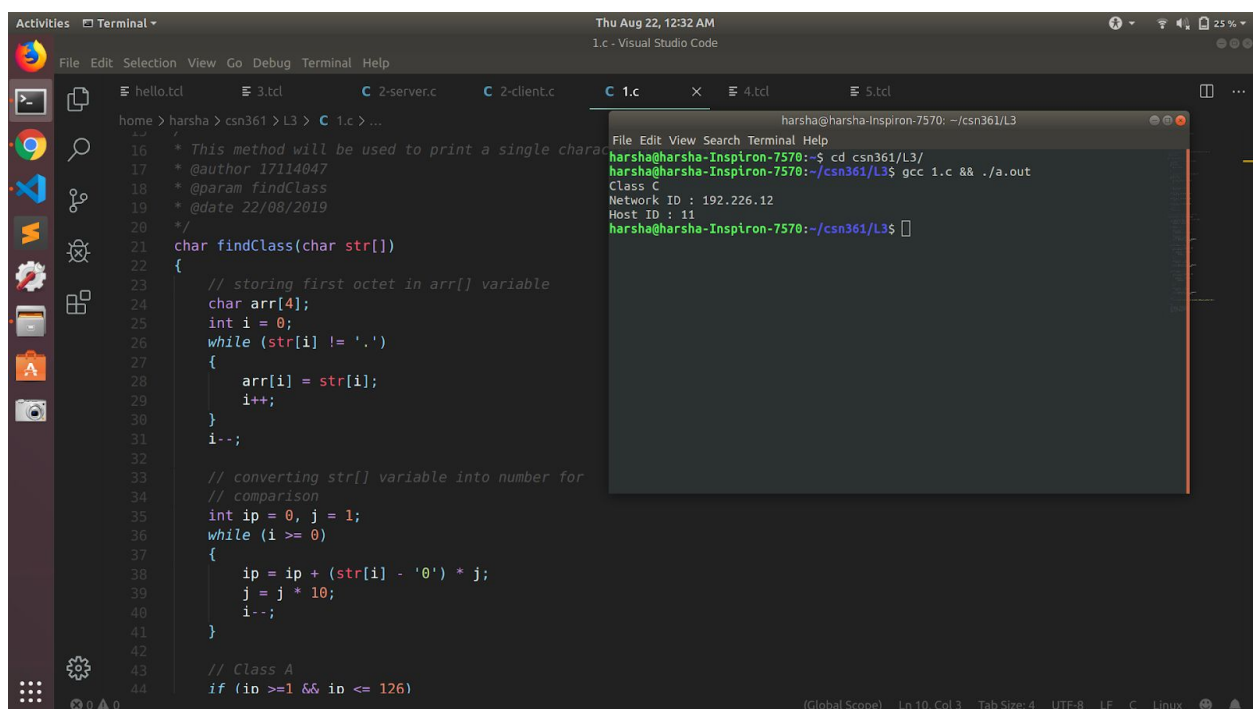Name : L.Harsha Vardhan

Enroll No. : 17114047

1.Write a socket program in C to determine class, Network and Host ID of an IPv4 address.

A.

Data Structures and Functions used:
- char findClass(char str[]) : find the class of the IP address based on the first octet.
- void separate(char str[], char ipClass) : find the Network ID and Host ID from the class.

2. Write a C program to demonstrate File Transfer using UDP

A.

Data Structures and Functions used:

- sockfd = socket(AF_INET, SOCK_DGRAM, IP_PROTOCOL) : The socket() call creates a socket in the specified domain and of the specified type.

3.Write a TCL code for network simulator NS2 to demonstrate the star topology among a set of computer nodes. Given N nodes, one node will be assigned as the central node and the other nodes will be connected to it to form the star. You have to set up a TCP connection between k pairs of nodes and demonstrate the packet transfer between them using Network Animator (NAM). Use File Transfer protocol (FTP) for the same. Each link should have different color of packets to differentiate the packets transferred between each pair of nodes. The program should take the number of nodes (N) as input followed by k pairs of nodes.

A.
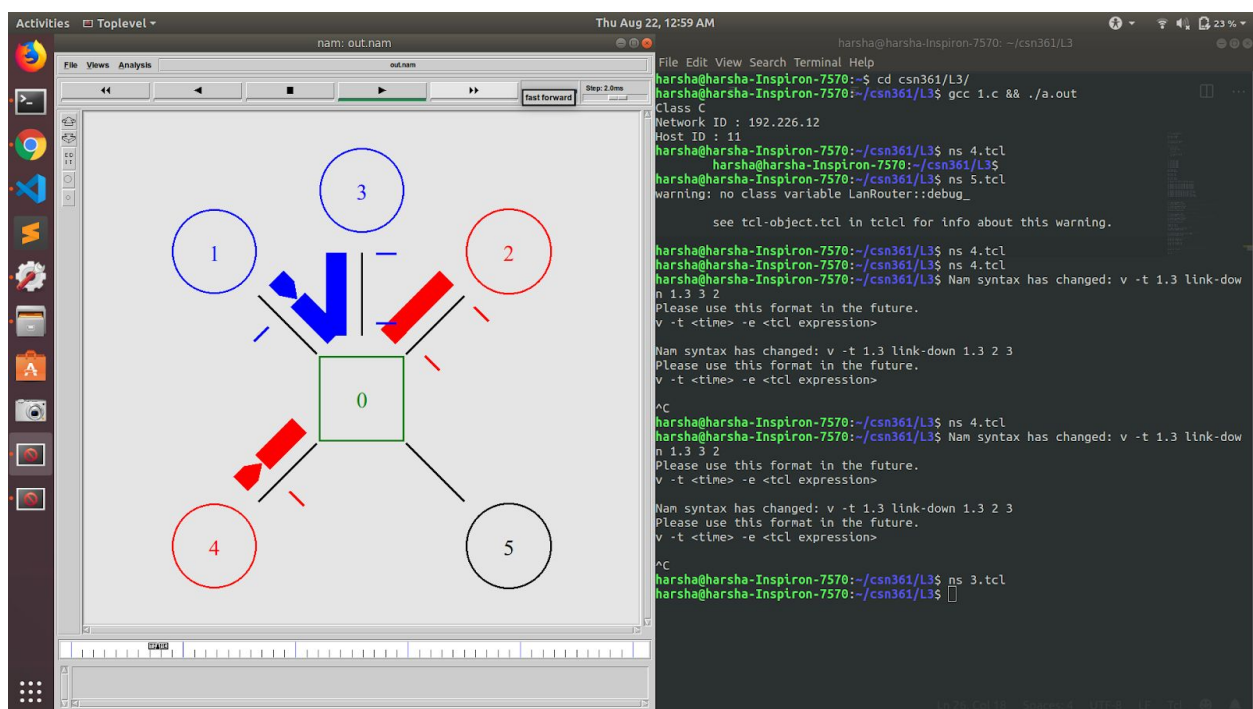
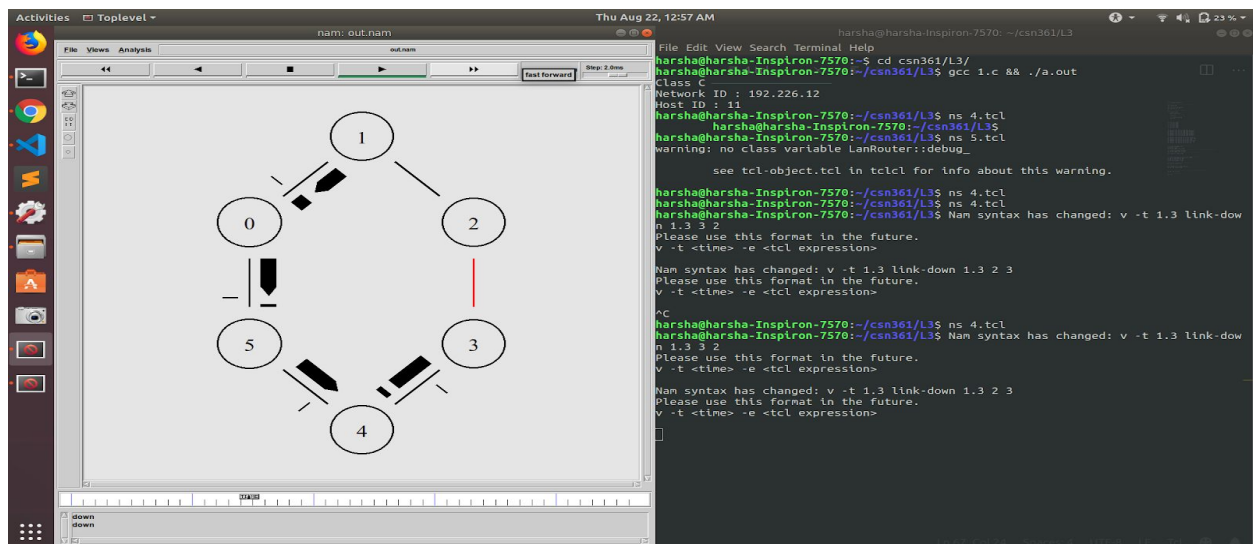**4. Write a TCL code for network simulator NS2 to demonstrate the ring topology among a set of computer nodes. Given N nodes, each node will be connected to two other nodes in the form of a ring. You have to set up a TCP connection between k pairs of nodes and demonstrate packet transfer between them using Network Animator (NAM). Use File Transfer protocol (FTP) for the same. Each link should have different color of packets to differentiate the packets transferred between each pair of nodes. The program should take the number of nodes (N) as input followed by k pairs of nodes**
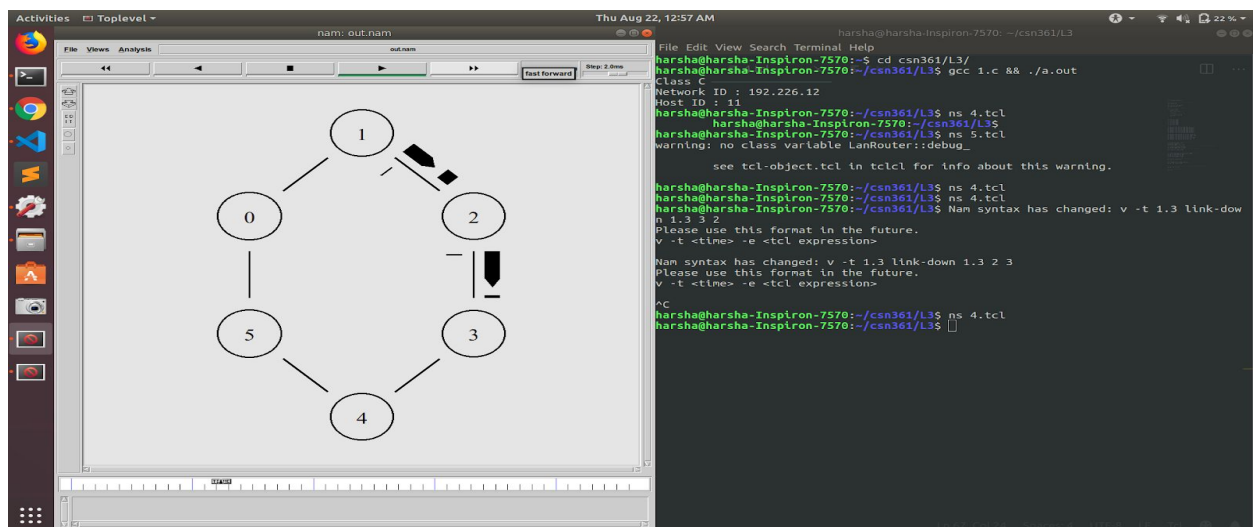
A.

5. Write a TCL code for network simulator NS2 to demonstrate the bus topology among a set of computer nodes. Given N nodes, each node will be connected to a common link. You have to set up a TCP connection between k pairs of nodes and demonstrate packet transfer between them using Network Animator (NAM). Use File Transfer protocol (FTP) for the same. Each link should have different color of packets to differentiate the packets transferred between each pair of nodes. The program should take the number of nodes (N) as input followed by k pairs of nodes.

A.