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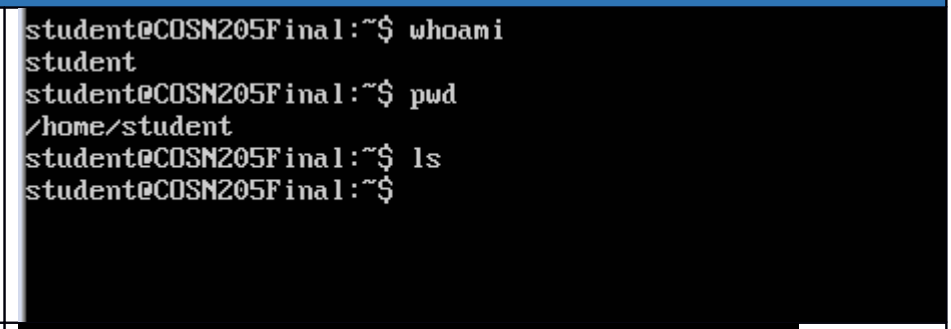
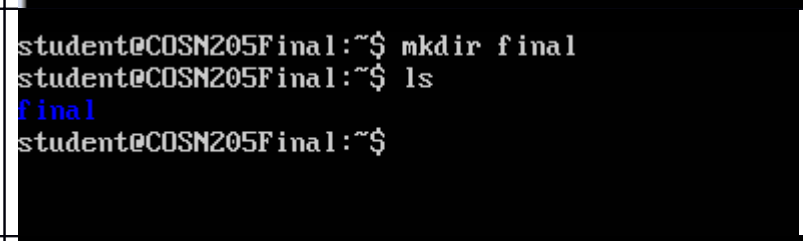
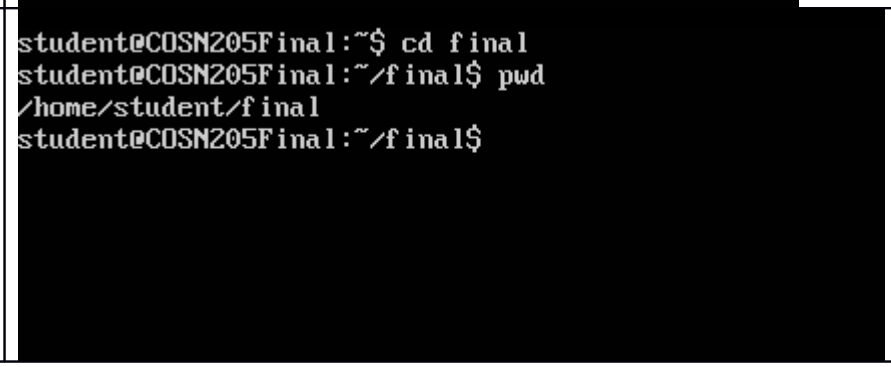
Date Submitted:	6/4/19		Course Section:
Course:			

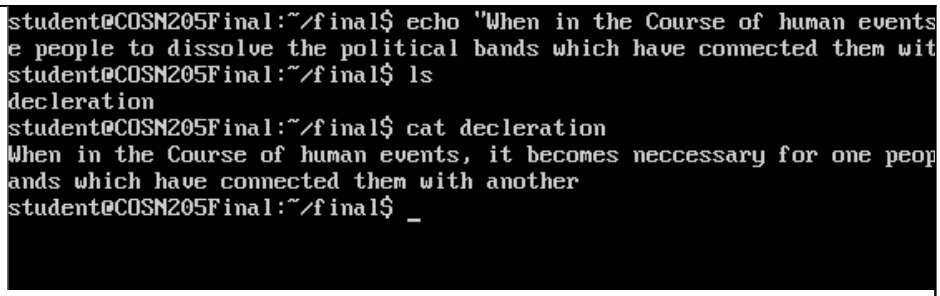
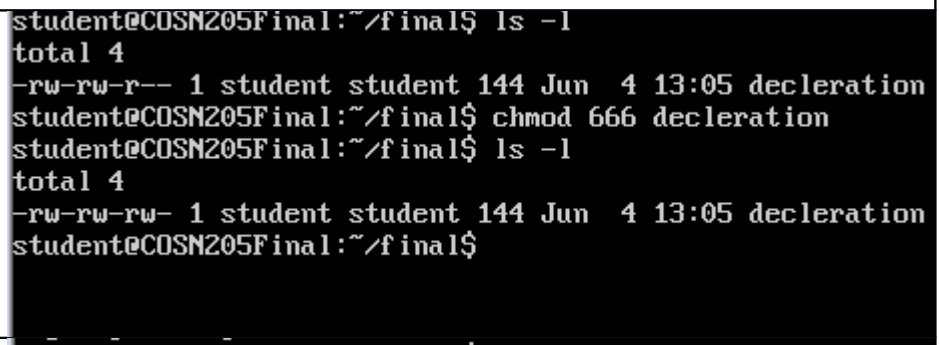
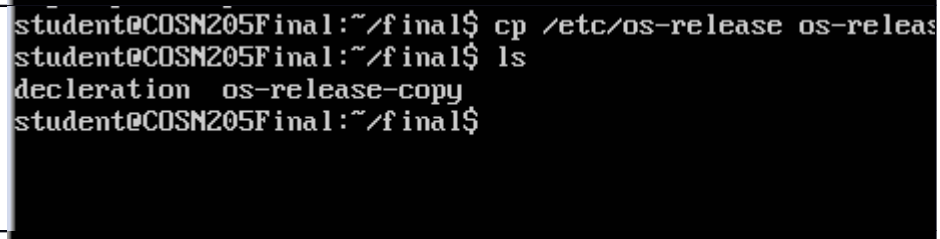
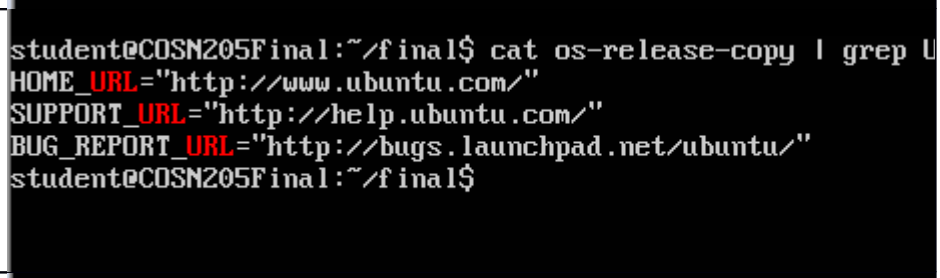
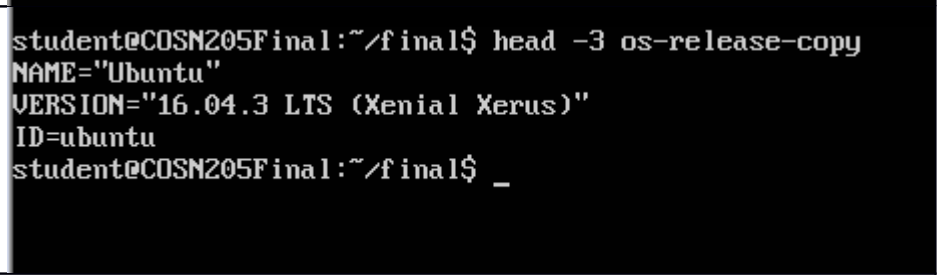
Setup

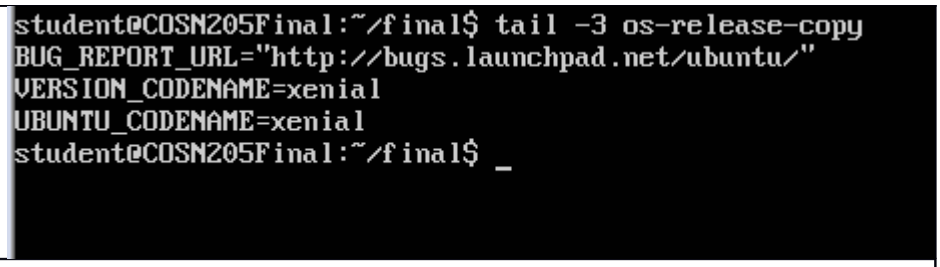
On the C: drive you should find a VM folder named **COSN205FinalExam**. Browse into the folder and click on the **.vmx** file to start the VM. Log in with the username `student` and password `P@ssw0rd`

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?	
Create a directory called **final**	
Change into the **final** directory	

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**	
Numerically give read and write permissions to **declaration**	
Copy the **/etc/os-release** file into your current working directory	
Using one command, print all of **os-release**'s lines that contain **URL** to the terminal	
Print only the first 3 lines of **os-release** to the terminal	

Print only the last 3 lines of **os-release** to the terminal	
Open **os-release** in vim and tell me how many characters are in the file?	298 characters 
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 curser to the end of the line?	$
Still in vim, what command will delete 5 words?	5x
Still in vim, turn on search highlighting with the command **:set hlsearch** What is the regular expression that highlights everything to the left of the equal sign, inclusive	
For extra credit: Still in vim, what is the regular expression that highlights everything to the left of the equal sign, excluding the equal sign	

Phase 2

Create 2 new users with the usernames **mario** and **luigi**	Forgot to take screenshot but used sudo adduser mario
	`student@COSN205Final:~/final$ sudo useradd mario`
	`useradd: user 'mario' already exists`
	`student@COSN205Final:~/final$ _`
	
	`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$ _`

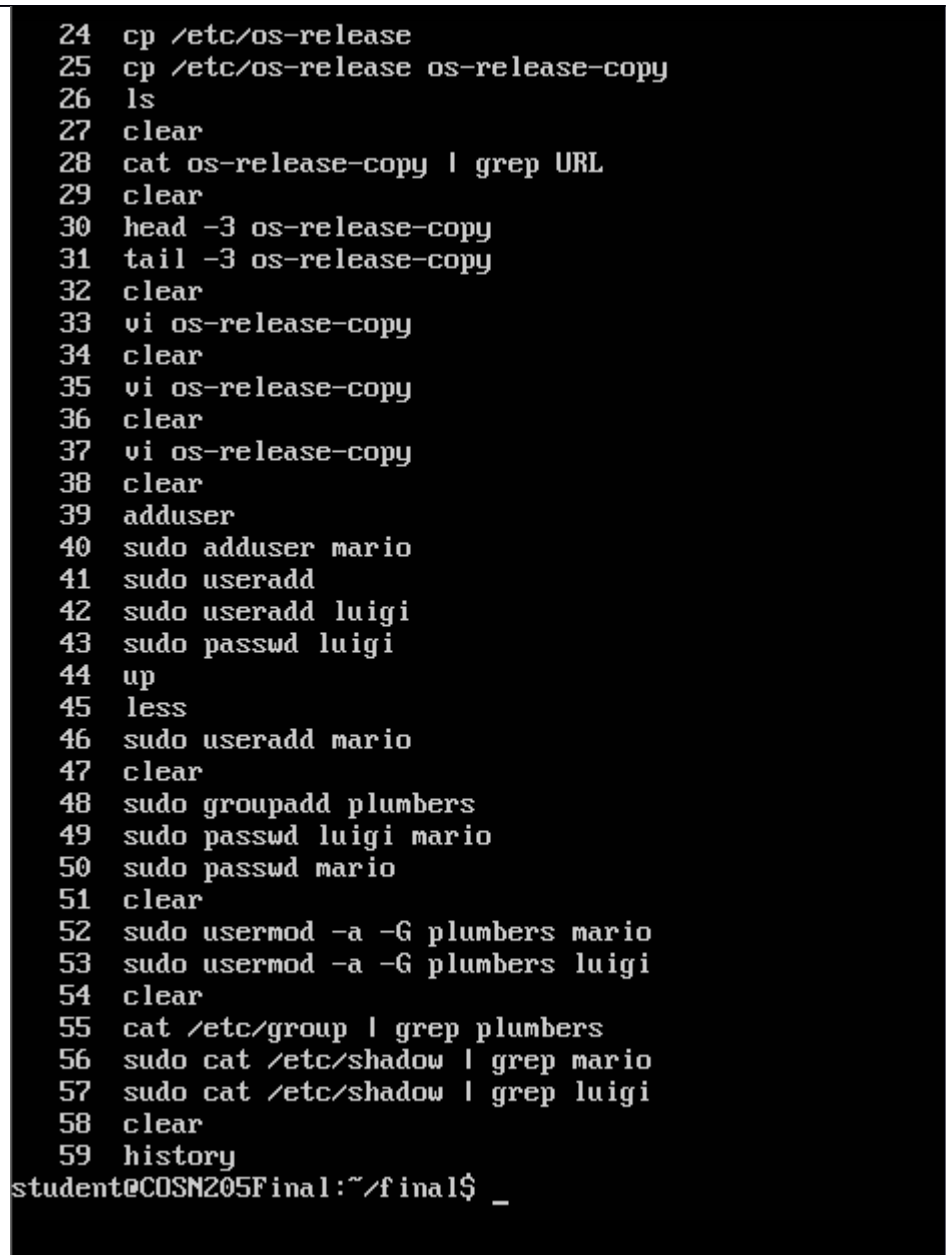
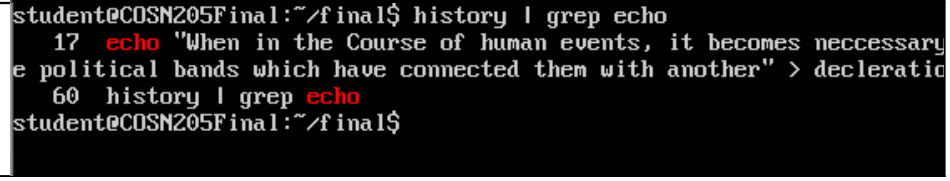
Set their passwords to **P@ssw0rd**	`student@COSN205Final:~/final$ sudo passwd mario`
	`Enter new UNIX password:`
	`Retype new UNIX password:`
	`passwd: password updated successfully`
	`student@COSN205Final:~/final$ _`
	
	`student@COSN205Final:~/final$ sudo cat /etc/shadow | grep mario`
	`mario:$6$prV6e9O6$zjKfLRed15GWPodlVm71zSOYb0gIxVLnu52PIcRJ510uXpMnAWt`
	`P6./:18051:0:99999:7:::`
	`student@COSN205Final:~/final$ sudo cat /etc/shadow | grep luigi`
	`luigi:$6$tFfaGtyd$MepMSuMfWTXar0gYAVm/SSohGMBQqQT51u9ejfzyWT0LpgXSVa2`
	`SMe0:18051:0:99999:7:::`
	`student@COSN205Final:~/final$`

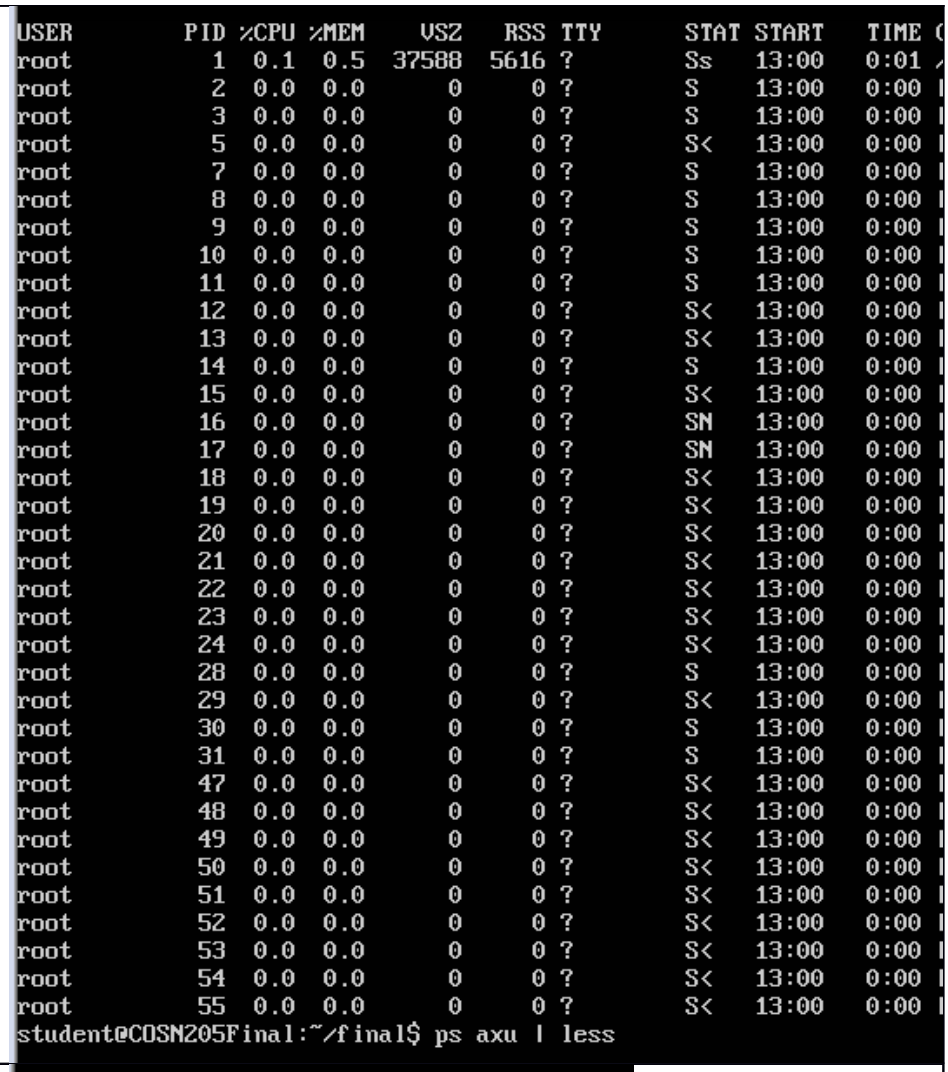
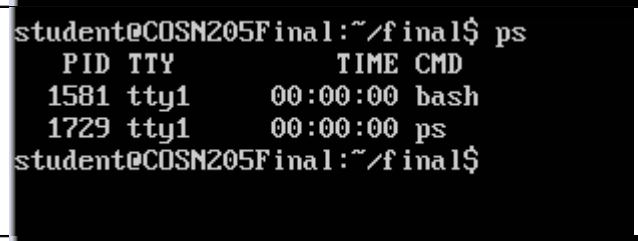
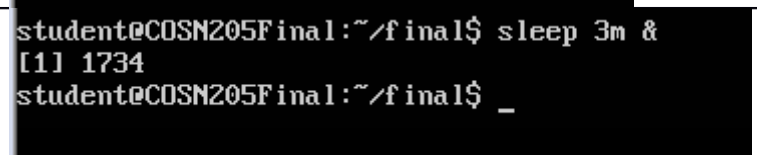
Create a new group called **plumbers**	`student@COSN205Final:~/final$ sudo groupadd plumbers` `student@COSN205Final:~/final$ _`

Add both new users to the new group	`student@COSN205Final:~/final$ sudo usermod -a -G plumbers`
	`student@COSN205Final:~/final$ sudo usermod -a -G plumbers`
	`student@COSN205Final:~/final$`

Show that they are part of the group	`student@COSN205Final:~/final$ cat /etc/group | grep plumb`
	`plumbers:x:1003:mario,luigi`
	`student@COSN205Final:~/final$ _`

Phase 3

Show your prior bash commands	
Using one command, find where you have used **echo** in the past	

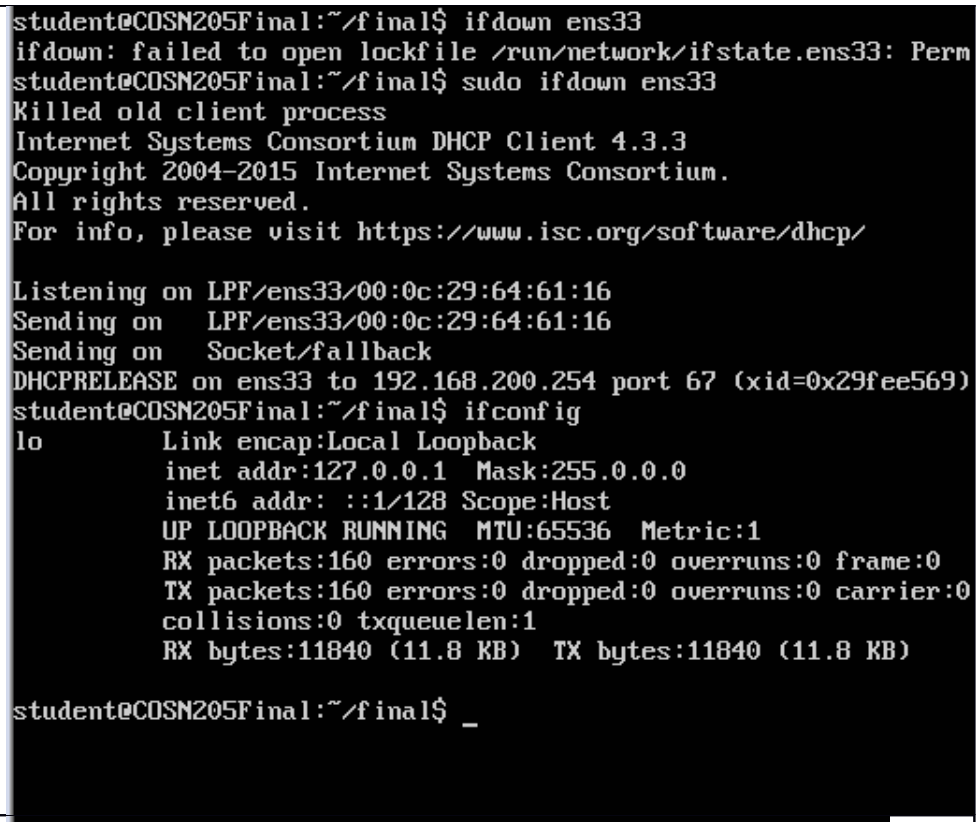
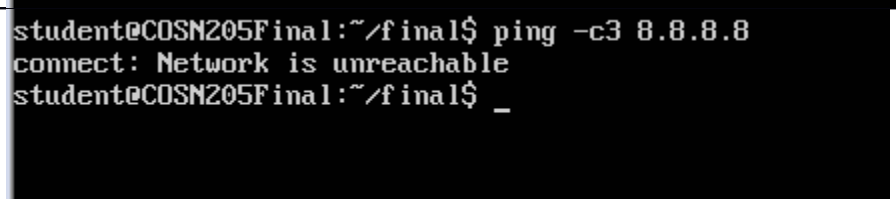
Show all processes currently running	
Show all **your** processes currently running	
Start **sleep** in the background for 3 minutes. What is its process number and what is its job number?	 Process [1] job number 1734

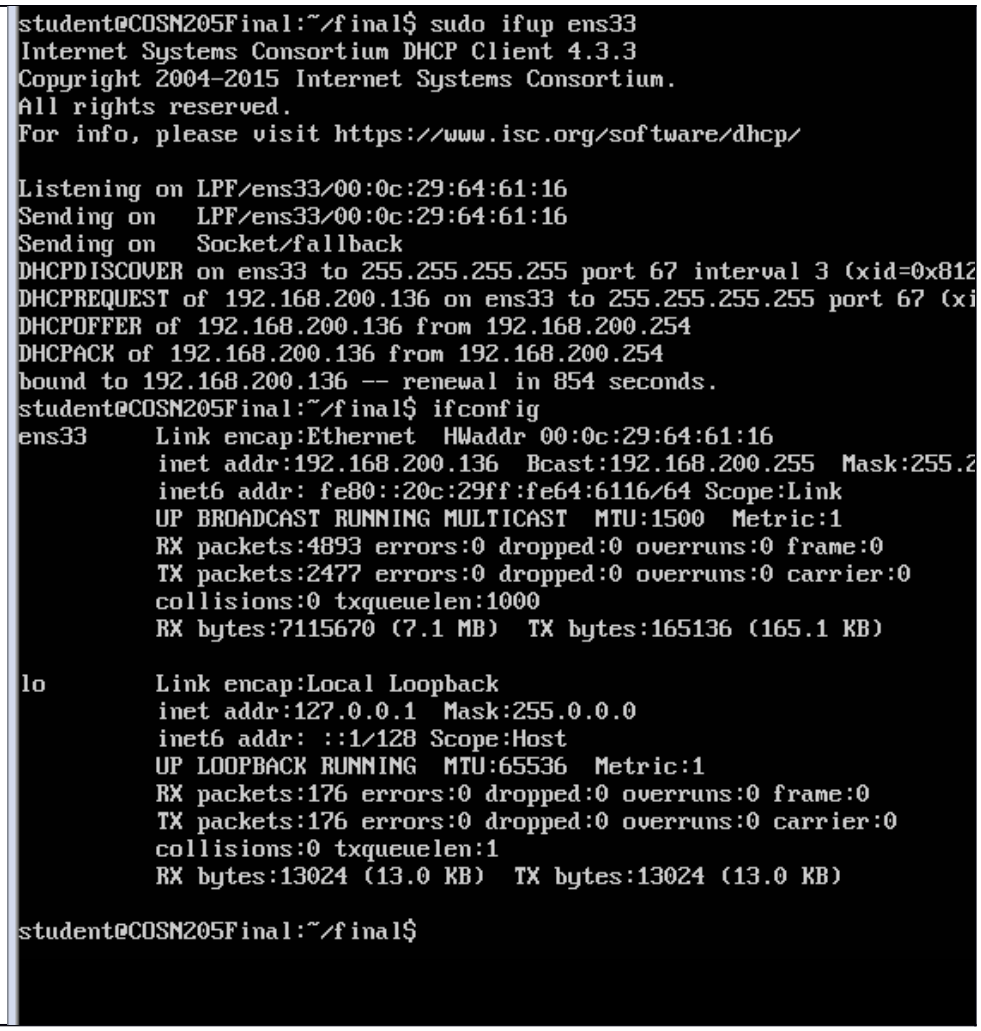
Kill that process	student@COSN205Final:~/final$ kill 1734
	student@COSN205Final:~/final$ ps
	  PID TTY TIME CMD
	  1581 tty1 00:00:00 bash
	  1735 tty1 00:00:00 ps
	[1]+ Terminated sleep 3m
	student@COSN205Final:~/final$ _

Phase 4	

What are ALL the IP and MAC addresses of this VM?	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$ _

How would you prove you can connect to 8.8.8.8? Do it.	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$ _

Take your Ethernet card down; show that it's down.	
Can you connect to 8.8.8.8 now? Why or why not?	 There is no Ethernet card running

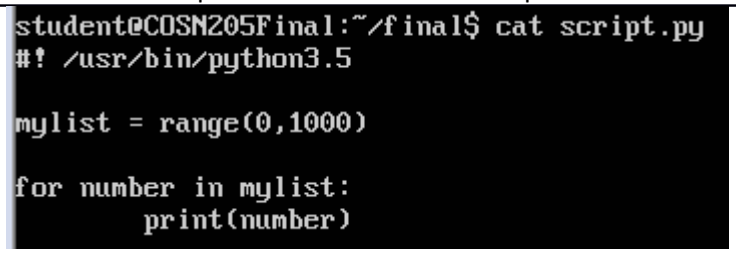
Bring your Ethernet card back up	

```
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$
```

Phase 5	
Explain the first line of any script file	#! /usr/bin/python3.5 This lets the script file know where the compiler is located on the machine
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.	

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

mylist = range(0,1000)

for number in mylist:
        print(number)
```

	972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999

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, iles 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$ _
```