Programming Test – Kyle Wholton 2018

How to run the program:

This program is a simple script that takes a text input and then outputs text. Due to the simplicity of the script you can utilise the command line to run this program and get the same results as if you had run this on a server with PHP installed.

To run this script via the command line do the following:

1. Open your Operating Systems Console, I.E Command line for windows or Bash for MacOs.
2. Change Directories to the folder where the program is located and the text file you want to parse is also located (make sure it is in a .txt format).
3. Now run the file, with MacOs the command would be “Input Here | php WordLengthCounter.php” where php is the filetype and WordLengthCounter is the filename.
4. For input you can use the cat command on unix systems to call a file or use echo to provide your own input. I.E “cat daily bible.txt | php WordLengthCounter.php”.
5. If you ran the file correctly, you should be presented with an output of word lengths in the console window.

Definition of a word:

Words are any set of symbols separated by whitespace, with the exclusion of punctuation. I.E “Word’s,” is a word of length 5 despite containing 7 symbols. In the phrase “pots & pans”, the ampersand symbol counts as a word of length 1 as it is separated by whitespace and is not considered punctuation.

What is the definition of punctuation? Any symbol that isn’t alphanumerical or ‘&’ is considered punctuation for this script.

Psuedo Code:

Below is the initial Psuedo Code I came up with. This acted as a starting scaffold for me to build the solution around, but in the end wasn't particularly close to the final solution.

1. Set up input (textfile)
2. Set up total words variable
   $wordsTotal // keeps
3. $wordLengthArray // contains all
   wordLength arrays
4. $charactersTotal // total characters
   parsed
5. For each line of input:
    a. Parse Input Line $line (string literal)
    b. Explode $line into array of words $words by whitespace.
    c. Add array length to $wordsTotal (count of words).
    d. Foreach($word in $words)
        i. $wordsTotal += 1
        ii. Strip word of punctuation
        iii. Concatenate word back together (if necessary)
        iv. $charactersTotal += stringLength($word)
        v. If (!variableExists('wordLength' . stringLength($word))
            1. // new variable is length of word (key) with a value that acts as a counter for the amount of those words.
            2. Create variable $stringLength($word) = 1
            3. $wordLengthArray += $stringLength($word)
        vi. $wordLengthArray($stringLength($word))) += 1
6. print: Word Count = $wordsTotal
7. print Average word length = $charactersTotal/$wordsTotal
8. Foreach($array in $wordLengthArray)
    a. Print 'Number of words of Length ' . Key($array) . ' is ' . Value($array)
9. Print 'The most frequently occurring word length quantity is ' .
   max($wordLengthArray) . ', for word lengths of key(max($wordLengthArray))'