

Announcements

- Midterm Regrade Requests are due Today
- Reading Chapter 11 (ch 10 7th Ed)

Does the OS know what is stored in a file?

- needs to know about some types of files
 - directories
 - executables
- should other file types be visible to the OS?
 - Example: word processing file vs. spreadsheet
 - Advantages:
 - OS knows what application to run
 - Automatic make (tops-20)
 - if source changed, re-compile before running
 - Problems:
 - to add new type, need to extend OS
 - OS vs. application features are blurred
 - what if a file is several types
 - consider a compressed postscript file

Example of File Types

- **Macintosh**
 - has a file type that is part of file meta-data
 - also has an application associated with each file type
- **Windows**
 - has a file type in the extension of the file name
 - has a table (per user) to map extensions to applications
- **Unix**
 - can use last part of filename like an extension
 - applications can decide what (if anything) to do with it
 - Look at first few bytes of file content for “magic number”

File Protection

- How to give access to some users and not others?
- Access types:
 - read, write, execute, append, delete, list
 - rename: often based on protection of directory
 - copy: usually the same as read
- Degree of control
 - access lists
 - list for each user for each file the permitted operations
 - groups
 - enumerate users in a list called a group
 - provide same protection to all members of the group
 - depending on system:
 - files may be in one or many groups
 - users may be in one or many groups
 - per file passwords (tedious and a security problem)