

Answers to Questions from TT 7.2.1

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Hand execution using a trace table

Demonstrate how the following code is executed in the computer.

```
1 def whatshouldthisfunctionbecalled?(data, val)
2   i = 0
3   result = false
4   while i < data.length
5     if data[i] == val
6       result = true
7       return result
8     end
9     i = i + 1
10  end
11  return result
12 end
```

we start with index 0 following the sequence of the array data
then we set all result to be false
while index is less than data.length
if data[index] is or isn't the value
then result will either show false or true
then increment to add 1 to the index to keep reading the array data list

Draw and complete trace tables for the following two sets of data and place the final result in the table below:

<i>data</i>	<i>val</i>	<i>Result</i>
[2, 6, -4, 3, 7]	3	
[-2, 8, 2, -5, 9]	6	

Once you have completed your trace tables (below) write the name you chose for the function above:
Arraydata1

Place your trace tables below:

For data set: **data** = [2, 6, -4, 3, 7] **val** = 3

2	false
6	false
-4	false
3	true
7	

only 3 is true due to being the same data as the value

For data set: **data** = [-2, 8, 2, -5, 9] **val** = 6
arraydata2

-2	false
8	false
2	false
-5	false
9	false

all false due to no present of same value in the data list

4.suggestion as to how the design of the code could be improved in line with structured principles?
best solution will be to improved the code with clarification of the “val” field. It’s a very simple name which could cause some reading understanding to some people so its best to use such names like “value1”, “value2”.