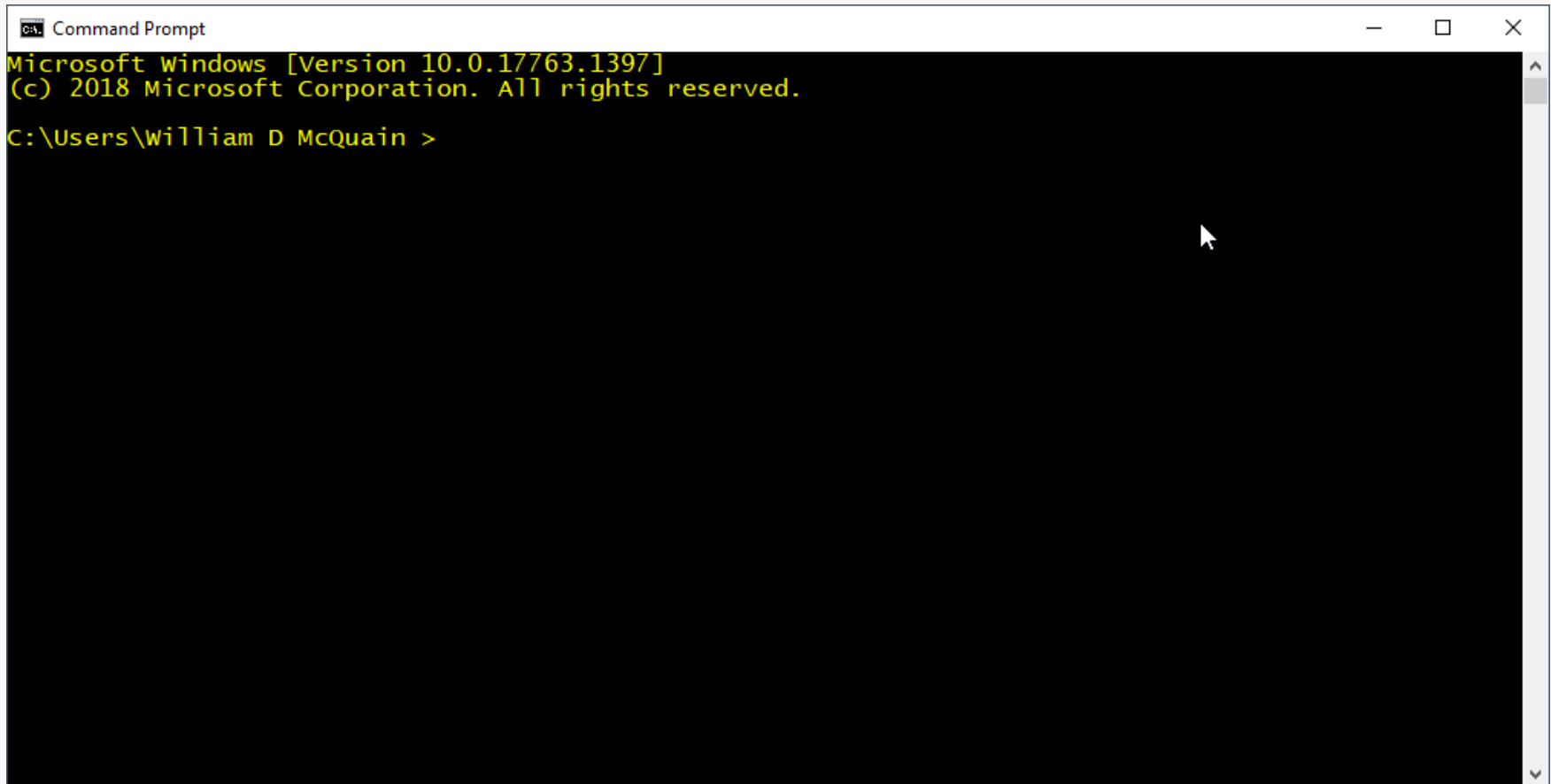
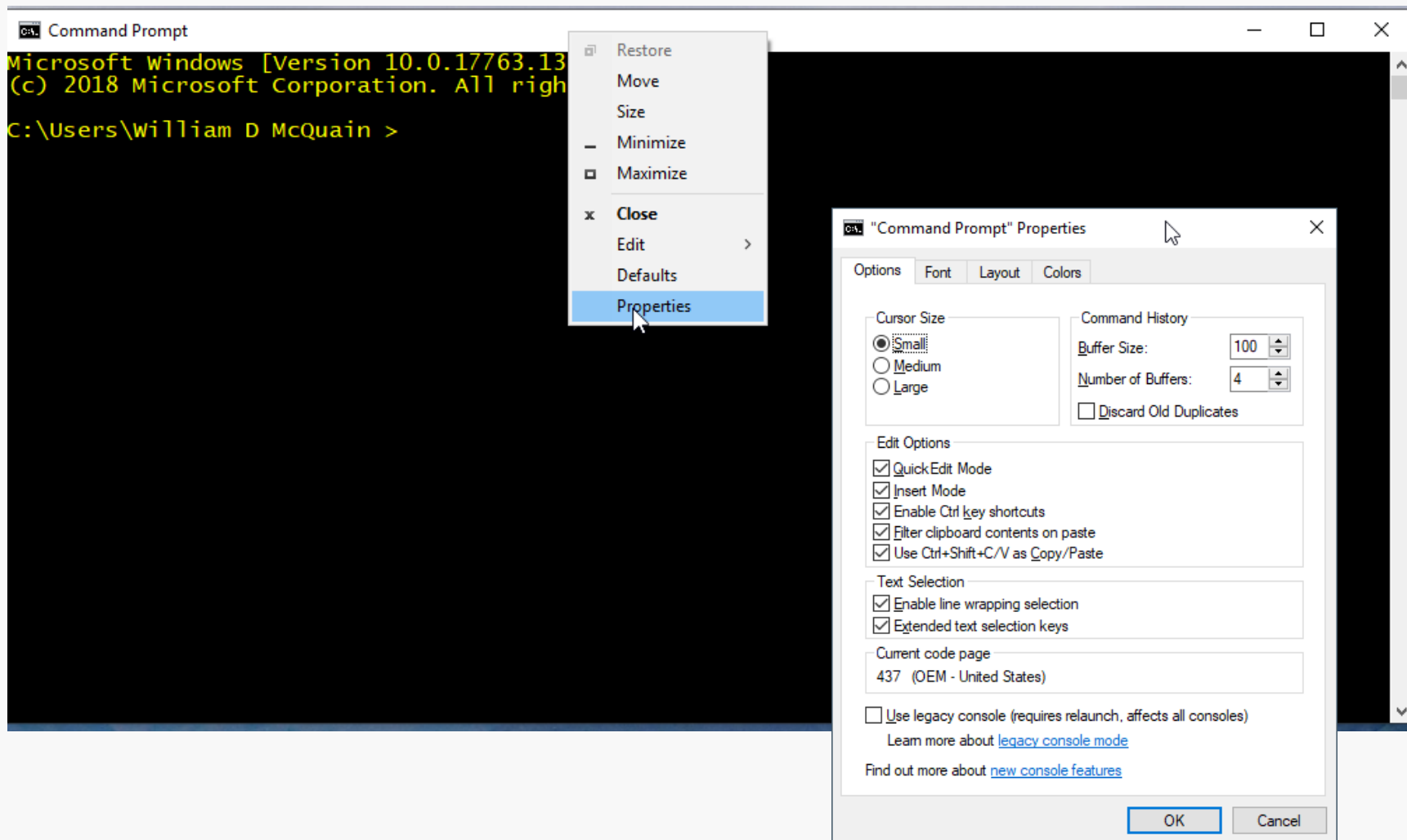


In Win10, go to the Start Menu, select Windows System and then Command Prompt.

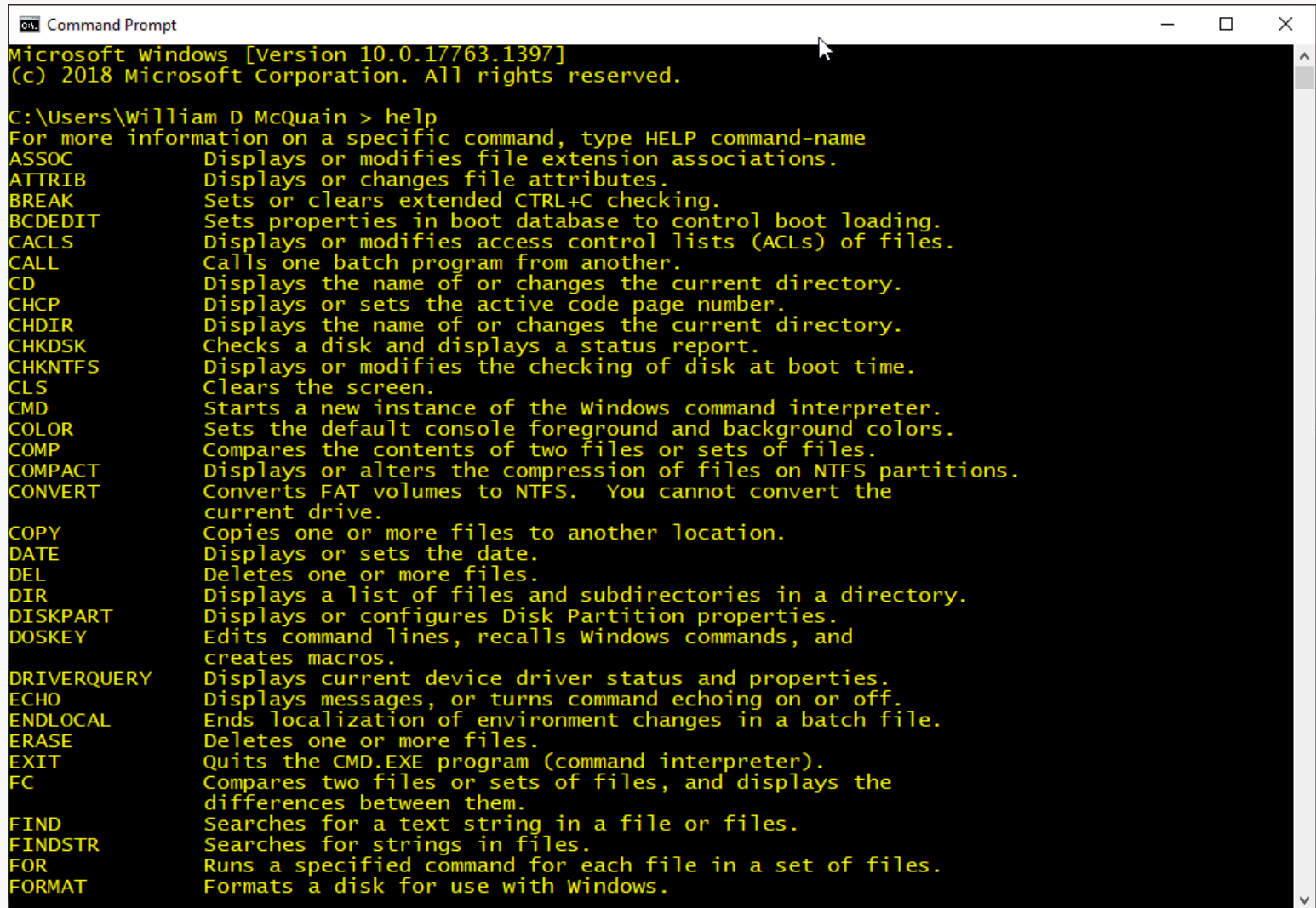
A screenshot of a Windows Command Prompt window. The window title is "C:\> Command Prompt". The text inside the window is yellow on a black background. It shows the Windows version and copyright information: "Microsoft Windows [Version 10.0.17763.1397] (c) 2018 Microsoft Corporation. All rights reserved." followed by the current directory path "C:\Users\William D McQuain >". A mouse cursor is visible in the center of the window.

```
C:\> Command Prompt
Microsoft Windows [Version 10.0.17763.1397]
(c) 2018 Microsoft Corporation. All rights reserved.
C:\Users\William D McQuain >
```

Right-click the title bar and select Properties; you can customize many appearance and some operational properties from here...



Typing "help" at the command prompt displays a list of shell commands with brief descriptions:



```
Command Prompt
Microsoft Windows [Version 10.0.17763.1397]
(c) 2018 Microsoft Corporation. All rights reserved.

C:\Users\William D McQuain > help
For more information on a specific command, type HELP command-name
ASSOC          Displays or modifies file extension associations.
ATTRIB         Displays or changes file attributes.
BREAK          Sets or clears extended CTRL+C checking.
BCDEDIT        Sets properties in boot database to control boot loading.
CACLS          Displays or modifies access control lists (ACLs) of files.
CALL           Calls one batch program from another.
CD             Displays the name of or changes the current directory.
CHCP           Displays or sets the active code page number.
CHDIR          Displays the name of or changes the current directory.
CHKDSK         Checks a disk and displays a status report.
CHKNTFS        Displays or modifies the checking of disk at boot time.
CLS            Clears the screen.
CMD            Starts a new instance of the Windows command interpreter.
COLOR          Sets the default console foreground and background colors.
COMP           Compares the contents of two files or sets of files.
COMPACT        Displays or alters the compression of files on NTFS partitions.
CONVERT        Converts FAT volumes to NTFS. You cannot convert the
               current drive.
COPY           Copies one or more files to another location.
DATE           Displays or sets the date.
DEL            Deletes one or more files.
DIR            Displays a list of files and subdirectories in a directory.
DISKPART       Displays or configures Disk Partition properties.
DOSKEY         Edits command lines, recalls Windows commands, and
               creates macros.
DRIVERQUERY    Displays current device driver status and properties.
ECHO           Displays messages, or turns command echoing on or off.
ENDLOCAL       Ends localization of environment changes in a batch file.
ERASE          Deletes one or more files.
EXIT           Quits the CMD.EXE program (command interpreter).
FC             Compares two files or sets of files, and displays the
               differences between them.
FIND           Searches for a text string in a file or files.
FINDSTR        Searches for strings in files.
FOR            Runs a specified command for each file in a set of files.
FORMAT         Formats a disk for use with Windows.
```

Typing a command followed by "/"? displays a fuller explanation of the command:

```
C:\Users\William D McQuain > cd /?  
Displays the name of or changes the current directory.  
  
CHDIR [/D] [drive:][path]  
CHDIR [..]  
CD [/D] [drive:][path]  
CD [..]  
  
.. Specifies that you want to change to the parent directory.  
  
Type CD drive: to display the current directory in the specified drive.  
Type CD without parameters to display the current drive and directory.  
  
Use the /D switch to change current drive in addition to changing current  
directory for a drive.  
.  
. . .
```

The most common shell commands are probably:

CD	Displays the name of or changes the current directory.
CLS	Clears the screen.
COPY	Copies one or more files to another location.
DEL	Deletes one or more files.
DIR	Displays a list of files and subdirectories in a directory.
MKDIR	Creates a directory.
MOVE	Moves one or more files from one directory to another directory.
PATH	Displays or sets a search path for executable files.
REN	Renames a file or files.
RMDIR	Removes a directory.

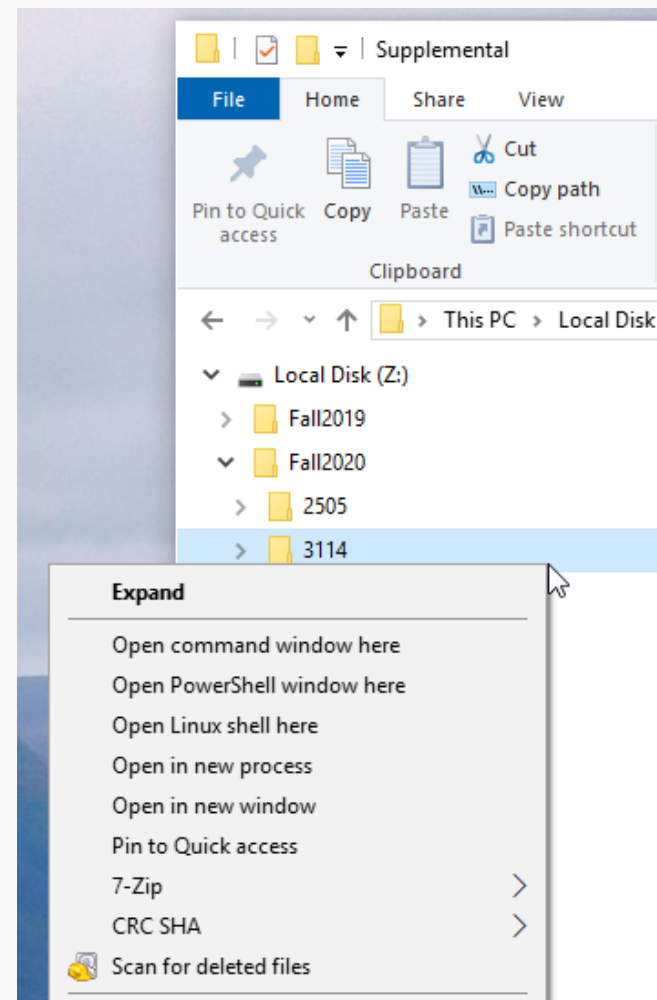
Use the command-line switch `\?` or `help <command>` to get more information about a command.

By default, a command shell opens in your home directory. Navigating from that to another directory is an exercise in forming full and regular paths and using the `cd` command. It's tedious.

Right-click on a directory in File Explorer to raise a context menu

This includes the option of opening a **Command Window** in that directory...

... well... almost...



Microsoft seems to have decided that we should abandon the Command Window and use PowerShell... which is very different and incompatible.

So, the right-click menu on the previous slide is not available by default.

Restoring it requires editing the dreaded Windows Registry.

... well... almost...

You can save this file, name it `cmdHere.reg`, and run it in Windows 10:

```
Windows Registry Editor Version 5.00

[HKEY_CLASSES_ROOT\Directory\shell\cmdprompt]
@="@shell32.dll,-8506"
"Extended"=""
"NoWorkingDirectory"=""

[HKEY_CLASSES_ROOT\Directory\shell\cmdprompt\command]
@="cmd.exe /s /k pushd \"%V\"

[HKEY_CLASSES_ROOT\Directory\Background\shell\cmdprompt]
@="@shell32.dll,-8506"
"Extended"=""
"NoWorkingDirectory"=""

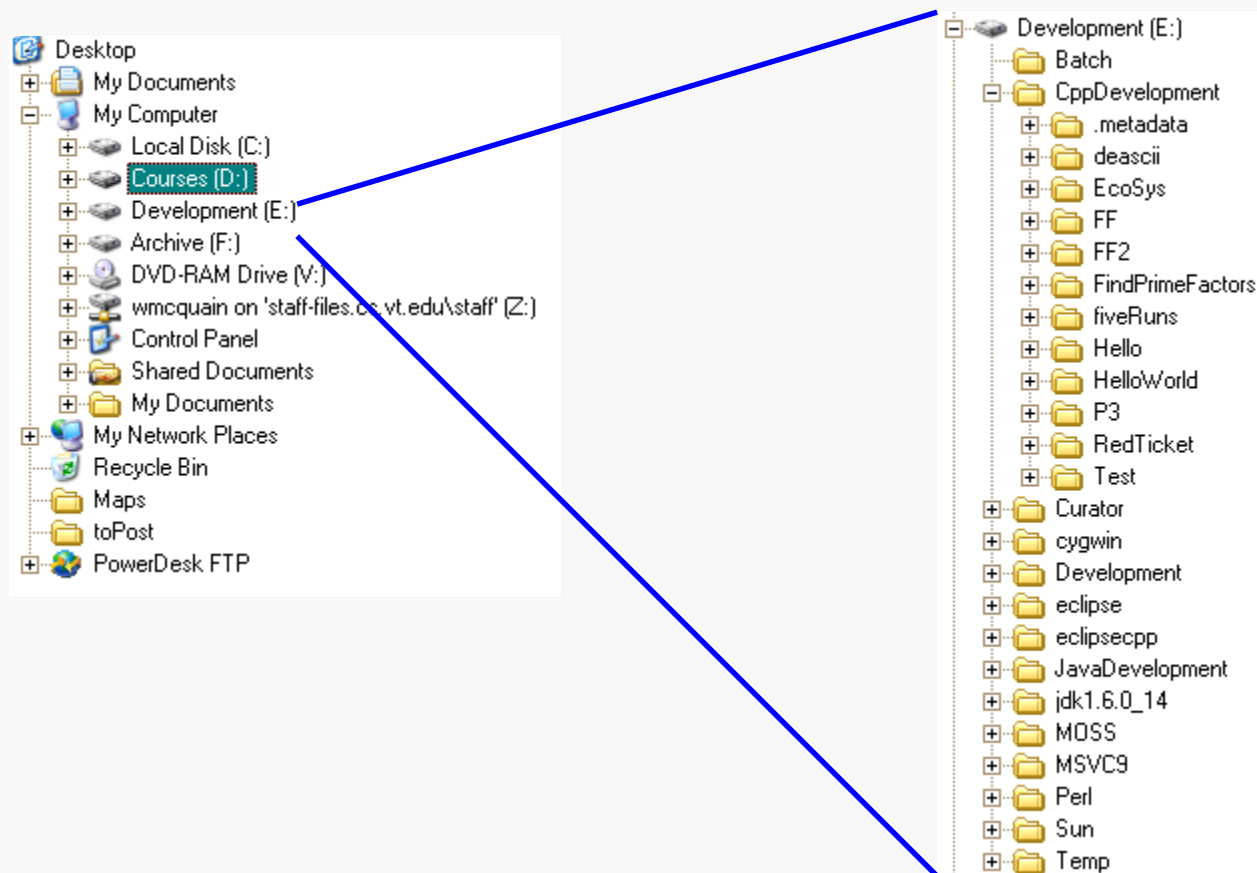
[HKEY_CLASSES_ROOT\Directory\Background\shell\cmdprompt\command]
@="cmd.exe /s /k pushd \"%V\"

[HKEY_CLASSES_ROOT\Drive\shell\cmdprompt]
@="@shell32.dll,-8506"
"Extended"=""
"NoWorkingDirectory"=""

[HKEY_CLASSES_ROOT\Drive\shell\cmdprompt\command]
@="cmd.exe /s /k pushd \"%V\"
```

You should already be familiar with the basic notion of a hierarchical file system.

We may have a number of logical drives, and separate physical devices:



Each drive, like E shown on the previous slide is organized logically as a tree of nested directories (or folders).

The top-level directory is called the *root directory* and is denoted by the drive letter, a colon and a back-slash; for example E : \

There is a unique *full path* from the root directory to every other directory on the drive.

The full path is formed by concatenating directory names, separated by a back-slash:

```
E:\CppDevelopment\EcoSys\
```

We can also form a *relative path* from one directory to another. The parent of the current directory is denoted by ". .".

For example:

```
..\Redticket\
```

The shell stores the most-recently executed commands in a history list.

Use the F7 function key to display a scrollable list of those commands. You can use the up/down arrow keys to navigate the list, and press Enter to repeat the selected command.

You can also use the up/down arrow keys directly at the command prompt to scroll through the previous commands.

Note that you can use this feature to re-display a previous command and then edit that command to change file names or command-line switches.

The length of the history list can be set through the shell window Properties dialog.