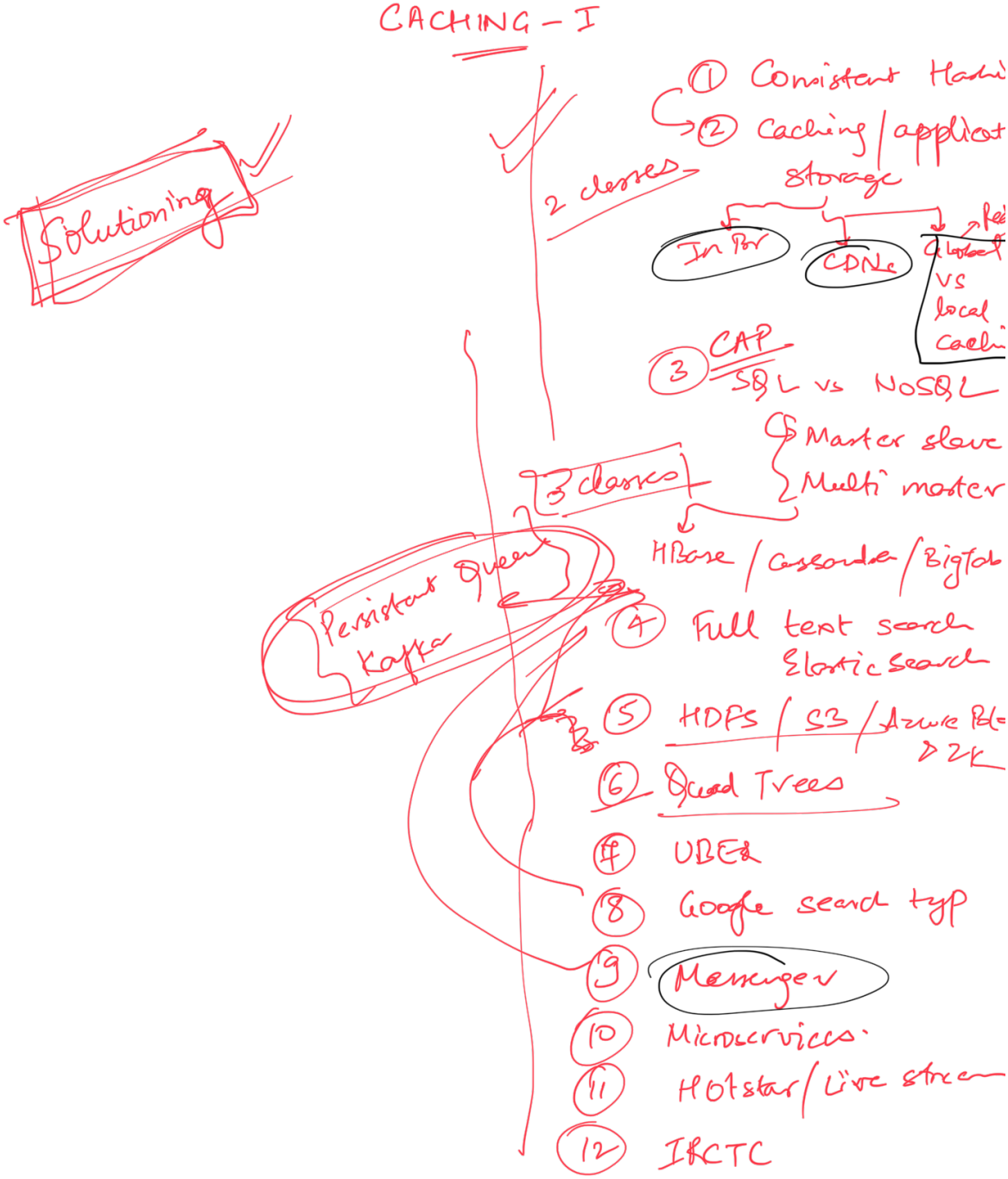
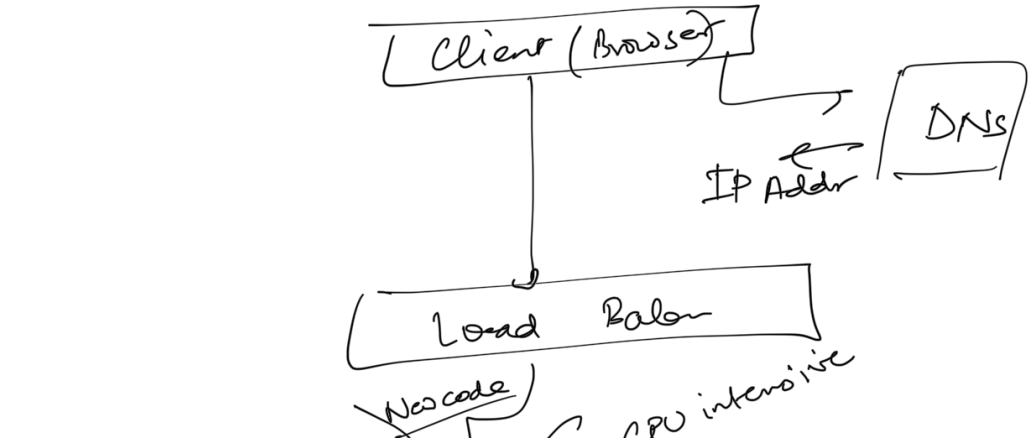
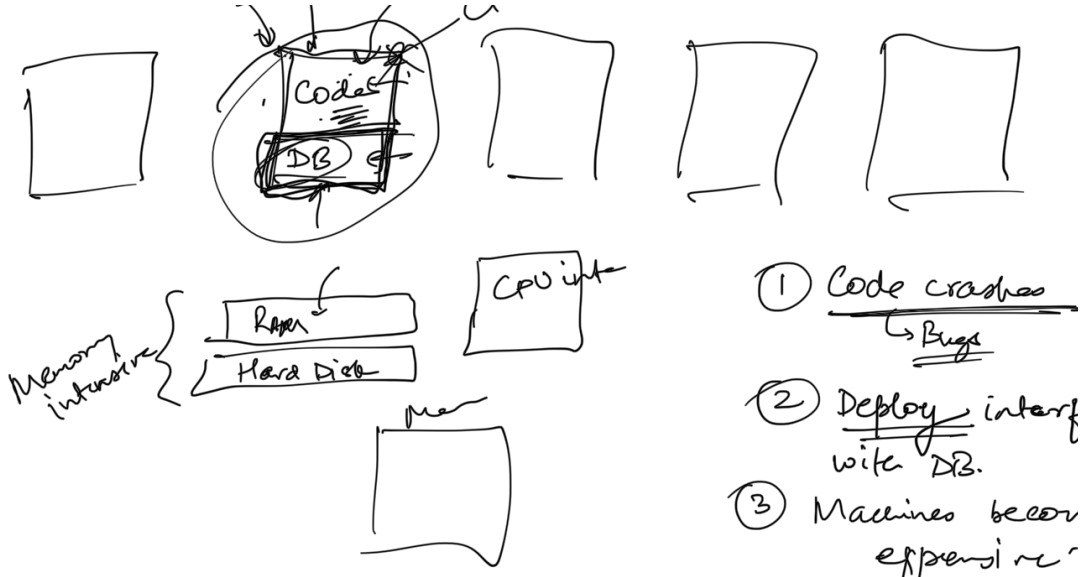
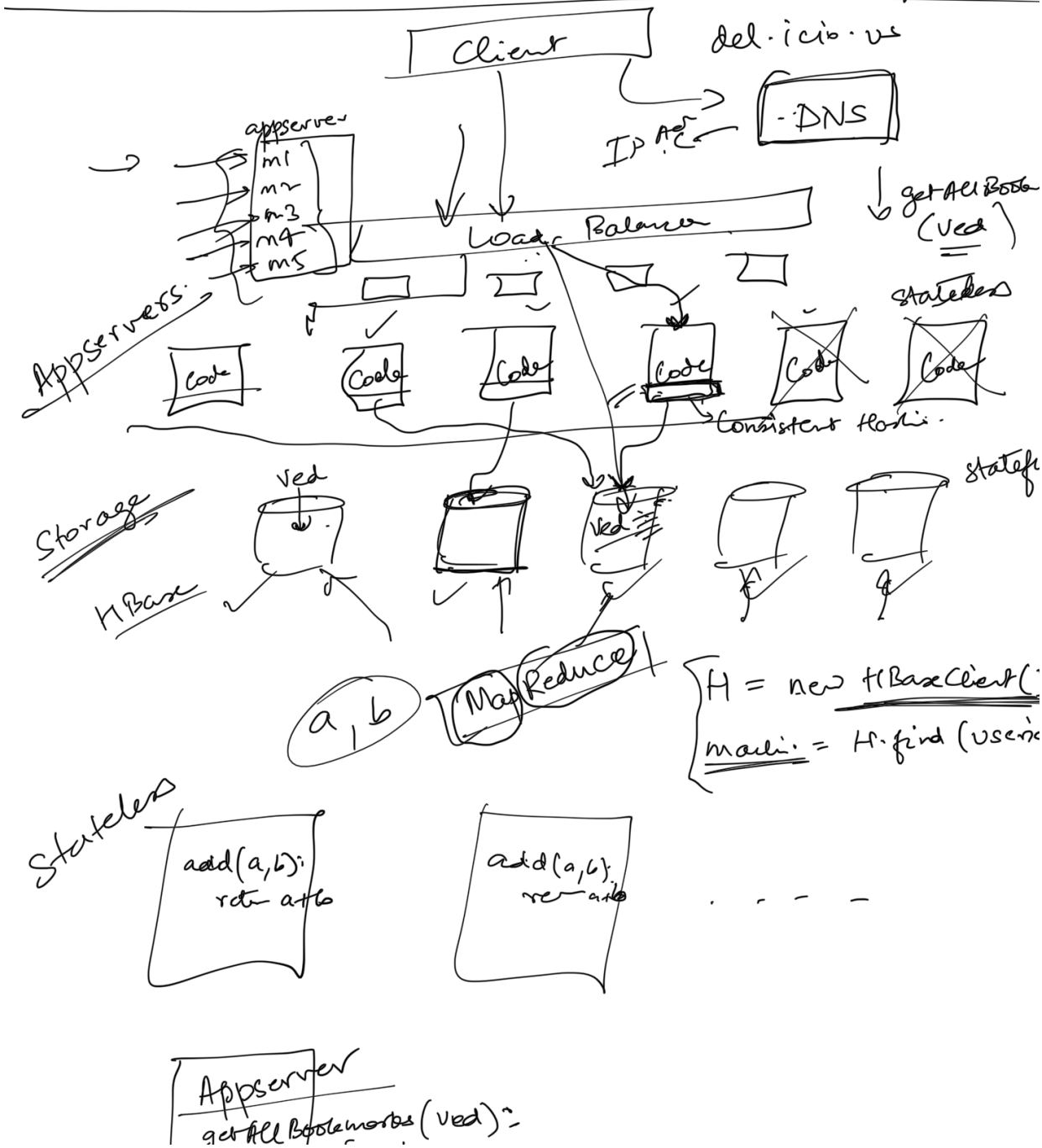
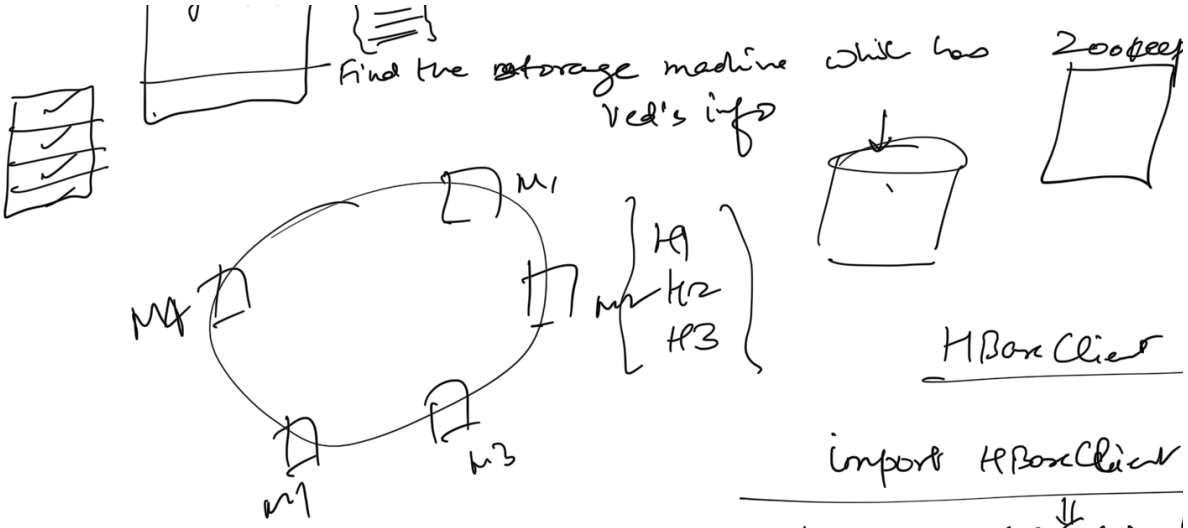
CACHING - I


Solutioning
2 classes
① Consistent Hashi
② Caching / applicat
storage
In Br
CDNs
vs
local
cachi
③ CAP
SQL vs NoSQL
Master slave
Multi master
3 classes
HBase / Cassandra / BigTab
Persistent Queue
Kafka
④ Full text search
Elastic search
⑤ HDFS / S3 / Azure Bl
> 2K
⑥ Quad Trees
⑦ UBER
⑧ Google search typ
⑨ Messenger
⑩ Microservices.
⑪ Hotstar / Live strea
⑫ IRCTC


Client (Browser)
DNS
IP Addr
Load Balan
No code
CPU intensive


Code
DB
Memory intensive
RAM
Hard Disk
CPU int
1) Code crashes
↳ Bugs
2) Deploy interf
with DB.
3) Machines becom
expensive


Client
del.icio.us
DNS
IP Addr
appserver
m1
m2
m3
m4
m5
Load Balancer
getAllBooks
(ved)
Appservers
stateless
Code
Consistent Hashing
Storage
HBase
ved
statefu
a, b
Map Reduce
H = new HBaseClient(
mouli = H.find (usern
stateless
add(a,b):
return a+b
add(a,b):
return a+b
. . . .
Appserver
getAllBookmarks(ved):



HBaseClient

import HBaseClient

H = new HBaseClient()

H.find(user_id)

H1(machine1)

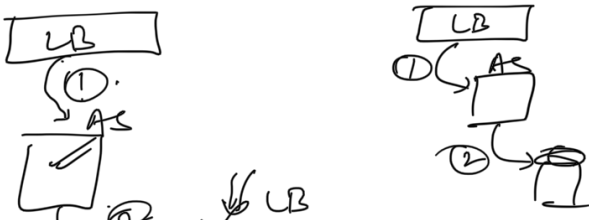
output

1000

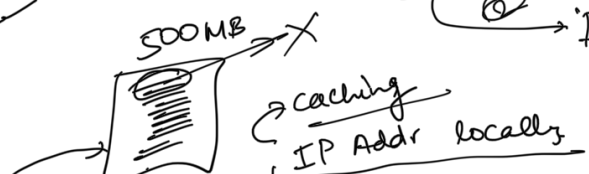
500

Numbers every SE should know

- RAM : 0.1 ms
- HDD : 1 ms
- Network in same DC : 10 ms
- Network across DC (on same coast) : 20-30 ms
- Network across DC (on diff coast) : 200 ms
- Network across DC (on diff continents) : 600 ms

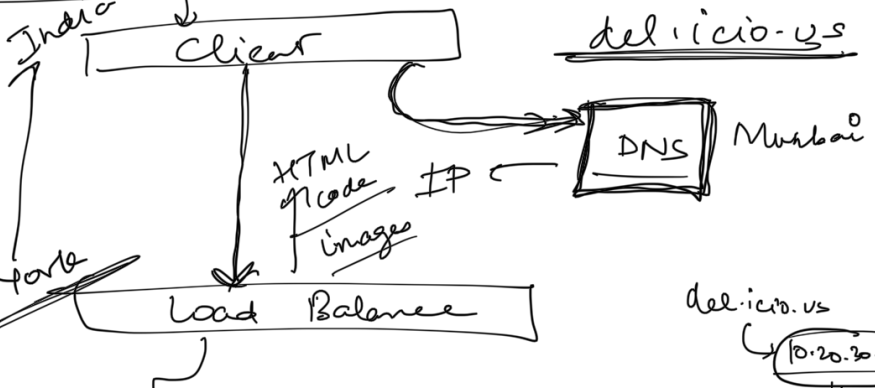


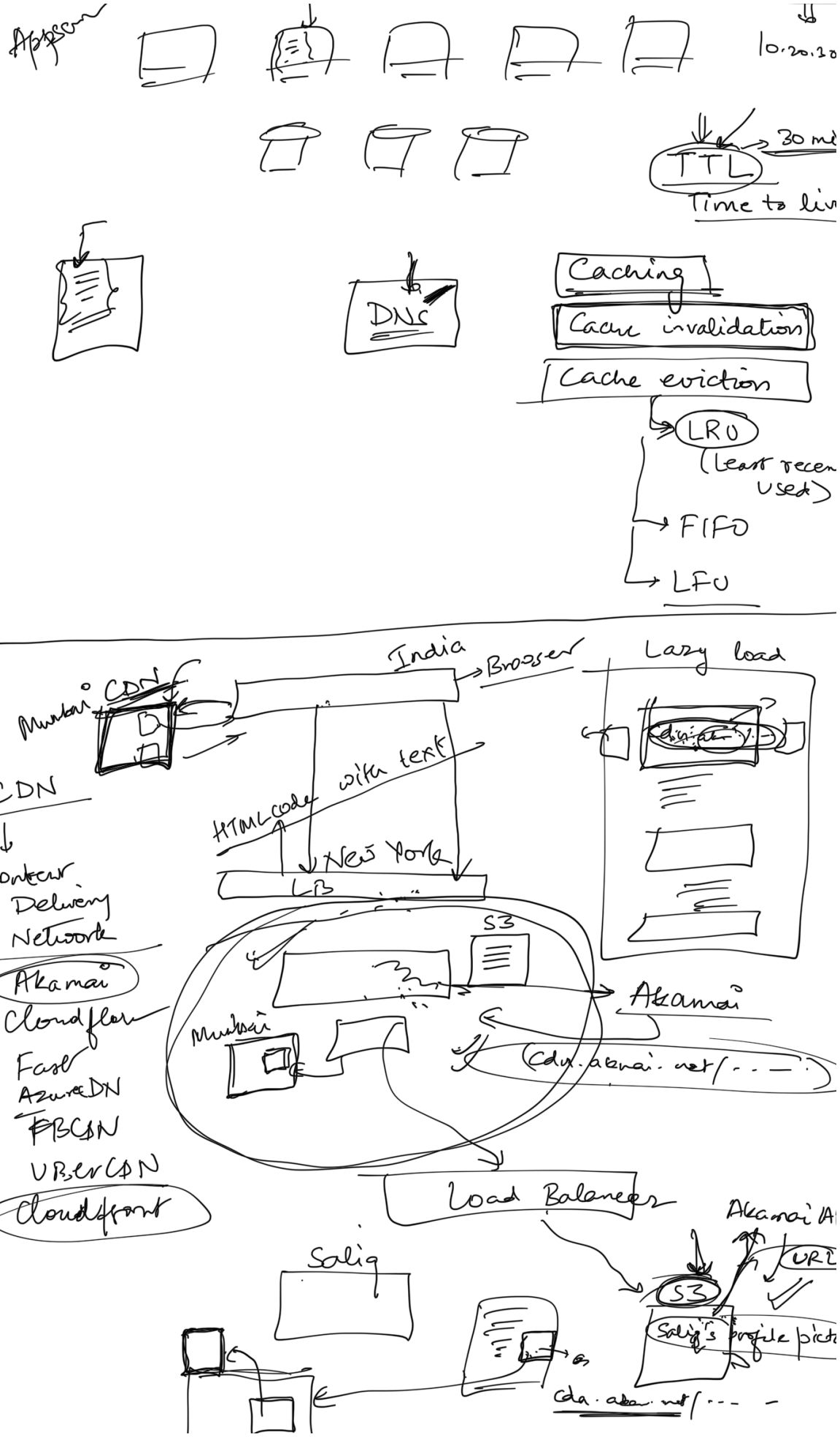
Appserver caching

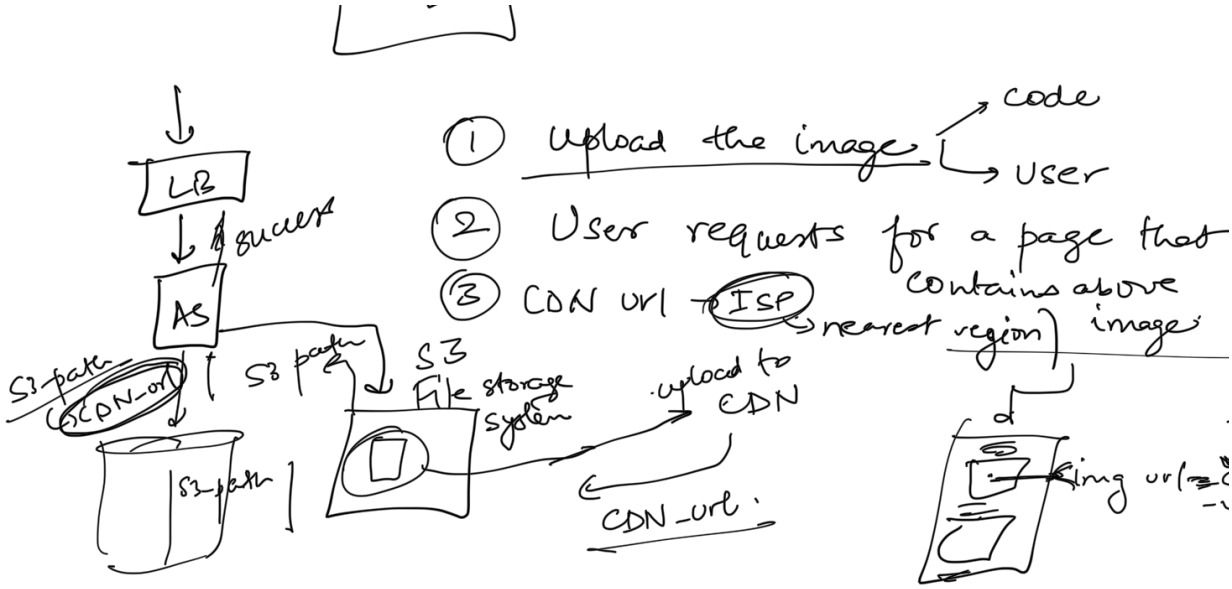


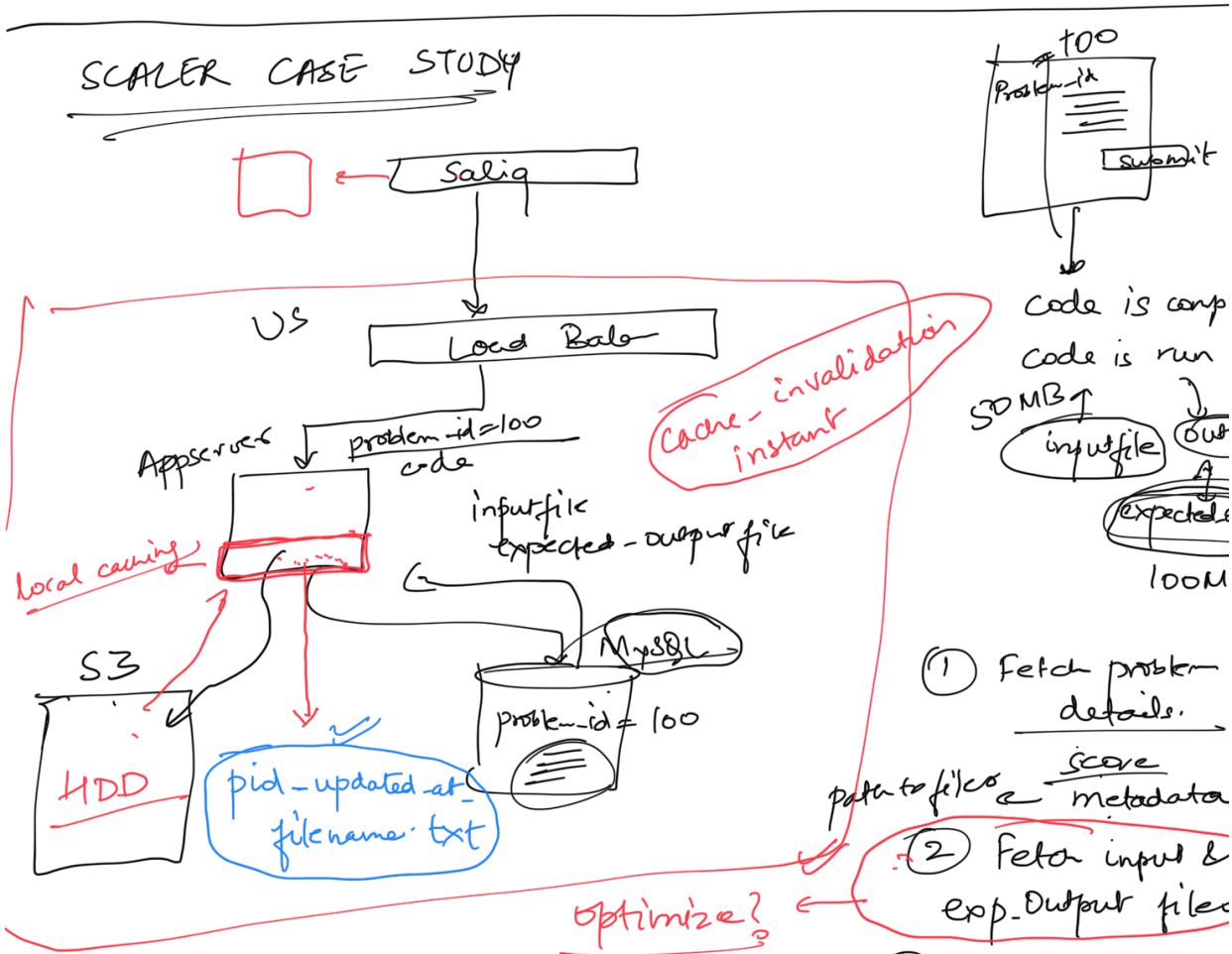
Local storage

cookies




10.20.30
30 mi
TTL
Time to liv
DNS
Caching
Cache invalidation
Cache eviction
LRU
(least recen
used)
FIFO
LFU
India
Brosser
Lazy load
Mumbai CDN
CDN
HTML code with text
New York
LB
Content
Delivery
Network
Akamai
Cloudflare
Fast
AzureCDN
BBCDN
UberCDN
Cloudfront
S3
Akamai
Mumbai
Load Balancer
Akamai
URL
Saliq
S3
Saliq's profile pict

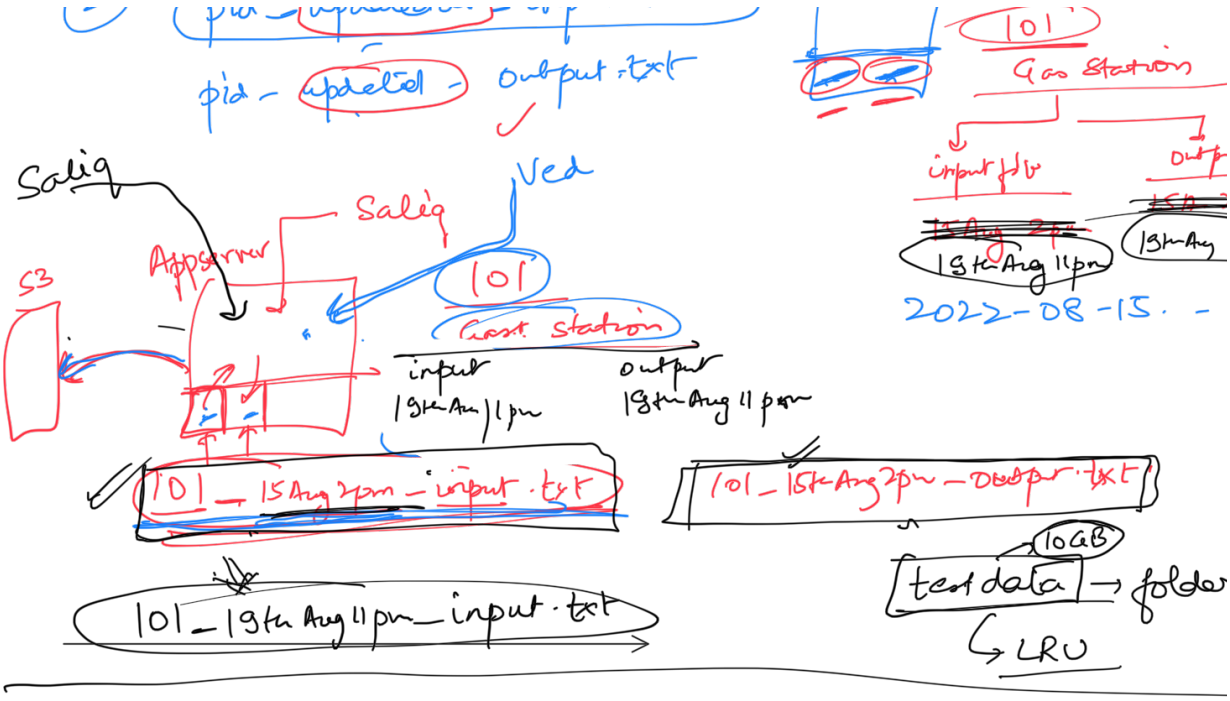


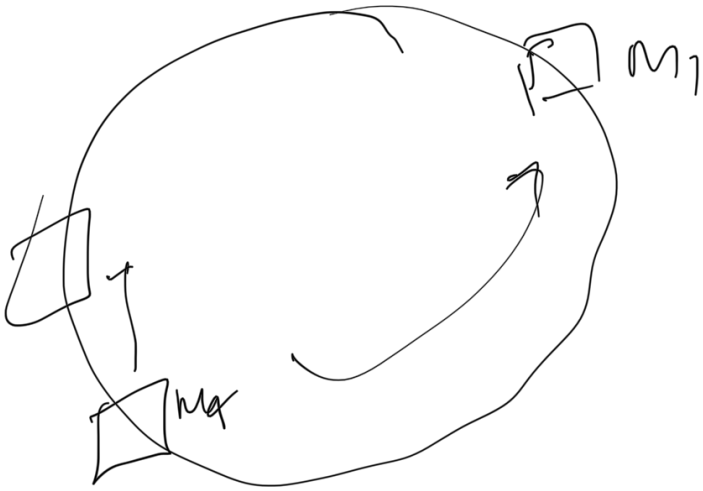


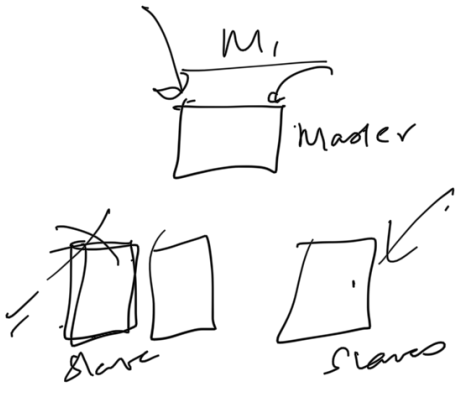
1. Fetch problem details.
   - S3 path_to_input_file
   - S3 path_to_output_file
   - score
   - problem name

   updated_at / updated_at

2. pid_updated_at_input.txt


pid - updated - output.txt
101
Gas Station
input fldr
2022-08-15. -
Saliq
Ved
Appserver
S3
101
Cust. station
input
output
101_15thAug2pm_input.txt
101_15thAug2pm_output.txt
101_19thAug11pm_input.txt
10GB
testdata
folder
LRU


M1
M4


M1
Master
Slave
Slave


M1