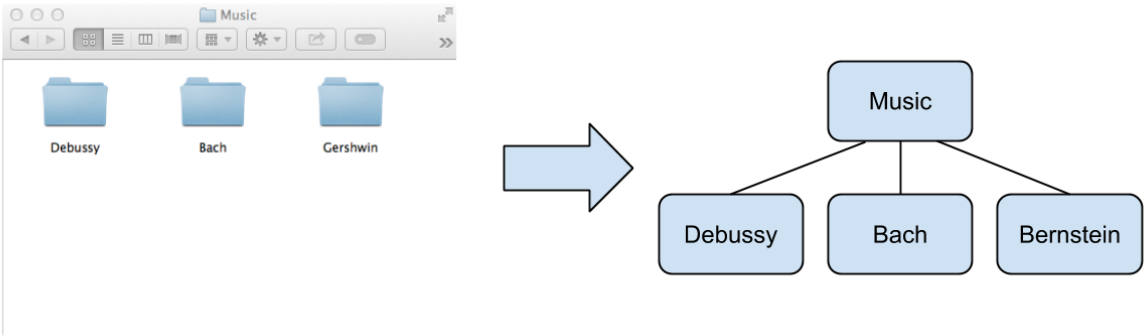
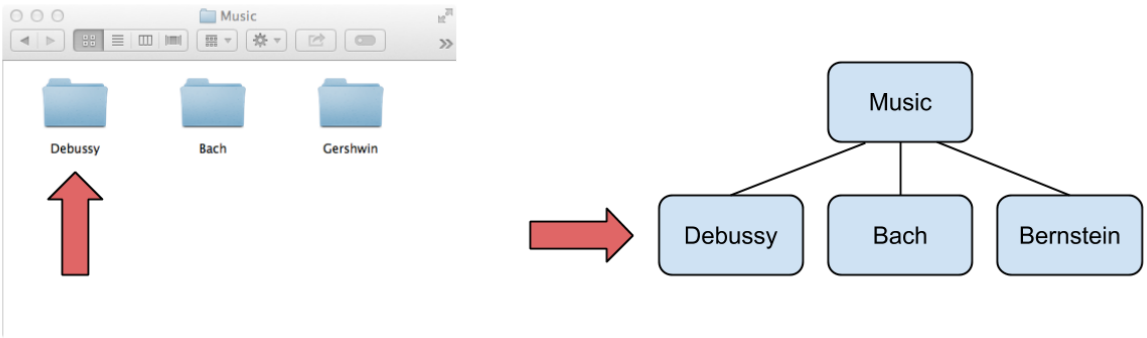
You've learned two command line commands (clear and echo) which is pretty good! Before you learn more commands we need to discuss how files and folders are organized on your computer.

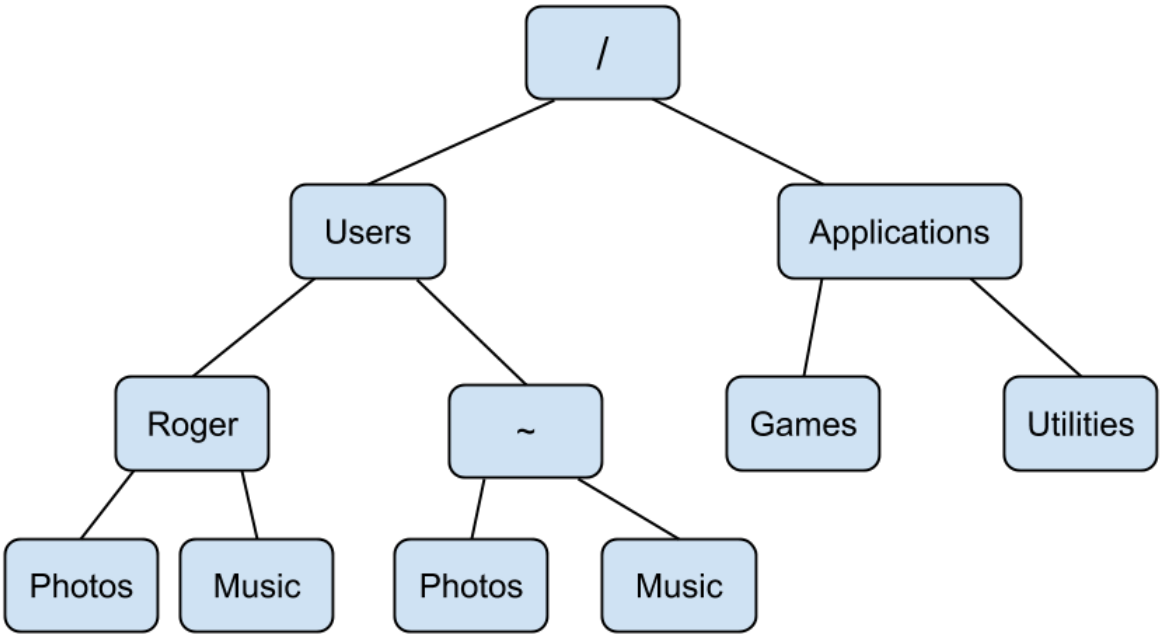
Computers are organized in a hierarchy of folders, where a folder can contain many folders and files. People who use Unix often refer to folders as directories and these terms are interchangeable. This directory hierarchy forms a tree, like the diagram below. You can use the command line to navigate these trees on your computer.



As you can see in the image below, my Debussy directory is contained in my Music directory. This is the simplest case of how directories are structured.

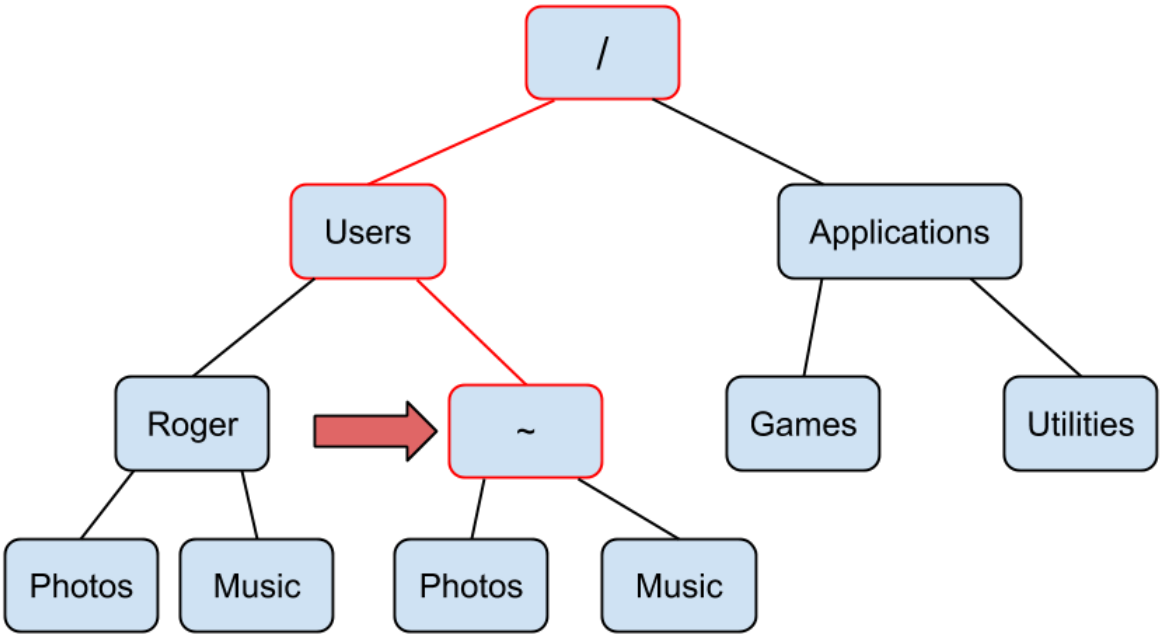


The directory structure on most computers is much more complicated, but the structure on your computer probably looks something like this:



There are a few special directories that you should be aware of on your computer. The directory at the top of this tree is called the root directory. The root directory contains all other directories, and is represented by a slash (/).

The home directory is another special directory that is represented by a tilde (~). Your home directory contains your personal files, like your photos, documents, and the contents of your desktop. When you first open up your shell you usually start off in your home directory. Imagine tracing all of the directories from your root directory to the directory you're currently in. This sequence of directories is called a **path**. The diagram below illustrates the path from a hypothetical root directory to the home directory.



This path can be written as /Users/sean.

Open the command line if you closed it. Your shell starts in your home directory. Whatever directory your shell is in is called the **working directory**. Enter the pwd command into your shell to **p**rint the **w**orking **d**irectory.

```
pwd
## /Users/sean
```

You can change your working directory using the cdcommand. If you use the cd command without any arguments then your working directory is changed to your home directory.

Enter cd into the command line and then enter pwd.

```
cd
pwd
## /Users/sean
```

You were in your working directory to start, and by entering cd into the command line you did technically **c**hange **d**irectory, you just changed it to your home directory (the directory you were in to begin with). To use cd to change your working directory to a directory other than your home directory, you need to provide cd with the path to another directory as an argument. You can specify a path as either a path that is **relative** to your current directory, or you can specify the **absolute** path to a directory starting from the root of your computer. Let's say we simply want to change the working directory to one of the folders that is inside our home directory. First we need to be able to see which folders are in our working directory. You can list the files and folders in a directory using the ls command. Let's use the lscommand in our home directory to list the files and folders contained within it.

```
ls
## Desktop
## Documents
## Photos
## Music
## todo.txt
```

It looks like I have four folders and one text file in my home directory. Now let's switch into the Music directory:

```
cd Music
```

As you can see the path to the current working directory has changed:

```
pwd
## /Users/sean/Music
```

I specified a **relative** path when I entered cd Music. The path to the Music directory is just Music/ relative to my previous working directory. I can go back to /Users/sean/with the command cd .. which changes the working directory to the folder above the current working directory:

```
cd ..
pwd
## /Users/sean
```

Notice that .. is also a relative path, since it specifies the directory above your current working directory. Similarly .is the path to your current working directory. Therefore since my current working directory is /Users/sean then cd Musicis the same as cd ./Music.

I can cd to any folder as long as I know the **absolute** path to that folder. For example I can cd to /Users/sean/Musicby entering the following into the shell:

```
cd ~/Music
pwd
## /Users/sean/Music
```

It doesn't matter what directory I'm in since I'm using an absolute path, I can jump straight to that directory (Remember that ~ is a shortcut for the path to your home folder). Of course you shouldn't expect yourself to have every absolute path on your computer memorized! You can use a terminal feature called tab completion in order to speed up typing paths and other commands. Enter the following into your shell, and then try pressing the Tab key (on some machines you need to press it twice):

```
cd ~/
```

(press Tab)

```
## Desktop
## Documents
## Photos
## Music
## todo.txt
```

Pressing tab shows you a list of all files and folders inside of the ~/ directory. Now I'm going to type ~/D into my terminal and you can see what happens when I press tab again:

```
cd ~/D
```

(press Tab)

```
## Desktop
## Documents
```

Since I added a "D" to the path, only folders with names that start with a "D" are listed. If I type cd ~/De into the console and then press Tab then the command will autocomplete to cd ~/Desktop/. If I press tab again, the console will list all of the files and folders on my desktop.

Make sure to pause and try this yourself in your own terminal! You won't have the same files or folders that I do, but you should try using cd and tab completion with directories and files that start with the same letters.

Summary

- You can identify a specific file or folder by its path.
- The root directory (/) contains all of the folders and files on your computer.

- Your home directory (~) is the directory where your terminal always starts.
- Use the cd command to change your working directory.
- The pwd command will print the working directory.
- The ls command will list files and folders in a directory.

Mark as completed