
# Full Stack Developer Program

EvolveU

# Agenda

## Javascript Exercises

**Arrays**

- **Select the maximum value in an array**
- **Select the n’th smallest value in an array**
- **Select top “N” elements of an array**

**Strings**

- **Count the number of times a letter appears in a string**
- **Encrypt/decrypt a message with a substitution cipher**
- **Reverse the cipher key**

# Warm up (5-10 write, 10 mins review)

## Select largest element in an array

**Write a function that takes an array of numbers and returns the maximum value in that array.**

- **Options:**
    a. **Use a for loop**
    b. **Use forEach**

(I literally write several versions of that function every week)

# Exercise 1: (15 mins write, 15 mins review)

**Select the “n’th” smallest item in an array**

https://www.codewars.com/kata/5a512f6a80eba857280000fc

# Exercise 2: (15 mins write, 15 mins review)

**Select largest “n” elements of an array**

https://www.codewars.com/kata/53d32bea2f2a21f666000256

# Warm up: (5-10 mins write, 10 mins review)

## Count the number of times a letter occurs in a string

- **Input is a string, and a single letter**
- **Output is the number of times that letter appears in the string**

**Example:**

**countLetter(“hello”, “l”) = 2**

**countLetter(“Tony”, “k”) = 0**

# Exercise 3: (15 mins write, 15 mins review)

## Encrypt a message with a substitution cipher

- **Input is a string, and a cipher key**
- **Output is a string where every character that has an entry in the cipher key has been substituted with the value of that entry**
- **If the letter does not exist in the cipher key, you do not change it**

**Example:**

**encrypt(“hello”, {h: ‘i’, e: ‘f’, l:’m’, o: ‘p’}) = “ifmmp”**

# Exercise 4: (15 mins write, 15 mins review)

## Compute the reverse cipher key

- **Input is a cipher key**
- **Output the inverse of that cipher key that can be used to decrypt a message that has been encrypted with the cipher key**
- **If a letter exists more than once as a substitution value, the behavior is undefined**

**Example:**

**reverseKey({h: ‘i’, e: ‘f’, l:’m’, o: ‘p’}) = {i: ‘h’, f: ‘e’, m: ‘l’, p: ‘o’}**