Agenda:

- → Client side Caching
- → CDN.
- → Backend < Local | Server Cache.
  Global Cache.
- → Cache Invalidation
- → Cache Writing strategies.

Client side Caching.

CDN. → 3rd party cache

↳ Content Delivery Network.

CDN is the backbone of the internet.

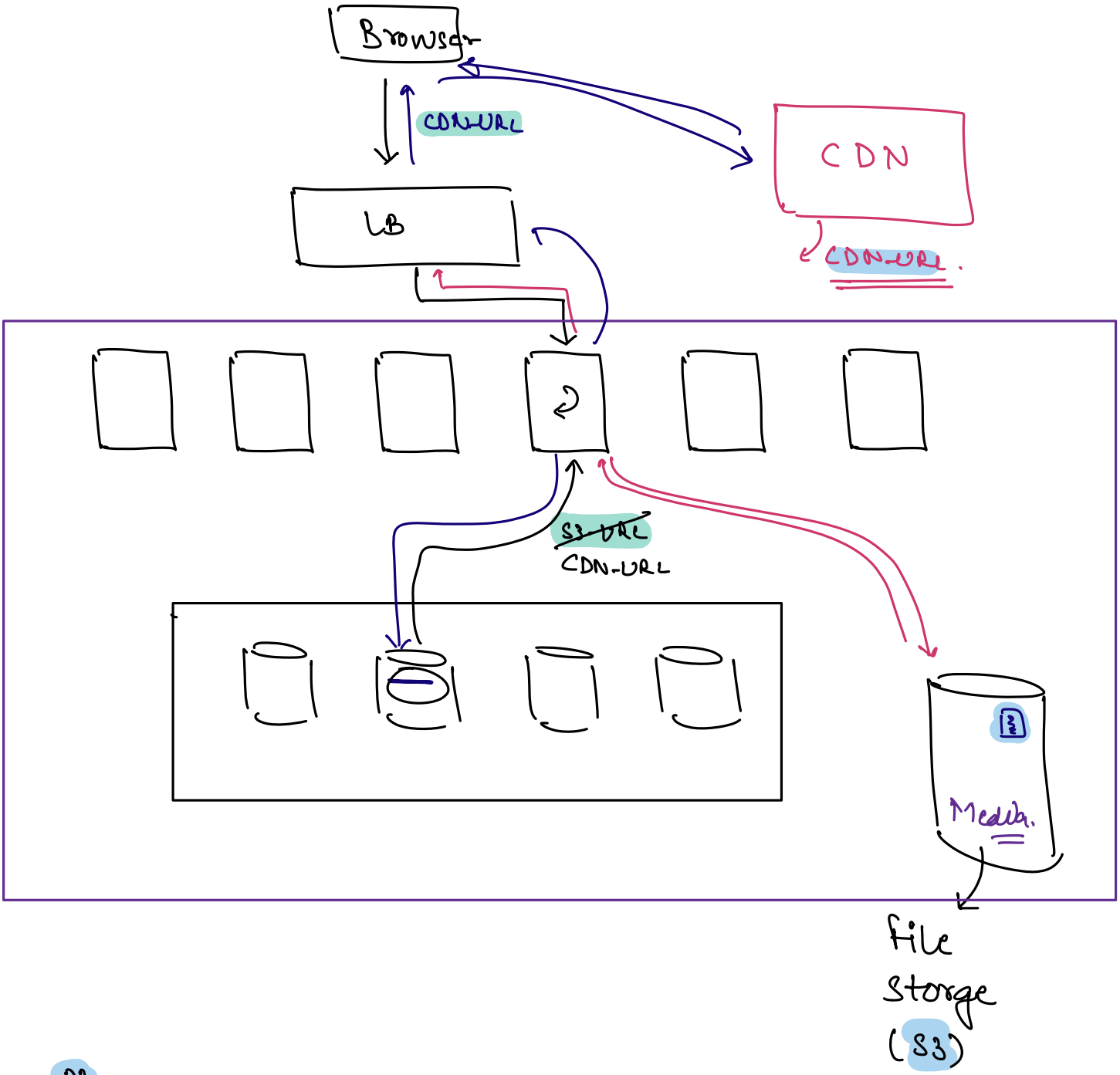
Text Data

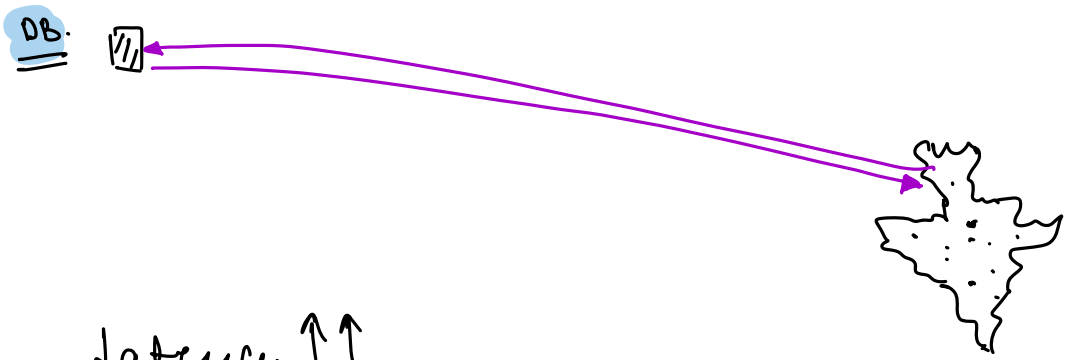
Media Content — Videos, Images, Audio. } Static

↳ Big in size.

- → Akamai
- → Cloudflare
- → Cloundfront .....

fb/ Twitter / Instagram.





Latency ↑↑

N/w Bandwidth ↑↑

↳ Cost ↑↑

Latency ∝ Distance.

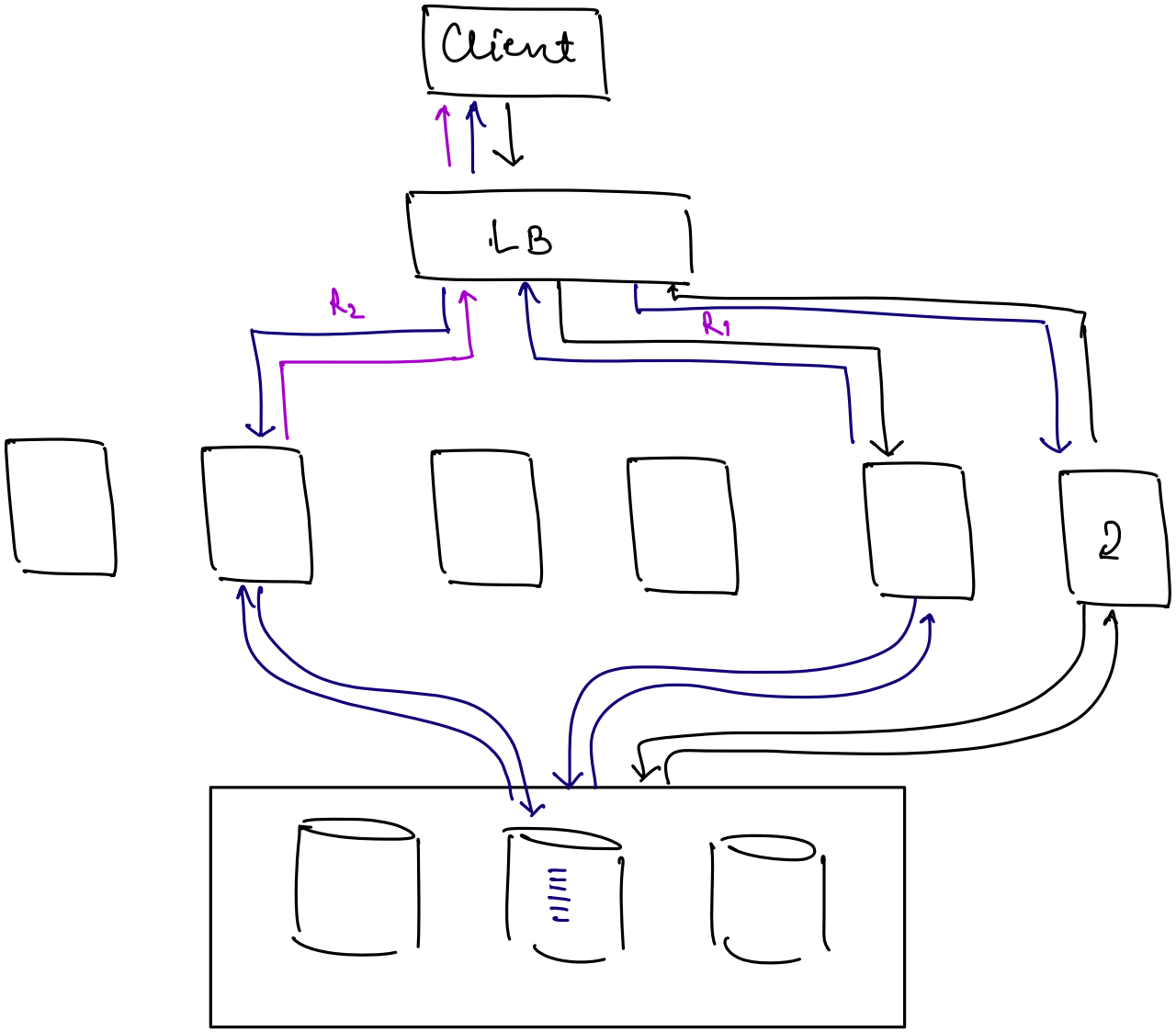
Edge Servers.

FB → FBCDN

Netflix → Open Connect.

Scaler → Cloudflare CDN.

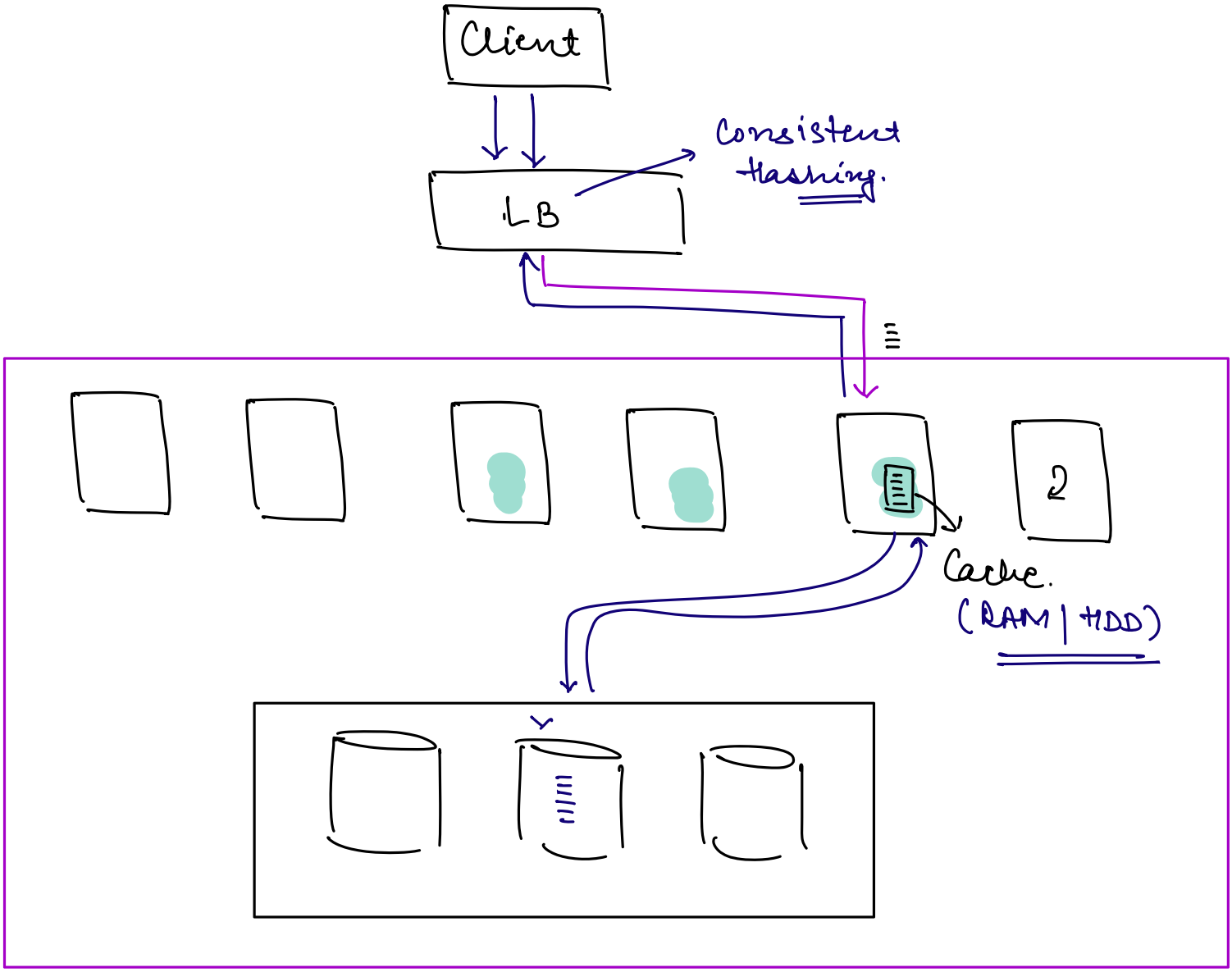
Backend Cache.



for each request :

- → Extra n/w call.
- → DB read time
- → N/w Bandwidth ↑↑

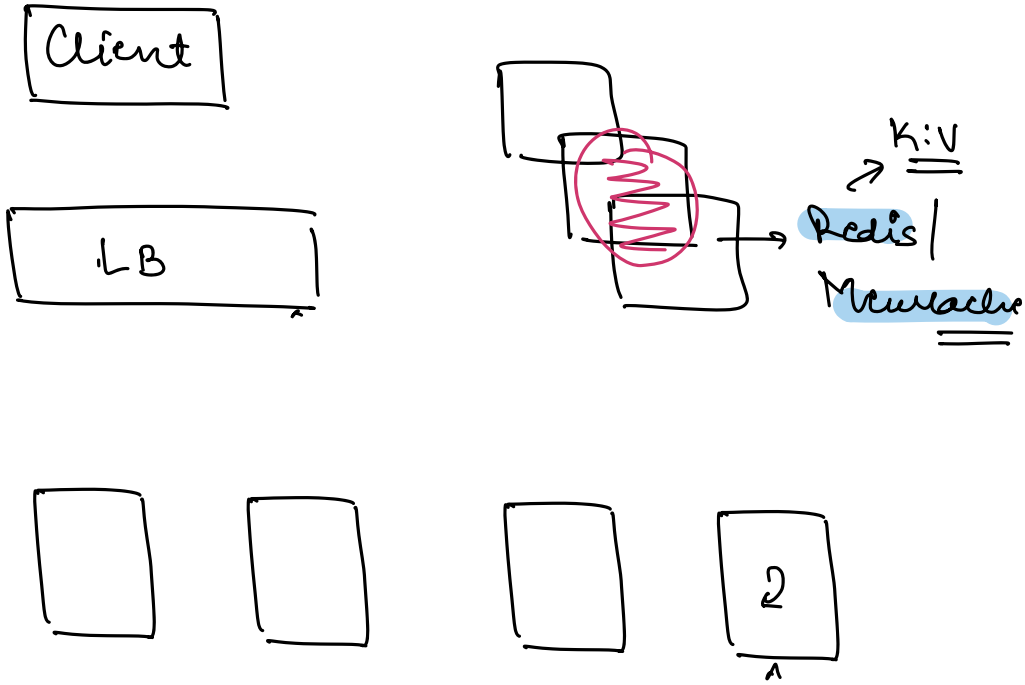
Stateful App Servers.

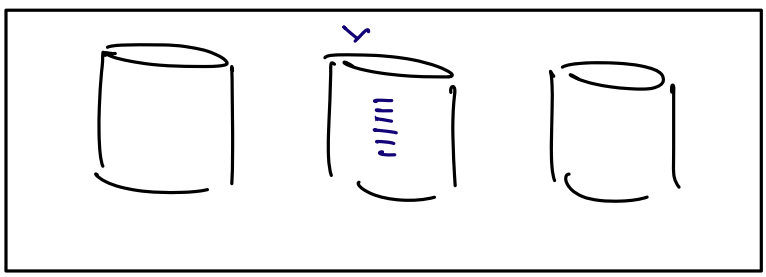


App Server Cache | Local Cache.

Global Cache.

↳ Distributed.





Cache can always go stale.

↳ limited in size.

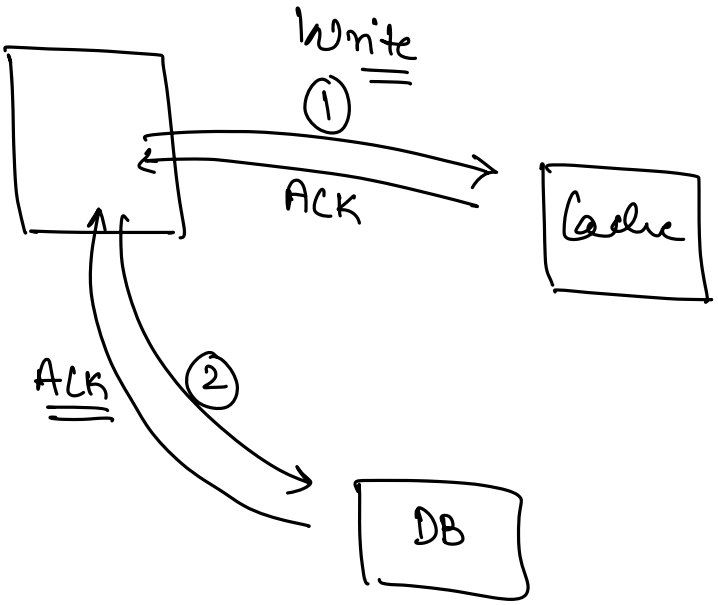
Cricbuzz

Cache Invalidation Strategy.

TTL (Time To Live)

→ Cache Writing Strategy.

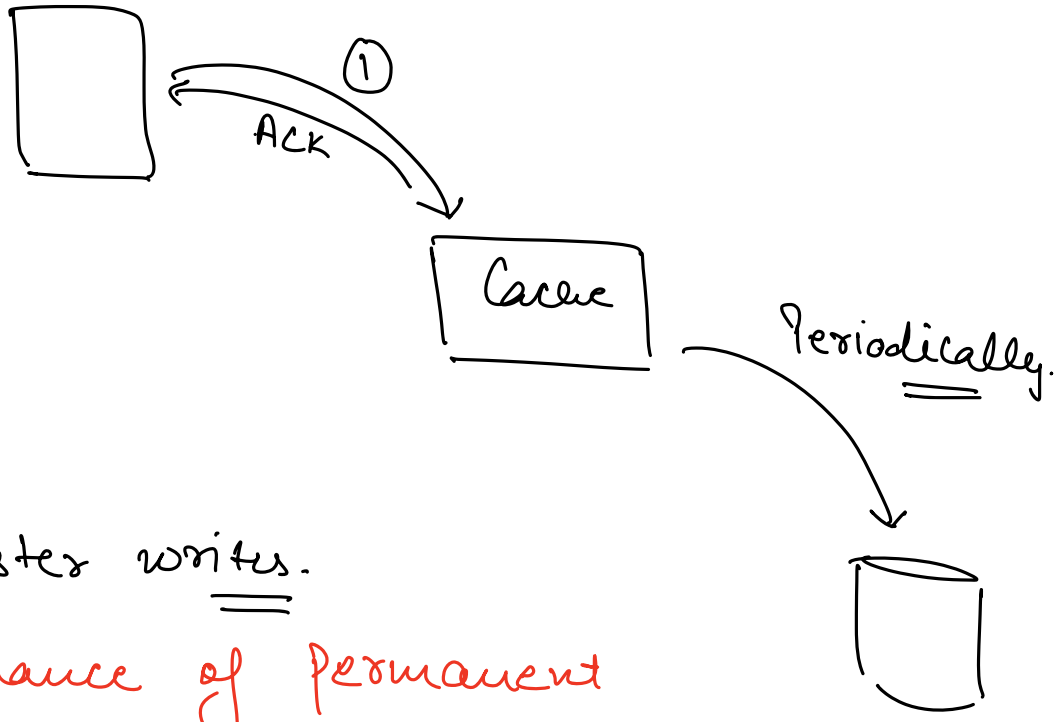
① Write through cache.



→ Cache is always up to date.

→ Write latency ↑

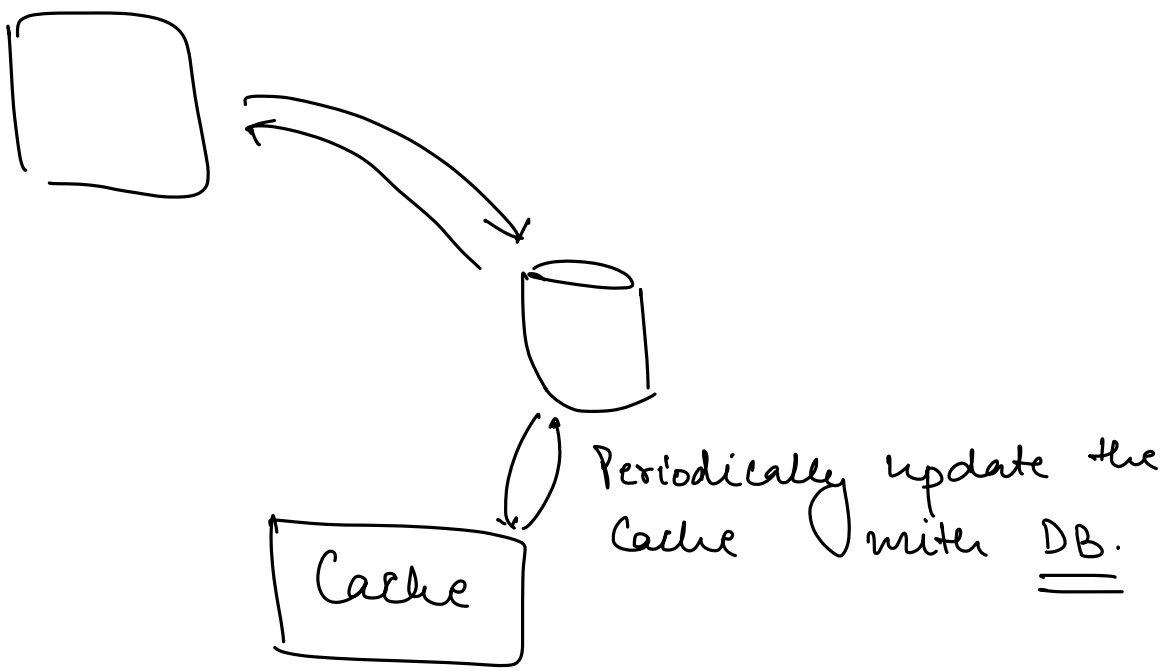
(2) Write Back Cache.



→ Faster writes.

→ Chance of permanent data loss.

(3) Write Around Cache.



Cache Eviction Strategy.

→ Remove the older data from cache to accommodate the new data.

FIFO

LIFO

LRU.

MRU

LFU