Mimir Exercise 4

Points 100/100

The Unix/Linux command fgrep is a program that takes a string and a series of filenames as command line arguments. It then looks through the files one by one, line by line. For each line that contains the given string, the name of the file, a colon, and the entire line containing the string are printed.

As an example:

Given the following files:

Test.txt (with the following information)
ab cdefgh i j k lmnop qustuv Hello_World kadldfjklsa
fjkd;a fjkdl;ajf adkfa;jfjkda;jfk ajk;dfjk;adjka;
jdka; dk;ajfkd;a jfdk;ajfl Hello_World fjkal;j fjdka;
fjkd;af ajkd; jfk;laj fkd; Hello_World

Test2.txt (with the following information)
jjajjj This is a test! This is a test! This is a test! This is a test!
Hello_World

If on the command line you type:
fgrep Hello_World Test.txt Test2.txt
you would get the following output

Test.txt:ab cdefgh i j k lmnop qustuv Hello_World kadldfjklsa
Test.txt:jdka; dk;ajfkd;a jfdk;ajfl Hello_World fjkal;j fjdka;
Test.txt:fjkd;af ajkd; jfk;laj fkd; Hello_World
Test2.txt:Hello_World

You are going to write a program that mimics the fgrep. After the executable, the string argument (no new line characters are allowed in the string to be searched for) is next, then the filenames are listed. <executable> <string to be searched for> <filename(s)>

There are several c-string functions and other concepts that I strongly suggest you familiarize yourself with prior to starting this assignment.

fgets
strstr
fputs
perror

pointer arithmetic – you are going to be dealing with command line arguments. Using pointer arithmetic with respect to argv (command line arguments) will be useful for this assignment.

Your program output should be to stdout.

You will only need one file: driver.c
This assignment only requires one function.

void search (char*, File*, char*);

Parameter 1: Represents the name of the file that will be searched. This will be provided as a command line argument.
Parameter 2: Represents the file pointer that points to the file that will be searched.
Parameter 3: Represents the string being searched for also provided as a command line argument.

As stated earlier, I strongly suggest you look at fgets, strstr and fputs. These functions can be very useful in your search function.

This function basically searches the file line by line to determine if the string being searched for is present. If it is present then print the file name, a colon, and the line that the string is present in.

In main:

If the string to be searched for nor any files are provided on the command line you are to print to "stderr" the following:

"Usage: executable string file …"

Using a loop, you will create and open a file pointer. If the file pointer does not open correctly print to stdout the following:

<filename>: No such file or directory
Hint: Use perror for this.
DO NOT EXIT THE PROGRAM

If the file pointer opens successfully; you should call search. After search has successfully returned close the file; repeat for the next file.

Do not overthink this program. If you take the time to look up the c functions listed above, you should be able to write this program in 60 lines of code or less.