

REPORT

PROGRAM SCANS NETWORK USING RAW SOCKET

1. Overview the operation of program:

Send 5 Ping packet to each host in LAN, if they send back packet reply, that host is seemed Online. Then, write the IP of the online host to 1712478.txt, which will be created in the same folder as program's folder.

2. How to run

- Turn on terminal, then type make in folder 1712478 to compile code C

```
hunghuynh1412@ubuntu:~/Desktop/laptrinhmang/1712478$ make  
gcc 1712478.c -o 1712478
```

- Type in terminal the network that need to scan, then press Enter to start scanning:
./1712478 .

For example: ./1712478 192.168.1.0/24

```
hunghuynh1412@ubuntu:~/Desktop/laptrinhmang/1712478$ ./1712478 192.168.1.0/24  
Scan 192.168.1.1:      This is IP local machine  
Scan 192.168.1.2:      OFFLINE  
Scan 192.168.1.3:      OFFLINE
```

3. Review code and function:

```
//get IP of interfaces local machine  
int check_IP_local(char *ip_addr)  
{
```

- check_IP_local: get IP from all interfaces of machine, check and ignore sending packet to local host. Return 1 if this is local ip machine, else return 0.

```
int get_Input_cmd(char *input, char *ip_addr, int* total_host)
```

- get_Input_cmd: split into network and subnet mask from parameter argv[1] in command line, calculate total hosts of network.

- intHandler: stop program if catching signal interrupt (Ctrl+C)

```
char* increase_ip(char* ip_addr)
```

- Increase_ip: increase IP by 1, return string address.

- ip_add_structure: fill up ip address to sockaddr_in *addr_con for usage when sending packet

```
// make a ping request  
int send_ping(int ping_sockfd, struct sockaddr_in *ping_addr, char *ping_ip)
```

- send_ping: make a ping request by sending 5 icmp echo request packet and wait for reply, if ping_ip reply correctly, break the loop and return 1, meaning ping_ip is online, otherwise, notify the ping_ip is offline by return 0.
- Reference: <https://www.geeksforgeeks.org/ping-in-c/>