

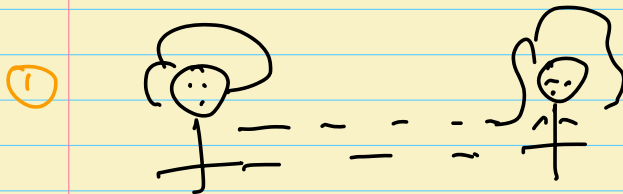
How Internet Works

Why?

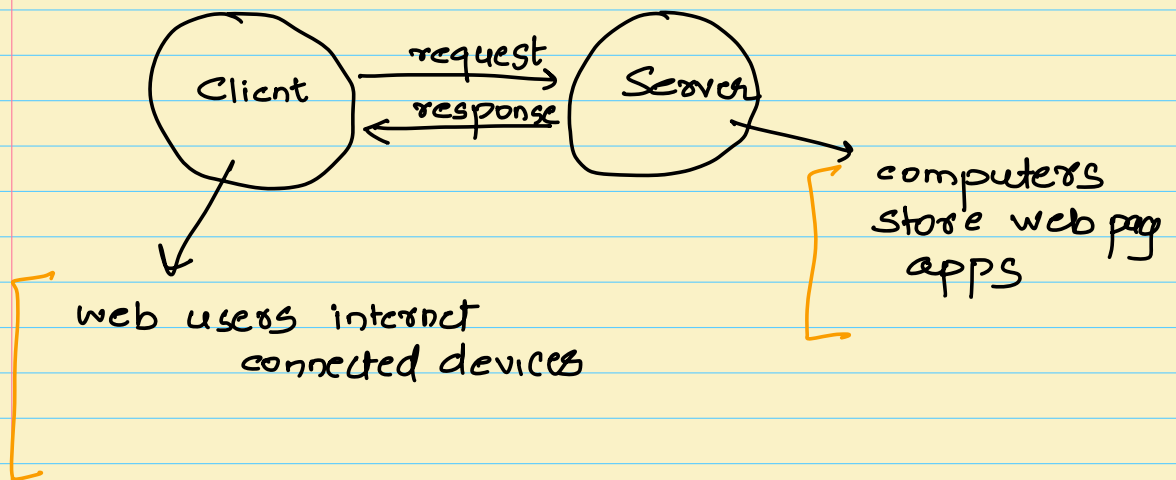
Disruption

↳ New kind of business
→ " " " job

Movie — How internet works
— How 2 system talk
—



① Clients Servers



② Internet Connection

network of networks
Starlink

③

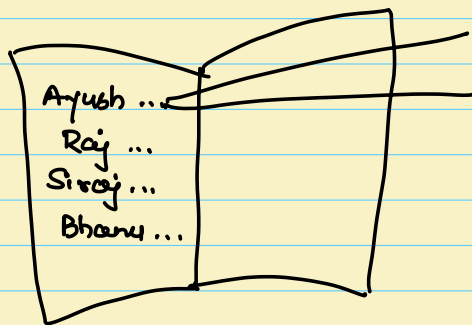
TCP/IP

- Communication protocol
- how data should travel across the internet

④

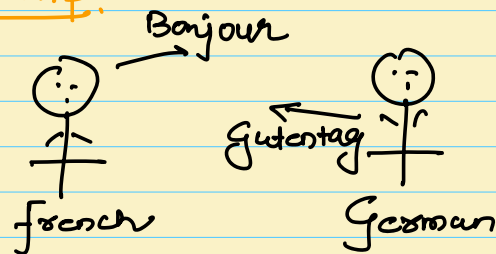
DNS

- Domain Name Server
- website \longleftrightarrow IP address



⑤

HTTP



→ Hyper Text Transfer Protocol

↓ ↓ ↓

hyper text document one s/s to another set of rules

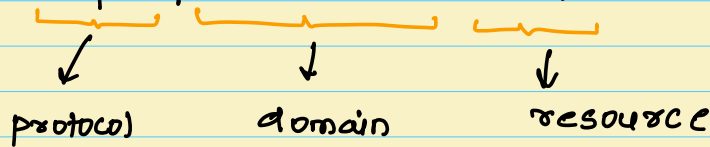
- common language for client & server

The Movie

1. type website name

- Browser passes URL

https : // scaler.com / ...



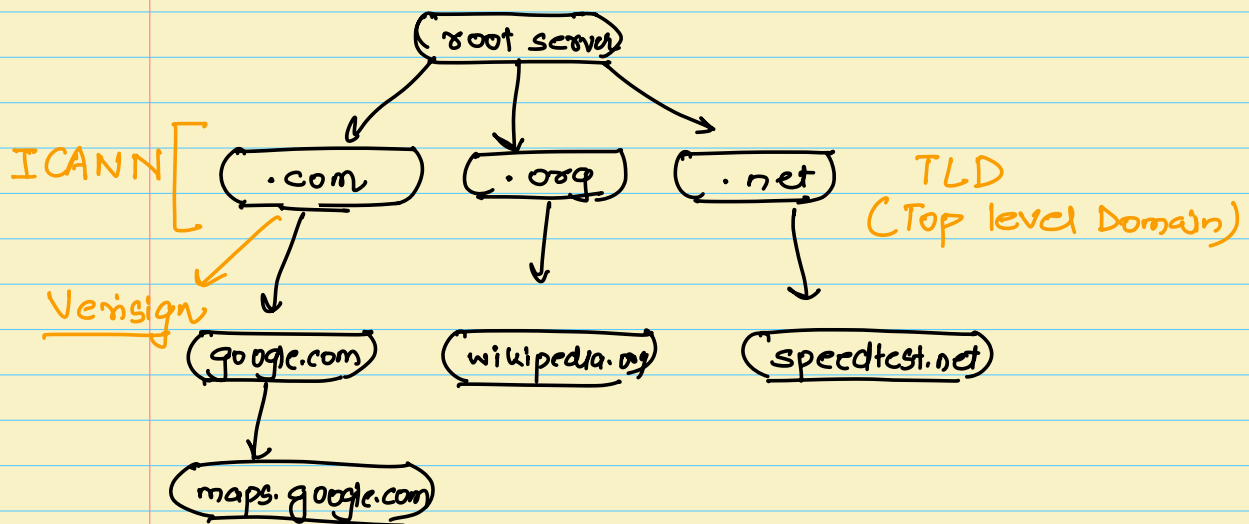
2. DNS Lookup

Various cache lookups {

- Browser cache
- OS Cache
- Router Cache
- ISP Cache

- DNS Server

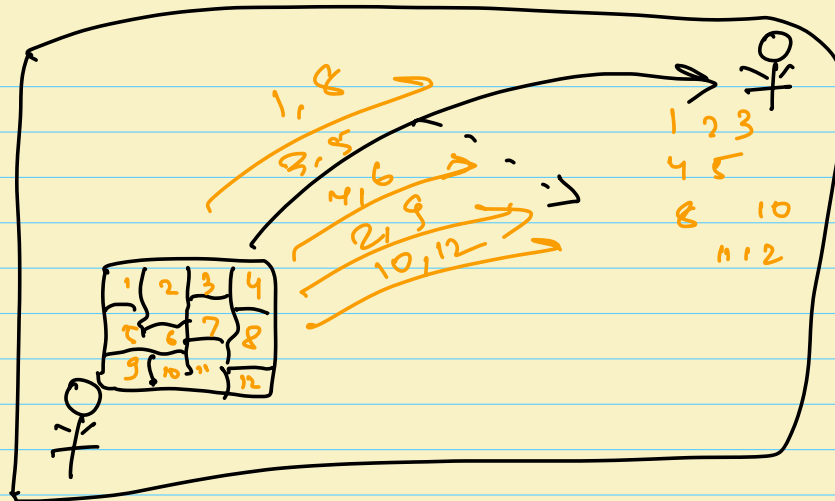
3. IP Resolution



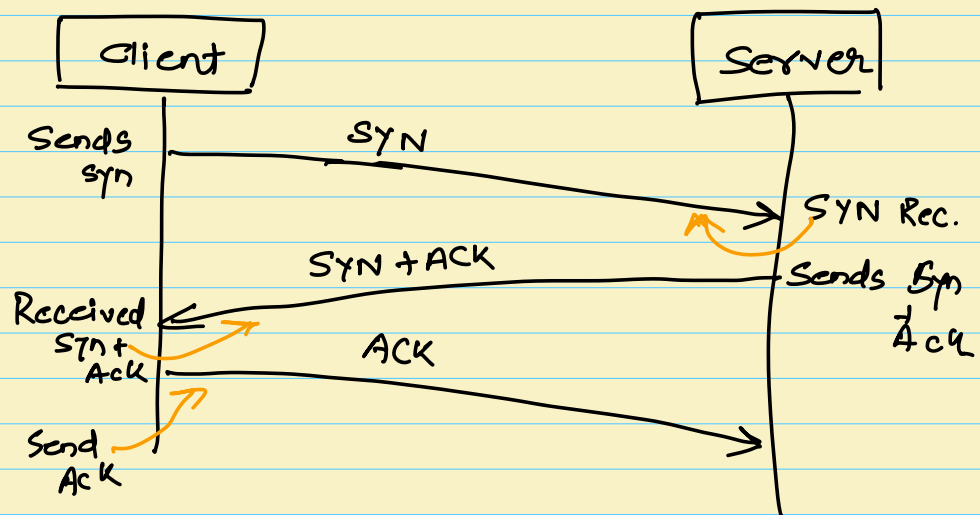
4. Browser sends http requests

5. TCP/IP

- Breaks each message into packets
- packets are transmitted over n/w
- reassembled at other end



6. TCP 3 Way Handshake

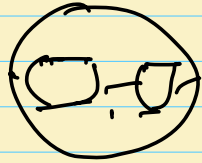


7. Client sends Get/Put/Post request to server

8. Server sends back response

- 1xx - information msg
- 2xx - success
- 3xx - redirect
- 4xx - error on client side
- 5xx - " " server side

9. Browser



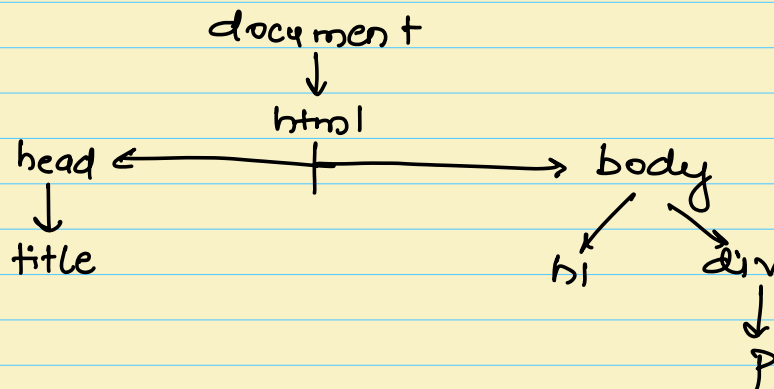
- HTML Response
 - external CSS
 - script
- Generate in memory DOM tree
- CSSOM from the parsed CSS

HTML Response

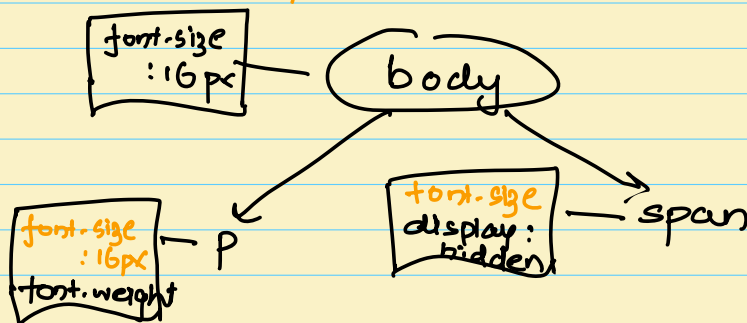
↳ tokens

↳ nodes

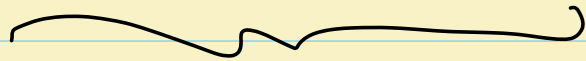
↳ DOM



CSSOM



DOM + CSSOM



render tree

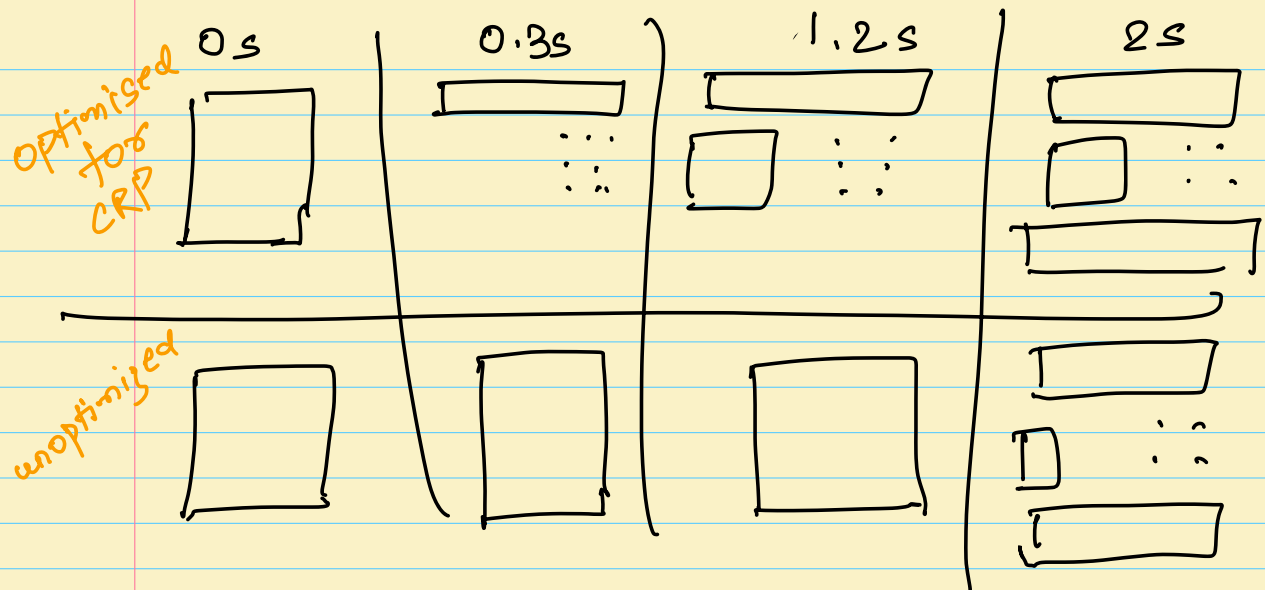
CRITICAL RENDERING PATH

- Steps your browser goes through
 - to convert HTML, CSS, JS
 - into pixels on screen
- DOM + CSSOM = Render Tree
- Layout : dependent on size of screen
 - viewport
- What are some common ways to optimize CRP
 - Control the order in which resources are loaded
 - Reduce the size of resources
 - Minimize the no. of critical resources at initial load

execute after DOM building

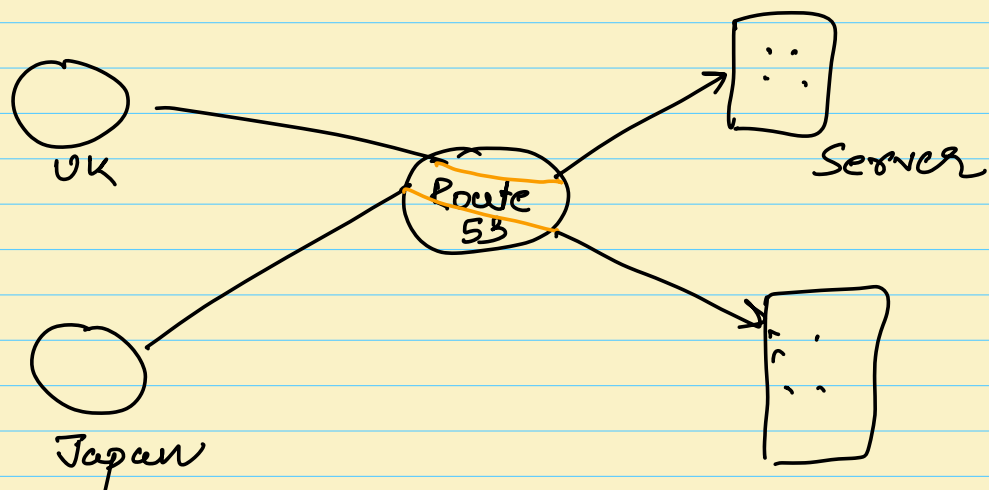
- defer - parallel loading
- async - parallel loading

invoke as soon as available



AWS utilities

- ① **Route 53**
— Amazon DNS Solution



- CloudFront**
— CDN (Content Delivery N/w)

