

## Review of Module 2

### ➤ Shells

- `/bin/bash`
- `/bin/tcsh`

### ➤ Absolute Paths

- Begin with a slash /

### ➤ Present working directory

- `pwd`
- `cd /somewhere`
  - `cd` Returns to home directory.
  - `cd -` To previous directory.

### ➤ Making and Deleting Directories

- `mkdir some_directory`
- `rmdir empty_directory`
- `rm -r non_empty_directory`

### ➤ Relative Paths

- Do not begin with a slash
- Usually with respect to the present working directory.

### ➤ Dot files and Directories

- `..` Parent of present directory.
- `.` Present directory

- Other files and directory names can begin with a period .
  - By default `ls` and `lc` do not show them.
  - Nothing else about them is special.
  - Often used for configuration
- Specifying the home directory
  - `~`
  - For user `alice`, `~alice` is her home directory.
- Specifying multiple files.
  - `rm file1 file2`
  - Files with spaces, asterisks `*` or tildes `~` should be surrounded with apostrophes: `cat '* some file *'`
- Wildcards
  - The shell expands an asterisk `*` into all files and directories in the present directory.
- Looking at Files
  - With an editor
  - `head some_file`
  - `tail some_file`
  - `more some_file`
  - `less some_file`
  - `grep 'somestring' some_file`
- Documentation

- `man [section] program_name`
- `man -k keyword` Search for keywords

### ➤ Plumbing

- Most utilities output to “stdout”.
- If not given a filename, most utilities read “stdin”.
- Direct the stdout from `prog1` to stdin of `prog2` with: `prog1 | prog2`
- Direct stdout to a file: `prog1 > file`
- Read stdin from a file: `prog2 < file`

### ➤ Command options:

- These are equivalent:
  - `who -i -H`
  - `who -H -i`
  - `who -iH`
  - `who -Hi`
- Some options require further arguments;
  - `last -n 10`
  - `last -n10`
- These are equivalent:
  - `last -R -n 10`
  - `last -Rn 10`
  - `last -Rn10`
  - `last -n 10 -R`

- `last -n10 -R`
- Long option names:
  - Begin with double hyphens:
    - `date --version`
  - Arguments follow an equal sign:
    - `date --date='2 days ago'`