

UNIX FILE SYSTEM

Introduction

UNIX Filesystem

- ▣ The file system is your interface to
 - physical storage (disks) on your machine
 - storage on other machines
 - output devices
- ▣ *Everything* in UNIX is a file (programs, text, peripheral devices, terminals, ...)

Working directory

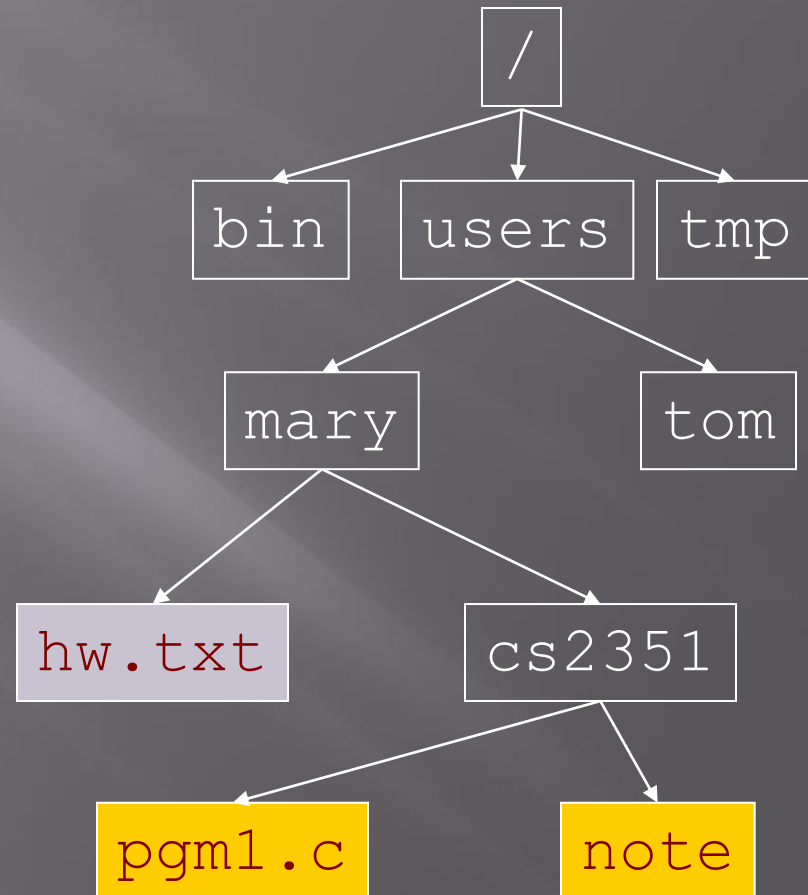
- ▣ The current directory in which you are working
- ▣ `pwd` command: outputs the absolute path (more on this later) of your working directory
- ▣ Unless you specify another directory, commands will assume you want to operate on the working directory

Home directory

- ▣ A special place for each user to store personal files
- ▣ When you log in, your working directory will be set to your home directory
- ▣ Your home directory is represented by the symbol ~ (tilde)
- ▣ The home directory of “user1” is represented by ~user1

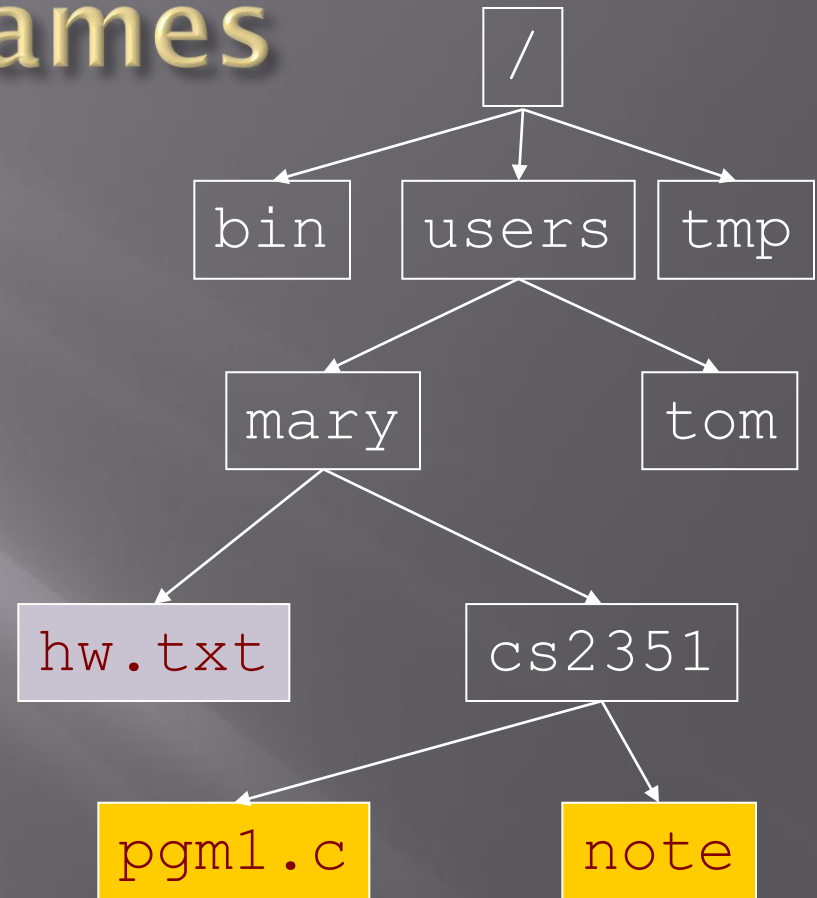
UNIX file hierarchy

- ▣ Directories may contain plain files or other directories
- ▣ Leads to a tree structure for the filesystem
- ▣ Root directory: /



Path names

- ▣ Separate directories by /
- ▣ Absolute path
 - start at root and follow the tree
 - e.g. `/users/dkl/foo.txt`



- Relative path
 - start at working directory
 - `..` refers to level above; `.` refers to working dir.
 - If `/users/mary/cs2351` is working dir, all these refer to the same file

`../hw.txt` `~/hw.txt` `~mary/hw.txt`

Types of files

- ▣ Plain (- in the first bit)
 - Most files
 - Includes binary and text files
- ▣ Directory (d)
 - A directory is actually a file
 - Points to another set of files

File permissions

- ▣ Permissions used to allow/disallow access to file/directory contents
- ▣ Read (r) , write (w) , and execute (x)
- ▣ For owner, group, and world (everyone)
- ▣ `chmod <mode> <file(s)>`
 - `chmod 700 file.txt` (only owner can read, write, and execute)

Looking at file contents

- ▣ `cat <filename(s)>`
 - “concatenate”
 - output the contents of the file all at once
- ▣ `more <filename(s)>`
 - Output the contents of a file one screen at a time
 - Allows forward and backward scroll and search

Getting help on UNIX commands

- ▣ These notes only give you the tip of the iceberg for these basic commands
- ▣ `man <command_name>` shows you all the documentation for a command
- ▣ `apropos <keyword>` shows you all the commands with the keyword in their description