CSCI12042-Structured Programming II
Assignment II

Utility task topic: - Text Processing Program

About: -

This program assumes that there is a text file named "*example.txt*" in the same directory as the program, and it processes the text in that file. It reads each word from the file, removes any punctuation characters from the word, and then counts the number of words and calculates the average word length.

Please note that this is a basic example and does not handle all possible text processing scenarios. In a real-world application, you may need to consider other factors like handling different word delimiters, case sensitivity, and more advanced text processing tasks such as stemming, tokenization, and natural language processing.

Implementation of the program: -

1.Import C programming libraries and variables declaration.

```c
#include <stdio.h>
#include <string.h>
#include <ctype.h>

#define MAX_WORD_LENGTH 100

int main() {
    printf("\t\t\t\t******************WELCOME******************\n\n");
    FILE *file;
    char word[MAX_WORD_LENGTH];  //variables declaration
    char fname[MAX_WORD_LENGTH];
    int numWords = 0;
    int totalLength = 0;
    int run=1;
```

2.Open and read the file which is entered by user

```c
while(run==1){
    printf("\n\t\t==>Enter your file name('filename'.txt):");   //get file name
    scanf("%s",&fname);
    file = fopen(fname, "r");   //read file
```

```
                ******************WELCOME******************


  ==>Enter your file name('filename'.txt):
```

3.The file name that was entered if it is wrong and after generating error.

```
//entered file name that if it was a wrong input
if (file == NULL) {
    printf("\n\t\t\t\t\t---Error opening the file---\n");
}
```

```
==>Enter your file name('filename'.txt):fakefile.txt

                        ---Error opening the file---
```

4.When the entered file name if it is correct and remove any punctuation characters from the word

```
//when entered correct file name
else if(1){
    while (fscanf(file, "%s", word) == 1) {  // Remove any punctuation characters from the word
        int len = strlen(word);
        for (int i = 0; i < len; i++) {
            if (ispunct(word[i])) {
                for (int j = i; j < len; j++) {
                    word[j] = word[j + 1];
                }
                len--;
                i--;
            }
        }

    if (len > 0) {
        numWords++;
        totalLength += len;
        }
    }

    fclose(file);   //close file
```

5. It's showing the outputs of the program when will be entered valid text file name.

```
printf("\n\t\t\t==>Number of words in the file: %d\n", numWords);
printf("\n\t\t\t==>Average word length: %.2f\n", (float)totalLength / numWords);
```

```
==>Enter your file name('filename'.txt):reference.txt

        ==>Number of words in the file: 762

        ==>Average word length: 5.56
```

6.If you want to rerun the program.

```
printf("\n\t\t==>Do you want to try another one(Y-1,N-0): ");  //if you want to try furthermore
scanf("%d",&run);
```

```
==>Do you want to try another one(Y-1,N-0): 1

==>Enter your file name('filename'.txt):
```

(If you want to re-run enter 1 else if 0.)

7.When you enter 0 to exit the program.

```
if(run==0){
    printf("\n\t\t\t\t\t\t\t***END***\n");    //exit from the program
}
```

```
==>Do you want to try another one(Y-1,N-0): 0

                                        ***END***
```

Finally, you can get

1.The number of words in the file you entered

2.The average length of a word

as the output of you entered file in the text processing program.

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