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{Introduction to the Command Line}

Introduction To The Command Line

Getting started with Windows Powershell

The Command Line is a text-based interface that allows you to communicate with your computer to accomplish a wide range of tasks. You will use the skills you develop in this lesson when working with [Twarc](), a command line tool for collecting and analyzing Twitter data. It is important to have a handle on basic commands so that you can work with the 1 October Twitter Data Collection later on in this tutorial series. Get started by downloading the materials below!

Difficulty level: Beginner

Optimized for: Windows users. Mac users can view the tutorial [here]().

Prerequisite(s): None

Materials: [Download 'walt_whitman.zip' to your desktop]()

Tutorial Key
- `Command Line commands will be displayed in this format`
- 🎉 means you have come to the end of a set of instructions

Lesson objectives
- Use the command line to navigate your computer
- Create and move content around
- Make changes to existing files

Key Terms
- PowerShell - Command Line Shell from Microsoft
  - A text interface for your computer. PowerShell receives commands and then passes those commands on to the computer's operating system to run.
- Command

- ○ A specific order from a user to the computer's operating system to perform a service
- Graphical-User Interface (GUI)
    - ○ A visual form of user interface that allows users to interact with a computer through icons and other visual indicators
- Filepath
    - ○ A unique address that specifies a location in a file system
- Directory
    - ○ A location for storing files on your computer. A directory is the same thing as a folder; a folder is represented visually in a GUI.

Table of Contents

Introduction

How do you create a new folder? Pick the option below that applies to you:

    a.   Right-click on my desktop and click 'Create New Folder'
    b.   Click on the 'New Folder' button in my file explorer
    c.   Will it into existence, I have the power within me
    d.   I don't. I like my files to be free range.

If you selected C or D, chances are you are probably not having much success organizing your files. If you selected A or B, you are interacting with your system through a Graphical-User Interface (GUI). Before users relied on GUIs to move around their systems, the command-line interface was the primary way people would interact with their computers. While a GUI is a visual way for operating your computer, the Command Line is a text-based interface for doing the same tasks you perform when clicking, dragging, and dropping files. It has a range of capabilities that make it a powerful tool for those who need more precision in their work. In this tutorial, you will learn how to navigate your computer using the Command Line.

Getting started

There are two main command-line interfaces that are discussed in this tutorial series. We will be using Windows PowerShell for this tutorial since many of the commands are similar to bash shell (OS X) commands. Let's get started by opening PowerShell.

Note: To open PowerShell, use the taskbar to search for PowerShell and select 'Windows PowerShell'

Read through these tips and tricks before moving on to the next section:

Tips and tricks
'PS' signals the shell prompt. You can tell when a process is complete when it returns to the shell prompt.   - Capitalization and spacing matters! Make sure to always double check your work.   - You can drag and drop folders into PowerShell instead of typing out their filepath   - Using the up arrow on your keyboard will recall commands. Use this tip to waste less time writing out commands and lengthy filepaths.   - You can paste text by right-clicking in PowerShell

🎉Awesome work! You're ready to start using PowerShell. Scroll down to the next section.🎉

Moving Around Using PowerShell
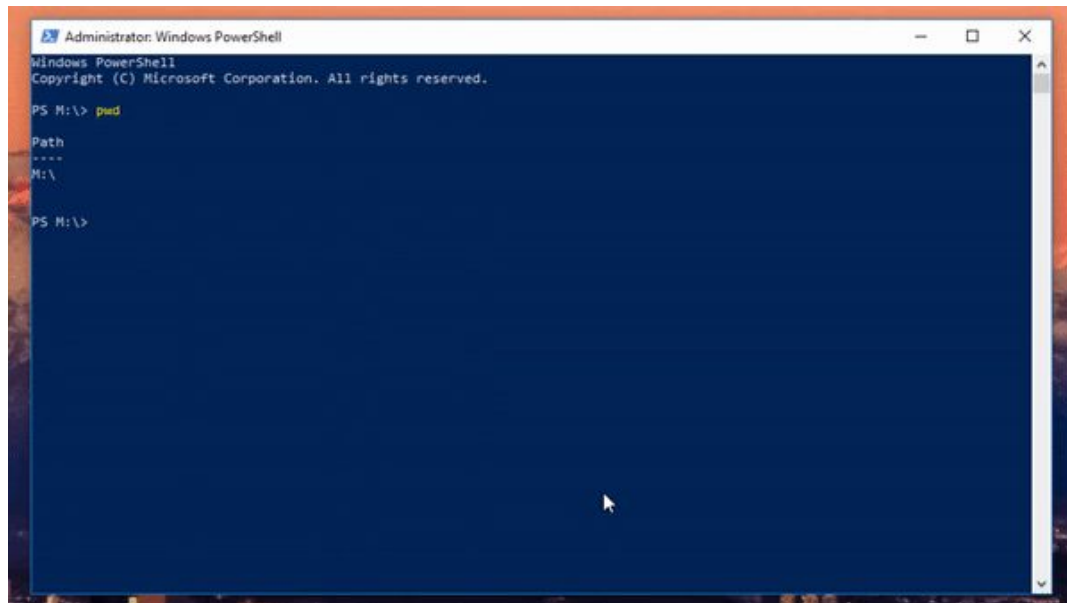
If you are feeling lost after opening PowerShell, it is important to find out where you are in your filesystem. Go ahead and enter the following command to **print the working (your current) directory**:

```
pwd
```
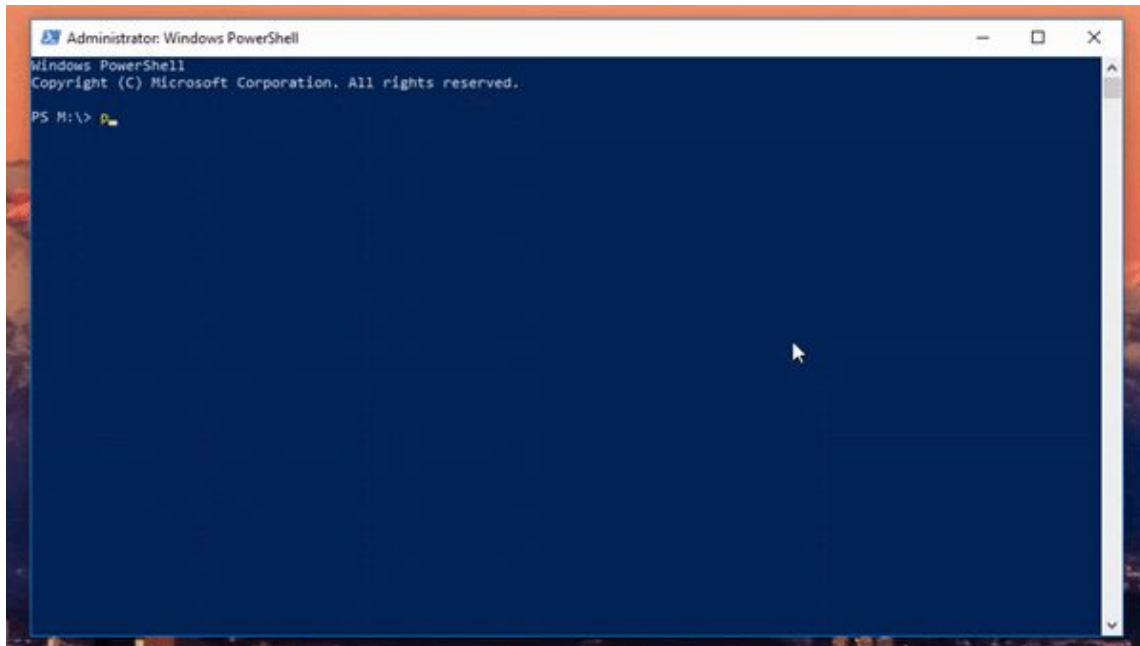
Nice job! Now let's see which directories and files are available in your location by entering the **list files** command:
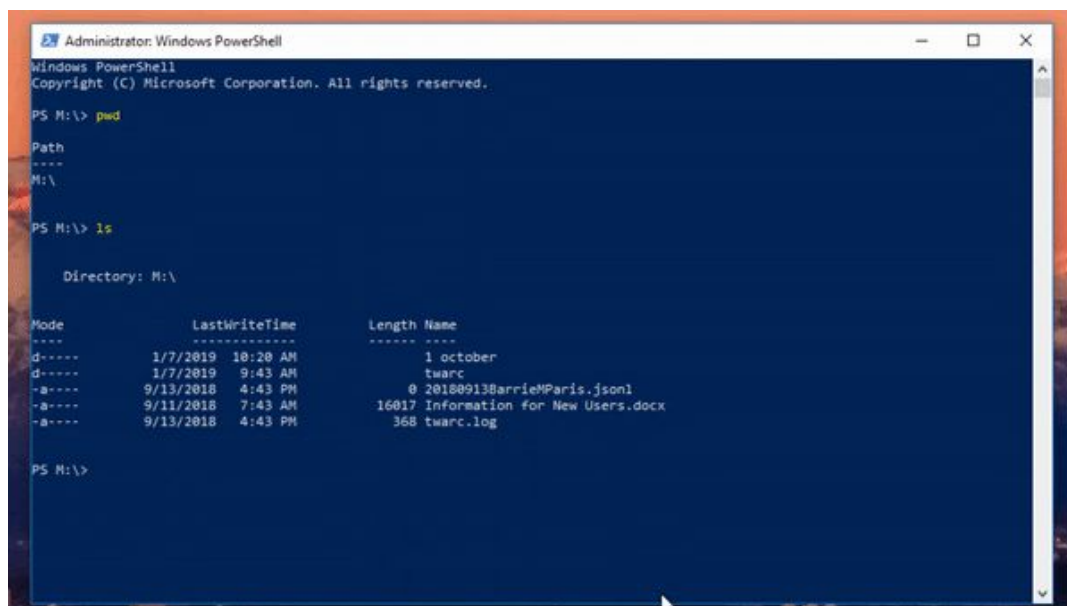
`ls`

Let's change directories. Navigate to your Desktop by entering the **change directory** command:

`cd D:\Desktop`
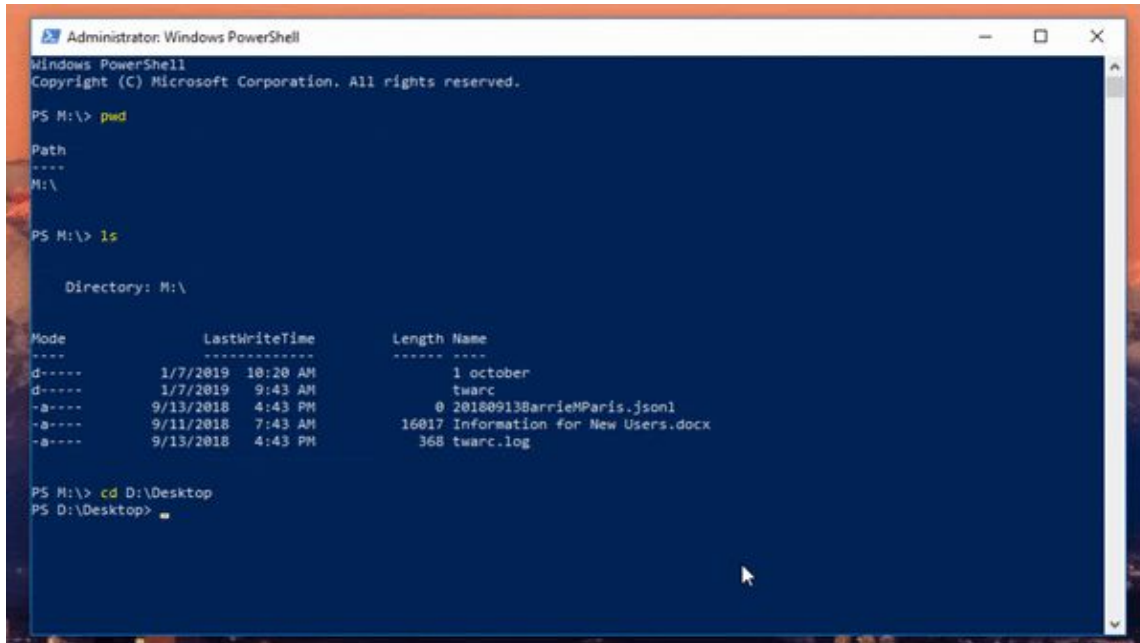
If you haven't already, go ahead and <u>click here to download the zip file</u> we will be working within this tutorial <u>to your Desktop</u>. After you've downloaded the file, let's create a directory that we can store the file in by entering the **make directory** command:

`mkdir walt_whitman`

We're going to move the 'walt_whitman' zip file you downloaded from your Desktop into your 'walt_whitman' directory by using a new command, **move**:

`mv walt_whitman.zip walt_whitman`

Note: If you're having trouble with this step, double check to make sure you moved the 'walt_whitman.zip' file from your to your downloads folder to your Desktop.

Navigate to your new directory using the **change directory** command:

`cd D:\Desktop\walt_whitman`
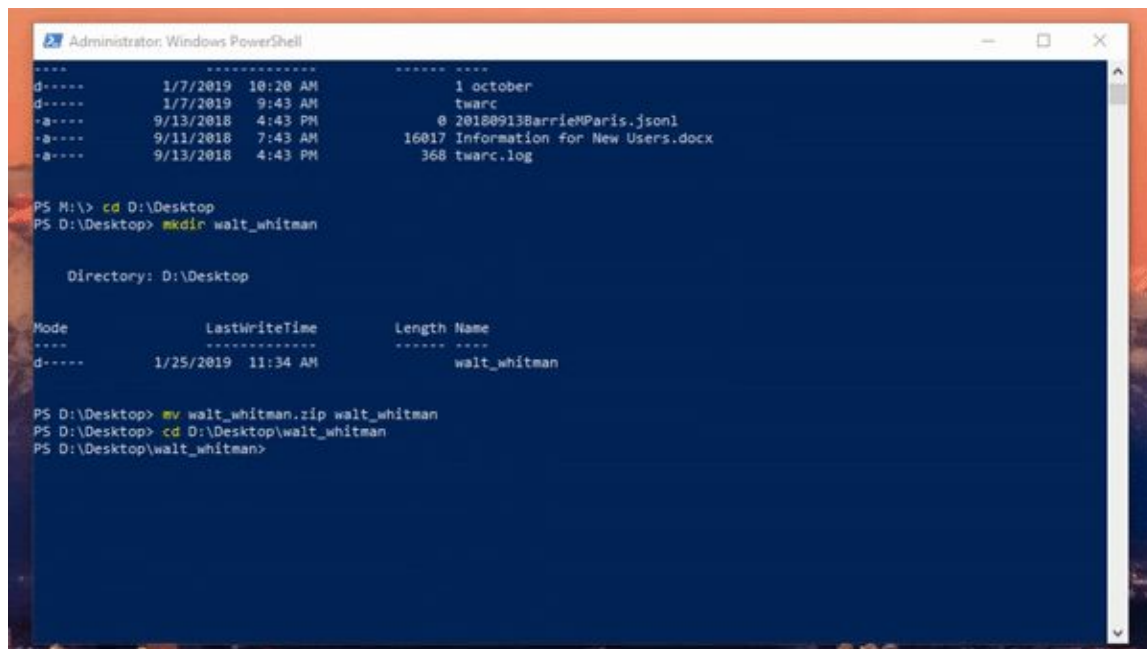
🎉Good job! You're ready to move on to the next section.🎉

Manipulating Files Using PowerShell

Now that you know how to find your location in a filesystem, we're going to edit and move individual files around. We're going to start with the 'walt_whitman' zip file on your Desktop.

Double check to make sure that you are still in your 'walt_whitman' directory using the **print working directory** command:

`pwd`

To get started, we need to unzip the file. Enter the **expand archive** command to do so:

`Expand-Archive walt_whitman.zip`
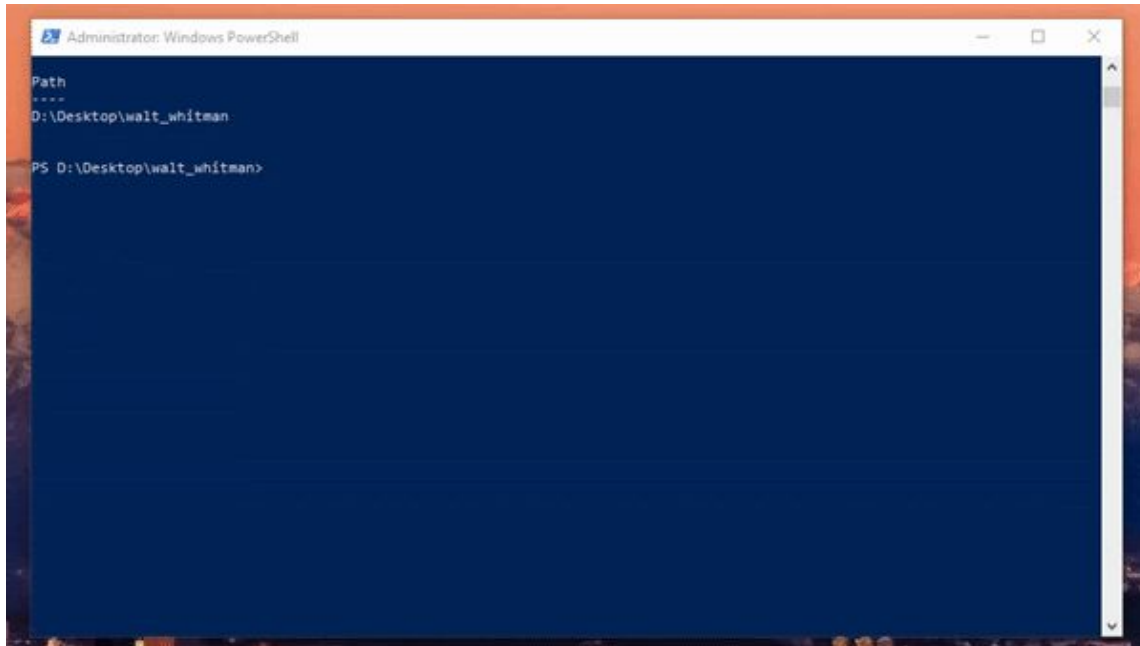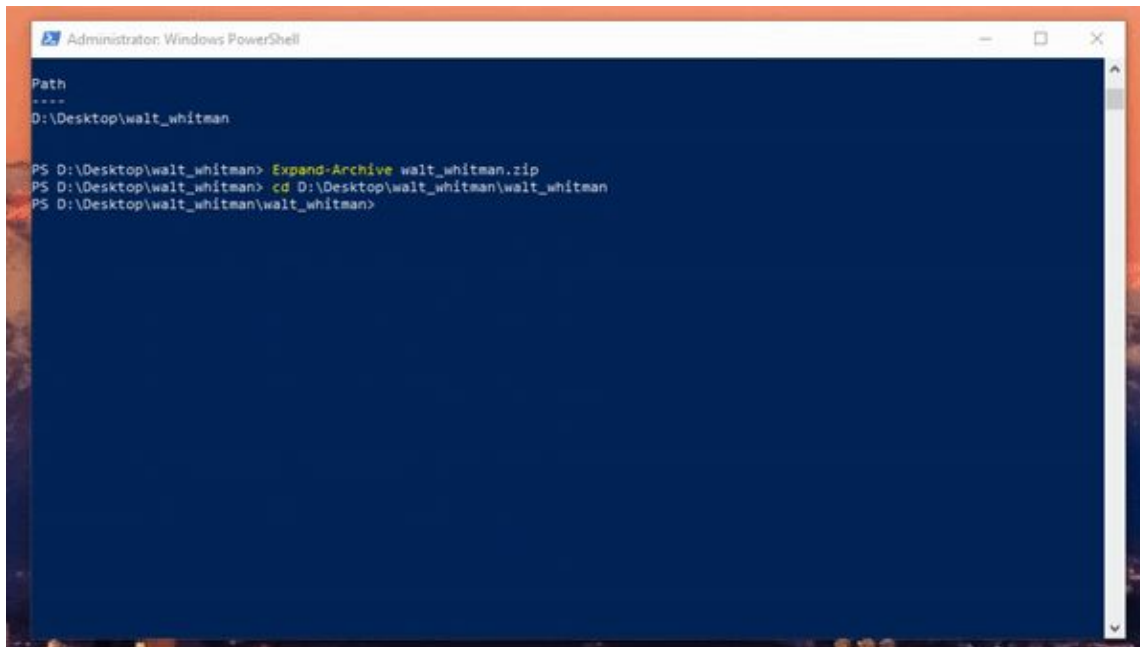
Navigate to the directory containing the unzipped files using the **change directory** command:

```
cd D:\Desktop\walt_whitman\walt_whitman
```
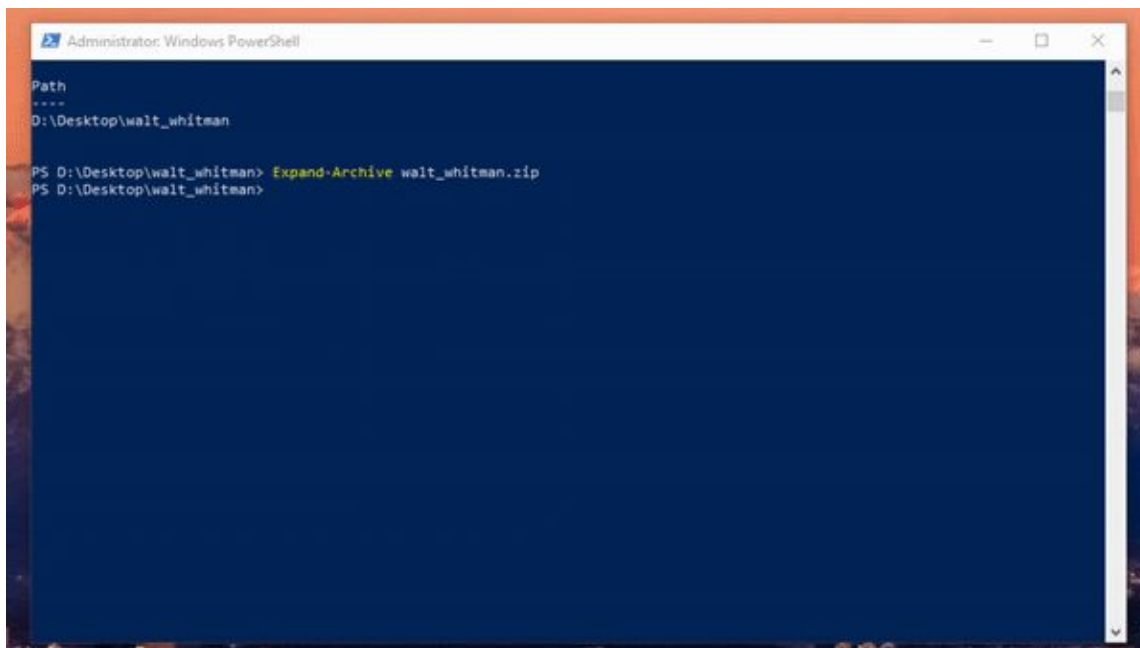

Let's see what's inside. Use the **list files** command:

```
ls
```


What you should see:

```
1_Poems.txt 2_Poems.txt 3_Poems.txt 4_Poems.txt readme.txt
```

What a treat! You've unzipped four poems and a README plain text file. Let's find out how many lines and words are in the file '1_Poem.txt' by entering the **get content** command:

```
Get-Content 1_Poem.txt | Measure-Object –Line -Word
```

Note: 'Get-Content' reads the content of a specified file one line at a time. 'Measure-Object' measures the numeric or string properties of objects.

There are 289 lines and 2,451 words in the first poem.

Let's find out which poem it is! Start by using the **tail** command, which pulls up the last 10 lines of a text:

```
Get-Content 1_Poem.txt -Tail 10
```
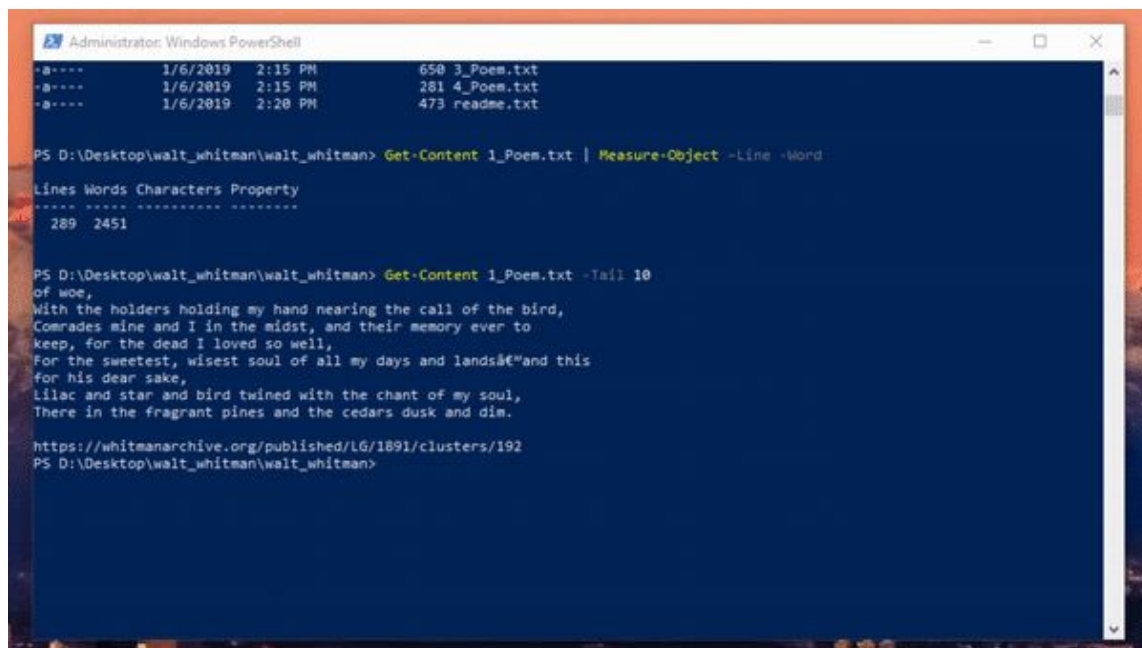
What you should see:

```
of woe,
With the holders holding my hand nearing the call of the bird,
Comrades mine and I in the midst, and their memory ever to
keep, for the dead I loved so well,
For the sweetest, wisest soul of all my days and lands—and this
for his dear sake,
Lilac and star and bird twined with the chant of my soul,
There in the fragrant pines and the cedars dusk and dim.

https://whitmanarchive.org/published/LG/1891/clusters/192
```

So that didn't give us the title, let's try and see if using the **head** command to get the first 10 lines of a text will help:

`Get-Content 1_Poem.txt -Head 10`

What you should see:

```
WHEN LILACS LAST IN THE DOORYARD BLOOM'D.


1


WHEN lilacs last in the dooryard bloom'd,
And the great star early droop'd in the western sky in the night,
I mourn'd, and yet shall mourn with ever-returning spring.


Ever-returning spring, trinity sure to me you bring,
Lilac blooming perennial and drooping star in the west,
```
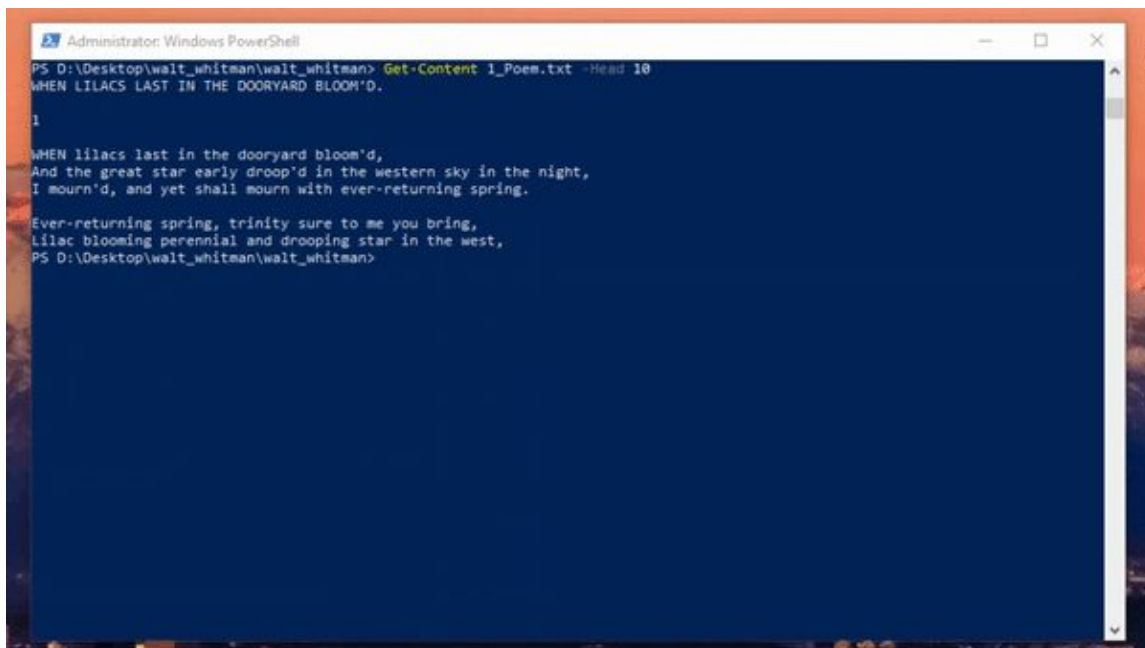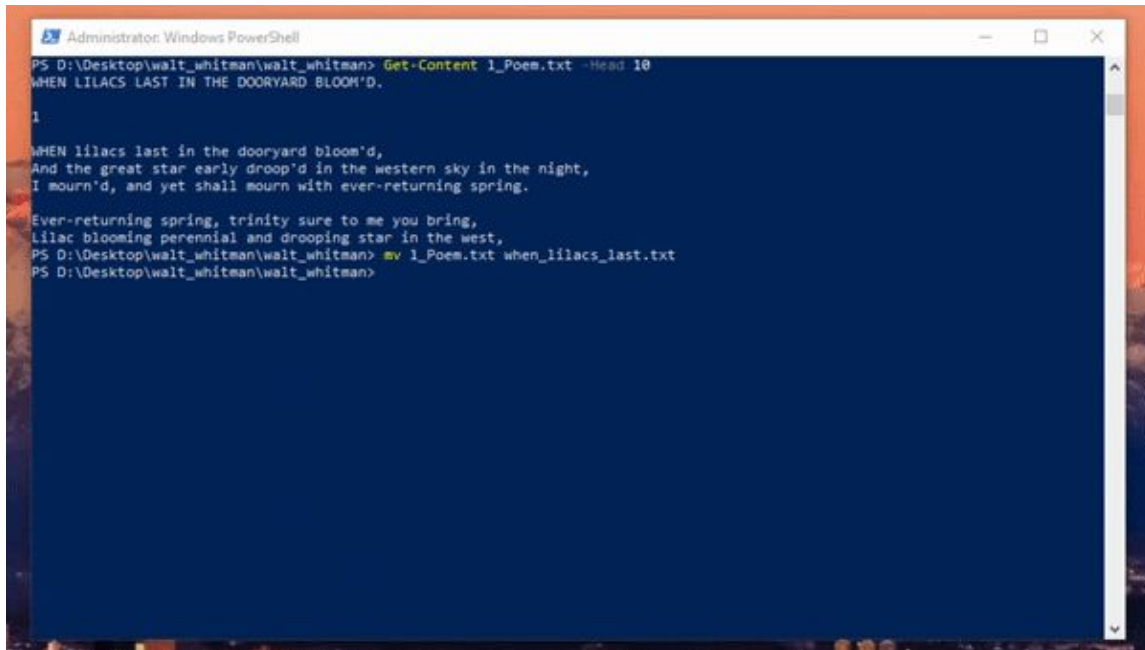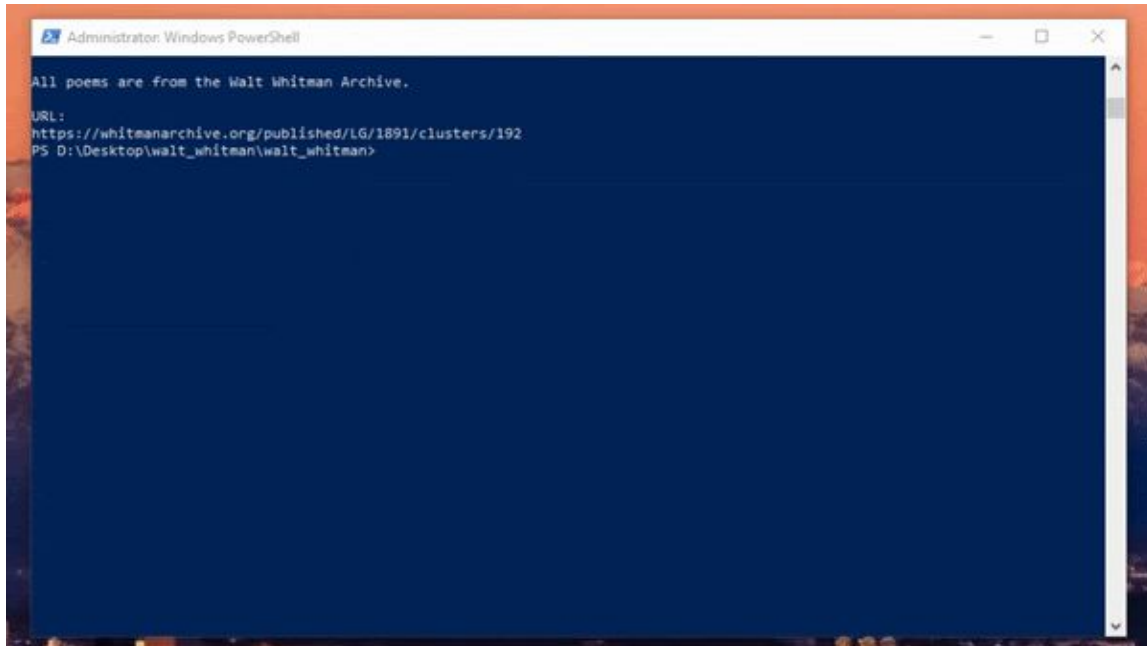
Looks like we tracked down the title of the poem. Let's rename the file to match the poem's title. You can do this using the **move** command you learned earlier:

```
mv 1_Poem.txt when_lilacs_last.txt
```


Let's check out the 'readme.txt' file to see if it tells us about any of the other poems. You can open the file by using the **cat** (concatenate) command:

```
cat readme.txt
```

Note: The cat command will read a file

Looking at the README file we see that the other three poems are part of Walt Whitman's 'Memories of President Lincoln'. If you want to read the other poems, you know how to read them using the cat command.

Before we exit PowerShell, let's get rid of the 'walt_whitman.zip' file since we don't need it anymore. Do this by entering the **remove** command:

```
rm D:\Desktop\walt_whitman\walt_whitman.zip
```
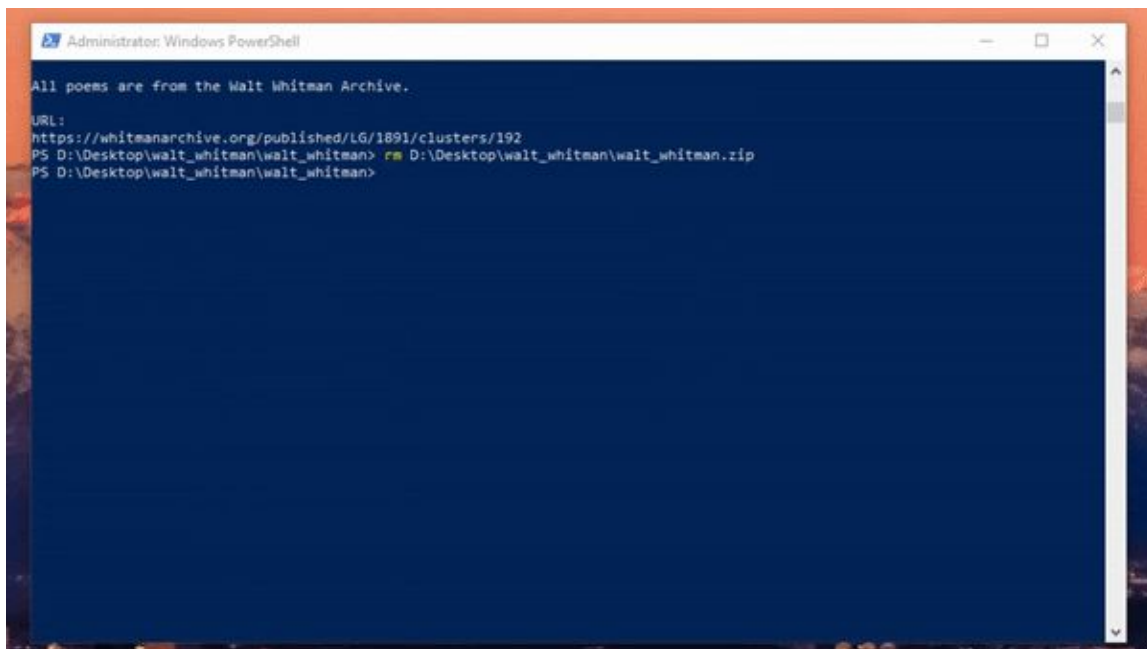
```
Administrator. Windows PowerShell                                    —  □  ×
All poems are from the Walt Whitman Archive.

URL:
https://whitmanarchive.org/published/LG/1891/clusters/192
PS D:\Desktop\walt_whitman\walt_whitman>
```

Since we're all done in this directory, navigate up two directories to your Desktop by entering the **change directory** command:

```
cd ..\..
```
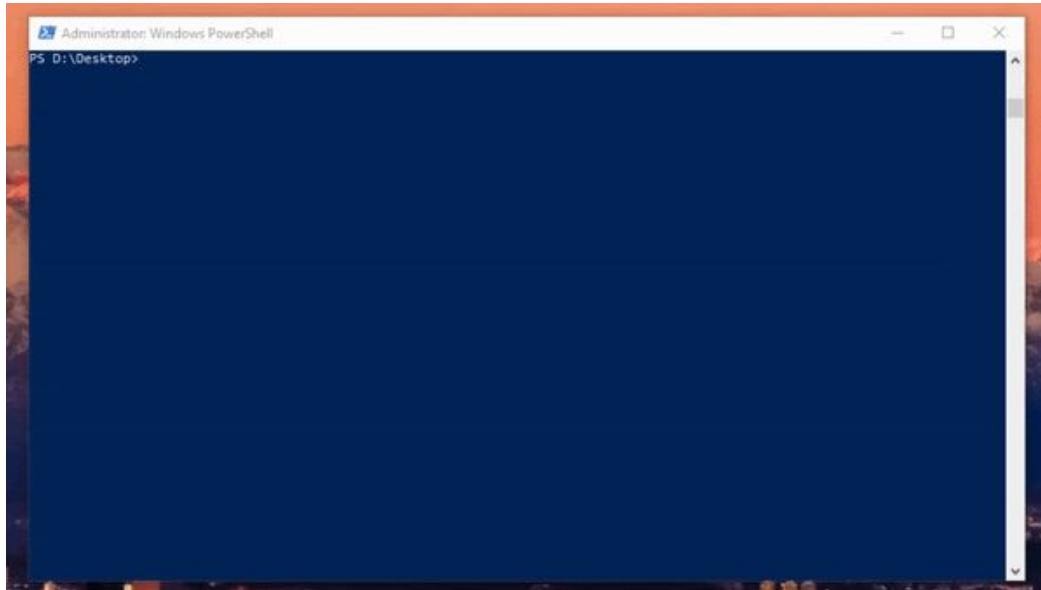


```
Administrator. Windows PowerShell                                    —  □  ×
All poems are from the Walt Whitman Archive.

URL:
https://whitmanarchive.org/published/LG/1891/clusters/192
PS D:\Desktop\walt_whitman\walt_whitman> rm D:\Desktop\walt_whitman\walt_whitman.zip
PS D:\Desktop\walt_whitman\walt_whitman>
```
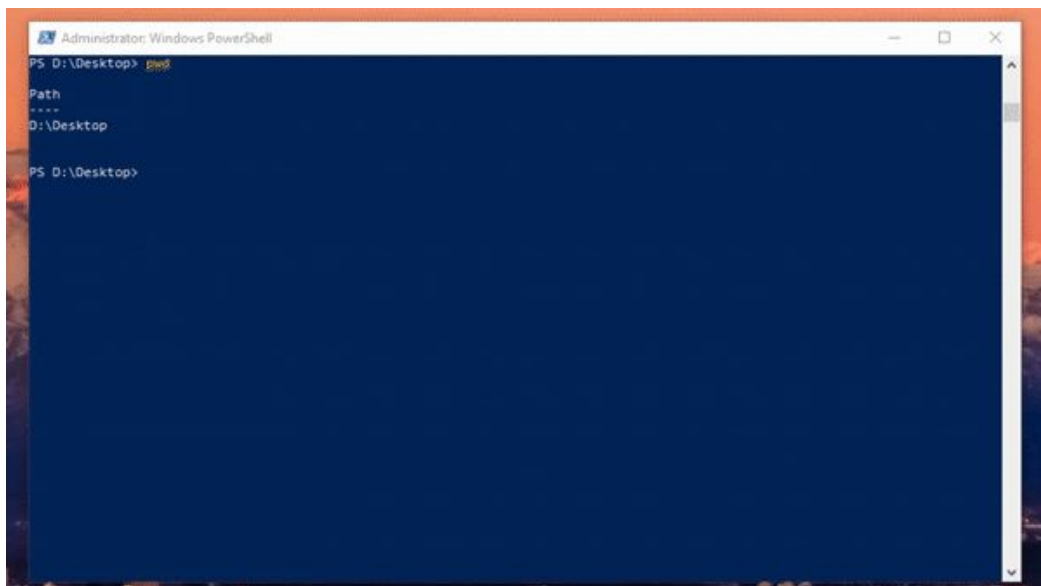
Home sweet Desktop. **Print the working directory** one more time to make sure you're in the right place.

```
pwd
```


We're good to go! Go ahead and leave PowerShell by entering the **exit** command:

```
exit
```


🎉Fantastic work! You've completed the tutorial.🎉

Review

Reference the table below to review the material we covered in this tutorial.

Command:	Stands for:	Does what?
pwd	Print working directory	Lets you know where you are in your file system
ls	List files	Lists the files in your current directory
cd	Change directory	Changes the current directory
cd ..	Navigate up one directory	Navigate up one directory from the current directory
cd ..\..	Navigate up two directories	Navigate up two directories from the current directory
mkdir	Make directory	Creates a directory
mv	Move	Moves a file, can also be used to rename a file
rm	Remove	Deletes a file
Get-Content	Get Content	Reads the content one line at a time and returns an object for each line
Measure-Object	Measure Object	Measures the numeric or string properties of objects
cat	Concatenate	Will read a file
exit	Exit	Exit PowerShell