# Database Handling for Billions of Users:

First Method -> Redis Cache for billions of users handles.

Requests comes, checks if users exist in cache stored usernames/emails if yes then return no or yes then go to server to store it in cache and data goes from there to cache as well and it gets refreshes by time to time as well.

Second Method -> Bloom Filters

A bloom filter is a probabilistic data structure that is based on hashing. It is extremely space efficient and is typically used to add elements to a set and test if an element is in a set. Though, the elements themselves are not added to a set. Instead a hash of the elements is added to the set.

<https://brilliant.org/wiki/bloom-filter/#:~:text=A%20bloom%20filter%20is%20a,is%20added%20to%20the%20set>.

If user deletes accounts, hash may still remain in bloom filters dsa.

String -> bye mapped hashes in bit array like [1,0,1]

Second time when bye come, hashes will be checked like either they are in bit array having all ones, if all ones yes user exists otherwise no.

Third Method -> Bloom Filters + Caching

Combination of bloom filters and caching is used to queries fast