Assignment 2

Due Date: February 19, 2025 at 7:30 PM

Overview

This assignment will be worth **4.5%** of your total grade. Parts 1 and 2 are designed to utilize the asynchronous properties of Node.js. Part 3 is a way to try out a new, fun package.
Important: If you are on a Windows machine, do not take into account /r for anything, or you will lose 10%. 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 the asynchronous properties of Node.js.

Part 1: Asynchronous Newline Count

Write a program called asyncNewlines.js that uses a single asynchronous filesystem operation to read a file and print the number of newlines it contains to the console (stdout).
You will have a file name as the third argument just like in assignment 1.
Hint: Instead of fs.readFileSync() you will want to use fs.readFile() and instead of using the return value of this method you need to collect the value from a callback function that you pass in as the second argument.
An example run would be: *node asyncNewlines.js test.txt*

Part 2: 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*

Part 3: LoDash

Lo-Dash is a Javascript library that gives a lot of assistance when working with Arrays, JSON and Javascript objects. Lo-Dash can be used with Node.js in the back-end but also in a browser in the front-end. As a preamble, here are some useful functions to know:

- _.groupBy(collection, callback)
- _.map(collection, callback)
- _.uniq(collection)
- _.orderBy(collection, [fieldName], [orders])

For our assignment, we have an array of Reddit comments in a JSON file. Below is an example (note: this is just an example structure of a JSON object {username: some_username, comment: some_comment}. It could extend beyond or below the seven objects given.

[{ username: "nftGeek", comment: "bayc is awesome!" },
{ username: "nftGeek", comment: "do you own one?" },
{ username: "maceth", comment: "my wallet has 0 eth" },
{ username: "max", comment: "crypto is a ponzi scheme" },
{ username: "max", comment: "i love crypto" },
{ username: "maceth", comment: "my wallet has 0 usdc" },
{ username: "max", comment: "i really love your site" }]

Create a file called reddit.js that reads in a JSON file and:

- Returns an array with every username for every comment. Note: include repeats.
- Displays each user name as a key with an array of the JSON({username: some_username, comment: some_comment}) as the value
- Returns an array with every unique username for every comment. Note: do not include repeats.
- Return the original JSON object with usernames in ascending order

** You must must use at least one LoDash function for each of the four parts. No answer to each of the four parts can be above **three** lines of code, otherwise points will be subtracted.

Example output given the JSON object above:

```
Part 1:
[
  'nftGeek', 'nftGeek',
  'maceth',  'max',
  'max',     'maceth',
  'max'
]
--------------
Part 2:
{
  nftGeek: [
    { username: 'nftGeek', comment: 'bayc is awesome!' },
    { username: 'nftGeek', comment: 'do you own one?' }
  ],
  maceth: [
    { username: 'maceth', comment: 'my wallet has 0 eth' },
    { username: 'maceth', comment: 'my wallet has 0 usdc' }
  ],
  max: [
    { username: 'max', comment: 'crypto is a ponzi scheme' },
    { username: 'max', comment: 'i love crypto' },
    { username: 'max', comment: 'i really love your site' }
  ]
}
--------------
Part 3:
[ 'nftGeek', 'maceth', 'max' ]
--------------
Part 4:
[
  { username: 'maceth', comment: 'my wallet has 0 eth' },
  { username: 'maceth', comment: 'my wallet has 0 usdc' },
  { username: 'max', comment: 'crypto is a ponzi scheme' },
  { username: 'max', comment: 'i love crypto' },
  { username: 'max', comment: 'i really love your site' },
  { username: 'nftGeek', comment: 'bayc is awesome!' },
  { username: 'nftGeek', comment: 'do you own one?' }
]
```

Submission

Please submit the following on Blackboard (may need submit as a .zip):

- asyncNewlines.js
- asyncFileCount.js
- reddit.js