**TASK 1 : BASIC NETWORK SNIFFER**

**SOURCE CODE**

import socket  
import struct  
def main():  
 sniffer = socket.socket(socket.AF\_INET, socket.SOCK\_RAW, socket.IPPROTO\_IP)  
 host = socket.gethostbyname(socket.gethostname())  
 sniffer.bind((host, 0))  
 sniffer.setsockopt(socket.IPPROTO\_IP, socket.IP\_HDRINCL, 1)  
 sniffer.ioctl(socket.SIO\_RCVALL, socket.RCVALL\_ON)  
 print(f"[\*] Sniffing on {host}...\n")  
 try:  
 while True:  
 raw\_packet = sniffer.recvfrom(65565)[0]  
 ip\_header = raw\_packet[0:20]  
 iph = struct.unpack('!BBHHHBBH4s4s', ip\_header)  
 version\_ihl = iph[0]  
 version = version\_ihl >> 4  
 ihl = version\_ihl & 0xF  
 iph\_length = ihl \* 4  
 protocol = iph[6]  
 src\_addr = socket.inet\_ntoa(iph[8])  
 dst\_addr = socket.inet\_ntoa(iph[9])  
 print(f'Protocol: {protocol} | Source: {src\_addr} -> Destination: {dst\_addr}')  
 except KeyboardInterrupt:  
 print('\n[!] Stopping sniffer.')  
 sniffer.ioctl(socket.SIO\_RCVALL, socket.RCVALL\_OFF)  
if \_\_name\_\_ == "\_\_main\_\_":  
 main()

**OUTPUT**

[\*] Sniffing on 192.168.1.12...

Protocol: 6 | Source: 192.168.1.12 -> Destination: 18.161.246.117

Protocol: 6 | Source: 192.168.1.12 -> Destination: 18.161.246.117

Protocol: 6 | Source: 192.168.1.12 -> Destination: 108.158.245.18

Protocol: 6 | Source: 192.168.1.12 -> Destination: 108.158.245.18

Protocol: 6 | Source: 192.168.1.12 -> Destination: 18.67.161.81

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