EXP 27: Develop a C program for simulating the function of ls UNIX Command.

```c
#include <stdio.h>

#include <stdlib.h>

#include <dirent.h>

#include <sys/stat.h>

#include <string.h>


int main(int argc, char *argv[]) {

    DIR *dir;

    struct dirent *entry;

    struct stat fileStat;

    const char *path;  // Corrected: use const char*


    // Use current directory if no argument is given

    if (argc < 2) {

        path = ".";

    } else {

        path = argv[1];

    }


    dir = opendir(path);

    if (dir == NULL) {

        perror("opendir");

        return 1;

    }


    printf("Contents of directory: %s\n\n", path);
```

```c
    while ((entry = readdir(dir)) != NULL) {
        char fullPath[1024];
        snprintf(fullPath, sizeof(fullPath), "%s/%s", path, entry->d_name);

        if (stat(fullPath, &fileStat) == 0) {
            if (S_ISDIR(fileStat.st_mode)) {
                printf("[DIR]  %s\n", entry->d_name);
            } else {
                printf("[FILE] %s\n", entry->d_name);
            }
        } else {
            printf("[ERR ] %s (unable to stat)\n", entry->d_name);
        }
    }

    closedir(dir);
    return 0;
}
```

Sample Output

```
Contents of directory: .

[DIR]  .
[DIR]  ..
[FILE] Airways-Reservation-System-in-C-An-Overview.pptx
[FILE] Algorithms.docx
[FILE] An Automated Attendance System is a technology solution designed to enhance the efficiency of attendance recording and management in schools.docx
[FILE] bookings.dat
[FILE] capstone project c_chaitanya.docx
[FILE] capstone project c_prakash.docx
[FILE] CAPSTONE PROJECT REPORT_DM.docx
[FILE] chaitanya_cn capstone report (2).docx
[FILE] Chaitanya_cn capstone report.docx
[FILE] chaithanya_ppt.pptx
[FILE] CN EXPERIMENTS.zip
[DIR]  Custom Office Templates
[FILE] desktop.ini
[FILE] destination.txt
[FILE] destination.txt.txt
[FILE] Document (1).docx
[FILE] Document (2).docx
[FILE] Document (3).docx
[FILE] Document (4).docx
[FILE] Document (5).docx
[FILE] Document.docx
[FILE] Downloads - Shortcut.lnk
[FILE] EXP 1 Process Creation.pdf
[FILE] EXP 11 Dinning-Philosophers Problem.pdf
[FILE] EXP 11 Multi-Threading.pdf
[FILE] EXP 12 Dinning-Philosophers Problem.pdf
[FILE] EXP 13 Memory Allocations.pdf
[FILE] EXP 14 Single Level Directory.pdf
[FILE] EXP 15 Two Level Directory Structure.pdf
[FILE] EXP 16 random access file for processing the employee details.pdf
[FILE] EXP 17 Banker's Algorithm.pdf
[FILE] EXP 18 producer-consumer problem using semaphores.pdf
[FILE] EXP 19 Process Synchronization using Mutex Locks..pdf
[FILE] EXP 19 Reader-Writer problem using Semaphores.pdf
[FILE] EXP 2 File Copying.pdf
[FILE] EXP 20 Reader-Writer problem using Semaphores.pdf
[FILE] EXP 21 worst fit algorithm of memory management.pdf
```

```
[FILE] EXP 21 worst fit algorithm of memory management.pdf
[FILE] EXP 22 Best fit algorithm of memory management.pdf
[FILE] EXP 23 first fit algorithm of memory management.pdf
[FILE] EXP 24 UNIX system calls for file management..pdf
[FILE] EXP 25 System calls of UNIX.pdf
[FILE] EXP 26 File Management Operations.pdf
[FILE] EXP 3 FCFS Scheduling.pdf
[FILE] EXP 3 SJF Scheduling.docx
[FILE] EXP 3 SJF Scheduling.pdf
[FILE] EXP 4 SJF Scheduling.pdf
[FILE] EXP 5 Priority Scheduling.pdf
[FILE] EXP 6 Pre-emptive Priority Scheduling.pdf
[FILE] EXP 7 SJF Non-Preemptive Scheduling.pdf
[FILE] EXP 8 Round Robin Scheduling.pdf
[FILE] EXP 9 Inter-Process Communication.pdf
[FILE] file2.txt
[FILE] G Chaitanya_Assignment2(c programming).docx
[FILE] G.Chaitanya_CN capstrone project (1).docx
[FILE] G.Chaitanya_CN capstrone project.docx
[FILE] IoT-Based Traffic Management System.pptx
[FILE] Jagadeesh kumar_ethics.docx
[FILE] Lab Exp Programs OS.docx
[FILE] LITHIUM ION BATTERY.pptx
[DIR]  LOGISMS
[FILE] MATERIALS AND METHODS.docx
[FILE] model 2 ans.docx
[FILE] movies.dat
[FILE] nimarsh.docx
[DIR]  OriginLab
[FILE] PAPER 1 HINTS.docx
[FILE] pp answers.docx
[FILE] Secure Memory PPT.pptx
[FILE] slots.docx
[FILE] source.txt
[FILE] Untitled1.cpp
[FILE] Untitled12.cpp
[FILE] Untitled12.exe
[FILE] Untitled1222.c
[FILE] Untitled13.cpp
[FILE] Untitled13.exe
```

```
[FILE] Untitled132.c
[FILE] Untitled1333.cpp
[FILE] Untitled1333.exe
[FILE] Untitled134.c
[FILE] Untitled1345.c
[FILE] Untitled1345.exe
[FILE] Untitled135.cpp
[FILE] Untitled135.exe
[FILE] Untitled14.cpp
[FILE] Untitled14.exe
[FILE] Untitled15.c
[FILE] Untitled15.exe
[FILE] Untitled16.cpp
[FILE] Untitled17.c
[FILE] Untitled17.exe
[FILE] Untitled2.c
[FILE] Untitled2.cpp
[FILE] Untitled21.cpp
[FILE] Untitled211.c
[FILE] Untitled211.exe
[FILE] Untitled22.cpp
[FILE] Untitled22.exe
[FILE] Untitled222.c
[FILE] Untitled222.exe
[FILE] Untitled23.cpp
[FILE] Untitled24.cpp
[FILE] Untitled24.exe
[FILE] Untitled26.cpp
[FILE] Untitled26.exe
[FILE] Valus.docx
[FILE] varun.docx
[FILE] vigneshvar_ca capstone report (2) (1).docx
[FILE] vishwa_cn capstone report copy.pdf
[FILE] Which IEEE 754 standard format uses 64 bits.docx
[DIR]  Zoom

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Process exited after 3.124 seconds with return value 0
Press any key to continue . . . |
```