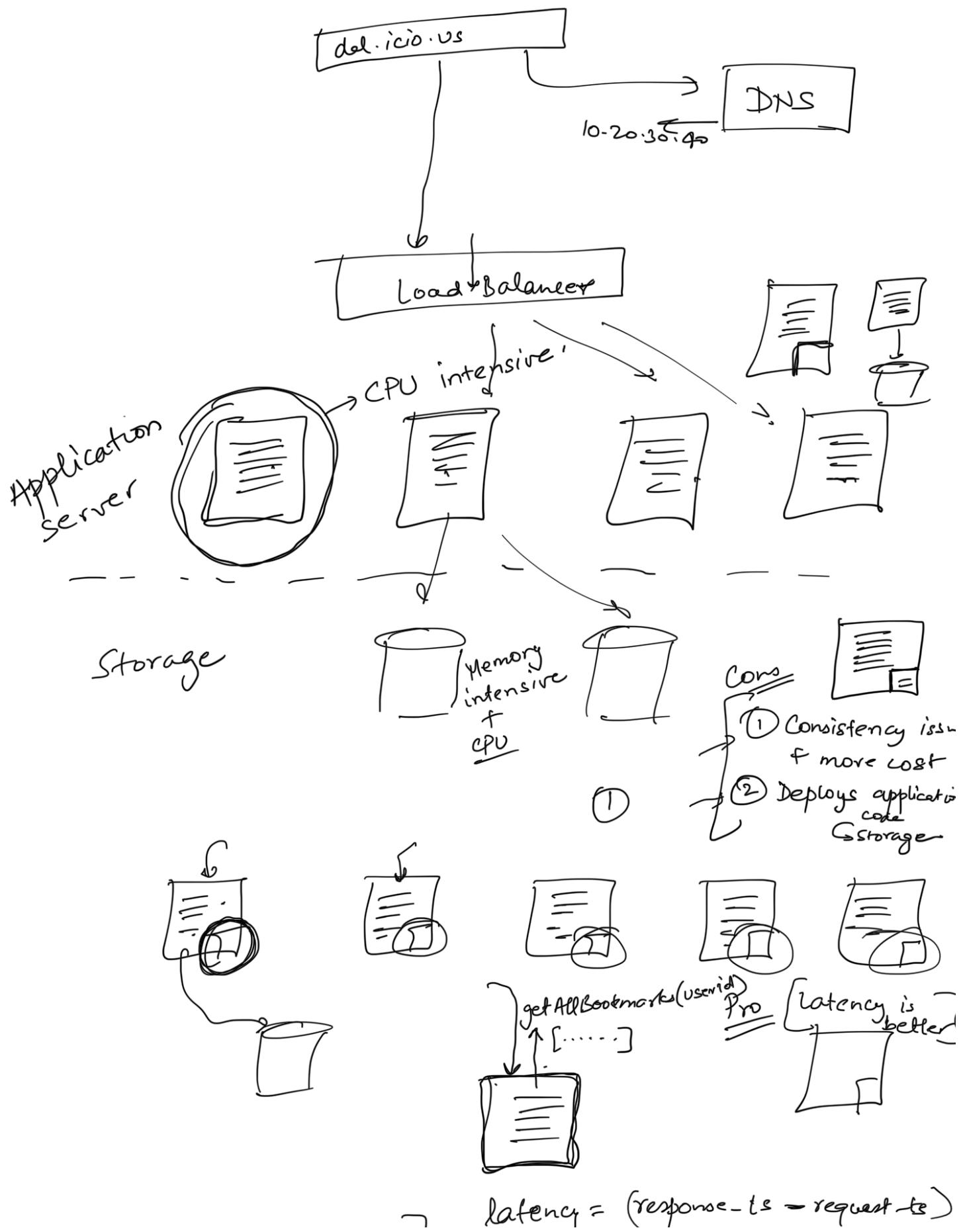
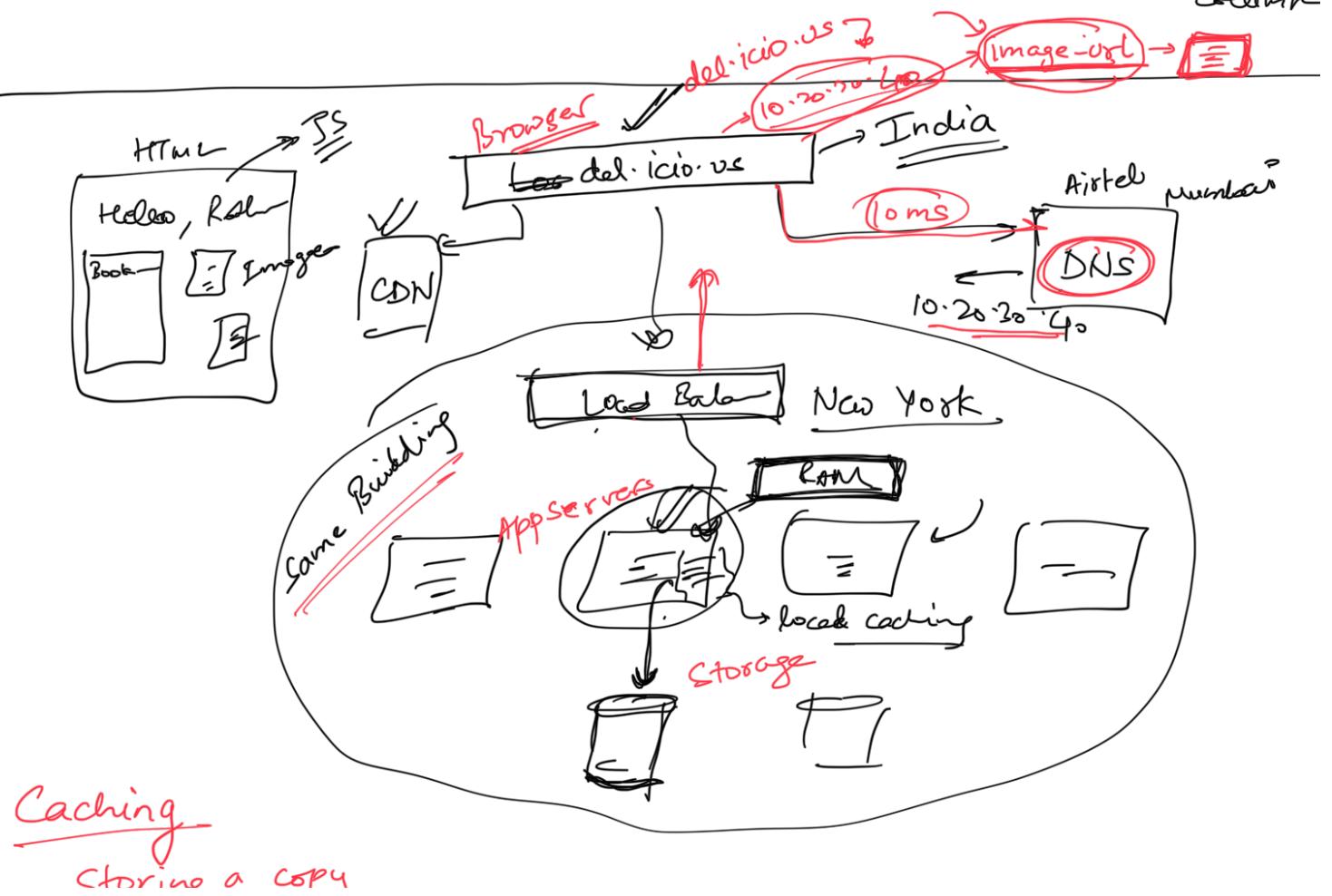
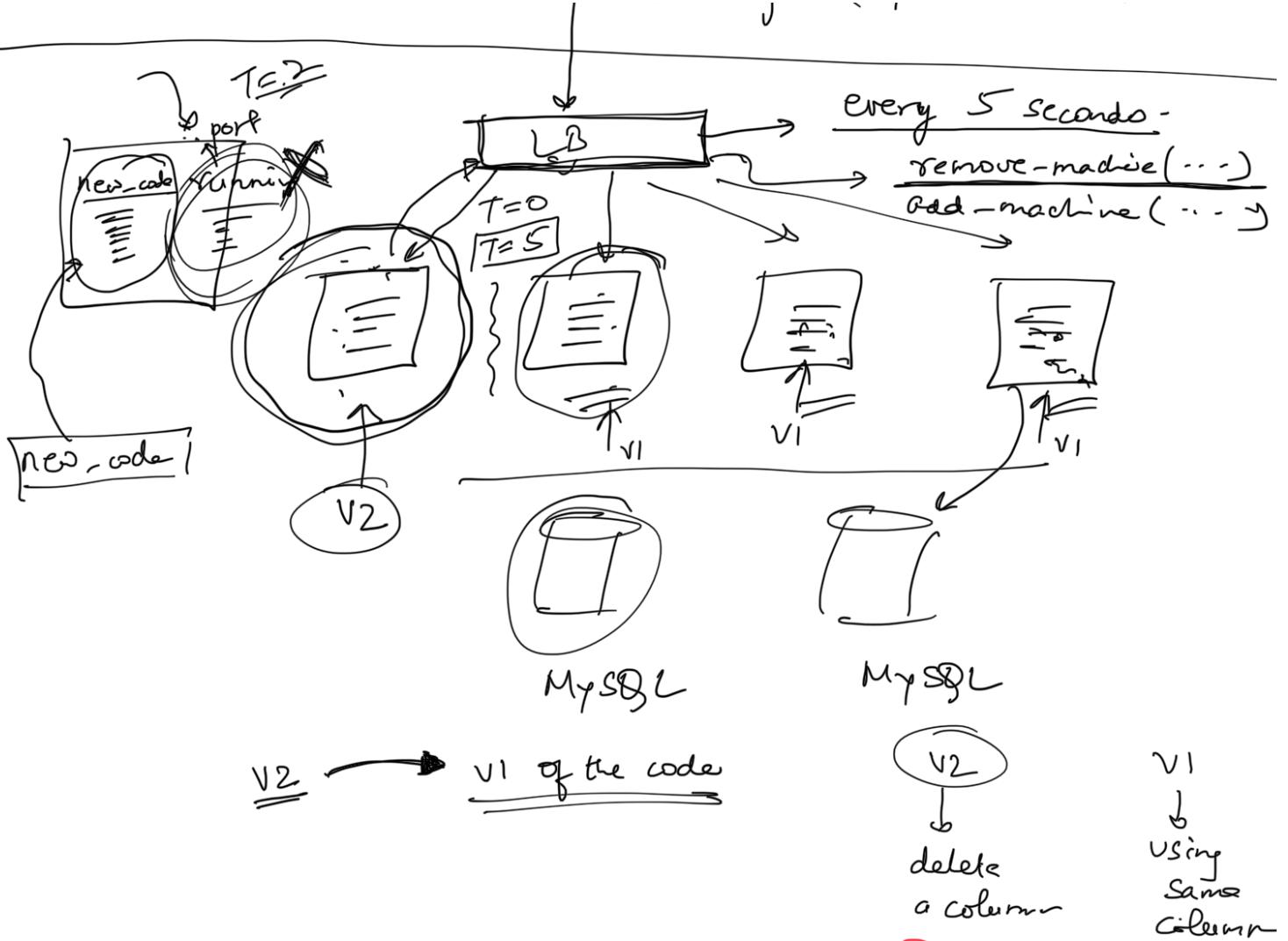


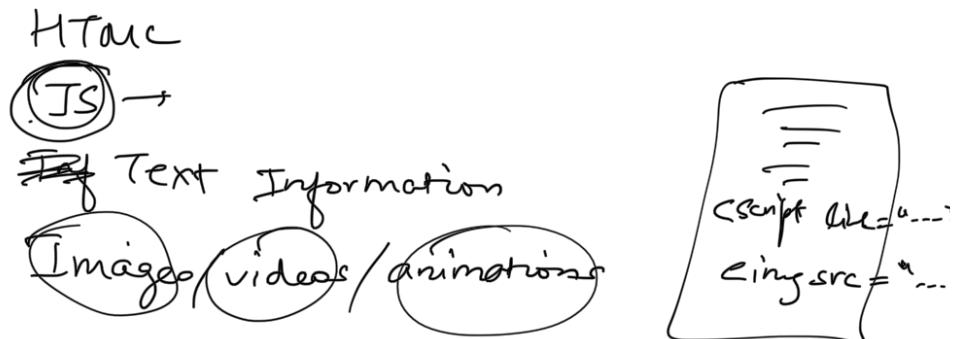
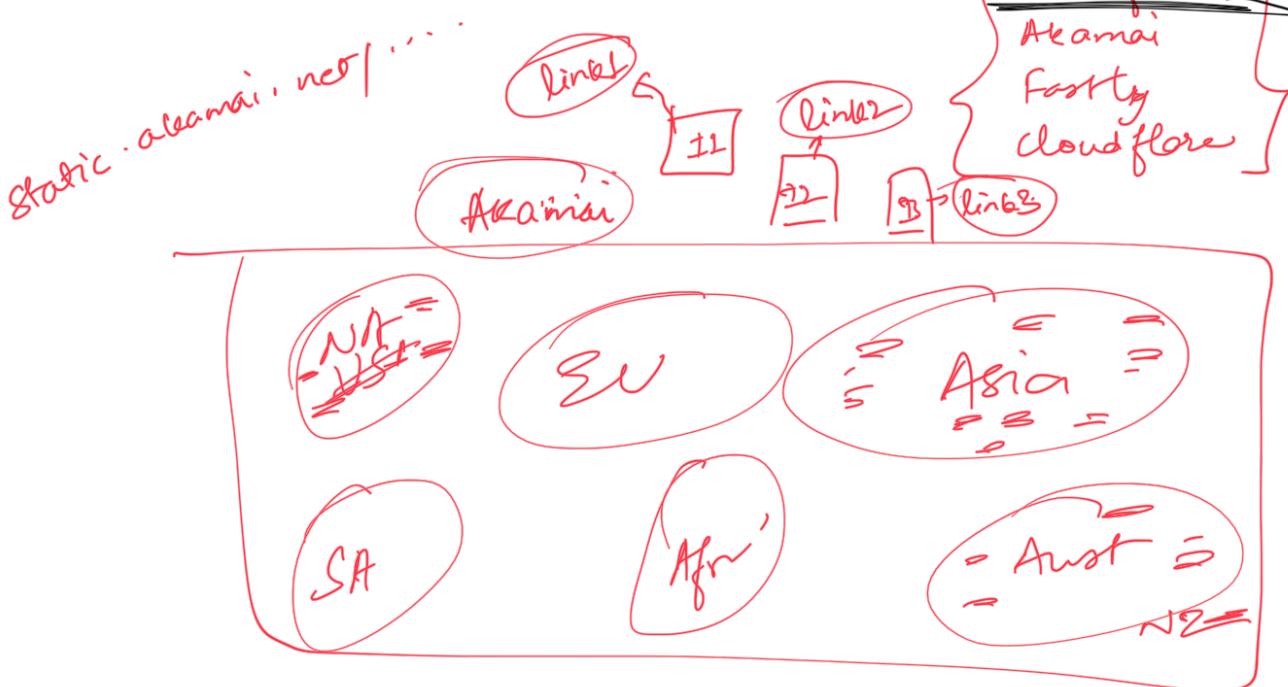
CACHING - 1

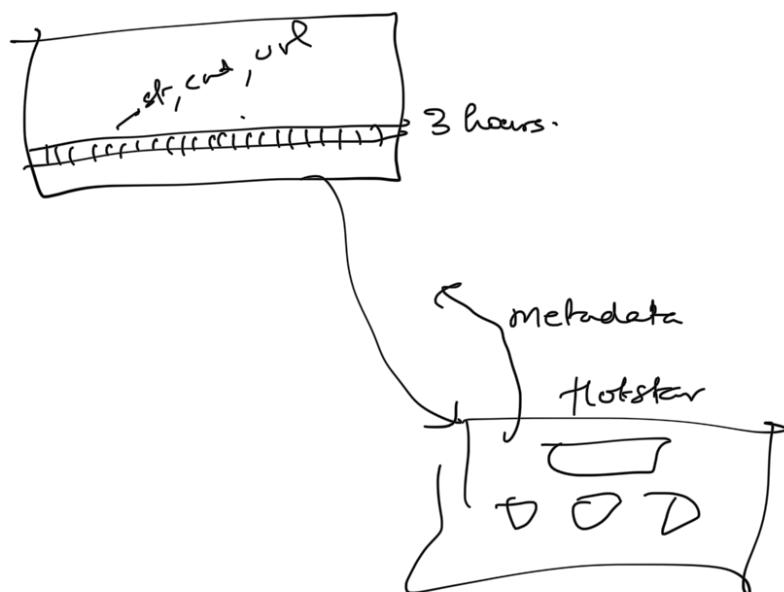
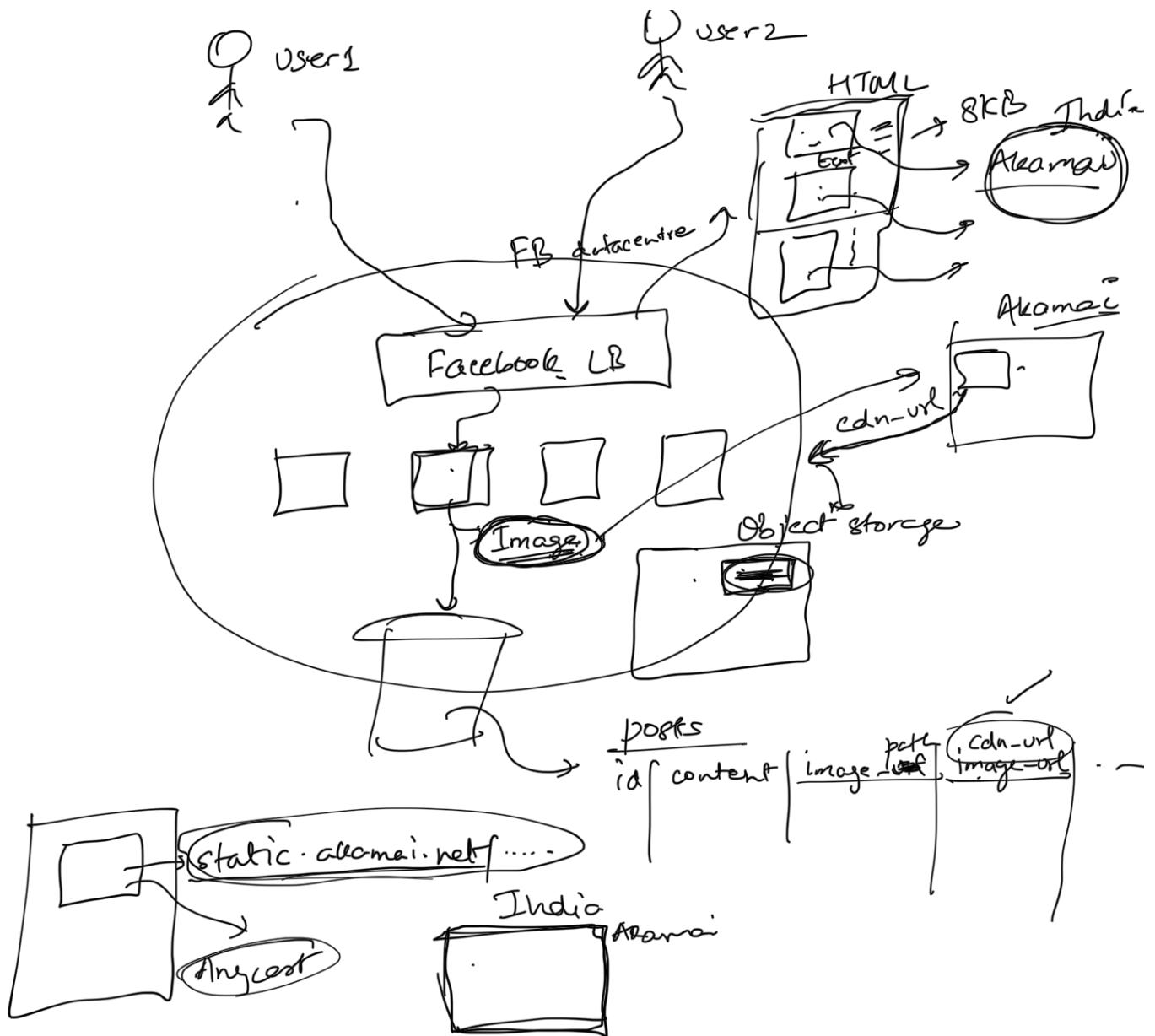




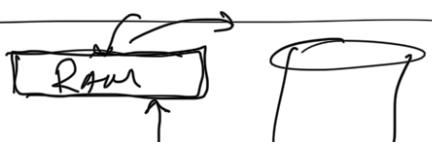
2. 1
of information
closer / faster

- ① Browser caching
- ② ~~for~~ CDN (Content Delivery Network)





- Browser cache
- CDN



- Appserver



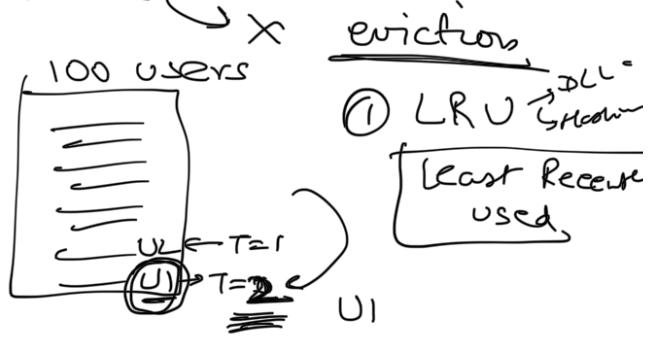
② Cache invalidations

① TTL (Time To Live)

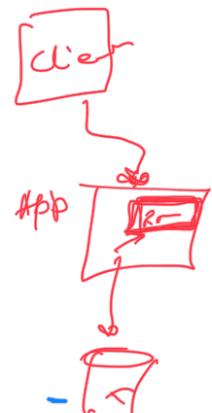
$\times \text{domain-name} \rightarrow \text{ip-addr.}$
30 mins

if domain-name in H:
return H[domain]
else:
get-domain(d)
~~H[...]~~ = - - -

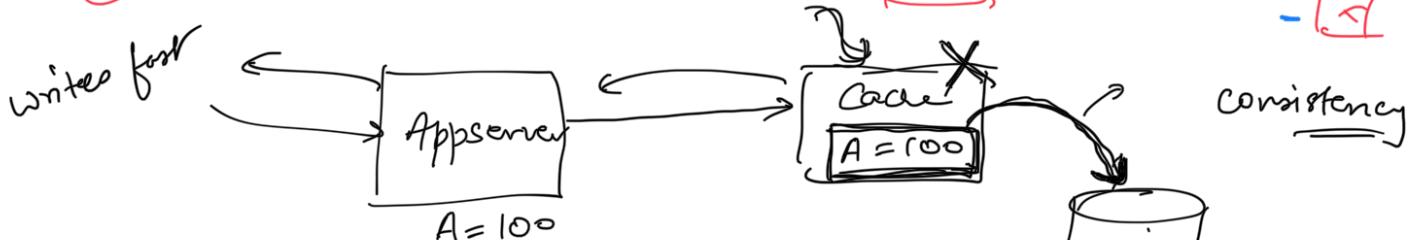
① When cache is full



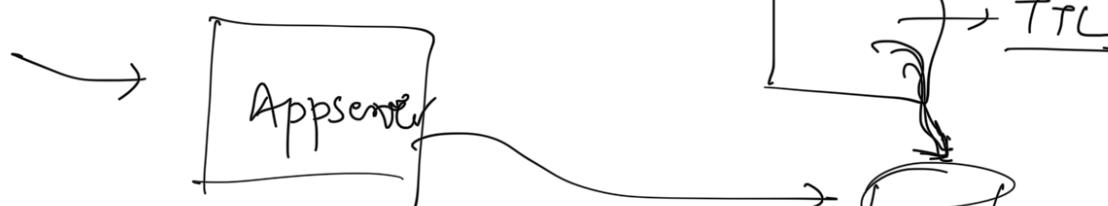
① Write through cache (consistent) writes slow

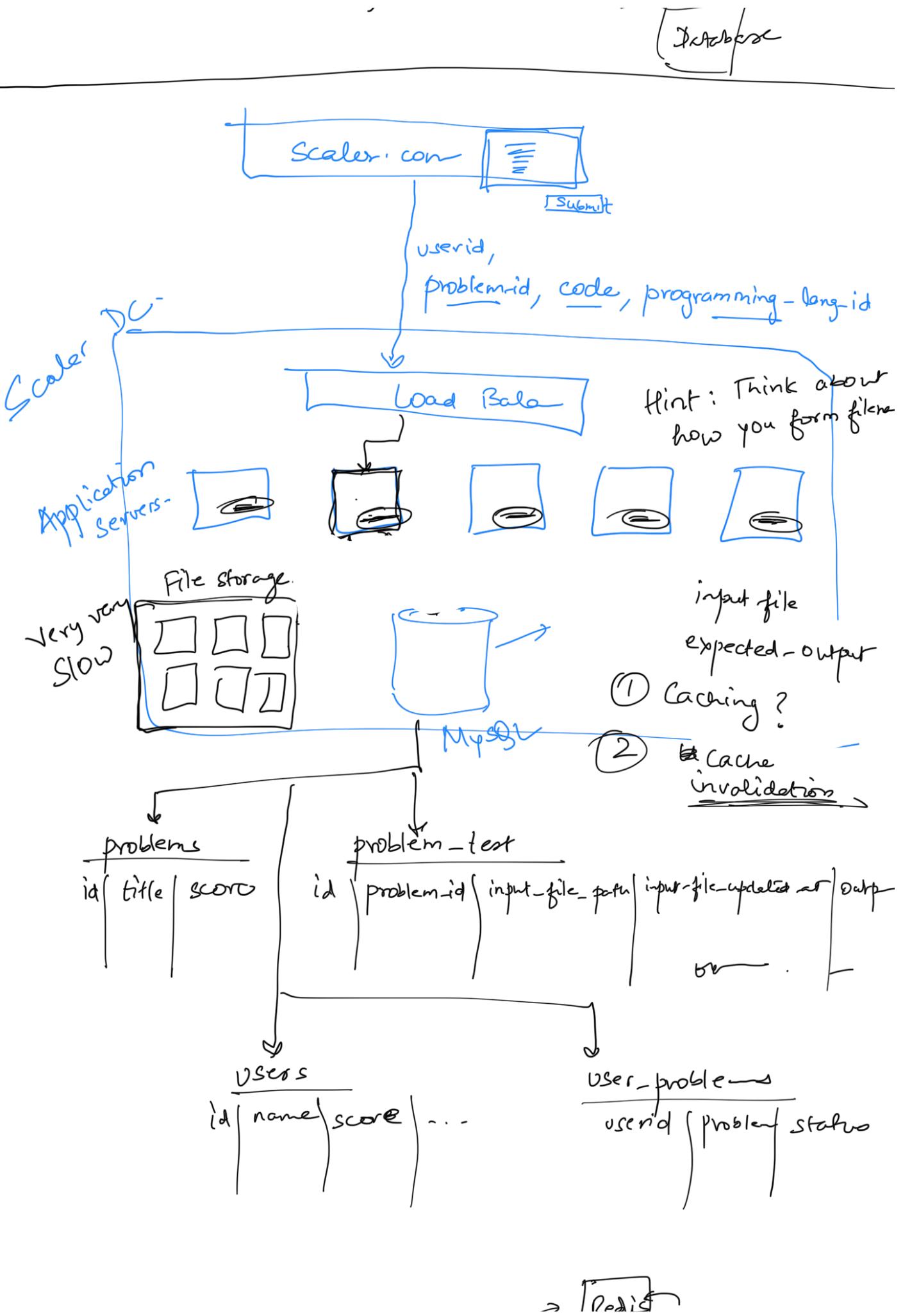


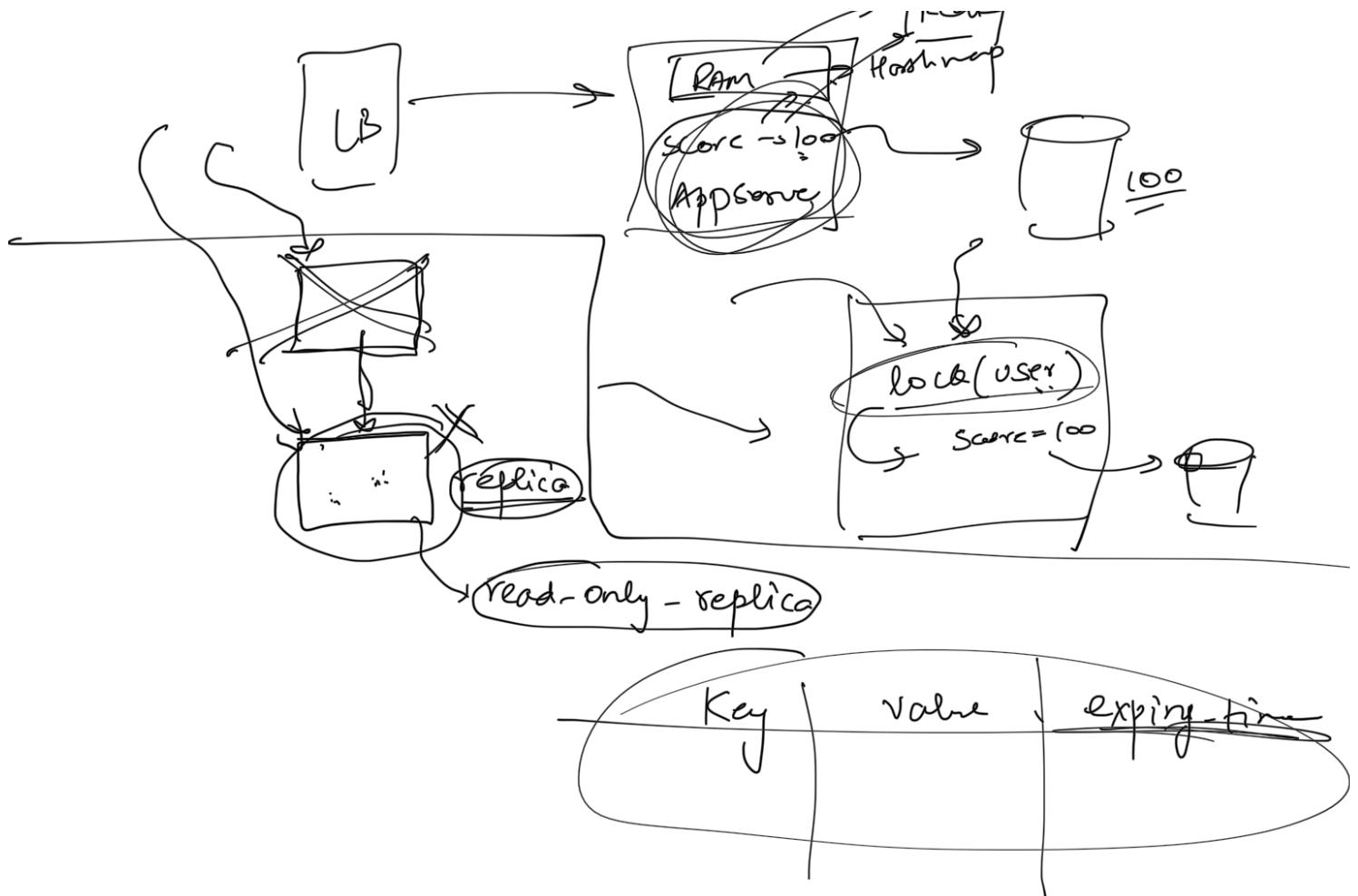
② write back cache



③ write around cache







`get(Kay):`

[Value, expiry-time = H[key]]
 if expiry-time > cur-time
 return value

return NULL/not found