========== VLAN ==========

Vlan in both side:
Vlan #number
Name #name

Port addressing:
int #pc-switchWire
switchport mode accress
switchport access vlan #number

Trunk :
int #switch-switchWire
switchport mode trunk
switchport trunk native vlan #number\
switchport trunk allowed vlan #number, #number,#number – vlan 2 and default vlan 1

========== NAT ==========

Private side router# give ip to each port of the router

```
int g0/0 (same for g0/1)
ip address 192.168.10.1 255.255.255.0
no shutdown

int s0/0/0
ip address 100.1.1.1 255.255.255.252          (real IP)
clock rate 64000                              (clock on private side router)
no shutdown
```

Public ISP router#

```
int s0/0/0
ip address 100.1.1.2 255.255.255.252
no shutdown

int g0/0
ip address 100.100.100.1 255.255.255.0
no shutdown
```

Set default gateways of PCs and servers properly

STATIC NAT (fixed one to one mapping) config (static ip bind)

Private side router#

```
ip route 0.0.0.0  0.0.0.0  s0/0/0    (kono rasta na chinle serial port 0 diye just pathay dibe)
int g0/0
ip nat inside
int g0/1
ip nat inside
int s0/0/0
ip nat outside
```

Public isp router#

```
ip route 0.0.0.0  0.0.0.0     S0/0/0
```

Dynamic NAT config (dynamic one to one mapping)

je je side e NAT translation lagbe oi router gulate similar cmd dibo

```
ip nat pool BUET-pool1 209.165.200.8 209.165.200.11 netmask 255.255.255.224
```

permitting our 2 VLANs

```
access-list 1 permit 192.168.10.0   0.0.0.255
access-list 1 permit 192.168.20.0   0.0.0.255
```
(the last portion is wildcard mask, used to filter out host part)

```
ip nat inside source list 1 pool BUET-pool1
```

ekhaneo inside outside chinay dite hobe (same as STATIC NAT)

```
sh ip nat translations
```
(for dynamic NAT & PAT)

PAT (same ip onekjon ke dibo)

```
int g0/0
ip nat inside
int g0/1
ip nat inside
int s0/0/0
ip nat outside

access-list 2 permit 192.168.10.0   0.0.0.255
access-list 2 permit 192.168.20.0   0.0.0.255

ip nat pool BUET-pool2 209.165.200.8 209.165.200.8 netmask 255.255.255.224
ip nat inside source list 2 pool BUET-pool2 overload
```

=============== ACL ===============

```
ip access-list 10 permit 192.168.10.0     0.0.0.15
```
(10.1-10.15 allowed)

```
ip access-list 10 permit host 192.168.10.10
```
(Just allows 192.168.10.10)

```
access-list 10 remark PERMISSION OF CSE LAB 1
```
(Note)

Standard ACL (Just source) (1-99)

Named Access-List Syntax

```
ip access-list extended FTP-FILTER
permit tcp 192.168.10.0       0.0.0.255 any eq ftp
```
allowing 192.168.10.0 - 192.168.10.255 ip addresses to access any ftp

```
int s0/0/0
ip access-group FTP-FILTER in
```

Example {

```
no access-list 1
```
(clear any standard ACL beforehand)

```
access-list 101  permit tcp host  192.168.10.5  host 192.168.50.5 eq www
access-list 101  deny   tcp host  192.168.10.5  host 192.168.50.6 eq ftp

access-list 101  permit tcp host  192.168.20.5  host 192.168.50.6 eq ftp
access-list 101  deny   tcp host  192.168.20.5  host 192.168.50.5 eq www
access-list 101 permit ip any any
```

apply ACL to ports

```
int s0/0/0
ip access-group 101 out
```

}

```
no ip access-list 10
```
(clears access list 10)

```
permit ip any any
```
(to enable ping)

```
sh access-list
```

```
telnet:
interface vlan 1
ip address 192.168.10.10 255.255.255.0
no shutdown
exit

line vty 0 15
password cisco
login
---- now telnet possible-----
```