

<b><u>Name</u></b>	<i><u>Muddassir Ali Siddiqui</u></i>
<b><u>Instructor</u></b>	<i><u>Miss Hira Sohail</u></i>
<b><u>Date</u></b>	<i><u>14<sup>th</sup> July 2025</u></i>

### 1. In-Lab Tasks: (Write your lab task & screenshots here)

#### i. Task 1:



FF flowchart.fun

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS TERSHDL
```

```
• [cc@ncdc-0053 codes]$ gcc lab4_task1.c -o task1
• [cc@ncdc-0053 codes]$ ./task1
Type any sentence.
YoU Are THE BeST.

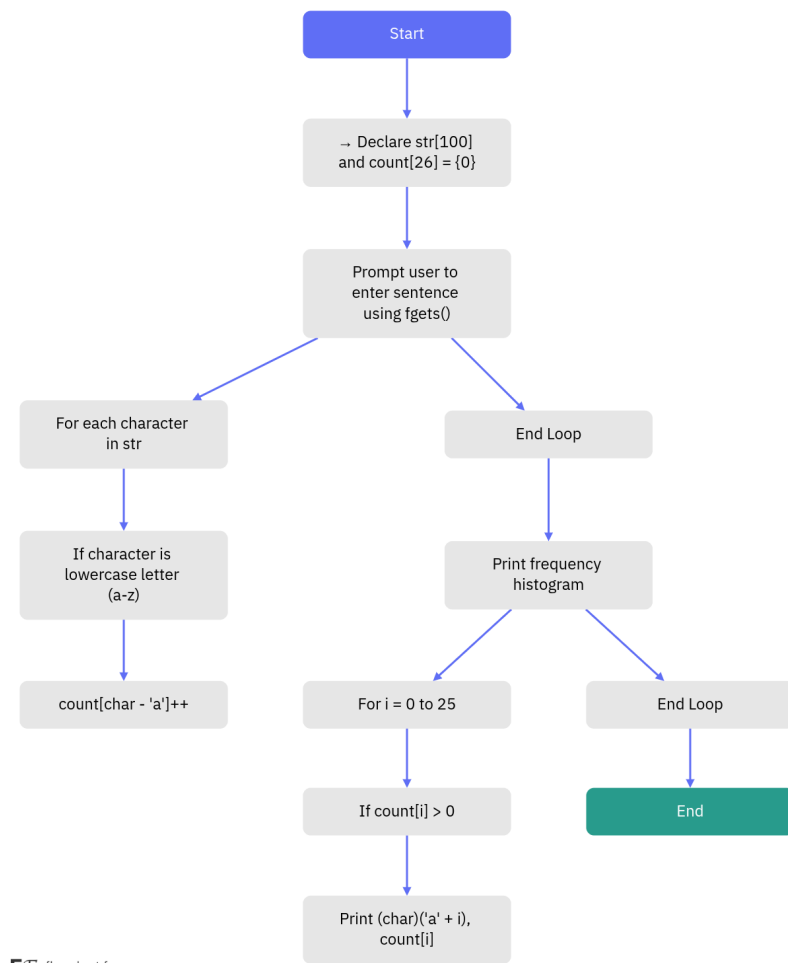
The length of the sentence is: 18

The sentence in Upper case is:   YOU ARE THE BEST.

The sentence in Lower case is:   you are the best.

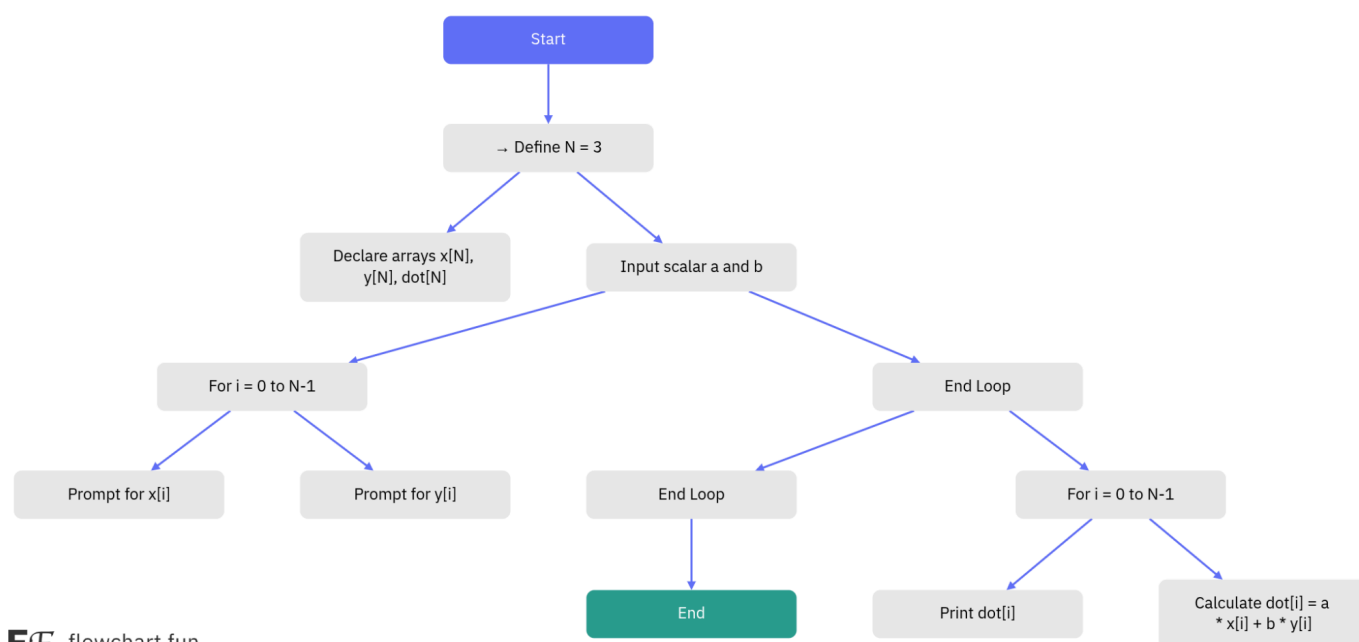
The words in the sentence :      4
The vowels in the sentence:      6
Ocurrence of a:      1
Ocurrence of e:      3
Ocurrence of i:      0
Ocurrence of o:      1
Ocurrence of u:      1
```

### ii. Task 2:

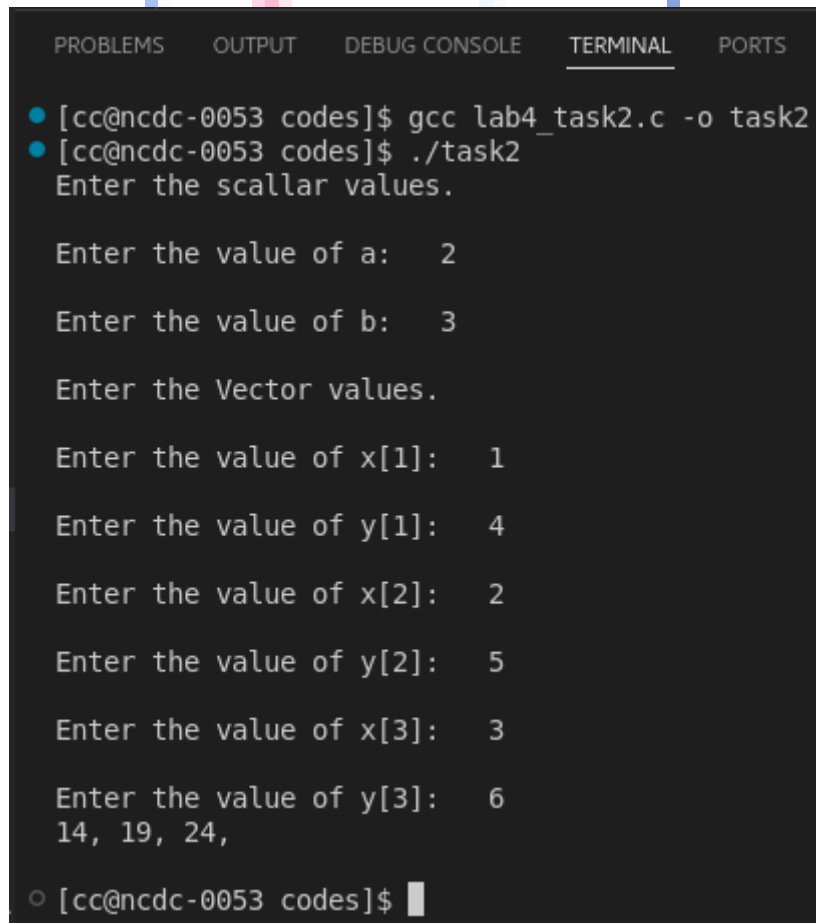


```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
[cc@ncdc-0053 codes]$ gcc lab4_task3.c -o task3
[cc@ncdc-0053 codes]$ ./task3
Elements      Value      Histogram
0             9      *****
1            16      *****
2            11      *****
3             8      *****
4             8      *****
5             4      ****
6            14      *****
7            16      *****
8             6      *****
9            16      *****
[cc@ncdc-0053 codes]$
```

### iii. Task 3:



**FF** flowchart.fun



```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
[cc@ncdc-0053 codes]$ gcc lab4_task2.c -o task2
[cc@ncdc-0053 codes]$ ./task2
Enter the scallar values.

Enter the value of a:  2

Enter the value of b:  3

Enter the Vector values.

Enter the value of x[1]:  1

Enter the value of y[1]:  4

Enter the value of x[2]:  2

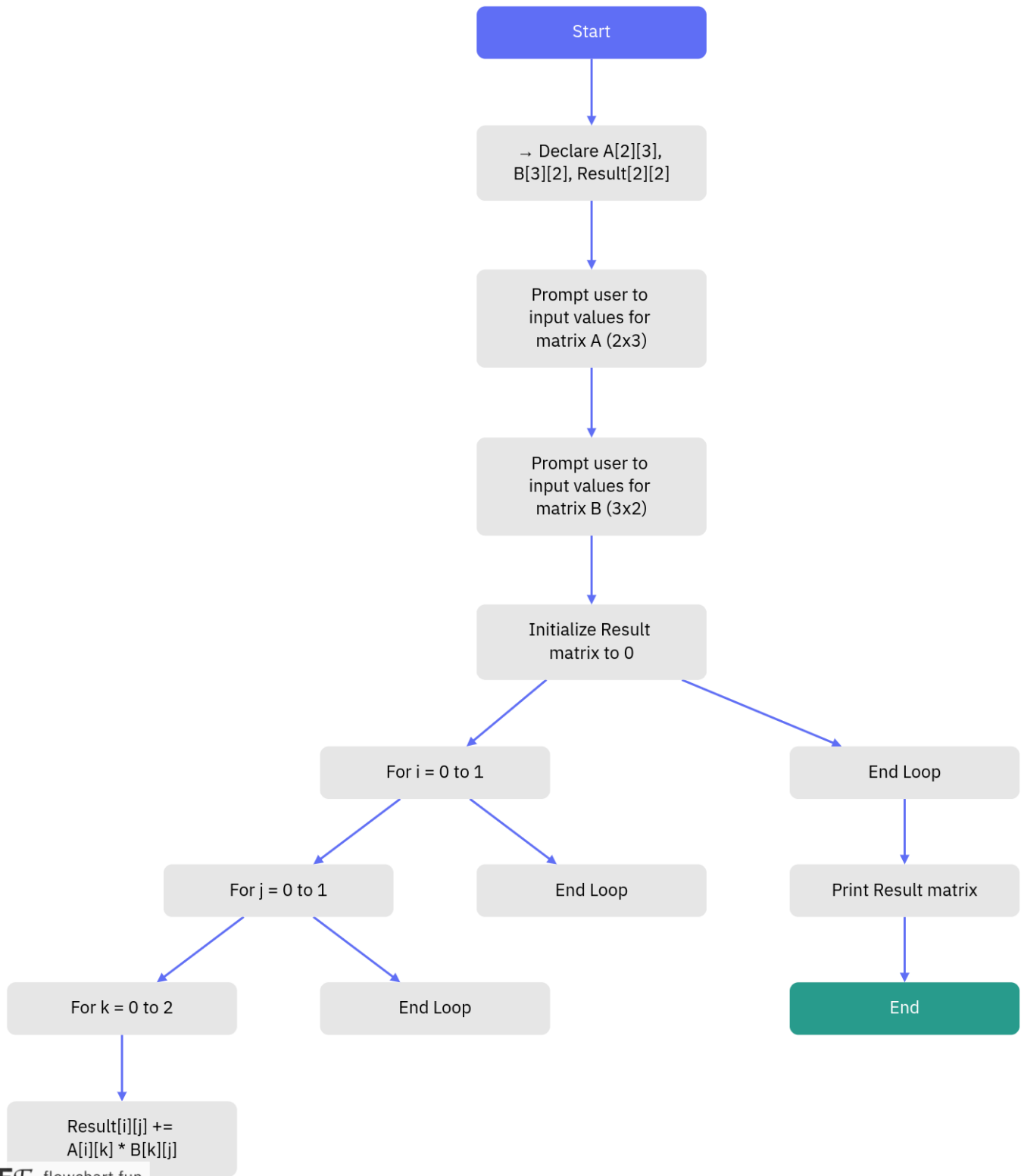
Enter the value of y[2]:  5

Enter the value of x[3]:  3

Enter the value of y[3]:  6
14, 19, 24,

[cc@ncdc-0053 codes]$
```

#### iv. Task 4:



**FF** flowchart.fun

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS 1
• [cc@ncdc-0053 codes]$ gcc lab4_task4.c -o task4
• [cc@ncdc-0053 codes]$ ./task4
Enter the Rows and Column for matrix A.

Enter the Rows (M): 2
Enter the Column (N): 3

Enter only the Column for matrix B.

Enter the Column (K): 2

Enter the values of matrix A.
Enter the Row # (1) and Cloumn # (1): 1
Enter the Row # (1) and Cloumn # (2): 2
Enter the Row # (1) and Cloumn # (3): 3
Enter the Row # (2) and Cloumn # (1): 4
Enter the Row # (2) and Cloumn # (2): 5
Enter the Row # (2) and Cloumn # (3): 6

Enter the values of matrix B.
Enter the Row # (1) and Cloumn # (1): 7
Enter the Row # (1) and Cloumn # (2): 8
Enter the Row # (2) and Cloumn # (1): 9
Enter the Row # (2) and Cloumn # (2): 10
Enter the Row # (3) and Cloumn # (1): 11
Enter the Row # (3) and Cloumn # (2): 12

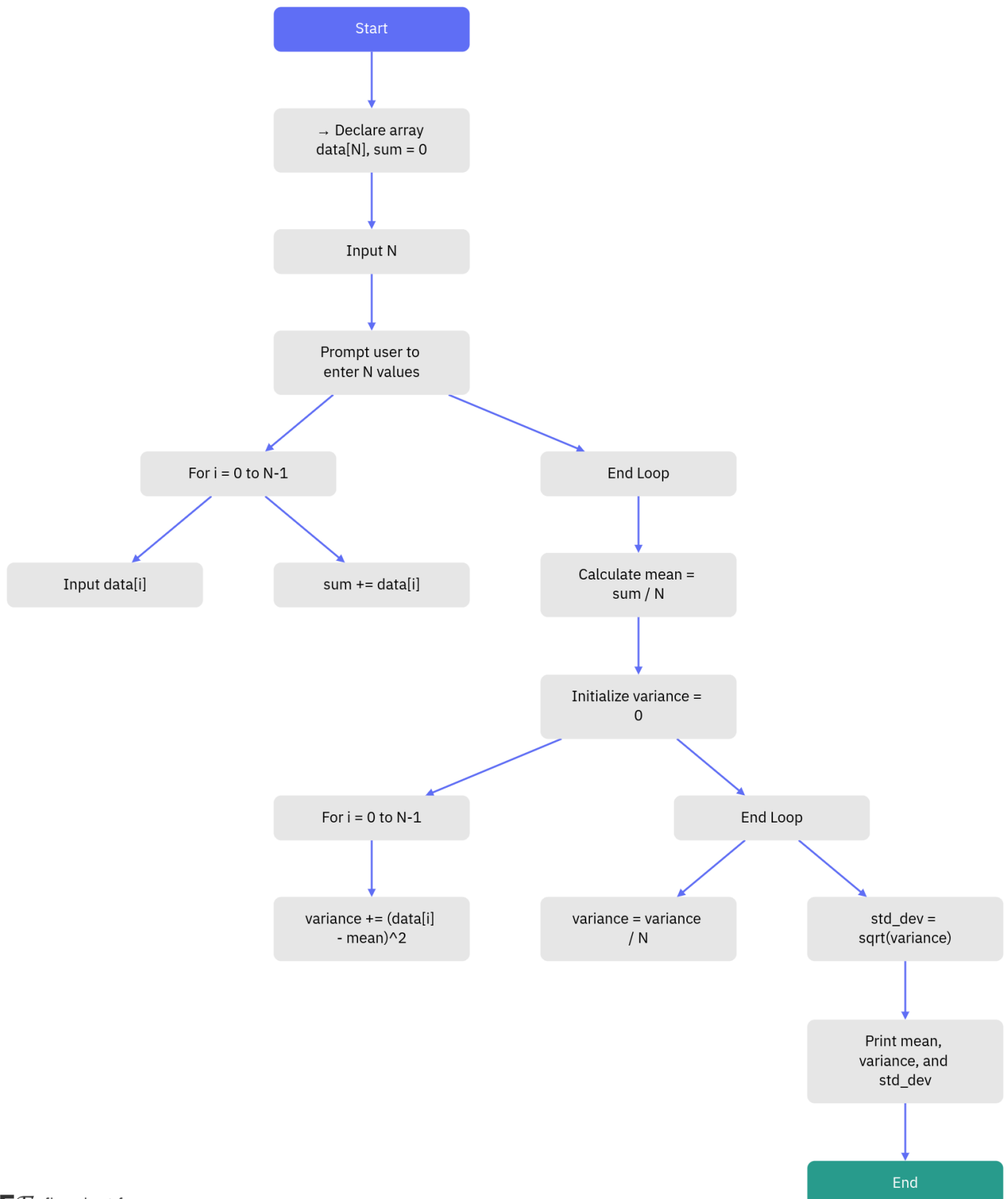
The Resultant vector is.

58 64

139 154

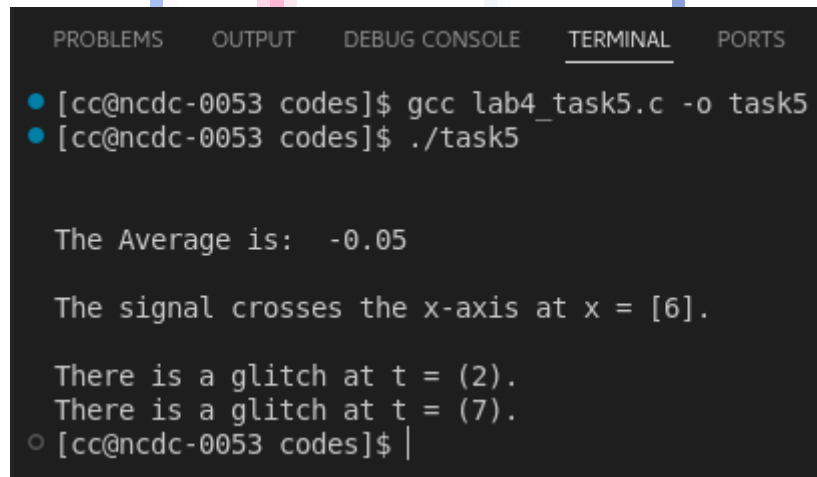
○ [cc@ncdc-0053 codes]$ |
```

### v. Task 5:



**FF** flowchart.fun





```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
[cc@ncdc-0053 codes]$ gcc lab4_task5.c -o task5
[cc@ncdc-0053 codes]$ ./task5

The Average is: -0.05

The signal crosses the x-axis at x = [6].

There is a glitch at t = (2).
There is a glitch at t = (7).
[cc@ncdc-0053 codes]$ |
```

## **2. Critical Analysis:** (*Write you critical analysis / conclusion here*)

In this lab we learned about the arrays and how we store values in a single variable by assigning it the length of the array. We do not take multiple variables for multiple input just assign the array of length and take input by using for loop.