

1. Windows

- a. ls - list directory
 - i. Can enter the path as a command parameter
 - 1. ls C:\
 - ii. ls -Force C:\
 - 1. The -Force parameter will show hidden and system files that aren't normally listed with just ls.
 - iii. pwd
 - 1. Print working directory
- b. cd
 - i. Change directory
 - 1. Examples
 - a. cd C:\Users\cindy\Documents
 - i. cd command on an absolute path
 - b. cd ..
 - i. Change directories to the parent directory of current path
 - ii. Considered a relative path command as it takes you up one folder level relative to where you were before
 - c. cd ..\Desktop
 - i. We know that the desktop and document directories are under the home directory so we could run cd.., then cd desktop but there's actually an easier way to write this. Cd..\backslash desktop.
 - d. cd ~
 - i. The tilde is a shortcut for the path of your home directory
 - ii. cd ~\Desktop
- c. Tab completion
 - i. Lets us use the tab key to auto-complete file names and directories
- d. .\
 - i. Means current directory
- e. mkdir
 - i. Make directory
- f. history
 - i. See a list of commands that you entered earlier
 - ii. Can scroll through the commands just by hitting up or down at the type prompt
- g. Ctrl + R
 - i. History shortcut / Search commands
- h. ` - backtick
 - i. Escapes a character

1. Example
 - a. Mkdir my` cool` folder
- i. “ - quotes
 - i. Can surround a file name so the spaces are included
 1. Example
 - a. Mkdir “my cool folder”
- j. Cp
 - i. Copy
 1. Example
 - a. Cp mycoolfolder.txt C:\Users\cindy\Desktop
- k. Wildcard - a character that’s used to help select files based on a certain pattern
 - i. *
 1. Example
 - a. Cp *.jpg C:\Users\cindy\Desktop\
- l. -Recurse
 - i. List the contents of the directory
- m. -Verbose
 - i. Copy doesn’t output anything to the CLI by default unless there are errors
 - ii. This command will output one line for each file in the directory being copied
- n. Example combo command
 - i. cp ‘Bird Pictures’C:\Users\cindy\Desktop\ -Recurse - Verbose
 1. This copies the directory and all of its contents while printing a log for each file that was copied
- o. Mv
 - i. Move (can also be used to rename files)
 1. Example
 - a. Rename
 - i. Mv .\blue_document.txt yellow_document.txt
 1. This “moves” the file without changing the directory
 - b. Move
 - i. Mv .\yellow_document.txt
c:\Users\cindy\Documents
 - ii. Mv *_document.txt C:\Users\cindy\Documents
- p. Rm
 - i. Remove
 - ii. Take caution when using remove because it does not use the recycle bin. Once the files or directories are removed, they’re gone for good
- q. Cat
 - i. Short for concatenate; it shows the file contents
 - ii. This displays one line at a time until the document is fully printed/viewed
- r. More

- i. This command lets you view all the contents at once, or it will stop once it fills the terminal window
 - ii. When we run the more command, we're launched into a separate program from the shell. This means that we interact with the more program with different keys
 - 1. The Enter key advances the file by one line.
 - 2. Space advances the file by one page.
 - 3. The Q key allows you to quit out of more and go back to your shell. If we want to leave the more command and go back to our shell, we can just hit the Q key
- s. -Head
 - i. To be used with the cat command
 - 1. Example
 - a. Cat fruits.txt -Head 10
 - i. This will show us the first 10 lines of a file
- t. -Tail
 - i. To be used with the cat command
 - ii. Similar to -Head but to view the last lines of a file
 - 1. Example
 - a. Cat fruits.txt -Tail 10
 - i. This will show us the last 10 lines of a file
- u. Start notepad++ hello.txt
 - i. Need to download notepad++ first
 - ii. This command allows you to edit a file right in the CLI
- v. Powershell commands
 - i. Get-Help
 - 1. Used to see more info about commands
 - 2. /?
 - a. Get-Help with cmd.exe commands
 - ii. Get-Alias
 - 1. Used to see the actual command that is being run
 - a. Example
 - i. Get-Alias ls
 - 1. This works because ls is an aliased command to make it similar to a linux bash command
 - iii. Get-ChildItem
 - 1. Example
 - a. Get-ChildItem C:\
 - i. Same output as ls C:\
 - iv. Cmd.exe
 - 1. Commands from the old MSDOS days of windows but they can still be run due to backwards compatibility
 - 2. They are not as powerful as PowerShell commands

- v. SIs - select-string
 - 1. To find words or other strings of characters and files
 - a. Example
 - i. Select-string cow farm_animals.txt
 - 1. Searching for the word/string cow in the document farm_animals.txt
 - b. Pattern Matching
 - i. Using patterns to search for/through multiple files (in a directory?)
 - 1. Example
 - a. Select-string cow *.txt
- vi. -Filter
 - 1. Look for certain types of files (in directories?)
 - a. Example
 - i. Ls 'C:\Program Files' -Recurse -Filter *.exe
 - 1. Looks for all exe files in the Program Files folder
- vii. Echo
 - 1. Echo is an alias for Write-Output
- viii. >
 - 1. A redirect or operator; lets us change where we want our standard output to go
- ix. >>
 - 1. Append
 - a. Example
 - i. Echo woof >> dog.txt
 - 1. Results are "woof" added on the 2nd line
 - 2. This appends data to the file instead of overwriting it (no flag)
- x. |
 - 1. Pipe operator
 - a. Takes the output of one command and inputs it into another
 - i. Example
 - 1. Cat words.txt | select-string st
 - a. See a list of words with the string 'st' found in the cat
- xi. Output Streams are numbered
 - 1. Stdout - the output (1)
 - 2. Stderr - the error (2)
- xii. \$null = nothing
 - 1. Think of it as a black hole for the purposes of redirecting
- xiii. Get-help about_redirection
- xiv. Combination commands

1. Echo woof > dog.txt
 - a. The word woof is entered into a created file named dog.txt
 2. Cat .\dog.txt
 - a. Reads the file; "woof" is the result
 3. Cat words.txt | select-string st
 - a. See a list of words with the string 'st' found in the cat words.txt file
 4. Cat words.txt | select-string st > st_words.txt
 - a. Reads the words.txt file
 - b. Copies of all the strings containing 'st
 5. Rm secure_file 2> errors.txt
 - a. Trying to remove a secured or important system file will result in an error
 - b. The output of the errors is redirected to the errors.txt file
 6. Rm secure_file 2> \$null
 - a. Outputs the error messages to the null blackhole; i.e. filters them out
- w. Get-LocalUser
- i. Checks the local user information
- x. Get-LocalGroup
- i. List the groups on the local machine
- y. Get-LocalGroupMember [insert group name]
- i. Shows the members of the selected group
- z. Net
- i. Net command does lots of different things
 1. Change a local password in powershell
 - a. Examples
 - i. Net user cindy 'some_password'
 - ii. Net user cindy *
 1. Next prompt will ask you to enter the password
 - b. /logonpasswordchg:yes
 - i. Parameter that forces the user to change their password on next login
 - ii. Example
 1. Net user victor /logonpasswordchg:yes
- aa. Net user andrea * /add
- i. This creates a new user and on the next line you will be prompted to enter a password for the user
 - ii. Net user andrea /logonpasswordchg:yes
 1. Need to follow up with this command so that the user has to change their password at the next login
- bb. Net user cesar pa5sw0rd /add /logonpasswordchg:yes

- i. This creates a new user and sets a password for the user ("pa5sw0rd") and also forces them to change their password at the next login
- cc. Net user andrea /del
 - i. Deletes the user Andrea's account
- dd. Remove-LocalUser cesar
 - i. Removes the user Cesar's account

2. Linux

- a. ls - list directory
 - i. ls /
 - 1. Can see all the contents under the root directory
 - ii. ls -l
 - 1. for long. This shows detailed info about files and folders in a long list format
 - iii. ls -a
 - 1. For all. This shows us all the files in the directory, including the hidden files
 - iv. ls -la /
 - 1. Appended two different flags together. This is the same thing as ls -l -a /, both work the same way
 - 2. The order of the flag determines which order it goes in. In our case, it doesn't matter if we do a long list first or show all files first
- b. man
 - i. This is the command for Manual
 - 1. Example: man ls
- c. .i_am_hidden
 - i. You can hide a file or directory by pre-pending a dot to it
- d. pwd
 - i. Print working directory
- e. cd
 - i. Change directories
 - 1. Examples
 - a. cd /home/cindy/Documents
 - b. cd ../Documents
- f. Tilde (~) represents the home directory
- g. mkdir
 - i. Make directory
- h. \
 - i. Escapes a character
 - 1. Example
 - a. Mkdir my\ cool\ folder
- i. " - quotes
 - i. Can surround a file name so the spaces are included
 - 1. Example
 - a. Mkdir "my cool folder"

- j. history
 - i. See a list of commands that you entered earlier
 - ii. Can scroll through the commands just by hitting up or down at the type prompt
- k. Ctrl + R
 - i. History shortcut / Search commands
- l. ` - backtick
 - 1. Escapes a character
 - a. Example
 - i. Mkdir my` cool` folder
 - ii. " - quotes
 - 1. Can surround a file name so the spaces are included
 - a. Example
 - i. Mkdir "my cool folder"
- m. Clear
 - i. Clears the terminal screen
- n. Cp
 - i. Copy
 - ii. Example
 - 1. Cp my_very_cool_file.txt ~/Desktop
- o. *
 - i. Wildcard
 - 1. Example
 - a. Cp *.png ~/Desktop
 - i. This combo command copies all .png files from the current directory to the Desktop
- p. -r
 - i. The flag for recursive copy
 - 1. Example
 - a. Cp -r 'Cat Pictures' ~/Desktop
 - i. This combo command copies a directory and all the contents within from the current directory to Desktop
- q. Mv
 - i. Move
 - 1. Example
 - a. Mv blue_document.txt ~/Documents
 - ii. Can also be used to rename files
 - 1. Example
 - a. Mv red_document.txt blue_document.txt
 - iii. Can move multiple files at a time using the wildcard operator(? function?)
 - 1. Mv *_document.txt
 - a. This moves all files that end in _document.txt
- r. Rm

- i. Remove
- s. Cat
 - i. Short for concatenate; it shows the file contents
 - ii. This displays one line at a time until the document is fully printed/viewed
- t. Less
 - i. Similar to the more command in windows, but with more functionality
 - ii. Fun fact there's a bash command called More but it's been slowly dying out in favor of Less. It's literally a case of less is more.
 - iii. Keys
 - 1. Up and down
 - 2. Page up and page down
 - 3. g - moves to the beginning of a text file
 - 4. G - moves to the end of a text file
 - 5. /word_search - allows you to search for a word or phrase
 - a. Example
 - i. /money - all instances of money in the document will be highlighted
 - 6. q - allows you to quit out of less and go back to your shell
- u. head
 - i. By default, will show the first 10 lines of a file
 - 1. Example
 - a. Head fruits.txt
- v. Tail
 - i. By default, will show the last 10 lines of a file
 - 1. Example
 - a. tail fruits.txt
- w. Nano my_file
 - i. Opens nano text editor
 - ii. Nano then the name of the file
 - iii. Nano is built into most Linux Distributions
- x. Grep
 - i. Search for words within files that match a certain pattern
 - 1. Example
 - a. Grep cow farm_animals.txt
 - i. Searching for the word cow in the farm_animals.txt file
 - b. Grep cow *_animals.txt
 - i. Searching for the word cow in any files that end in '_animals.txt'
- y. Three I/O or input/output streams
 - i. Stdin
 - ii. Stdout
 - iii. Stderr
- z. >> - Append

- i. Echo woof >> dog.txt
 - 1. Appends woof to the next line in the dog.txt file
- aa. Combination commands
 - i. Echo woof > dog.txt
 - 1. This redirects the output of the string 'woof' to the file, dog.txt.
Without the > operator, echo would print the string to the console
 - 2. This will overwrite an existing file
 - ii. Echo woof >> dog.txt
 - 1. Appends woof to the next line in the dog.txt file
- bb. <
 - i. Standard in redirector
 - 1. Cat < file_input.txt
 - a. Reads the contents of the file as input
 - b. This is technically the same as cat file_input.txt
 - 2.
- cc. 2>
 - i. Stderr redirect
 - 1. Example
 - a. Ls /dir/fake_dir 2> error_output.txt
- dd. /dev/null
 - i. Similar to the \$null tool in Windows
 - ii. We can use this to filter out output we don't want to see
 - iii. Example
 - 1. Less /var/log/syslog 2> /dev/null
 - a. Output is filtered from error messages
 - iv. |
 - 1. Pipe operator
 - 2. Takes the output of one command and inputs it into another
 - 3. Example
 - a. Ls -la /etc | grep bluetooth
 - i. Shows which sub-directories in the /etc directory contain the word Bluetooth
- ee. Sudo command or superuser do
 - i. Run a command as a super user
 - 1. Example
 - a. Sudo cat /etc/sudoers
- ff. Su
 - i. Substitute user- allows you to change to a different user so you don't have to use sudo all the time. If you don't specify a user it defaults to root
 - ii. Example
 - 1. Sudo su -
- gg. Cat /etc/group
 - i. Views membership for all groups
 - ii. Also shows which users have access to run sudo

- hh. Cat /etc/passwd
 - i. Read the file that contains user information
- ii. Passwd
 - i. Changes the user's password
 - ii. Example
 - 1. Passwd cindy
 - iii. Sudo passwd -e victor
 - 1. Forces the user to change their password at next login
 - 2. The -e stands for expire flag
- jj. Sudo useradd juan
 - i. Adds a new user named Juan in Linux
- kk. Sudo userdel juan
 - i. Removes the user, juan's account
- ll.