0, 0, 0, 0, 7, 7, 6, 6, 5, 5, 4, 4, 3, 3, 2, 2, 1, 1, 0, 0]
Output Array: 9, 9, 7, 7, 5, 5, 4, 4, 3, 3, 2, 2, 1, 1, 0, 0

Completed Problem 1 for [gb373] [2025-06-02T15:40:07.968578Z]
PS: C:\Users\Graham\vscode\gb373 IT114 450
```

Output of solved problem 1

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## Part 2:

Progress: 100%

### Details:

Direct link to the file in the homework related branch from Github (should end in `.java`)

URL #1

<https://github.com/GrahamBlack10/gb373-IT114-450/blob/M2-Homework/M2/Problem1.java>



URL

<https://github.com/GrahamBlack10>



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## Part 3:

Progress: 100%

## Details:

Briefly explain **how** the code solves the challenge (note: this isn't the same as **what** the code does)

## Your Response:

How the code solves the problem is that it uses a for loop and an if statement to find each odd number in the arrays and print them separated by a comma and in a single line.



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## Section #2: ( 2 pts.) Problem 2 - Sum

Progress: 100%

Task #1 ( 2 pts.) - Edit the `sumValues` method to sum the array values and present them in a format with exactly two decimal places

Progress: 100%

## Part 1:

Progress: 100%

## Details:

Two screenshots are expected

1. Snippet of relevant code showing solution (with ucid/date comment)
2. Full output of executing the program

```

import java.util.*;

public class Problem2 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int n = scanner.nextInt();
        int[] arr = new int[n];
        for (int i = 0; i < n; i++) {
            arr[i] = scanner.nextInt();
        }
        double sum = sumValues(arr);
        System.out.println(sum);
    }

    public static double sumValues(int[] arr) {
        double sum = 0;
        for (int i = 0; i < arr.length; i++) {
            sum += arr[i];
        }
        return sum;
    }
}

```

Code of Problem 2

```

import java.util.*;

public class Problem2 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int n = scanner.nextInt();
        int[] arr = new int[n];
        for (int i = 0; i < n; i++) {
            arr[i] = scanner.nextInt();
        }
        double sum = sumValues(arr);
        System.out.println(sum);
    }

    public static double sumValues(int[] arr) {
        double sum = 0;
        for (int i = 0; i < arr.length; i++) {
            sum += arr[i];
        }
        return sum;
    }
}

```

```
public void bePositive() {
    for (int i = 0; i < array.length; i++) {
        if (array[i] < 0) {
            array[i] = Math.abs(array[i]);
        }
    }
}

// Example usage
public static void main(String[] args) {
    int[] array = {1, -2, 3, -4, 5};
    bePositive();
    for (int i = 0; i < array.length; i++) {
        System.out.print(array[i] + " ");
    }
}
```

## Output of problem 2



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### Part 2:

Progress: 100%

#### Details:

Direct link to the file in the homework related branch from Github (should end in `.java`)

#### URL #1

<https://github.com/GrahamBlack10/gb373-IT114-450/blob/M2-Homework/M2/Problem2.java>



URL

<https://github.com/GrahamBlack10/gb373-IT114-450/blob/M2-Homework/M2/Problem2.java>



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### Part 3:

Progress: 100%

#### Details:

Briefly explain `how` the code solves the challenges (note: this isn't the same as `what` the code does)

#### Your Response:

How the code solves the challenges is for the first one, the for loop looks through each number in the array, and then I did some math by doing += to add the sum of them to the array for each array, then it is printed. Next, I use String.format to format the way the total looks by changing it to show only 2 decimal points of each total and assigning it to modifiedTotal.



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## Section #3: ( 2 pts.) Problem 3 - Conversion

Progress: 100%

Task #1 ( 2 pts.) - Edit the `bePositive` method to make each value positive, convert it back to the original data type, and set it to the proper slot in the `output` array

Progress: 100%

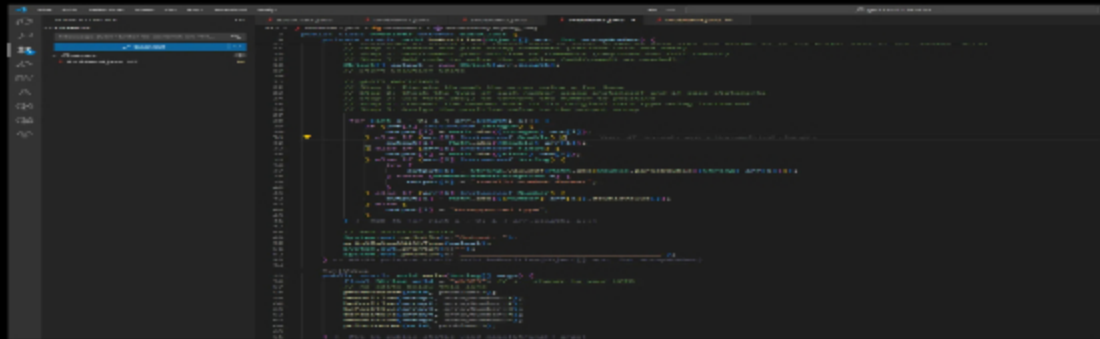
### Part 1:

Progress: 100%

### Details:

Two screenshots are expected

1. Snippet of relevant code showing solution (with ucid/date comment)
2. Full output of executing the program


A screenshot of a code editor with a dark theme. The left sidebar shows a file explorer with a project named 'M2'. The main editor area displays Java code. The code includes a package declaration, imports, a class definition, and a main method. The main method contains logic for processing an array of integers, including a loop and conditional statements. The code is well-commented and uses standard Java syntax.

Code for problem 3

```
import java.util.*;
import java.io.*;

public class Problem3 {
    public static void main(String[] args) {
        Scanner scanner = new Scanner(System.in);
        int n = scanner.nextInt();
        int[] arr = new int[n];
        for (int i = 0; i < n; i++) {
            arr[i] = scanner.nextInt();
        }
        // ... (rest of the code) ...
    }
}
```

Output for problem 3

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## Part 2:

Progress: 100%

### Details:

Direct link to the file in the homework related branch from Github (should end in `.java`)


#### URL #1

<https://github.com/GrahamBlack10/gb373-IT114-450/blob/M2-Homework/M2/Problem3.java>



URL

<https://github.com/GrahamBlack10>

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## Part 3:

Progress: 100%

### Details:

Briefly explain `how` the code solves the challenges (note: this isn't the same as `what` the code does)

## Your Response:

How the code solves the challenge is that it goes through the arrays and each number, then it will check the type of each number by doing an if-else statement and an instance of to see whether it's an Integer, Double, Float, or String. While it does that, the code uses Math.abs to turn the number positive. Then the code prints it out while also using a try and catch to see if the number is an invalid number format, and also an else to see if the number is an unsupported type of type.



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## Section #4: ( 2 pts.) Problem 4 - Strings

Progress: 100%

### Task #1 ( 2 pts.) - Edit the `transformText` method to solve the challenges

Progress: 100%

#### Part 1:

Progress: 100%

##### Details:

Two screenshots are expected

1. Snippet of relevant code showing solution (with ucid/date comment)
2. Full output of executing the program

```
1 // Problem 4: Transform Text
2 // This program takes a string and transforms it according to the rules in the challenge.
3 // It uses the transformText method to perform the transformations.
4
5 import java.util.Scanner;
6
7 public class Problem4 {
8     public static void main(String[] args) {
9         Scanner scanner = new Scanner(System.in);
10         String input = scanner.nextLine();
11         String output = transformText(input);
12         System.out.println(output);
13     }
14
15     public static String transformText(String input) {
16         // Create a StringBuilder to build the transformed string
17         StringBuilder sb = new StringBuilder();
18
19         // Iterate over each character in the input string
20         for (int i = 0; i < input.length(); i++) {
21             char c = input.charAt(i);
22
23             // Check if the character is a space
24             if (c == ' ') {
25                 // Append the character as is
26                 sb.append(c);
27             } else if (Character.isUpperCase(c)) {
28                 // Convert to lowercase
29                 sb.append(Character.toLowerCase(c));
30             } else if (Character.isLowerCase(c)) {
31                 // Convert to uppercase
32                 sb.append(Character.toUpperCase(c));
33             } else {
34                 // Append the character as is
35                 sb.append(c);
36             }
37         }
38
39         // Return the transformed string
40         return sb.toString();
41     }
42 }
```

Code for problem 4 part 1

```
1 // Problem 4: Transform Text
2 // This program takes a string and transforms it according to the rules in the challenge.
3 // It uses the transformText method to perform the transformations.
4
5 import java.util.Scanner;
6
7 public class Problem4 {
8     public static void main(String[] args) {
9         Scanner scanner = new Scanner(System.in);
10         String input = scanner.nextLine();
11         String output = transformText(input);
12         System.out.println(output);
13     }
14
15     public static String transformText(String input) {
16         // Create a StringBuilder to build the transformed string
17         StringBuilder sb = new StringBuilder();
18
19         // Iterate over each character in the input string
20         for (int i = 0; i < input.length(); i++) {
21             char c = input.charAt(i);
22
23             // Check if the character is a space
24             if (c == ' ') {
25                 // Append the character as is
26                 sb.append(c);
27             } else if (Character.isUpperCase(c)) {
28                 // Convert to lowercase
29                 sb.append(Character.toLowerCase(c));
30             } else if (Character.isLowerCase(c)) {
31                 // Convert to uppercase
32                 sb.append(Character.toUpperCase(c));
33             } else {
34                 // Append the character as is
35                 sb.append(c);
36             }
37         }
38
39         // Return the transformed string
40         return sb.toString();
41     }
42 }
```

Code for problem 4 part 2

```
1 // Problem 4: Transform Text
2 // This program takes a string and transforms it according to the rules in the challenge.
3 // It uses the transformText method to perform the transformations.
4
5 import java.util.Scanner;
6
7 public class Problem4 {
8     public static void main(String[] args) {
9         Scanner scanner = new Scanner(System.in);
10         String input = scanner.nextLine();
11         String output = transformText(input);
12         System.out.println(output);
13     }
14
15     public static String transformText(String input) {
16         // Create a StringBuilder to build the transformed string
17         StringBuilder sb = new StringBuilder();
18
19         // Iterate over each character in the input string
20         for (int i = 0; i < input.length(); i++) {
21             char c = input.charAt(i);
22
23             // Check if the character is a space
24             if (c == ' ') {
25                 // Append the character as is
26                 sb.append(c);
27             } else if (Character.isUpperCase(c)) {
28                 // Convert to lowercase
29                 sb.append(Character.toLowerCase(c));
30             } else if (Character.isLowerCase(c)) {
31                 // Convert to uppercase
32                 sb.append(Character.toUpperCase(c));
33             } else {
34                 // Append the character as is
35                 sb.append(c);
36             }
37         }
38
39         // Return the transformed string
40         return sb.toString();
41     }
42 }
```



1. Snippet of relevant code showing solution (with ucid/date comment)


## 2. Full output of executing the program

```
86
87 String middleChars = "";
88 if (titleCase.length() >= 3) {
89     int middleIndex = titleCase.length() / 2;
90     if (middleIndex - 1 >= 0 && middleIndex + 1 < titleCase.length()) {
91         middleChars = titleCase.substring(middleIndex - 1, middleIndex + 2);
92     } else {
93         middleChars = titleCase.substring(titleCase.length() - 1);
94     }
95 } else {
96     middleChars = "Not enough characters";
97 }
98
99 placeholderForModifiedPhrase = titleCase;
100 placeholderForMiddleCharacters = middleChars;
101
102 // End Solution Edits
```

Code for solving the extra credit for problem 4

```
1 1. Write a program that takes a string as input and prints out the middle character(s) of the string.
2 2. If the string has an odd number of characters, print out the single middle character.
3 3. If the string has an even number of characters, print out the two middle characters.
4 4. If the string is empty, print out "Not enough characters".
5 5. If the string has only one character, print out that character.
6 6. If the string has two characters, print out both characters.
7 7. If the string has three characters, print out the middle character.
8 8. If the string has four characters, print out the two middle characters.
9 9. If the string has five characters, print out the middle character.
10 10. If the string has six characters, print out the two middle characters.
11 11. If the string has seven characters, print out the middle character.
12 12. If the string has eight characters, print out the two middle characters.
13 13. If the string has nine characters, print out the middle character.
14 14. If the string has ten characters, print out the two middle characters.
15 15. If the string has eleven characters, print out the middle character.
16 16. If the string has twelve characters, print out the two middle characters.
17 17. If the string has thirteen characters, print out the middle character.
18 18. If the string has fourteen characters, print out the two middle characters.
19 19. If the string has fifteen characters, print out the middle character.
20 20. If the string has sixteen characters, print out the two middle characters.
21 21. If the string has seventeen characters, print out the middle character.
22 22. If the string has eighteen characters, print out the two middle characters.
23 23. If the string has nineteen characters, print out the middle character.
24 24. If the string has twenty characters, print out the two middle characters.
25 25. If the string has twenty-one characters, print out the middle character.
26 26. If the string has twenty-two characters, print out the two middle characters.
27 27. If the string has twenty-three characters, print out the middle character.
28 28. If the string has twenty-four characters, print out the two middle characters.
29 29. If the string has twenty-five characters, print out the middle character.
30 30. If the string has twenty-six characters, print out the two middle characters.
31 31. If the string has twenty-seven characters, print out the middle character.
32 32. If the string has twenty-eight characters, print out the two middle characters.
33 33. If the string has twenty-nine characters, print out the middle character.
34 34. If the string has thirty characters, print out the two middle characters.
35 35. If the string has thirty-one characters, print out the middle character.
36 36. If the string has thirty-two characters, print out the two middle characters.
37 37. If the string has thirty-three characters, print out the middle character.
38 38. If the string has thirty-four characters, print out the two middle characters.
39 39. If the string has thirty-five characters, print out the middle character.
40 40. If the string has thirty-six characters, print out the two middle characters.
41 41. If the string has thirty-seven characters, print out the middle character.
42 42. If the string has thirty-eight characters, print out the two middle characters.
43 43. If the string has thirty-nine characters, print out the middle character.
44 44. If the string has forty characters, print out the two middle characters.
45 45. If the string has forty-one characters, print out the middle character.
46 46. If the string has forty-two characters, print out the two middle characters.
47 47. If the string has forty-three characters, print out the middle character.
48 48. If the string has forty-four characters, print out the two middle characters.
49 49. If the string has forty-five characters, print out the middle character.
50 50. If the string has forty-six characters, print out the two middle characters.
51 51. If the string has forty-seven characters, print out the middle character.
52 52. If the string has forty-eight characters, print out the two middle characters.
53 53. If the string has forty-nine characters, print out the middle character.
54 54. If the string has fifty characters, print out the two middle characters.
55 55. If the string has fifty-one characters, print out the middle character.
56 56. If the string has fifty-two characters, print out the two middle characters.
57 57. If the string has fifty-three characters, print out the middle character.
58 58. If the string has fifty-four characters, print out the two middle characters.
59 59. If the string has fifty-five characters, print out the middle character.
60 60. If the string has fifty-six characters, print out the two middle characters.
61 61. If the string has fifty-seven characters, print out the middle character.
62 62. If the string has fifty-eight characters, print out the two middle characters.
63 63. If the string has fifty-nine characters, print out the middle character.
64 64. If the string has sixty characters, print out the two middle characters.
65 65. If the string has sixty-one characters, print out the middle character.
66 66. If the string has sixty-two characters, print out the two middle characters.
67 67. If the string has sixty-three characters, print out the middle character.
68 68. If the string has sixty-four characters, print out the two middle characters.
69 69. If the string has sixty-five characters, print out the middle character.
70 70. If the string has sixty-six characters, print out the two middle characters.
71 71. If the string has sixty-seven characters, print out the middle character.
72 72. If the string has sixty-eight characters, print out the two middle characters.
73 73. If the string has sixty-nine characters, print out the middle character.
74 74. If the string has seventy characters, print out the two middle characters.
75 75. If the string has seventy-one characters, print out the middle character.
76 76. If the string has seventy-two characters, print out the two middle characters.
77 77. If the string has seventy-three characters, print out the middle character.
78 78. If the string has seventy-four characters, print out the two middle characters.
79 79. If the string has seventy-five characters, print out the middle character.
80 80. If the string has seventy-six characters, print out the two middle characters.
81 81. If the string has seventy-seven characters, print out the middle character.
82 82. If the string has seventy-eight characters, print out the two middle characters.
83 83. If the string has seventy-nine characters, print out the middle character.
84 84. If the string has eighty characters, print out the two middle characters.
85 85. If the string has eighty-one characters, print out the middle character.
86 86. If the string has eighty-two characters, print out the two middle characters.
87 87. If the string has eighty-three characters, print out the middle character.
88 88. If the string has eighty-four characters, print out the two middle characters.
89 89. If the string has eighty-five characters, print out the middle character.
90 90. If the string has eighty-six characters, print out the two middle characters.
91 91. If the string has eighty-seven characters, print out the middle character.
92 92. If the string has eighty-eight characters, print out the two middle characters.
93 93. If the string has eighty-nine characters, print out the middle character.
94 94. If the string has ninety characters, print out the two middle characters.
95 95. If the string has ninety-one characters, print out the middle character.
96 96. If the string has ninety-two characters, print out the two middle characters.
97 97. If the string has ninety-three characters, print out the middle character.
98 98. If the string has ninety-four characters, print out the two middle characters.
99 99. If the string has ninety-five characters, print out the middle character.
100 100. If the string has ninety-six characters, print out the two middle characters.
101 101. If the string has ninety-seven characters, print out the middle character.
102 102. If the string has ninety-eight characters, print out the two middle characters.
103 103. If the string has ninety-nine characters, print out the middle character.
104 104. If the string has one hundred characters, print out the two middle characters.
```

Output for Problem 4

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### Part 2:


Progress: 100%

#### Details:

Briefly explain **how** the code solves the extra credit challenge (note: this isn't the same as **what** the code does)

#### Your Response:

For the extra credit, the code solves this challenge by finding the length of the variable and using the index and substrings to find the middle 3 characters and print them, and for not enough characters, a substring is used to see if it is too short.

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## Section #5: ( 2 pts.) Misc

Progress: 100%

### Task #1 ( 0.67 pts.) - Github Details

Progress: 100%

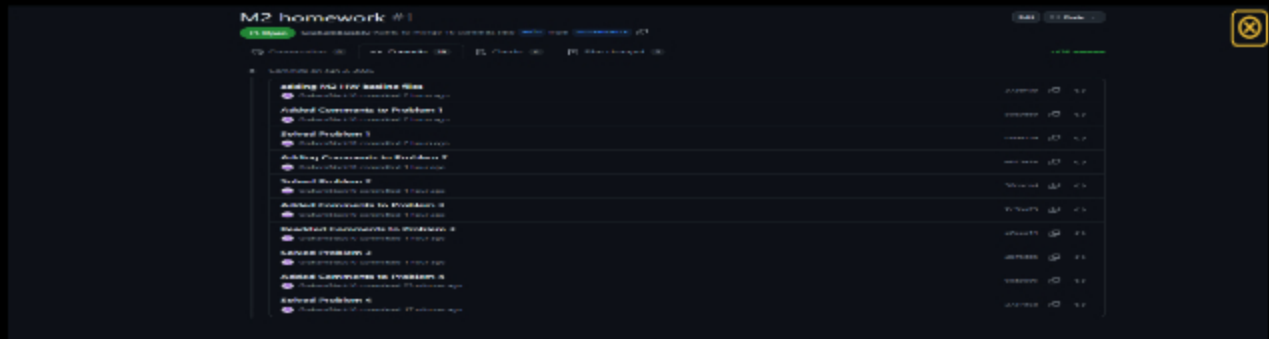
#### Part 1:

Progress: 100%


#### Details:



From the Commits tab of the Pull Request screenshot the commit history Following minimum should be present



Screenshot of Commits in merge tab for M2 to main

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## Part 2:

Progress: 100%

### Details:

Include the link to the Pull Request (should end in `/pull/#`)


### URL #1

<https://github.com/GrahamBlack10/gb373-IT114-450/pull/1>



### URL

<https://github.com/GrahamBlack10/gb373-IT114-450/pull/1>

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## Task #2 ( 0.67 pts.) - WakaTime - Activity


Progress: 100%

### Details:

- Visit the WakaTime.com Dashboard
- Click **Projects** and find your repository
- Capture the overall time at the top that includes the repository name
- Capture the individual time at the bottom that includes the file time
- Note: The duration isn't relevant for the grade and the visual graphs aren't necessary



**Projects - gb373-IT114-450**

**2 hrs 54 mins** over the Last 7 Days in gb373-IT114-450 under all branches. 

[illegible]

individual



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### ≡ Task #3 ( 0.67 pts.) - Reflection

Progress: 100%

⇒ Task #1 ( 0.33 pts.) - What did you learn?

Progress: 100%

### Details:

**Briefly answer the question (at least a few decent sentences)**

**Your Response:**

I learned about `trim()`, which helps with trimming spaces and other things. I also learned about another way of getting rid of special characters and keeping spaces without using the library, which is actually pretty neat and useful.



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⇒ Task #2 ( 0.33 pts.) - What was the easiest part of the assignment?

Progress: 100%

### Details:

**Briefly answer the question (at least a few decent sentences)**

**Your Response:**

The easiest part was Problems 1 and 2, this is because I have done something like this before in another class. Most of it was a refresher on the easier parts of Java and how to work with arrays and find different outputs using for loops and if statements. Also, for problem 2, I found it easy to modify the total to 2 decimal points.



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### ⇒ Task #3 ( 0.33 pts.) - What was the hardest part of the assignment?

Progress: 100%

**Details:**

Briefly answer the question (at least a few decent sentences)

**Your Response:**

The hardest part of this homework was the last 2 problems. For problem 3, I remembered about using `Math.abs` for making a number positive, but needed to remember and learn again about instances to help get the correct output. For problem 4, most was easy, and I needed to learn about `trim`, but for the extra credit, I ran into issues of how to get the middle characters. I knew how to find the length, but it was hard to print only 3. I came to the solution by using the index and substring to count 3 characters, and that's how I got it to print. I also found a solution with not enough characters by using a substring and the length to see if it has 3 characters.



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