

CSC4421 Computer Operating System

Lab 01

- **Goals**
- The purpose of this lab is to help you learn more about some frequently used system calls.

Printing File Names using Dired Library

- Here we want to access a Linux directory using C. To do so we use the structs and functions made available in the dired library. Below we see the function prototypes for the functions opendir, readdir, and closedir which have been implemented in the dired library. DIR is simple type that is available from the library.

- **SYNOPSIS**
- `#include <dirent.h>`
- `DIR *opendir (const char *dirname);`
- `struct dirent *readdir (DIR * dir);`
- `int closedir (DIR * dir) ;`

Printing the time that the file path was created

- The stat system call can access a file by name and retrieve file status information. It is given by: **int stat (const char *pathname, struct stat *buf);** This system call returns a stat structure (both the function and struct are called stat), which contains the following fields:

- struct stat {
- dev_t st_dev; /* ID of device containing file */
- ino_t st_ino; /* inode number */
- mode_t st_mode; /* protection */
- nlink_t st_nlink; /* number of hard links */
- uid_t st_uid; /* user ID of owner */
- gid_t st_gid; /* group ID of owner */
- dev_t st_rdev; /* device ID (if special file) */
- off_t st_size; /* total size, in bytes */
- blksize_t st_blksize; /* blocksize for file system I/O */
- blkcnt_t st_blocks; /* number of 512B blocks allocated */
- time_t st_atime; /* time of last access */
- time_t st_mtime; /* time of last modification */
- time_t st_ctime; /* time of last status change */
- };