# This is CS50x

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## Lab 2: Scrabble

You are welcome to collaborate with one or two classmates on this lab, though it is expected that every student in any such group contribute equally to the lab.

GitHub now requires that you use SSH or a personal access token instead of a password to log in, but you can still use `check50` and `submit50`! See **cs50.ly/github (https://cs50.ly/github)** for instructions if you haven't already!

Determine which of two Scrabble words is worth more.

```
$ ./scrabble
Player 1: COMPUTER
Player 2: science
Player 1 wins!
```

### When to Do It

By Saturday, January 1, 2022, 10:29 AM GMT+5:30 (https://time.cs50.io/2021-12-31T23:59:00-05:00).

## Background

In the game of Scrabble (https://scrabble.hasbro.com/en-us/rules), players create words to score points, and the number of points is the sum of the point values of each letter in the word.

| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 3 | 2 | 1 | 4 | 2 | 4 | 1 | 8 | 5 | 1 | 3 | 1 | 1 | 3 | 10 | 1 |

For example, if we wanted to score the word `Code`, we would note that in general Scrabble rules, the `C` is worth `3` points, the `o` is worth `1` point, the `d` is worth `2` points, and the `e` is worth `1` point. Summing these, we get that `Code` is worth `3 + 1 + 2 + 1 = 7` points.

## Getting Started

- Copy the "distribution code" (i.e., starter code) from cdn.cs50.net/2020/fall/labs/2/scrabble.c (https://cdn.cs50.net/2020/fall/labs/2/scrabble.c) into a new file in your IDE called `scrabble.c`.
  - You can also download the distribution code by running the command `wget https://cdn.cs50.net/2020/fall/labs/2/scrabble.c` in CS50 IDE.

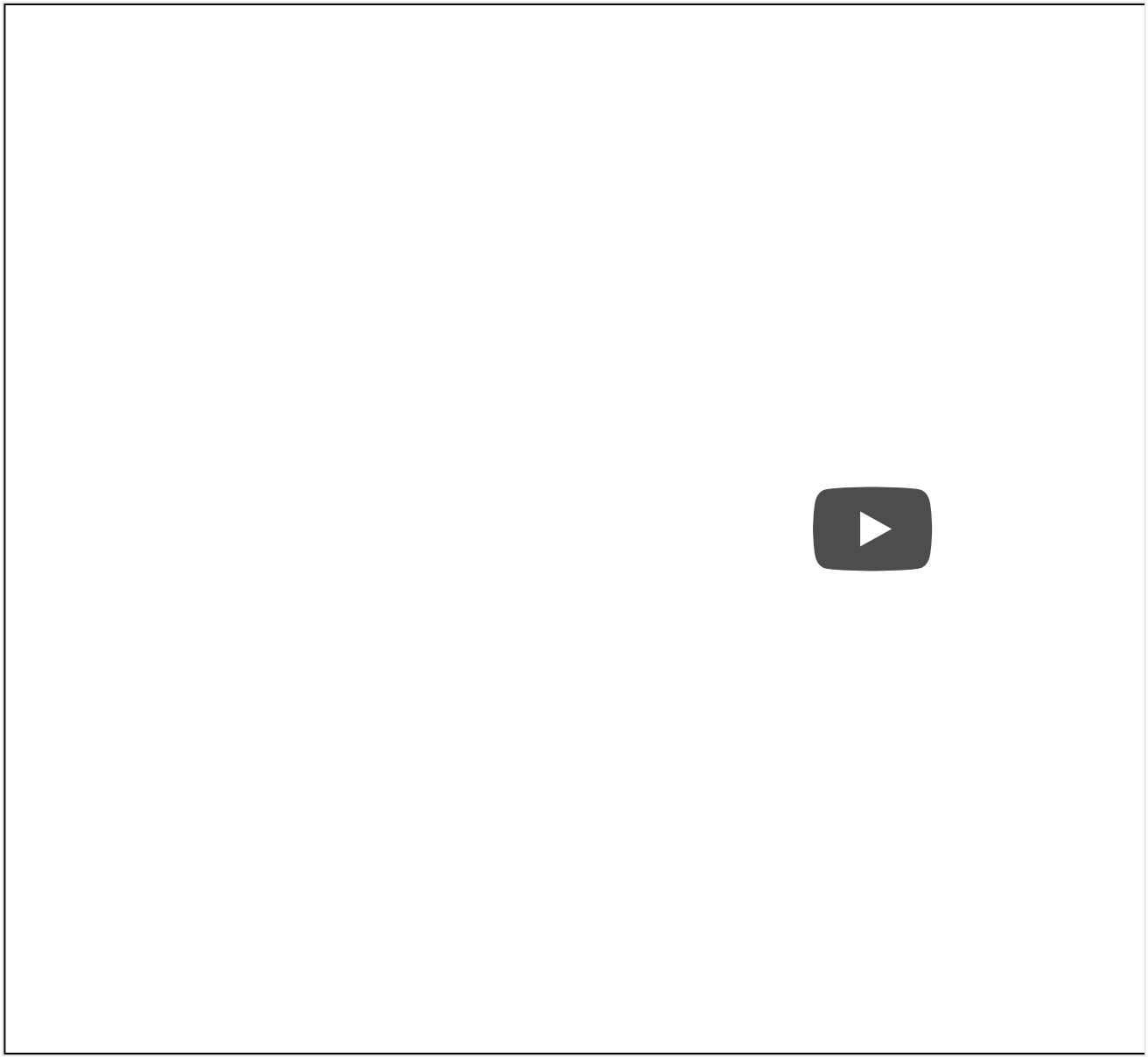
## Implementation Details

Complete the implementation of `scrabble.c`, such that it determines the winner of a short scrabble-like game, where two players each enter their word, and the higher scoring player wins.

- Notice that we've stored the point values of each letter of the alphabet in an integer array named `POINTS`.
  - For example, `A` or `a` is worth 1 point (represented by `POINTS[0]`), `B` or `b` is worth 3 points (represented by `POINTS[1]`), etc.
- Notice that we've created a prototype for a helper function called `compute_score()` that takes a string as input and returns an `int`. Whenever we would like to assign point values to a particular word, we can call this function. Note that this prototype is required for C to know that `compute_score()` exists later in the program.

- In `main()`, the program prompts the two players for their words using the `get_string()` function. These values are stored inside variables named `word1` and `word2`.
- In `compute_score()`, your program should compute, using the `POINTS` array, and return the score for the string argument. Characters that are not letters should be given zero points, and uppercase and lowercase letters should be given the same point values.
  - For example, `!` is worth `0` points while `A` and `a` are both worth `1` point.
  - Though Scrabble rules normally require that a word be in the dictionary, no need to check for that in this problem!
- In `main()`, your program should print, depending on the players' scores, `Player 1 wins!`, `Player 2 wins!`, or `Tie!`.

## Walkthrough



## Hints

- You may find the functions `isupper()` and `islower()` to be helpful to you. These functions take in a character as the argument and return a nonzero value if the character

is uppercase (for `isupper`) or lowercase (for `islower`).

- To find the value at the `n`th index of an array called `arr`, we can write `arr[n]`. We can apply this to strings as well, as strings are arrays of characters.
- Recall that computers represent characters using ASCII (http://asciitable.com/), a standard that represents each character as a number.

## How to Test Your Code

Your program should behave per the examples below.

```
$ ./scrabble
Player 1: Question?
Player 2: Question!
Tie!
```

```
$ ./scrabble
Player 1: Oh,
Player 2: hai!
Player 2 wins!
```

```
$ ./scrabble
Player 1: COMPUTER
Player 2: science
Player 1 wins!
```

```
$ ./scrabble
Player 1: Scrabble
Player 2: wiNNeR
Player 1 wins!
```

▶ **Not sure how to solve?**

Execute the below to evaluate the correctness of your code using `check50`. But be sure to compile and test it yourself as well!

```
check50 cs50/labs/2021/x/scrabble
```

Execute the below to evaluate the style of your code using `style50`.

```
style50 scrabble.c
```

# How to Submit

Execute the below to submit your work.

```
submit50 cs50/labs/2021/x/scrabble
```