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28.Write a C program for simulation of GREP UNIX command

Aim:

The aim of this C program is to simulate the functionality of the `grep` command in Unix. The program will search for a specified pattern within a given file and print the lines that contain the pattern.

Algorithm:

1. Read the file name and the pattern to search for from the user.
2. Open the file for reading.
3. Read the file line by line.
4. For each line, check if the pattern exists in the line using `strstr`.
5. If the pattern is found, print the line.
6. Close the file.

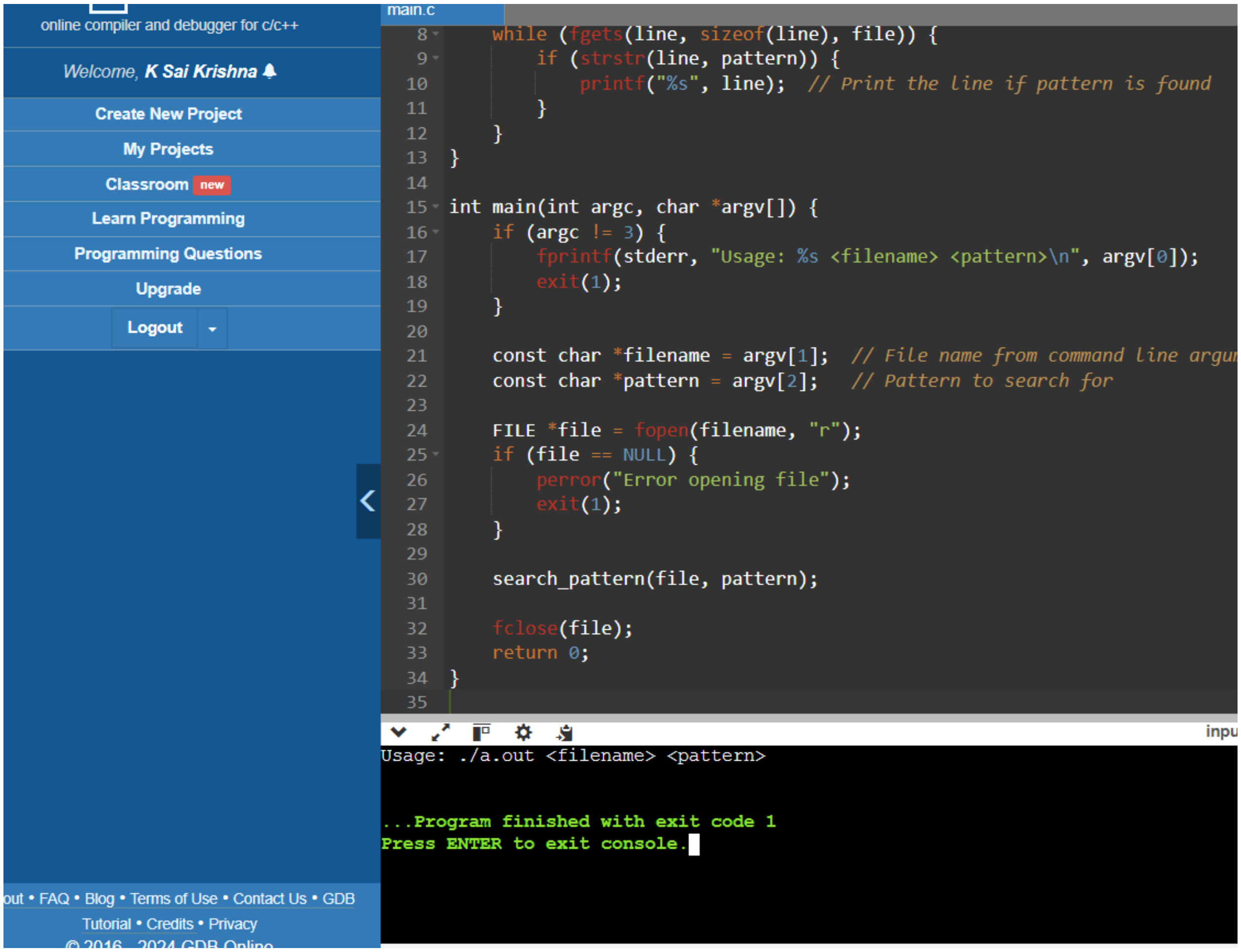
Procedure:

1. Accept file name and pattern from the user.
2. Open the file using `fopen`.
3. Use `fgets` to read the file line by line.
4. Use `strstr` to check if the pattern is found in each line.
5. Print the lines that match the pattern.
6. Handle errors like file not found.

Code:

```
#include <stdio.h>

#include <string.h>



int main() {

    FILE *file;

    char line[1000], pattern[100];

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

    printf("Enter the pattern to search for: ");

    scanf("%s", pattern);

    file = fopen(pattern, "r");

    if (file == NULL) {

        printf("File not found!\n");

        return 1;

    }

    while (fgets(line, sizeof(line), file)) {

        if (strstr(line, pattern)) {

            printf("%s", line);

        }

    }

    fclose(file);

    return 0;

}
```

Output:



```c
    while (fgets(line, sizeof(line), file)) {
        if (strstr(line, pattern)) {
            printf("%s", line);  // Print the line if pattern is found
        }
    }
}

int main(int argc, char *argv[]) {
    if (argc != 3) {
        fprintf(stderr, "Usage: %s <filename> <pattern>\n", argv[0]);
        exit(1);
    }

    const char *filename = argv[1];  // File name from command line argu
    const char *pattern = argv[2];   // Pattern to search for

    FILE *file = fopen(filename, "r");
    if (file == NULL) {
        perror("Error opening file");
        exit(1);
    }

    search_pattern(file, pattern);

    fclose(file);
    return 0;
}

```

```
Usage: ./a.out <filename> <pattern>


...Program finished with exit code 1
Press ENTER to exit console.
```

Result:

If the file contains the pattern, the matching lines will be printed to the console. If no match is found, nothing will be printed. If the file doesn't exist, an error message will be displayed.