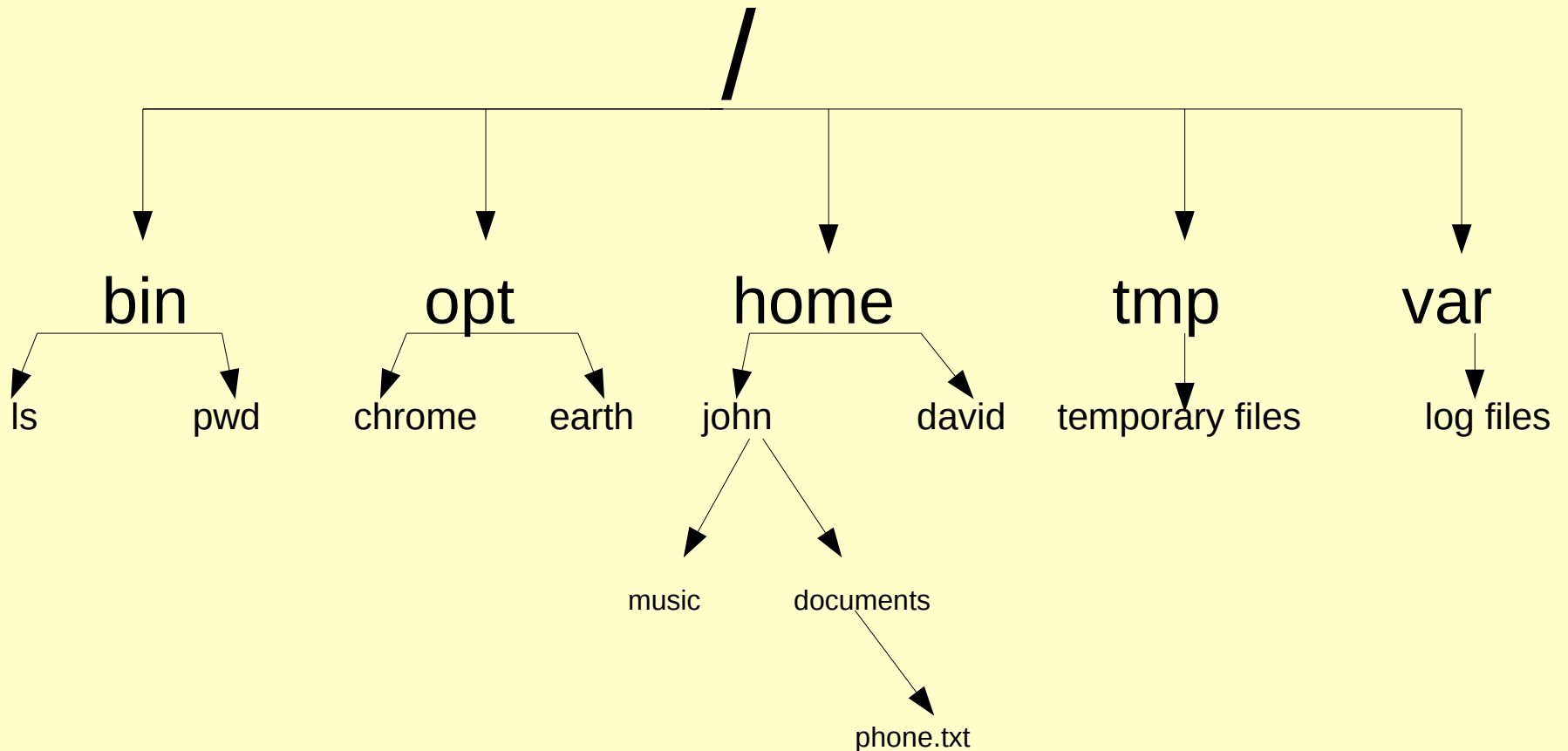# The Linux File system

- The Linux file system has a tree like structure.

- The tree like structure is also referred to as the Directory tree

- When we draw the Linux file system on a paper , we see a tree like structure developing. That's why it is called the directory tree.

- A folder is a location that stores multiple files

- Windows users usually use the word folder instead of a directory, however , in Linux terminology we always say a directory instead of a folder.

The Directory Tree

Here are some facts about the directory tree

- Each directory (or file) has exactly one parent

- The first directory (top most) in our directory tree is called the root directory .It is represented by a forward slash /

- The root directory contains files and subdirectories, which contain more files and subdirectories and so on.

Visualizing the file system

/
- bin
  - ls
  - pwd
- opt
  - chrome
  - earth
- home
  - john
    - music
    - documents
      - phone.txt
  - david
- tmp
  - temporary files
- var
  - log files

Common Directories

/	The root directory , Where everything begins
/etc	This directory contains system configuration files
/bin	This directory contains the commands and utilities that you on a daily basis (All the users have access to it)
/sbin	This directory contains programs that performs vital system tasks (Network management , Disk partitioning).Only the superuser has access to these programs.
/home	Each user is given a directory under the home directory .A user can store anything in his home directory Ex:Music files,Pictures, ...etc
/opt	This directory contains optional commercial software products that are not installed by default on the system (Ex: Google Earth)
/tmp	This directory contains temporary files created by various programs. Generally cleared on reboot
/var	Contains variable data (Ex: databases, spool files, user mail, etc. are located here.)

Two special Directories

- Under each directory , we have two special directories

  (1) The current directory represented as .

  (2) The parent directory represented as ..

- and so one dot refers to the current directory

  and two dots refers to the parent (Previous)

  directory.

Absolute and relative paths

- An absolute path begins with the root directory and follows the directory tree branch by branch until the path to the desired directory or file is completed.

- Example

  /home/john/documents/phone.txt

  is the absolute path of the file phone.txt

  Notice we use a / to separate between directories.

- A relative path starts from the current working directory.

  Example

  if our current working directory is john then ./documents/phone.txt is relative path of the file phone.txt

- You can omit the ./ and so documents/phone.txt also works