CSN-361 Computer Networks Laboratory

Assignment 3

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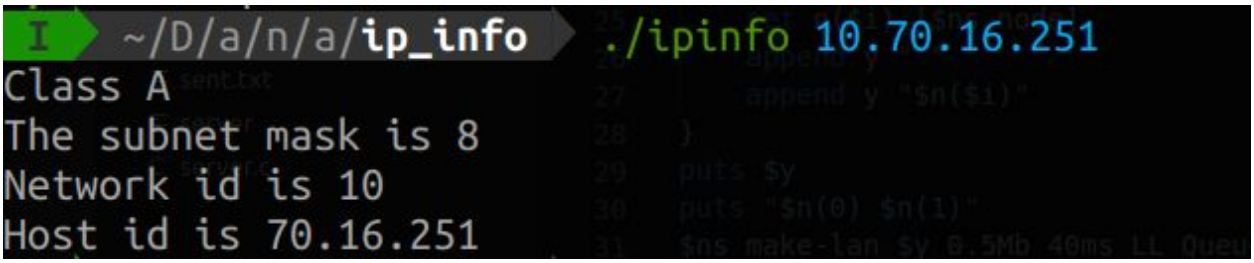
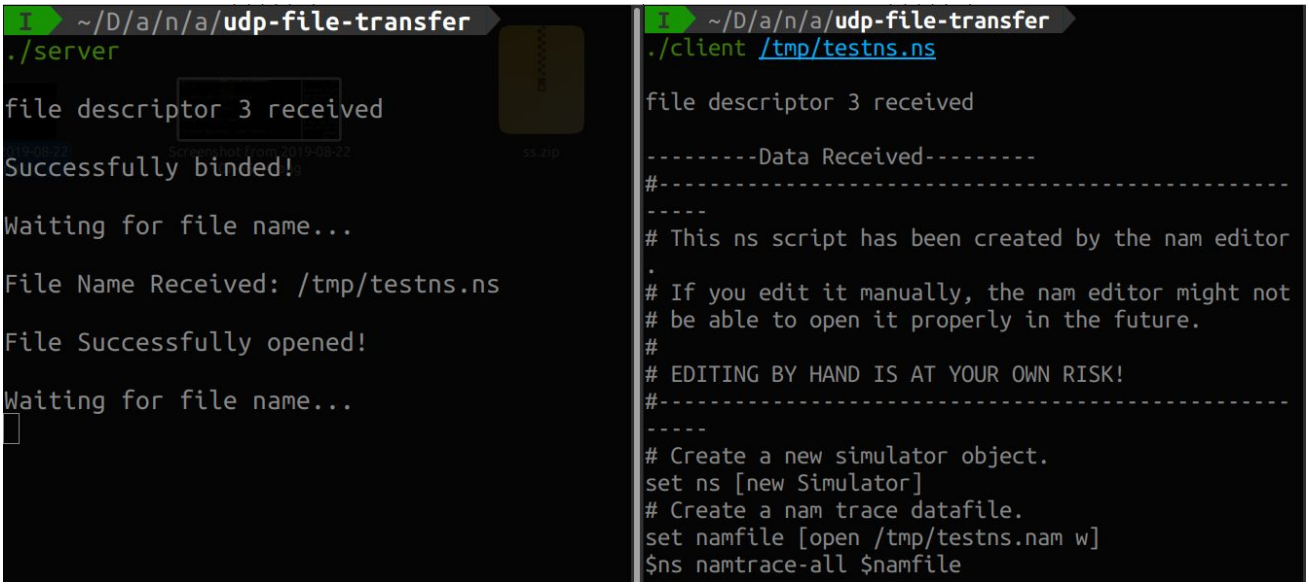
Problem Statement 1:

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



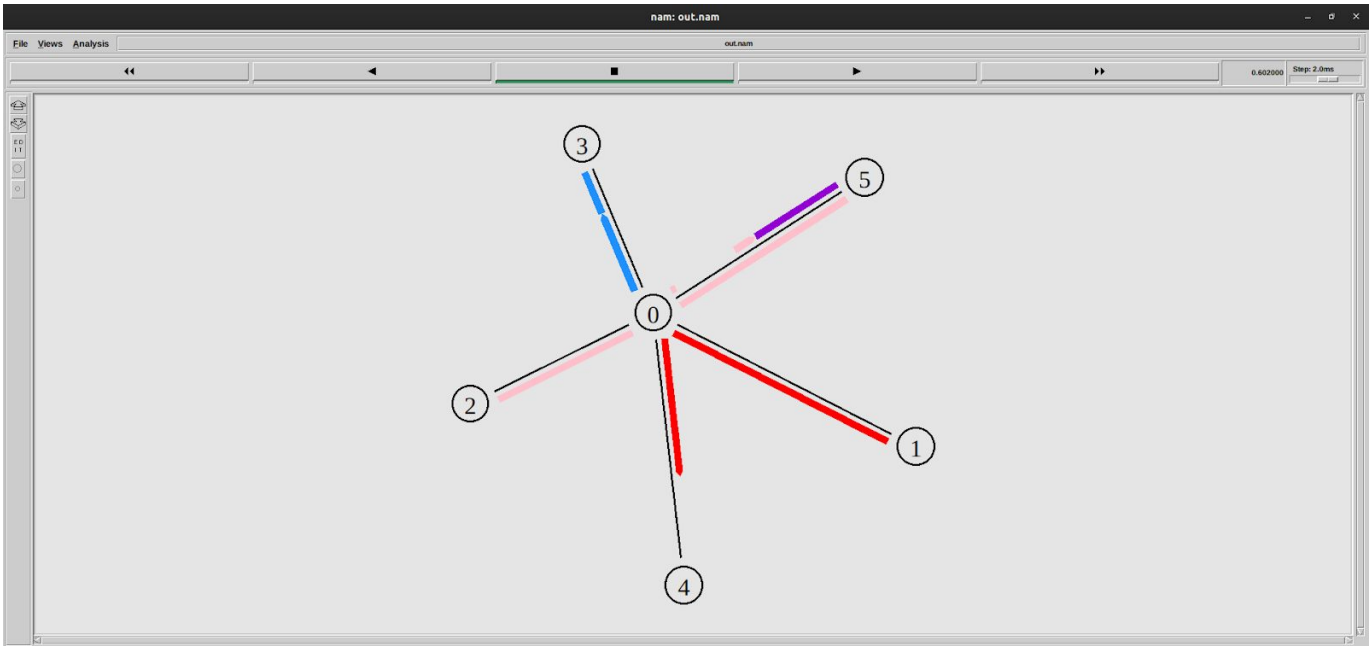
Problem Statement 2:

Write a C program to demonstrate File Transfer using UDP.



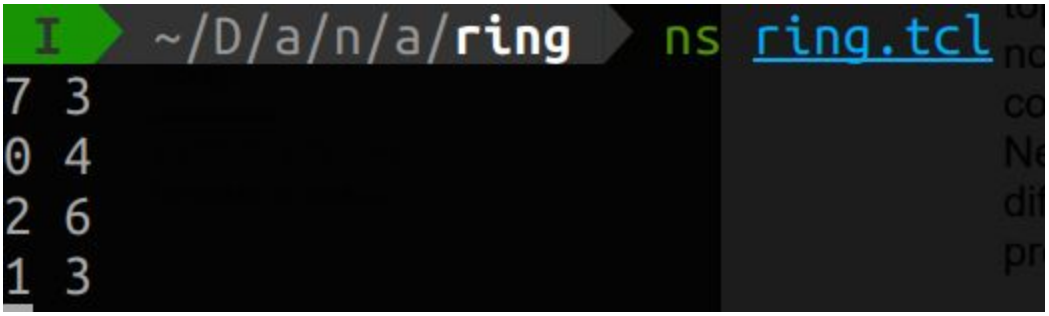
Problem Statement 3:

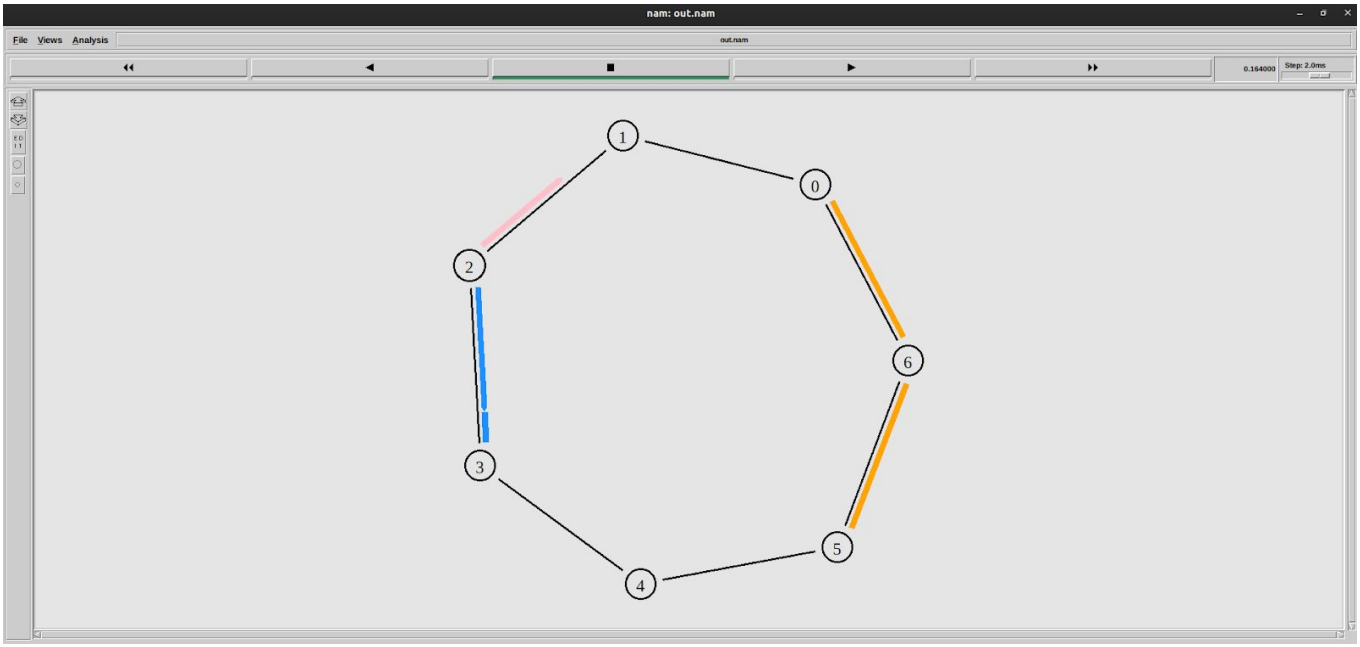
Write a TCL code for network simulator NS2 to demonstrate the **star** topology among a set of computer nodes. Given N nodes, one node will be assigned as the central node and the other nodes will be connected to it to form the star. You have to set up a TCP connection between k pairs of nodes and demonstrate 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.



Problem Statement 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.





Problem Statement 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.

```
I ~/D/a/n/a/bus ns bus.tcl
Enter no. of Nodes:
6
_o10 _o13 _o16 _o19 _o22 _o25
_o10 _o13
warning: no class variable LanRouter::debug_
         see tcl-object.tcl in tclcl for info about this warning.
Enter k:
3
1 3
2 5
0 1
```