AJAY S RAM
ROLL NO 3
S6 CSE

EXPERIMENT 7 :

USING RAW SOCKETS CREATE A PACKET MONITORING APPLICATION

PROGRAM

All programs are created using C.

1. Compile the code :

   gcc raw_tcp.c -o raw_tcp
   gcc raw_udp.c -o raw_udp
   gcc packet_sniffer.c -o packet_sniffer

```
n00b@ubuntu:~/NetworkingLab/EXP_7$ gcc raw_tcp.c -o raw_tcp
n00b@ubuntu:~/NetworkingLab/EXP_7$ gcc raw_udp.c -o raw_udp -w
n00b@ubuntu:~/NetworkingLab/EXP_7$ gcc packet_sniffer.c -o packet_sniffer -w
n00b@ubuntu:~/NetworkingLab/EXP_7$
```

2. Run the program

   Note : All programs need sudo privileges to run

   I'll be sending the data : **dummy_data_to_send**

   The output of the packet sniffer will be stored in **log.txt.**

1. tcp traffic

```
n00b@ubuntu:~/NetworkingLab/EXP_7$ sudo ./packet_sniffer
Sniffing started
TCP : 11   UDP : 205   ICMP : 3   IGMP : 0   Others : 4   Total : 223
```

```
n00b@ubuntu:~/NetworkingLab/EXP_7$ sudo ./raw_tcp
Sending TCP packet : 192.168.1.2
Packet sent Successfully.
Packet length : 58

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Packet sent Successfully.
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Packet sent Successfully.
Packet length : 58

Sending TCP packet : 192.168.1.2
Packet sent Successfully.
Packet length : 58
```
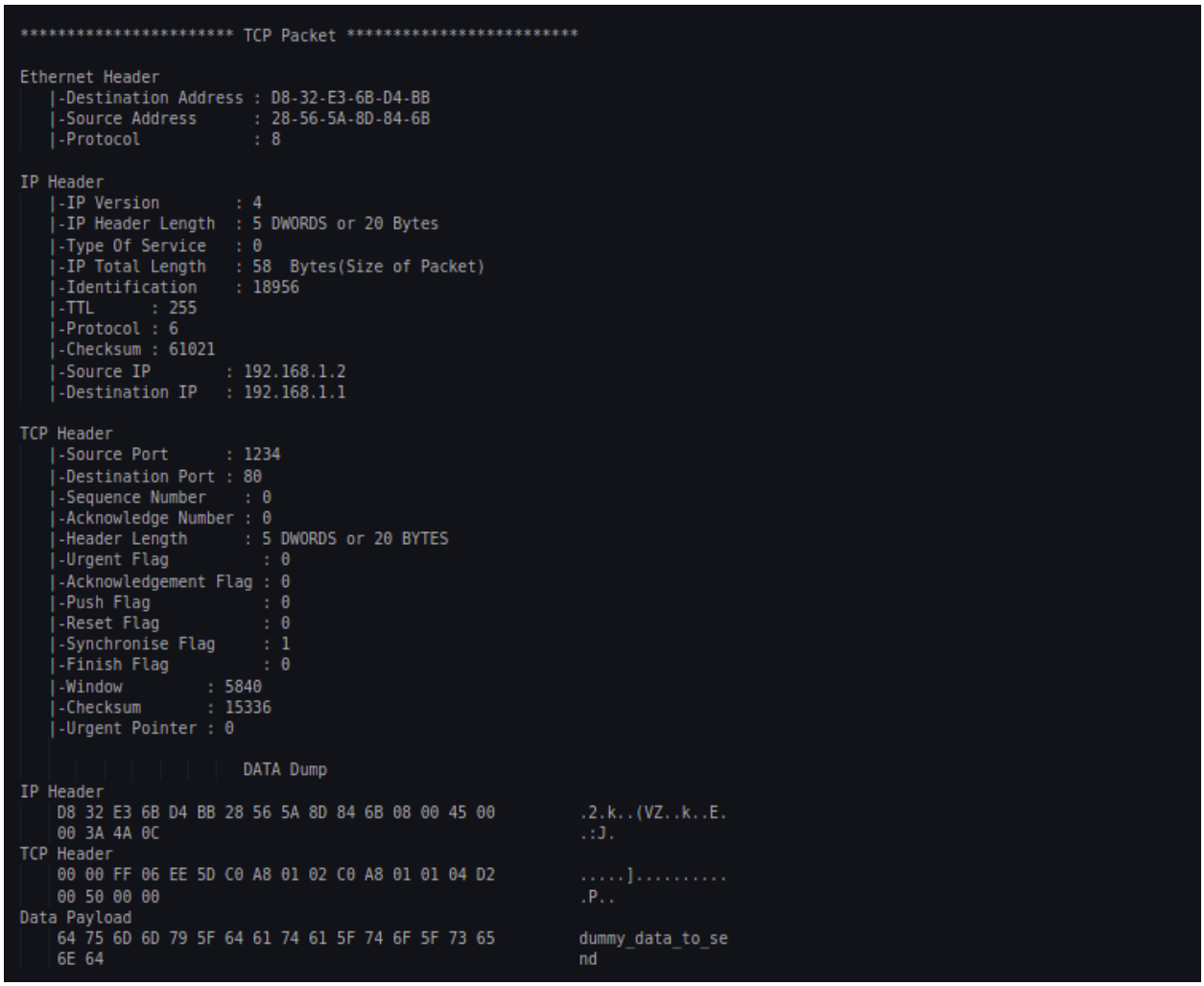

2. udp traffic

```
n00b@ubuntu:~/NetworkingLab/EXP_7$ sudo ./packet_sniffer
Sniffing started
TCP : 11   UDP : 218   ICMP : 3   IGMP : 0   Others : 6   Total : 237
```

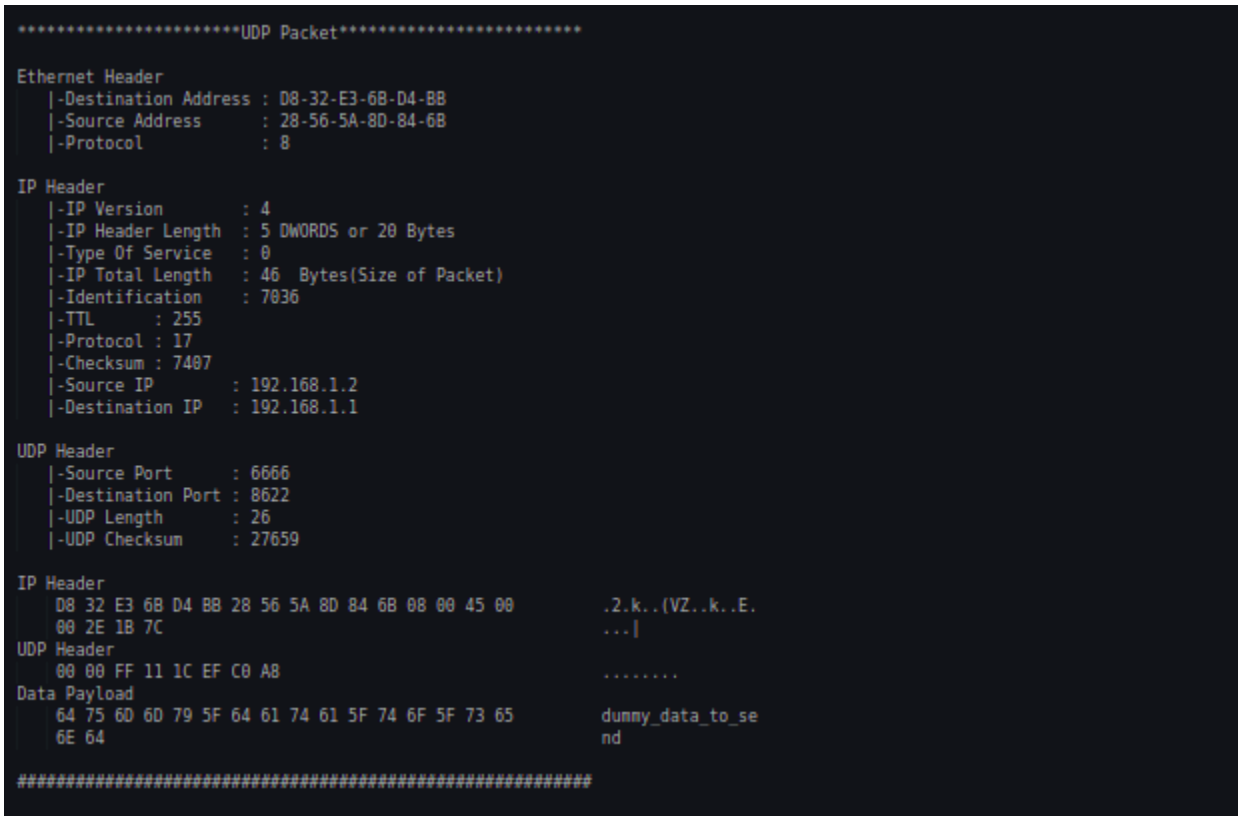
```
n00b@ubuntu:~/NetworkingLab/EXP_7$ sudo ./raw_udp
Sending UDP packet : 192.168.1.2
Packet sent Successfully.
Packet length : 46

Sending UDP packet : 192.168.1.2
Packet sent Successfully.
Packet length : 46

Sending UDP packet : 192.168.1.2
Packet sent Successfully.
Packet length : 46

Sending UDP packet : 192.168.1.2
Packet sent Successfully.
Packet length : 46

Sending UDP packet : 192.168.1.2
Packet sent Successfully.
Packet length : 46
```

3. Viewing tcp headers



```
********************* TCP Packet ************************

Ethernet Header
   |-Destination Address : D8-32-E3-6B-D4-BB
   |-Source Address      : 28-56-5A-8D-84-6B
   |-Protocol            : 8

IP Header
   |-IP Version        : 4
   |-IP Header Length  : 5 DWORDS or 20 Bytes
   |-Type Of Service   : 0
   |-IP Total Length   : 58  Bytes(Size of Packet)
   |-Identification    : 18956
   |-TTL      : 255
   |-Protocol : 6
   |-Checksum : 61021
   |-Source IP        : 192.168.1.2
   |-Destination IP   : 192.168.1.1

TCP Header
   |-Source Port      : 1234
   |-Destination Port : 80
   |-Sequence Number    : 0
   |-Acknowledge Number : 0
   |-Header Length      : 5 DWORDS or 20 BYTES
   |-Urgent Flag          : 0
   |-Acknowledgement Flag : 0
   |-Push Flag            : 0
   |-Reset Flag           : 0
   |-Synchronise Flag     : 1
   |-Finish Flag          : 0
   |-Window         : 5840
   |-Checksum       : 15336
   |-Urgent Pointer : 0

                        DATA Dump
IP Header
    D8 32 E3 6B D4 BB 28 56 5A 8D 84 6B 08 00 45 00         .2.k..(VZ..k..E.
    00 3A 4A 0C                                             .:J.
TCP Header
    00 00 FF 06 EE 5D C0 A8 01 02 C0 A8 01 01 04 D2         .....]..........
    00 50 00 00                                             .P..
Data Payload
    64 75 6D 6D 79 5F 64 61 74 61 5F 74 6F 5F 73 65         dummy_data_to_se
    6E 64                                                   nd
```

4. Viewing udp headers



```
**********************UDP Packet************************

Ethernet Header
   |-Destination Address : D8-32-E3-6B-D4-BB
   |-Source Address      : 28-56-5A-8D-84-6B
   |-Protocol            : 8

IP Header
   |-IP Version        : 4
   |-IP Header Length  : 5 DWORDS or 20 Bytes
   |-Type Of Service   : 0
   |-IP Total Length   : 46  Bytes(Size of Packet)
   |-Identification    : 7036
   |-TTL      : 255
   |-Protocol : 17
   |-Checksum : 7407
   |-Source IP        : 192.168.1.2
   |-Destination IP   : 192.168.1.1

UDP Header
   |-Source Port      : 6666
   |-Destination Port : 8622
   |-UDP Length       : 26
   |-UDP Checksum     : 27659

IP Header
    D8 32 E3 6B D4 BB 28 56 5A 8D 84 6B 08 00 45 00         .2.k..(VZ..k..E.
    00 2E 1B 7C                                             ...|
UDP Header
    00 00 FF 11 1C EF C0 A8                                 ........
Data Payload
    64 75 6D 6D 79 5F 64 61 74 61 5F 74 6F 5F 73 65         dummy_data_to_se
    6E 64                                                   nd

########################################################
```