* Use try catch block

For input, BufferedReader class

For output, PrintWriter class

BufferedReader br = new BufferedReader (new InputStreamReader(
                                                socket.getInputStream()));

PrintWriter pr = new PrintWriter (socket. getOutputStream ());

SMTP port : 25, 587

server : webmail. buet.ac.bd

abc @ ghi @ fgh . com   X
abc @ ghi@.com. com   ✓
abc@ ghi . comf   X
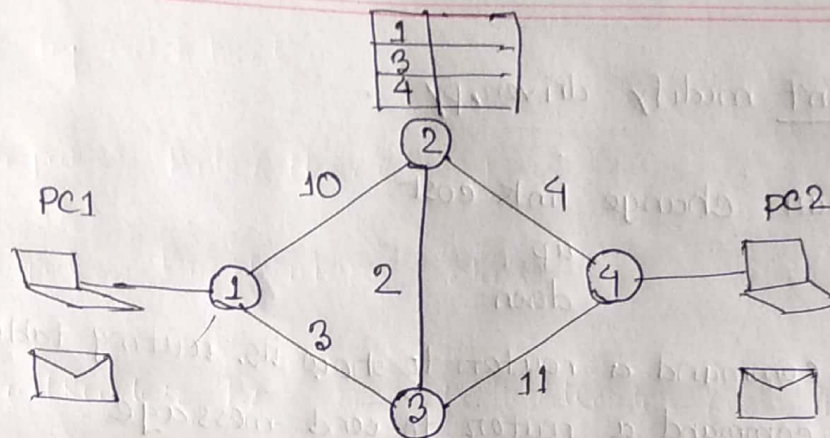
Wireshark

- arp -a

  Address Resolution Protocol

- ping

- * 248.0 : Same network between two devices.

- tracert ip-address

  ping -a 192 168. 168. 0. 103

  // Resolve host name

1	
3	
4	

(2)

PC1

10

4

pc2

(1)

2

(4)

3

11

(3)

2	5	3
5	3	3
4	4	3	← next hop

1	
2	
4	

↑ Cost to reach from 1

↑ Router

But routing table doesn't have the info about shortest path.

Routing table for 1

2	10	2
3	3	3
4	—	—

Routing table for 3

1	3	1
2	2	2
4	11	4

Routing table for 2

1	10	1
3	2	2
4	4	4

Routing table for 4

1	~~3~~	~~4~~
2	2	2
~~3~~	11	~~3~~

So, one router sends its routing table to its immediate router, and updates accordingly.

Distance vector routing.

IP and weight of every edges are in topo.txt

*** we can only extract info about neigbour from topo.txt

** We __can't__ modify driver.py .

Driver can change link cost
          up
      ① down

     command a router to show its routing table
     command a router to send message

Commands

$ ifconfig

   # shows interface, IP, ...

* driver always runs in IP 168. 192 . 168 . ⑩⑩

| Split | → to divide the terminal .

$ show <ip>

$ send <ip> <ip> n message
       src   dst   msg len

* Driver sends message byte by byte

* Cross cable   for   connecting   between   similar devices
* Straight cable for   connecting   between dissimilar devices.

- Uplink → for connecting with other switch, or other room
             ~~not with~~

  ├ Core layer
  ├ Distribution layer
  ├ Access layer   → In room

  - Putty → software

  - CLI → Common Line Interface

  - Console → Wire of

  - TIA ~~588~~ 568

  - IOS → Internetworking Operating system.

       >   #
            └→ Privilige mode
       └→ User / View mode

- RIP → Routing Information Protocol

  [ISIS → Intermediate System Intermediate System (less popular)
  [OSPF → Open SPF   (more popular)

- IETF → Internet Engineering Stuff Force

- DHCP

192.168.43. 3

This 24 bits are same ttin all devices under same network.

↓
Subnet address.   subnet mask. 255. 255.255.0
                                              ↑
AND ing ~~Ip~~ address with $111...1_{24} \ 000...0_8$, we get

network address
‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾‾

* * IP Header
* * frame header.

                        Commands
                        ‾‾‾‾‾‾‾‾

> enable

show version

show flash

show ip interface brief

** { g 0/0   gigabyte (for router to device)
     { s0/0/0   Serial (for router to router)

    * DORA → 4 messages are exchanged in DHCP

ping icmp

┌─────────────────────────┐
│ IP unreliable protocol │
└─────────────────────────┘

```
ICMP \ echo   request
ICMP  echo   reply
```

\# enable configure terminal

\# show run   * *

    RAM   NVRAM

\# Copy run start

\# no shutdown

    arp —address resolving protocol

Serial DCE

(Uses clock in
   one port)
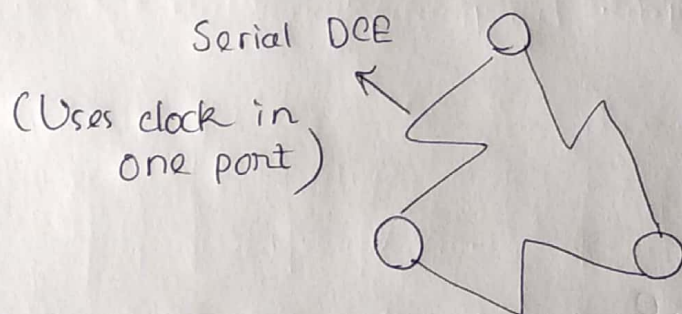
\# . . . clock . . .

\# router rip

\# network 43.0   } routing rip

\# network 45.0

Static
ip route 192.168.44.0   0.0.0.255   s0/0/0

ip route 192.168.43.0   0.0.0.255   s/0/0

configure t

router rip
network 192.168.43.0
network 192.168.45.0