Overview

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EECS 368 Programming Language Paradigms

Friday Sept 7th 2022

In-Class Problem

1. What will the function in the blue box below calculate for a script from the Script Data Set?

```
function characterCount(script) {
    return script.ranges.reduce((count, [from, to]) => {
        return count + (to - from);
    }, 0);
}

console.log(SCRIPTS.reduce((a,b) => {
    return characterCount(a) < characterCount(b) ? b : a;
}));
```

This function will calculate the script that contains the largest amount of character in unicode. The script data set is where higher-order functions process data. In order to do so we use data sets about scripts - writing systems such as Coptic.

The characterCount method reduces the ranges assigned to a script by summing their sizes. The second call to reduce then uses this to find the largest script by comparing two scripts and returning the larger one. ranges being the property that contains an array of unicode character ranges, each of which is a two-element array containing alower bound and an upper bound. The lower bound in this case is an inclsuive (for example code 994 is a coptic character), and the upper bound is a non-inclusive code (for example 1108 is not).

2. What will console.log display?

```
{
  name: 'Coptic',
  ranges: [ [ 994, 1008 ], [ 11392, 11508 ], [ 11513, 11520 ] ],
  direction: 'ltr',
  year: -200,
  living: false,
  link: 'https://en.wikipedia.org/wiki/Coptic_alphabet'
}
```

3. Describe what this code from below does:

```
SCRIPTS.reduce((a,b) => {
    return characterCount(a) < characterCount(b) ? b : a;
})
```

This will compare the total number of characters of two different scripts from our data set and will then after return the largest of the two after iterating.