

# **CSE 5004**

## COMPUTER NETWORKS



### **Assessment – 1**

L1+L2 | SJT418  
WINTER SEMESTER 2020-21

by

**SHARADINDU ADHIKARI**  
19BCE2105

## Question 1

shara-d@Rohans-workstation

1. A) Write a C program to print the IP address of "[www.google.com](http://www.google.com)".  
B) Write a C program to print the IP address of "localhost".

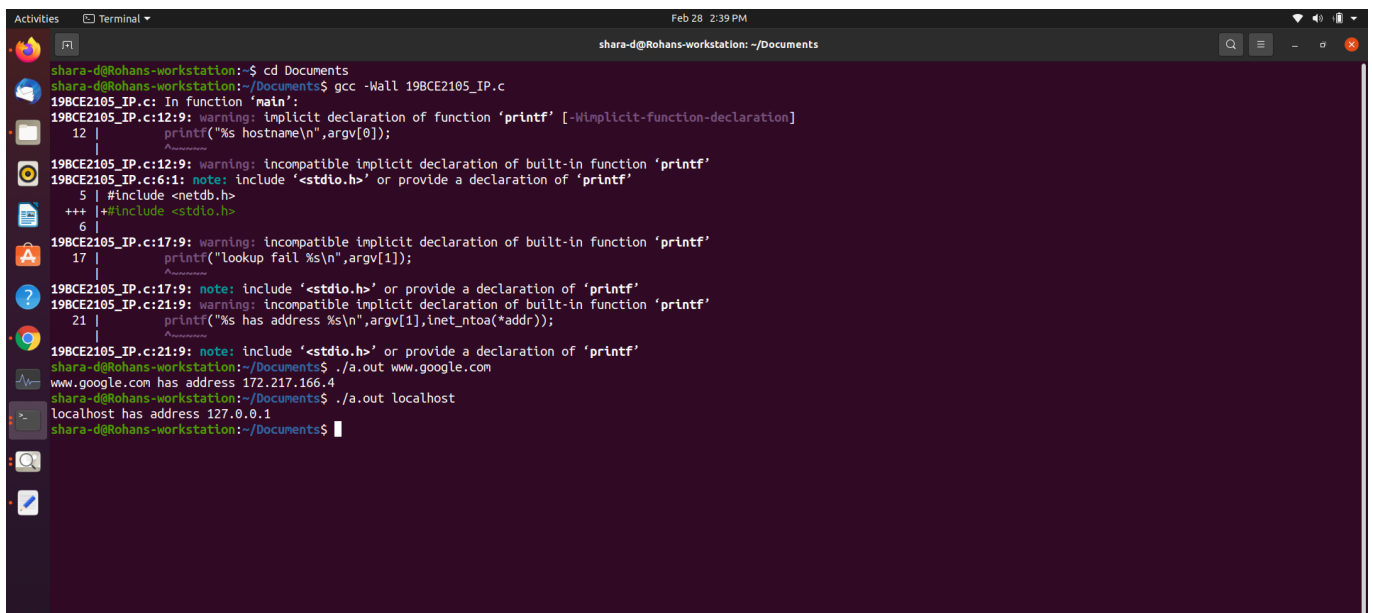
Solution:

```
#include <string.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include <netdb.h>

int main(int argc, char **argv){
    struct hostent *info;
    struct in_addr *addr;

    if(argc<2){
        printf("%s hostname\n", argv[0]);
    }
    info=gethostbyname(argv[1]);

    if(info == NULL){
        printf("lookup fail %s\n", argv[1]);
    }
    else{
        addr=(struct in_addr*)(info->h_addr);
        printf("%s has address %s\n", argv[1], inet_ntoa(*addr));
    }
}
```



```
shara-d@Rohans-workstation:~$ cd Documents
shara-d@Rohans-workstation:~/Documents$ gcc -Wall 198CE2105_IP.c
198CE2105_IP.c: In function 'main':
198CE2105_IP.c:12:9: warning: implicit declaration of function 'printf' [-Wimplicit-function-declaration]
   12 |         printf("%s hostname\n", argv[0]);
      |         ^~~~~~
198CE2105_IP.c:12:9: warning: incompatible implicit declaration of built-in function 'printf'
198CE2105_IP.c:6:1: note: include '<stdio.h>' or provide a declaration of 'printf'
    5 | #include <netdb.h>
      | ^~~
    6 | ++#include <stdio.h>
      |
198CE2105_IP.c:17:9: warning: incompatible implicit declaration of built-in function 'printf'
   17 |         printf("lookup fail %s\n", argv[1]);
      |         ^~~~~~
198CE2105_IP.c:17:9: note: include '<stdio.h>' or provide a declaration of 'printf'
198CE2105_IP.c:21:9: warning: incompatible implicit declaration of built-in function 'printf'
   21 |         printf("%s has address %s\n", argv[1], inet_ntoa(*addr));
      |         ^~~~~~
198CE2105_IP.c:21:9: note: include '<stdio.h>' or provide a declaration of 'printf'
shara-d@Rohans-workstation:~/Documents$ ./a.out www.google.com
www.google.com has address 172.217.166.4
shara-d@Rohans-workstation:~/Documents$ ./a.out localhost
localhost has address 127.0.0.1
shara-d@Rohans-workstation:~/Documents$
```

## Question 2

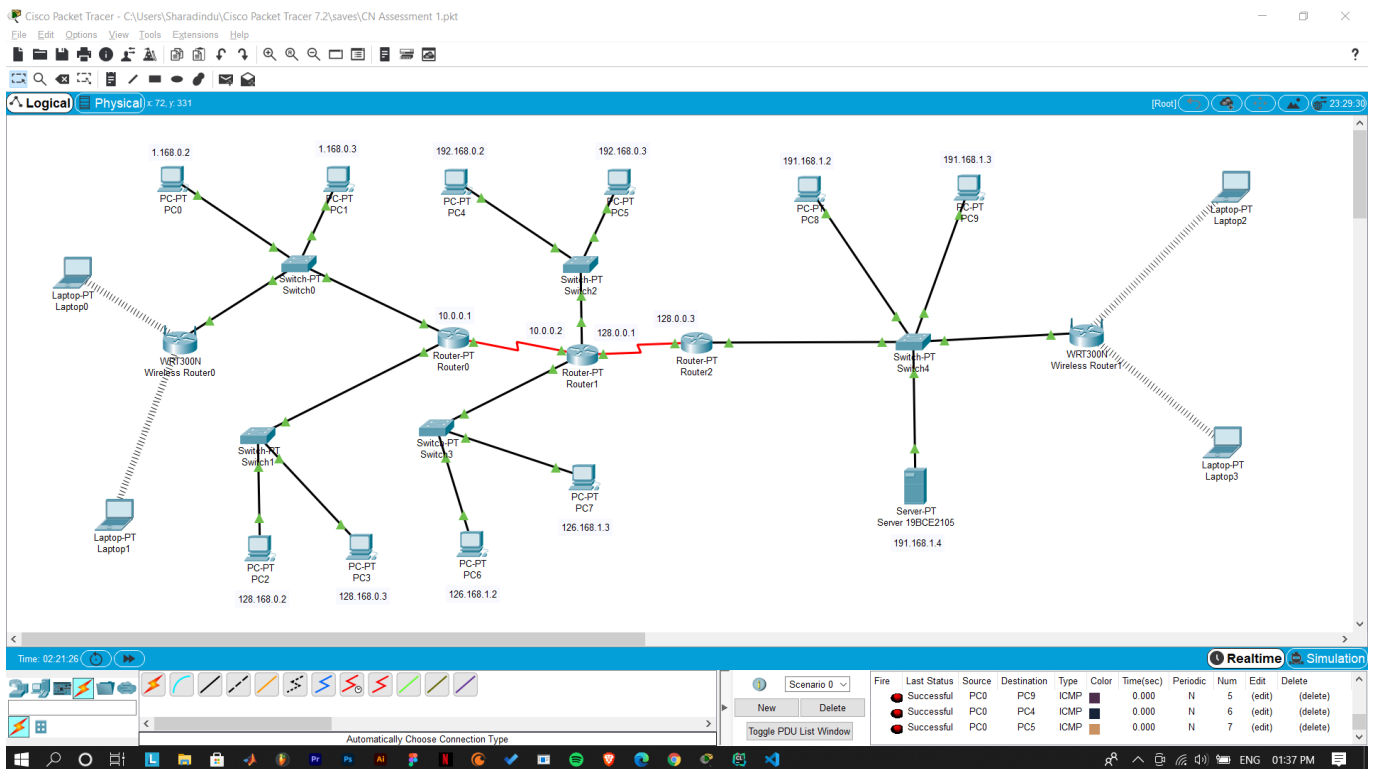
### Cisco Packet Tracer

2. Design the following network configuration using packet tracer:-

- 1 Server (type "Reg.No -PT")
- 10 PC's
- 4 Laptops
- 3 Routers
- 5 Switches

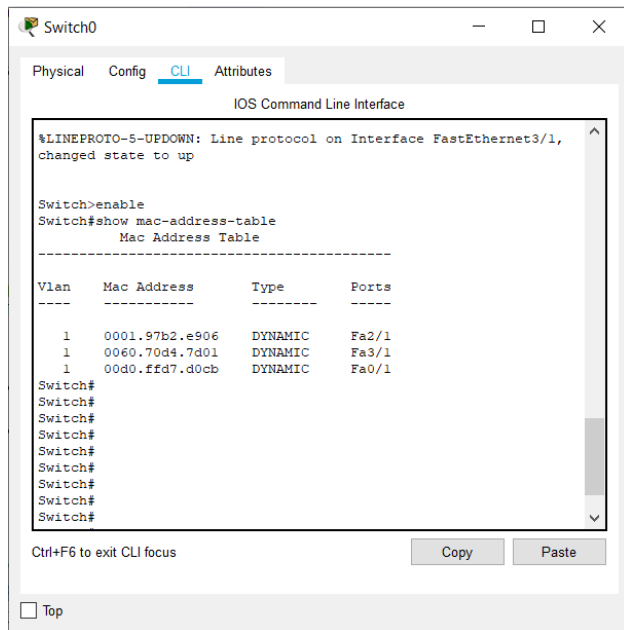
- Type all the names using label option ( Type your reg.number as a server name)
- Assign IP address to all PC's – Using Class B IP address
- Implement DHCP to all Laptops – Using Class C IP address
- Assign IP address to Server – Using Class A IP address
- Make the proper cable configuration between all the devices
- Enclose the following screenshot ( Switch MAC address table ; Simulate Ping command; Simulate IP config command ; Simulate simple PDU )

### Solution:

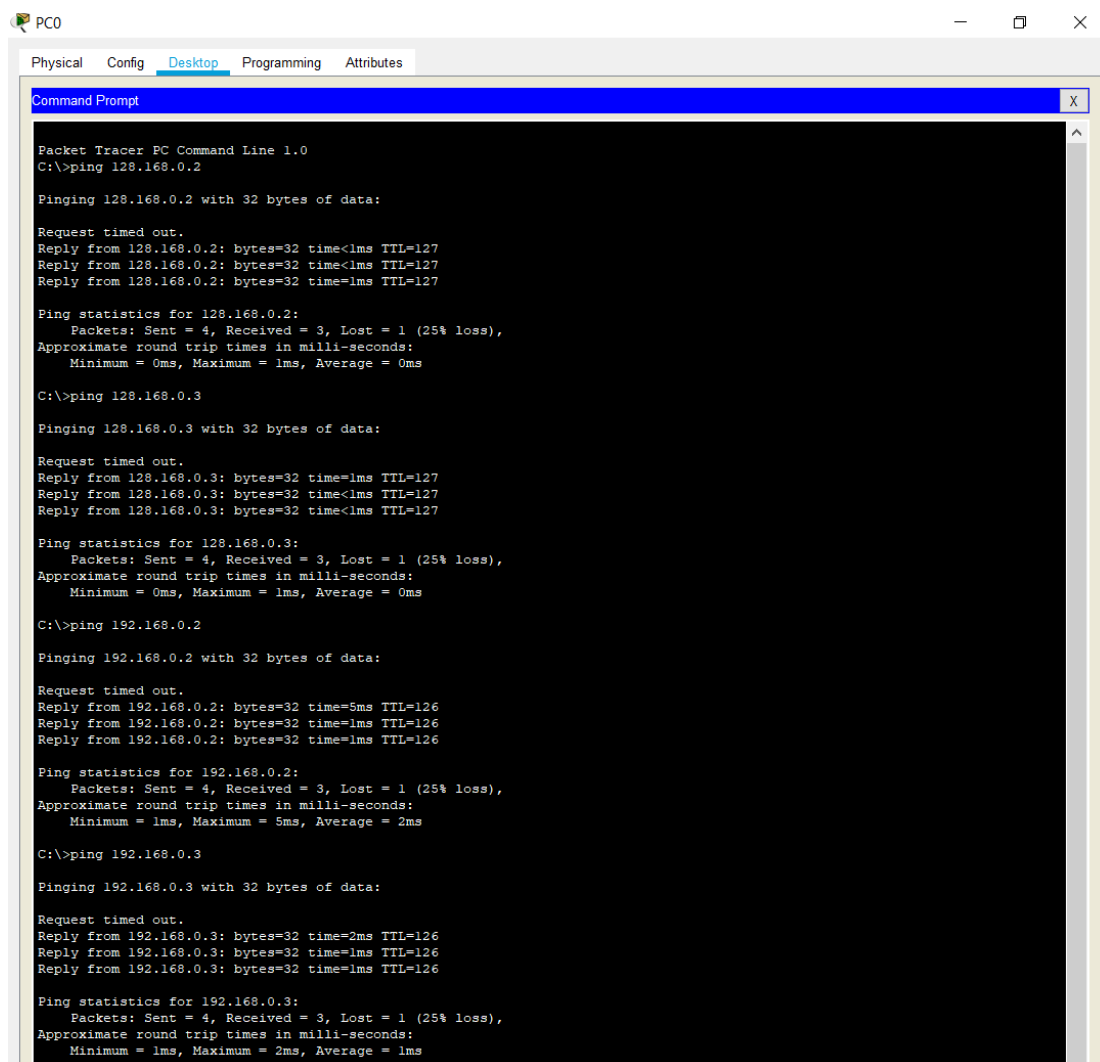


Since for all routers, switches, PCs, and servers, the input IPs and processes are similar, snaps of one from each category are enclosed:

### (a) MAC address table (for Switch 0)



### (b) Ping command (for PC 0)



```

C:\>ping 126.168.1.2

Pinging 126.168.1.2 with 32 bytes of data:

Request timed out.
Reply from 126.168.1.2: bytes=32 time=2ms TTL=126
Reply from 126.168.1.2: bytes=32 time=1ms TTL=126
Reply from 126.168.1.2: bytes=32 time=1ms TTL=126

Ping statistics for 126.168.1.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms

C:\>ping 126.168.1.3

Pinging 126.168.1.3 with 32 bytes of data:

Request timed out.
Reply from 126.168.1.3: bytes=32 time=2ms TTL=126
Reply from 126.168.1.3: bytes=32 time=1ms TTL=126
Reply from 126.168.1.3: bytes=32 time=1ms TTL=126

Ping statistics for 126.168.1.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 2ms, Average = 1ms

C:\>ping 191.168.1.2

Pinging 191.168.1.2 with 32 bytes of data:

Request timed out.
Reply from 191.168.1.2: bytes=32 time=4ms TTL=125
Reply from 191.168.1.2: bytes=32 time=15ms TTL=125
Reply from 191.168.1.2: bytes=32 time=3ms TTL=125

Ping statistics for 191.168.1.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 3ms, Maximum = 15ms, Average = 7ms

C:\>ping 191.168.1.3

Pinging 191.168.1.3 with 32 bytes of data:

Request timed out.
Reply from 191.168.1.3: bytes=32 time=3ms TTL=125
Reply from 191.168.1.3: bytes=32 time=5ms TTL=125
Reply from 191.168.1.3: bytes=32 time=2ms TTL=125

Ping statistics for 191.168.1.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 5ms, Average = 3ms

C:\>

```

☐ Top


### (c) IP config command (for Router 0 and Wireless Router 0)

The image displays two screenshots of network configuration interfaces for a simulation environment.

**Router0 Configuration:** The interface shows the configuration for FastEthernet1/0. The Port Status is set to On. Bandwidth is 100 Mbps. Duplex is set to Full Duplex. The MAC Address is 0002.4AD5.5464. The IP Configuration is set to 128.168.0.1 with a Subnet Mask of 255.255.0.0. The Tx Ring Limit is 10. The Equivalent IOS Commands are shown in a text area.

**Wireless Router0 Configuration:** The interface shows the configuration for the LAN. The IP Configuration is set to 192.168.0.1 with a Subnet Mask of 255.255.255.0. The Equivalent IOS Commands are shown in a text area.

**Wireless Router0 Configuration (Wireless Settings):** The interface shows the configuration for the Wireless settings. The SSID is A. The 2.4 GHz Channel is 1. The Authentication is set to WPA-PSK. The WEP Key is 11111111. The PSK Pass Phrase is 11111111. The Encryption Type is AES.

#### (d) Simple PDUs (from PC 0 through other PCs)

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC0	PC2	ICMP		0.000	N	0	(edit)	(delete)
	Successful	PC0	PC3	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC0	PC6	ICMP		0.000	N	2	(edit)	(delete)
	Successful	PC0	PC7	ICMP		0.000	N	3	(edit)	(delete)
	Successful	PC0	PC8	ICMP		0.000	N	4	(edit)	(delete)
	Successful	PC0	PC9	ICMP		0.000	N	5	(edit)	(delete)
	Successful	PC0	PC4	ICMP		0.000	N	6	(edit)	(delete)
	Successful	PC0	PC5	ICMP		0.000	N	7	(edit)	(delete)

Time: 02:28:01

Realtime Simulation