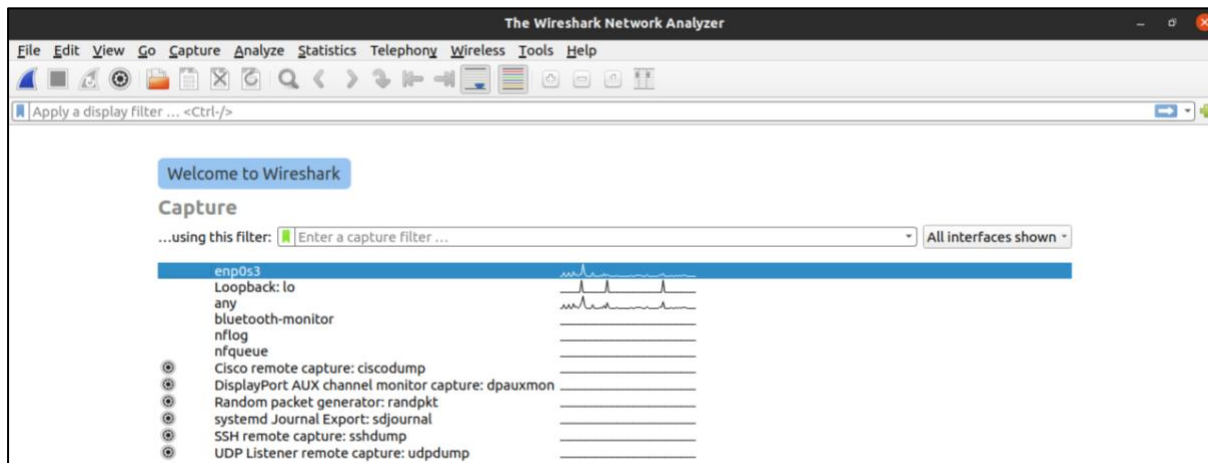
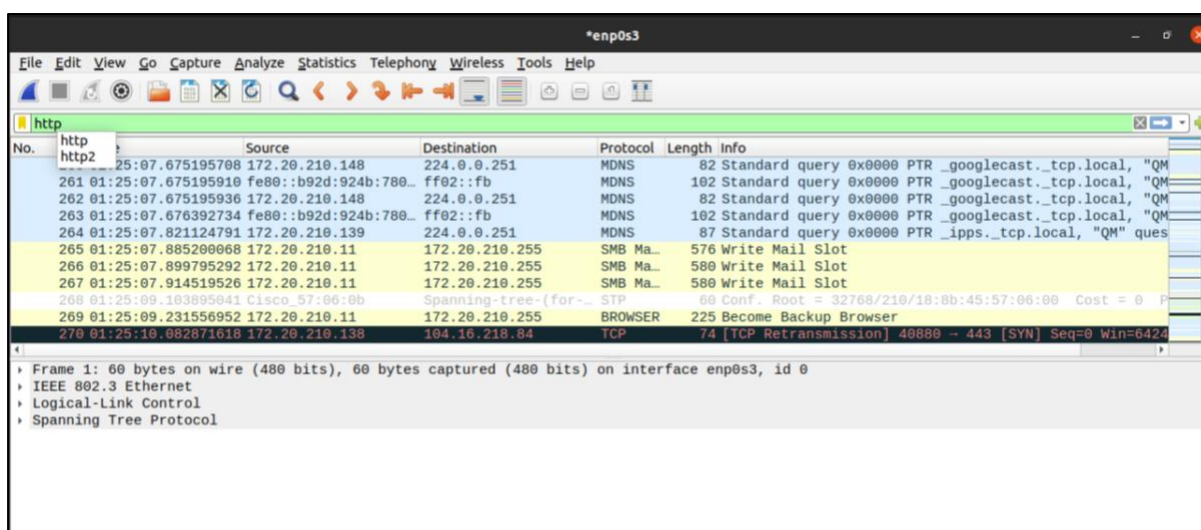
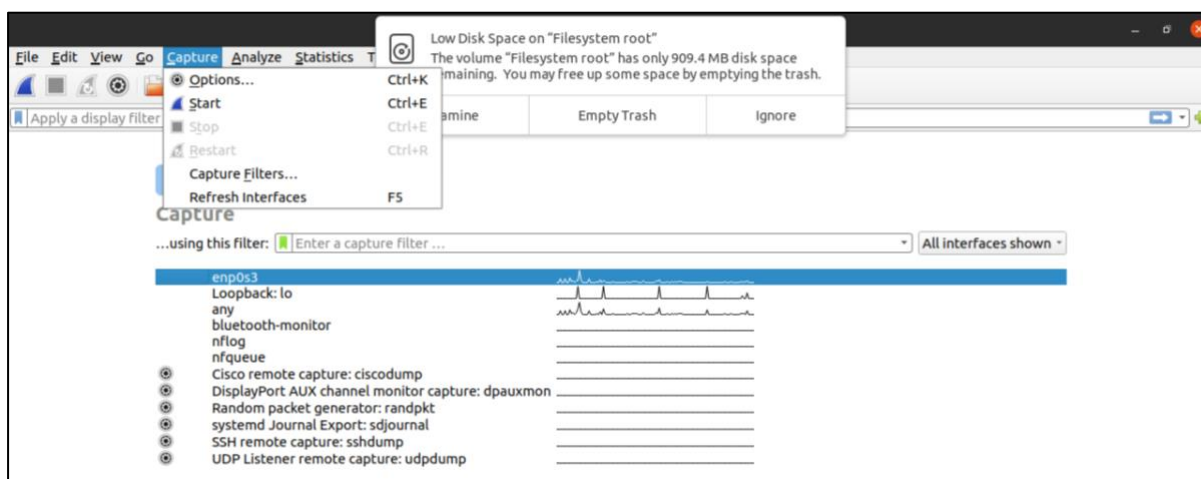


1a) Packet Sniffing Basics in non – promiscuous mode:

```
student@ubuntu: ~/Desktop
student@ubuntu:~/Desktop$ wireshark
```

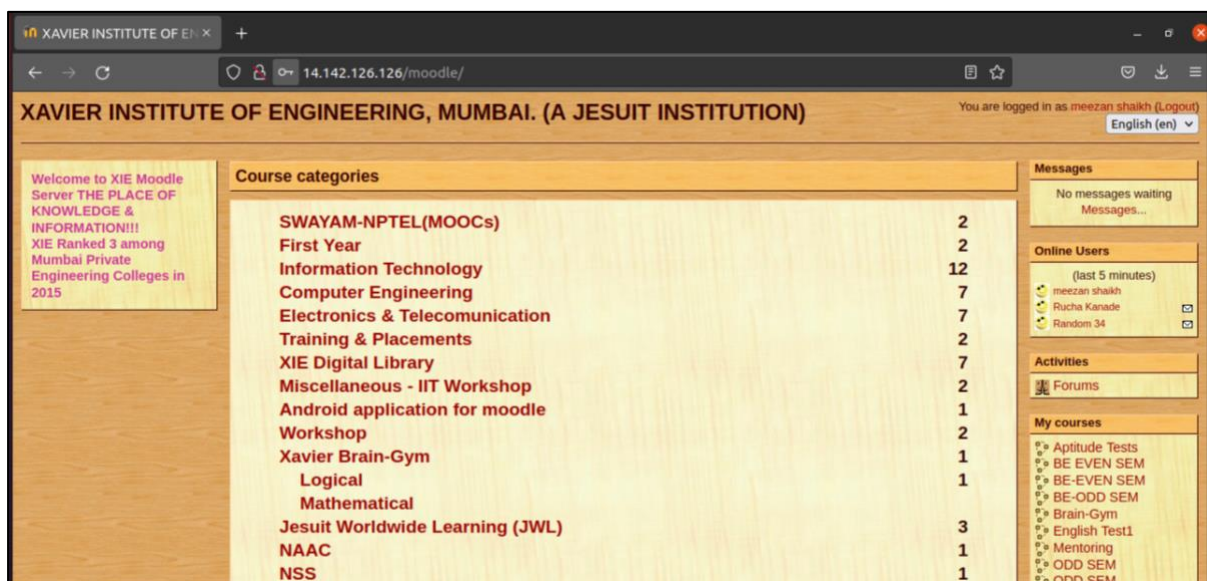
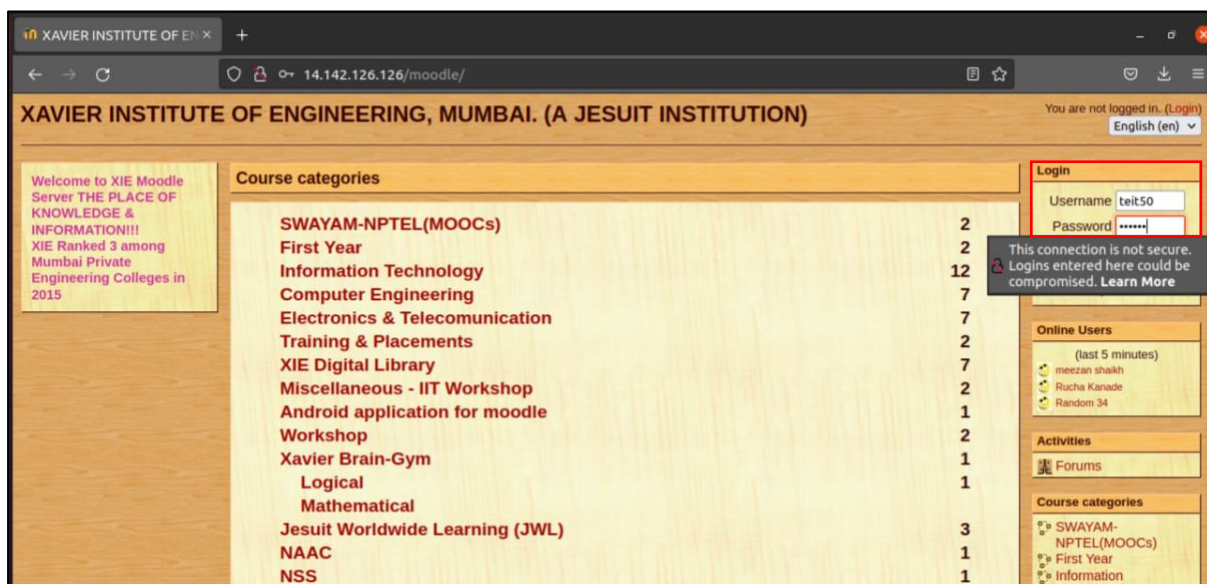
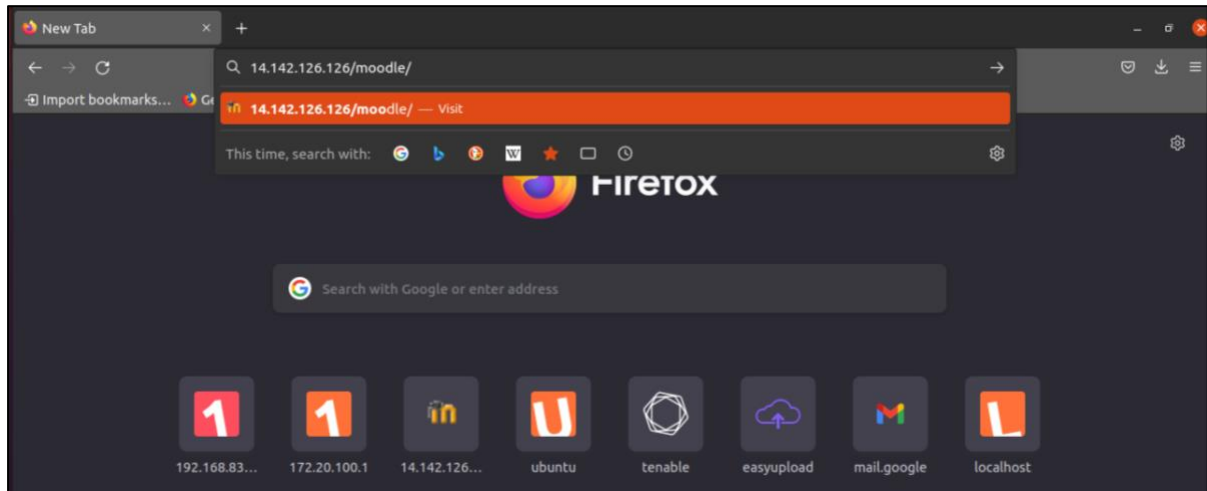


Start capturing

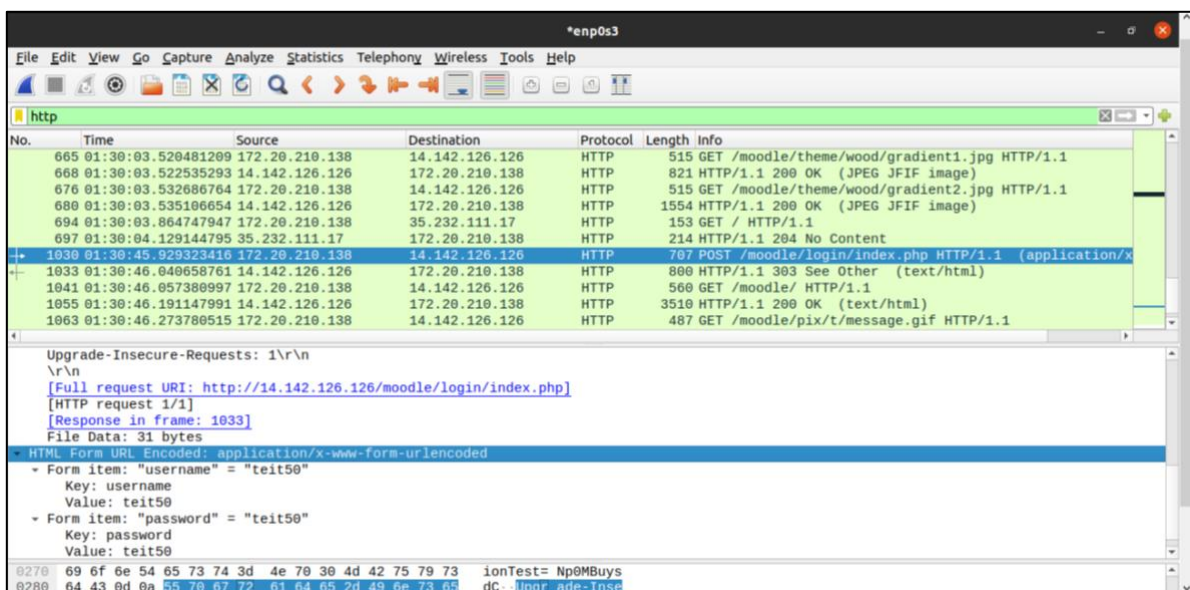
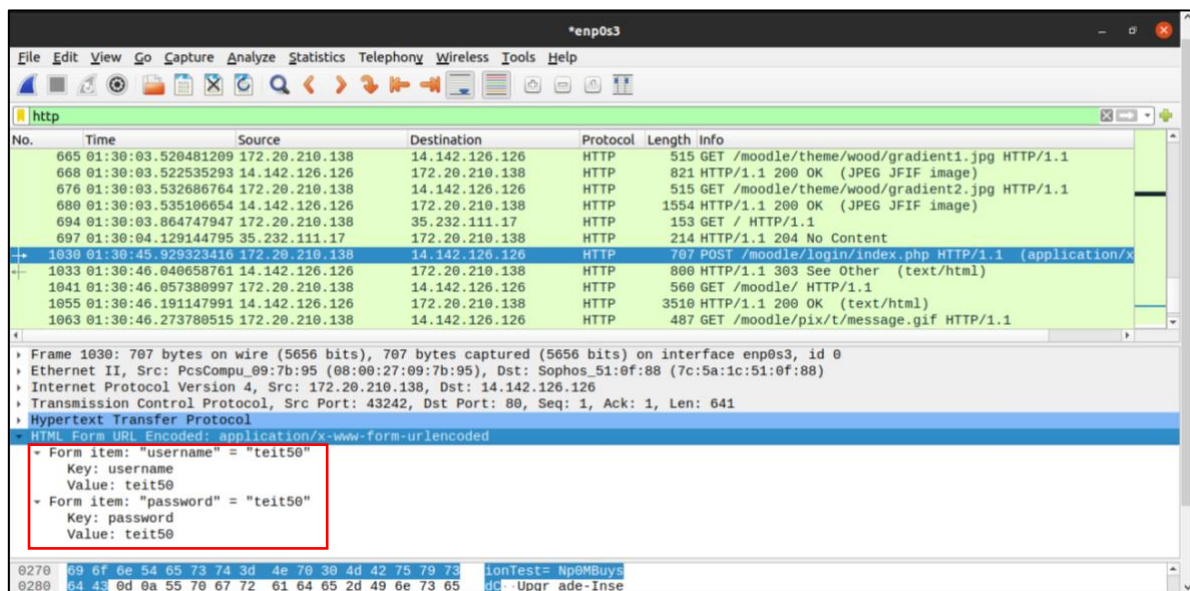
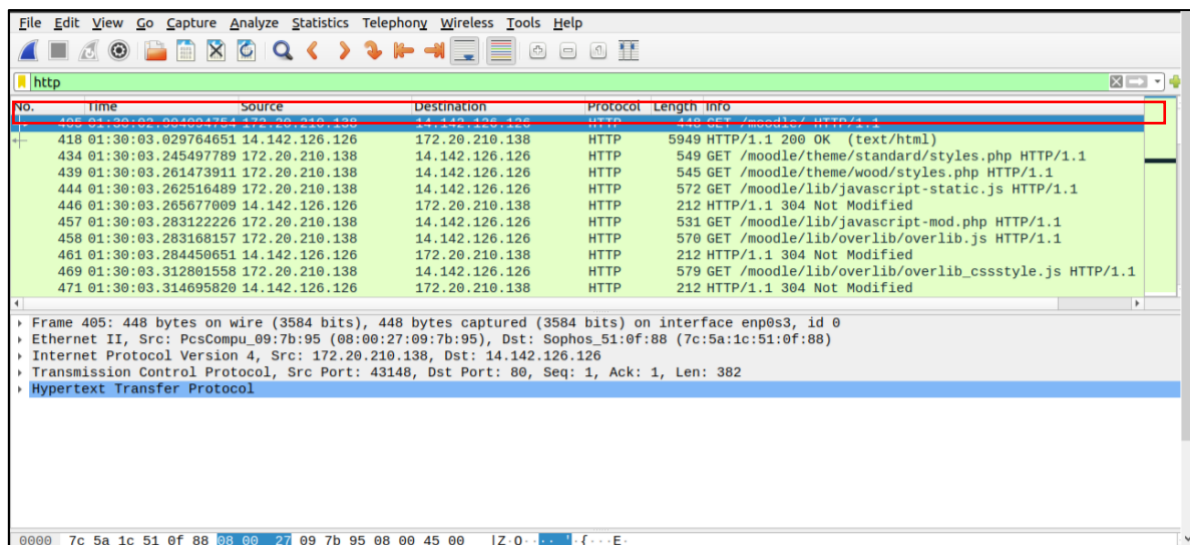


1b) Packet Sniffing of SSH, HTTP and SSL packets

For HTTP: Go to Moddle IP Address and login using teit50 as username and password



Now stop capturing and select the http packet with POST method



For HTTP/SSL: Login to ERP and start capturing in Wireshark again

The screenshot shows a web browser window displaying the 'Xavier Institute of Engineering' Student Information Module. The user is logged in as 'SUDEEP'. The dashboard includes a search bar, navigation links (Update Info, Apply For, Academic Calendar), and a welcome message for 'POOJARY SUDEEP SADASHIV SHASHIKALA'. Below this, there's a section for 'Subjects - 2022-2023' with a table listing subjects, semesters, and faculties. A 'Course Plan' button is also visible.

Sr. No.	Semester	Subject Name	Faculty	Subject Code	Explore Study Material
1	V	Advance DevOps Lab (PRACTICAL)	Mrs. Jyotsna More	ITL504	View
2	V	Advanced Data structure and Analysis (THEORY)	Mrs. Chhaya Dhavale	ITD05014	View
3	V	Computer Network Security	Mrs. Stella J	ITC502	View

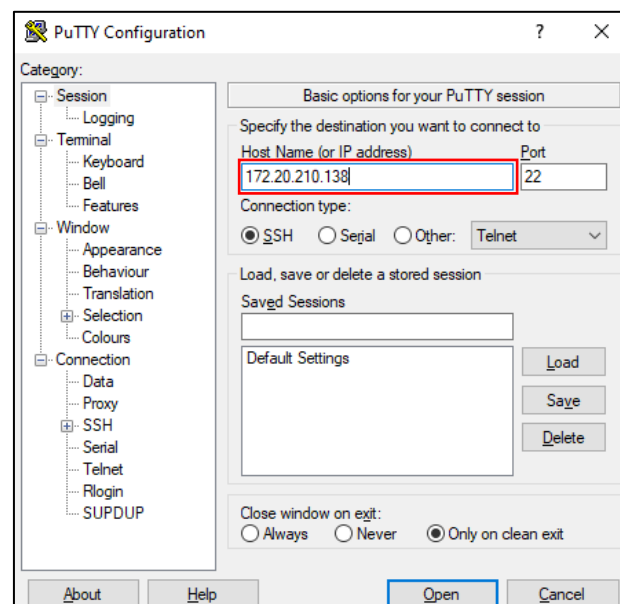
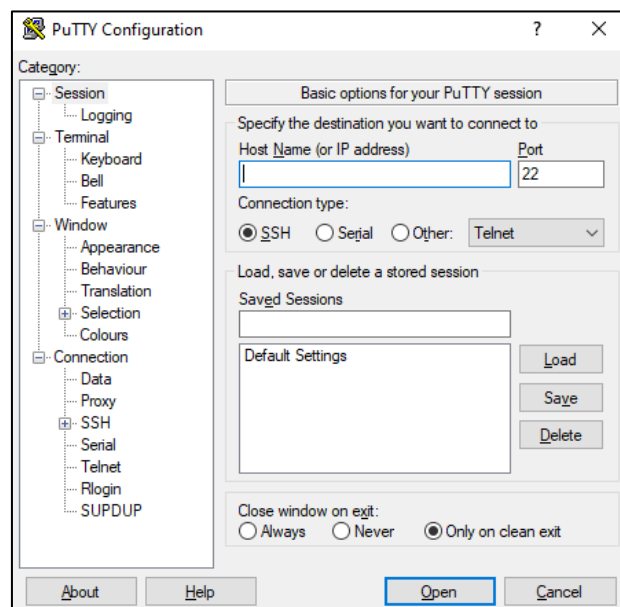
Stop capturing and filter using tcp.port==443

The screenshot shows the Wireshark interface with the packet capture filter 'tcp.port==443' applied. The packet list shows several TCP and TLSv1.3 packets. The packet details pane shows the selected packet (No. 406) with its structure: Ethernet II, Internet Protocol Version 4, and Transmission Control Protocol.

The screenshot shows the Wireshark interface with the packet capture filter 'tcp.port==443' applied. The packet list shows several TCP and TLSv1.3 packets. The packet details pane shows the selected packet (No. 390) with its structure: Ethernet II, Internet Protocol Version 4, and Transmission Control Protocol. The 'Transport Layer Security' section is expanded, showing the 'TLSv1.3 Record Layer: Application Data Protocol: http-over-tls' and the 'Encrypted Application Data'.

For SSH: Now, Packet Sniffing of SHH from Windows in Ubuntu

```
student@ubuntu: ~  
student@ubuntu:~/Desktop$ cd  
student@ubuntu:~$ ifconfig  
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1500  
    inet 172.20.210.138 netmask 255.255.255.0 broadcast 172.20.210.255  
    inet6 fe80::43f2:689:c837:3f8c prefixlen 64 scopeid 0x20<link>  
    ether 08:00:27:09:7b:95 txqueuelen 1000 (Ethernet)  
    RX packets 10577 bytes 10282229 (10.2 MB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 7268 bytes 830056 (830.0 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 2250 bytes 276194 (276.1 KB)  
    RX errors 0 dropped 0 overruns 0 frame 0  
    TX packets 2250 bytes 276194 (276.1 KB)  
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0  
  
student@ubuntu:~$
```



```
student@ubuntu: ~  
login as: student  
student@172.20.210.138's password:  
Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 5.11.0-36-generic x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:       https://ubuntu.com/advantage  
  
235 updates can be installed immediately.  
11 of these updates are security updates.  
To see these additional updates run: apt list --upgradable  
  
The list of available updates is more than a week old.  
To check for new updates run: sudo apt update  
  
10 updates could not be installed automatically. For more details,  
see /var/log/unattended-upgrades/unattended-upgrades.log  
Last login: Thu Sep 15 02:23:51 2022 from 172.20.210.138  
student@ubuntu:~$
```

```
student@ubuntu: ~  
To see these additional updates run: apt list --upgradable  
  
The list of available updates is more than a week old.  
To check for new updates run: sudo apt update  
  
10 updates could not be installed automatically. For more details,  
see /var/log/unattended-upgrades/unattended-upgrades.log  
Last login: Thu Sep 15 02:23:51 2022 from 172.20.210.138  
student@ubuntu:~$ ls  
bootcamp  Documents  krishna46  privatewincy.pem  snap      wincy.pem  
c2        Downloads  krishsh   Public            Templates  
demoCA    k          Music     rc2               Videos  
Desktop   krishna   Pictures  sabat             water  
student@ubuntu:~$ mkdir  
mkdir: missing operand  
Try 'mkdir --help' for more information.  
student@ubuntu:~$ mkdir sudeepp  
student@ubuntu:~$ ls  
bootcamp  Documents  krishna46  privatewincy.pem  snap      water  
c2        Downloads  krishsh   Public            sudeepp   wincy.pem  
demoCA    k          Music     rc2               Templates  
Desktop   krishna   Pictures  sabat             Videos  
student@ubuntu:~$ exit
```

*enp0s3

File Edit View Go Capture Analyze Statistics Telephony Wireless Tools Help

ssh

No.	Time	Source	Destination	Protocol	Length	Info
900	02:05:35.459608943	172.20.210.121	172.20.210.138	SSHv2	82	Client: Protocol (SSH-2.0-PuTTY_Release_0.77)
902	02:05:35.519755631	172.20.210.138	172.20.210.121	SSHv2	95	Server: Protocol (SSH-2.0-OpenSSH_8.2p1 Ubuntu-4ubuntu1)
904	02:05:35.560817662	172.20.210.138	172.20.210.121	SSHv2	1110	Server: Key Exchange Init
905	02:05:35.569260180	172.20.210.121	172.20.210.138	SSHv2	1310	Client: Key Exchange Init
907	02:05:35.571998603	172.20.210.121	172.20.210.138	SSHv2	102	Client: Diffie-Hellman Key Exchange Init
909	02:05:35.577734677	172.20.210.138	172.20.210.121	SSHv2	518	Server: Diffie-Hellman Key Exchange Reply, New Keys,
910	02:05:35.595044463	172.20.210.121	172.20.210.138	SSHv2	134	Client: New Keys, Encrypted packet (len=64)
912	02:05:35.595222711	172.20.210.138	172.20.210.121	SSHv2	118	Server: Encrypted packet (len=64)
931	02:05:42.562416050	172.20.210.121	172.20.210.138	SSHv2	134	Client: Encrypted packet (len=80)
933	02:05:42.571171387	172.20.210.138	172.20.210.121	SSHv2	134	Server: Encrypted packet (len=80)
943	02:05:45.138586687	172.20.210.121	172.20.210.138	SSHv2	326	Client: Encrypted packet (len=272)

Frame 900: 82 bytes on wire (656 bits), 82 bytes captured (656 bits) on interface enp0s3, id 0
Ethernet II, Src: Dell_6c:ca:dc (8c:ec:4b:6c:ca:dc), Dst: PcsCompu_09:7b:95 (08:00:27:09:7b:95)
Internet Protocol Version 4, Src: 172.20.210.121, Dst: 172.20.210.138
Transmission Control Protocol, Src Port: 50558, Dst Port: 22, Seq: 1, Ack: 1, Len: 28
SSH Protocol
Protocol: SSH-2.0-PuTTY_Release_0.77
[Direction: client-to-server]

0000 08 00 27 09 7b 95 8c ec 4b 6c ca dc 08 00 45 00 ...{... K1... E-
0010 00 44 4b 6e 40 08 00 06 b2 18 ac 14 d2 79 ac 14 ...DKn@... y...