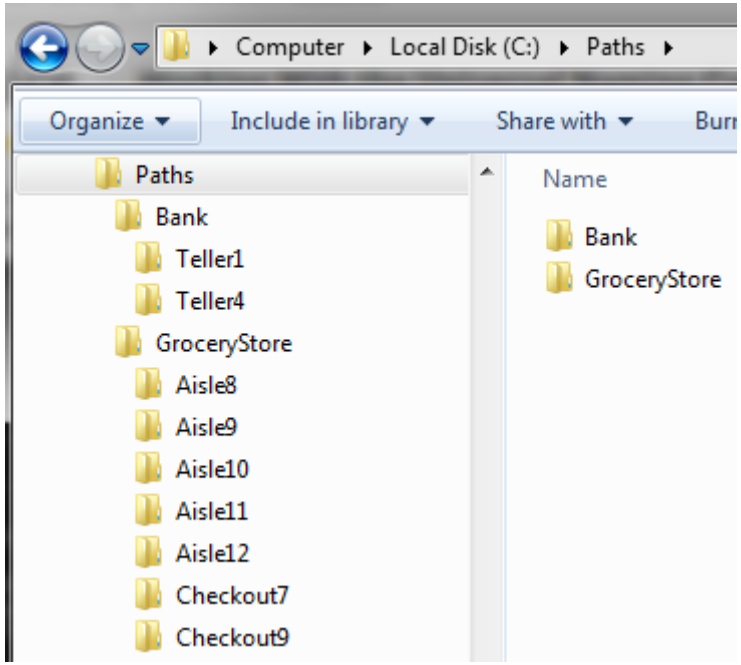
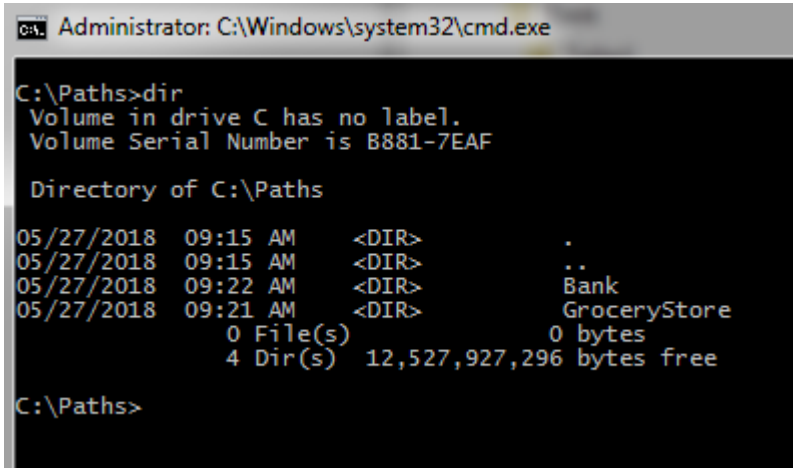
Windows Directories, Files & Paths

Windows Explorer is just a graphical representation of the files and folders ("directories") on your hard disks. Both the command line and Windows Explorer will show the same truth. Here is a simple example for the directories and files we'll be using here.





A path is nothing more than specifying directions to a file or directory on disk. It is the list of directories *from* a location *to* a location. There are 2 primary types of paths, absolute and relative.

An **absolute path** always begins with the drive root and lists all subdirectories all the way down to the file or directory target. Here is an example.

```
C:\Paths\GroceryStore\Checkout9\cashier_jerry.txt
```

Here C: is the drive root and the target is cashier_jerry.txt. Paths, GroceryStore and Checkout9 are directories to follow from the C: drive root down to the target.

Absolute paths always start at the drive letter root, like always specifying directions from home if you're trying to go somewhere in your car. If you need to go to the bank you'd get directions from your home address. From home to the bank is an example of an absolute path if we think of the root of the drive, the drive letter, as your "home".

…but what would happen if you're at the grocery store and you needed to go to the bank? You'd get directions from the grocery store to the bank; you would obviously not start from home. This is called a **relative path** because it starts at a location other than the drive letter root, what we're calling "home".

Here is an example of a relative path to get to Aisle9 of the GroceryStore if you're at Teller4 at the bank.

```
..\..\GroceryStore\Aisle9
```

This says "go up 2 directories and then go down to GroceryStore and down to Aisle9". (The **..** here means go up.)

You can use absolute and relative paths to locate any file or directory on a given system, but what happens if you need to reference an item on a system over the network? For those cases there is a special type of absolute path that enables you to reference files and directories across a network. These are called Universal Naming Convention paths, really always just called a **UNC path**. These are absolute paths that don't start at the root drive letter but instead use the network name and share name on the host computer.

For instance, if the computer name hosting our example above were EMPOWER01 and we shared our entire C: drive to the network the UNC path to get the ketchup.png on aisle11 in the grocery store would be:

```
\\EMPOWER01\C\Paths\GroceryStore\Aisle11\ketchup.jpg
```

Now that you know what paths are it's going to be useful to know how to use them to navigate. Open a command line and navigate to the Paths test folder on your computer. Let's talk about some basic commands.

dir	List current directory contents when no parameters are specified. Used to search with a filter when one is specified.
cd *path*	Change directory, show current directory if no path is provided
cls	Clear console window
mkdir *path*	Create the directory
copy *from-path to-path*	
del *path*	Delete the specified path
TAB-key	If you're specifying a path and you start typing some of it TAB will complete as much as it can for you

When you're on the command line you've got a current working directory (where you're currently at). Relative paths are by far more common than absolute paths in programming because code gets moved around and you can't make assumptions about what the whole drive looks like or where your code will be placed. Let's practice with some relative path movements…