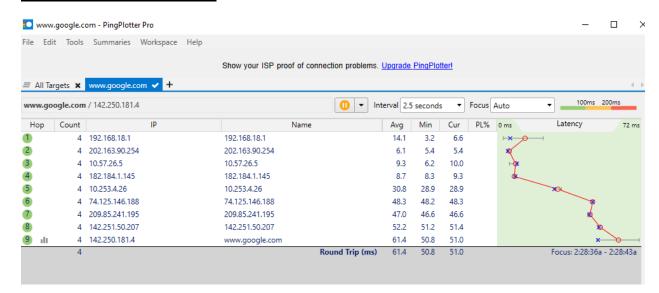
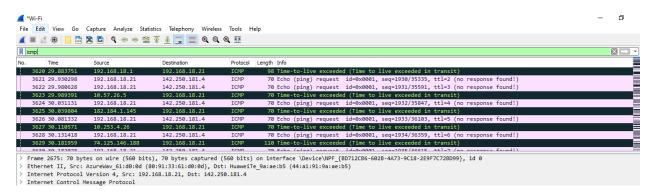
JAVAIRIA REHMAN 19P-0020 BS(CS) 19-5A "COMPUTER NETWORKS" WIRESHARK HOME WORK

PING PLOTTER



QUESTION 1

WIRESHARK



SOURCE=192.168.18.21

Frame 2675: 70 bytes on wire (560 bits), 70 bytes captured (560 bits) on interface Ethernet II, Src: AzureWav_61:d0:0d (80:91:33:61:d0:0d), Dst: HuaweiTe_9a:ae:b5 Internet Protocol Version 4, Src: 192.168.18.21, Dst: 142.250.181.4 Internet Control Message Protocol

QUESTION 2

Protocol: ICMP (1)

_ICMP1

QUESTION 3

```
> Frame 2675: 70 bytes on wire (560 bits), 70 bytes captured (560 bits) on interface \Device\NPF_{BD712CB6-
> Ethernet II, Src: AzureWav_61:d0:0d (80:91:33:61:d0:0d), Dst: HuaweiTe_9a:ae:b5 (44:a1:91:9a:ae:b5)
✓ Internet Protocol Version 4, Src: 192.168.18.21, Dst: 142.250.181.4
     0100 .... = Version: 4
     .... 0101 = Header Length: 20 bytes (5)
  > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
     Total Length: 56
     Identification: 0x3dd8 (15832)
  > Flags: 0x00
     Fragment Offset: 0
     Time to Live: 255
     Protocol: ICMP (1)
     Header Checksum: 0x6730 [validation disabled]
     [Header checksum status: Unverified]
     Source Address: 192.168.18.21
     Destination Address: 142.250.181.4

✓ Internet Control Message Protocol
```

20 bytes.

Header length= 20

Total Length= 56

Payload Bytes= 56 - 20= 36

QUESTION 4

```
> Frame 2675: 70 bytes on wire (560 bits), 70 bytes captured (560 bits) on interface \
> Ethernet II, Src: AzureWav 61:d0:0d (80:91:33:61:d0:0d), Dst: HuaweiTe 9a:ae:b5 (44:
Internet Protocol Version 4, Src: 192.168.18.21, Dst: 142.250.181.4
     0100 .... = Version: 4
     .... 0101 = Header Length: 20 bytes (5)
   > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
     Total Length: 56
     Identification: 0x3dd8 (15832)
   > Flags: 0x00
     Fragment Offset: 0
     Time to Live: 255
     Protocol: ICMP (1)
     Header Checksum: 0x6730 [validation disabled]
     [Header checksum status: Unverified]
     Source Address: 192.168.18.21
     Destination Address: 142.250.181.4
> Internet Control Message Protocol
```

No, because we don't see any ipv4 fragments

icmp									
No.	Time	Source	Destination	Protocol	Length Info				
35	98 27.538811	182.184.1.145	192.168.18.21	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)				
359	99 27.580537	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1923/33543, ttl=5 (no response four				
36	00 27.609149	10.253.4.26	192.168.18.21	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)				
360	01 27.631912	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1924/33799, ttl=6 (no response four				
360	02 27.682181	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1925/34055, ttl=7 (no response four				
36	03 27.684258	74.125.146.188	192.168.18.21	ICMP	110 Time-to-live exceeded (Time to live exceeded in transit)				
36	04 27.727521	209.85.241.195	192.168.18.21	ICMP	98 Time-to-live exceeded (Time to live exceeded in transit)				
360	05 27.732141	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1926/34311, ttl=8 (no response four				
36	06 27.783229	142.251.50.207	192.168.18.21	ICMP	110 Time-to-live exceeded (Time to live exceeded in transit)				
360	07 27.783262	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1927/34567, ttl=9 (reply in 3608)				
360	08 27.833650	142.250.181.4	192.168.18.21	ICMP	70 Echo (ping) reply id=0x0001, seq=1927/34567, ttl=118 (request in 360				
36	17 29.829651	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1928/34823, ttl=255 (reply in 3619)				
36:	18 29.879987	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1929/35079, ttl=1 (no response four				
36:	19 29.880618	142.250.181.4	192.168.18.21	ICMP	70 Echo (ping) reply id=0x0001, seq=1928/34823, ttl=118 (request in 361				
36	20 29.883751	192.168.18.1	192.168.18.21	ICMP	98 Time-to-live exceeded (Time to live exceeded in transit)				
36	21 29.930298	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1930/35335, ttl=2 (no response four				
	22 29.980628	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1931/35591, ttl=3 (no response four				
	23 29.989391	10.57.26.5	192.168.18.21	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)				
	24 30.031131	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1932/35847, ttl=4 (no response four				
	25 30.039804	182.184.1.145	192.168.18.21	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)				
	26 30.081332	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1933/36103, ttl=5 (no response four				
	27 30.110571	10.253.4.26	192.168.18.21	ICMP	70 Time-to-live exceeded (Time to live exceeded in transit)				
	28 30.131418	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1934/36359, ttl=6 (no response four				
	29 30.181959	74.125.146.188	192.168.18.21	ICMP	110 Time-to-live exceeded (Time to live exceeded in transit)				
	30 30.182028	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1935/36615, ttl=7 (no response four				
	31 30.229067	209.85.241.195	192.168.18.21	ICMP	98 Time-to-live exceeded (Time to live exceeded in transit)				
	32 30.232176	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1936/36871, ttl=8 (no response foun				
	33 30.282341	192.168.18.21	142.250.181.4	ICMP	70 Echo (ping) request id=0x0001, seq=1937/37127, ttl=9 (reply in 3636)				
	35 30.284860	142.251.50.207	192.168.18.21	ICMP	110 Time-to-live exceeded (Time to live exceeded in transit)				
└ 36	36 30.333930	142.250.181.4	192.168.18.21	ICMP	70 Echo (ping) reply id=0x0001, seq=1937/37127, ttl=118 (request in 363				

Seq and TTL are changing with each packet.

QUESTION 6

- Version, header length, source IP, destination IP, upper layer protocol remain constant.
 - The version and header length will remain same because we are using ipv4.
 - The source and destination ip address remain the same as they are not changing.
 - Upper layer protocol is not changing because we are using the same protocol every time. Sequence Number and Time To Live are changing.
 - Each packet will have a different sequence number.

QUESTION 7

Increase by 1

```
> Frame 2675: 70 bytes on wire (560 bits), 70 bytes captured (560 bits) on i
Ethernet II, Src: AzureWav 61:d0:0d (80:91:33:61:d0:0d), Dst: HuaweiTe 9a:

▼ Internet Protocol Version 4, Src: 192.168.18.21, Dst: 142.250.181.4

     0100 .... = Version: 4
     .... 0101 = Header Length: 20 bytes (5)
   > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
     Total Length: 56
     Identification: 0x3dd8 (15832)
  > Flags: 0x00
     Fragment Offset: 0
     Time to Live: 255
     Protocol: ICMP (1)
     Header Checksum: 0x6730 [validation disabled]
     [Header checksum status: Unverified]
     Source Address: 192.168.18.21
     Destination Address: 142.250.181.4
Internet Control Message Protocol
```

- Identification Field: 0x3dd8 (15832)
- Time To Live: 255

QUESTION 9

The identification field changes with the each datagram but the TTL remains the same

QUESTION 10

YES

```
Identification: 0xab07 (43783)

Flags: 0x20, More fragments

0... = Reserved bit: Not set

.0. ... = Don't fragment: Not set

.1. ... = More fragments: Set
```

```
rrame 5028: 1514 Dytes on wire (12112 Dits), 1514 Dytes captured (
Ethernet II, Src: IntelCor_69:08:7a (24:41:8c:69:08:7a), Dst: Fibe
Internet Protocol Version 4, Src: 192.168.10.6, Dst: 157.240.227.3
  0100 .... = Version: 4
   .... 0101 = Header Length: 20 bytes (5)
> Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
  Total Length: 1500
  Identification: 0xab07 (43783)
Flags: 0x20, More fragments
     0... - Reserved bit: Not set
     .0.. .... = Don't fragment: Not set
     ..1. .... = More fragments: Set
  Fragment Offset: 0
  Time to Live: 63
  Protocol: ICMP (1)
  Header Checksum: 0x0000 [validation disabled]
  [Header checksum status: Unverified]
  Source Address: 192.168.10.6
  Destination Address: 157.240.227.35
```

- the flag for more fragments has been set which means the datagram has been fragmented.
- the fragment offset is 0, which tells us that this is the first fragment.
- The total length is 1500 including the data and the header

QUESTION 12

```
Frame 5629: 534 bytes on wire (4272 bits), 534 bytes captured (4272 bits)
 Ethernet II, Src: IntelCor_69:08:7a (24:41:8c:69:08:7a), Dst: Fiberhom_f6
Internet Protocol Version 4, Src: 192.168.10.6, Dst: 157.240.227.35
    0100 .... = Version: 4
    .... 0101 = Header Length: 20 bytes (5)
  > Differentiated Services Field: 0x00 (DSCP: CS0, ECN: Not-ECT)
    Total Length: 520
    Identification: 0xab07 (43783)
 ∨ Flags: 0x00
       0... .... = Reserved bit: Not set
      .0.. ... = Don't fragment: Not set
       ..0. .... = More fragments: Not set
    Fragment Offset: 1480
    Time to Live: 63
    Protocol: ICMP (1)
    Header Checksum: 0x0000 [validation disabled]
    [Header checksum status: Unverified]
    Source Address: 192.168.10.6
    Destination Address: 157.240.227.35
 > [2 IPv4 Fragments (1980 bytes): #5628(1480), #5629(500)]
```

- this is the last fragment because the more fragments flag is not set
- the fragment offset is 1480.

- total length
- flags
- fragment offset

QUESTION 14

Only one additional packet is created

QUESTION 15

- total length
- flags
- fragment offset