CSCI12042 – Structured Progamming

Coursework Assignment

CS/2020/071

Task Topic : Text file word search

About :

This C program allows you to upload a text document and search for a specific word within it.The program reads the content of the text file,searches for the given word,and displays the line numbers where the word appears.

The program assumes that the lines in the text file are not longer than 255 characters.Modify the 'MAX_LINE_LENGTH' constant in the code to adjust the maximum line length if needed.

If the file is not found or there is an error opening the file ,the program will display an appropriate error message.

Implementation of the programe :

- Import C programming Libraries and Define Constant

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

#define MAX_LINE_LENGTH 256
```

- Import first function to search for a word in a given line

```c
int searchWordInLine(const char *line, const char *word, int lineNumber) {
    int wordFound = 0;
    char *found = strstr(line, word);

    while (found != NULL) {
        wordFound = 1;
        printf("\n'%s' found at line %d\n\n", word, lineNumber);
        found = strstr(found + 1, word);
    }

    return wordFound;
}
```

- Import second function to search for a word in the entire file and if word is found in the line,print the line

```c
void searchWordInFile(FILE *file, const char *word) {
    int lineNumber = 1;
    char line[MAX_LINE_LENGTH];

    while (fgets(line, MAX_LINE_LENGTH, file) != NULL) {
        if (searchWordInLine(line, word, lineNumber)) {

            printf("Line %d: %s\n", lineNumber, line);
        }
        lineNumber++;
    }
}
```

- Import variable declaration and enter txt file and enter the what word to find in txt file by user

```c
int main() {
    char filename[MAX_LINE_LENGTH];
    char searchWord[MAX_LINE_LENGTH];
    FILE *file;
```

```c
    printf("Enter the filename: ");
    scanf("%s", filename);

    printf("Enter the word to search: ");
    scanf("%s", searchWord);
```

```
Enter the filename: danika.txt
Enter the word to search: github
```

- If txt file is not exist

```c
    file = fopen(filename, "r");
    if (file == NULL) {
        printf("Error opening the file '%s'\n", filename);
        return 1;
    }
```

```
Enter the filename: danika
Enter the word to search: github
Error opening the file 'danika'
```

- If txt file is exist

```c
printf("Searching for the word '%s' in file '%s'\n", searchWord, filename);
searchWordInFile(file, searchWord);

fclose(file);

return 0;
```

```
Enter the filename: danika.txt
Enter the word to search: github
Searching for the word 'github' in file 'danika.txt'

'github' found at line 7

Line 7: https://github.com/GLRandula/Probability_Distributions/blob/main/Poisson_Distribution_Data_Analyst.ipynb
```

We can see these things after running the program

1. Enter the file name of the text document you want to search in
2. Enter the word you want to find in the txt document
3. The program will display the line numbers where the word is found in the document