

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

Aim:

The aim of this C program is to simulate the functionality of the `ls` command in UNIX. The program lists the files and directories in the current directory or specified directory.

Algorithm:

1. Take an optional directory path as input. If no directory is specified, use the current directory.
2. Use the `opendir` function to open the directory.
3. Use the `readdir` function to read each entry in the directory.
4. Print the names of the files and directories.
5. Close the directory using `closedir`.

Procedure:

1. Include necessary headers (`stdio.h`, `dirent.h`, `stdlib.h`).
2. Open the directory using `opendir`.
3. Read the directory entries using `readdir`.
4. Print the filenames of the directory entries.
5. Close the directory after reading.

Code:

```
#include <stdio.h>
```

```
#include <stdlib.h>
```

```
#include <dirent.h>
```

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

```
    DIR *dir;
```

```
    struct dirent *entry;
```

```
    char *path = (argc > 1) ? argv[1] : ".";
```

```
dir = opendir(path);

if (dir == NULL) {

    perror("opendir");

    return 1;

}

while ((entry = readdir(dir)) != NULL) {

    printf("%s\n", entry->d_name);

}

closedir(dir);

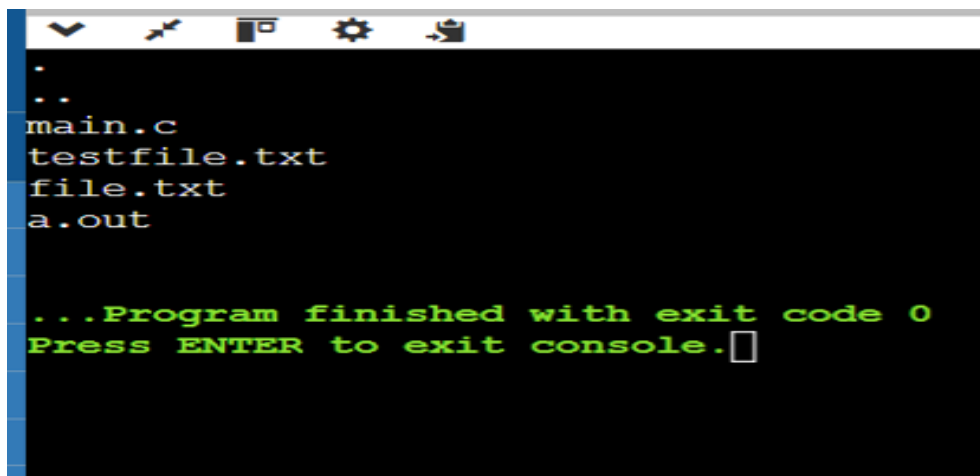
return 0;

}
```

Result:

Running the program would output a list of filenames and directories in the current directory or specified directory.

Output:

A screenshot of a terminal window with a dark background and light blue/green text. The window has a title bar with standard icons. The output shows a list of files and directories: '.', '..', 'main.c', 'testfile.txt', 'file.txt', and 'a.out'. Below this, a green message states '...Program finished with exit code 0' and 'Press ENTER to exit console.' followed by a cursor icon.

```
.
..
main.c
testfile.txt
file.txt
a.out

...Program finished with exit code 0
Press ENTER to exit console.█
```