Background:

In this assignment we are going to implement three basic concepts of networks in this assignment.

DNS(Domain Name Server), whenever we enter a destination name (website name) it is hosted against some IP and it is resolved by DNS.

Simple Routing, after getting IP address from DNS server about destination we need to send data from source to destination. All of you have an idea about routing protocols such as EIGRP, RIP or OSPF. A routing protocol specifies how routers communicate with each other, distributing routing information that enables them to select routes between any two nodes on a computer network. These routing protocols share their routing table with each other so that whenever a node has to communicate with another node, the router should know where to forward this packet. Now in this task you are implementing a kind of prototype of routing protocol that will work on the basis of hop count. Above diagram is the sample topology for this assignment.

Outcomes:

The purpose of such an assignment is that you would have some idea about basic network operations such as routing protocol and DNS implementation, how they work. How routing tables are shared and how a routing path is calculated in a simple scenario.

Major Functionality :

- In order to forward data towards the destination each router has a routing table (data structure or txt file).

- This routing table will be shared with other routers so each router should have information about the connected networks/clients with other routers. (20)

- As the routing table sharing is a broadcast msg in our case but every router should have one routing table, it should not have multiple copies.

- Whenever a client gets connected to any server a message will be generated and passed to all the routers. This message contains information about client numbers **For example C 1 connected with Server 1.**

- All clients should communicate with each other. **Like C1 from Server 1 should be able to communicate with C6 of Server 4.**

- We will consider it as a circuit switch network that means if C1 and C6 are communicating then C2 and C4 cannot communicate. If they want to do so there should be an error message displayed on their screens that Link 1 is already in use by C1.

- When two clients stop communicating by sharing a message of "close" then this link will be free and other clients can use it.