

## Lab – File System Commands

### Introduction

In this lab, you will use CLI commands to manage files and folders in Windows.

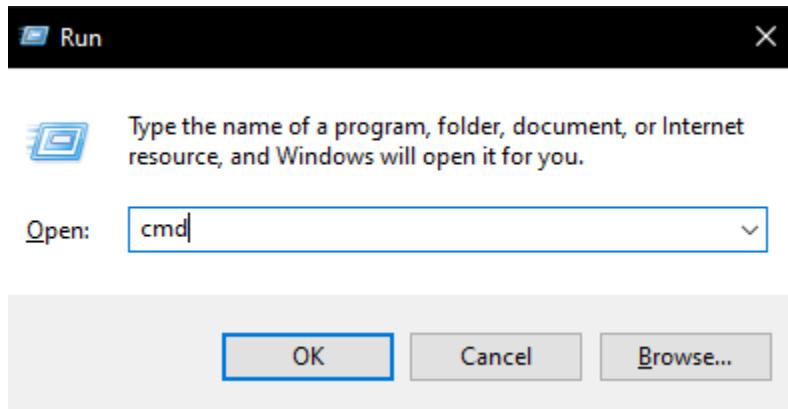
### Recommended Equipment

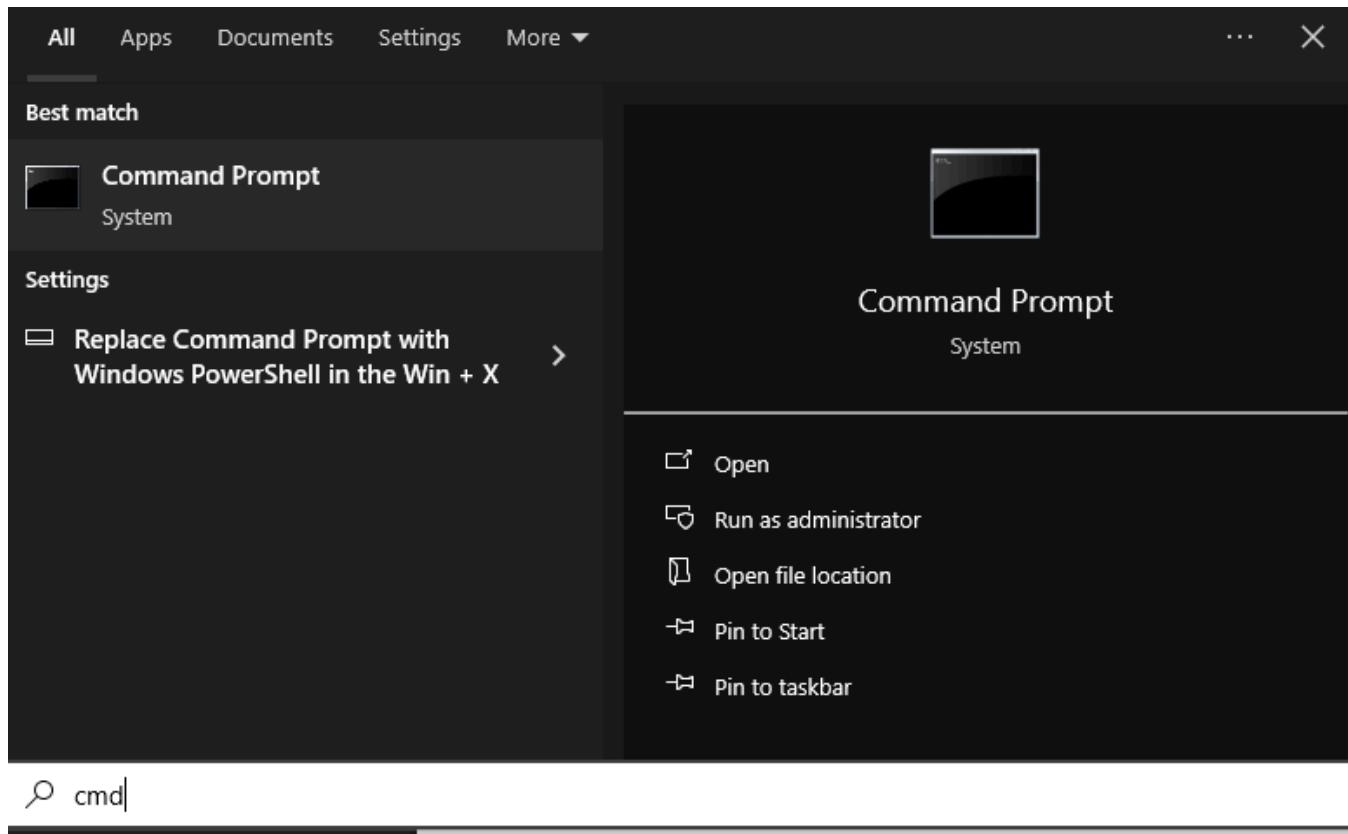
- A computer running Windows

### Instructions

#### Step 1: Access the Windows command prompt.

- a. Log on to a Windows computer. The account **ITEUser** is used as the example user account throughout this lab.
- b. To access the Windows command prompt, click **Start** and enter **cmd**. Select **Command Prompt** or **cmd.exe** to continue.





### Step 2: Create and change directories.

In this step, you will use the change directory (**cd**), make directory (**md**), and directory (**dir**) commands.

**Note:** A directory is another word for folder. Directory and folder are used interchangeably throughout this lab.

- Type **cd** at the command prompt.

Question:

What is the current directory?

C:\Users\user

```
C:\Users\user>cd  
C:\Users\user  
  
C:\Users\user>_
```

- Type **dir** at the command prompt to list the files and folders that are in the current folder.

```
C:\Users\ITEUser> dir  
Volume in drive C has no label.  
Volume Serial Number is 9055-35E9
```

Directory of C:\Users\ITEUser

04/27/2019	09:21 AM	<DIR>	.
04/27/2019	09:21 AM	<DIR>	..
04/25/2019	11:39 AM	<DIR>	3D Objects

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```
04/25/2019 11:39 AM <DIR> Contacts
04/26/2019 10:29 AM <DIR> Desktop
04/25/2019 11:39 AM <DIR> Documents
04/25/2019 11:39 AM <DIR> Downloads
<some output omitted>
          0 File(s)           0 bytes
      15 Dir(s)  32,671,969,280 bytes free

C:\Users\user>dir
 Volume in drive C has no label.
 Volume Serial Number is C0BA-74EC

 Directory of C:\Users\user

10/18/2025 17:58 <DIR> .
10/18/2025 17:58 <DIR> ..
11/10/2024 20:18 <DIR> .cache
05/15/2025 18:22 <DIR> .dbus-keyrings
10/06/2024 13:54 <DIR> 77 .gtk-bookmarks
10/18/2025 18:56 <DIR> .VirtualBox
08/09/2024 18:10 <DIR> 3D Objects
08/09/2024 18:10 <DIR> Contacts
10/19/2025 19:39 <DIR> Desktop
10/30/2025 22:08 <DIR> Documents
10/30/2025 22:04 <DIR> Downloads
08/09/2024 18:10 <DIR> Favorites
08/09/2024 18:10 <DIR> Links
09/17/2024 00:04 <DIR> Music
07/29/2025 23:09 <DIR> Pictures
09/17/2024 00:04 <DIR> Recorded Calls
08/09/2024 18:10 <DIR> Saved Games
08/09/2024 18:11 <DIR> Searches
08/17/2025 22:58 <DIR> Videos
10/18/2025 18:40 <DIR> VirtualBox VMs
          1 File(s)           77 bytes
      19 Dir(s)  41,824,317,440 bytes free

C:\Users\user>
```

- c. In the current directory, use the **md** command to create three new folders: **ITEfolder1**, **ITEfolder2**, and **ITEfolder3**. Type **md ITEfolder1** and press **Enter**. Create **ITEfolder2** and **ITEfolder3**. (Note: The command **mkdir** performs the same function as the command **md**.)

```
C:\Users\ITEUser> md ITEfolder1
C:\Users\ITEUser> md ITEfolder2 ITEfolder3
```

```
C:\Users\user>md ITEfolder1
C:\Users\user>md ITEfolder2 ITEfolder3
C:\Users\user>
```

- d. Type **dir** to verify that the folders have been created.

```
C:\Users\user>dir
 Volume in drive C has no label.
 Volume Serial Number is C0BA-74EC

 Directory of C:\Users\user

10/30/2025  22:10    <DIR>      .
10/30/2025  22:10    <DIR>      ..
11/10/2024  20:18    <DIR>      .cache
05/15/2025  18:22    <DIR>      .dbus-keyrings
10/06/2024  13:54    <DIR>      77 .gtk-bookmarks
10/18/2025  18:56    <DIR>      .VirtualBox
08/09/2024  18:10    <DIR>      3D Objects
08/09/2024  18:10    <DIR>      Contacts
10/19/2025  19:39    <DIR>      Desktop
10/30/2025  22:08    <DIR>      Documents
10/30/2025  22:04    <DIR>      Downloads
08/09/2024  18:10    <DIR>      Favorites
10/30/2025  22:10    <DIR>      ITEfolder1
10/30/2025  22:10    <DIR>      ITEfolder2
10/30/2025  22:10    <DIR>      ITEfolder3
08/09/2024  18:10    <DIR>      Links
09/17/2024  00:04    <DIR>      Music
07/29/2025  23:09    <DIR>      Pictures
09/17/2024  00:04    <DIR>      Recorded Calls
08/09/2024  18:10    <DIR>      Saved Games
08/09/2024  18:11    <DIR>      Searches
08/17/2025  22:58    <DIR>      Videos
10/18/2025  18:40    <DIR>      VirtualBox VMs
               1 File(s)           77 bytes
              22 Dir(s)  41,822,728,192 bytes free

C:\Users\user>_
```

- e. Type **cd ITEfolder3** at the command prompt and press **Enter**.

Question:

Which folder are you in now?

C:\Users\user\ITEfolder3>

```
C:\Users\user>cd ITEfolder3
C:\Users\user\ITEfolder3>_
```

- f. Create **ITEfolder4** in the current directory. Within the **ITEfolder4** folder, create a folder named **ITEfolder5**. Use the **dir** command to verify the folder creation.

Question:

What command or commands did you use to create the nested folders?

**md ITEfolder4**

**cd ITEfolder4**

**md ITEfolder5**

*dir*

```
C:\Users\user\ITEfolder3>md ITEfolder4  
C:\Users\user\ITEfolder3>cd ITEfolder4  
C:\Users\user\ITEfolder3\ITEfolder4>md ITEfolder5  
C:\Users\user\ITEfolder3\ITEfolder4>dir  
Volume in drive C has no label.  
Volume Serial Number is C0BA-74EC  
  
Directory of C:\Users\user\ITEfolder3\ITEfolder4  
  
10/30/2025 22:13 <DIR> .  
10/30/2025 22:13 <DIR> ..  
10/30/2025 22:13 <DIR> ITEfolder5  
          0 File(s)           0 bytes  
          3 Dir(s) 41,799,004,160 bytes free  
  
C:\Users\user\ITEfolder3\ITEfolder4>-
```

- g. Change directory as necessary until you are in ITEfolder5.

```
C:\Users\user\ITEfolder3\ITEfolder4>cd ITEfolder5  
  
C:\Users\user\ITEfolder3\ITEfolder4\ITEfolder5>
```

- h. Type **cd ..** to change the current directory. Each .. is a shortcut to move up one level in the directory tree.

Question:

After issuing the **cd ..** command, what is your directory now?

```
C:\Users\user\ITEfolder3\ITEfolder4>
```

```
C:\Users\user\ITEfolder3\ITEfolder4>cd ITEfolder5  
  
C:\Users\user\ITEfolder3\ITEfolder4\ITEfolder5>cd ..  
  
C:\Users\user\ITEfolder3\ITEfolder4>-
```

What would be the current directory if you issue this command at  
C:\Users\ITEUser\ITEFolder3\ITEFolder4?

```
C:\Users\user\ITEfolder3>
```

```
C:\Users\user\ITEfolder3\ITEfolder4>cd ..  
  
C:\Users\user\ITEfolder3>-
```

### Step 3: Create text files.

- a. Navigate to the **C:\Users\ITEUser\ITEFolder1** directory. Type **cd ..\ITEfolder1** at the prompt.

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```
C:\Users\user\ITEfolder3>cd ..\ITEfolder1  
C:\Users\user\ITEfolder1>
```

- b. Type **echo This is doc1.txt > doc1.txt** at the command prompt. The **echo** command is used to display a message at the command prompt. The **>** is used to redirect the message from the screen to a file. For example, in the first line, the message **This is doc1.txt** is redirected into a new file named **doc1.txt**. Use the **echo** command and **>** redirect to create these files: **doc2.txt**, **file1.txt**, and **file2.txt**.

```
C:\Users\ITEUser\ITEfolder1> echo This is doc1.txt > doc1.txt  
C:\Users\ITEUser\ITEfolder1> echo This is doc2.txt > doc2.txt  
C:\Users\ITEUser\ITEfolder1> echo This is file1.txt > file1.txt  
C:\Users\ITEUser\ITEfolder1> echo This is file2.txt > file2.txt
```

```
C:\Users\user\ITEfolder1>echo This is doc1.txt > doc1.txt  
C:\Users\user\ITEfolder1>echo This is doc2.txt > doc2.txt  
C:\Users\user\ITEfolder1>echo This is file1.txt > file1.txt  
C:\Users\user\ITEfolder1>echo This is file2.txt > file2.txt
```

- c. Use the **dir** command to verify the files are in the **ITEfolder1** folder.

```
C:\Users\ITEUser\ITEFolder1> dir  
<some output omitted>  
04/29/2019  08:05 AM           19 doc1.txt  
04/29/2019  08:06 AM           19 doc2.txt  
04/29/2019  08:08 AM          20 file1.txt  
04/29/2019  08:08 AM          20 file2.txt  
               4 File(s)           78 bytes  
              2 Dir(s)  32,625,397,760 bytes free
```

```
C:\Users\user\ITEfolder1>dir  
Volume in drive C has no label.  
Volume Serial Number is C0BA-74EC  
  
Directory of C:\Users\user\ITEfolder1  
  
10/30/2025  22:18    <DIR>      .  
10/30/2025  22:18    <DIR>      ..  
10/30/2025  22:17           19 doc1.txt  
10/30/2025  22:18           19 doc2.txt  
10/30/2025  22:18          20 file1.txt  
10/30/2025  22:18          20 file2.txt  
                  4 File(s)           78 bytes  
                 2 Dir(s)  41,798,131,712 bytes free  
  
C:\Users\user\ITEfolder1>
```

- d. Use the **more** or **type** command to view the content of the newly created text files.

```
C:\Users\ITEUser\ITEfolder1> more doc1.txt
```

This is doc1.txt

```
C:\Users\user\ITEfolder1>more doc1.txt  
This is doc1.txt
```

```
C:\Users\user\ITEfolder1>
```

C:\Users\ITEUser\ITEfolder1> type doc2.txt

This is doc2.txt

```
C:\Users\user\ITEfolder1>type doc2.txt  
This is doc2.txt
```

**Step 4: Copy, delete, and move files.**

- a. At the command prompt, type **move doc2.txt C:\Users\ITEfolder2** to move the file **doc2.txt** to the **C:\Users\ITEUser\ITEfolder2** directory.

```
C:\Users\ITEUser\ITEfolder1> move doc2.txt C:\Users\ITEUser\ITEfolder2  
1 file(s) moved.
```

```
C:\Users\user\ITEfolder1>move doc2.txt C:\Users\user\ITEfolder2  
1 file(s) moved.
```

- b. Type **dir** at the prompt to verify that **doc2.txt** is no longer in the current directory.

```
C:\Users\user\ITEfolder1>dir  
Volume in drive C has no label.  
Volume Serial Number is C0BA-74EC  
  
Directory of C:\Users\user\ITEfolder1  
  
10/30/2025  22:20    <DIR>      .  
10/30/2025  22:20    <DIR>      ..  
10/30/2025  22:17            19 doc1.txt  
10/30/2025  22:18            20 file1.txt  
10/30/2025  22:18            20 file2.txt  
                   3 File(s)       59 bytes  
                   2 Dir(s)  41,809,526,784 bytes free
```

- c. Navigate to **C:\Users\ITEUser\ITEfolder2** to change the directory to **ITEfolder2**. Type **dir** at the prompt to verify **doc2.txt** has been moved.

```
C:\Users\user\ITEfolder1>cd ..\ITEfolder2

C:\Users\user\ITEfolder2>dir
 Volume in drive C has no label.
 Volume Serial Number is C0BA-74EC

 Directory of C:\Users\user\ITEfolder2

10/30/2025  22:20      <DIR>          .
10/30/2025  22:20      <DIR>          ..
10/30/2025  22:18              19 doc2.txt
               1 File(s)           19 bytes
               2 Dir(s)  41,808,596,992 bytes free
```

- d. Type **copy doc2.txt doc2\_copy.txt** to create a copy of **doc2.txt**. Type **dir** at the prompt to verify a copy of the file has been created.

```
C:\Users\user\ITEfolder2>copy doc2.txt doc2_copy.txt
 1 file(s) copied.
```

```
C:\Users\ITEUser\ITEfolder2> dir
<some output omitted>
Directory of C:\Users\ITEUser\ITEfolder2

04/30/2019  09:07 AM          19 doc2.txt
04/30/2019  09:07 AM          19 doc2_copy.txt
               2 File(s)           38 bytes
               2 Dir(s)  31,753,068,544 bytes free
```

```
C:\Users\user\ITEfolder2>dir
 Volume in drive C has no label.
 Volume Serial Number is C0BA-74EC

 Directory of C:\Users\user\ITEfolder2

10/30/2025  22:21      <DIR>          .
10/30/2025  22:21      <DIR>          ..
10/30/2025  22:18              19 doc2.txt
10/30/2025  22:18              19 doc2_copy.txt
               2 File(s)           38 bytes
               2 Dir(s)  41,807,802,368 bytes free
```

- e. Use the **move** command to move **doc2\_copy.txt** to **ITEfolder1**. Type **move doc2\_copy.txt ..\ITEfolder1**.

```
C:\Users\ITEUser\ITEfolder2> move doc2_copy.txt ..\ITEfolder1
 1 file(s) moved.
```

```
C:\Users\user\ITEfolder2>move doc2_copy.txt ..\ITEfolder1
 1 file(s) moved.
```

```
C:\Users\user\ITEfolder2>dir
Volume in drive C has no label.
Volume Serial Number is C0BA-74EC

Directory of C:\Users\user\ITEfolder2

10/30/2025  22:22    <DIR>      .
10/30/2025  22:22    <DIR>      ..
10/30/2025  22:18              19 doc2.txt
5           1 File(s)       19 bytes
2 Dir(s)   41,807,736,832 bytes free
```

- f. A copy of the file **doc2.txt** can be created in a new location using the **copy** command. At the prompt, enter the **copy doc2.txt ..\ITEfolder1\doc2\_new.txt**.

```
C:\Users\ITEUser\ITEfolder2> copy doc2.txt ..\ITEfolder1\doc2_new.txt
1 file(s) copied.
```

```
C:\Users\user\ITEfolder2>copy doc2.txt ..\ITEfolder1\doc2_new.txt
1 file(s) copied.
```

- g. The file **doc2.txt** can also be moved to a new location with a new filename using the **move** command. Type **move doc2.txt ..\ITEfolder1\doc2\_move.txt** at the prompt.

```
C:\Users\ITEUser\ITEfolder2> move doc2.txt ..\ITEfolder1\doc2_move.txt
1 file(s) moved.
```

```
C:\Users\user\ITEfolder2>move doc2.txt ..\ITEfolder1\doc2_move.txt
1 file(s) moved.
```

```
C:\Users\user\ITEfolder2>dir
Volume in drive C has no label.
Volume Serial Number is C0BA-74EC

Directory of C:\Users\user\ITEfolder2

10/30/2025  22:25    <DIR>      .
10/30/2025  22:25    <DIR>      ..
0 File(s)          0 bytes
2 Dir(s)  41,805,541,376 bytes free
```

- h. Type **dir ..\ITEfolder1** to view the content in **ITEfolder1** without leaving the current directory.

```
C:\Users\ITEUser\ITEfolder2> dir ..\ITEfolder1
<some output omitted>
Directory of C:\Users\ITEUser\ITEfolder1

04/29/2019  12:08 PM    <DIR>      .
04/29/2019  12:08 PM    <DIR>      ..
04/29/2019  08:05 AM          19 doc1.txt
04/29/2019  08:06 AM          19 doc2_copy.txt
04/29/2019  08:06 AM          19 doc2_move.txt
04/29/2019  08:06 AM          19 doc2_new.txt
```

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```
04/29/2019  08:08 AM          20 file1.txt  
04/29/2019  08:08 AM          20 file2.txt  
       6 File(s)           116 bytes  
      2 Dir(s)  31,467,700,224 bytes free
```

```
C:\Users\user\ITEfolder2>dir ..\ITEfolder1  
Volume in drive C has no label.  
Volume Serial Number is C0BA-74EC  
  
Directory of C:\Users\user\ITEfolder1  
  
10/30/2025  22:25    <DIR>          .  
10/30/2025  22:25    <DIR>          ..  
10/30/2025  22:17          19 doc1.txt  
10/30/2025  22:18          19 doc2_copy.txt  
10/30/2025  22:18          19 doc2_move.txt  
10/30/2025  22:18          19 doc2_new.txt  
10/30/2025  22:18          20 file1.txt  
10/30/2025  22:18          20 file2.txt  
          6 File(s)           116 bytes  
          2 Dir(s)  41,806,336,000 bytes free
```

- i. Change the current directory to **ITEfolder1**. Type **cd ..\ITEfolder1** at the prompt.

```
C:\Users\user\ITEfolder2>cd ..\ITEfolder1  
  
C:\Users\user\ITEfolder1>
```

- j. Move **file1.txt** and **file2.txt** into **ITEfolder3**. To move all the files that contain the word **file** into **ITEfolder3** with one command, use a **wildcard** (\*) character to represent one or more characters. Type **move file\* ..\ITEfolder3**.

```
C:\Users\ITEUser\ITEfolder1> move file* ..\ITEfolder3  
C:\Users\ITEUser\ITEfolder1\file1.txt  
C:\Users\ITEUser\ITEfolder1\file2.txt  
          2 file(s) moved.
```

```
C:\Users\user\ITEfolder1>move file* ..\ITEfolder3  
C:\Users\user\ITEfolder1\file1.txt  
C:\Users\user\ITEfolder1\file2.txt  
    2 file(s) moved.
```

```
C:\Users\user\ITEfolder1>dir  
Volume in drive C has no label.  
Volume Serial Number is C0BA-74EC  
  
Directory of C:\Users\user\ITEfolder1  
  
10/30/2025  22:26    <DIR>      .  
10/30/2025  22:26    <DIR>      ..  
10/30/2025  22:17            19 doc1.txt  
10/30/2025  22:18            19 doc2_copy.txt  
10/30/2025  22:18            19 doc2_move.txt  
10/30/2025  22:18            19 doc2_new.txt  
                           4 File(s)       76 bytes  
                           2 Dir(s)  41,806,274,560 bytes free
```

- k. To view the content of the file doc2\_new.txt, use the **type** or **more** command at the prompt.

```
C:\Users\ITEUser\ITEfolder1> type doc2_new.txt  
This is doc2.txt
```

```
C:\Users\user\ITEfolder1>type doc2_new.txt  
This is doc2.txt
```

- l. Use the **ren** command to rename doc2\_new.txt to doc3.txt. Use the **dir** command to display the content in the directory.

```
c:\Users\ITEUser\ITEfolder1> ren doc2_new.txt file.log
```

```
C:\Users\user\ITEfolder1>ren doc2_new.txt file.log
```

- m. Use the **type** or **more** command to view the content of the newly rename file **file.log**.

```
C:\Users\ITEUser\ITEfolder1> more file.log  
This is doc2.txt
```

```
C:\Users\user\ITEfolder1>more file.log  
This is doc2.txt
```

```
C:\Users\user\ITEfolder1>dir
 Volume in drive C has no label.
 Volume Serial Number is C0BA-74EC

 Directory of C:\Users\user\ITEfolder1

10/30/2025  22:29    <DIR>      .
10/30/2025  22:29    <DIR>      ..
10/30/2025  22:17            19 doc1.txt
10/30/2025  22:18            19 doc2_copy.txt
10/30/2025  22:18            19 doc2_move.txt
10/30/2025  22:18            19 file.log
              4 File(s)       76 bytes
              2 Dir(s)  41,816,510,464 bytes free
```

- n. To delete a file or multiple files, use the **del** command with the file names at the prompt.

Question:

What single command would you use to delete all the files with doc2 in the filename? Use the command to remove the files with doc2 in the filename.

**del doc2\***

```
C:\Users\user\ITEfolder1>del doc2*

C:\Users\user\ITEfolder1>dir
 Volume in drive C has no label.
 Volume Serial Number is C0BA-74EC

 Directory of C:\Users\user\ITEfolder1

10/30/2025  22:33    <DIR>      .
10/30/2025  22:33    <DIR>      ..
10/30/2025  22:17            19 doc1.txt
10/30/2025  22:18            19 file.log
              2 File(s)       38 bytes
              2 Dir(s)  41,816,473,600 bytes free
```

What command would you use to delete all the files in the directory? Use the command to remove the files.

**del \*.\***

```
C:\Users\user\ITEfolder1>del *.*  
C:\Users\user\ITEfolder1\*.* , Are you sure (Y/N)? y  
  
C:\Users\user\ITEfolder1>dir  
Volume in drive C has no label.  
Volume Serial Number is C0BA-74EC  
  
Directory of C:\Users\user\ITEfolder1  
  
10/30/2025 22:34 <DIR> .  
10/30/2025 22:34 <DIR> ..  
          0 File(s)           0 bytes  
          2 Dir(s) 41,798,901,760 bytes free  
  
C:\Users\user\ITEfolder1>
```

**Step 5: Use the xcopy and robocopy commands.**

In this step, the **xcopy** and **robocopy** commands are used to copy the content in a directory.

- View the content of **ITEfolder3**.

```
C:\Users\ITEUser\ITEfolder1> dir ..\ITEfolder3  
<some output omitted>  
  
Directory of c:\Users\ITEUser\ITEfolder3  
  
04/29/2019 03:11 PM <DIR> .  
04/29/2019 03:11 PM <DIR> ..  
04/29/2019 03:05 PM           20 file1.txt  
04/29/2019 03:05 PM           20 file2.txt  
04/29/2019 03:01 PM <DIR> ITEfolder4  
          2 File(s)           40 bytes  
          3 Dir(s) 31,492,157,440 bytes free
```

```
C:\Users\user\ITEfolder1>dir ..\ITEfolder3  
Volume in drive C has no label.  
Volume Serial Number is C0BA-74EC  
  
Directory of C:\Users\user\ITEfolder3  
  
10/30/2025 22:26 <DIR> .  
10/30/2025 22:26 <DIR> ..  
10/30/2025 22:18           20 file1.txt  
10/30/2025 22:18           20 file2.txt  
10/30/2025 22:13 <DIR> ITEfolder4  
          2 File(s)           40 bytes  
          3 Dir(s) 41,798,852,608 bytes free
```

- Type **xcopy ..\ITEfolder3 .** at the prompt to copy the content of **ITEfolder3** to **ITEfolder1**. Note the **.** at the end of the command. It is a shortcut for the current directory.

```
C:\Users\ITEUser\ITEfolder1> xcopy ..\ITEfolder3 .  
..\ITEfolder3\file1.txt  
..\ITEfolder3\file2.txt
```

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```
2 File(s) copied
```

```
C:\Users\user\ITEfolder1>xcopy ..\ITEfolder3 .
..\ITEfolder3\file1.txt
..\ITEfolder3\file2.txt
2 File(s) copied
```

- c. At the prompt, type **dir** to display the content of **ITEfolder1**. Only the files in the **ITEfolder3** were copied into **ITEfolder1**. The directory **ITEfolder4** was not copied into **ITEfolder3**.

```
C:\Users\ITEUser\ITEfolder1> dir
<some output omitted>
Directory of C:\Users\ITEUser\ITEfolder1
04/29/2019  03:16 PM    <DIR>      .
04/29/2019  03:16 PM    <DIR>      ..
04/29/2019  03:05 PM          20 file1.txt
04/29/2019  03:05 PM          20 file2.txt
                           2 File(s)          40 bytes
                           2 Dir(s) 31,491,321,856 bytes free
```

```
C:\Users\user\ITEfolder1>dir
Volume in drive C has no label.
Volume Serial Number is C0BA-74EC

Directory of C:\Users\user\ITEfolder1

10/30/2025  22:36    <DIR>      .
10/30/2025  22:36    <DIR>      ..
10/30/2025  22:18          20 file1.txt
10/30/2025  22:18          20 file2.txt
                           2 File(s)          40 bytes
                           2 Dir(s) 41,811,136,512 bytes free
```

- d. Use **help xcopy** or **xcopy /?** to determine which switch would allow the **xcopy** command to copy **all** the files and directories.

Question:

What option allows you to copy all the files and directories, including the empty directories?

**/E**

```
C:\Users\user\ITEfolder1>xcopy /?
```

```
/E           Copies directories and subdirectories, including empty ones.
             Same as /S /E. May be used to modify /T.
```

- e. Because **ITEfolder4** is a subfolder and **ITEfolder5** is both a subfolder and an empty folder, **/E** is needed to copy all the contents of **ITEfolder3** and the empty subfolder.

Type **xcopy /E ..\ITEfolder3 .** at the prompt to copy the files. When prompted, type **a** to allow overwriting the existing files.

```
c:\Users\ITEUser\ITEfolder1> xcopy /E ..\ITEfolder3
Overwrite C:\Users\ITEUser\ITEfolder1\file1.txt (Yes/No/All)? a
..\ITEfolder3\file1.txt
```

```
..\ITEfolder3\file2.txt
2 File(s) copied
C:\Users\user\ITEfolder1>xcopy /E ..\ITEfolder3
Overwrite C:\Users\user\ITEfolder1\file1.txt (Yes/No/All)? a
..\ITEfolder3\file1.txt
..\ITEfolder3\file2.txt
2 File(s) copied
```

- f. Verify that the **ITEfolder4** and **ITEfolder5** were also copied in **ITEfolder1**.

```
c:\Users\ITEUser\ITEfolder1> dir
<some output omitted>
Directory of c:\Users\ITEUser\ITEfolder1

04/29/2019  04:41 PM    <DIR>          .
04/29/2019  04:41 PM    <DIR>          ..
04/29/2019  03:05 PM           20 file1.txt
04/29/2019  03:05 PM           20 file2.txt
04/29/2019  04:41 PM    <DIR>          ITEfolder4
      2 File(s)           40 bytes
      3 Dir(s)   31,493,193,728 bytes free
```

```
c:\Users\ITEUser\ITEfolder1> dir ITEfolder4
<some output omitted>
Directory of c:\Users\ITEUser\ITEfolder1\ITEfolder4

04/29/2019  04:41 PM    <DIR>          .
04/29/2019  04:41 PM    <DIR>          ..
04/29/2019  03:00 PM    <DIR>          ITEfolder5
      0 File(s)           0 bytes
      3 Dir(s)   31,493,193,728 bytes free
```

```
C:\Users\user\ITEfolder1>dir
Volume in drive C has no label.
Volume Serial Number is C0BA-74EC

Directory of C:\Users\user\ITEfolder1

10/30/2025  22:40    <DIR>      .
10/30/2025  22:40    <DIR>      ..
10/30/2025  22:18            20 file1.txt
10/30/2025  22:18            20 file2.txt
10/30/2025  22:40    <DIR>      ITEfolder4
                2 File(s)           40 bytes
                3 Dir(s)  41,808,797,696 bytes free

C:\Users\user\ITEfolder1>dir ITEfolder4
Volume in drive C has no label.
Volume Serial Number is C0BA-74EC

Directory of C:\Users\user\ITEfolder1\ITEfolder4

10/30/2025  22:40    <DIR>      .
10/30/2025  22:40    <DIR>      ..
10/30/2025  22:13    <DIR>      ITEfolder5
                0 File(s)           0 bytes
                3 Dir(s)  41,808,797,696 bytes free

C:\Users\user\ITEfolder1>
```

- g. The robocopy command can also be used to copy the content of a directory to a new destination. The robocopy command has more capabilities than the built-in Windows copy and xcopy command, such as resume copying after a network interruption, skip files that appear to be identical to the files in the destination folders, and mirror a directory by keeping the destination directory in sync with the source directory.

Copy the ITEfolder4 content to ITEUser folder using the robocopy command.

```
C:\Users\ITEUser\ITEfolder1> robocopy /E
C:\Users\ITEUser\ITEfolder3\ITEfolder4\ C:\Users\ITEUser
```

```
C:\Users\user\ITEfolder1>robocopy /E C:\Users\user\ITEfolder3\ITEfolder4\ C:\Users\user\ITEUser

ROBOCOPY      ::      Robust File Copy for Windows

-----
Started : Thursday, October 30, 2025 22:44:25
Source  : C:\Users\user\ITEfolder3\ITEfolder4\
Dest    : C:\Users\user\ITEUser\
```

Note the information provided by the command during the copying process.

- h. Navigate to **C:\Users\ITEUser** to verify that the folder ITEfolder5 is copied.

```
C:\Users\user\ITEfolder1>cd ..

C:\Users\user>dir
 Volume in drive C has no label.
 Volume Serial Number is C0BA-74EC

 Directory of C:\Users\user

10/30/2025  22:44    <DIR>      .
10/30/2025  22:44    <DIR>      ..
11/10/2024  20:18    <DIR>      .cache
05/15/2025  18:22    <DIR>      .dbus-keyrings
10/06/2024  13:54    <DIR>      77 .gtk-bookmarks
10/18/2025  18:56    <DIR>      .VirtualBox
08/09/2024  18:10    <DIR>      3D Objects
08/09/2024  18:10    <DIR>      Contacts
10/19/2025  19:39    <DIR>      Desktop
10/30/2025  22:08    <DIR>      Documents
10/30/2025  22:04    <DIR>      Downloads
08/09/2024  18:10    <DIR>      Favorites
10/30/2025  22:40    <DIR>      ITEfolder1
10/30/2025  22:25    <DIR>      ITEfolder2
10/30/2025  22:26    <DIR>      ITEfolder3
10/30/2025  22:13    <DIR>      ITEfolder5
08/09/2024  18:10    <DIR>      Links
09/17/2024  00:04    <DIR>      Music
07/29/2025  23:09    <DIR>      Pictures
09/17/2024  00:04    <DIR>      Recorded Calls
08/09/2024  18:10    <DIR>      Saved Games
08/09/2024  18:11    <DIR>      Searches
08/17/2025  22:58    <DIR>      Videos
10/18/2025  18:40    <DIR>      VirtualBox VMs
               1 File(s)          77 bytes
               23 Dir(s)   41,809,526,784 bytes free
```

**Step 6: Delete directories.**

In this step, you will delete an empty and a non-empty directory using the **rd** command.

- Use the **rd ITEfolder2** to delete the empty directory and verify that the directory was deleted.

```
C:\Users\ITEUser> rd ITEfolder2
```

```
C:\Users\user>rd ITEfolder2

C:\Users\user>dir
 Volume in drive C has no label.
 Volume Serial Number is C0BA-74EC

 Directory of C:\Users\user

10/30/2025  22:47    <DIR>      .
10/30/2025  22:47    <DIR>      ..
11/10/2024  20:18    <DIR>      .cache
05/15/2025  18:22    <DIR>      .dbus-keyrings
10/06/2024  13:54    <DIR>      77 .gtk-bookmarks
10/18/2025  18:56    <DIR>      .VirtualBox
08/09/2024  18:10    <DIR>      3D Objects
08/09/2024  18:10    <DIR>      Contacts
10/19/2025  19:39    <DIR>      Desktop
10/30/2025  22:08    <DIR>      Documents
10/30/2025  22:04    <DIR>      Downloads
08/09/2024  18:10    <DIR>      Favorites
10/30/2025  22:40    <DIR>      ITEfolder1
10/30/2025  22:26    <DIR>      ITEfolder3
10/30/2025  22:13    <DIR>      ITEfolder5
08/09/2024  18:10    <DIR>      Links
09/17/2024  00:04    <DIR>      Music
07/29/2025  23:09    <DIR>      Pictures
09/17/2024  00:04    <DIR>      Recorded Calls
08/09/2024  18:10    <DIR>      Saved Games
08/09/2024  18:11    <DIR>      Searches
08/17/2025  22:58    <DIR>      Videos
10/18/2025  18:40    <DIR>      VirtualBox VMs
                           1 File(s)           77 bytes
                           22 Dir(s)   41,809,334,272 bytes free
```

- b. Navigate to the **C:\Users\ITEUser\ITEfolder3** directory.

```
C:\Users\user>cd ITEfolder3

C:\Users\user\ITEfolder3>
```

```
C:\Users\user\ITEfolder3>dir
Volume in drive C has no label.
Volume Serial Number is C0BA-74EC

Directory of C:\Users\user\ITEfolder3

10/30/2025  22:26    <DIR>        .
10/30/2025  22:26    <DIR>        ..
10/30/2025  22:18            20  file1.txt
10/30/2025  22:18            20  file2.txt
10/30/2025  22:13    <DIR>        ITEfolder4
                           2 File(s)           40 bytes
                           3 Dir(s)  41,810,333,696 bytes free
```

- c. Use the **rd ITEfolder1** to delete the directory. Verify the directory removal using the **dir** command.  
Were you able to delete the directory? Explain.

*No, first reason is ITEfolder1 does not exist after navigating to this directory "C:\Users\ITEUser\ITEfolder3" using cd as told by the instructions before.*

```
C:\Users\user\ITEfolder3>rd ITEfolder1
The system cannot find the file specified.
```

*To get around this, use cd .. to enter the upper directory containing ITEfolder1.*

```
C:\Users\user\ITEfolder3>cd ..

C:\Users\user>dir
 Volume in drive C has no label.
 Volume Serial Number is C0BA-74EC

 Directory of C:\Users\user

10/30/2025  22:47    <DIR>      .
10/30/2025  22:47    <DIR>      ..
11/10/2024  20:18    <DIR>      .cache
05/15/2025  18:22    <DIR>      .dbus-keyrings
10/06/2024  13:54    <DIR>      77 .gtk-bookmarks
10/18/2025  18:56    <DIR>      .VirtualBox
08/09/2024  18:10    <DIR>      3D Objects
08/09/2024  18:10    <DIR>      Contacts
10/19/2025  19:39    <DIR>      Desktop
10/30/2025  22:08    <DIR>      Documents
10/30/2025  22:04    <DIR>      Downloads
08/09/2024  18:10    <DIR>      Favorites
10/30/2025  22:40    <DIR>      ITEfolder1
10/30/2025  22:26    <DIR>      ITEfolder3
10/30/2025  22:13    <DIR>      ITEfolder5
08/09/2024  18:10    <DIR>      Links
09/17/2024  00:04    <DIR>      Music
07/29/2025  23:09    <DIR>      Pictures
09/17/2024  00:04    <DIR>      Recorded Calls
08/09/2024  18:10    <DIR>      Saved Games
08/09/2024  18:11    <DIR>      Searches
08/17/2025  22:58    <DIR>      Videos
10/18/2025  18:40    <DIR>      VirtualBox VMs
                           1 File(s)      77 bytes
                           22 Dir(s)   41,787,957,248 bytes free
```

Then, use the command **rd ITEfolder1**.

```
C:\Users\user\ITEfolder3>cd ..

C:\Users\user>rd ITEfolder1
The directory is not empty.
```

Because **ITEfolder1** is not an empty directory, it cannot be deleted unless **/S** is used, which the next step introduces.

- d. Use **rd /?** command to determine the switch that allows the deletion of a non-empty directory.

```
c:\Users\ITEUser\ITEfolder3> rd /s ITEfolder1
ITEfolder4, Are you sure (Y/N) ? Y
```

```
C:\Users\user>rd /S ITEfolder1
ITEfolder1, Are you sure (Y/N)? Y

C:\Users\user>dir
Volume in drive C has no label.
Volume Serial Number is C0BA-74EC

Directory of C:\Users\user

10/30/2025  23:09    <DIR>      .
10/30/2025  23:09    <DIR>      ..
11/10/2024  20:18    <DIR>      .cache
05/15/2025  18:22    <DIR>      .dbus-keyrings
10/06/2024  13:54    <DIR>      77 .gtk-bookmarks
10/18/2025  18:56    <DIR>      .VirtualBox
08/09/2024  18:10    <DIR>      3D Objects
08/09/2024  18:10    <DIR>      Contacts
10/19/2025  19:39    <DIR>      Desktop
10/30/2025  22:08    <DIR>      Documents
10/30/2025  22:04    <DIR>      Downloads
08/09/2024  18:10    <DIR>      Favorites
10/30/2025  23:06    <DIR>      ITEfolder3
10/30/2025  22:13    <DIR>      ITEfolder5
08/09/2024  18:10    <DIR>      Links
09/17/2024  00:04    <DIR>      Music
07/29/2025  23:09    <DIR>      Pictures
09/17/2024  00:04    <DIR>      Recorded Calls
08/09/2024  18:10    <DIR>      Saved Games
08/09/2024  18:11    <DIR>      Searches
08/17/2025  22:58    <DIR>      Videos
10/18/2025  18:40    <DIR>      VirtualBox VMs
                           1 File(s)           77 bytes
                           21 Dir(s)  41,799,761,920 bytes free
```

- e. Use the appropriate commands to delete all the text files and folders that you have created in this lab.  
Type **exit** to close the command prompt window.

```
C:\Users\user>rd /S /Q ITEfolder3 && rd /S /Q ITEfolder5

C:\Users\user>dir
 Volume in drive C has no label.
 Volume Serial Number is C0BA-74EC

 Directory of C:\Users\user

10/30/2025  23:16    <DIR>      .
10/30/2025  23:16    <DIR>      ..
11/10/2024  20:18    <DIR>      .cache
05/15/2025  18:22    <DIR>      .dbus-keyrings
10/06/2024  13:54    <DIR>      77 .gtk-bookmarks
10/18/2025  18:56    <DIR>      .VirtualBox
08/09/2024  18:10    <DIR>      3D Objects
08/09/2024  18:10    <DIR>      Contacts
10/19/2025  19:39    <DIR>      Desktop
10/30/2025  22:08    <DIR>      Documents
10/30/2025  22:04    <DIR>      Downloads
08/09/2024  18:10    <DIR>      Favorites
08/09/2024  18:10    <DIR>      Links
09/17/2024  00:04    <DIR>      Music
07/29/2025  23:09    <DIR>      Pictures
09/17/2024  00:04    <DIR>      Recorded Calls
08/09/2024  18:10    <DIR>      Saved Games
08/09/2024  18:11    <DIR>      Searches
08/17/2025  22:58    <DIR>      Videos
10/18/2025  18:40    <DIR>      VirtualBox VMs
                           1 File(s)           77 bytes
                           19 Dir(s)   41,816,211,456 bytes free
```

Note: /Q parameter skips y/n confirmation. && chains two commands and runs the next commands only if the first one succeeds.

### Reflection Question

What are the advantages of using CLI vs. GUI?

*The main advantage of CLI over GUI is the creation of scripts that allow for performing multiple file operations with their respective commands in one execution, which is what batch files do in file management. There are also more file management options in the CLI such as the ones in robocopy, which have lists of help info, commands, and other modes. This automates file operations and also allows for faster and flexible copying than the copying system used in Windows Explorer.*

*GUI, on the other hand, allows for a “what you see is what you get” type of file management, allowing you to do file management visually and in real-time, such as copy, delete, move, etc. like in the CLI. GUI file management also allows for bookmarking or favoriting of file directories and warnings of deleting a file when it is still being used by another program through a dialog.*