EXP NO: 12 Write a code using RAW sockets
10/10/25 to implement packet sniffing.

AIM: To implement a packet sniffer using RAW sockets.

CODE:

```
from scapy.all import sniff
from scapy.layers.inet import IP, TCP, UDP, ICMP

def packet_callback(packet):
    if IP in packet:
        ip_layer = packet[IP]
        protocol = ip_layer.proto
        src_ip = ip_layer.src
        dst_ip = ip_layer.dst

        if protocol == 1:
            protocol_name = "ICMP"
        elif protocol == 6:
            protocol_name = "TCP"
        elif protocol == 17:
            protocol_name = "UDP"
        else:
            protocol_name = "Unknown Protocol"

        print(f"Protocol: {protocol_name}")
        print(f"Source IP : {src_ip}")
        print(f"Destination IP: {dst_ip}")
        print("-" * 50)

sniff(iface='Wi-Fi', prn=packet_callback,
      filter="ip", store=0)
```

Sample Input

Protocol: TCP
Source IP: 192.168.1.10
Destination IP: 142.250.72.14

Protocol: ICMP
Source IP: 192.168.1.10
Destination IP: 8.8.8.8

Protocol: UDP
Source IP: 192.168.1.10
Destination IP: 192.168.1.1

RESULT:

* The packet sniffer successfully capture
* IP packets on the network, identifying their protocol type, source IP & destinatio IP.
* This demonstrates the use of RAW socke for monitoring network traffic in real-time

```python
from scapy.all import sniff
from scapy.layers.inet import IP, TCP, UDP, ICMP

def packet_callback(packet):
    if IP in packet:
        ip_layer = packet[IP]
        protocol = ip_layer.proto
        src_ip = ip_layer.src
        dst_ip = ip_layer.dst

        # Determine the protocol
        protocol_name = ""
        if protocol == 1:
            protocol_name = "ICMP"
        elif protocol == 6:
            protocol_name = "TCP"
        elif protocol == 17:
            protocol_name = "UDP"
        else:
            protocol_name = "Unknown Protocol"

        # Print packet details
        print(f"Protocol: {protocol_name}")
        print(f"Source IP: {src_ip}")
        print(f"Destination IP: {dst_ip}")
        print("-" * 50)


# Capture packets on the default network interface
sniff(iface='Wi-Fi',prn=packet_callback, filter="ip", store=0)
```

```
C:\Users\tkala\Downloads>python packet.py
Protocol: TCP
Source IP: 57.155.141.117
Destination IP: 192.168.1.6
------------------------------------------------
Protocol: TCP
Source IP: 192.168.1.6
Destination IP: 57.155.141.117
------------------------------------------------
Protocol: TCP
Source IP: 192.168.1.6
Destination IP: 57.155.141.117
------------------------------------------------
Protocol: TCP
Source IP: 192.168.1.6
Destination IP: 57.155.141.117
------------------------------------------------
Protocol: TCP
Source IP: 57.155.141.117
Destination IP: 192.168.1.6
------------------------------------------------
Protocol: TCP
Source IP: 57.155.141.117
Destination IP: 192.168.1.6
------------------------------------------------
Protocol: UDP
Source IP: 192.168.1.6
Destination IP: 192.168.1.1
------------------------------------------------
Protocol: UDP
Source IP: 192.168.1.6
Destination IP: 192.168.1.1
------------------------------------------------
Protocol: UDP
Source IP: 192.168.1.6
Destination IP: 192.168.1.1
------------------------------------------------
Protocol: UDP
Source IP: 192.168.1.1
Destination IP: 192.168.1.6
------------------------------------------------
```