

# CSE 331/503

## Computer Organization

### Homework 2-Report

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The code explanation is inside the code files.

There is no missing parts as far as I tested

I have printed the array elements which can reach to target.

Recursion call numbers are calculated.

Every test in a different page

#### Tests 1:

Array Size: 10

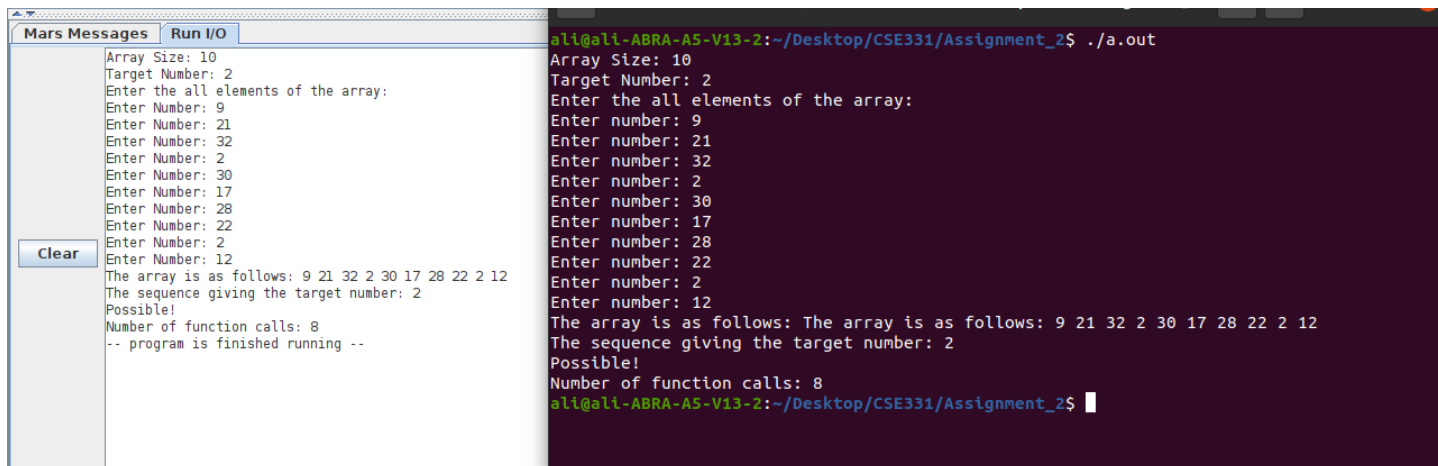
Target Number: 2

Array = 9 21 32 2 30 17 28 22 2 12

Result = possible

Result array = 2

Number of calls = 8



The screenshot displays two side-by-side windows. The left window, titled 'Mars Messages', contains a list of input prompts and their corresponding values: 'Array Size: 10', 'Target Number: 2', and ten 'Enter the all elements of the array:' prompts with values 9, 21, 32, 2, 30, 17, 28, 22, 2, and 12. Below these inputs, it shows the output: 'The array is as follows: 9 21 32 2 30 17 28 22 2 12', 'The sequence giving the target number: 2', 'Possible!', 'Number of function calls: 8', and '-- program is finished running --'. A 'Clear' button is visible. The right window is a terminal with a dark background, showing the same sequence of inputs and outputs as the Mars Messages window, confirming the program's execution.

```
ali@ali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment_2$ ./a.out
Array Size: 10
Target Number: 2
Enter the all elements of the array:
Enter number: 9
Enter number: 21
Enter number: 32
Enter number: 2
Enter number: 30
Enter number: 17
Enter number: 28
Enter number: 22
Enter number: 2
Enter number: 12
The array is as follows: 9 21 32 2 30 17 28 22 2 12
The sequence giving the target number: 2
Possible!
Number of function calls: 8
-- program is finished running --
```

## Tests 2:

Array Size: 10

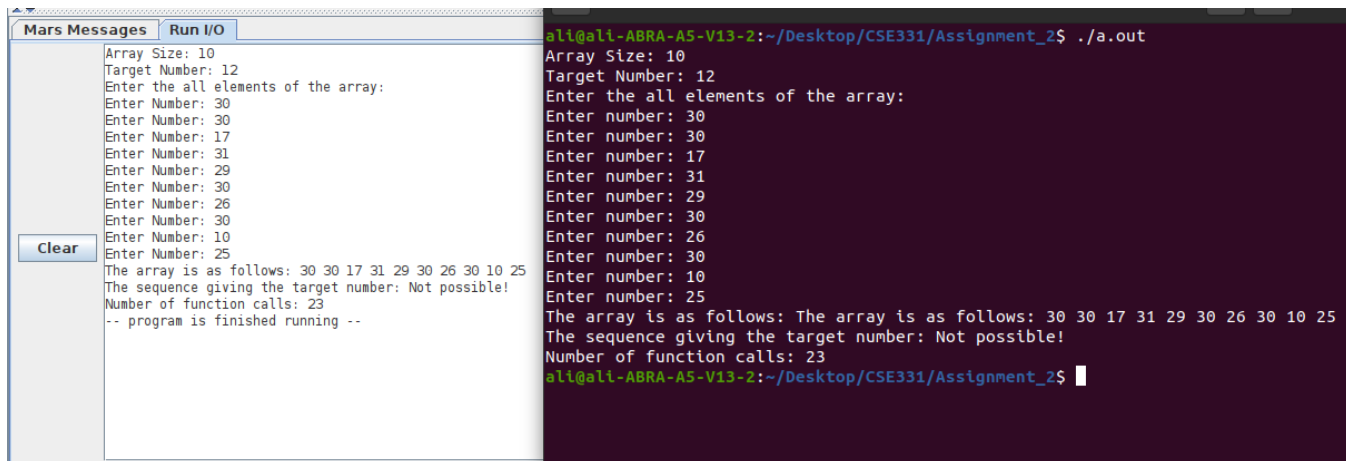
Target Number: 12

Array = 30 30 17 31 29 30 26 30 10 25

Result = Not Possible!

Result array =

Number of calls = 23



The screenshot displays two side-by-side windows. The left window, titled 'Mars Messages', shows the program's input and output. It lists the array size (10), target number (12), and the array elements (30 30 17 31 29 30 26 30 10 25). It then states 'The sequence giving the target number: Not possible!' and 'Number of function calls: 23'. The right window is a terminal showing the command to run the program: `all@ali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment_2$ ./a.out`. The terminal output matches the messages in the left window, including the array details, the 'Not possible!' result, and the 23 function calls.

```
Mars Messages Run I/O
Array Size: 10
Target Number: 12
Enter the all elements of the array:
Enter Number: 30
Enter Number: 30
Enter Number: 17
Enter Number: 31
Enter Number: 29
Enter Number: 30
Enter Number: 26
Enter Number: 30
Enter Number: 10
Enter Number: 25
The array is as follows: 30 30 17 31 29 30 26 30 10 25
The sequence giving the target number: Not possible!
Number of function calls: 23
-- program is finished running --

all@ali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment_2$ ./a.out
Array Size: 10
Target Number: 12
Enter the all elements of the array:
Enter number: 30
Enter number: 30
Enter number: 17
Enter number: 31
Enter number: 29
Enter number: 30
Enter number: 26
Enter number: 30
Enter number: 10
Enter number: 25
The array is as follows: The array is as follows: 30 30 17 31 29 30 26 30 10 25
The sequence giving the target number: Not possible!
Number of function calls: 23
all@ali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment_2$
```

### Tests 3:

Array Size: 0

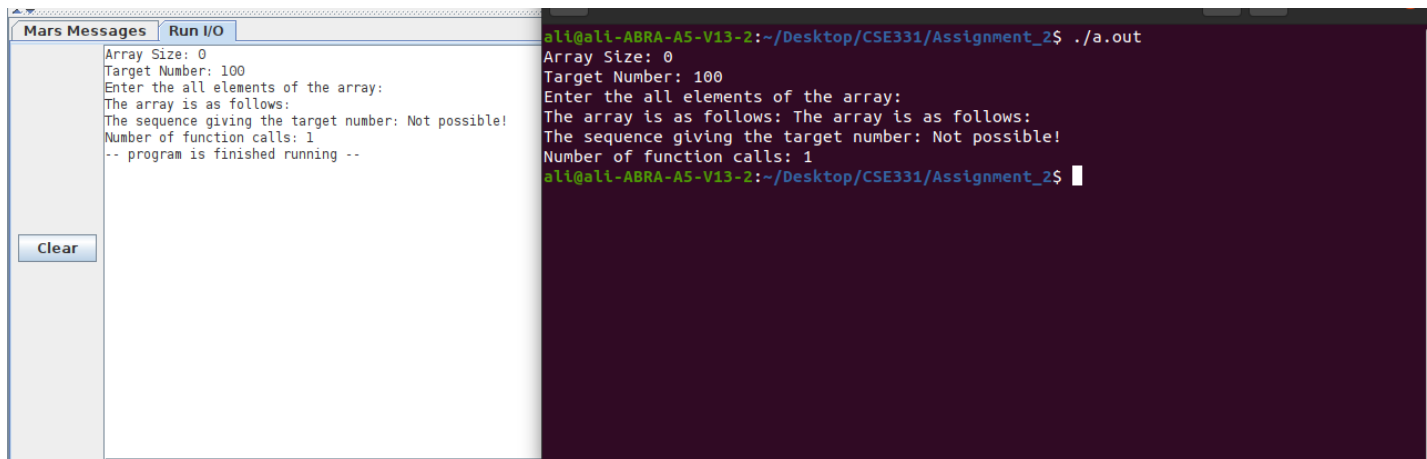
Target Number: 100

Array =

Result = Not Possible!

Result array =

Number of call =1



The screenshot displays two side-by-side windows from a Mars simulation environment. The left window, titled 'Mars Messages', shows the program's output: 'Array Size: 0', 'Target Number: 100', 'Enter the all elements of the array:', 'The array is as follows:', 'The sequence giving the target number: Not possible!', 'Number of function calls: 1', and '-- program is finished running --'. Below the text is a 'Clear' button. The right window is a terminal with a dark purple background, showing the command prompt 'ali@ali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment\_2\$ ./a.out' and the same output as the Mars Messages window.

```
ali@ali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment_2$ ./a.out
Array Size: 0
Target Number: 100
Enter the all elements of the array:
The array is as follows:
The sequence giving the target number: Not possible!
Number of function calls: 1
-- program is finished running --
```

#### Tests 4:

Array Size: 15

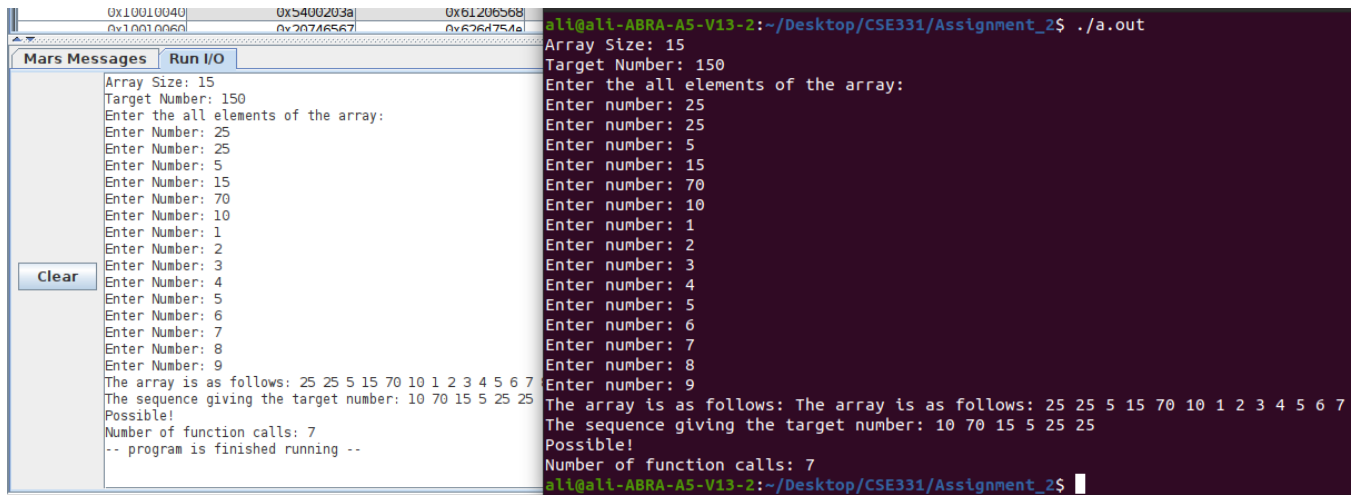
Target Number: 150

Array = 25 25 5 15 70 10 1 2 3 4 5 6 7

Result = Possible

Result array = 10 70 15 5 25 25

Number of call = 7



The screenshot shows a Mars Messages window on the left and a terminal window on the right. The Mars Messages window displays the following text:

```
Array Size: 15
Target Number: 150
Enter the all elements of the array:
Enter Number: 25
Enter Number: 25
Enter Number: 5
Enter Number: 15
Enter Number: 70
Enter Number: 10
Enter Number: 1
Enter Number: 2
Enter Number: 3
Enter Number: 4
Enter Number: 5
Enter Number: 6
Enter Number: 7
Enter Number: 8
Enter Number: 9
The array is as follows: 25 25 5 15 70 10 1 2 3 4 5 6 7
The sequence giving the target number: 10 70 15 5 25 25
Possible!
Number of function calls: 7
-- program is finished running --
```

The terminal window shows the following text:

```
all@gali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment_2$ ./a.out
Array Size: 15
Target Number: 150
Enter the all elements of the array:
Enter number: 25
Enter number: 25
Enter number: 5
Enter number: 15
Enter number: 70
Enter number: 10
Enter number: 1
Enter number: 2
Enter number: 3
Enter number: 4
Enter number: 5
Enter number: 6
Enter number: 7
Enter number: 8
Enter number: 9
The array is as follows: 25 25 5 15 70 10 1 2 3 4 5 6 7
The sequence giving the target number: 10 70 15 5 25 25
Possible!
Number of function calls: 7
all@gali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment_2$
```

## Tests 5:

Array Size: 15

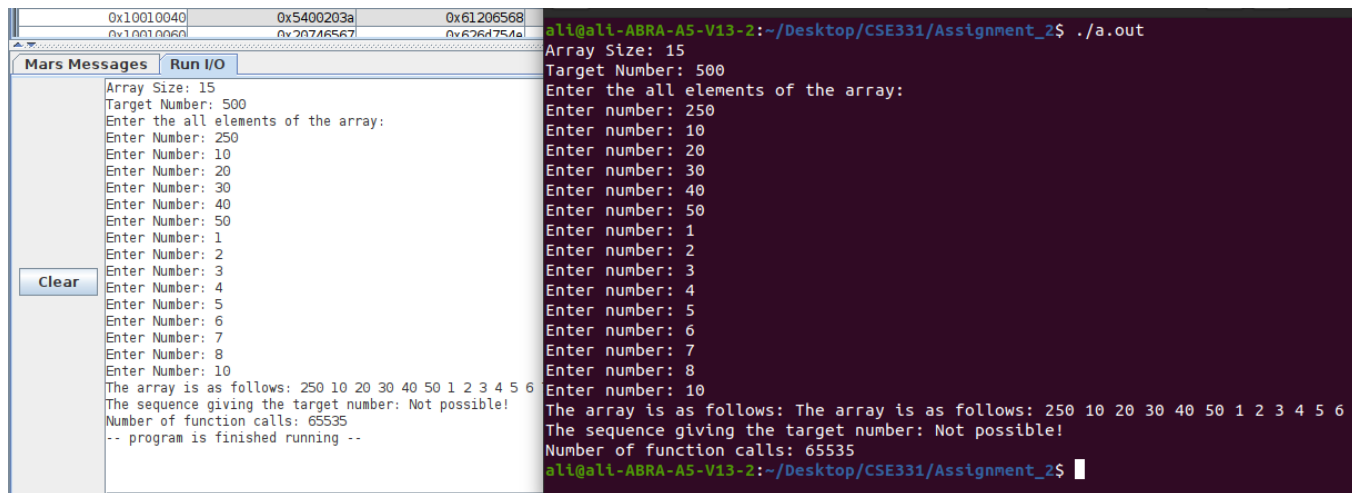
Target Number: 500

Array = 250 10 20 30 40 50 1 2 3 4 5 6

Result = Not Possible!

Result array =

Number of call = 65535



The screenshot shows two windows side-by-side. The left window is titled 'Mars Messages' and contains a text area with the following text: 'Array Size: 15', 'Target Number: 500', 'Enter the all elements of the array:', 'Enter Number: 250', 'Enter Number: 10', 'Enter Number: 20', 'Enter Number: 30', 'Enter Number: 40', 'Enter Number: 50', 'Enter Number: 1', 'Enter Number: 2', 'Enter Number: 3', 'Enter Number: 4', 'Enter Number: 5', 'Enter Number: 6', 'Enter Number: 7', 'Enter Number: 8', 'Enter Number: 10', 'The array is as follows: 250 10 20 30 40 50 1 2 3 4 5 6', 'The sequence giving the target number: Not possible!', 'Number of function calls: 65535', and '-- program is finished running --'. There is a 'Clear' button below the text area. The right window is a terminal window with a dark background, showing the command 'all@all-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment\_2\$ ./a.out' and its output, which matches the text in the 'Mars Messages' window.

```
all@all-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment_2$ ./a.out
Array Size: 15
Target Number: 500
Enter the all elements of the array:
Enter number: 250
Enter number: 10
Enter number: 20
Enter number: 30
Enter number: 40
Enter number: 50
Enter number: 1
Enter number: 2
Enter number: 3
Enter number: 4
Enter number: 5
Enter number: 6
Enter number: 7
Enter number: 8
Enter number: 10
The array is as follows: The array is as follows: 250 10 20 30 40 50 1 2 3 4 5 6
The sequence giving the target number: Not possible!
Number of function calls: 65535
all@all-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment_2$
```

## Tests 6:

Array Size: 10

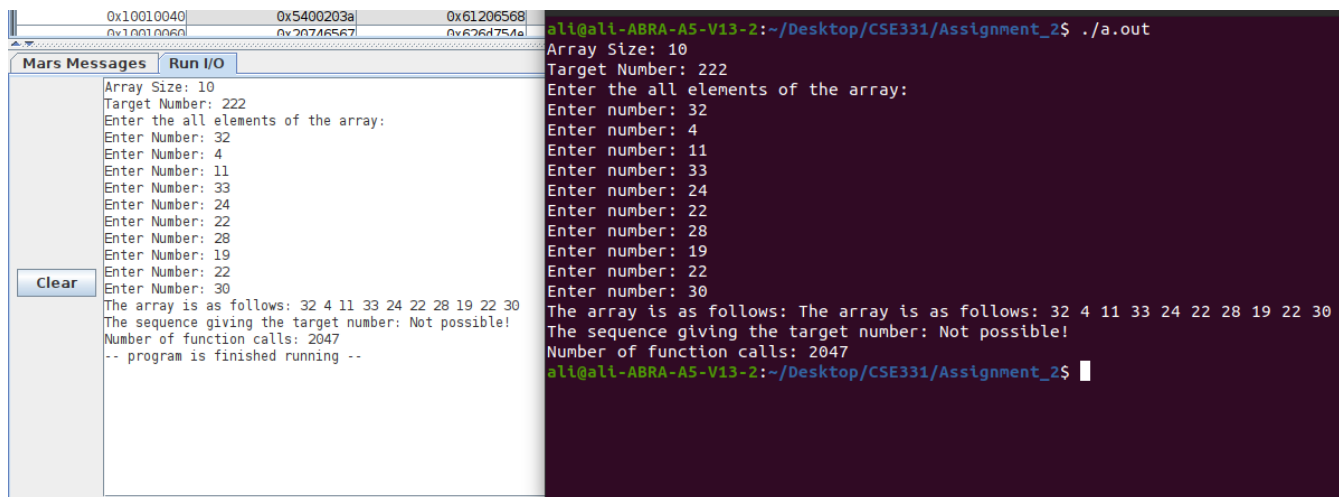
Target Number: 222

Array = 32 4 11 33 24 22 28 19 22 30

Result = Not Possible!

Result array =

Number of call = 2047



The image shows a screenshot of a Mars Messages window and a terminal window. The Mars Messages window has a 'Mars Messages' tab and a 'Run I/O' button. The terminal window shows the execution of a program named 'a.out' in a directory '~/Desktop/CSE331/Assignment\_2\$'. The program prompts for 'Array Size: 10' and 'Target Number: 222'. It then asks to 'Enter the all elements of the array:' and receives 10 inputs: 32, 4, 11, 33, 24, 22, 28, 19, 22, 30. The program outputs 'The array is as follows: 32 4 11 33 24 22 28 19 22 30', 'The sequence giving the target number: Not possible!', and 'Number of function calls: 2047'. The terminal window also shows the command 'ali@ali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment\_2\$ ./a.out' and the output of the program.

```
0x10010040 0x5400203a 0x61206568  
0x10010060 0x20746567 0x6264754a  
Mars Messages Run I/O  
Array Size: 10  
Target Number: 222  
Enter the all elements of the array:  
Enter Number: 32  
Enter Number: 4  
Enter Number: 11  
Enter Number: 33  
Enter Number: 24  
Enter Number: 22  
Enter Number: 28  
Enter Number: 19  
Enter Number: 22  
Enter Number: 30  
The array is as follows: 32 4 11 33 24 22 28 19 22 30  
The sequence giving the target number: Not possible!  
Number of function calls: 2047  
-- program is finished running --  
Clear  
ali@ali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment_2$ ./a.out  
Array Size: 10  
Target Number: 222  
Enter the all elements of the array:  
Enter number: 32  
Enter number: 4  
Enter number: 11  
Enter number: 33  
Enter number: 24  
Enter number: 22  
Enter number: 28  
Enter number: 19  
Enter number: 22  
Enter number: 30  
The array is as follows: The array is as follows: 32 4 11 33 24 22 28 19 22 30  
The sequence giving the target number: Not possible!  
Number of function calls: 2047  
ali@ali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment_2$
```

## Tests 7:

Array Size: 8

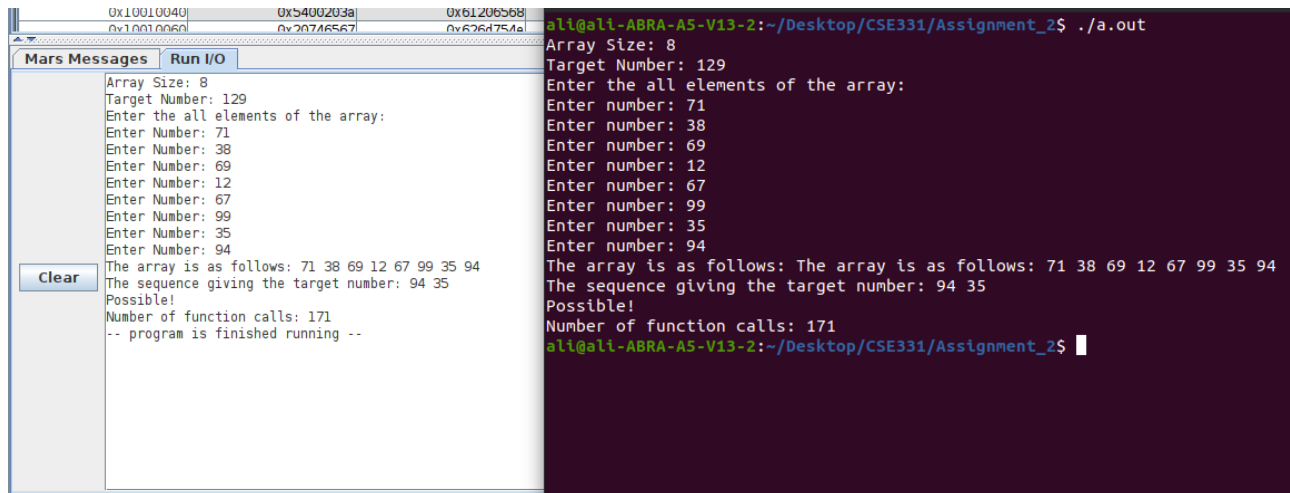
Target Number: 129

Array = 71 38 69 12 67 99 35 94

Result = Possible!

Result array = 94 35

Number of call = 171



The image shows two side-by-side windows. The left window is titled 'Mars Messages' and has a 'Run I/O' button. It displays the following text:

```
Array Size: 8
Target Number: 129
Enter the all elements of the array:
Enter Number: 71
Enter Number: 38
Enter Number: 69
Enter Number: 12
Enter Number: 67
Enter Number: 99
Enter Number: 35
Enter Number: 94
The array is as follows: 71 38 69 12 67 99 35 94
The sequence giving the target number: 94 35
Possible!
Number of function calls: 171
-- program is finished running --
```

The right window is a terminal window with a dark background. It shows the command prompt and the execution of the program:

```
ali@ali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment_2$ ./a.out
Array Size: 8
Target Number: 129
Enter the all elements of the array:
Enter number: 71
Enter number: 38
Enter number: 69
Enter number: 12
Enter number: 67
Enter number: 99
Enter number: 35
Enter number: 94
The array is as follows: The array is as follows: 71 38 69 12 67 99 35 94
The sequence giving the target number: 94 35
Possible!
Number of function calls: 171
ali@ali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment_2$
```

## Tests 8:

Array Size: 8

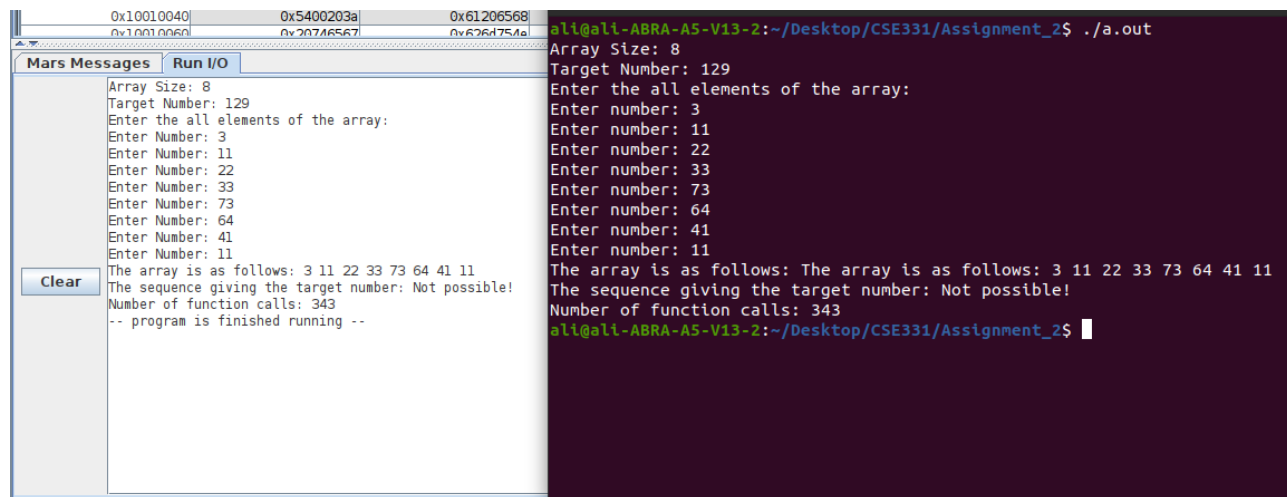
Target Number: 129

Array = 3 11 22 33 73 64 41 11

Result = Not Possible!

Result array =

Number of call = 343



The screenshot shows two windows side-by-side. The left window is titled 'Mars Messages' and has a 'Run I/O' button. It displays the following text: 'Array Size: 8', 'Target Number: 129', 'Enter the all elements of the array:', 'Enter Number: 3', 'Enter Number: 11', 'Enter Number: 22', 'Enter Number: 33', 'Enter Number: 73', 'Enter Number: 64', 'Enter Number: 41', 'Enter Number: 11', 'The array is as follows: 3 11 22 33 73 64 41 11', 'The sequence giving the target number: Not possible!', 'Number of function calls: 343', and '-- program is finished running --'. The right window is a terminal window with a dark background, showing the same text as the Mars Messages window, but with the prompt 'ali@ali-ABRA-A5-V13-2:~/Desktop/CSE331/Assignment\_2\$ ./a.out' at the top.

## How to test:

- First enter the size of the array
- Enter the target number
- Enter the all number by one by (after every number press enter)
- The result will be shown on terminal