Basic Directory Operations

Unix

➡ Directories implemented in file and a C runtime library provides a higher-level abstraction for reading directories

- opendir(name)
- readdir(DIR)
- seekdir(DIR)
- closedir(DIR)

Windows

➡ Explicit dir operations

- `CreateDirectory(name)`
- `RemoveDirectory(name)`
- `FindFirstFile(pattern)`
- `FindNextFile()`

A Short History of Directories

Approach 1 : Single directory for entire system

- Put directory at known location on disk
- Directory contains `hname`, `inumberi` pairs
- If one user uses a name, no one else can
- Many ancient personal computers work this way

Approach 2 : Single directory for each user

- Still clumsy, and `ls` on 10,000 files is a real pain

Approach 3 : Hierarchical name spaces

- Allow directory to map names to files or other directories
- File system forms a tree (or graph, if links allowed)
- Large name spaces tend to be hierarchical
  (ip addresses, domain names, scoping in programming languages, etc.)