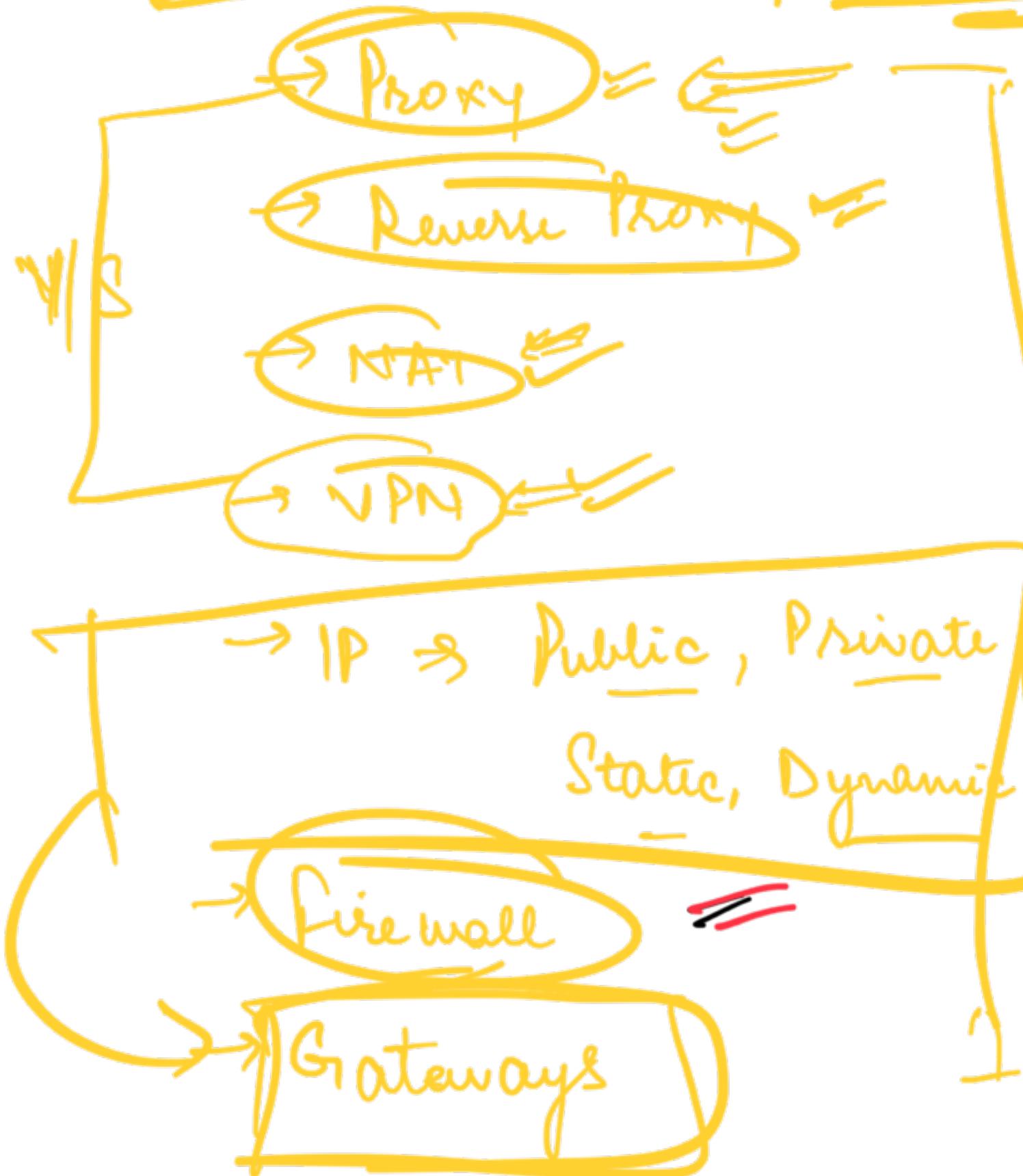


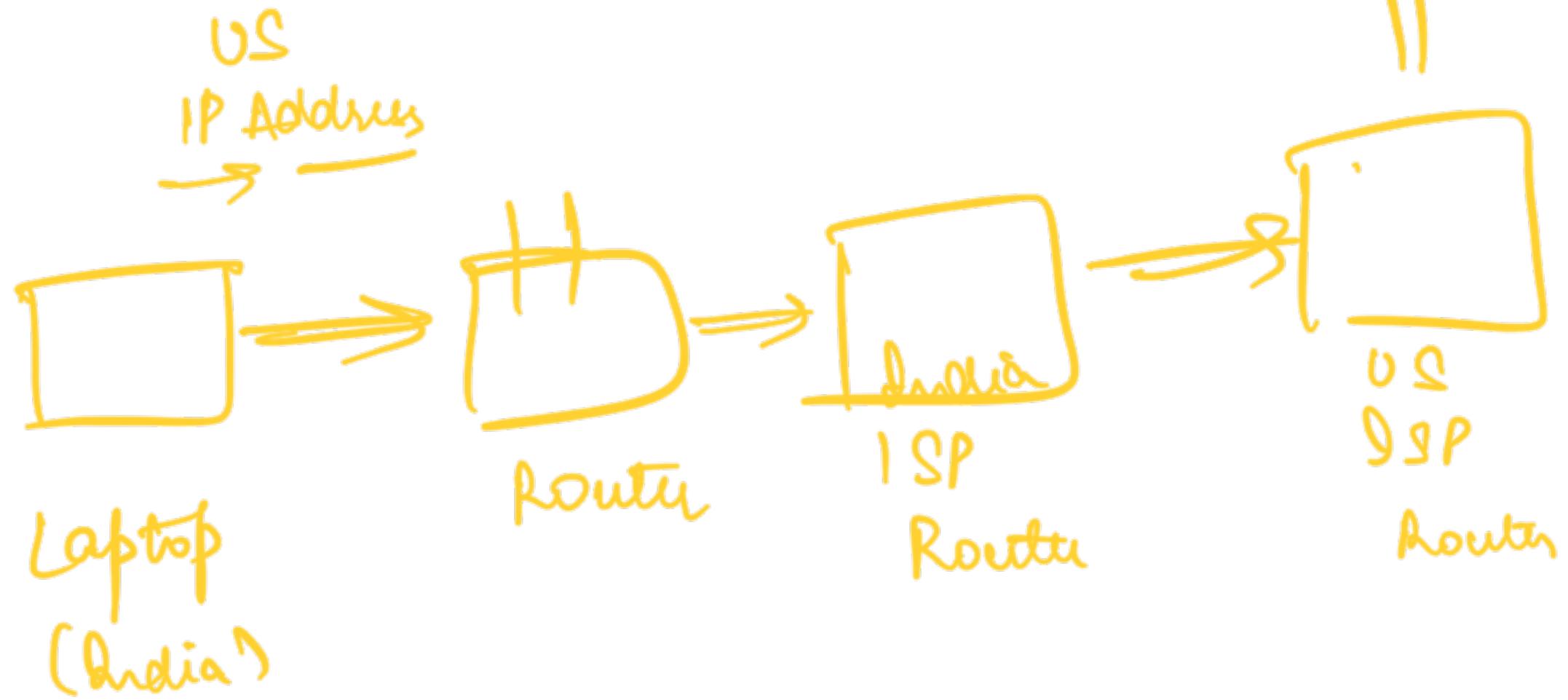
Agenda

(Computer Networks 3)



OPY.-

How do we access internet



College \Rightarrow Someone else marks your attendance
 \Rightarrow proxy

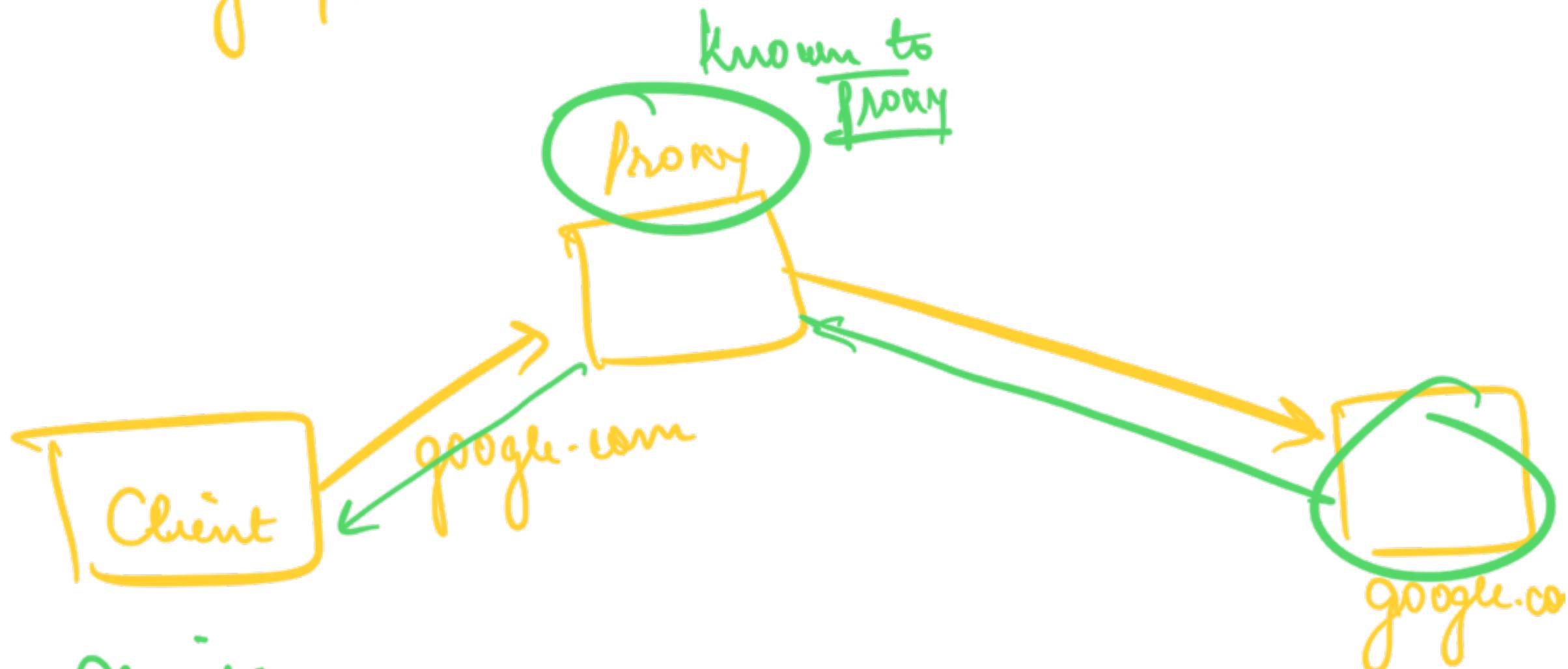


Use Case

You don't want your IP address to be
revealed to the server

~~why?~~

My IP address is blocked

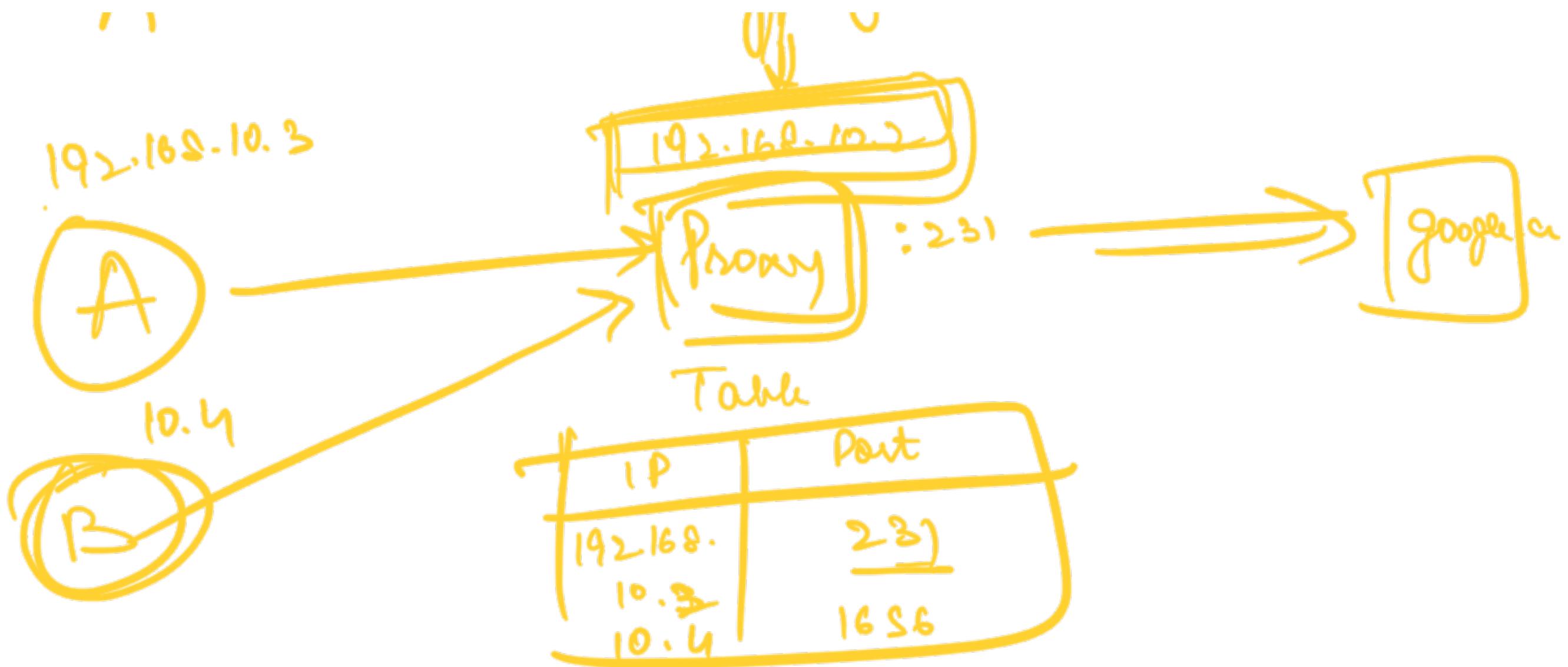




Maintain a table

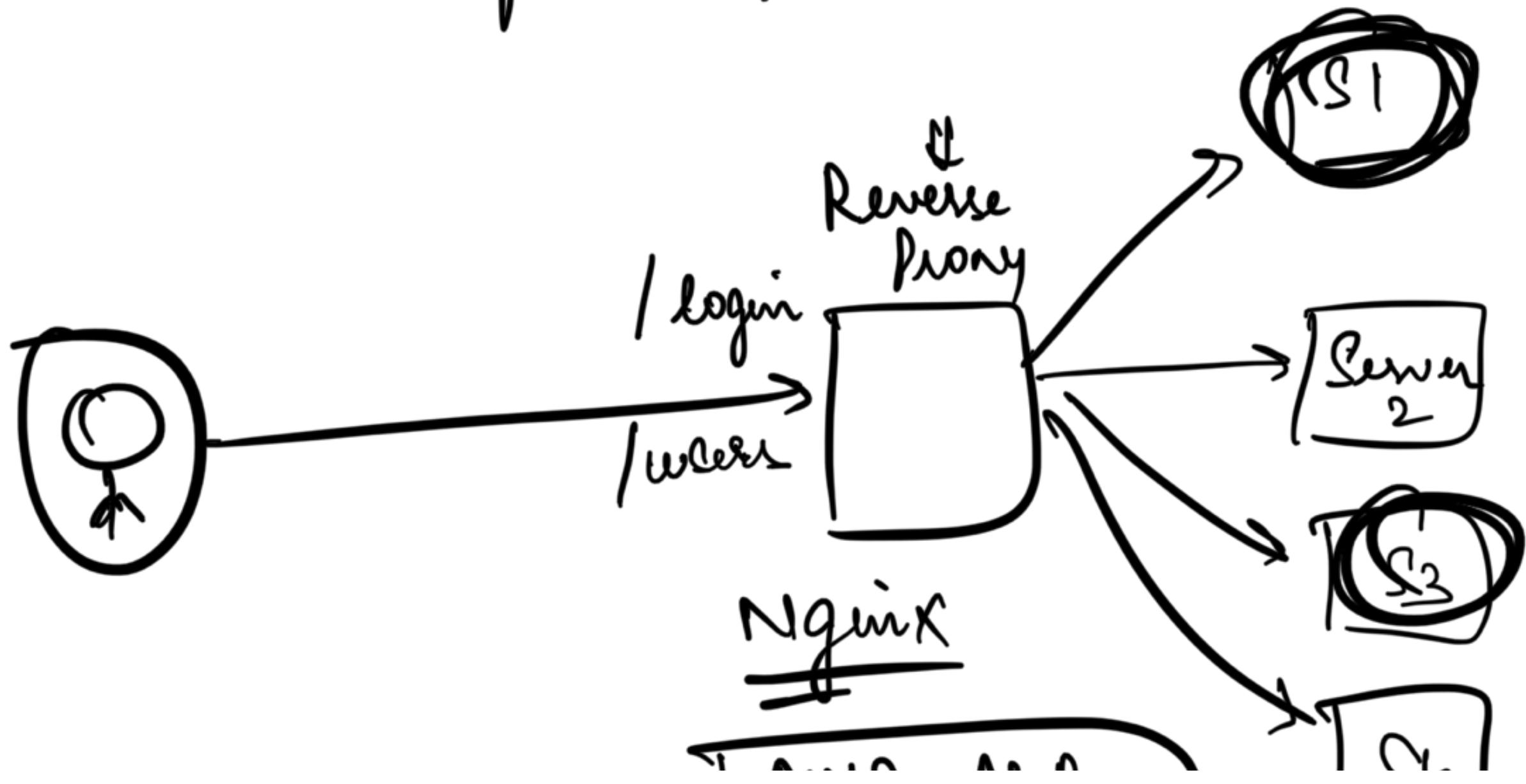
Client ID	Port
A	23
B	2012
C	1234
D	999

A → google.com



Reverse Proxy

→ lives in front of the server

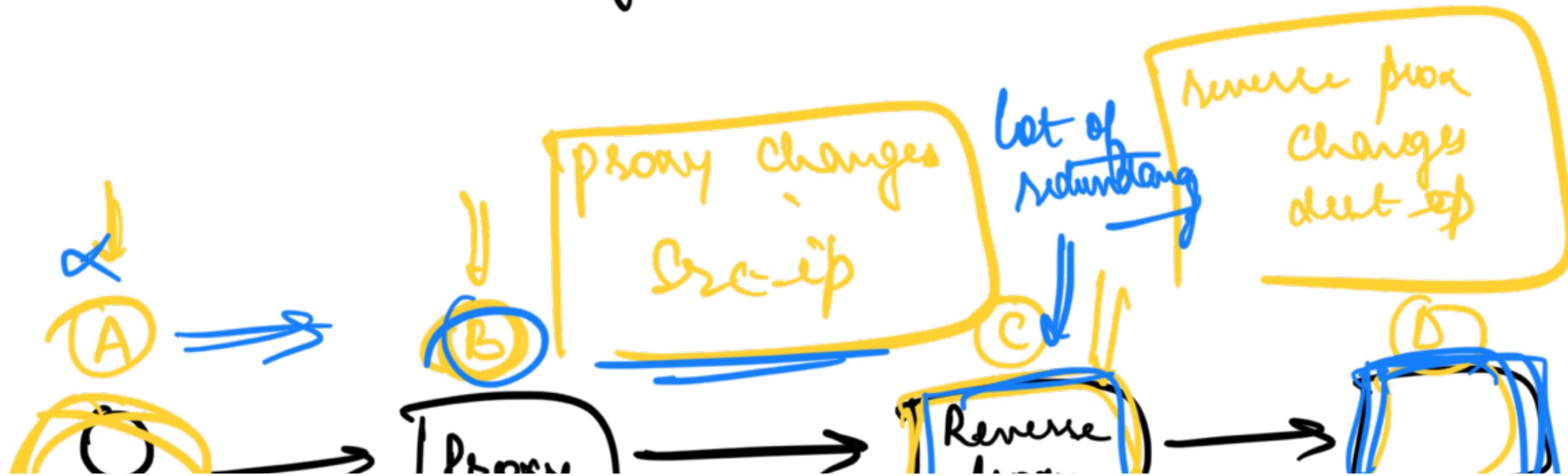


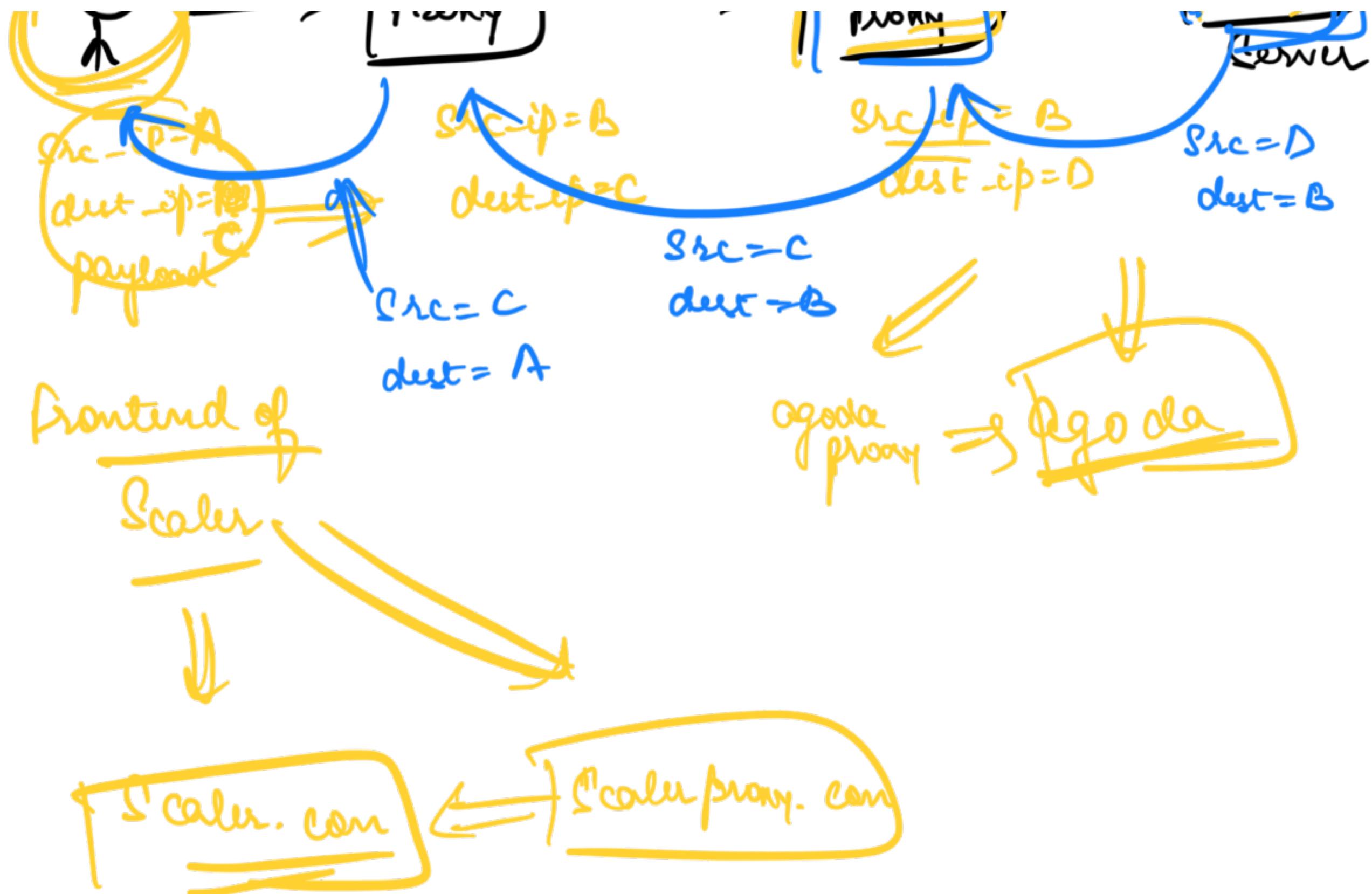
the ultimate reverse proxy built in

① Security

② Load Balancing

③ API Gateway





NAT (N/w Address Translator)

49.207.215.240

P \Rightarrow 192.168.28.51

\Rightarrow A \Rightarrow 192.168.0.103

S \Rightarrow 192.168.0.2

IPv4

2^{32}

\approx 4B

10.12.25.723

10B
Internet
Devices
.....

Every ~~free~~ comp doesn't have a
ip address



buy a IPv4

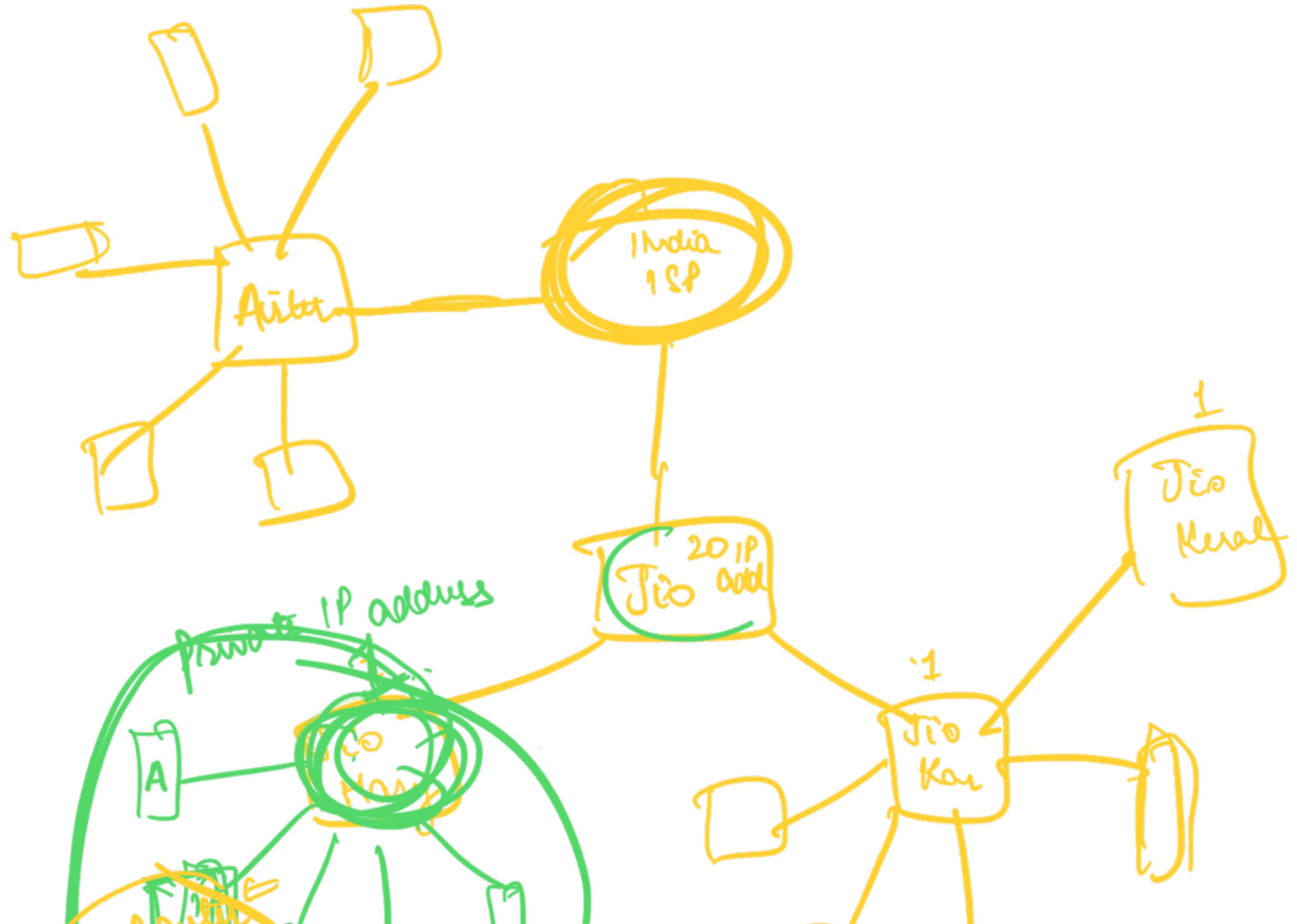
IP addresses have a cost

(2)

ISP | Cloud Hosts → AWS,
Cloud,
Azure

Buy IP addresses in Bulk

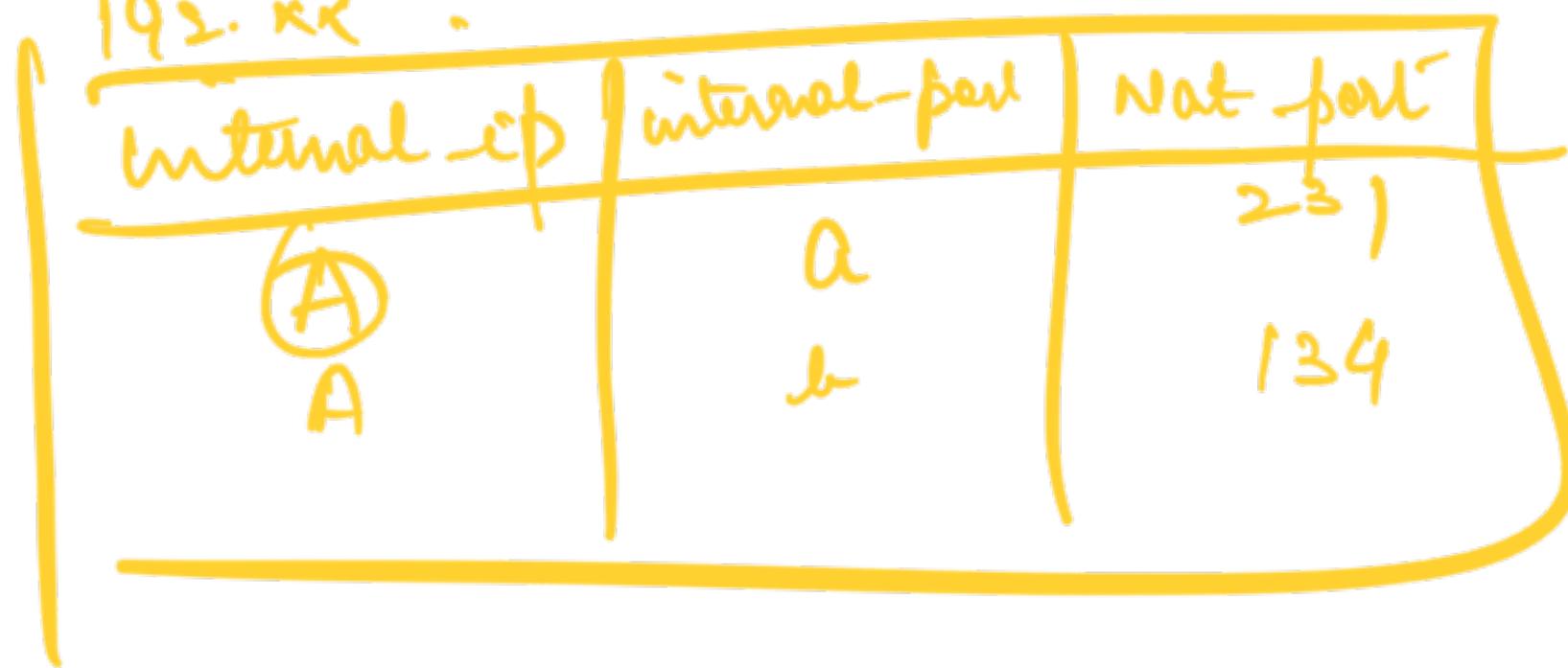
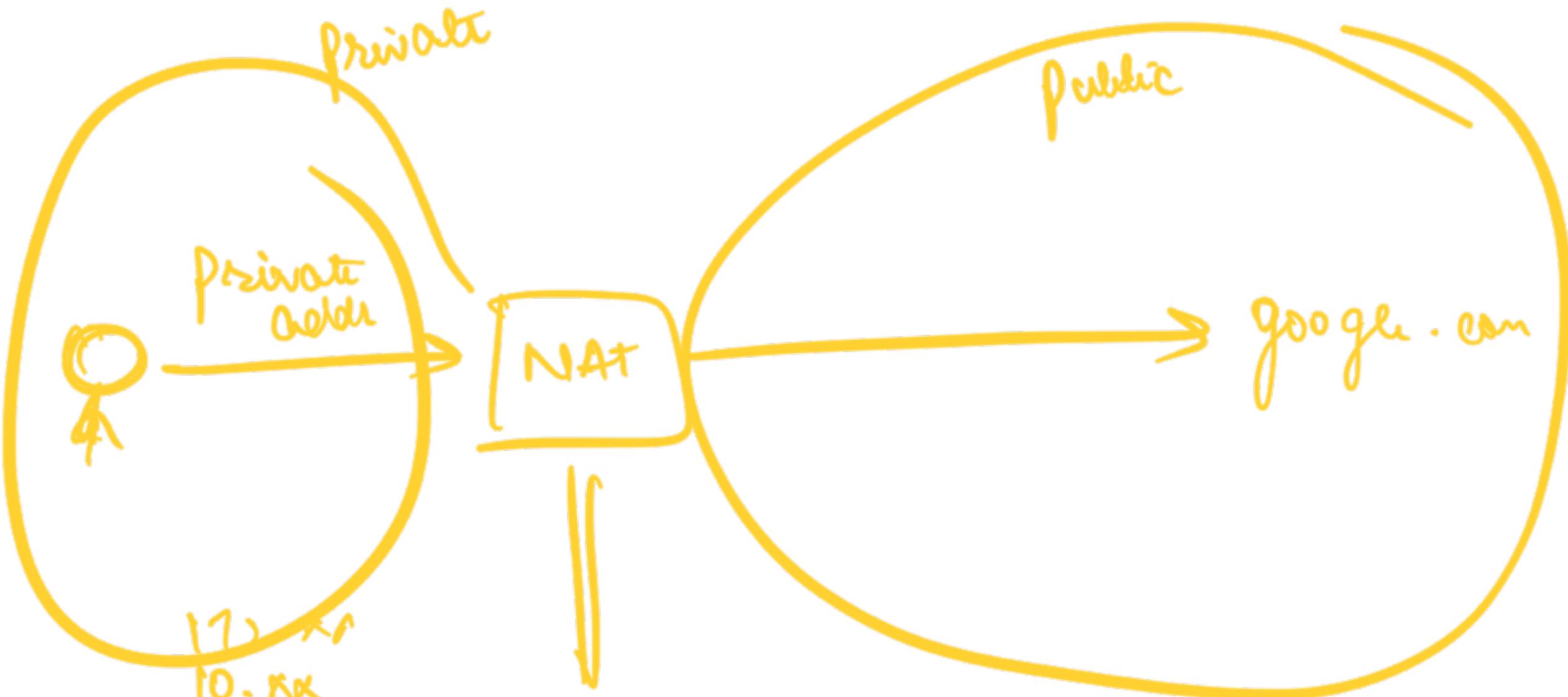
Gold

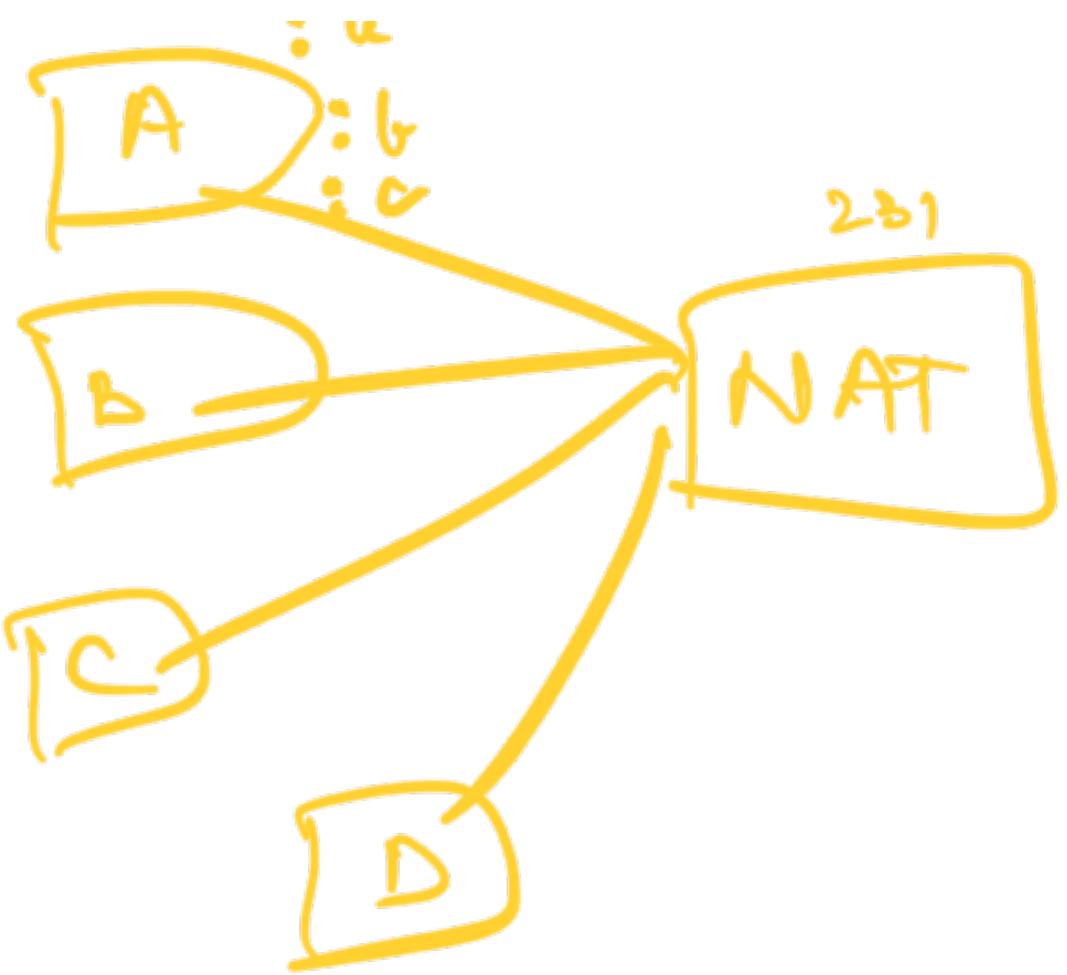




→ Whenever multiple devices have to be connected and host doesn't have that many public IP addresses, host creates a private network

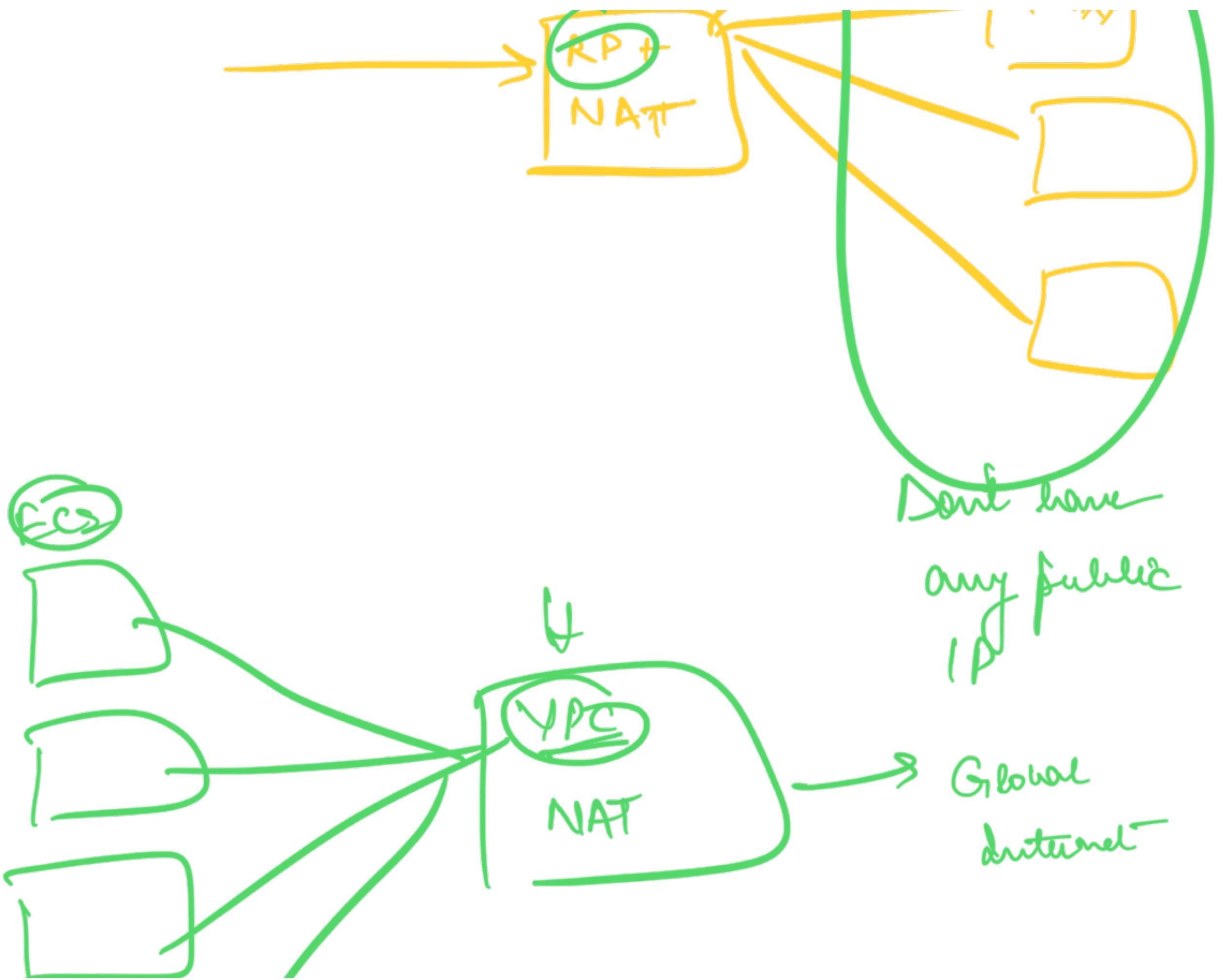
Internal Network created via NAT





NATs within reverse proxy







Proxy, RP, NAT

Router + NAT

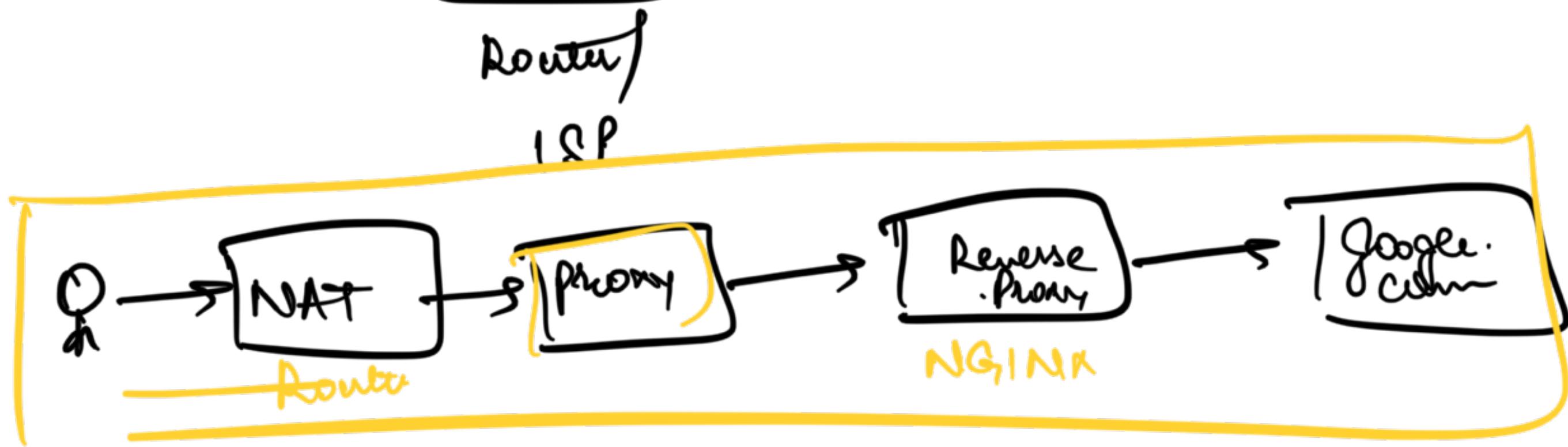
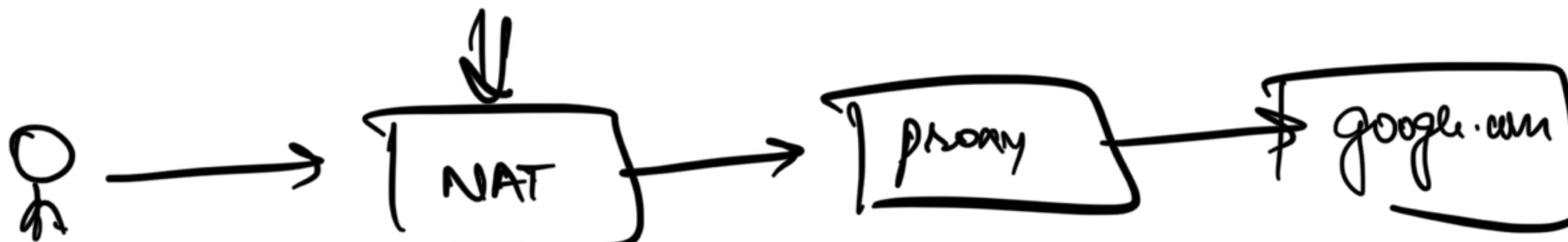
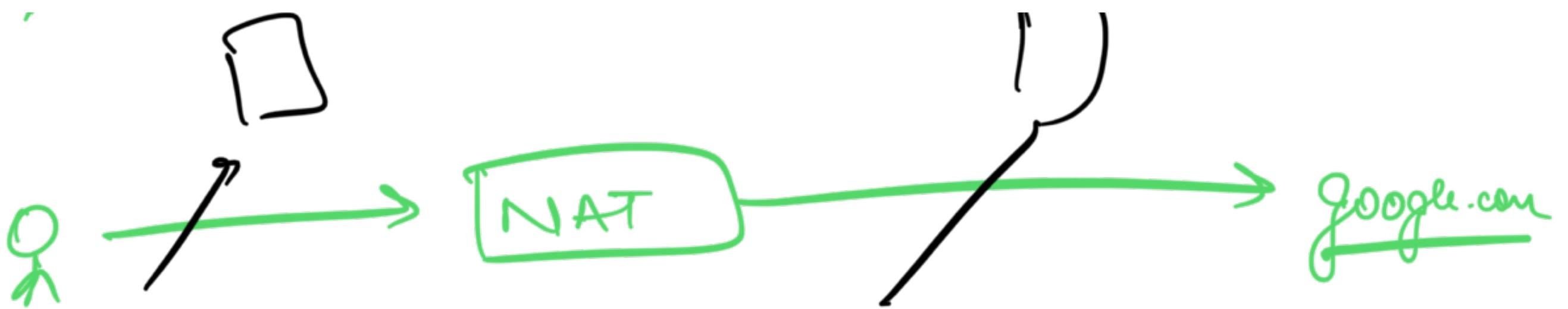
192.168

10.0.0

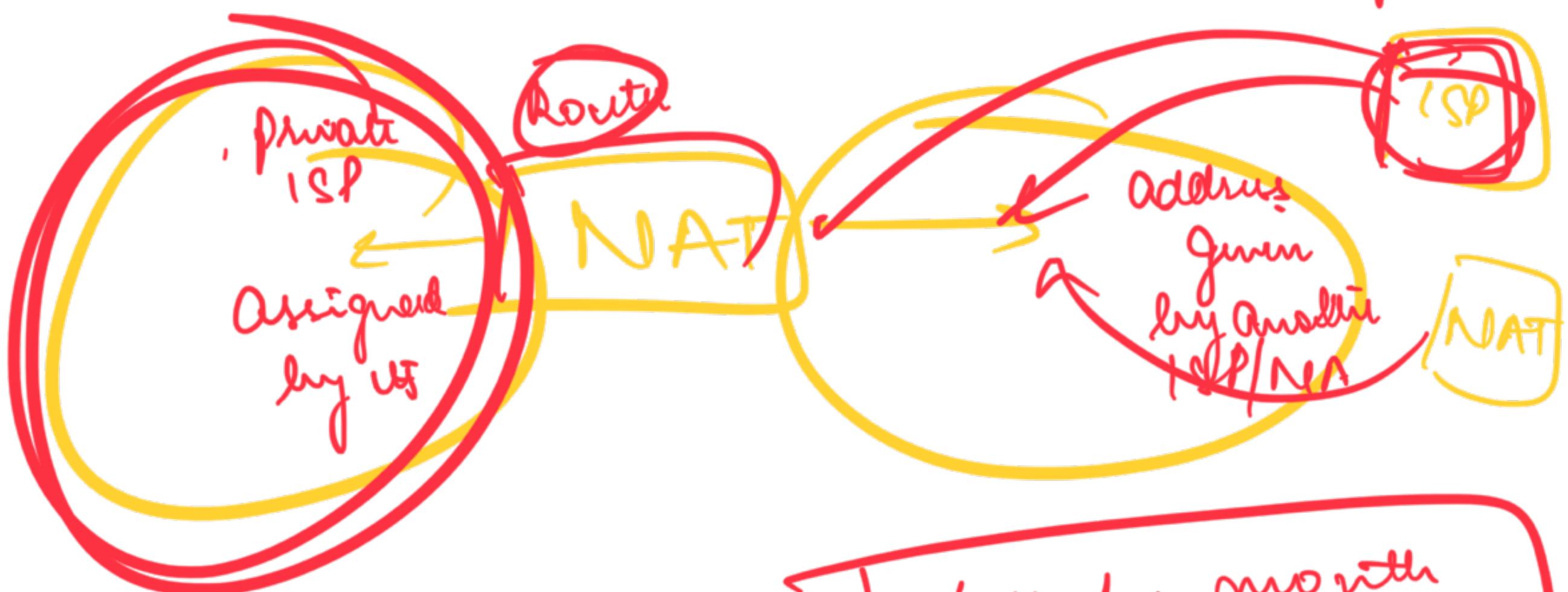


→ google.com

}



Rein



Slack

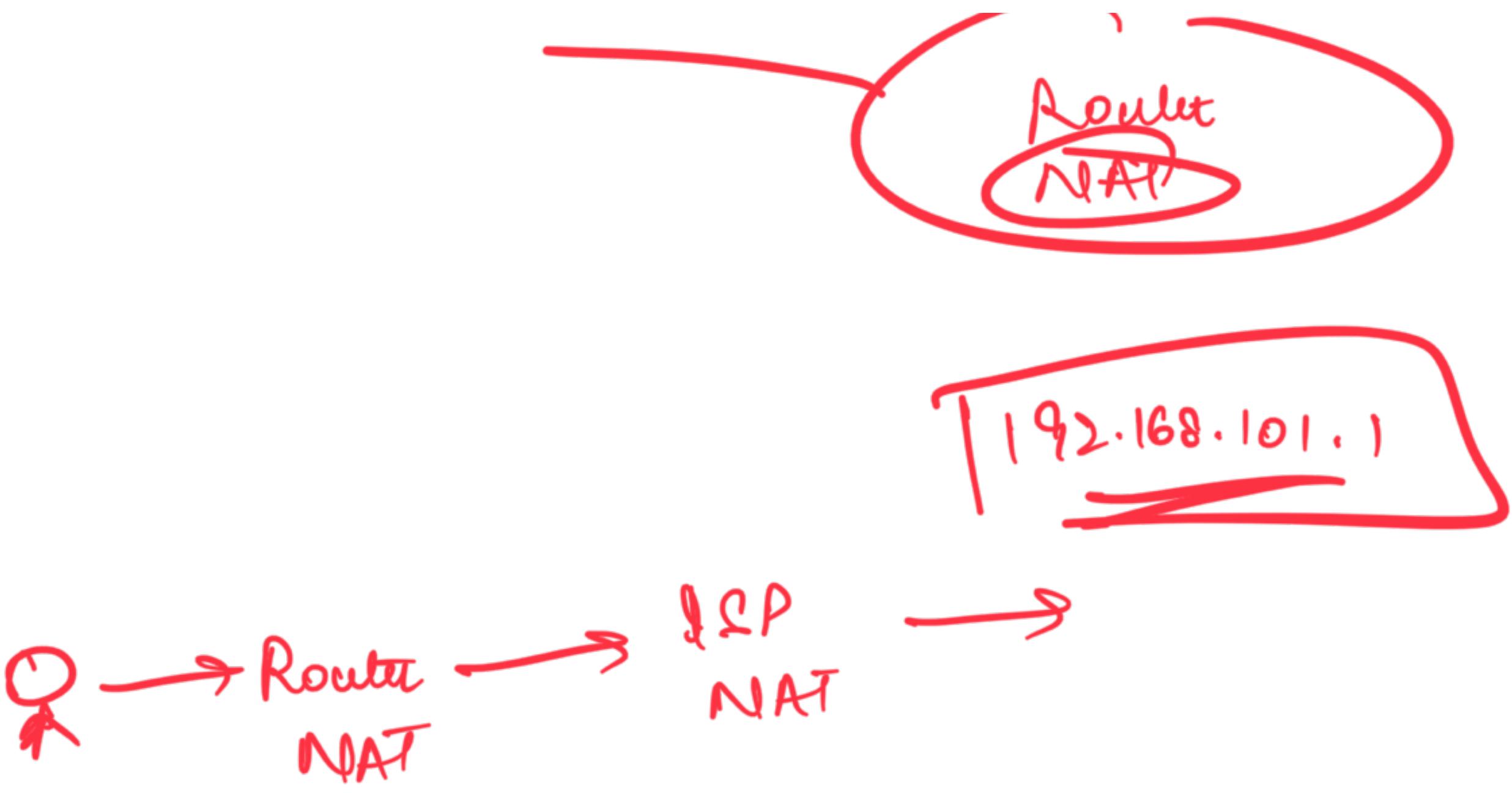
@ Naman

+91-9996203771

Hosting a Server

₹ 4K per month

→ N/W administrator
→ Dev Ops engineer



A hand-drawn diagram showing a connection from a user icon to a "VPN" box, which then connects to an "ISP NAT" box. A large bracket covers the "VPN" and "ISP NAT" boxes, with the text "To configure a proxy I tell the app" written below it.

- don't send your requests directly to the server
- send them via proxy

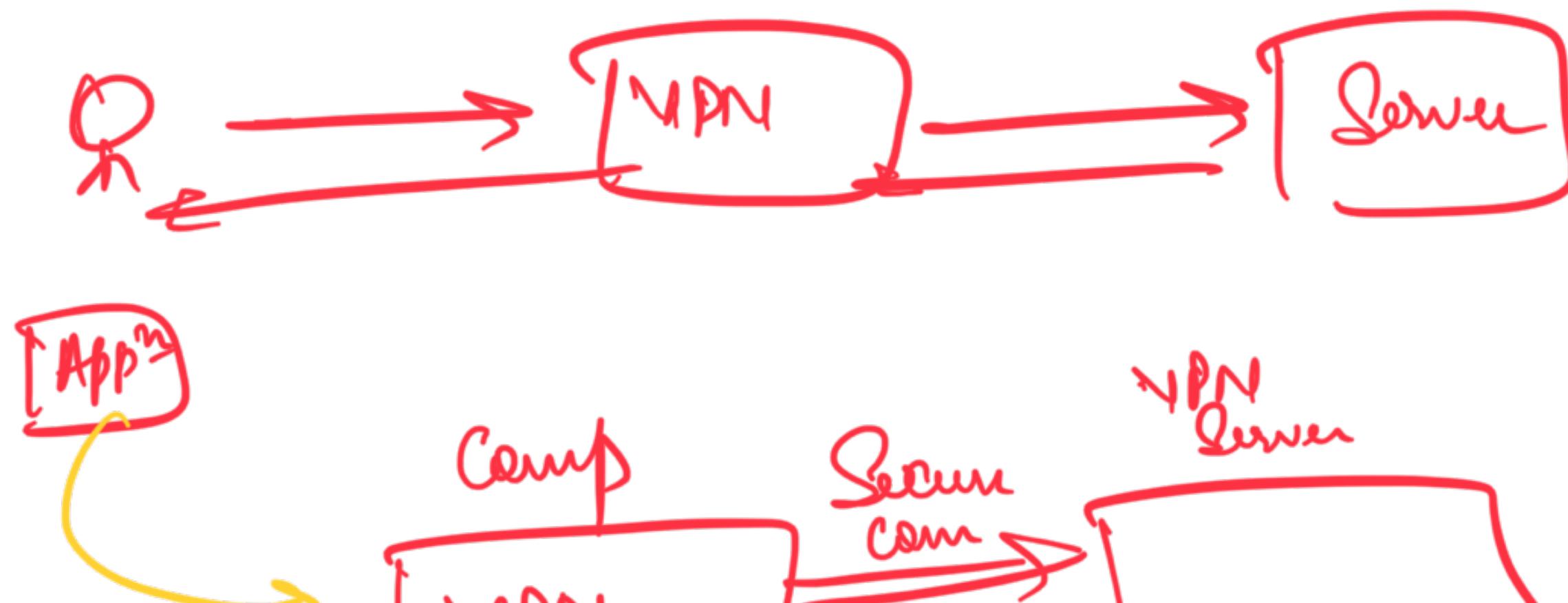
Proxy is appⁿ level

VPN Virtual Private Network
→ OS level

When I connect to VPN

DS creates a Secure Conn (Tunnel)
B/w your comp and the VPN
Server

→ all the requests will go through your
VPN



→ VPN

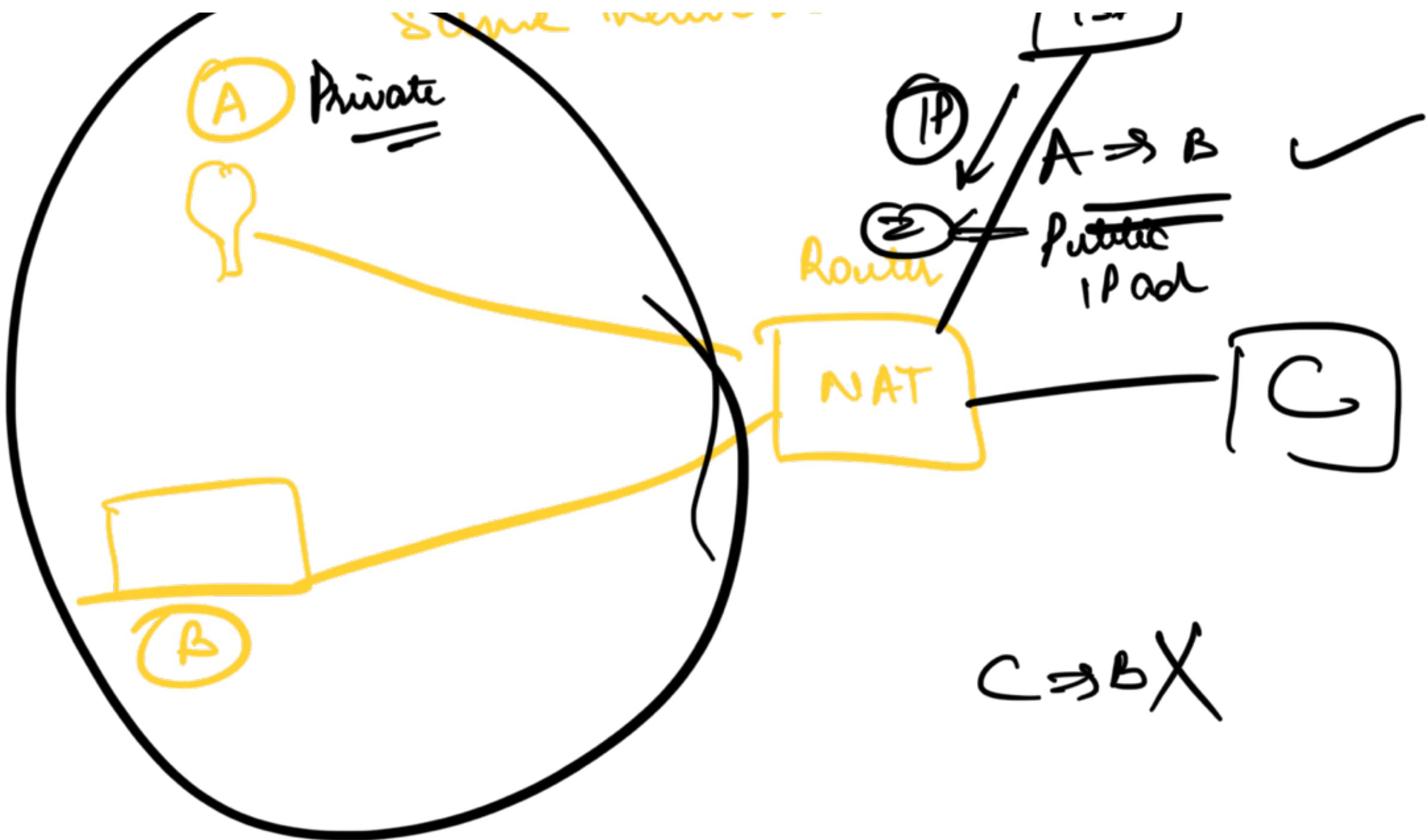
App^u doesn't know a VPN is being used

2 types of way to categorize IP addresses

① Public vs Private

→ a private IP address is the address that is given by a NAT and is only reachable by other devices on the network

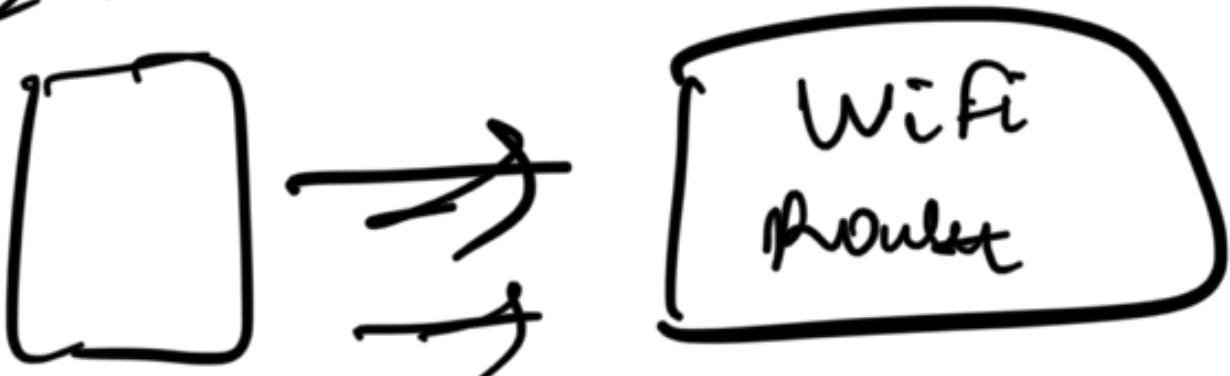
TiCD



②

Static vs Dynamic

192.168.10.1



192.168.10.1

Even in private Net, Router/NAT

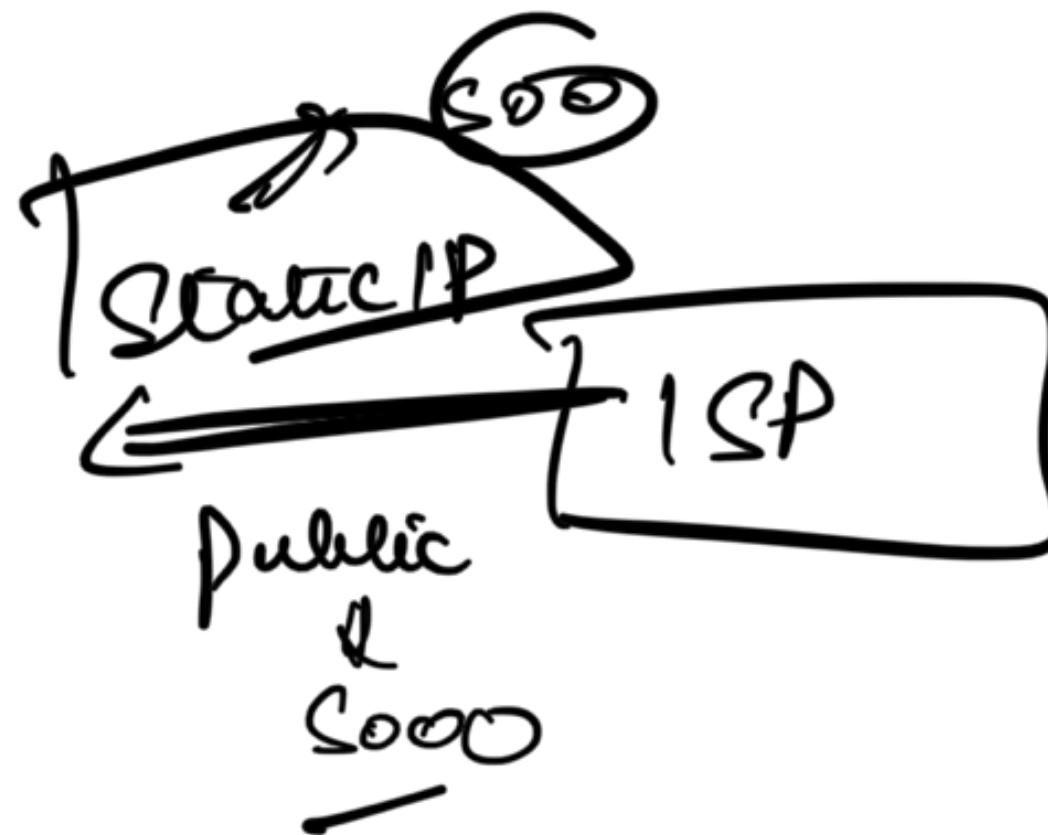
Can decide to give a static /

dynamic ISP
=

→ Static IP

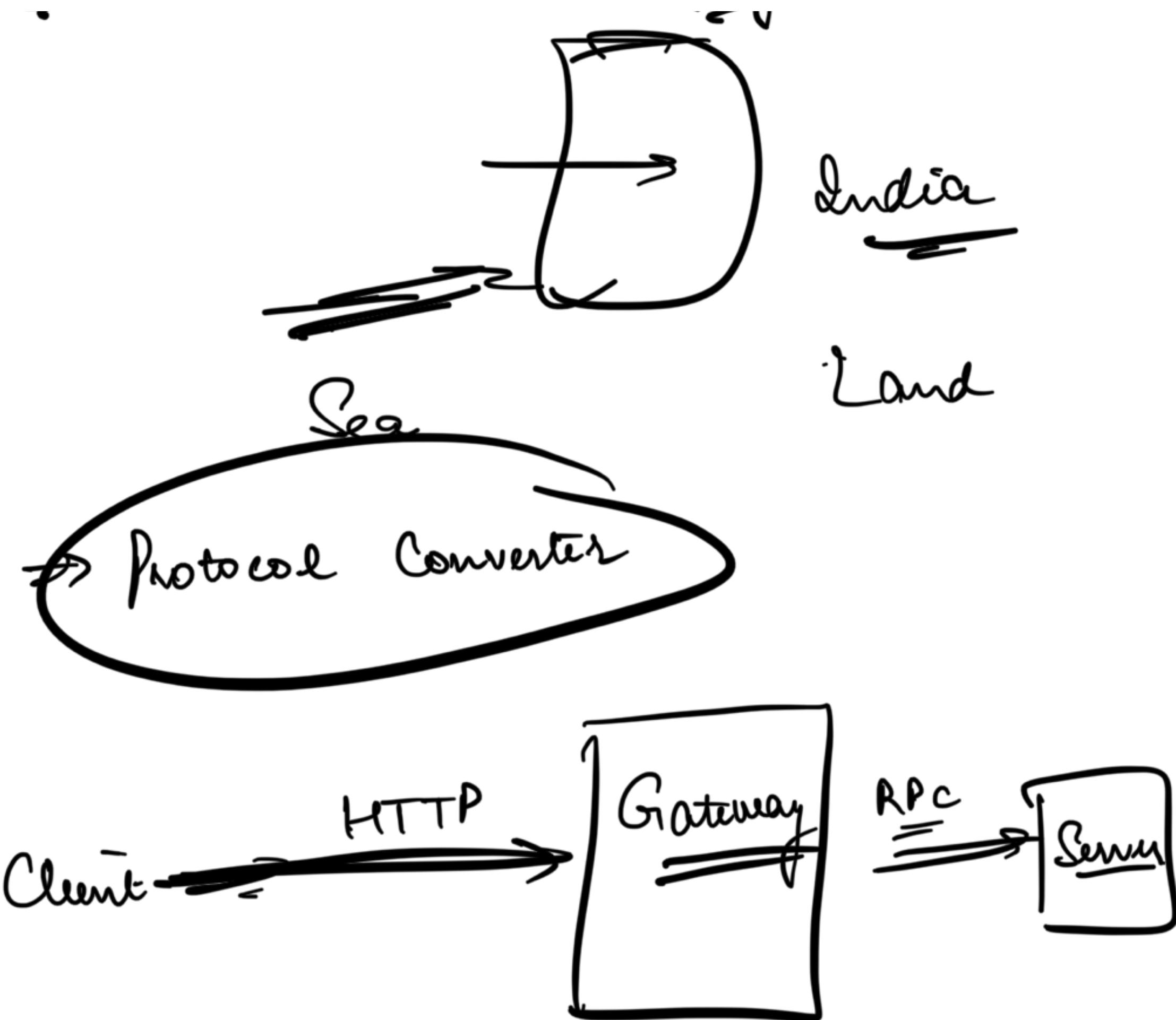
→ Static

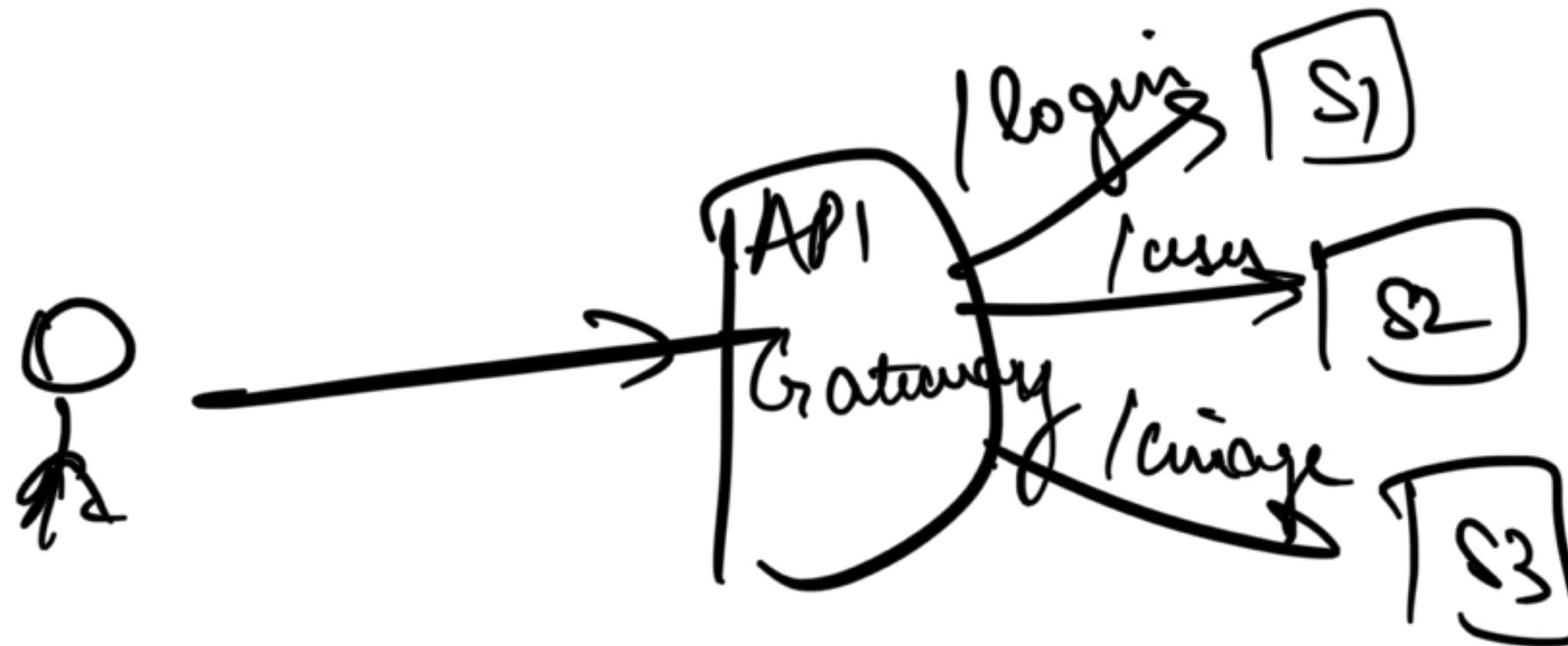
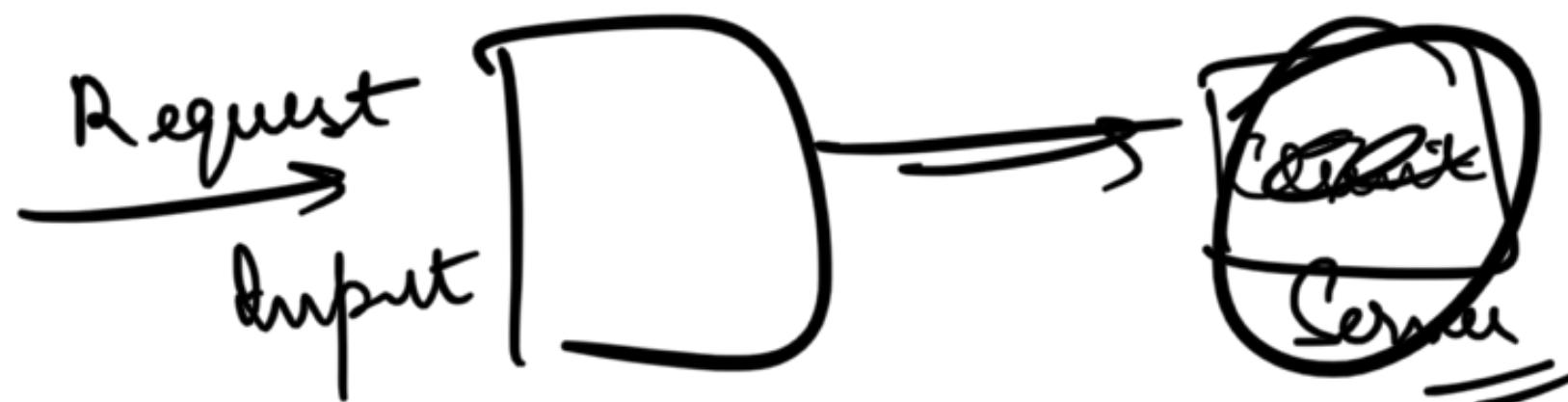
↳ whenever some clients
need to know the IP
to use it



Gateway

Gateway

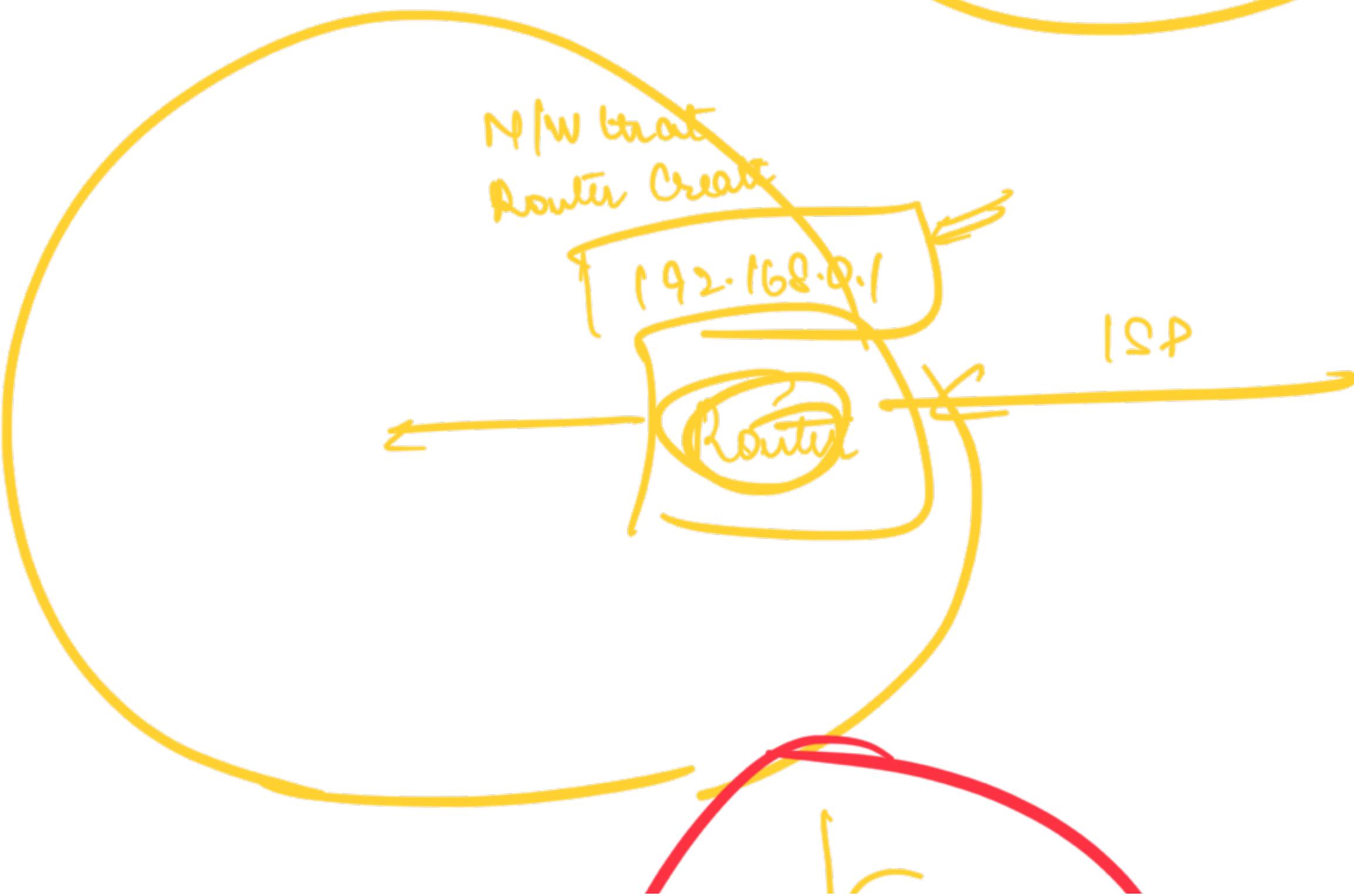


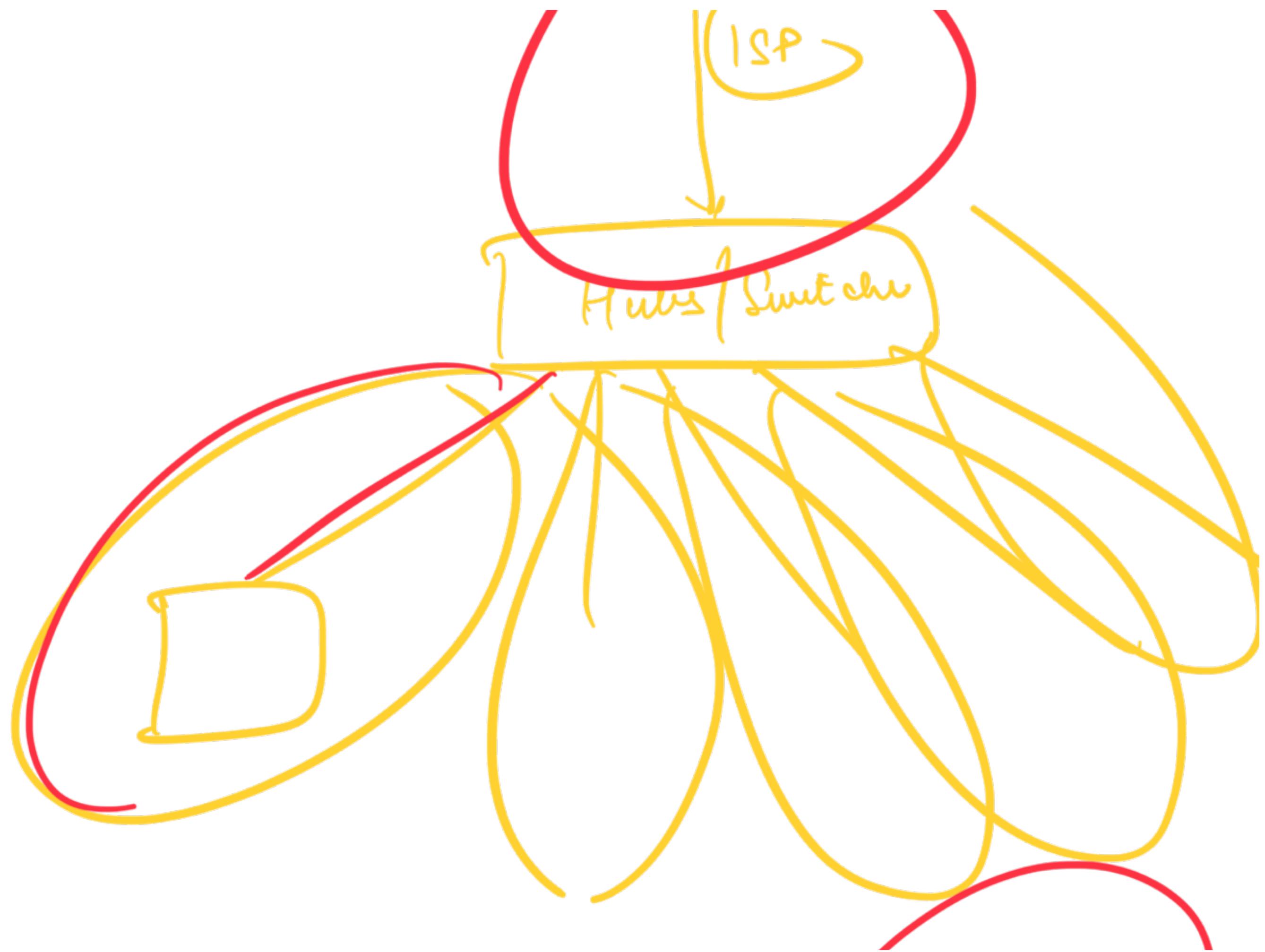


Protocol
Gateway

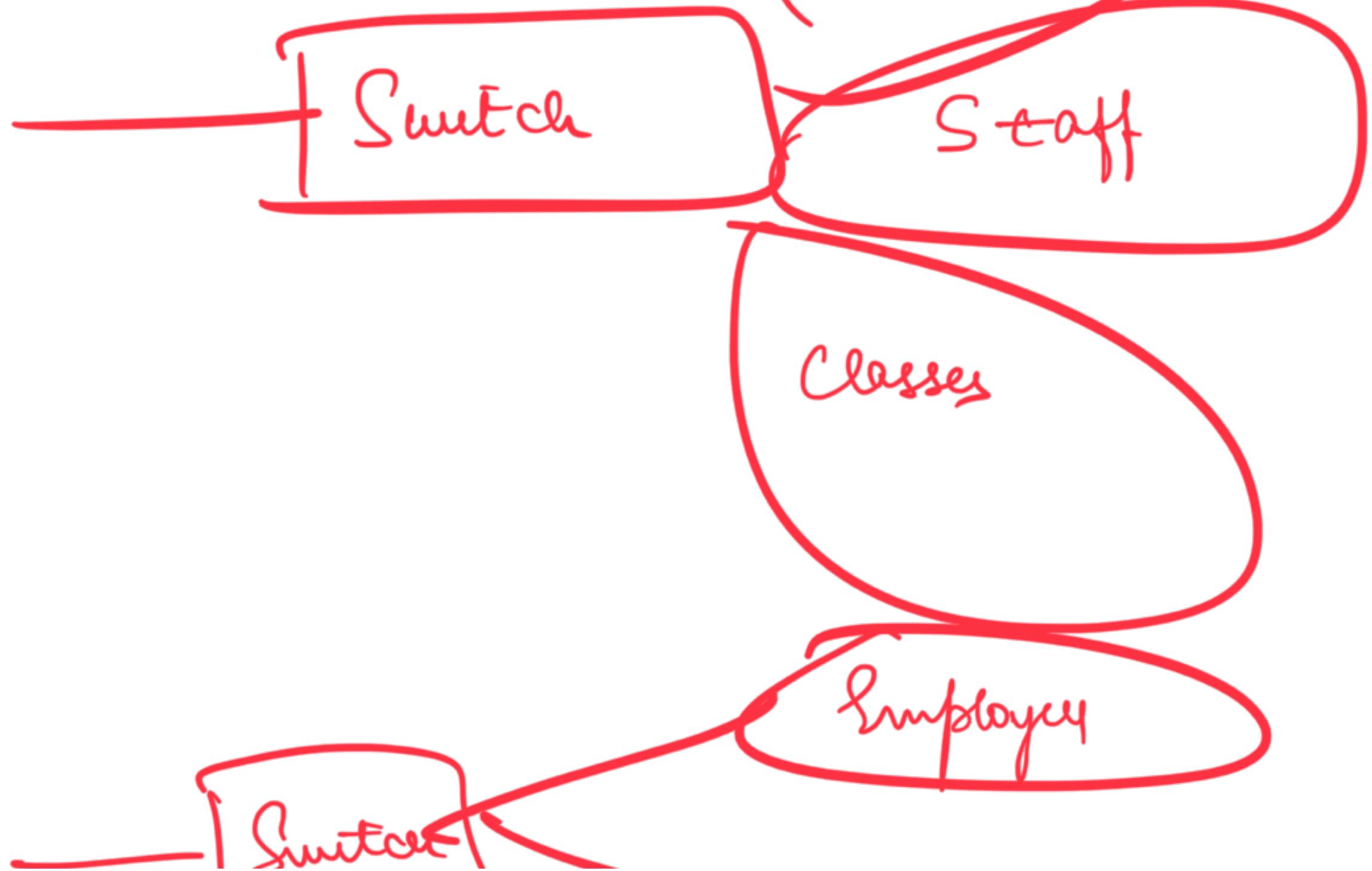
Left

Left Right





Pitomi



1:

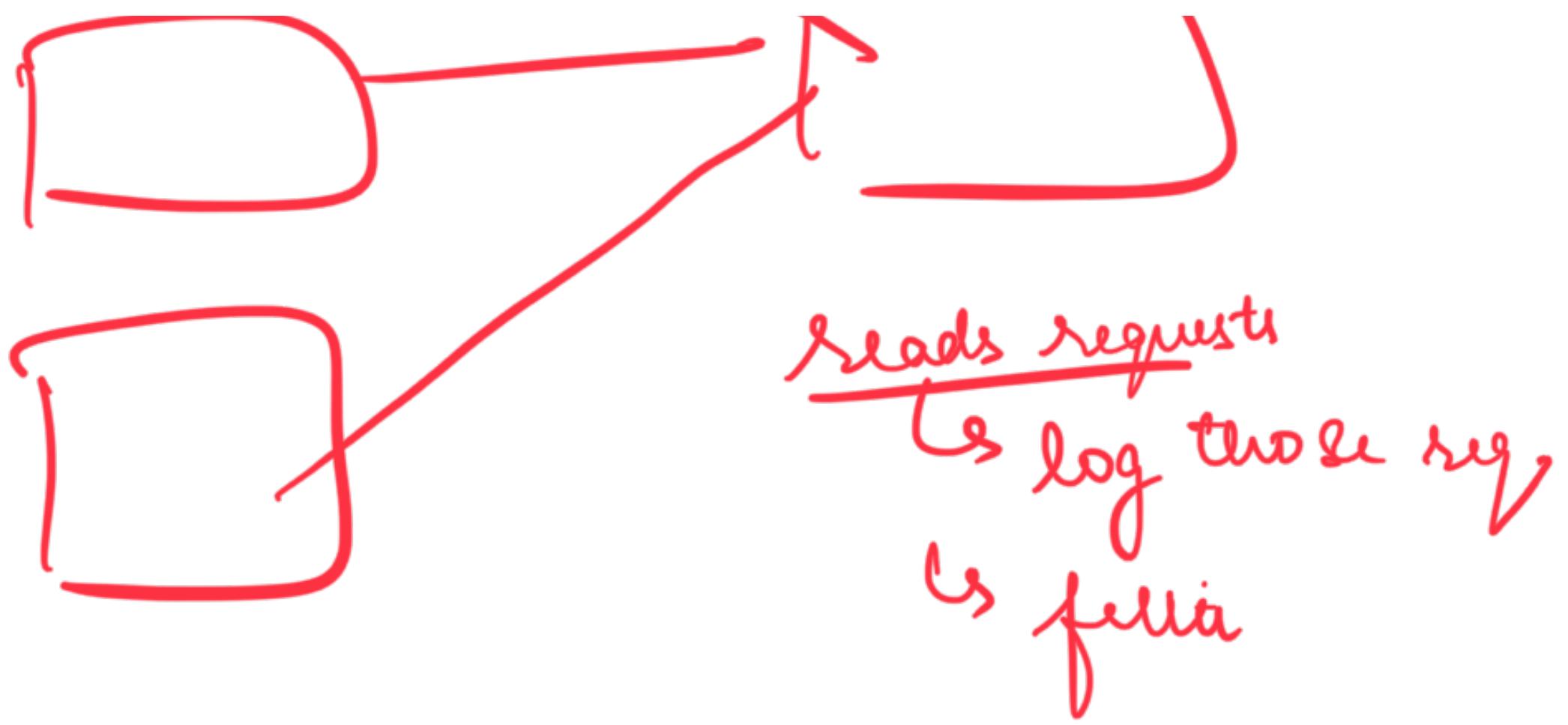


firewall \Rightarrow Proxy
that

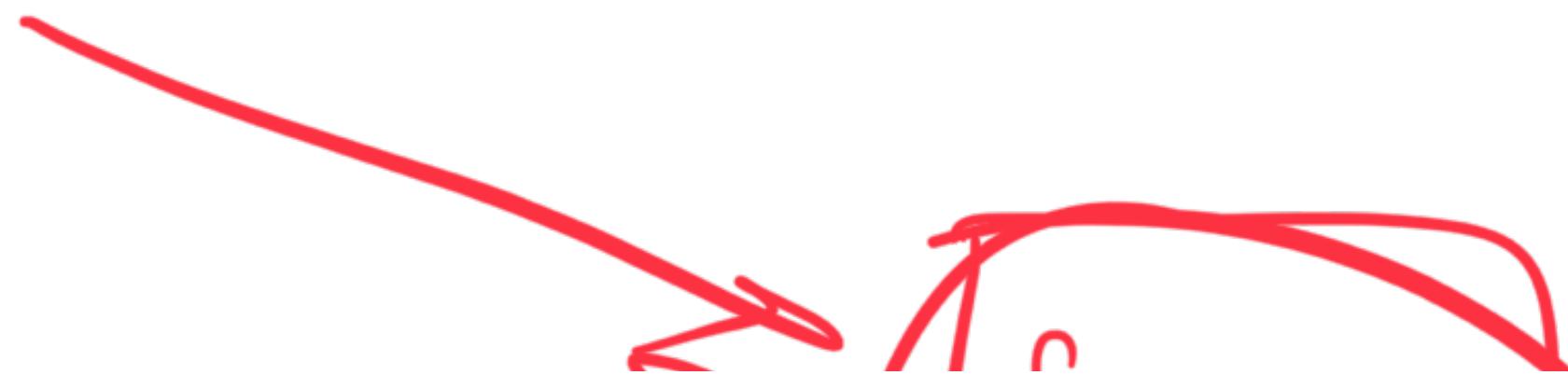
filters requests



Proxy



The Great Chinese
firewall

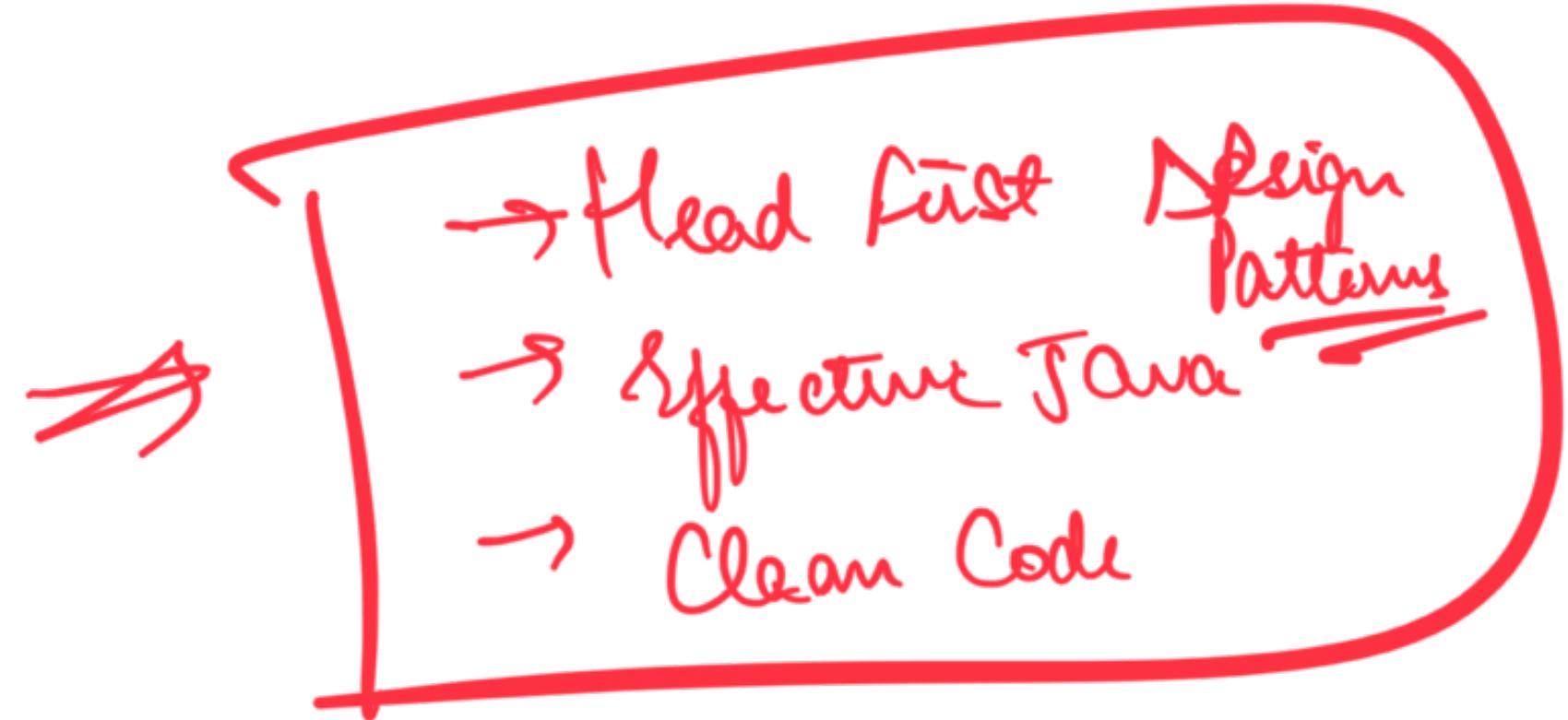




Proxy \rightarrow App

VPN \rightarrow OS (via app^u / directly)

Firewall \rightarrow Router / Proxy



4 classes

Head First Design Pattern

Effective Java

Clean Code

Firewall

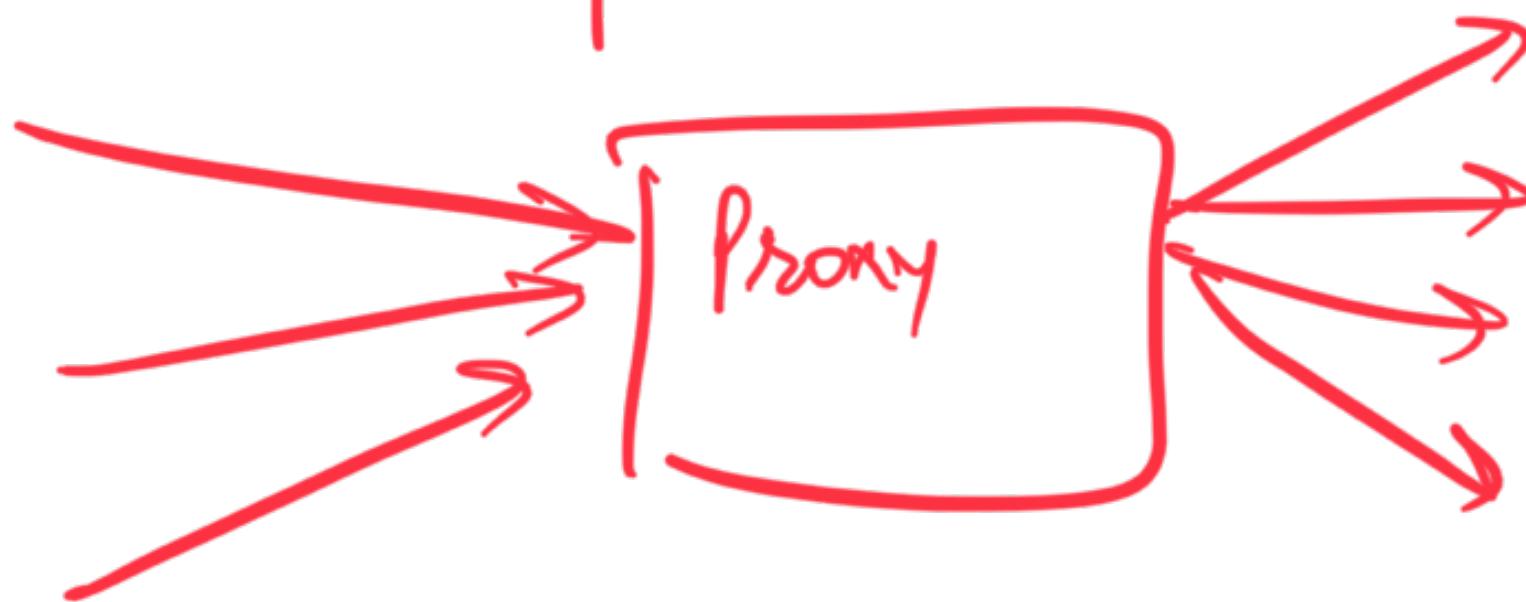
→ Design Patterns

- Proxy -

→ Router / ISP / Org

→ Reads the requests and blocks based upon some rules

e.g. if it's a URL
→ req. a contains
a word



LLD

→ Want to approach 1 to N problem

SLI +

I → flow to ~~gtm~~ ~~www~~ from

E → Book My Show ↗

P → parkinglot



IS cla