

CEIS 106 FINAL PROJECT

Monsiff Zeizae

OVERVIEW

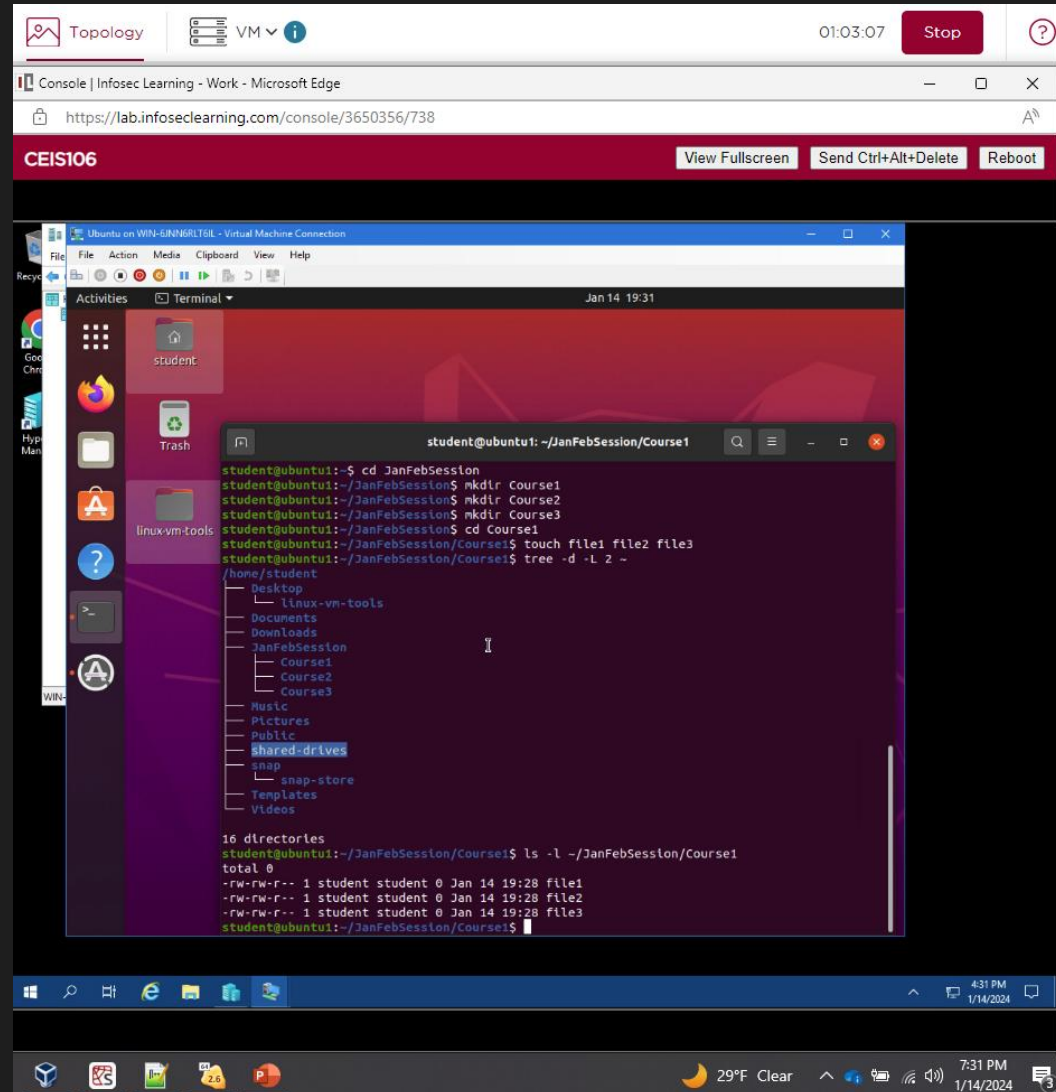
In this project we covered several important topics in Linux. Topics included how to navigate the Linux filesystem tree, Linux shell scripts, user and group management, networking configurations in Linux.

NAVIGATE THE LINUX FILESYSTEM TREE

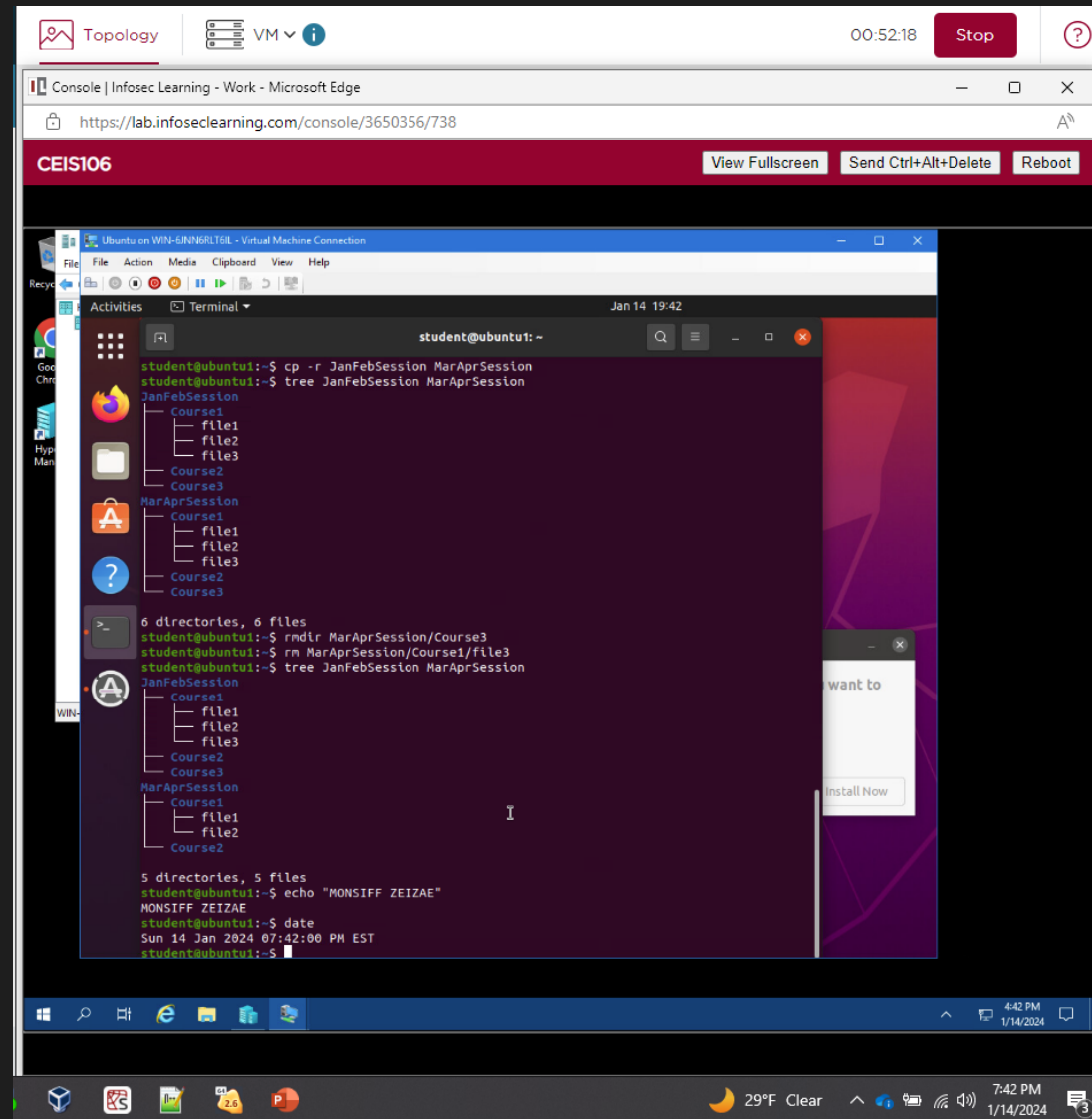
Explain the differences between a relative path and an absolute/full path in Linux.

Answer: In Linux an absolute path is used to provide the entire locate of a file or a directory stemming from the root directory “/”. Whereas the relative path is used to specify the location of a file or directory relative to the current working directory.

CREATE DIRECTORIES AND FILES



COPY AND REMOVE DIRECTORIES AND FILES



The screenshot shows a virtual machine interface with a terminal window open. The terminal displays the following commands and output:

```
student@ubuntu1:~$ cp -r JanFebSession MarAprSession
student@ubuntu1:~$ tree JanFebSession MarAprSession
JanFebSession
├── course1
│   ├── file1
│   ├── file2
│   └── file3
├── Course2
├── Course3
└── MarAprSession
    ├── Course1
    │   ├── file1
    │   ├── file2
    │   └── file3
    ├── Course2
    └── Course3

6 directories, 6 files
student@ubuntu1:~$ rmdir MarAprSession/Course3
student@ubuntu1:~$ rm MarAprSession/Course1/file3
student@ubuntu1:~$ tree JanFebSession MarAprSession
JanFebSession
├── course1
│   ├── file1
│   ├── file2
│   └── file3
├── Course2
├── Course3
└── MarAprSession
    ├── Course1
    │   ├── file1
    │   └── file2
    ├── Course2
    └── Course3

5 directories, 5 files
student@ubuntu1:~$ echo "MONSIEFF ZEIZAE"
MONSIEFF ZEIZAE
student@ubuntu1:~$ date
Sun 14 Jan 2024 07:42:00 PM EST
student@ubuntu1:~$
```

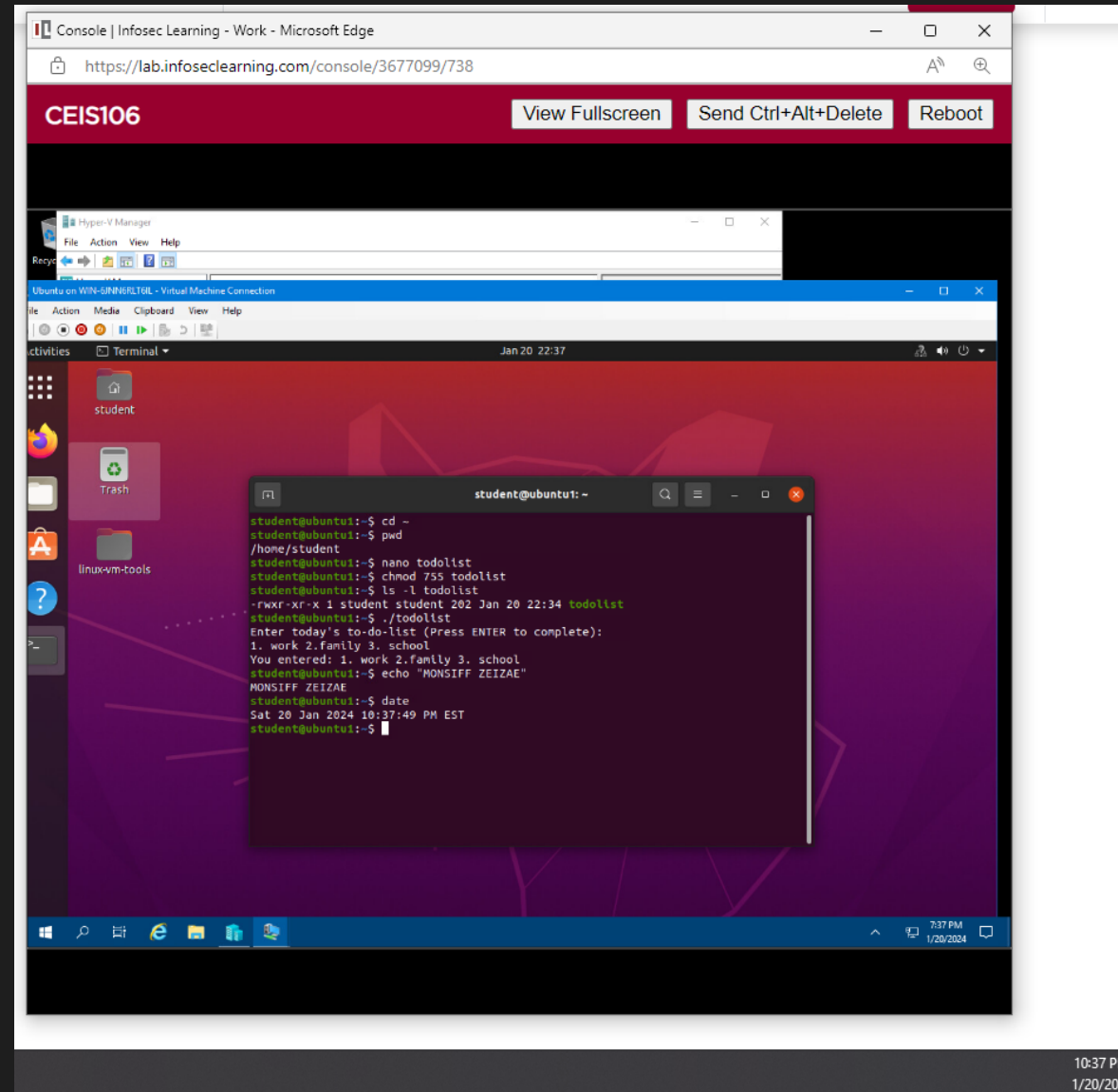
The terminal window is titled "student@ubuntu1: ~" and shows the file structure of the virtual machine. The desktop background is a purple Ubuntu logo. The window title bar indicates "Ubuntu on WIN-6NN6RLT6L - Virtual Machine Connection".

LOCATE DIRECTORIES AND FILES

The screenshot shows a virtual machine environment with a terminal window open. The terminal displays the output of the 'locate' command, which searches for files in the database. The output lists several files and directories, including those in the /home/student directory. The terminal also shows the user running 'sudo updatedb' to update the database and 'echo "MONSIEFF ZEIZAE"' to print a message. The terminal window is titled 'student@ubuntu1: ~' and the date is Jan 14 19:46.

```
student@ubuntu1: ~  
/home/student/MarAprSession/Course1/file1  
/home/student/MarAprSession/Course1/file2  
/home/student/MarAprSession/Course1/file3  
/home/student/MarAprSession/Course1/file1  
/home/student/MarAprSession/Course1/file2  
/home/student/MarAprSession/Course1/file3  
/home/student/MarAprSession/Course1/file1  
/home/student/MarAprSession/Course1/file2  
/home/student/MarAprSession/Course1/file3  
/home/student/MarAprSession/Course1/file1  
/home/student/MarAprSession/Course1/file2  
/home/student/MarAprSession/Course1/file3  
student@ubuntu1:~$ locate -S  
Database /var/lib/mlocate/mlocate.db:  
39,914 directories  
448,867 files  
31,463,812 bytes in file names  
11,283,404 bytes used to store database  
student@ubuntu1:~$ sudo updatedb  
[sudo] password for student:  
student@ubuntu1:~$ locate -t course  
/home/student/JanFebSession/Course1  
/home/student/JanFebSession/Course2  
/home/student/JanFebSession/Course3  
/home/student/JanFebSession/Course1/file1  
/home/student/JanFebSession/Course1/file2  
/home/student/JanFebSession/Course1/file3  
/home/student/MarAprSession/Course1  
/home/student/MarAprSession/Course2  
/home/student/MarAprSession/Course1/file1  
/home/student/MarAprSession/Course1/file2  
/home/student/MarAprSession/Course1  
/home/student/MarAprSession/Course2  
/home/student/MarAprSession/Course3  
/home/student/MarAprSession/Course1/file1  
/home/student/MarAprSession/Course1/file2  
/home/student/MarAprSession/Course1/file3  
student@ubuntu1:~$ echo "MONSIEFF ZEIZAE"  
MONSIEFF ZEIZAE  
student@ubuntu1:~$ DATE  
DATE: command not found  
student@ubuntu1:~$ date  
Sun 14 Jan 2024 07:46:39 PM EST  
student@ubuntu1:~$
```

CHANGE SCRIPT FILE PERMISSIONS



The screenshot displays a web-based console interface for a virtual machine. The browser window is titled "Console | Infosec Learning - Work - Microsoft Edge" and shows the URL "https://lab.infoseclearning.com/console/3677099/738". The console header includes the text "CEIS106" and buttons for "View Fullscreen", "Send Ctrl+Alt+Delete", and "Reboot".

The virtual machine window shows a desktop environment with a terminal window open. The terminal output is as follows:

```
student@ubuntu1:~$ cd ~
student@ubuntu1:~$ pwd
/home/student
student@ubuntu1:~$ nano todolist
student@ubuntu1:~$ chmod 755 todolist
student@ubuntu1:~$ ls -l todolist
-rwxr-xr-x 1 student student 202 Jan 20 22:34 todolist
student@ubuntu1:~$ ./todolist
Enter today's to-do-list (Press ENTER to complete):
1. work 2.family 3. school
You entered: 1. work 2.family 3. school
student@ubuntu1:~$ echo "MONSIEFF ZEIZAE"
MONSIEFF ZEIZAE
student@ubuntu1:~$ date
Sat 20 Jan 2024 10:37:49 PM EST
student@ubuntu1:~$
```

The terminal window is titled "student@ubuntu1: ~". The desktop environment includes icons for "student", "Trash", and "linux-vm-tools". The system clock at the bottom right of the terminal window shows "7:37 PM 1/20/2024".

SET THE PATH VARIABLE

Console | Infosec Learning - Work - Microsoft Edge

https://lab.infoseclearning.com/console/3677099/738

CEIS106 View Fullscreen Send Ctrl+Alt+Delete Reboot

Hyper-V Manager

File Action View Help

Recycle Bin

Ubuntu on WIN-6NHRJL7GIL - Virtual Machine Connection

File Action Media Clipboard View Help

activities Terminal Jan 20 22:40

student

Trash

linuxvm-tools

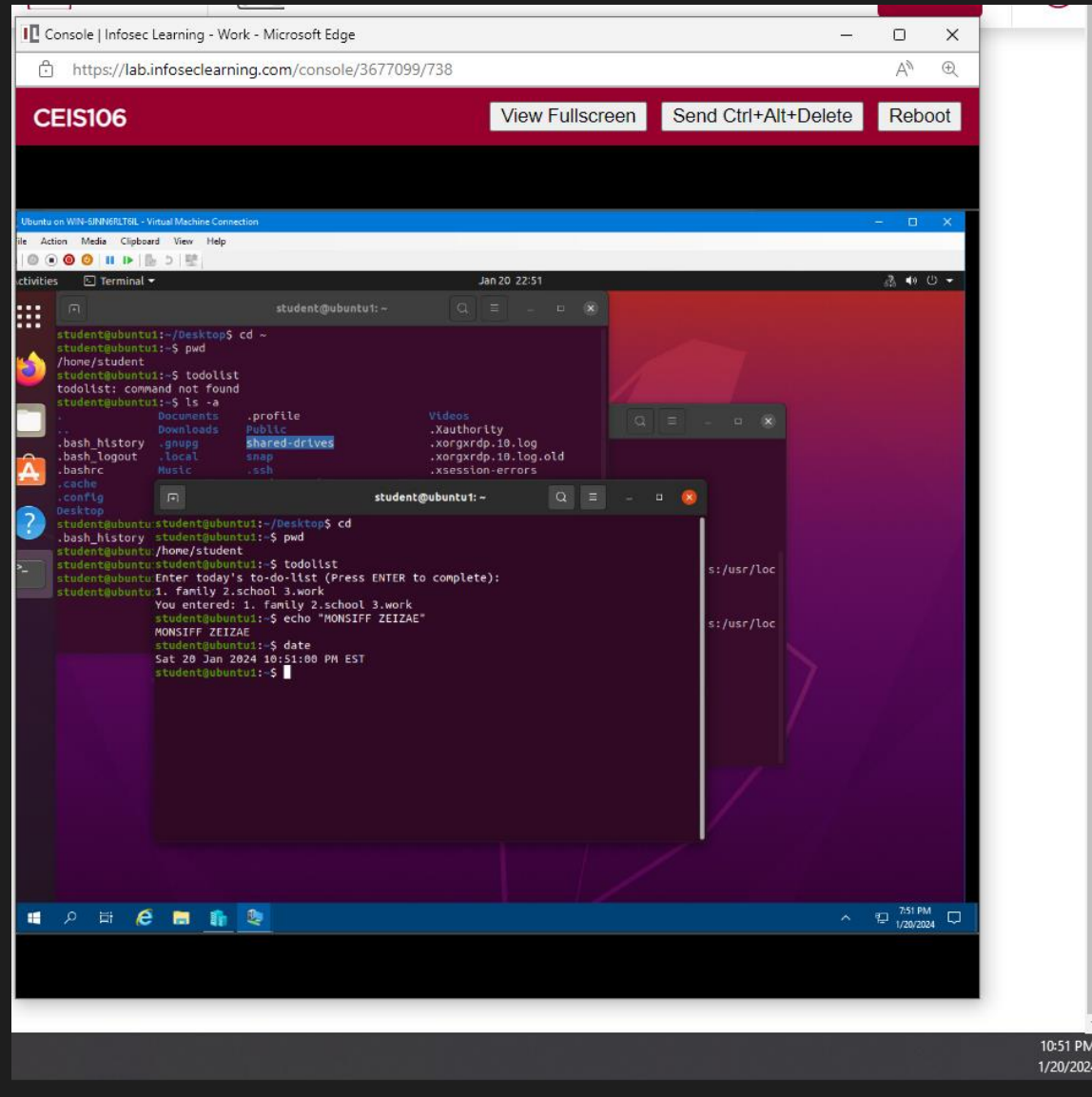
student@ubuntu1: ~

```
MONSIEFF ZEIZAE
student@ubuntu1:~$ date
Sat 20 Jan 2024 10:37:49 PM EST
student@ubuntu1:~$ cd ~
student@ubuntu1:~$ pwd
/home/student
student@ubuntu1:~$ todolist
todolist: command not found
student@ubuntu1:~$ echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin
student@ubuntu1:~$ PATH=$PATH:/home/student
student@ubuntu1:~$ echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/home/student
student@ubuntu1:~$ todolist
Enter today's to-do-list (Press ENTER to complete):
1. school 2. work 3. family
You entered: 1. school 2. work 3. family
student@ubuntu1:~$ echo "MONSIEFF ZEIZAE"
MONSIEFF ZEIZAE
student@ubuntu1:~$ date
Sat 20 Jan 2024 10:40:34 PM EST
student@ubuntu1:~$
```

10:40 PM
1/20/2024

8

MAKE THE PATH VARIABLE PERMANENT



ADD USERS AND GROUPS IN CLI

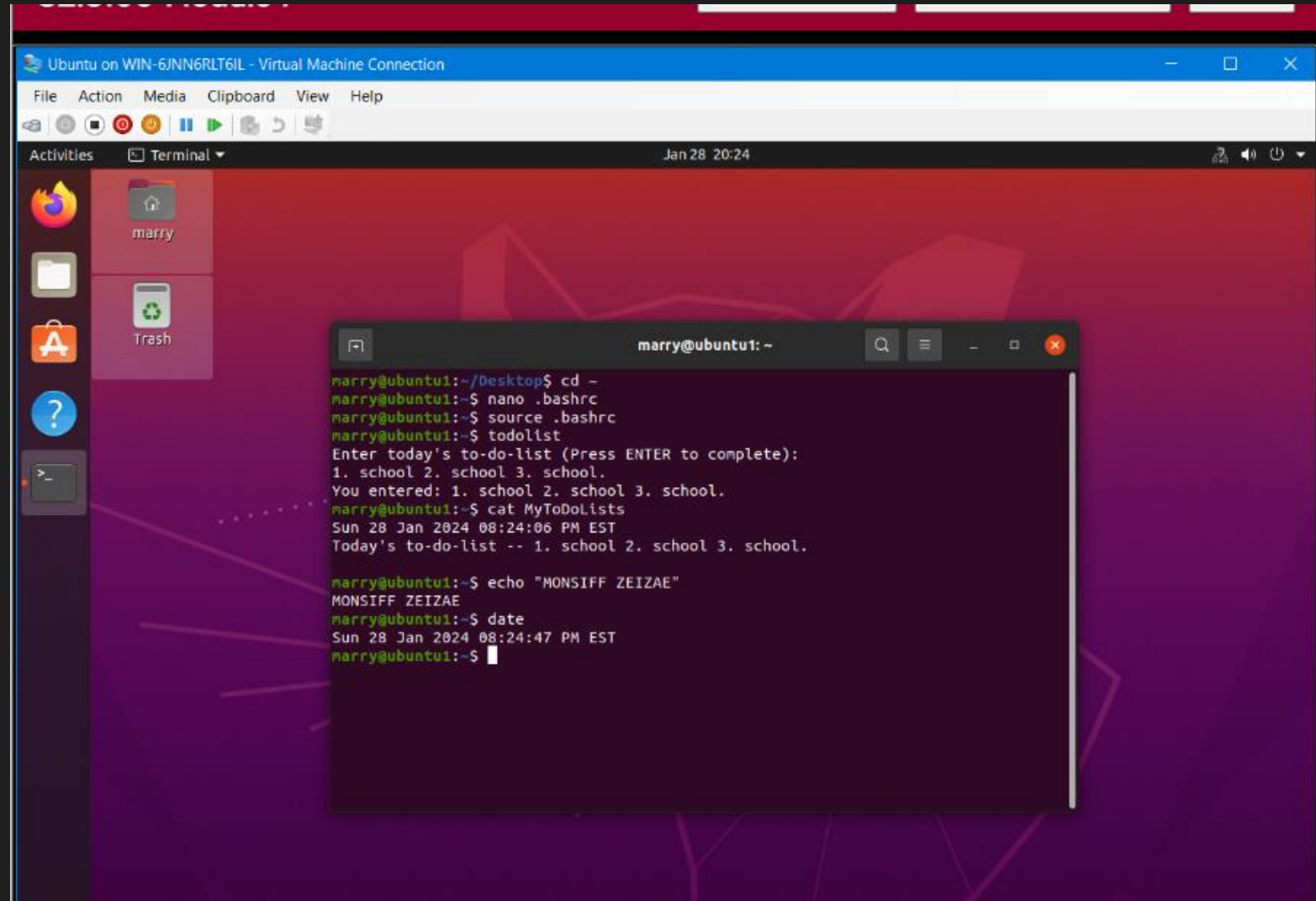
. What does the *-m* option in the `useradd` command do?

Answer here: “-m” tells `useradd` command to create a home directory for the new user

2. What does the *-3* option in the `tail` command do?

Answer here: it tells the `tail` command how many lines to show from the end of the file

TEST USER AND GROUP SETTINGS

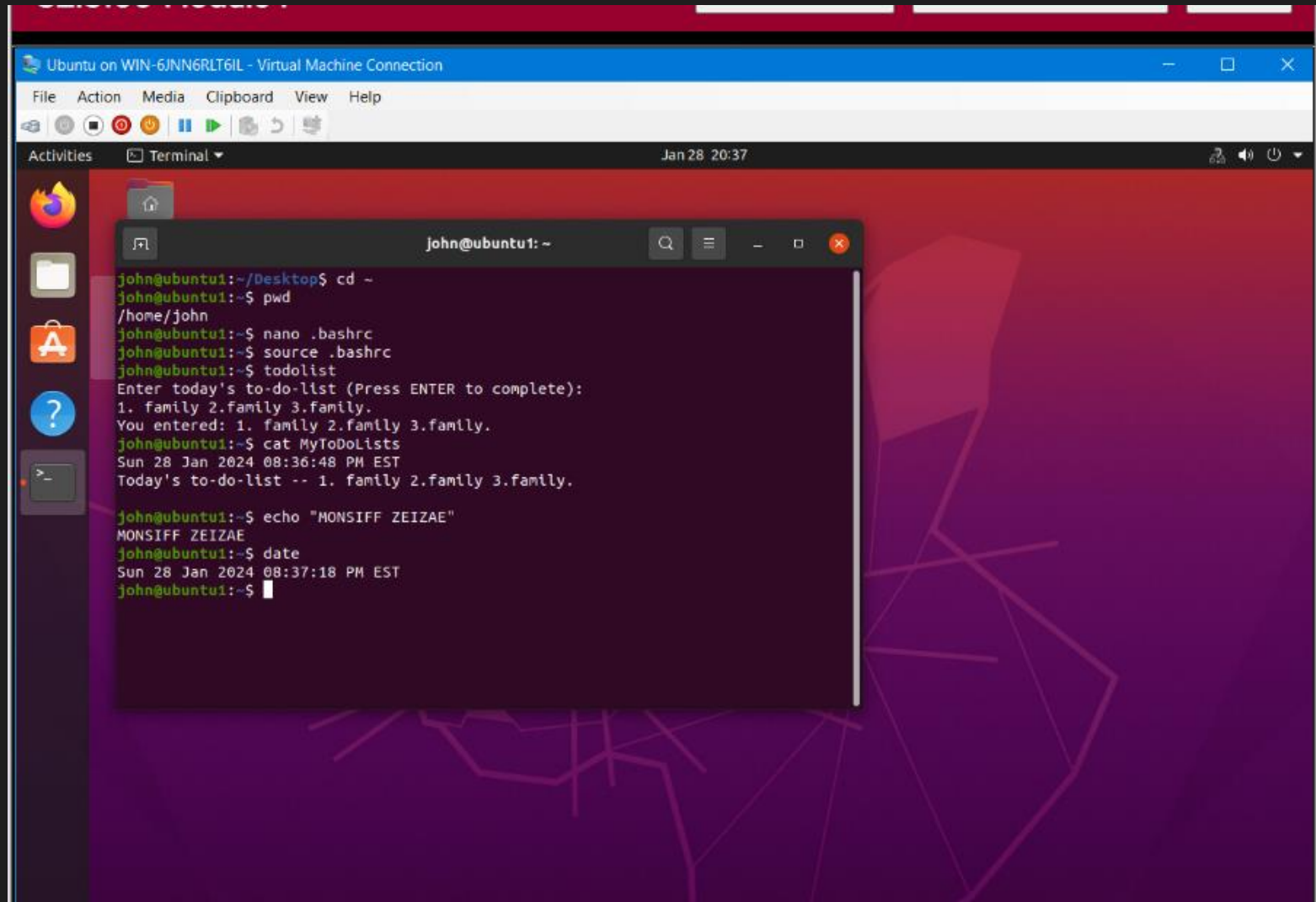


The screenshot displays an Ubuntu desktop environment within a virtual machine window titled "Ubuntu on WIN-6JNN6RLT6IL - Virtual Machine Connection". The desktop features a red and purple gradient background with a sidebar on the left containing icons for Firefox, a file manager, the App Store, a help icon, and a terminal icon. A dock on the right side shows icons for the user "marry", the Trash, and a question mark. A terminal window is open in the foreground, titled "marry@ubuntu1: ~". The terminal shows the following commands and output:

```
marry@ubuntu1:~/Desktop$ cd -
marry@ubuntu1:~$ nano .bashrc
marry@ubuntu1:~$ source .bashrc
marry@ubuntu1:~$ todolist
Enter today's to-do-list (Press ENTER to complete):
1. school 2. school 3. school.
You entered: 1. school 2. school 3. school.
marry@ubuntu1:~$ cat MyToDoLists
Sun 28 Jan 2024 08:24:06 PM EST
Today's to-do-list -- 1. school 2. school 3. school.

marry@ubuntu1:~$ echo "MONSIEFF ZEIZAE"
MONSIEFF ZEIZAE
marry@ubuntu1:~$ date
Sun 28 Jan 2024 08:24:47 PM EST
marry@ubuntu1:~$
```

ADD USERS IN GUI

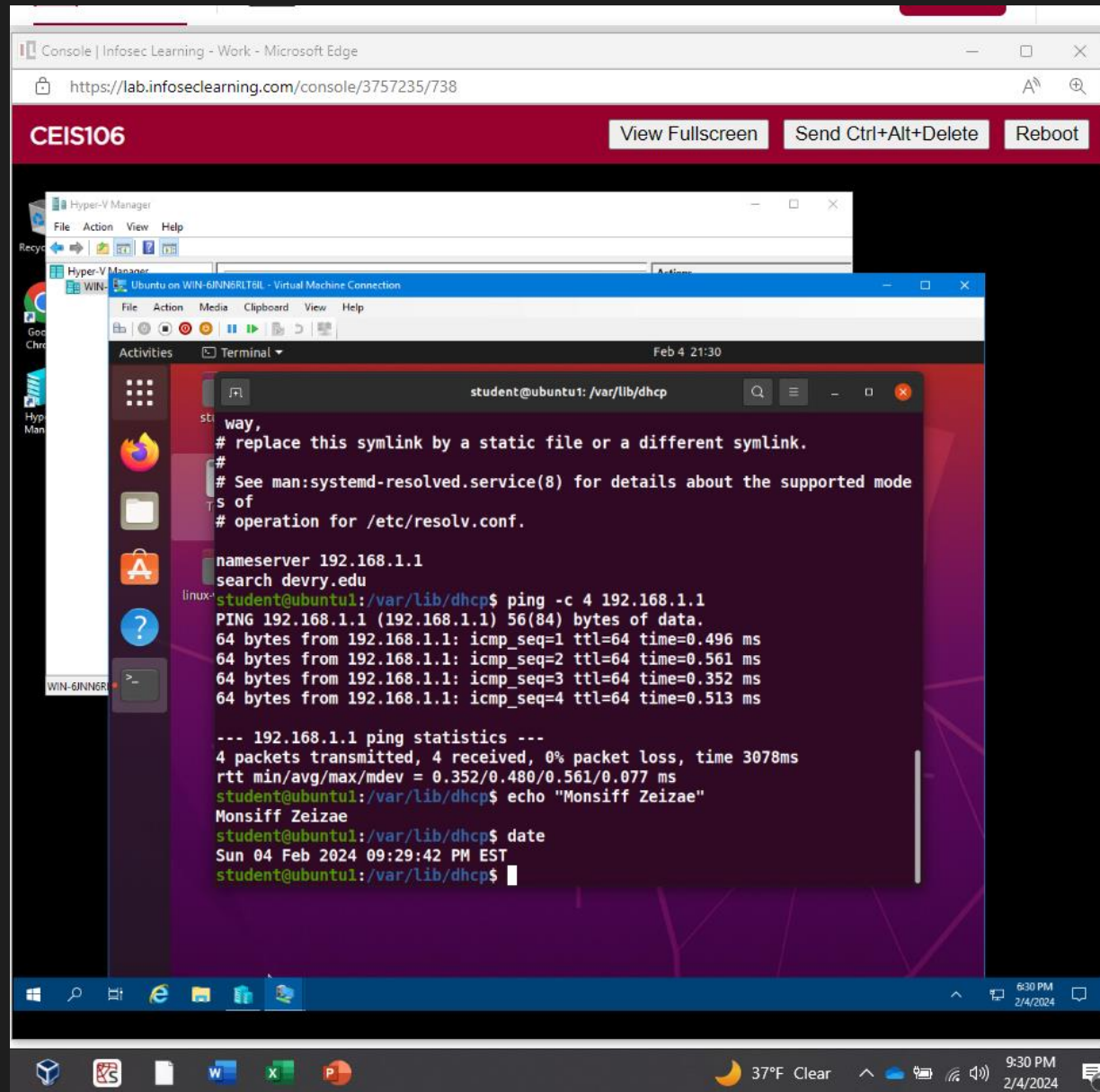


The screenshot shows a virtual machine window titled "Ubuntu on WIN-6JNN6RLT6IL - Virtual Machine Connection". The window has a menu bar with "File", "Action", "Media", "Clipboard", "View", and "Help". Below the menu bar is a toolbar with various icons. The main area displays the Ubuntu desktop with a red and purple background. A terminal window is open in the foreground, showing the following commands and output:

```
john@ubuntu1: ~/Desktop$ cd -
john@ubuntu1:~$ pwd
/home/john
john@ubuntu1:~$ nano .bashrc
john@ubuntu1:~$ source .bashrc
john@ubuntu1:~$ todolist
Enter today's to-do-list (Press ENTER to complete):
1. family 2.family 3.family.
You entered: 1. family 2.family 3.family.
john@ubuntu1:~$ cat MyToDoLists
Sun 28 Jan 2024 08:36:48 PM EST
Today's to-do-list -- 1. family 2.family 3.family.

john@ubuntu1:~$ echo "MONSIEFF ZEIZAE"
MONSIEFF ZEIZAE
john@ubuntu1:~$ date
Sun 28 Jan 2024 08:37:18 PM EST
john@ubuntu1:~$
```

NETWORK CONFIGURATIONS



```
student@ubuntu1: /var/lib/dhcp
way,
# replace this symlink by a static file or a different symlink.
#
# See man:systemd-resolved.service(8) for details about the supported mode
s of
# operation for /etc/resolv.conf.
nameserver 192.168.1.1
search devry.edu
student@ubuntu1: /var/lib/dhcp$ ping -c 4 192.168.1.1
PING 192.168.1.1 (192.168.1.1) 56(84) bytes of data.
64 bytes from 192.168.1.1: icmp_seq=1 ttl=64 time=0.496 ms
64 bytes from 192.168.1.1: icmp_seq=2 ttl=64 time=0.561 ms
64 bytes from 192.168.1.1: icmp_seq=3 ttl=64 time=0.352 ms
64 bytes from 192.168.1.1: icmp_seq=4 ttl=64 time=0.513 ms

--- 192.168.1.1 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3078ms
rtt min/avg/max/mdev = 0.352/0.480/0.561/0.077 ms
student@ubuntu1: /var/lib/dhcp$ echo "Monsiff Zeizae"
Monsiff Zeizae
student@ubuntu1: /var/lib/dhcp$ date
Sun 04 Feb 2024 09:29:42 PM EST
student@ubuntu1: /var/lib/dhcp$
```


USE OF NETWORK UTILITIES

```
student@ubuntu1: ~  
student@ubuntu1:~$ ifconfig eth0  
eth0: flags=4098<BROADCAST,MULTICAST> mtu 1500  
    ether 00:15:5d:00:ba:04 txqueuelen 1000  (Ethernet)  
    RX packets 3337  bytes 259854 (259.8 KB)  
    RX errors 0  dropped 0  overruns 0  frame 0  
    TX packets 5444  bytes 447323 (447.3 KB)  
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0  
  
student@ubuntu1:~$ sudo ifconfig eth0 up  
student@ubuntu1:~$ ifconfig eth0  
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet 192.168.1.107 netmask 255.255.255.0  broadcast 192.168.1.255  
    inet6 fe80::7b9e:ebf5:11a6:34e4 prefixlen 64  scopeid 0x20<link>  
    ether 00:15:5d:00:ba:04 txqueuelen 1000  (Ethernet)  
    RX packets 3354  bytes 261735 (261.7 KB)  
    RX errors 0  dropped 0  overruns 0  frame 0  
    TX packets 5502  bytes 453704 (453.7 KB)  
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0  
  
student@ubuntu1:~$ echo "Monsiff Zeizae"  
Monsiff Zeizae  
student@ubuntu1:~$ date  
Sun 04 Feb 2024 09:43:29 PM EST  
student@ubuntu1:~$
```