Title:	Windows – type command
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Synopsis:	Have you ever been in the command line, needed to view a text or Comma Separated Value (CSV) file, and opened a text editor (i.e., notepad) to view the file? Do you wish Windows command line has a command, akin to cat in Linux, to view files? Such a command exists. It is the "type" command.
Data File:	Execute Type_Command_Data_File.bat to create the data files for this walkthrough. Refer to the Appendix, on page 6, for details.

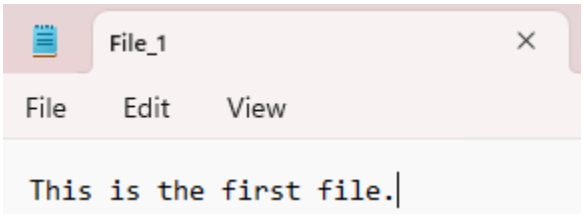
A. Command description and options. This window was invoked via the command, "find /?".

```
C:\Users\Amar Chhabra>type /?
Displays the contents of a text file or files.

TYPE [drive:][path]filename
```

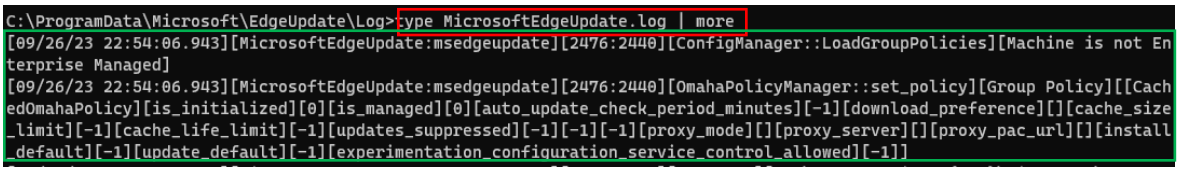
B. A common way to open/view a text file, from Windows Command Line (CLI), is to enter the name of the file. This invokes your default text editor (notepad by default) to display the file.

```
C:\Users\Amar Chhabra\Desktop\Temp - Portfolio\Type Command\Data_Files\Text_Files>File_1.txt
```



C. The ability to open and view files in the command line may be more convenient (vs. in a text editor). Such functionality is facilitated with the "type" command. The "type" command, followed by the name of the text file (i.e. .txt, .log, .csv, etc.) outputs contents of the file to command line.

Note: In the screenshot below output is piped to the "more" command to limit line output and display the command executed. The "type" command and file output are enclosed in red and green boxes.

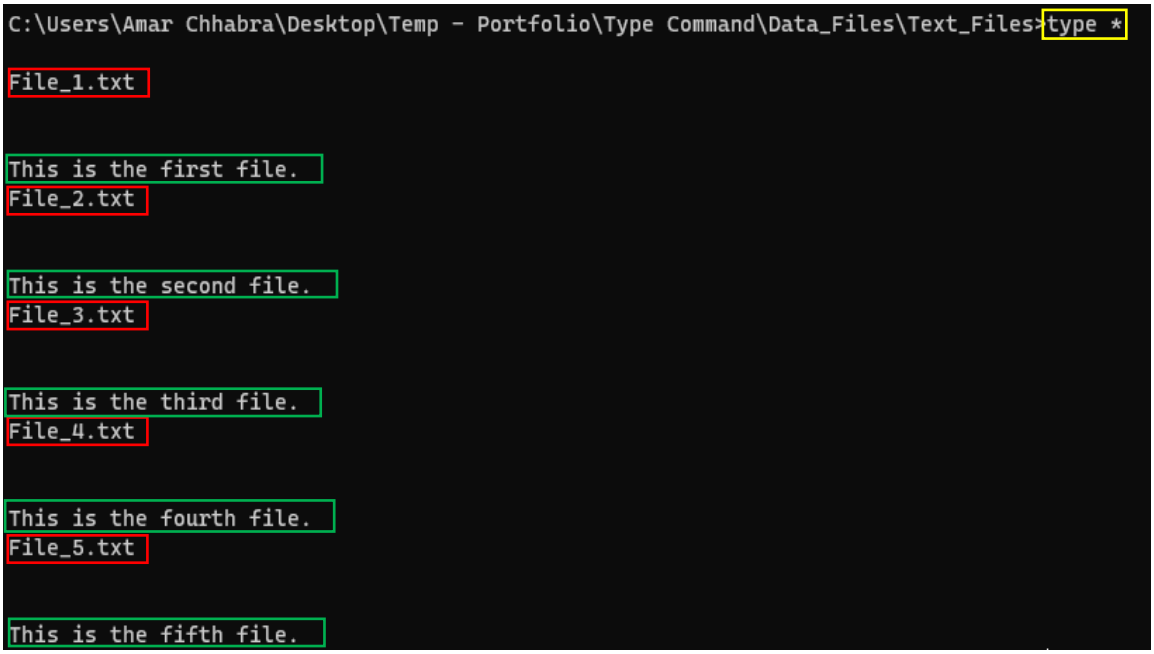


D. The “type” command can also simultaneously and sequentially open multiple files. This functionality can be used when output, from multiple files, needs to be compared/examined.

Output of this command prints the file name, followed by the file contents, for each file.

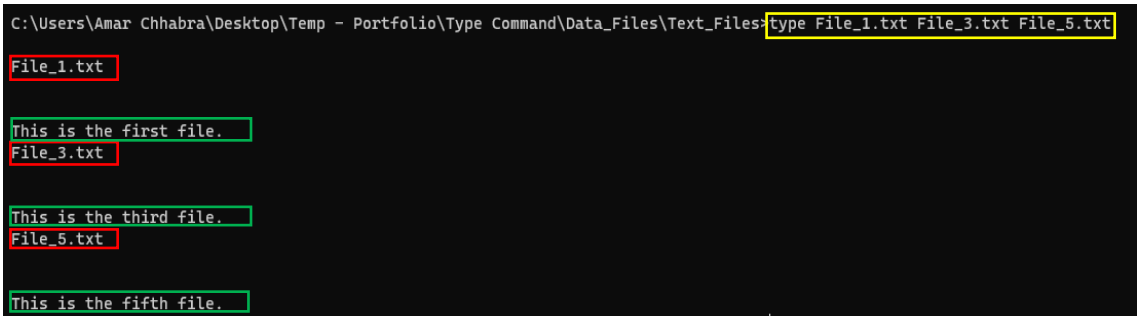
Note: The command is enclosed within a yellow box. File names and contents are enclosed in red and green boxes.

The present working directory, Text_Files, contains 5 text files (File_1.txt, File_2.txt, File_3.txt, File_4.txt, and File_5.txt). To view the contents of all files in the directory the wildcard character, an asterisk “*”, is utilized (vs. keying the name of each file).



To view specific files, enter the command “type” followed by the file names. The command below, “type File_1 File_3 File_5” displays the contents of the three specified files.

Note: The command is enclosed within a yellow box. File names and contents are enclosed in red and green boxes.



E. Utilizing the “type” command to output and aggregate file output, without file names, requires directing the standard error data stream to “nul”. “nul” is a device file that discards all data written to it.

Standard input (stdin), standard output (stdout), and standard error (stderr) are three data streams created when a command is executed. Data streams are assigned and may be called by the following numbers:

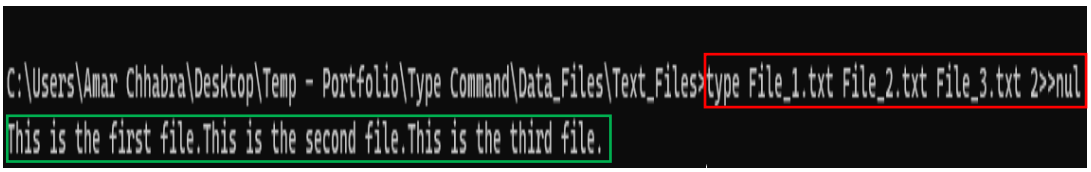
0 - stdin
1 - stdout
2 - stderr

By default, stdin (0) is sourced from keyboard input, stdout (1) and stderr (2) are output to screen. The "type" command outputs file content through the stdout (1) stream and file names through stderr (2).

Through redirecting stderr, from the type command, the file names are discarded and file content [stdin (1)] is aggregated and output through the command below. Note: Data streams redirected (via >>) to “nul” are discarded. “nul” provides functionality akin to “/dev/null” in Linux. :

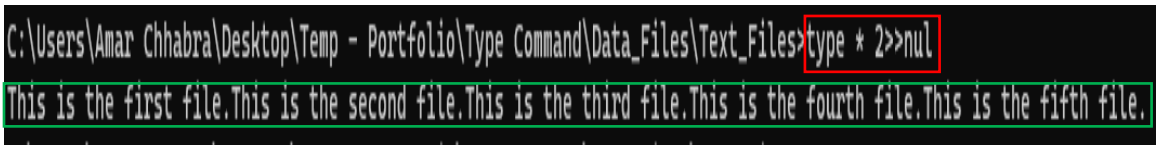
type File_1.txt File_2.txt File_3.txt 2>>nul

Note: The command and output are enclosed in red and green boxes.



F. Filenames/stderr(2) can also be redirected to nul when the “type” command is used to aggregate all files with the wildcard/asterisk (*).

Note: The command and output are enclosed in red and green boxes.



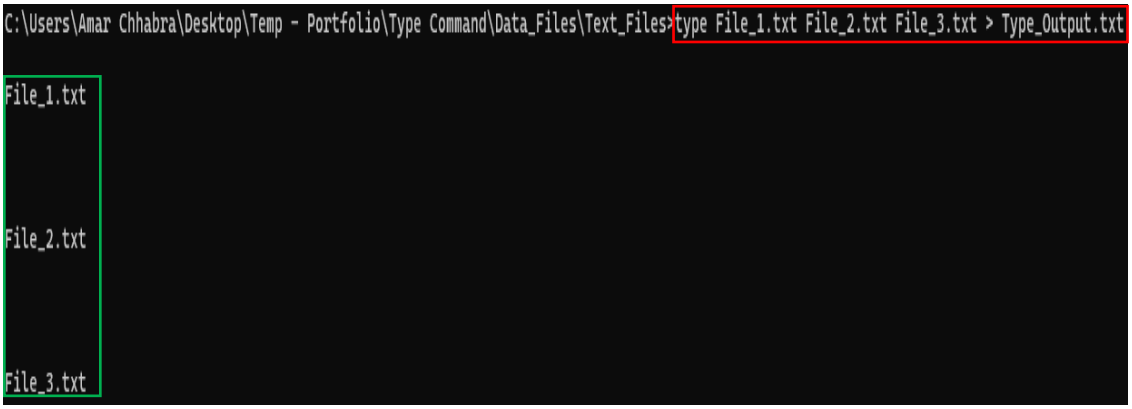
G. Output from a command is written to file through redirection. This is facilitated by appending the command, with a chevron (>), followed by the file name. The anatomy of such a command is:

command_name > file_name

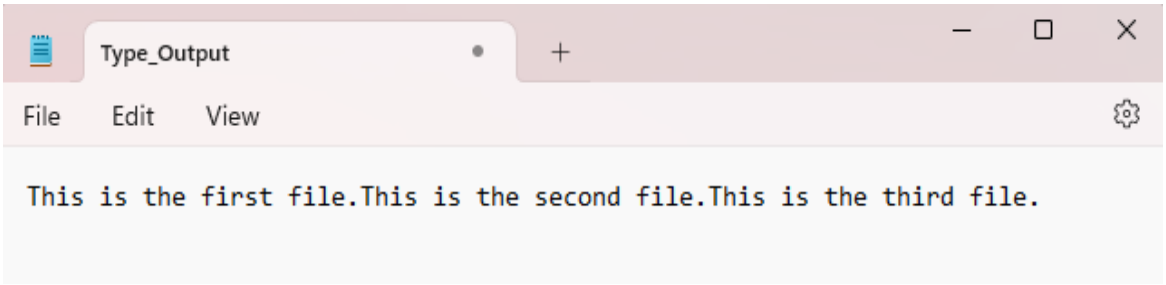
The following command sends output of the type command to a file titled type_file_output.
Note: The file (Type_Output.txt) is auto generated and populated upon command execution.

Although redirection to file, for the type command, was invoked the file names were printed to screen without file contents. The reason for this is by default, redirection only scribes stdout to file. As such, stderr (file names) are printed to screen.

Note: The command and stderr below are encased in red and green boxes.



Per review of the Type_Output.txt file we note the presence of stdout but absence of stderr. Note: The reason for this is, by default, redirection writes stdout to file but not stderr.

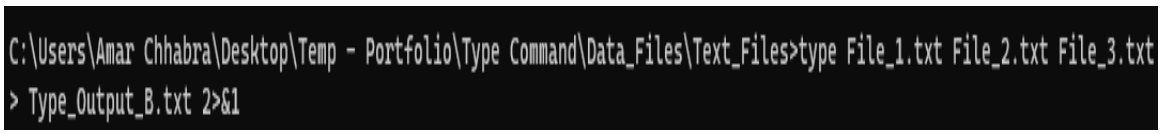


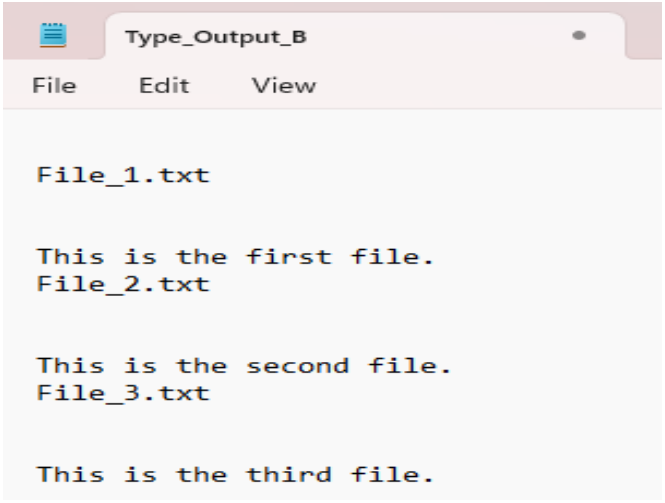
H. The following command enables stdout (1) and stderr (2) to be redirected to file.

type File_1.txt File_2.txt File_3.txt > Type_Output_B.txt 2>&1

The syntax, enclosed in a red box, routes stderr (2) to stdout (1). The ampersand (&) which is between the redirector (>) and stdout (1) facilitates the stderr (2) be routed to stdout (1). In the absence of the ampersand stderr (2) would be written to a separate text file titled 1. The portion of the command, enclosed in green, writes the aggregated output of stdout to the file Type_Output_B.txt.

The screenshots below illustrate execution of the above command and output of the Type_Output_B.txt file.



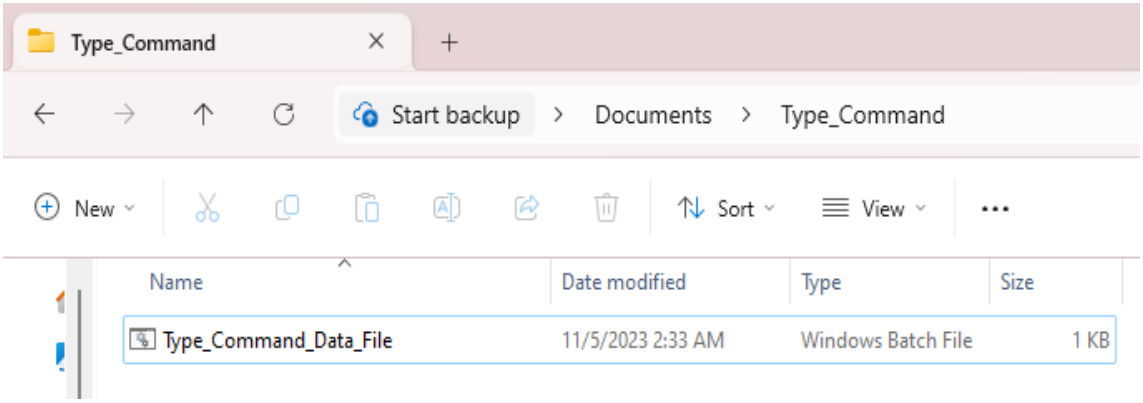


Appendix

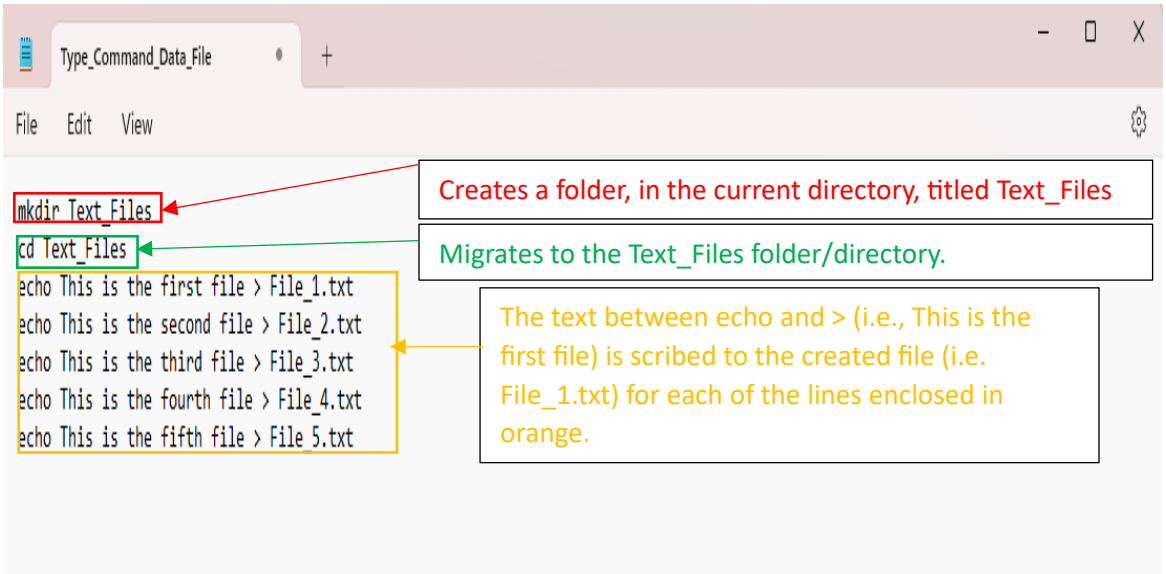
Executive Summary

The purpose of the Appendix is to provide directions on creating the data files for the Windows "type" command walkthrough/exercise.

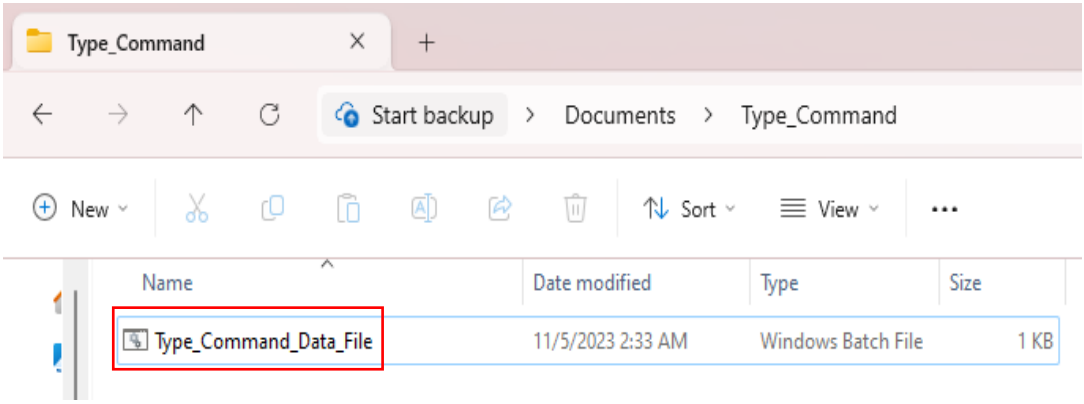
A. The data directory, and files, are created by downloading and executing the Type_Command_Data_File batch file. Insert this file to a folder of your choosing. In this case, we placed the file in a folder titled Type_Command within the Documents folder.

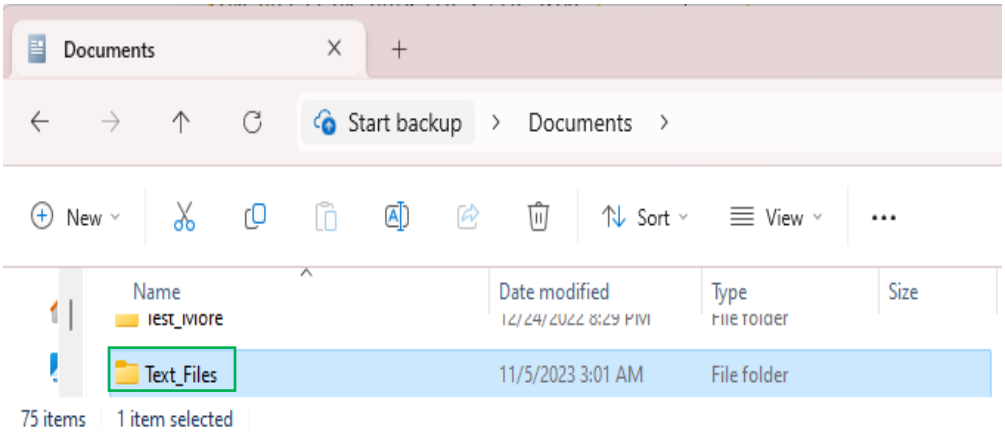


B. The contents and logic/actions performed by this batch file are annotated below.

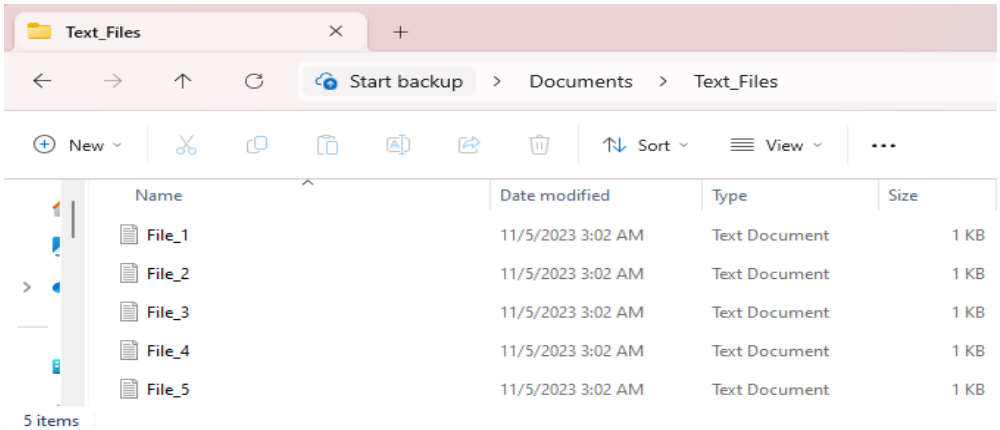


C. Double click the Type_Command_Data_File batch file (encased in red) to create the data directory and files (encased in green).

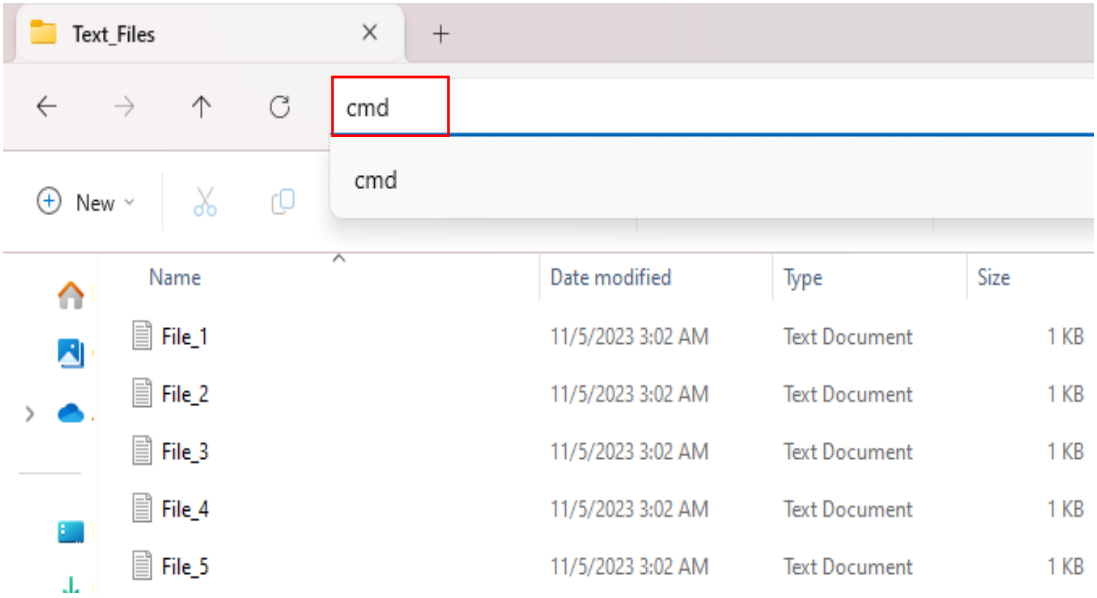


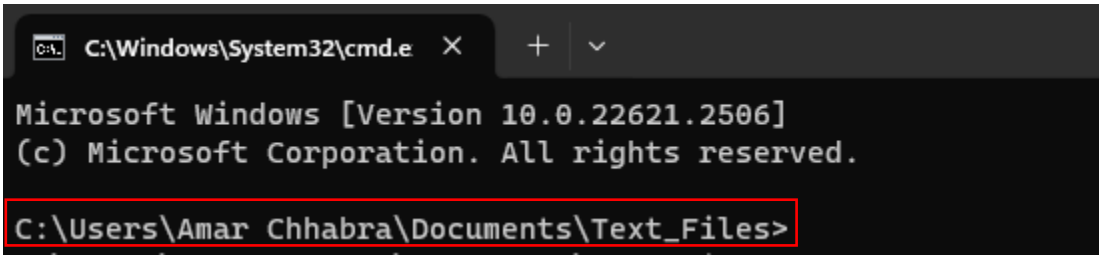


D. Double click on the Text_Files folder (above). This will open the folder which contains the data files.

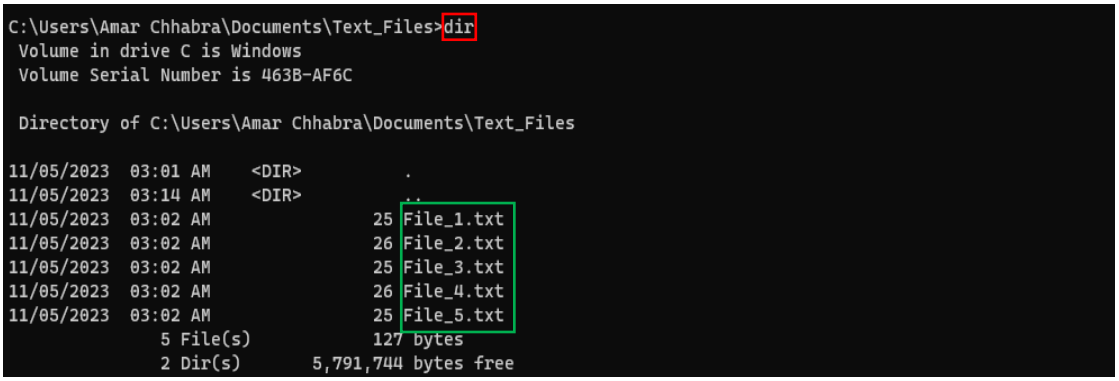


E. Key the text “cmd” in the menu bar and push enter. This will open a command prompt to the Text_Files directory.





F. Enter “dir” to view the contents of the directory. Note: The dir command and folder output are encased in red and green boxes.



G. Enter the command, “type *”, to view the files and their contents. The command and file names/contents are encased in red and green boxes.