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CCE-B
C4 batch

LAB 5:

Q1:

Server:

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/socket.h>
#include <sys/types.h>
#include <netinet/in.h>
#include <string.h>
#include <arpa/inet.h>

int main(){
	int sockfd, newsockfd, retval, recvbytes, sendbytes;
	char buff[50];
	struct sockaddr_in server, client;
	printf("Hi\n");
	sockfd = socket(AF_INET, SOCK_STREAM, 0);
	if(sockfd == -1){
		printf("Creation Error\n");
		exit(0);
	}

	server.sin_family = AF_INET;
	server.sin_port = htons(3212);
	server.sin_addr.s_addr = htonl(INADDR_ANY);

	retval = bind(sockfd, (struct sockaddr*) &server, sizeof(server));
	if(retval == -1){
		printf("Binding Error\n");
		exit(0);
	}
	printf("Socket Binded\n");

	retval = listen(sockfd, 5);
	if(retval == -1){
		printf("Listening Error\n");
		exit(0);
	}
	printf("Socket Listening\n");

	pid_t child;
	socklen_t clilen;
	int connection = 0;
	char str[50];
	str[0] = '\0';
```

```
while(1){
	clilen = sizeof(client);

	newsockfd = accept(sockfd, (struct sockaddr*) &client, &clilen);
	if(newsockfd == -1){
		printf("Accepting Error\n");
		close(sockfd);
		exit(0);
	}
	printf("Socket Accepting\n");
	connection++;
	if(connection > 2){
			printf("Connection exceeds Max Limit\n");
			FILE *fptr1, *fptr2;
			if((fptr1 = fopen("new.txt", "r")) == NULL){
				close(newsockfd);
				close(sockfd);
				exit(0);
			}
			char temp[100];
			char str[100];
			while(fgets(temp, 100, fptr1) != NULL){
				strcpy(str, temp);
				printf("%s\n", str );
			}
			if(fptr1){
				fclose(fptr1);
			}
			if((fptr2 = fopen("ip.txt", "r")) == NULL){
				close(newsockfd);
				close(sockfd);
				exit(0);
			}
			char temp2[100];
			char str2[100];
			while(fgets(temp2, 100, fptr2) != NULL){
				strcpy(str2, temp2);
				printf("%s\n", str2 );
			}
			if(fptr2){
				fclose(fptr2);
			}
			close(newsockfd);
			close(sockfd);
			exit(0);
		}
		printf("%s\n", str);
	if((child = fork()) == 0){

		close(sockfd);
		recvbytes = recv(newsockfd, buff, sizeof(buff), 0);
		if(recvbytes == -1){
```

```
                        printf("Receiving Error\n");
                        close(newsockfd);
                        exit(0);
                }
                puts(buff);
                strcat(str, buff);
                strcat(str, " ");
                FILE *fp;
                fp = fopen("ip.txt", "a");
                char ip[INET_ADDRSTRLEN];
                inet_ntop(AF_INET, &client.sin_addr, ip, sizeof(ip));
                fputs(ip, fp);
                fputs(" ", fp);
                fclose(fp);
                FILE *fp1;
                fp1 = fopen("new.txt", "a");
                fputs(buff, fp1);
                fputs(" ", fp1);
                fclose(fp1);
                close(newsockfd);
        }

    }

    close(sockfd);
    exit(0);
}
```

Client 1:

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/socket.h>
#include <sys/types.h>
#include <netinet/in.h>
#include <string.h>
#include <arpa/inet.h>

int main(){
    int sockfd, recvbytes, sentbytes, retval;
    char buff[50];
    struct sockaddr_in server;

    sockfd = socket(AF_INET, SOCK_STREAM, 0);
    if(sockfd == -1){
        printf("Creation Error\n");
        exit(0);
    }
    server.sin_family = AF_INET;
    server.sin_port = htons(3212);
    server.sin_addr.s_addr = inet_addr("127.0.0.1");

    retval = connect(sockfd, (struct sockaddr*)&server, sizeof(server));
```

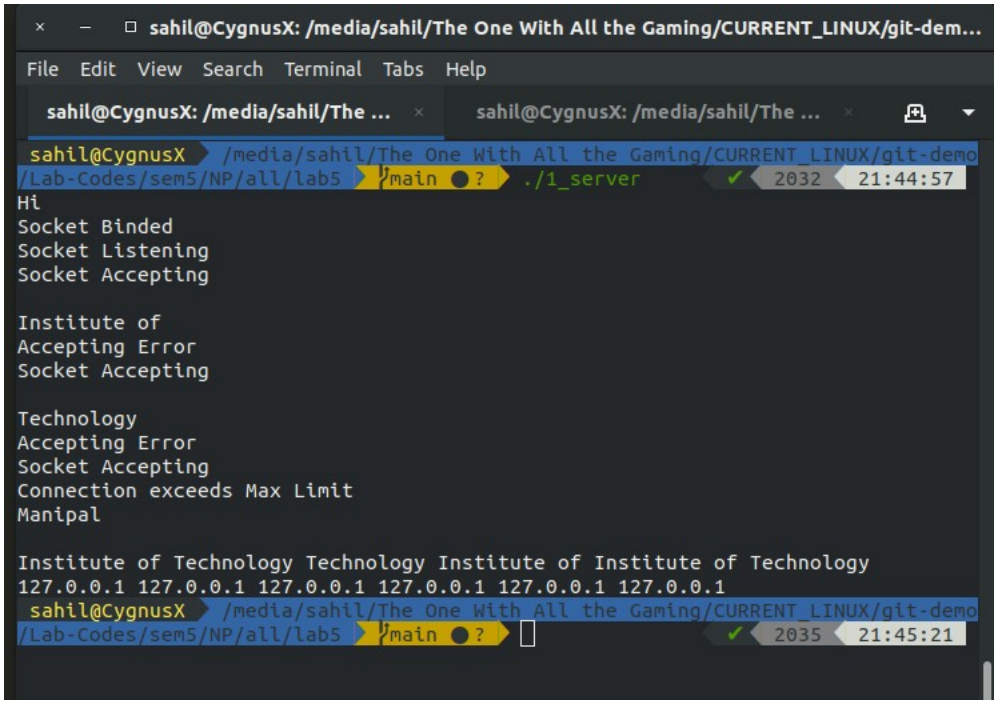
```
	if(retval == -1){
		printf("Connection Error\n");
		close(sockfd);
		exit(0);
	}
	printf("Connection Estabilished\n");

	strcpy(buff, "Institute of");
	puts(buff);
	sentbytes = send(sockfd, buff, sizeof(buff), 0);
	if(sentbytes == -1 ){
		printf("Send Error\n");
		close(sockfd);
		exit(0);
	}


	close(sockfd);
	exit(0);

}
```

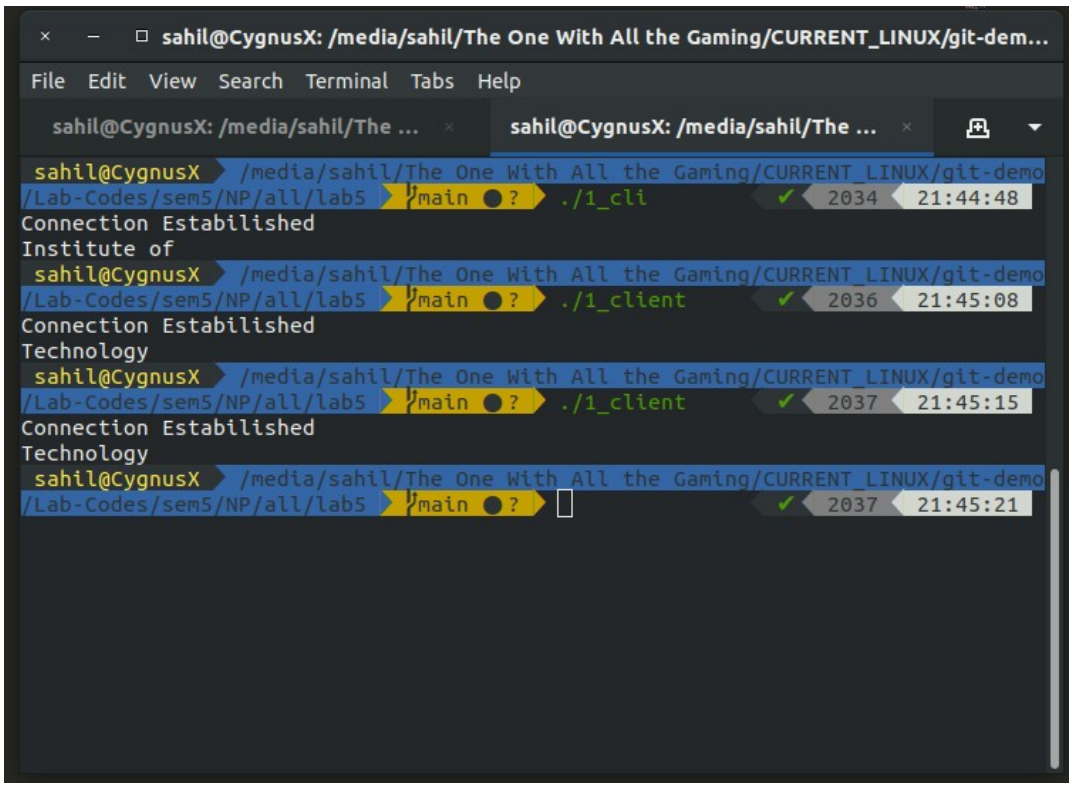
Client 2:

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include <sys/socket.h>
#include <sys/types.h>
#include <netinet/in.h>
#include <string.h>
#include <arpa/inet.h>

int main(){
	int sockfd, recvbytes, sentbytes, retval;
	char buff[50];
	struct sockaddr_in server;

	sockfd = socket(AF_INET, SOCK_STREAM, 0);
	if(sockfd == -1){
		printf("Creation Error\n");
		exit(0);
	}
	server.sin_family = AF_INET;
	server.sin_port = htons(3212);
	server.sin_addr.s_addr = inet_addr("127.0.0.1");

	retval = connect(sockfd, (struct sockaddr*)&server, sizeof(server));
	if(retval == -1){
		printf("Connection Error\n");
		close(sockfd);
		exit(0);
	}
	printf("Connection Estabilished\n");
```

```
        strcpy(buff, "Technology");
        puts(buff);
        sentbytes = send(sockfd, buff, sizeof(buff), 0);
        if(sentbytes == -1 ){
                printf("Send Error\n");
                close(sockfd);
                exit(0);
        }


        close(sockfd);
        exit(0);

}
```

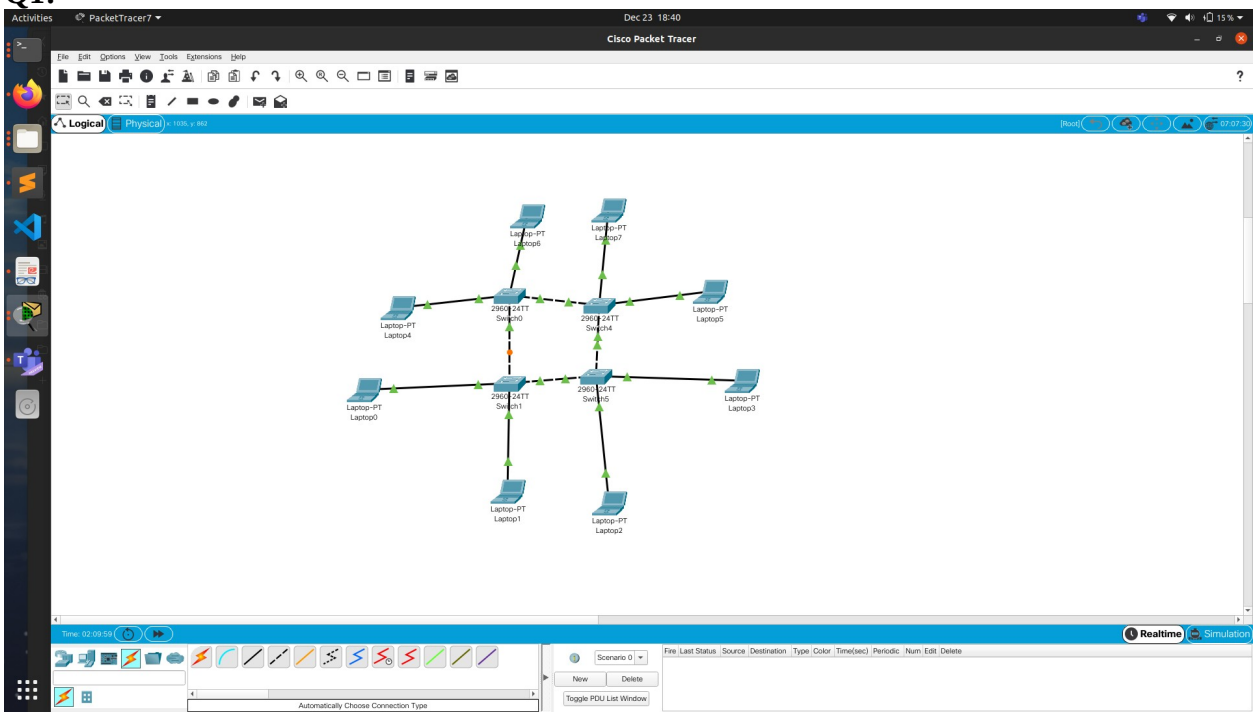
Output:

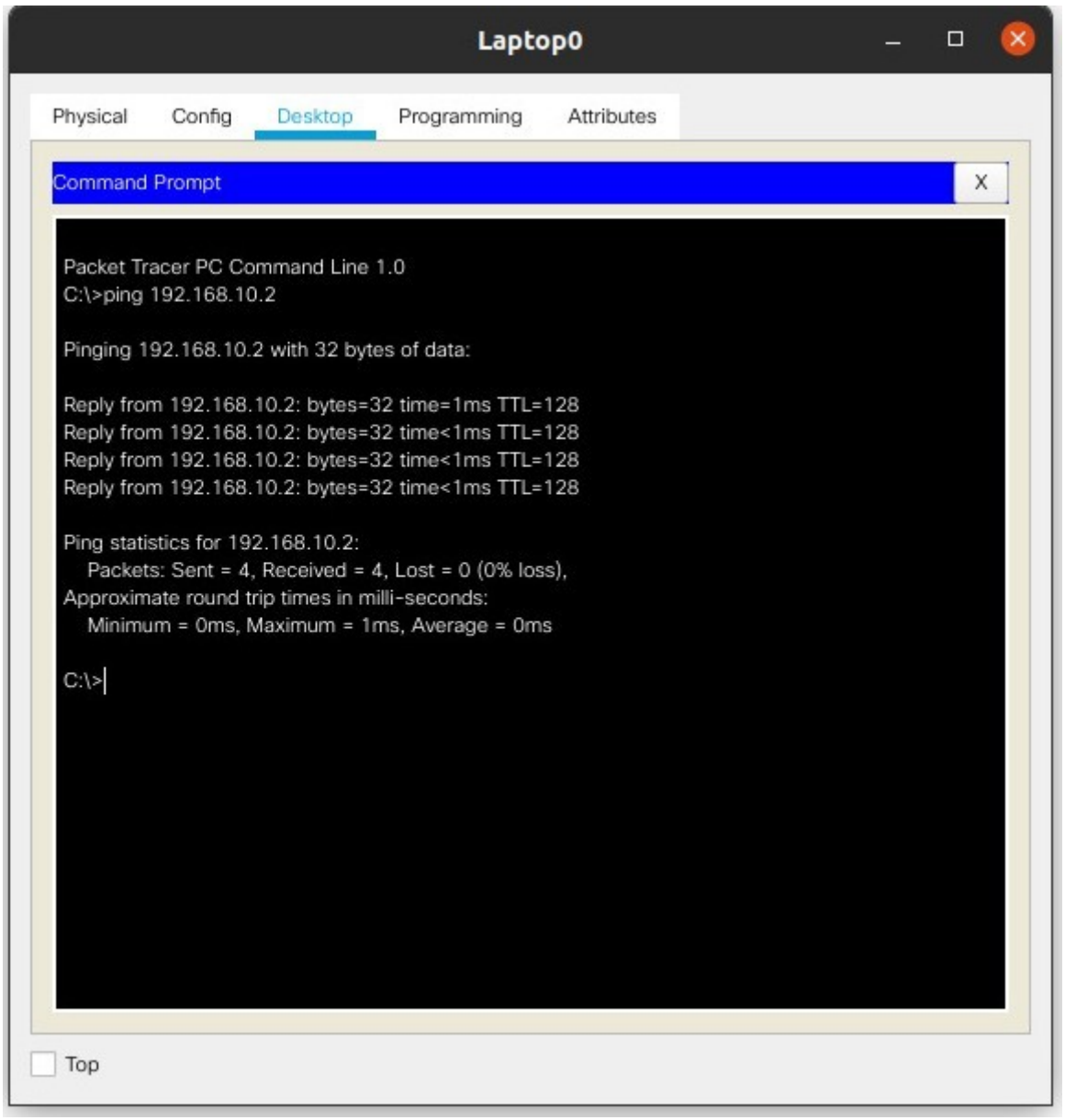


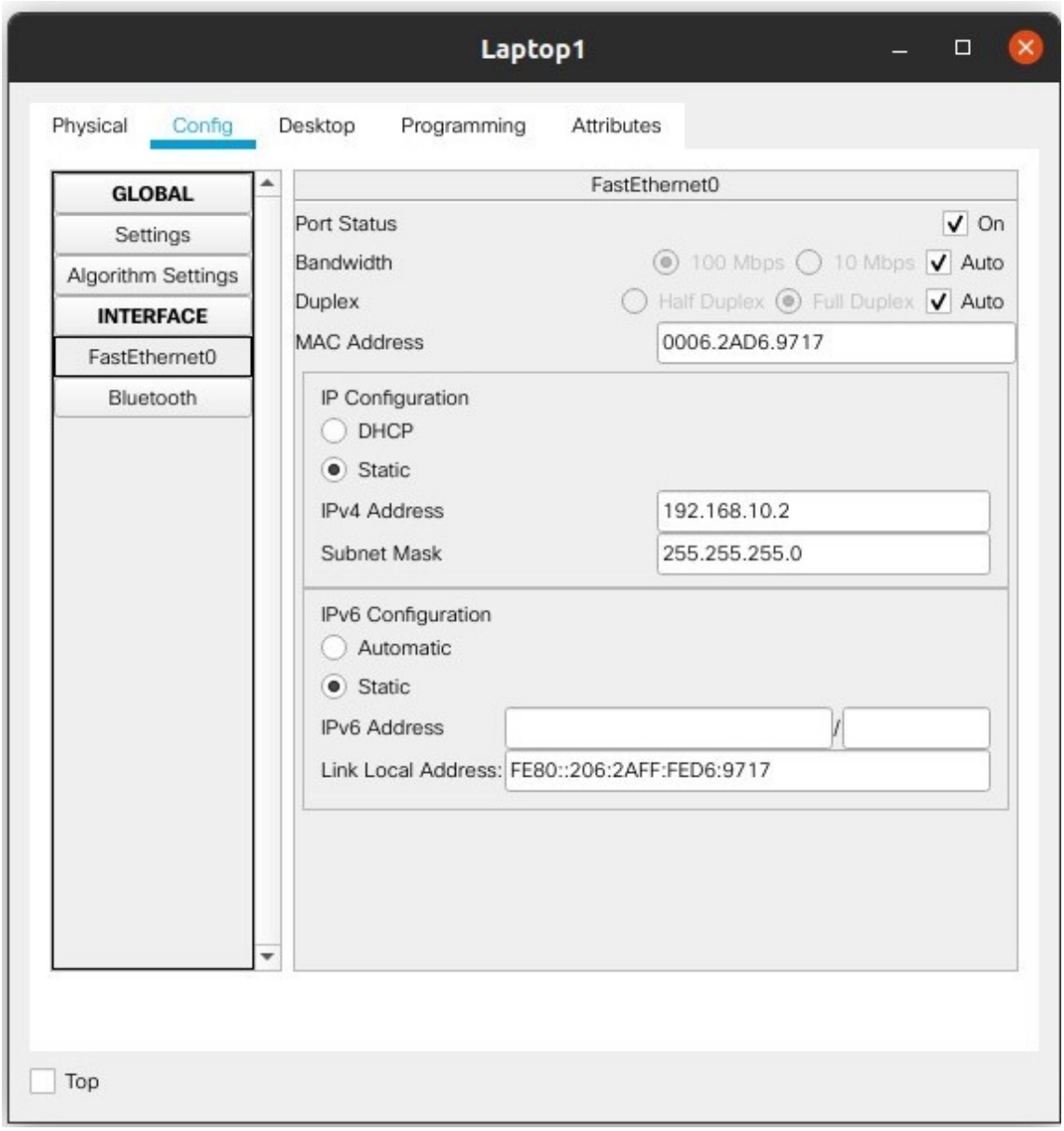

sahil@CygnusX: /media/sahil/The One With All the Gaming/CURRENT_LINUX/git-dem...
File Edit View Search Terminal Tabs Help
sahil@CygnusX: /media/sahil/The ...
sahil@CygnusX: /media/sahil/The ...
sahil@CygnusX /media/sahil/The One With All the Gaming/CURRENT_LINUX/git-demo
/Lab-Codes/sem5/NP/all/lab5 main ? ./1_cli ✔ 2034 21:44:48
Connection Established
Institute of
sahil@CygnusX /media/sahil/The One With All the Gaming/CURRENT_LINUX/git-demo
/Lab-Codes/sem5/NP/all/lab5 main ? ./1_client ✔ 2036 21:45:08
Connection Established
Technology
sahil@CygnusX /media/sahil/The One With All the Gaming/CURRENT_LINUX/git-demo
/Lab-Codes/sem5/NP/all/lab5 main ? ./1_client ✔ 2037 21:45:15
Connection Established
Technology
sahil@CygnusX /media/sahil/The One With All the Gaming/CURRENT_LINUX/git-demo
/Lab-Codes/sem5/NP/all/lab5 main ? ✔ 2037 21:45:21

LAB 8:

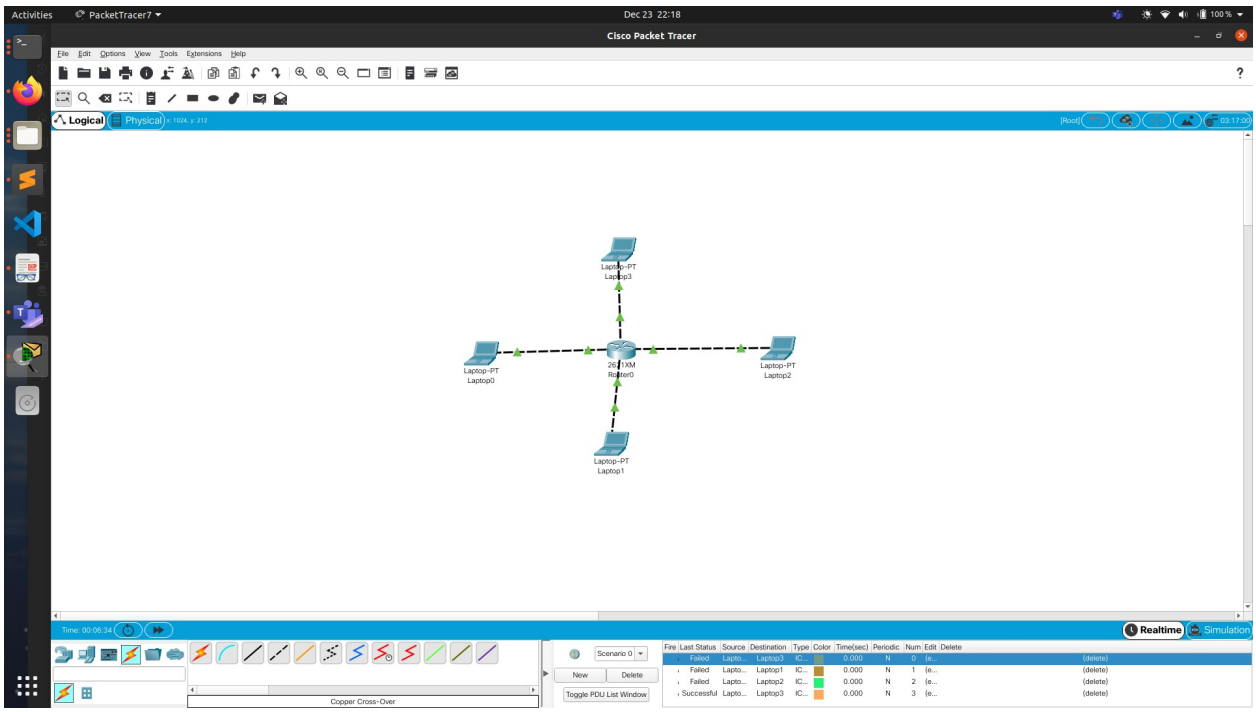
Q1:


Activities
PacketTracer7
Dec 23 18:40
Cisco Packet Tracer
File Edit Options View Tools Extensions Help
Logical
Physical
Laptop-PT Laptop6
Laptop-PT Laptop7
Laptop-PT Laptop4
2960-24TT Switch0
2960-24TT Switch4
Laptop-PT Laptop5
Laptop-PT Laptop0
2960-24TT Switch1
2960-24TT Switch5
Laptop-PT Laptop3
Laptop-PT Laptop1
Laptop-PT Laptop2
Realtime
Simulation
Automatically Choose Connection Type
New
Delete
Toggle PDU List Window


Laptop0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.2
Pinging 192.168.10.2 with 32 bytes of data:
Reply from 192.168.10.2: bytes=32 time=1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.10.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>
Top


Laptop1
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0006.2AD6.9717
IP Configuration
DHCP
Static
IPv4 Address
192.168.10.2
Subnet Mask
255.255.255.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address:
FE80::206:2AFF:FED6:9717
Top

Q2:



CLI:

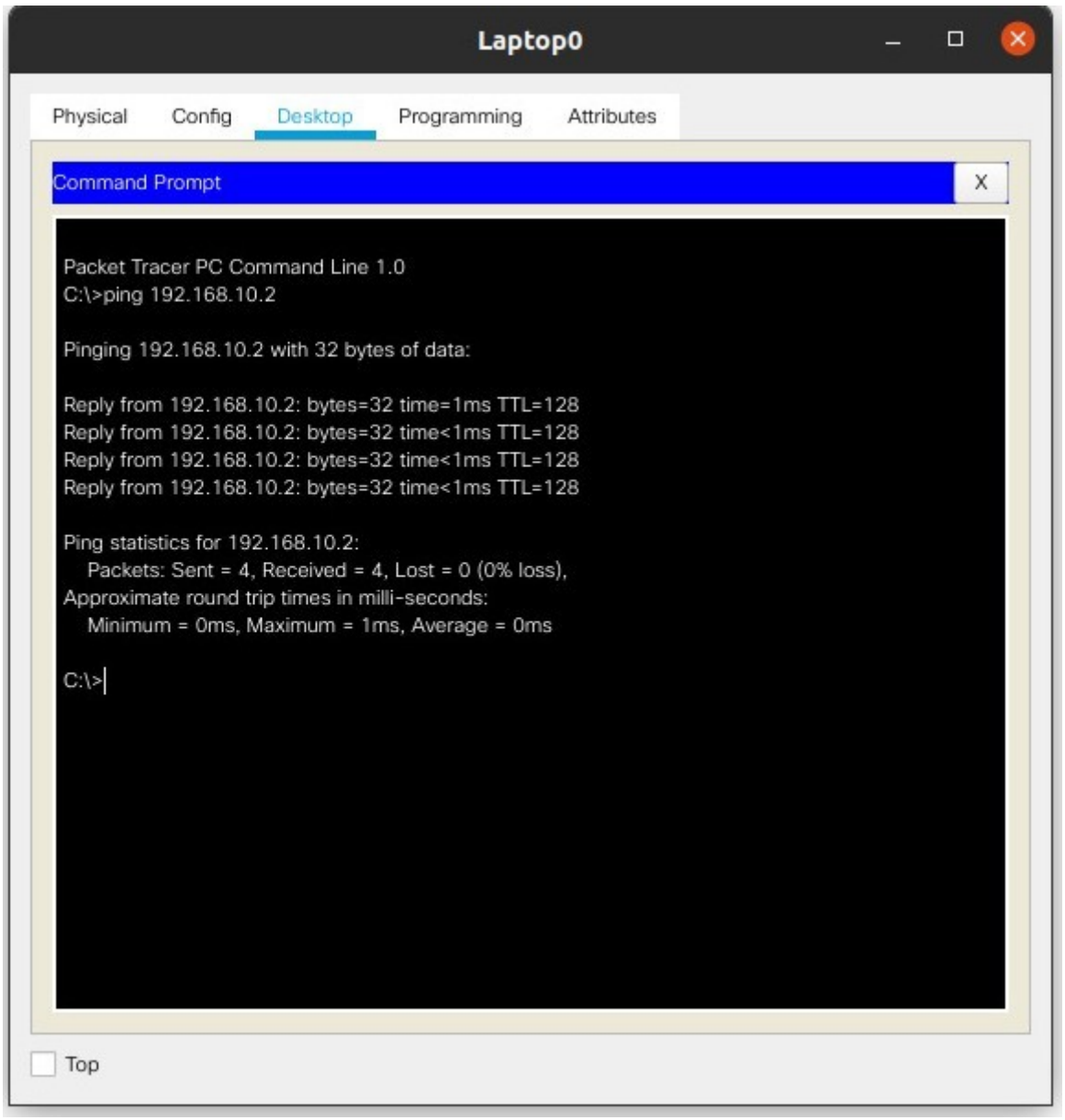
en
conf t
int fa0/0
ip add 192.168.10.1 255.255.255.0
no shutdown
exit

int fa0/1
ip add 192.168.20.1 255.255.255.0
no shutdown
exit

int fa1/0
ip add 192.168.30.1 255.255.255.0
no shutdown
exit

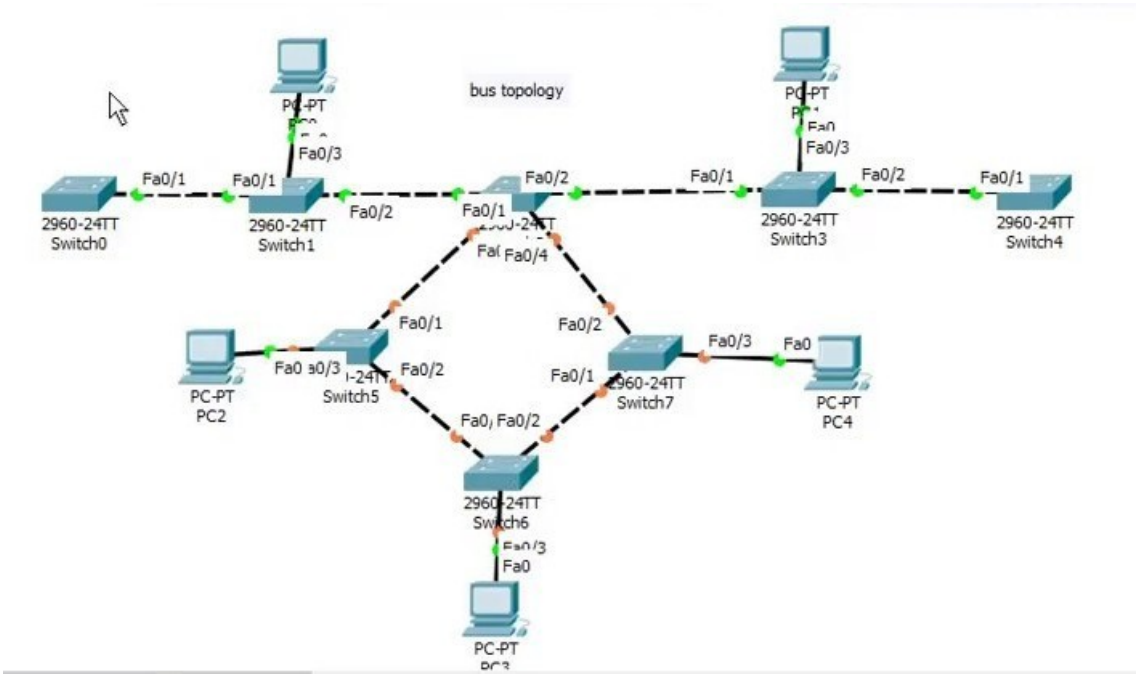
int fa1/1
ip add 192.168.140.1 255.255.255.0
no shutdown
exit

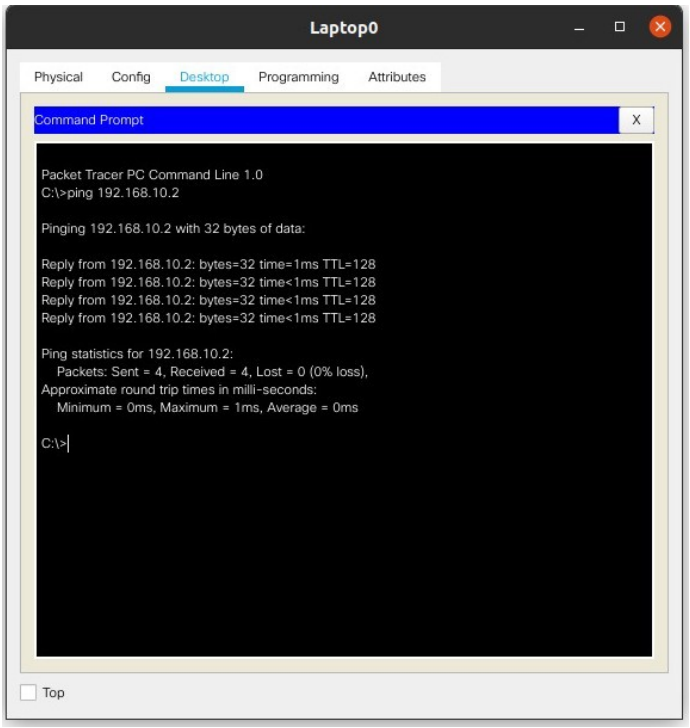
exit

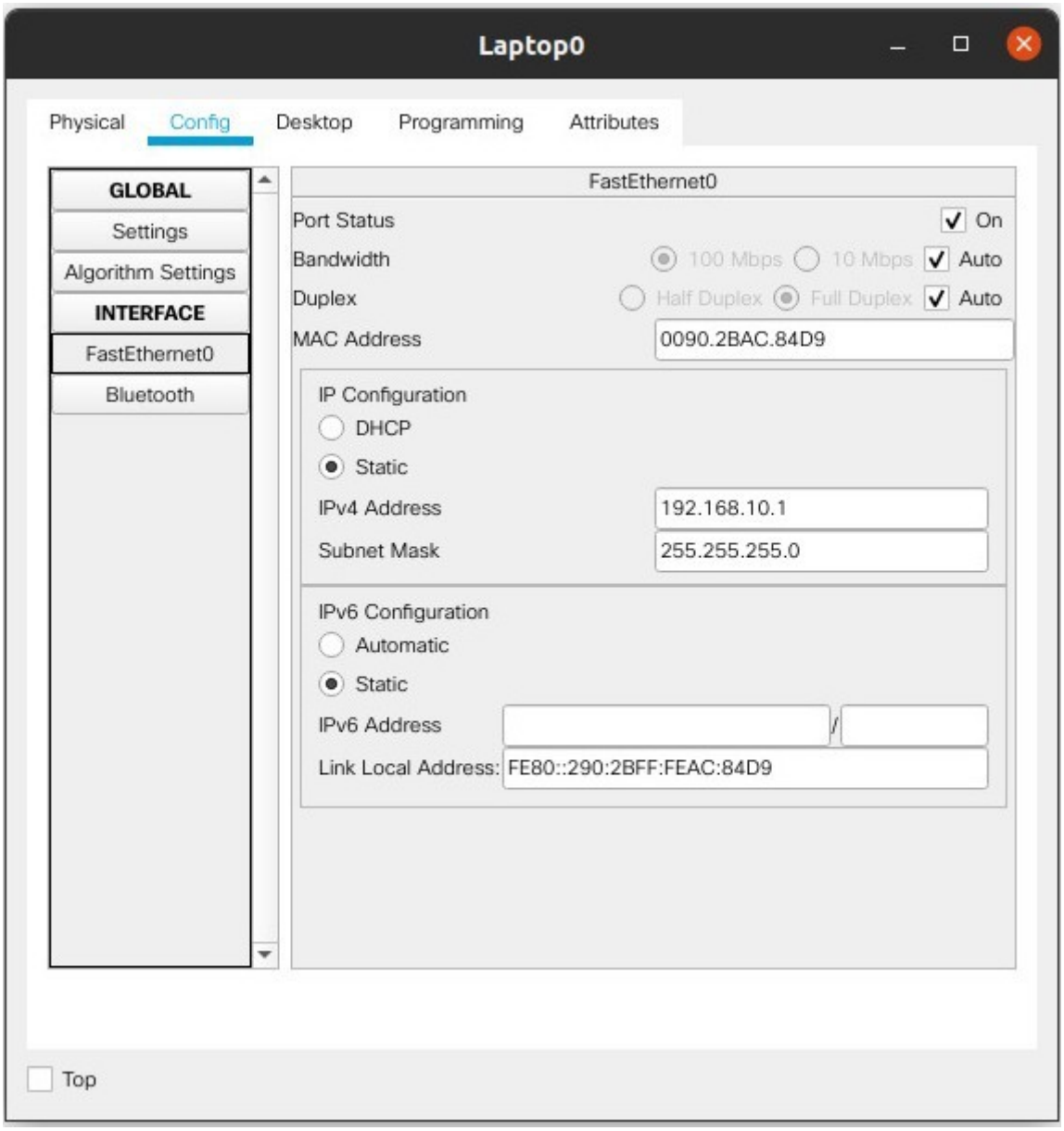

Laptop0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.2
Pinging 192.168.10.2 with 32 bytes of data:
Reply from 192.168.10.2: bytes=32 time=1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.10.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>
Top

LAB 9:

A1:


bus topology
PC-PT
Fa0/3
Fa0/1
Fa0/1
Fa0/2
Fa0/1
Fa0/2
Fa0/1
2960-24TT
Switch0
2960-24TT
Switch1
Fa0/2
Fa0/1
Fa0/4
2960-24TT
Switch3
2960-24TT
Switch4
Fa0/1
Fa0/2
Fa0/3
Fa0
PC-PT
PC2
Switch5
Fa0/2
Fa0/1
Switch7
PC-PT
PC4
Fa0/2
2960-24TT
Switch6
Fa0
PC-PT


Laptop0
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Packet Tracer PC Command Line 1.0
C:\>ping 192.168.10.2
Pinging 192.168.10.2 with 32 bytes of data:
Reply from 192.168.10.2: bytes=32 time=1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Reply from 192.168.10.2: bytes=32 time<1ms TTL=128
Ping statistics for 192.168.10.2:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
C:\>
Top


Laptop0
Physical
Config
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Bluetooth
FastEthernet0
Port Status
On
Bandwidth
100 Mbps
10 Mbps
Auto
Duplex
Half Duplex
Full Duplex
Auto
MAC Address
0090.2BAC.84D9
IP Configuration
DHCP
Static
IPv4 Address
192.168.10.1
Subnet Mask
255.255.255.0
IPv6 Configuration
Automatic
Static
IPv6 Address
Link Local Address:
FE80::290:2BFF:FEAC:84D9
Top