

Assignment Information			
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Date Submitted:	6/4/19		Course Section:
Course:			

Setup

On the C: drive you should find a VM folder named **COSN205FinalExam**. Browse into the folder and click on the **.vmx** file to start the VM. Log in with the **username student** and **password P@ssw0rd**

Directions

For each phase there is a direction in the left column and a place in the right column to put screenshots and explanations. Show all your work; you should show the commands you used **and** commands that demonstrate it worked. All prior work, your textbook, and the internet are available to you. You may not communicate with other students.

Phase 1	
Who are you? Where are you? What do you see?	<pre>student@COSN205Final:~\$ whoami student student@COSN205Final:~\$ pwd /home/student student@COSN205Final:~\$ ls student@COSN205Final:~\$</pre>
Create a directory called final	<pre>student@COSN205Final:~\$ mkdir final student@COSN205Final:~\$ ls final student@COSN205Final:~\$</pre>
Change into the final directory	<pre>student@COSN205Final:~\$ cd final student@COSN205Final:~/final\$ pwd /home/student/final student@COSN205Final:~/final\$</pre>

<p>Create a file named declaration and fill it with the text “When in the Course of human events, it becomes necessary for one people to dissolve the political bands which have connected them with another” Then display the contents of declaration</p>	<pre>student@COSN205Final:~/final\$ echo "When in the Course of human events e people to dissolve the political bands which have connected them wit student@COSN205Final:~/final\$ ls declaration student@COSN205Final:~/final\$ cat declaration When in the Course of human events, it becomes neccessary for one peop ands which have connected them with another student@COSN205Final:~/final\$ _</pre>
<p>Numerically give read and write permissions to declaration</p>	<pre>student@COSN205Final:~/final\$ ls -l total 4 -rw-rw-r-- 1 student student 144 Jun 4 13:05 declaration student@COSN205Final:~/final\$ chmod 666 declaration student@COSN205Final:~/final\$ ls -l total 4 -rw-rw-rw- 1 student student 144 Jun 4 13:05 declaration student@COSN205Final:~/final\$</pre>
<p>Copy the /etc/os-release file into your current working directory</p>	<pre>student@COSN205Final:~/final\$ cp /etc/os-release os-releas student@COSN205Final:~/final\$ ls declaration os-release-copy student@COSN205Final:~/final\$</pre>
<p>Using one command, print all of os-release's lines that contain URL to the terminal</p>	<pre>student@COSN205Final:~/final\$ cat os-release-copy grep U HOME_URL="http://www.ubuntu.com/" SUPPORT_URL="http://help.ubuntu.com/" BUG_REPORT_URL="http://bugs.launchpad.net/ubuntu/" student@COSN205Final:~/final\$</pre>
<p>Print only the first 3 lines of os-release to the terminal</p>	<pre>student@COSN205Final:~/final\$ head -3 os-release-copy NAME="Ubuntu" VERSION="16.04.3 LTS (Xenial Xerus)" ID=ubuntu student@COSN205Final:~/final\$ _</pre>

Print only the last 3 lines of os-release to the terminal	<pre>student@COSN205Final:~/final\$ tail -3 os-release-copy BUG_REPORT_URL="http://bugs.launchpad.net/ubuntu/" VERSION_CODENAME=xenial UBUNTU_CODENAME=xenial student@COSN205Final:~/final\$ _</pre>
Open os-release in vim and tell me how many characters are in the file?	<p>298 characters</p> <pre>"os-release-copy" 11L, 298C</pre>
Still in vim, what command would delete the first 5 lines? (as you experiment, remember that the u command will undo any changes you make)	5dd\$
Still in vim, what command will take your cursor to the end of the line?	\$
Still in vim, what command will delete 5 words?	5x
<p>Still in vim, turn on search highlighting with the command :set hlsearch</p> <p>What is the regular expression that highlights everything to the left of the equal sign, inclusive</p>	
<p>For extra credit:</p> <p>Still in vim, what is the regular expression that highlights everything to the left of the equal sign, excluding the equal sign</p>	

Create 2 new users with the usernames mario and luigi	<p>Forgot to take screenshot but used sudo adduser mario</p> <pre>student@COSN205Final:~/final\$ sudo useradd mario useradd: user 'mario' already exists student@COSN205Final:~/final\$ _</pre> <pre>student@COSN205Final:~/final\$ sudo useradd luigi student@COSN205Final:~/final\$ sudo passwd luigi Enter new UNIX password: Retype new UNIX password: passwd: password updated successfully student@COSN205Final:~/final\$ _</pre>
Set their passwords to P@ssw0rd	<pre>student@COSN205Final:~/final\$ sudo passwd mario Enter new UNIX password: Retype new UNIX password: passwd: password updated successfully student@COSN205Final:~/final\$ _</pre> <pre>student@COSN205Final:~/final\$ sudo cat /etc/shadow grep mario mario:\$6\$prV6e906\$z.jKfLRed15GWPodlV71zSOYb0gIxVLnu52P1cRJ510uXpMnAWt' P6./:18051:0:99999:7::: student@COSN205Final:~/final\$ sudo cat /etc/shadow grep luigi luigi:\$6\$tFfaGtyd\$MepMSuMfWTXar0gYAVm/SSohGMBQqQT51u9e.jfzyWT0LpgXSUa20 SNe0:18051:0:99999:7::: student@COSN205Final:~/final\$</pre>
Create a new group called plumbers	<pre>student@COSN205Final:~/final\$ sudo groupadd plumbers student@COSN205Final:~/final\$ _</pre>
Add both new users to the new group	<pre>student@COSN205Final:~/final\$ sudo usermod -a -G plumbers student@COSN205Final:~/final\$ sudo usermod -a -G plumbers student@COSN205Final:~/final\$</pre>
Show that they are part of the group	<pre>student@COSN205Final:~/final\$ cat /etc/group grep plumbers plumbers:x:1003:mario,luigi student@COSN205Final:~/final\$ _</pre>

Show your prior bash commands

```
24 cp /etc/os-release
25 cp /etc/os-release os-release-copy
26 ls
27 clear
28 cat os-release-copy | grep URL
29 clear
30 head -3 os-release-copy
31 tail -3 os-release-copy
32 clear
33 vi os-release-copy
34 clear
35 vi os-release-copy
36 clear
37 vi os-release-copy
38 clear
39 adduser
40 sudo adduser mario
41 sudo useradd
42 sudo useradd luigi
43 sudo passwd luigi
44 up
45 less
46 sudo useradd mario
47 clear
48 sudo groupadd plumbers
49 sudo passwd luigi mario
50 sudo passwd mario
51 clear
52 sudo usermod -a -G plumbers mario
53 sudo usermod -a -G plumbers luigi
54 clear
55 cat /etc/group | grep plumbers
56 sudo cat /etc/shadow | grep mario
57 sudo cat /etc/shadow | grep luigi
58 clear
59 history
student@COSN205Final:~/final$ _
```

Using one command, find where you have used **echo** in the past

```
student@COSN205Final:~/final$ history | grep echo
17 echo "When in the Course of human events, it becomes neccessary
e political bands which have connected them with another" > decleratio
60 history | grep echo
student@COSN205Final:~/final$
```

<p>Show all processes currently running</p>	<pre> USER PID %CPU %MEM USZ RSS TTY STAT START TIME root 1 0.1 0.5 37588 5616 ? Ss 13:00 0:01 root 2 0.0 0.0 0 0 ? S 13:00 0:00 root 3 0.0 0.0 0 0 ? S 13:00 0:00 root 5 0.0 0.0 0 0 ? S< 13:00 0:00 root 7 0.0 0.0 0 0 ? S 13:00 0:00 root 8 0.0 0.0 0 0 ? S 13:00 0:00 root 9 0.0 0.0 0 0 ? S 13:00 0:00 root 10 0.0 0.0 0 0 ? S 13:00 0:00 root 11 0.0 0.0 0 0 ? S 13:00 0:00 root 12 0.0 0.0 0 0 ? S< 13:00 0:00 root 13 0.0 0.0 0 0 ? S< 13:00 0:00 root 14 0.0 0.0 0 0 ? S 13:00 0:00 root 15 0.0 0.0 0 0 ? S< 13:00 0:00 root 16 0.0 0.0 0 0 ? SN 13:00 0:00 root 17 0.0 0.0 0 0 ? SN 13:00 0:00 root 18 0.0 0.0 0 0 ? S< 13:00 0:00 root 19 0.0 0.0 0 0 ? S< 13:00 0:00 root 20 0.0 0.0 0 0 ? S< 13:00 0:00 root 21 0.0 0.0 0 0 ? S< 13:00 0:00 root 22 0.0 0.0 0 0 ? S< 13:00 0:00 root 23 0.0 0.0 0 0 ? S< 13:00 0:00 root 24 0.0 0.0 0 0 ? S< 13:00 0:00 root 28 0.0 0.0 0 0 ? S 13:00 0:00 root 29 0.0 0.0 0 0 ? S< 13:00 0:00 root 30 0.0 0.0 0 0 ? S 13:00 0:00 root 31 0.0 0.0 0 0 ? S 13:00 0:00 root 47 0.0 0.0 0 0 ? S< 13:00 0:00 root 48 0.0 0.0 0 0 ? S< 13:00 0:00 root 49 0.0 0.0 0 0 ? S< 13:00 0:00 root 50 0.0 0.0 0 0 ? S< 13:00 0:00 root 51 0.0 0.0 0 0 ? S< 13:00 0:00 root 52 0.0 0.0 0 0 ? S< 13:00 0:00 root 53 0.0 0.0 0 0 ? S< 13:00 0:00 root 54 0.0 0.0 0 0 ? S< 13:00 0:00 root 55 0.0 0.0 0 0 ? S< 13:00 0:00 student@COSN205Final:~/final\$ ps axu less </pre>
<p>Show all your processes currently running</p>	<pre> student@COSN205Final:~/final\$ ps PID TTY TIME CMD 1581 tty1 00:00:00 bash 1729 tty1 00:00:00 ps student@COSN205Final:~/final\$ </pre>
<p>Start sleep in the background for 3 minutes. What is its process number and what is its job number?</p>	<pre> student@COSN205Final:~/final\$ sleep 3m & [1] 1734 student@COSN205Final:~/final\$ _ </pre> <p>Process [1] job number 1734</p>

Kill that process	<pre> student@COSN205Final:~/final\$ kill 1734 student@COSN205Final:~/final\$ ps PID TTY TIME CMD 1581 tty1 00:00:00 bash 1735 tty1 00:00:00 ps [1]+ Terminated sleep 3m student@COSN205Final:~/final\$ _ </pre>	
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Phase 4		
What are ALL the IP and MAC addresses of this VM?	<pre> student@COSN205Final:~/final\$ ifconfig ens33 Link encap:Ethernet HWaddr 00:0c:29:64:61:16 inet addr:192.168.200.136 Bcast:192.168.200.255 Mas inet6 addr: fe80::20c:29ff:fe64:6116/64 Scope:Link UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:4883 errors:0 dropped:0 overruns:0 frame:0 TX packets:2462 errors:0 dropped:0 overruns:0 carrier collisions:0 txqueuelen:1000 RX bytes:7114328 (7.1 MB) TX bytes:163068 (163.0 KB) lo Link encap:Local Loopback inet addr:127.0.0.1 Mask:255.0.0.0 inet6 addr: ::1/128 Scope:Host UP LOOPBACK RUNNING MTU:65536 Metric:1 RX packets:160 errors:0 dropped:0 overruns:0 frame:0 TX packets:160 errors:0 dropped:0 overruns:0 carrier collisions:0 txqueuelen:1 RX bytes:11840 (11.8 KB) TX bytes:11840 (11.8 KB) student@COSN205Final:~/final\$ _ </pre>	
How would you prove you can connect to 8.8.8.8 ? Do it.	<pre> student@COSN205Final:~/final\$ ping -c3 8.8.8.8 PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data. 64 bytes from 8.8.8.8: icmp_seq=1 ttl=128 time=2.75 ms 64 bytes from 8.8.8.8: icmp_seq=2 ttl=128 time=2.52 ms 64 bytes from 8.8.8.8: icmp_seq=3 ttl=128 time=2.37 ms --- 8.8.8.8 ping statistics --- 3 packets transmitted, 3 received, 0% packet loss, time 2005 rtt min/avg/max/mdev = 2.371/2.552/2.758/0.158 ms student@COSN205Final:~/final\$ _ </pre>	

<p>Take your Ethernet card down; show that it's down.</p>	<pre>student@COSN205Final:~/final\$ ifdown ens33 ifdown: failed to open lockfile /run/network/ifstate.ens33: Perm student@COSN205Final:~/final\$ sudo ifdown ens33 Killed old client process Internet Systems Consortium DHCP Client 4.3.3 Copyright 2004-2015 Internet Systems Consortium. All rights reserved. For info, please visit https://www.isc.org/software/dhcp/ Listening on LPF/ens33/00:0c:29:64:61:16 Sending on LPF/ens33/00:0c:29:64:61:16 Sending on Socket/fallback DHCPRELEASE on ens33 to 192.168.200.254 port 67 (xid=0x29fee569) student@COSN205Final:~/final\$ ifconfig lo Link encap:Local Loopback inet addr:127.0.0.1 Mask:255.0.0.0 inet6 addr: ::1/128 Scope:Host UP LOOPBACK RUNNING MTU:65536 Metric:1 RX packets:160 errors:0 dropped:0 overruns:0 frame:0 TX packets:160 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1 RX bytes:11840 (11.8 KB) TX bytes:11840 (11.8 KB) student@COSN205Final:~/final\$ _</pre>
<p>Can you connect to 8.8.8.8 now? Why or why not?</p>	<pre>student@COSN205Final:~/final\$ ping -c3 8.8.8.8 connect: Network is unreachable student@COSN205Final:~/final\$ _</pre> <p>There is no Ethernet card running</p>

Bring your Ethernet card back up	<pre> student@COSN205Final:~/final\$ sudo ifup ens33 Internet Systems Consortium DHCP Client 4.3.3 Copyright 2004-2015 Internet Systems Consortium. All rights reserved. For info, please visit https://www.isc.org/software/dhcp/ Listening on LPF/ens33/00:0c:29:64:61:16 Sending on LPF/ens33/00:0c:29:64:61:16 Sending on Socket/fallback DHCPDISCOVER on ens33 to 255.255.255.255 port 67 interval 3 (xid=0x812 DHCPREQUEST of 192.168.200.136 on ens33 to 255.255.255.255 port 67 (xi DHCPOFFER of 192.168.200.136 from 192.168.200.254 DHCPACK of 192.168.200.136 from 192.168.200.254 bound to 192.168.200.136 -- renewal in 854 seconds. student@COSN205Final:~/final\$ ifconfig ens33 Link encap:Ethernet HWaddr 00:0c:29:64:61:16 inet addr:192.168.200.136 Bcast:192.168.200.255 Mask:255.2 inet6 addr: fe80::20c:29ff:fe64:6116/64 Scope:Link UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1 RX packets:4893 errors:0 dropped:0 overruns:0 frame:0 TX packets:2477 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1000 RX bytes:7115670 (7.1 MB) TX bytes:165136 (165.1 KB) lo Link encap:Local Loopback inet addr:127.0.0.1 Mask:255.0.0.0 inet6 addr: ::1/128 Scope:Host UP LOOPBACK RUNNING MTU:65536 Metric:1 RX packets:176 errors:0 dropped:0 overruns:0 frame:0 TX packets:176 errors:0 dropped:0 overruns:0 carrier:0 collisions:0 txqueuelen:1 RX bytes:13024 (13.0 KB) TX bytes:13024 (13.0 KB) student@COSN205Final:~/final\$ </pre>
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Phase 5	
Explain the first line of any script file	<pre>#!/usr/bin/python3.5</pre> <p>This lets the script file know where the compiler is located on the machine</p>
Write a python or bash script that will print the numbers from 0 to 999. Show the contents of the script and the output running it here.	<pre> student@COSN205Final:~/final\$ cat script.py #!/usr/bin/python3.5 mylist = range(0,1000) for number in mylist: print(number) </pre>

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Write a python or bash script that will ask the user for a number between 1 and 10, then print a non-obscene message that number of times. Show the contents of the script and the output running it here.

```
student@COSN205Final:~/final$ cat script.py
#!/usr/bin/python3.5

number = input("Type a number between 0 and 10: ")

print("Printing message " + number + " times")

x = 0

while x < (float(number)):
    print("This is a while loop")
    x += 1
student@COSN205Final:~/final$ ./script.py
Type a number between 0 and 10: 5
Printing message 5 times
This is a while loop
This is a while loop
This is a while loop
This is a while loop
This is a while loop
student@COSN205Final:~/final$
```

Write a python or bash script that will iterate over the files in a directory, printing out "File number X is BLAH" with X being the number and BLAH being the file name. Show the contents of the script and the output running it here.

Did not find a way to do it but this is the closest I got with google.

```
student@COSN205Final:~/final$ cat script.py
#!/usr/bin/python3.5

import os

PATH = /home/student/final

for path, dirs, files in os.walk(PATH):
    for dirname in dirs:
        print (os.path.join(path,dirname))
student@COSN205Final:~/final$ ./script.py
File "./script.py", line 5
    PATH = /home/student/final
           ^
SyntaxError: invalid syntax
student@COSN205Final:~/final$ _
```