OS ONSPOT LAB – 5

1. Write a program that takes a string as an argument and returns all the files that beings with the name in the current directory and its subdirectories.

Code :

```c
#include <stdio.h>
#include <stdlib.h>
#include <dirent.h>
#include <fcntl.h>
#include <unistd.h>
#include <regex.h>
#include <string.h>
#include <sys/types.h>

void traverse(char *path, char *pattern);

int main(int argc, char **argv)
{
        if(argc != 2) {
                printf("Enter path filename regex pattern : ");
                return 1;
        }

        char path[] = ".";
        char *pattern = argv[1];


        traverse(path, pattern);

        return 0;
}

void traverse(char *base, char *pattern)
{
        regex_t regex;
        char path[200];
        struct dirent *dp;
        DIR *dir = opendir(base);

        if (!dir)
                return;

        while ((dp = readdir(dir)) != NULL)
        {
                if (strcmp(dp->d_name,".") != 0 && strcmp(dp->d_name,"..") != 0) {
                        char *str = dp->d_name;
                        int reti = regcomp(&regex, pattern, 0);
                        reti = regexec(&regex, str, 0 , NULL, 0);
                        if (!reti) {
                                printf("%s\n",dp->d_name);
                        }

                        strcpy(path, base);
                        strcat(path, "/");
                        strcat(path, dp->d_name);

                        traverse(path, pattern);
                }
        }

        closedir(dir);
}
```

Output :

```
[s2019103066@centos8-linux Mon Mar 15 12:20 PM lab05]$ vim spt5.c
[s2019103066@centos8-linux Mon Mar 15 12:21 PM lab05]$ gcc spt5.c
[s2019103066@centos8-linux Mon Mar 15 12:21 PM lab05]$ ./a.out file
file.txt
file1.txt
file2.c
```

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