

## 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
```

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:  
results\_check (data, val)

Place your trace tables below:

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

| Data | Index | Result |
|------|-------|--------|
| 2    | 0     | false  |
| 6    | 1     | false  |
| -4   | 2     | false  |
| 3    | 3     | true   |

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

| Data | Index | Result |
|------|-------|--------|
| -2   | 0     | false  |
| 8    | 1     | false  |
| 2    | 2     | false  |
| -5   | 3     | false  |
| 9    | 4     | false  |

**4. Suggestion as to how the design of the code could be improved in line with structured principles?**

- using index instead of i
- rewriting the function name to be clearer
- shorten the loop

```

while index < data.length
  return true if data[index] == val
  index += 1
end

```