COMPUTER NETWORKS

LAB REPORT # 11

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SYNDICATE - B

DATE: 19th January 2020

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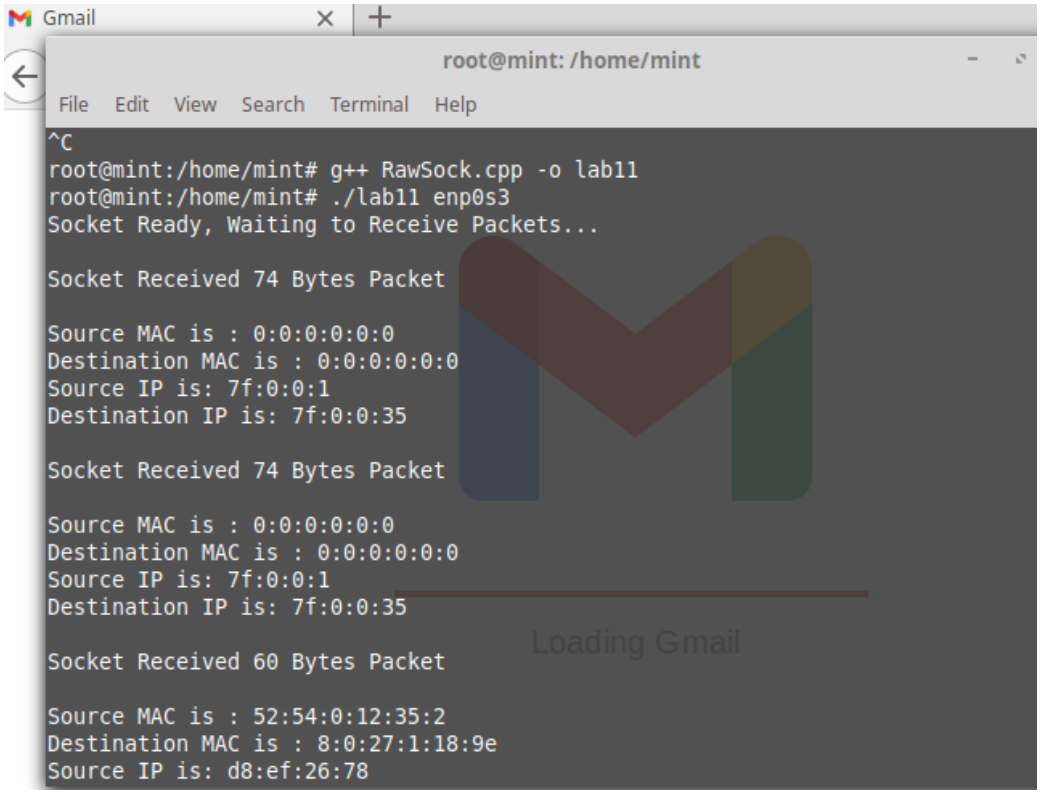
TASK # 11.1:

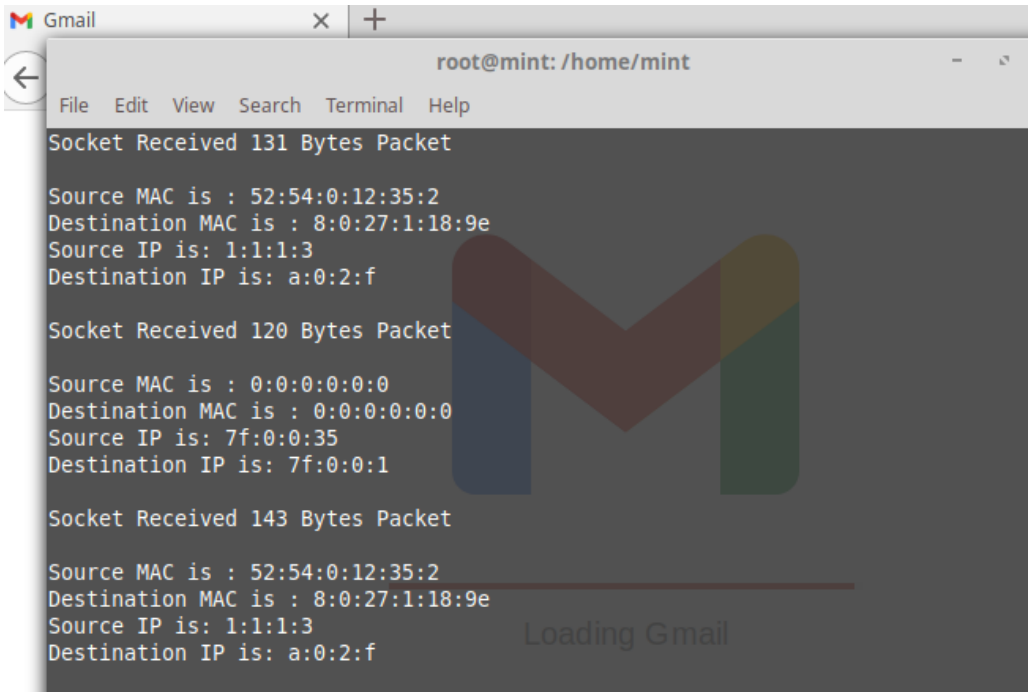
CODE:

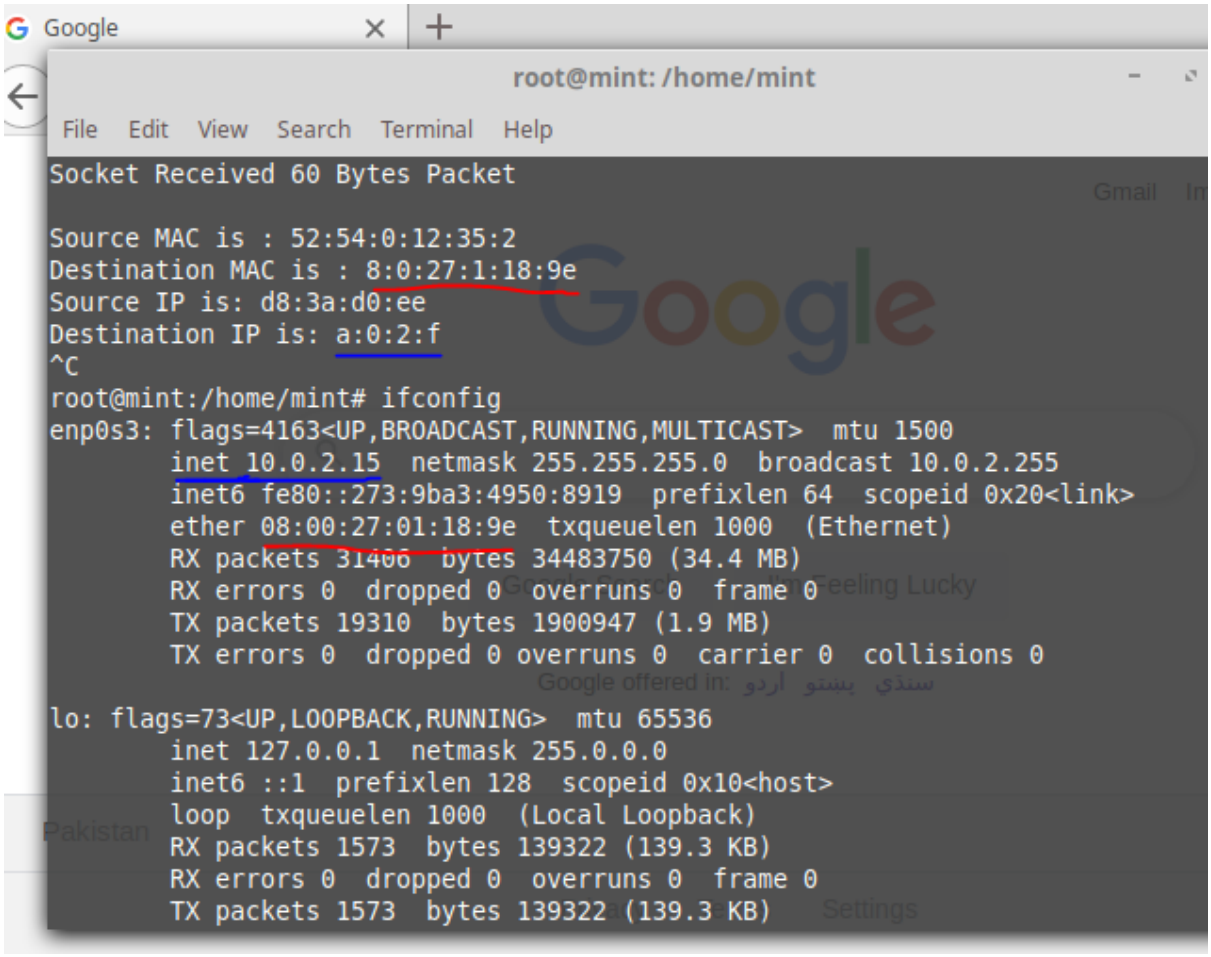
```
#include <arpa/inet.h>
#include <sys/ioctl.h>
#include <sys/socket.h>
#include <sys/types.h>
#include <errno.h>
#include <arpa/inet.h>
#include <net/if.h>
#include <netinet/ether.h>
#include <string.h>
#include <cstring>
#include <unistd.h>
#include <stdlib.h>

#include <iostream>

#define Buffer 1024

using namespace std;
int main(int argc, char *argv[]){
    int sockfd;
    int ret;
    char ifName[65536];
    ssize_t numbytes;
    uint8_t buf[Buffer];

    if(argc > 1){
        strcpy(ifName, argv[1]);
    }
    else{
        cout << "USAGE: ProgName IfaceName: Exiting..." << endl;
        exit(-1);
    }

    if((sockfd = socket(PF_PACKET, SOCK_RAW, htons(ETH_P_IP))) == -1){
        perror("listener: socket");
        return -1;
    }
    if(setsockopt(sockfd, SOL_SOCKET, SO_BINDTODEVICE, ifName,
IFNAMSIZ-1) == -1){
        perror("SO_BINDTODEVICE");
        close(sockfd);
        exit(EXIT_FAILURE);
    }

    cout << "Socket Ready, Waiting to Receive Packets..." << endl;

    while(1){
        numbytes = recvfrom(sockfd, buf, Buffer, 0, NULL, NULL);
        cout << endl << "Socket Received " << numbytes << " Bytes
Packet" << endl;
        printf("\nSource MAC is : %x:%x:%x:%x:%x:%x\t", buf[6], buf[7],
buf[8],  buf[9], buf[10], buf[11]);
        printf("\nDestination MAC is : %x:%x:%x:%x:%x:%x\t", buf[0],
buf[1], buf[2], buf[3], buf[4], buf[5]);
```

```
        printf("\nSource IP is: %x:%x:%x:%x\t", buf[26], buf[27],
buf[28], buf[29]);
        printf("\nDestination IP is: %x:%x:%x:%x\t", buf[30], buf[31],
buf[32], buf[33]);
        cout << endl;
    }
}
```

OUTPUT:







We can see that that the red underline addresses are tallied by us shows that destination address which is our PC is correct, same way we also tallied destination IP address with our IP address. It can be seen that IP Address caught is a:0:2:f, this is in HEX when changed to binary it gives 10.0.2.15 which is same as we found through ifconfig.