

# Computer Network Laboratory

# Assignment 3

Name: Gagan Kumre

Enrollment Number: 17114028

Class: 3rd year, B.Tech CSE

Course: CSN-361

GitHub link - <https://github.com/gagankumre/CSN361/tree/master/Assignment>

---

---

---

**Five problems were given for this assignment. They are-**

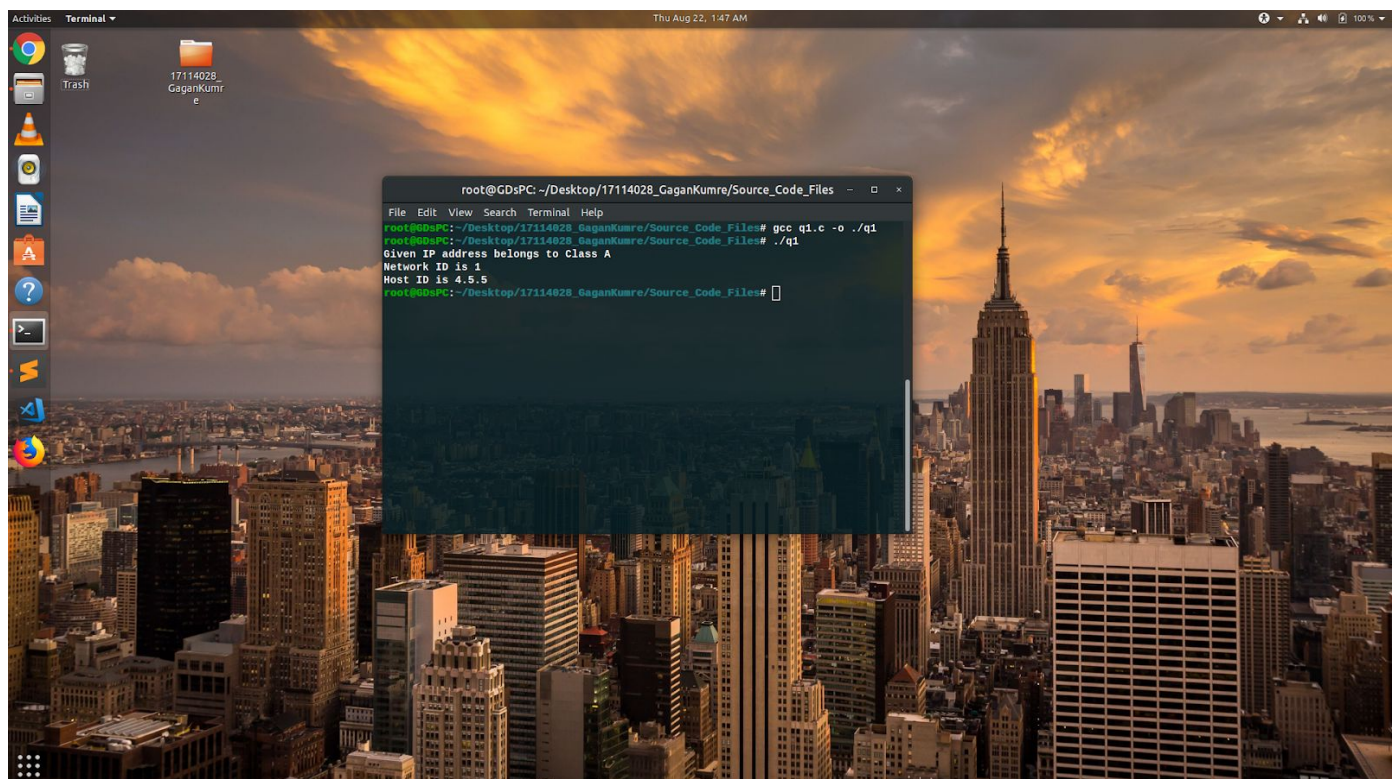
### **Problem 1 :**

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

#### ***Algorithms and data structure used :***

1. findclass(): to find class of ip
  2. seperate(): separte "." from ip
- str[]: To store the ip , strings, buffer
- char : for storing class

#### **Screenshot :**



## Problem 2 :

Write a C program to demonstrate File Transfer using UDP.

### ***Algorithms and data structure used :***

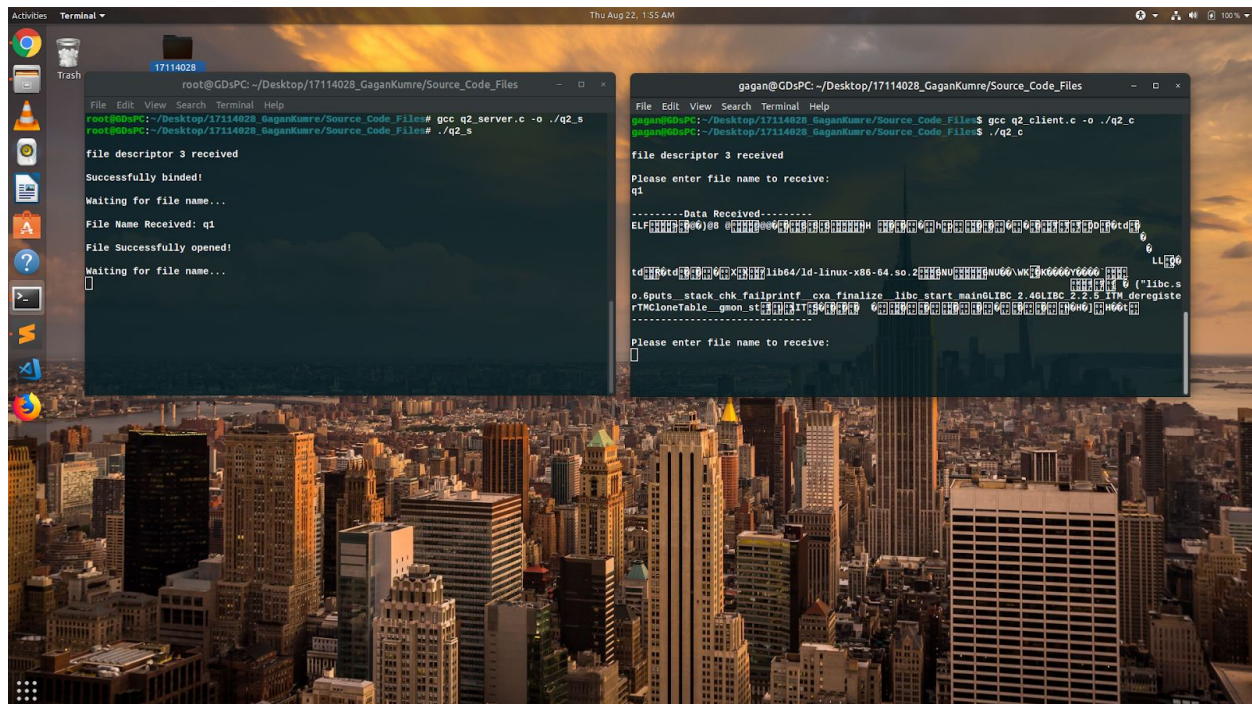
recvfile() : To receive file

Int sockfd: To store the file descriptor

Struct sockaddr\_in :to store the socket's address

buff[] =for storing the file.

### **Screenshot :**



## Problem 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.

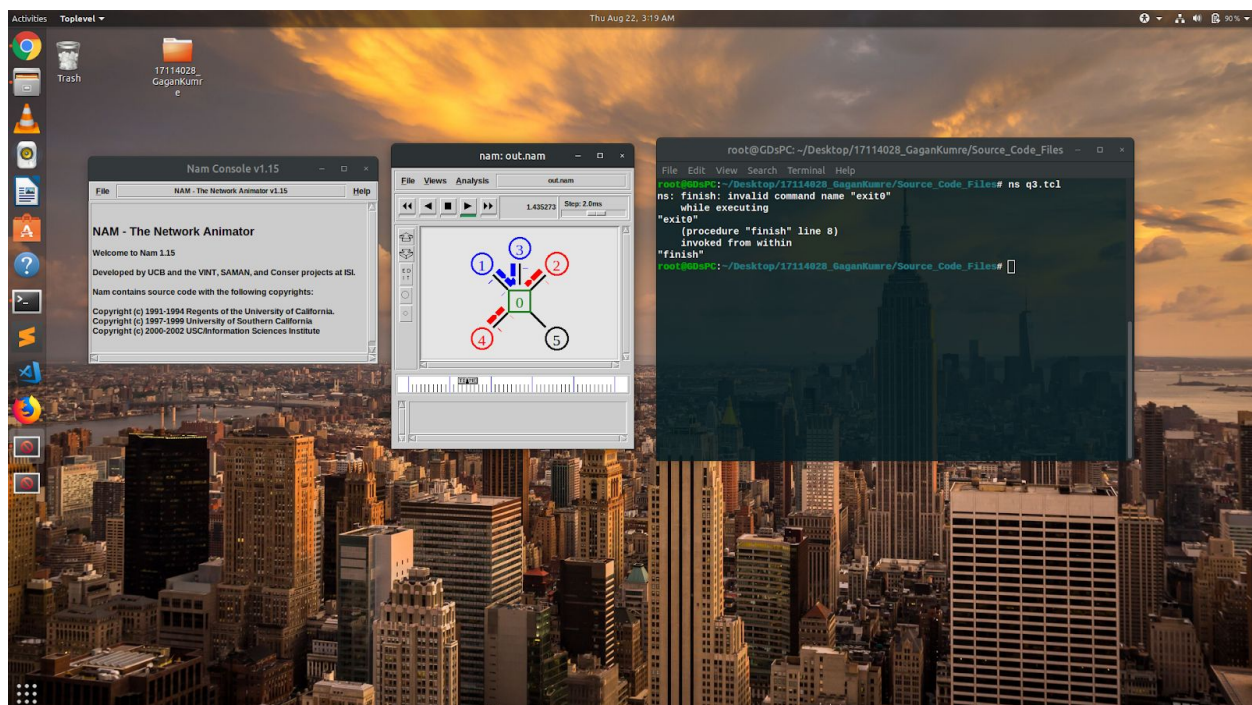
### ***Algorithms and data structure used :***

Set - for creating nodes

Tcp protocol for data transfer

Ftp-for data exchange

### **Screenshot :**





## Problem 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.

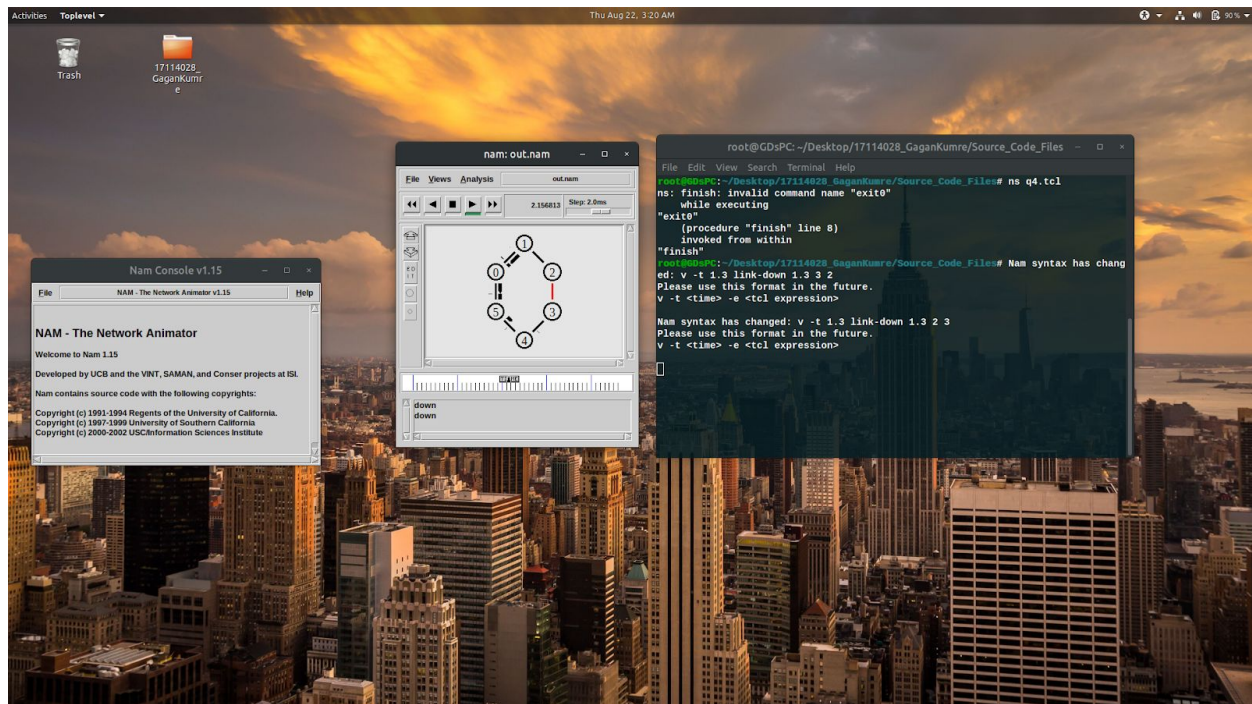
### ***Algorithms and data structure used :***

Set - for creating nodes

Tcp protocol for data transfer

Ftp-for data exchange

### **Screenshot :**



## Problem 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.

### *Algorithms and data structure used :*

Set - for creating nodes

Tcp protocol for data transfer

Ftp-for data exchange

### Screenshot :

