

CYSE 301: Cybersecurity Technique and Operations

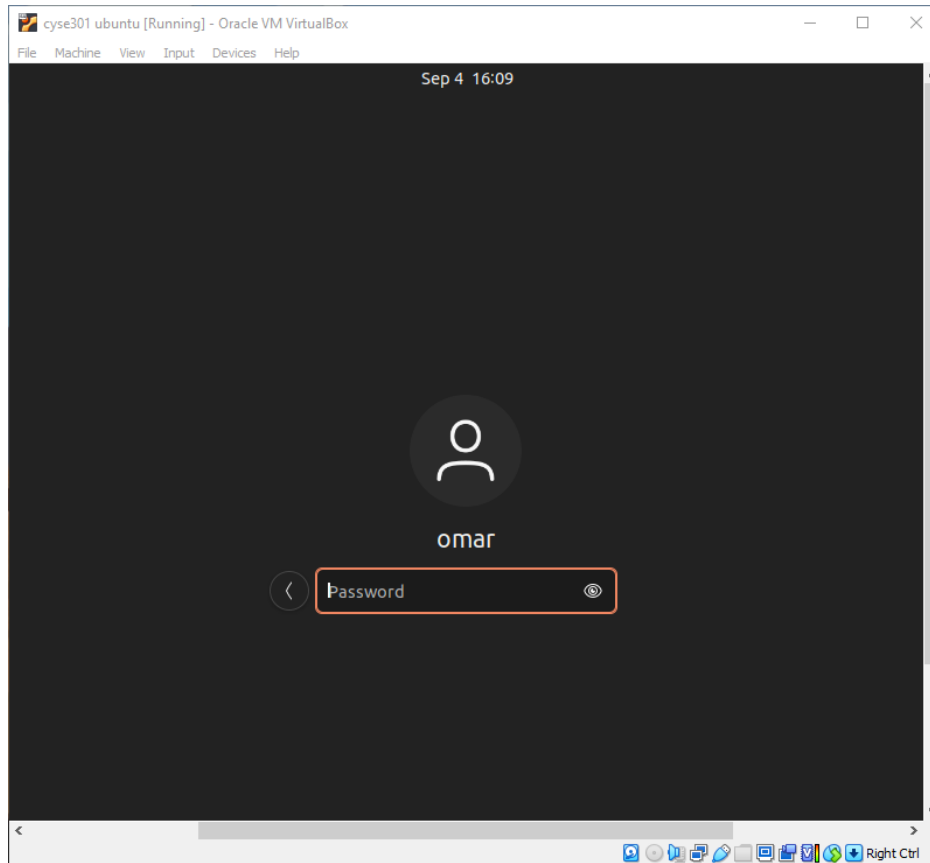
Assignment: Lab 1– Basic Linux commands

Before our CCIA is ready for use, You can configure a Ubuntu Virtual Machine on your computer to practice some basic the Linux skills.

Task A. Get ready with VMs (30 points)

1. Install a Ubuntu 20.04+ VM on your local machine and screenshot the login page.

Hint: You can follow many tutorials online. [Here is one example.](#)



Task B: Practice with Linux Commands

Tip: You can take one screenshot to cover the answer for multiple tasks.

1. How do you find the IP address of your Linux machine using the command line?
ifconfig
2. Display your current directory in a terminal.

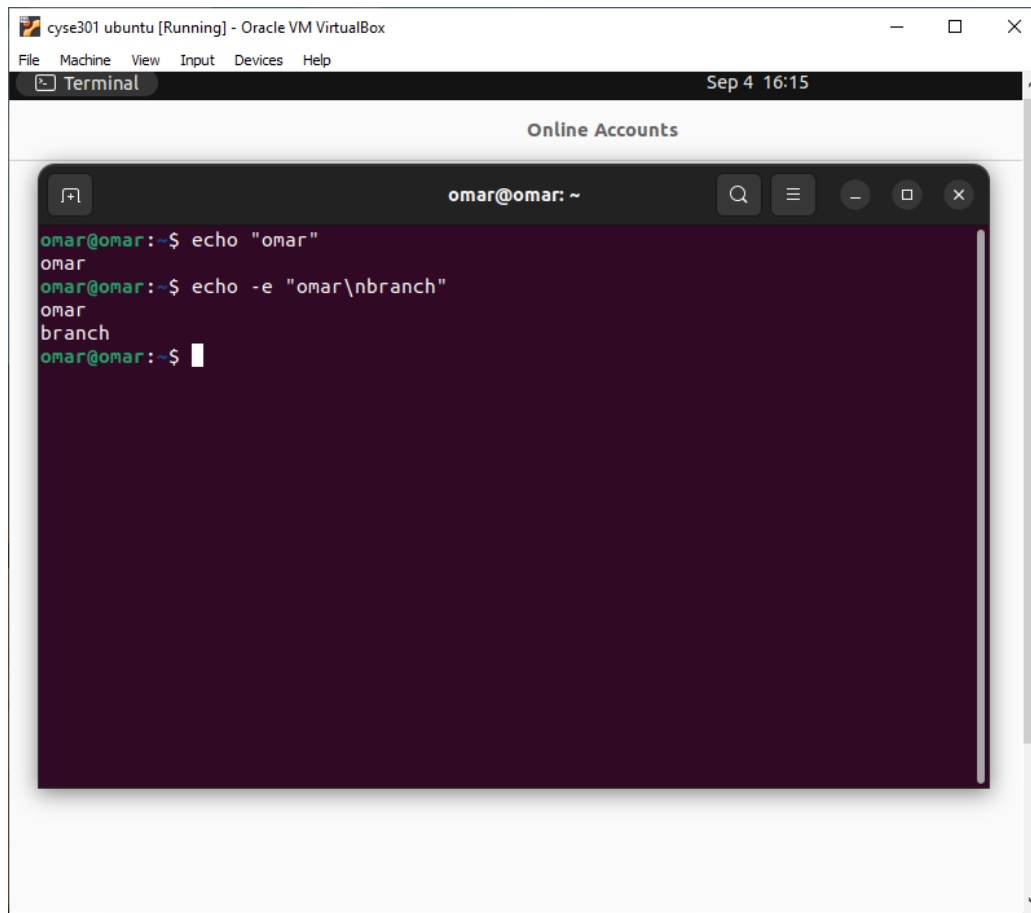
The screenshot shows a terminal window titled "cyse301 ubuntu [Running] - Oracle VM VirtualBox". The terminal is running the "ifconfig" command, displaying details for the "enp0s3" and "lo" interfaces. The "enp0s3" interface is an Ethernet card with IP 10.0.2.15 and MTU 1500. The "lo" interface is a loopback with IP 127.0.0.1 and MTU 65536. After the network configuration, the "pwd" command is executed, showing the current directory as "/home/omar".

```
omar@omar:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fe80::5a3a:daf:fd38:d8e9 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:a8:87:91 txqueuelen 1000 (Ethernet)
    RX packets 9184 bytes 12715518 (12.7 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 2449 bytes 248319 (248.3 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0x10<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 277 bytes 27137 (27.1 KB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 277 bytes 27137 (27.1 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

omar@omar:~$ pwd
/home/omar
omar@omar:~$
```

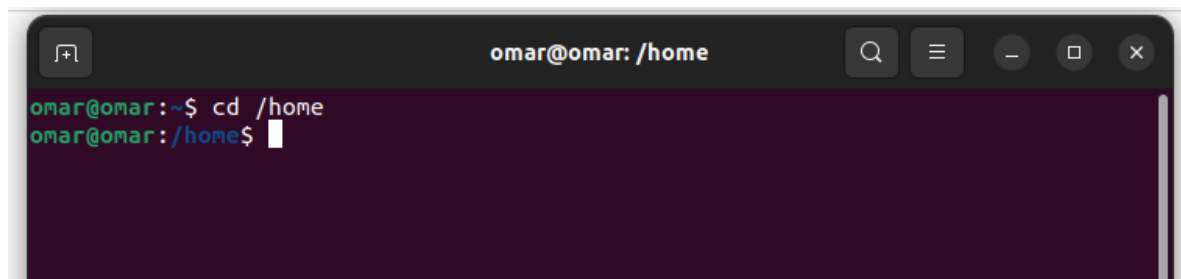
3. Use the **echo** command to print your name to the console.
4. Display your **first and last names in two separate lines** using **a single echo command** (tip: how to enable the interpretation of escape characters?)



The screenshot shows a terminal window titled "cyse301 ubuntu [Running] - Oracle VM VirtualBox". The terminal has a menu bar with "File", "Machine", "View", "Input", "Devices", and "Help". The title bar of the terminal window says "Terminal" and "Sep 4 16:15". The terminal content shows the user "omar" at the prompt "omar@omar: ~". The user enters the command "echo \"omar\"", which outputs "omar". Then, the user enters "echo -e \"omar\\nbranch\"", which outputs "omar" followed by "branch" on a new line. The prompt "omar@omar:~\$" is visible at the end of the output.

```
cyse301 ubuntu [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Terminal Sep 4 16:15
Online Accounts
omar@omar: ~
omar@omar:~$ echo "omar"
omar
omar@omar:~$ echo -e "omar\nbranch"
omar
branch
omar@omar:~$
```

5. How to change to home directory using cd and absolute pathname.



The screenshot shows a terminal window titled "omar@omar: /home". The terminal content shows the user "omar" at the prompt "omar@omar:~\$". The user enters the command "cd /home", which changes the directory to "/home". The prompt now shows "omar@omar: /home\$".

```
omar@omar: /home
omar@omar:~$ cd /home
omar@omar: /home$
```

6. Create a new file named "forXXXX.txt" in your **home** directory (replace "XXXX" with your own MIDAS). Then, use the long listing format to display the contents in your home directory. What is the size of the file you just created?

```
cyse301 ubuntu [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
Terminal Sep 4 16:24

Online Accounts

omar@omar: /home

omar@omar:~$ cd /home
omar@omar:/home$ touch forobran004.txt
touch: cannot touch 'forobran004.txt': Permission denied
omar@omar:/home$ sudo touch forobran004.txt
omar@omar:/home$ ls
forobran004.txt  omar
omar@omar:/home$ ls -l
total 4
-rw-r--r--  1 root root    0 Sep  4 16:23 forobran004.txt
drwxr-x--- 16 omar omar 4096 Sep  4 16:12 omar
omar@omar:/home$
```

7. Create a new directory named “XXXX” in your **home** directory (replace “XXXX” with your own MIDAS). Then, use the **long listing format** to display the contents in your home directory. What is the size of the file you just created?

```
omar@omar: /home

omar@omar:/home$ sudo mkdir obran004
omar@omar:/home$ ls -l
total 8
-rw-r--r--  1 root root    0 Sep  4 16:23 forobran004.txt
drwxr-xr-x  2 root root 4096 Sep  4 16:27 obran004
drwxr-x--- 16 omar omar 4096 Sep  4 16:12 omar
omar@omar:/home$
```

8. Copy **/etc/passwd** file to your home directory. The copy should be named as “passwd_XXXX” (replace “XXXX” with your own MIDAS) in your home directory. Then, complete the following two subtasks:
 - Use the proper command to display the first **six** lines in this file.
 - Search keyword “www” in this file.

```
omar@omar:/home$ sudo cp /etc/passwd ~/passwd_obran004
omar@omar:/home$ head -n 6 ~/passwd_obran004
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
omar@omar:/home$ grep "www" ~/passwd_obran004
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
omar@omar:/home$
```