Assignment 4

Due Date: March 28, 2023 at 7:00 PM

Overview

This assignment will be worth **4%** of your total grade. The goal is to demonstrate you knowledge of File I/O and JSON to parse text files as well as utilize the asynchronous properties of JavaScript. Look at readFile and readdir functions for parts 3 & 4.

Important: If you are on a Windows machine, do not take into account /r for anything, you will lose points if you do. Also, if you use the ES6 import statement **instead** of the CommonJS require for node modules taught during lecture, you will lose 10%.

Specifications

For this assignment, you will need to understand File I/O and how to use an asynchronous function in JavaScript.

Part 1: File I/O & JSON

Create a file called toJSON that reads a .txt file from the command line. This file should always contain **at least** three lines:

- line 1: is a first name (1 word)
- line 2: is a last name (1 word)
- line 3: is a location (1 word)
- lines 4-n: can be string(s) (n # of word(s))

Your job is to take this data and out a clean JSON object in the following format: fname: line1_fname, lname: line2_lname, location: line_3, other: lines_4-lines_n The only edge cases that need to be considered are:

- If there are not at least three lines in the file, print an error message and do no further processing on the file
- Only one arg is read in through the command line which is the filename. If more than one arg is provided, print an error message and do no further processing on the file
- If there are only three lines, other will contain "N/A"

Part 2: to Array

Create a file called toArray.js that reads n numbers from the command line, adds only the even numbers to an array, and returns the array in the order that they were entered. You must use a forEach loop for this file. The output will contain the size of the array and the array itself.

```
jirani@csmbirani Desktop % node toArray.js 1 2 3 4 5 6 7
The array contains: 2,4,6
The length of the array is: 3
jirani@csmbirani Desktop % node toArray.js 3 5 7 9
The array contains:
The length of the array is: 0
jirani@csmbirani Desktop % node toArray.js
The array contains:
The length of the array is: 0
```

Part 3: String Count

Create a file called stringCount.js that reads a textfile from the command line. You must return the total number of occurrences that the following words in the textfile (case should be ignored):

- towson
- cis
- web
- development

Please note: this should only count if one of the four words is a stand-alone word, not if it is contained within another word. For example, if a textfile contained the string "Welcome to TowsonCIS", the value returned would be 0. But if the textfile contained the string "Welcome to Towson CIS" the value returned would be 2.

```
jirani@csmbirani Desktop % node stringCount.js testfile.txt
The total number of occurrences is: 2
```

Part 4: File Count

Write a program called asyncFileCount.js that prints the number of files with a given extension in a given directory. The first argument will be the path to the directory we want to filter on (e.g. '/path/to/dir/') and a file extension to filter by as the second argument.
For example, if you get '.txt' as the second argument then you will need to filter the list to only files that end with .txt

Below are some example runs:
An example run would be: *node asyncFileCount.js . .js*
Another example run would be: *node asyncFileCount.js /Users/jalirani/Desktop .docx*

Submission

Please submit the following on Blackboard:

- toJSON.js
- toArray.js
- stringCount.js
- asyncFileCount.js