

OPS102 – Week 2 – File Systems

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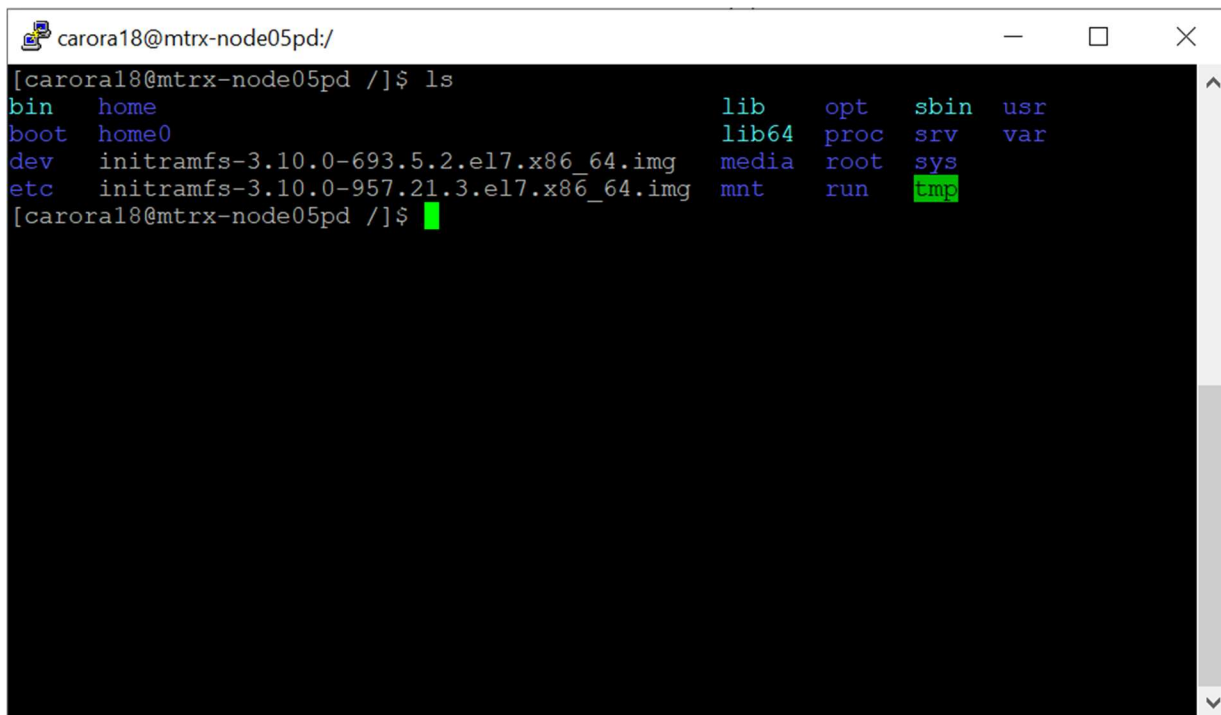
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Please refer to File System Basics lecture slides for this lab

Activity 1: File System Hierarchy

Task 1: Login to your matrix account and list folders in root directory and show the screenshot here. (Your login prompt should be visible in the screenshot)

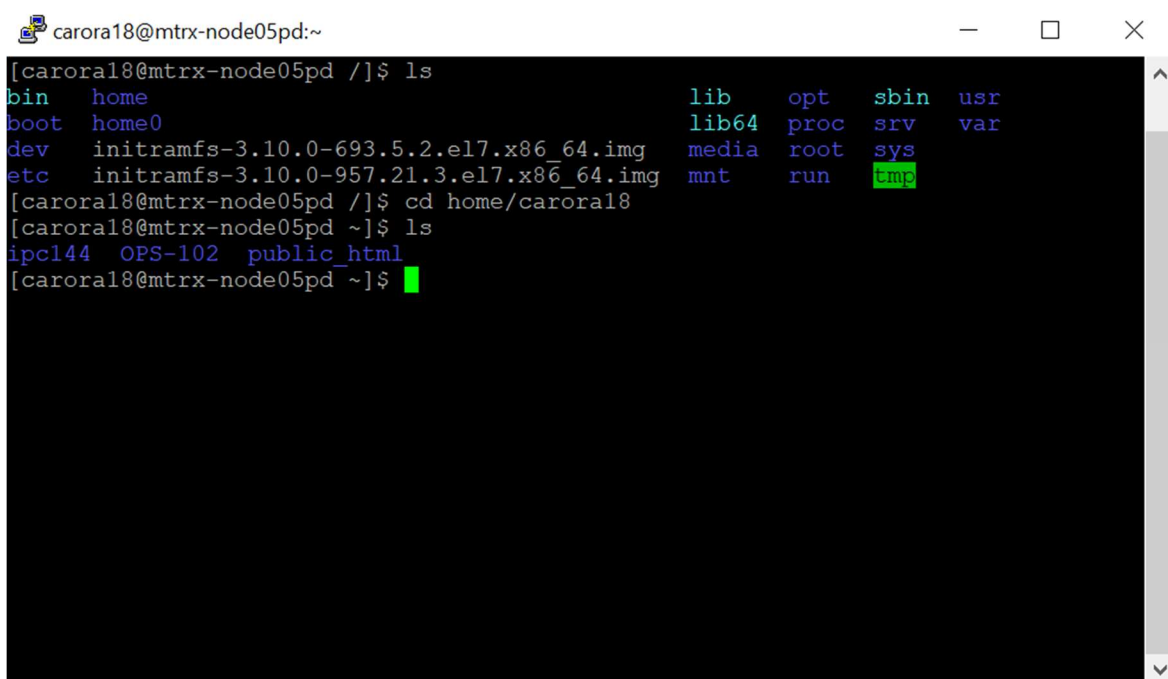
<Screenshots>

A terminal window titled 'carora18@mtrx-node05pd:/' showing the output of the 'ls' command. The output lists the root directory contents in a multi-column format. The 'tmp' directory is highlighted in green. The terminal window has a standard Linux-style title bar with minimize, maximize, and close buttons.

```
carora18@mtrx-node05pd:/  
[carora18@mtrx-node05pd /]$ ls  
bin      home          lib          opt          sbin         usr  
boot     home0         lib64        proc         srv          var  
dev      initramfs-3.10.0-693.5.2.el7.x86_64.img  media        root         sys  
etc      initramfs-3.10.0-957.21.3.el7.x86_64.img  mnt          run          tmp  
[carora18@mtrx-node05pd /]$
```

Task 2: Repeat Task 1 for your home directory and show the screenshot here.

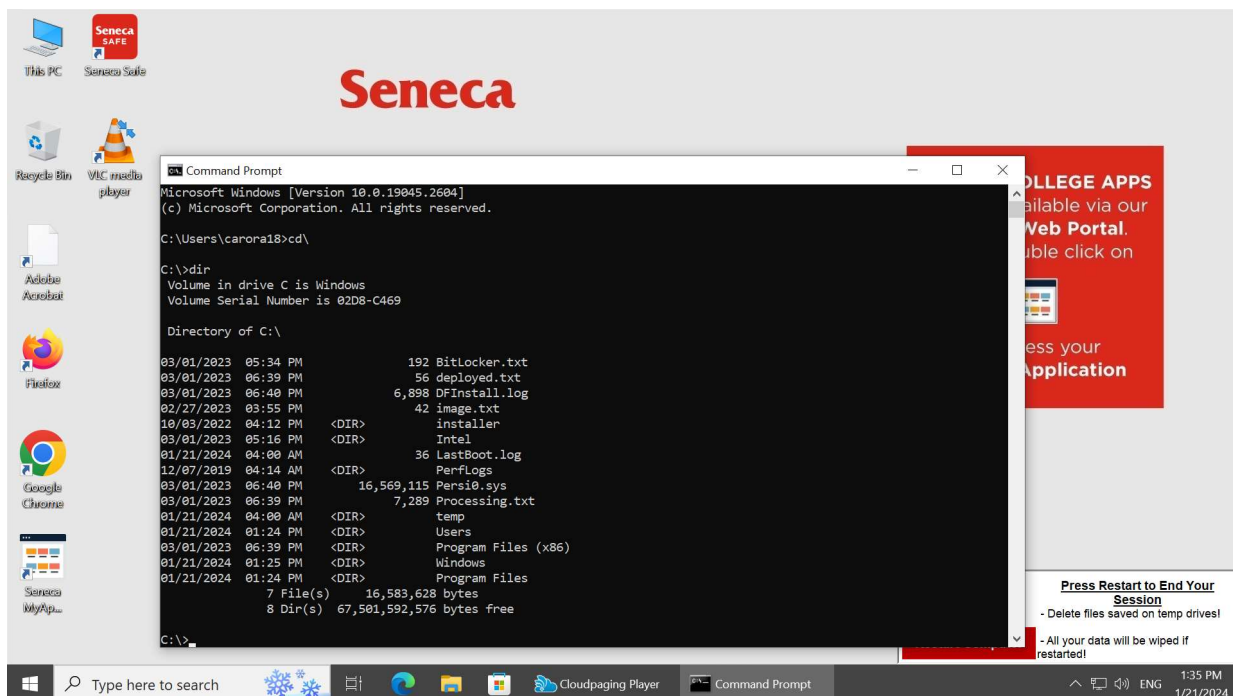
<Screenshots>

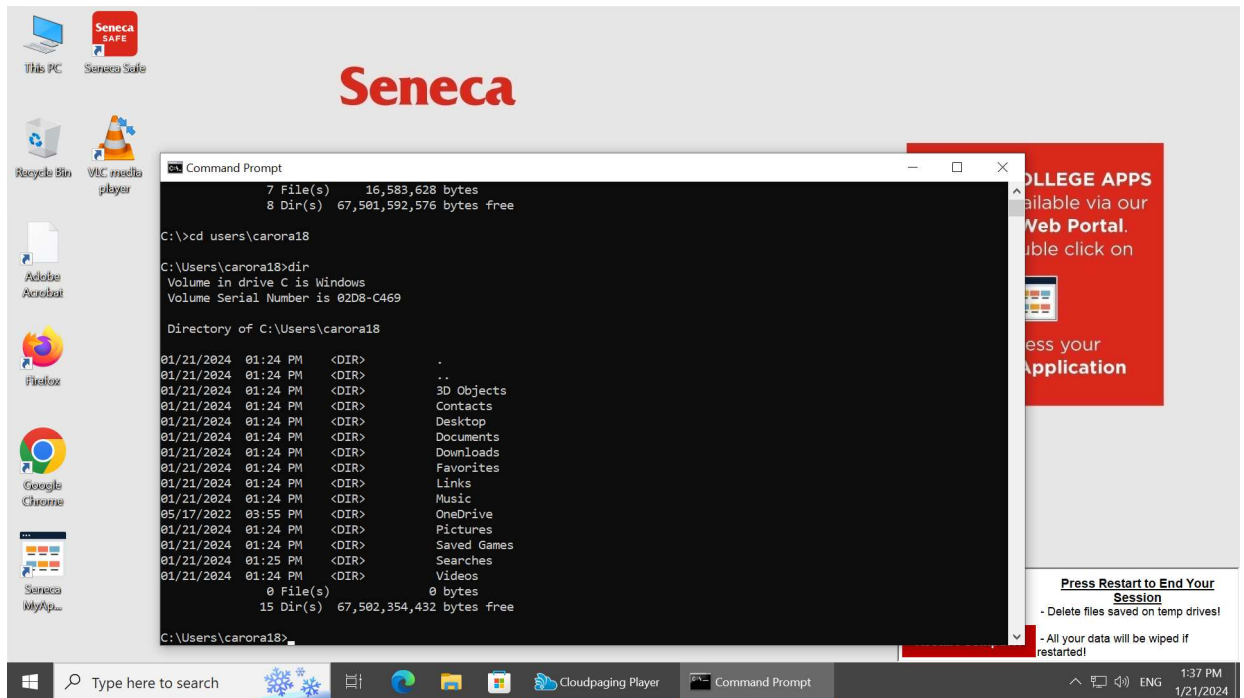


```
carora18@mtrx-node05pd:~  
[carora18@mtrx-node05pd /]$ ls  
bin      home      lib       opt       sbin      usr  
boot     home0     lib64     proc      srv        var  
dev       initramfs-3.10.0-693.5.2.el7.x86_64.img  media     root      sys  
etc       initramfs-3.10.0-957.21.3.el7.x86_64.img  mnt       run       tmp  
[carora18@mtrx-node05pd /]$ cd home/carora18  
[carora18@mtrx-node05pd ~]$ ls  
ipcl144  OPS-102  public    html  
[carora18@mtrx-node05pd ~]$
```

Task 3: Now login to your Windows account, open command prompt and repeat above two tasks and show screenshots here.

<Screenshots>





Activity 2: Paths

Consider following file hierarchy

```

<home>
|
|-- Courses
|   |
|   |-- OPS102
|   |   |
|   |   |-- Slides
|   |   |-- Labs
|   |   |-- ULI101
|-- Trips
|   |-- Paris
  
```

Task 1: List the absolute path of each folder shown in above image, for both Linux and Windows operating systems (You can consider this hierarchy in your home directory. Also note that

absolute path starts from root directory (/) on Linux and (C:) on Windows) (you don't need to use terminal or command prompt for these tasks, you can just type the paths):

Absolute Paths on Linux:

<list here>

For Courses: - /home/Courses

For OPS102: - /home/Courses/OPS102

For Slides: - /home/Courses/OPS102/Slides

For Labs: - /home/Courses/OPS102/Labs

For ULI101: - /home/Courses/ULI101

For Trips: - /home/Trips

For Paris: - /home/Trips/Paris

Absolute Paths of Windows:

<list here>

For Courses: - C:\home\Courses>

For OPS102: - C:\home\Courses\OPS102>

For Slides: - C:\home\Courses\OPS102\Slides>

For Labs: - C:\home\Courses\OPS102\Labs>

For ULI101: - C:\home\Courses\ULI101>

For Trips: - C:\home\Trips>

For Paris: - C:\home\Trip\Paris>

Task 2: List relative-to-home paths for "Slides" and "Labs" folders on Linux

<list here>

For Slides: - ~/Courses/OPS102/Slides

For Labs: - ~/Courses/OPS102/Labs

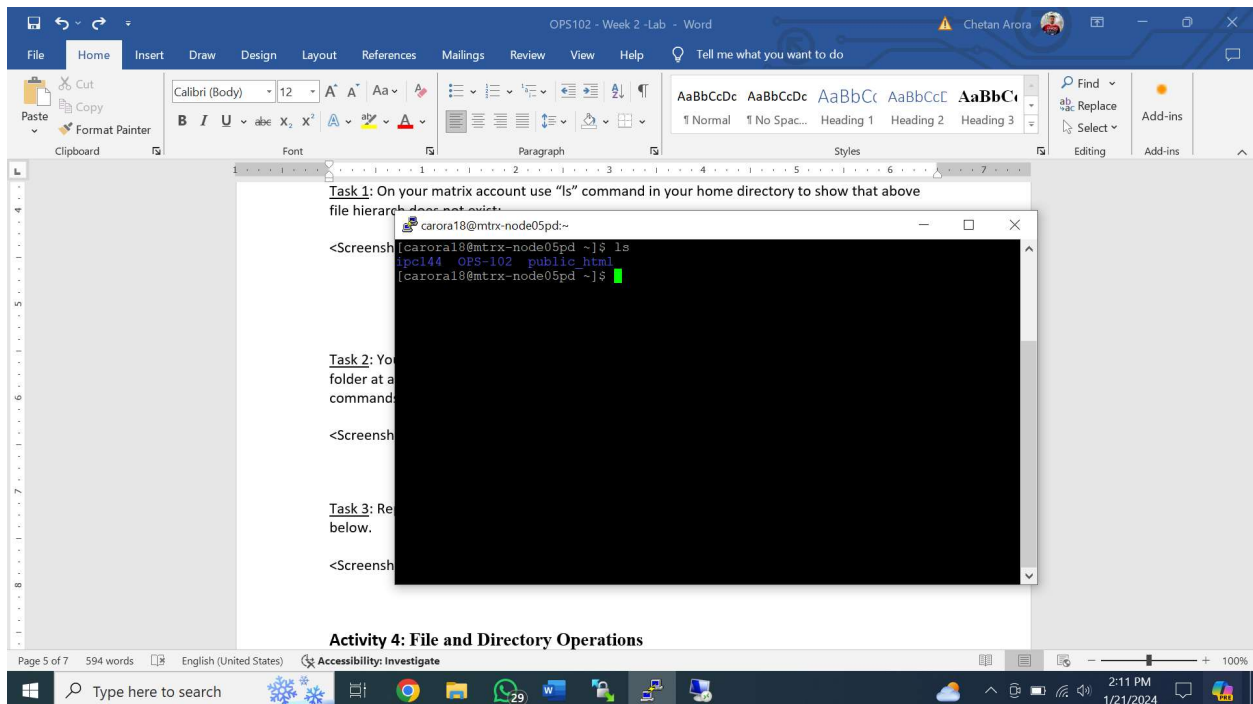
Activity 3: Creating Directories

Consider again the above folder hierarchy:

```
<home>
|
|-- Courses
|   |
|   |-- OPS102
|   |   |
|   |   |-- Slides
|   |   |-- Labs
|   |   |-- ULI101
|-- Trips
|   |-- Paris
```

Task 1: On your matrix account use “ls” command in your home directory to show that above file hierarchy does not exist:

<Screenshots>



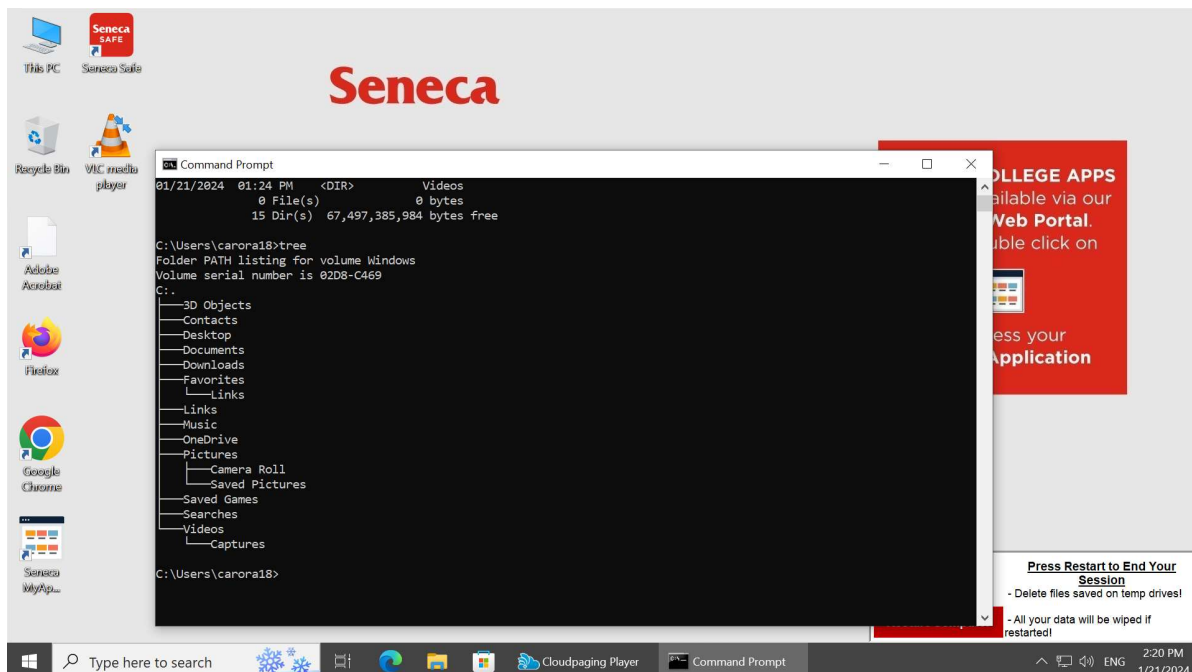
Task 2: You “mkdir” command to create above hierarchy in your home directory, creating one folder at a time. After creating all the hierarchy take one screenshot to show all executed commands.

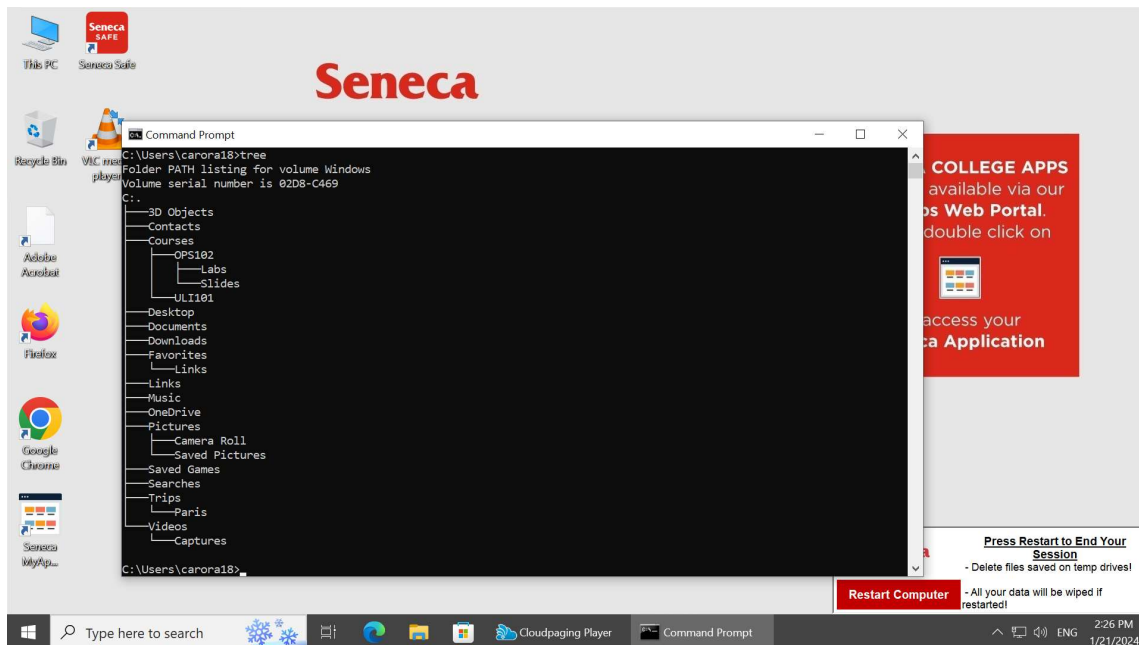
<Screenshots>

```
carora18@mtx-node05pd:~$ cd ..
[carora18@mtx-node05pd Courses]$ cd ..
[carora18@mtx-node05pd ~]$ ls
Courses  ipc144  OPS-102  public_html  Trips
[carora18@mtx-node05pd ~]$ cd Trips
[carora18@mtx-node05pd Trips]$ mkdir Paris
[carora18@mtx-node05pd Trips]$ cd ..
[carora18@mtx-node05pd ~]$ tree
.
├── Courses
│   ├── OPS102
│   │   ├── Labs
│   │   └── Slides
│   └── ULI101
├── ipc144
│   ├── w01
│   │   ├── error.txt
│   │   ├── output.txt
│   │   ├── reflect.txt
│   │   ├── reflectwlp1.txt
│   │   ├── w1
│   │   ├── wlp1.c
│   │   ├── wlp1_master_output.txt
│   │   ├── wlp2.c
│   │   ├── wlp2_master_output.txt
│   │   └── ws
│   └── w02
│       ├── error.txt
│       ├── output.txt
│       ├── w2
│       ├── w2p1.c
│       ├── w2p1_master_output.txt
│       └── ws
├── OPS-102
│   └── w1
│       └── clang32.ini
├── public_html
│   ├── cgi-bin
│   └── index.html
├── Trips
│   └── Paris
└── 14 directories, 18 files
[carora18@mtx-node05pd ~]$
```

Task 3: Repeat above two tasks for Windows using command prompt and show the screenshots below.

<Screenshots>





Activity 4: File and Directory Operations

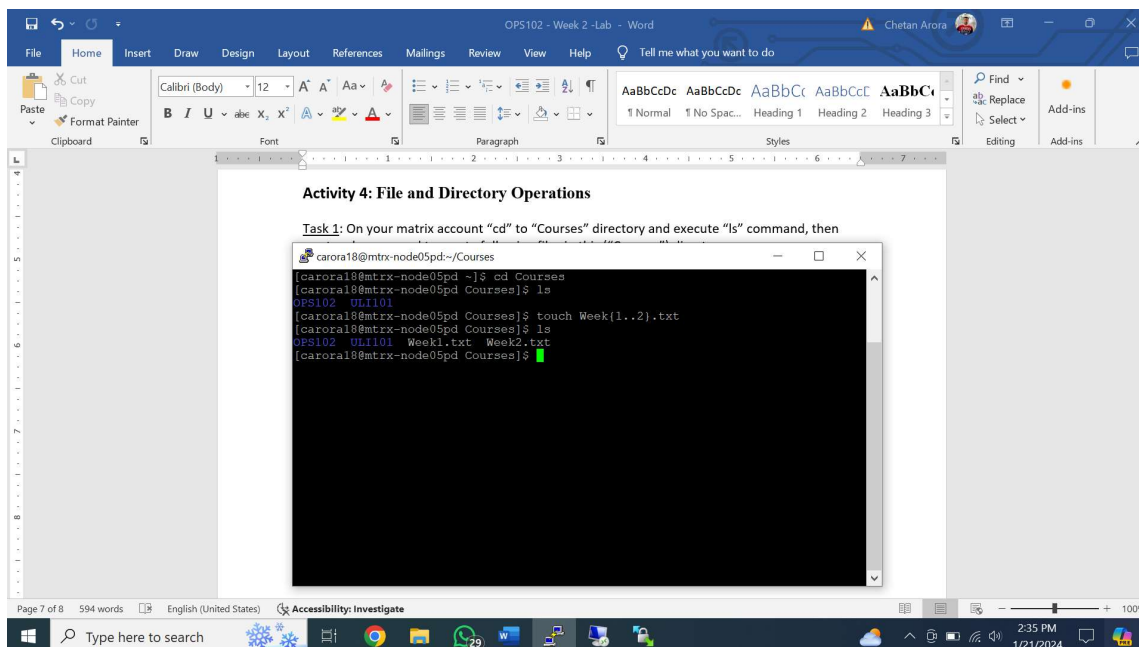
Task 1: On your matrix account “cd” to “Courses” directory and execute “ls” command, then use touch command to create following files in this (“Courses”) directory:

Week1.txt

Week2.txt

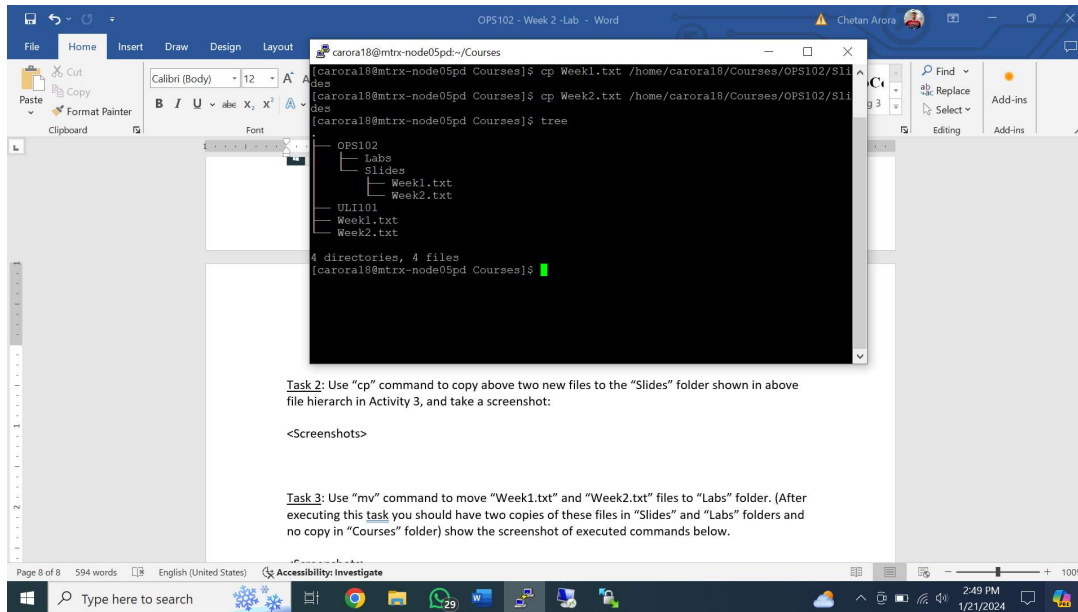
Execute “ls” command again to show that these files have been created. Take a Screenshot of commands and add below

<Screenshot>



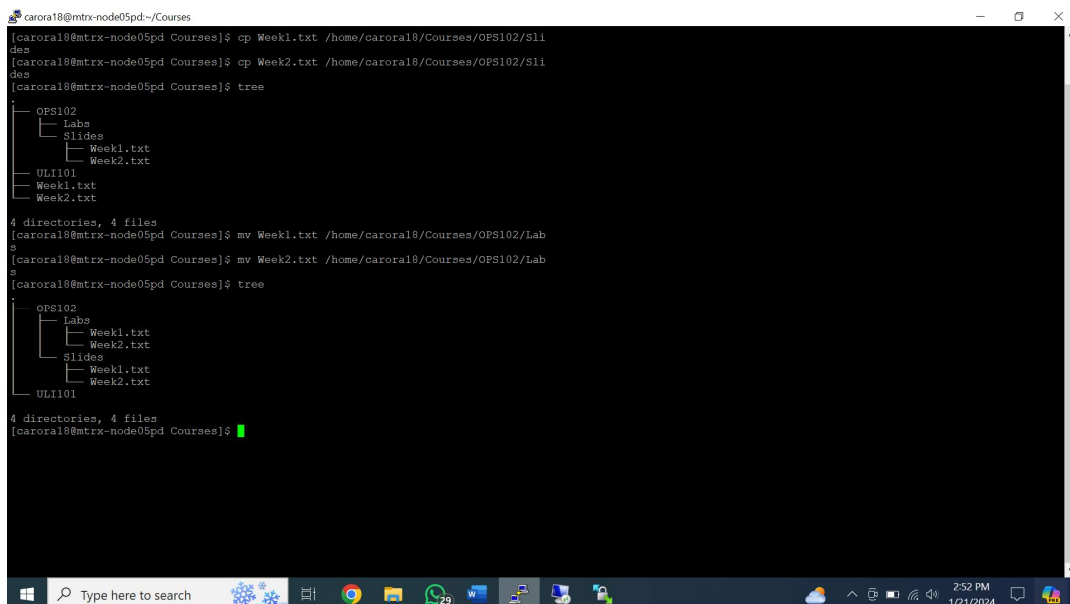
Task 2: Use “cp” command to copy above two new files to the “Slides” folder shown in above file hierarchy in Activity 3, and take a screenshot:

<Screenshots>



Task 3: Use “mv” command to move “Week1.txt” and “Week2.txt” files to “Labs” folder. (After executing this task you should have two copies of these files in “Slides” and “Labs” folders and no copy in “Courses” folder) show the screenshot of executed commands below.

<Screenshots>



Task 4: Repeat above 3 tasks for Windows using command prompt and add all screenshots below (you can use any way of creating these files in the “Courses” folder, since “touch” command does not exist on Windows).

<Screenshots>

```
Command Prompt
C:\Users\carora18>cd Courses

C:\Users\carora18\Courses>dir
Volume in drive C is Windows
Volume Serial Number is 02D8-C469

Directory of C:\Users\carora18\Courses

01/21/2024  02:24 PM  <DIR>          .
01/21/2024  02:24 PM  <DIR>          ..
01/21/2024  02:25 PM  <DIR>          OPS102
01/21/2024  02:24 PM  <DIR>          ULI101
               0 File(s)              0 bytes
               4 Dir(s)  67,417,174,016 bytes free

C:\Users\carora18\Courses>type nul > Week1.txt
C:\Users\carora18\Courses>type nul > Week2.txt

C:\Users\carora18\Courses>dir
Volume in drive C is Windows
Volume Serial Number is 02D8-C469

Directory of C:\Users\carora18\Courses

01/21/2024  03:17 PM  <DIR>          .
01/21/2024  03:17 PM  <DIR>          ..
01/21/2024  02:25 PM  <DIR>          OPS102
01/21/2024  02:24 PM  <DIR>          ULI101
01/21/2024  03:17 PM              0 Week1.txt
01/21/2024  03:17 PM              0 Week2.txt
               2 File(s)              0 bytes
               4 Dir(s)  67,404,386,304 bytes free

C:\Users\carora18\Courses>
```

```
Command Prompt

01/21/2024  03:17 PM  <DIR>          .
01/21/2024  03:17 PM  <DIR>          ..
01/21/2024  02:25 PM  <DIR>          OPS102
01/21/2024  02:24 PM  <DIR>          ULI101
01/21/2024  03:17 PM              0 Week1.txt
01/21/2024  03:17 PM              0 Week2.txt
               2 File(s)              0 bytes
               4 Dir(s)  67,404,386,304 bytes free

C:\Users\carora18\Courses>copy Week1.txt C:\Users\carora18\Courses\OPS102\Slides
1 file(s) copied.

C:\Users\carora18\Courses>copy Week2.txt C:\Users\carora18\Courses\OPS102\Slides
1 file(s) copied.

C:\Users\carora18\Courses>tree
Folder PATH listing for volume Windows
Volume serial number is 02D8-C469
C:.
├── OPS102
│   ├── Labs
│   └── Slides
└── ULI101

C:\Users\carora18\Courses> cd OPS102\Slides

C:\Users\carora18\Courses\OPS102\Slides>dir
Volume in drive C is Windows
Volume Serial Number is 02D8-C469

Directory of C:\Users\carora18\Courses\OPS102\Slides

01/21/2024  03:24 PM  <DIR>          .
01/21/2024  03:24 PM  <DIR>          ..
01/21/2024  03:17 PM              0 Week1.txt
01/21/2024  03:17 PM              0 Week2.txt
               2 File(s)              0 bytes
               2 Dir(s)  67,405,377,536 bytes free

C:\Users\carora18\Courses\OPS102\Slides>
```

```
Command Prompt
Volume Serial Number is 02D8-C469

Directory of C:\Users\carora18\Courses\OPS102\Slides
01/21/2024 03:24 PM <DIR> .
01/21/2024 03:24 PM <DIR> ..
01/21/2024 03:17 PM      0 Week1.txt
01/21/2024 03:17 PM      0 Week2.txt
                2 File(s)      0 bytes
                2 Dir(s)  67,405,377,536 bytes free

C:\Users\carora18\Courses\OPS102\Slides>cd..
C:\Users\carora18\Courses\OPS102>cd..
C:\Users\carora18\Courses>mv Week1.txt C:\Users\carora18\Courses\OPS102\Labs
'mv' is not recognized as an internal or external command,
operable program or batch file.
C:\Users\carora18\Courses>move Week1.txt C:\Users\carora18\Courses\OPS102\Labs
1 file(s) moved.
C:\Users\carora18\Courses>move Week2.txt C:\Users\carora18\Courses\OPS102\Labs
1 file(s) moved.
C:\Users\carora18\Courses>cd OPS102\Slides
C:\Users\carora18\Courses\OPS102\Slides>dir
Volume in drive C is Windows
Volume Serial Number is 02D8-C469

Directory of C:\Users\carora18\Courses\OPS102\Slides
01/21/2024 03:24 PM <DIR> .
01/21/2024 03:24 PM <DIR> ..
01/21/2024 03:17 PM      0 Week1.txt
01/21/2024 03:17 PM      0 Week2.txt
                2 File(s)      0 bytes
                2 Dir(s)  67,403,882,496 bytes free

C:\Users\carora18\Courses\OPS102\Slides>
```

```
Command Prompt
operable program or batch file.
C:\Users\carora18\Courses>move Week1.txt C:\Users\carora18\Courses\OPS102\Labs
1 file(s) moved.
C:\Users\carora18\Courses>move Week2.txt C:\Users\carora18\Courses\OPS102\Labs
1 file(s) moved.
C:\Users\carora18\Courses>cd OPS102\Slides
C:\Users\carora18\Courses\OPS102\Slides>dir
Volume in drive C is Windows
Volume Serial Number is 02D8-C469

Directory of C:\Users\carora18\Courses\OPS102\Slides
01/21/2024 03:24 PM <DIR> .
01/21/2024 03:24 PM <DIR> ..
01/21/2024 03:17 PM      0 Week1.txt
01/21/2024 03:17 PM      0 Week2.txt
                2 File(s)      0 bytes
                2 Dir(s)  67,403,882,496 bytes free

C:\Users\carora18\Courses\OPS102\Slides>cd..
C:\Users\carora18\Courses\OPS102>cd Labs
C:\Users\carora18\Courses\OPS102\Labs>dir
Volume in drive C is Windows
Volume Serial Number is 02D8-C469

Directory of C:\Users\carora18\Courses\OPS102\Labs
01/21/2024 03:30 PM <DIR> .
01/21/2024 03:30 PM <DIR> ..
01/21/2024 03:17 PM      0 Week1.txt
01/21/2024 03:17 PM      0 Week2.txt
                2 File(s)      0 bytes
                2 Dir(s)  67,404,120,064 bytes free

C:\Users\carora18\Courses\OPS102\Labs>
```

Task 5: Use “rm” command on Linux to delete the two files from both “Slides” and “Labs” folders and show the screenshots below.

<Screenshots>

```
carora18@mtmx-node05pd:~/Courses/OPS102
├── Week2.txt
├── ULI101
├── Week1.txt
└── Week2.txt

4 directories, 4 files
[carora18@mtmx-node05pd Courses]$ mv Week1.txt /home/carora18/Courses/OPS102/Lab
s
[carora18@mtmx-node05pd Courses]$ mv Week2.txt /home/carora18/Courses/OPS102/Lab
s
[carora18@mtmx-node05pd Courses]$ tree
.
├── OPS102
│   ├── Labs
│   │   ├── Week1.txt
│   │   └── Week2.txt
│   └── Slides
│       ├── Week1.txt
│       └── Week2.txt
└── ULI101

4 directories, 4 files
[carora18@mtmx-node05pd Courses]$ cd OPS102/slides
[carora18@mtmx-node05pd Slides]$ ls
Week1.txt Week2.txt
[carora18@mtmx-node05pd Slides]$ rm Week1.txt
[carora18@mtmx-node05pd Slides]$ rm Week2.txt
[carora18@mtmx-node05pd Slides]$ ls
[carora18@mtmx-node05pd Slides]$ tree
.

0 directories, 0 files
[carora18@mtmx-node05pd Slides]$ cd..
[carora18@mtmx-node05pd OPS102]$ cd Labs
[carora18@mtmx-node05pd Labs]$ rm Week1.txt
[carora18@mtmx-node05pd Labs]$ rm Week2.txt
[carora18@mtmx-node05pd Labs]$ cd..
[carora18@mtmx-node05pd OPS102]$ tree
.
└── Labs
    └── Slides

2 directories, 0 files
[carora18@mtmx-node05pd OPS102]$
```

Task 6: Use “rmdir” command iteratively on Linux to delete the folder hierarchy created in Activity 3 and add screenshot below.

<Screenshots>

```
carora18@mtmx-node05pd:~
[carora18@mtmx-node05pd Courses]$ rmdir ULI101
[carora18@mtmx-node05pd Courses]$ cd OPS102
[carora18@mtmx-node05pd OPS102]$ rmdir Labs
[carora18@mtmx-node05pd OPS102]$ rmdir Slides
[carora18@mtmx-node05pd OPS102]$ cd..
[carora18@mtmx-node05pd Courses]$ rmdir OPS102
-bash: rmdir: command not found
[carora18@mtmx-node05pd Courses]$ rmdir OPS102
[carora18@mtmx-node05pd Courses]$ cd..
[carora18@mtmx-node05pd ~]$ rmdir Courses
[carora18@mtmx-node05pd ~]$ cd Trips
[carora18@mtmx-node05pd Trips]$ rmdir Paris
[carora18@mtmx-node05pd Trips]$ cd..
[carora18@mtmx-node05pd ~]$ rmdir Trips
[carora18@mtmx-node05pd ~]$ tree
.
├── ipcl44
│   ├── w01
│   │   ├── error.txt
│   │   ├── output.txt
│   │   ├── reflect.txt
│   │   ├── reflectwlp1.txt
│   │   ├── w1
│   │   ├── wlp1.c
│   │   ├── wlp1_master_output.txt
│   │   ├── wlp2.c
│   │   ├── wlp2_master_output.txt
│   │   └── ws
│   ├── w02
│   │   ├── error.txt
│   │   ├── output.txt
│   │   ├── w2
│   │   ├── w2p1.c
│   │   ├── w2p1_master_output.txt
│   │   └── ws
│   └── OPS-102
│       ├── w1
│       └── slang32.ini
├── public_html
├── cgi-bin
└── index.html

7 directories, 18 files
[carora18@mtmx-node05pd ~]$
```

Task 7: Use “del” command on Windows to delete the two files from both “Slides” and “Labs” folders and show the screenshots below.

<Screenshots>

```
Command Prompt
01/21/2024 03:30 PM <DIR> ..
01/21/2024 03:17 PM      0 Week1.txt
01/21/2024 03:17 PM      0 Week2.txt
                2 File(s)      0 bytes
                2 Dir(s)  67,404,120,064 bytes free

C:\Users\carora18\Courses\OPS102\Labs>del Week1.txt
C:\Users\carora18\Courses\OPS102\Labs>del Week2.txt
C:\Users\carora18\Courses\OPS102\Labs>dir
Volume in drive C is Windows
Volume Serial Number is 02D8-C469

Directory of C:\Users\carora18\Courses\OPS102\Labs

01/21/2024 03:49 PM <DIR> .
01/21/2024 03:49 PM <DIR> ..
                0 File(s)      0 bytes
                2 Dir(s)  67,399,491,584 bytes free

C:\Users\carora18\Courses\OPS102\Labs>cd..
C:\Users\carora18\Courses\OPS102>cd Slides
C:\Users\carora18\Courses\OPS102\Slides>del Week1.txt
C:\Users\carora18\Courses\OPS102\Slides>del Week2.txt
C:\Users\carora18\Courses\OPS102\Slides>dir
Volume in drive C is Windows
Volume Serial Number is 02D8-C469

Directory of C:\Users\carora18\Courses\OPS102\Slides

01/21/2024 03:49 PM <DIR> .
01/21/2024 03:49 PM <DIR> ..
                0 File(s)      0 bytes
                2 Dir(s)  67,399,462,912 bytes free

C:\Users\carora18\Courses\OPS102\Slides>
```

Task 8: Use “rd” command iteratively on Windows to delete the folder hierarchy created in Activity 3 and add screenshot below.

<Screenshots>

```
Command Prompt
C:\Users\carora18\Courses\OPS102\Slides>cd..
C:\Users\carora18\Courses\OPS102>rd Slides
C:\Users\carora18\Courses\OPS102>rd Labs
C:\Users\carora18\Courses\OPS102>cd..
C:\Users\carora18\Courses>rd OPS102
C:\Users\carora18\Courses>rd ULI101
C:\Users\carora18\Courses>cd..
C:\Users\carora18>rd Courses
C:\Users\carora18>cd Trips
C:\Users\carora18\Trips>rd Paris
C:\Users\carora18\Trips>cd..
C:\Users\carora18>rd Trips
C:\Users\carora18>dir
Volume in drive C is Windows
Volume Serial Number is 02D8-C469

Directory of C:\Users\carora18

01/21/2024 03:58 PM <DIR> .
01/21/2024 03:58 PM <DIR> ..
01/21/2024 01:24 PM <DIR> 3D Objects
01/21/2024 01:24 PM <DIR> Contacts
01/21/2024 01:24 PM <DIR> Desktop
01/21/2024 01:24 PM <DIR> Documents
01/21/2024 01:24 PM <DIR> Downloads
01/21/2024 01:24 PM <DIR> Favorites
01/21/2024 01:24 PM <DIR> Links
01/21/2024 01:24 PM <DIR> Music
```

```
Command Prompt
C:\Users\carora18>rd Courses
C:\Users\carora18>cd Trips
C:\Users\carora18\Trips>rd Paris
C:\Users\carora18\Trips>cd..
C:\Users\carora18>rd Trips
C:\Users\carora18>dir
Volume in drive C is Windows
Volume Serial Number is 02D8-C469

Directory of C:\Users\carora18

01/21/2024  03:58 PM  <DIR>          .
01/21/2024  03:58 PM  <DIR>          ..
01/21/2024  01:24 PM  <DIR>          3D Objects
01/21/2024  01:24 PM  <DIR>          Contacts
01/21/2024  01:24 PM  <DIR>          Desktop
01/21/2024  01:24 PM  <DIR>          Documents
01/21/2024  01:24 PM  <DIR>          Downloads
01/21/2024  01:24 PM  <DIR>          Favorites
01/21/2024  01:24 PM  <DIR>          Links
01/21/2024  01:24 PM  <DIR>          Music
05/17/2022  03:55 PM  <DIR>          OneDrive
01/21/2024  01:24 PM  <DIR>          Pictures
01/21/2024  01:24 PM  <DIR>          Saved Games
01/21/2024  01:25 PM  <DIR>          Searches
01/21/2024  01:24 PM  <DIR>          Videos
               0 File(s)                0 bytes
               15 Dir(s)  67,398,488 bytes free

C:\Users\carora18>
```