

CSI 402 – Systems Programming – Handout 12.1

An Example using Directory-Related System Calls

Note: The following program example shows how we can use some of the directory-related system calls (such as `opendir`, `readdir` and `closedir`) to print the names of the files in the directory specified as a command line argument. In other words, the following program is a “bare bones” implementation of the shell command `ls`.

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <dirent.h>

/* No. of arguments on the command line. */
#define NUMARG 2

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

    DIR *dirptr;
    struct dirent *dp;

    /* Command line check. */
    if (argc != NUMARG) {
        fprintf(stderr, "Usage: %s  dirname\n", argv[0]);
        exit(1);
    }

    /* Open the specified directory. */
    if ((dirptr = opendir(argv[1])) == NULL) {
        fprintf(stderr, "Could not open directory %s\n", argv[1]);
        exit(1);
    }

    /* Go through the directory entries and print file names. */
    while ((dp = readdir(dirptr)) != NULL) {
        printf("%s\n", dp->d_name);
    }

    /* Close the directory and stop. */
    closedir(dirptr);
    return 0;
} /* End of main. */
```