#include <stdio.h>

#include <string.h>

#include <ctype.h>

float readability(int syllables, int words, int sentences);

int isVowel(char letter);

void main()

{

int count = 0;

FILE\* fptr;

fopen\_s(&fptr, "C:\\Users\\Maxie\\Desktop\\Week 21\\sample.txt", "r"); // open for reading

if (fptr == NULL)

{

printf("Could not open article\n");

}

else

{

printf("Analysing text document...");

printf("\n----------------------------");

char word[50];

int spaceCounter = 0;

int j = 0;

int i = 0;

int endSentenceCounter = 0;

int syllable = 0;

int noSyllable = 1; //initially, there are no syllables in a word (that hasnt been scanned).

int vowelGroupSize = 0;

while (!feof(fptr))

{

fscanf\_s(fptr, "%s ", word, 50);

spaceCounter++;

printf("\n\nword = %s", word); //get text until a space. save that as 1 word.

printf("\nspaceCounter = %d", spaceCounter);

//(Couting syllables)

for (i = 0; i < strlen(word); i++) //FOR each letter...

{

if (word[i] == '\'') //change all ' to Z

{

word[i] = 'Z';

}

//FOR each letter...

if (isVowel(word[i])) //If the letter is a vowel...

{

//the following is a reason not to count a syllable

if (tolower(word[i]) == 'e' && !( isalpha(word[i + 1]) ) ) //... and the vowel is an 'e' AND is the last letter in a word.

// graveyard: (word[i + 1] == " " || isEndOfSentenceCharacter(word[i + 1]) ||

{

//dont do anything :)

}

else

{

vowelGroupSize++;

noSyllable = 0;

}

}

else //letter is not a vowel then.

{

//GROUP OF ADJACENT VOWELS COUNTS AS ONE SYLLABLE

if (vowelGroupSize >= 1) //As soon as the letter is not a vowel, check if there was a vowel group before.

{

syllable++;

noSyllable = 0;

printf("\nvowelGroupSize = %d", vowelGroupSize);

}

vowelGroupSize = 0;

}

}

if (word[i] == '\0') //Do this check again at the end in case the word ends on a vowel (group).

{

if (vowelGroupSize >= 1) //apply syllable vounter increase. check if there was a vowel group before.

{

syllable++;

noSyllable = 0;

}

vowelGroupSize = 0;

}

if (noSyllable == 1) //at the end of the word. If a syllable wasnt found. Add a syllable.

{

syllable++;

}

noSyllable = 1; //reset the flag

printf("\nsyllable = %d", syllable);

//Counting sentences

for (j = 0; j < strlen(word); j++)

{

//endSentenceCounter++;

if (isEndOfSentenceCharacter(word[j]))

{

endSentenceCounter++;

}

}

printf("\nendSentenceCounter = %d", endSentenceCounter);

}

printf("\n\n----------------------------");

printf("\nAnalysis complete.\n");

printf("\nsyllable = %d", syllable);

printf("\nspaceCounter = %d", spaceCounter);

printf("\nend = %d", endSentenceCounter);

float answer = readability(syllable, spaceCounter, endSentenceCounter);

printf("\n\nThe Flesch Readbility Index of the input text file is = %0.3f\n", answer);

fclose(fptr);

}

}

float readability(int syllables, int words, int sentences) //calculates readability

{

return 206.835 - (84.6 \* (syllables / words)) - (1.015 \* (words / sentences));

}

int isVowel(char letter) //retuns 1 if the letter is a vowel. 0 if not.

{

letter = tolower(letter);

if (letter == 'a' || letter == 'e' || letter == 'i' || letter == 'o' || letter == 'u' || letter == 'y')

{

return 1;

}

else

{

return 0;

}

}

int isEndOfSentenceCharacter(char letter) //returns 1 if the letter is a sentence terminator. 0 if not.

{

if (letter == '.' || letter == ':' || letter == ';' || letter == '?' || letter == '!')

{

return 1;

}

else

{

return 0;

}

}

