


This is CS50

CS50's Introduction to Computer Science

OpenCourseWare

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Max

Learning Goals

- Pass an array into a function
- Create a helper function that finds a maximum value

Background

There are many situations where you'll find it helpful to have a function that finds the maximum (and minimum) value in an array. Since there is no built-in `max` function in `C`, you'll create one in this practice problem. You can then use it in upcoming problem sets where it may be helpful!

 Hints

Demo

Getting Started

1. Log into [code.cs50.io \(https://code.cs50.io/\)](https://code.cs50.io/) using your GitHub account.
2. Click inside the terminal window and execute `cd`.
3. Execute `wget https://cdn.cs50.net/2022/fall/labs/3/max.zip` followed by Enter in order to download a zip called `max.zip` in your codespace. Take care not to overlook the space between `wget` and the following URL, or any other character for that matter!
4. Now execute `unzip max.zip` to create a folder called `max`.
5. You no longer need the ZIP file, so you can execute `rm max.zip` and respond with “y” followed by Enter at the prompt.

Implementation Details

The `main` function initializes the array, asks the user to enter values, and then passes the array and the number of items to the `max` function. Complete the `max` function by iterating through every element in the array, and return the maximum value.

Thought Question

- What types of programs can you think of that might benefit from a `max` helper function?

How to Test Your Code

Your program should behave per the examples below.

```
max/ $ ./max
Number of elements: 3
Element 0: 2
Element 1: 10
Element 2: -1
The max value is 10.
```

```
max/ $ ./max
Number of elements: 4
Element 0: -100
Element 1: -200
Element 2: -3
Element 3: -5000
The max value is -3.
```

You can check your code using `check50`, a program that CS50 will use to test your code when you submit, by typing in the following at the `$` prompt. But be sure to test it yourself as well!

```
check50 cs50/labs/2023/x/max
```

To evaluate that the style of your code, type in the following at the `$` prompt.

```
style50 max.c
```

How to Submit

No need to submit! This is an optional practice problem.

