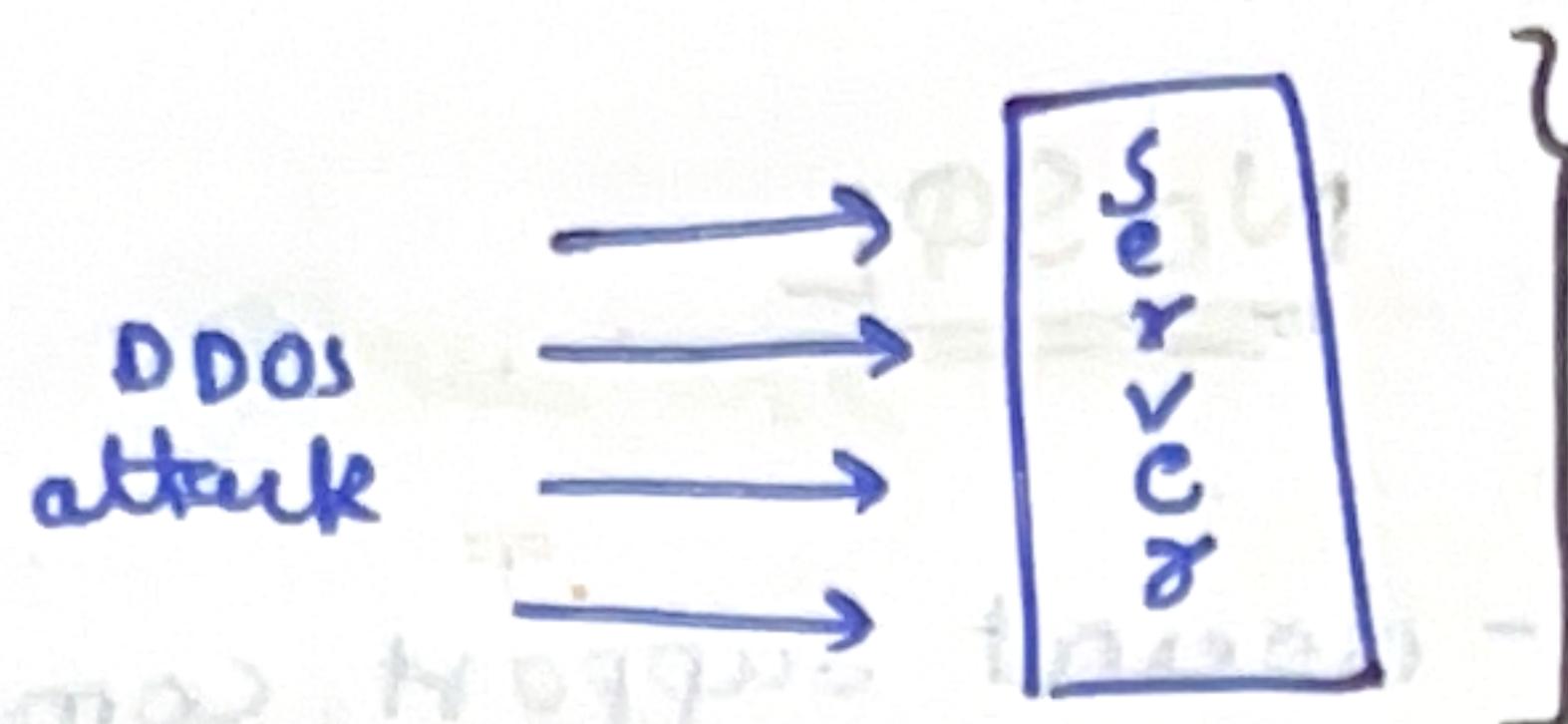


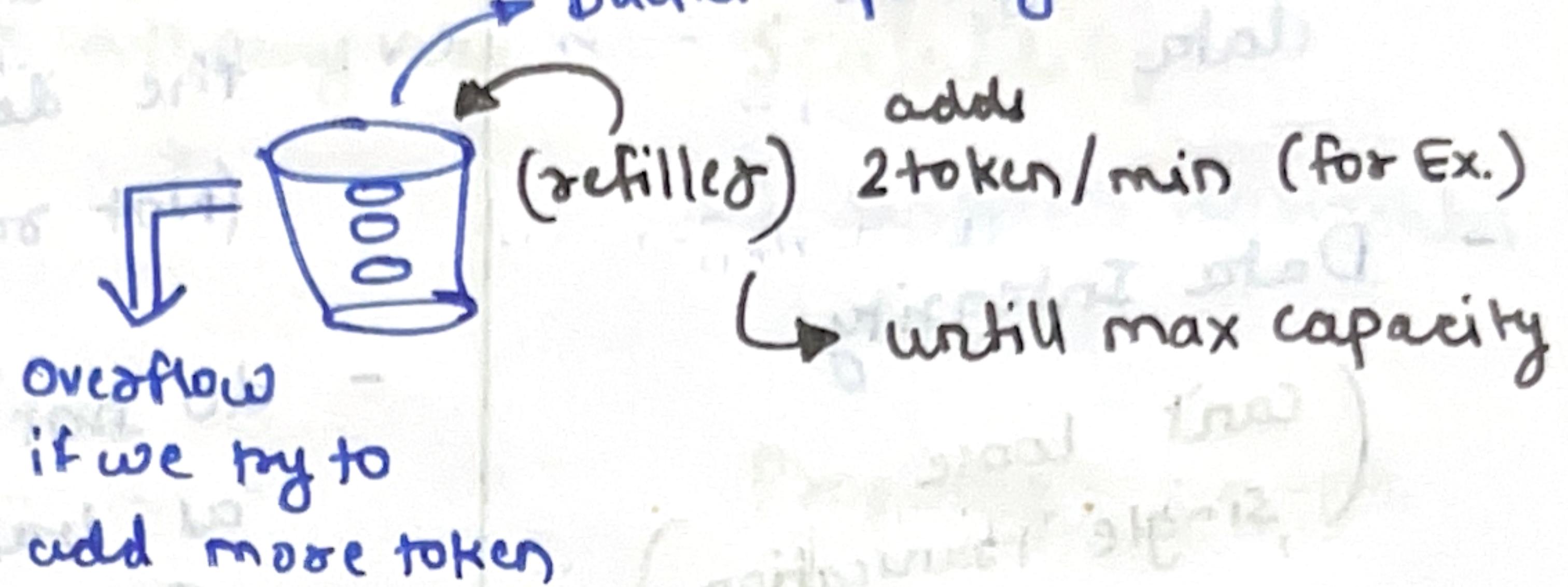
## # Rate Limiter :



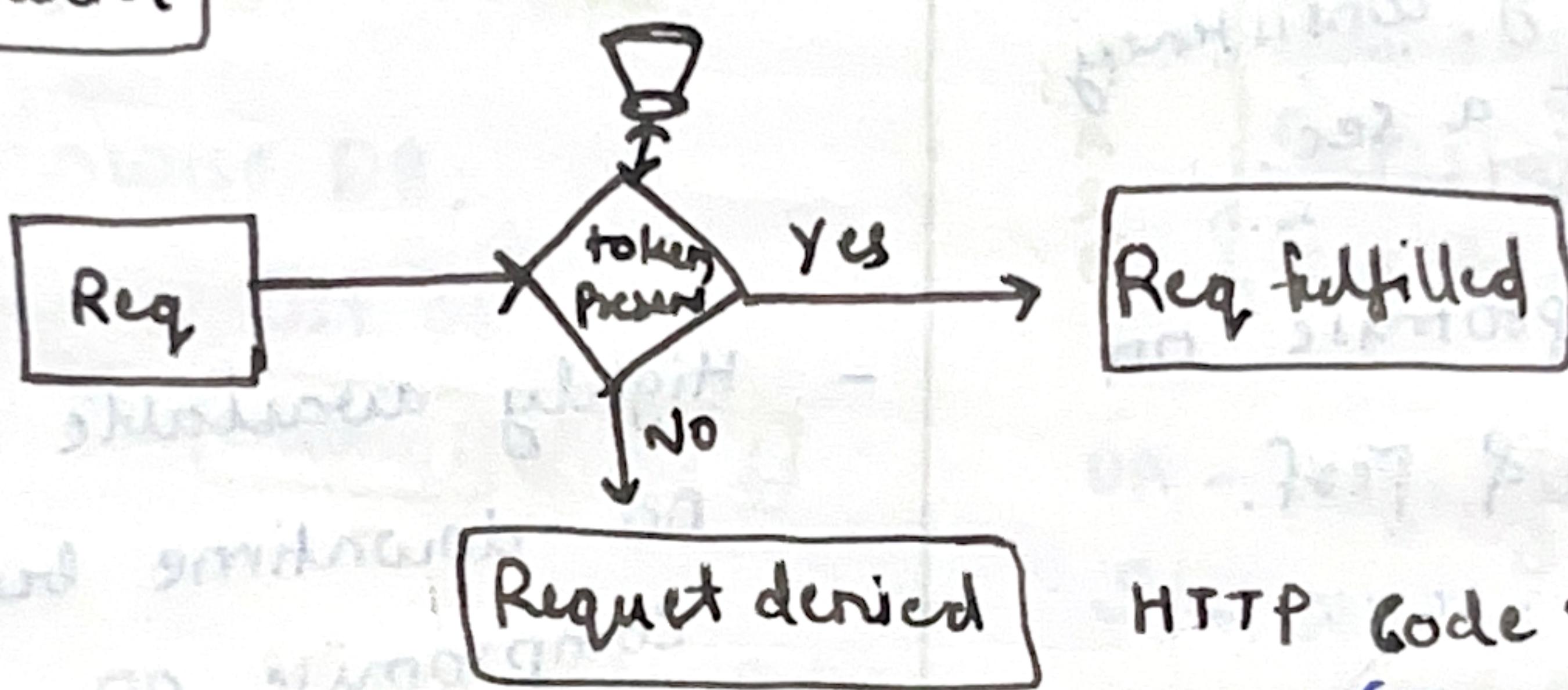
excessive amount  
of request can  
Bring down server

Algorithm :

### ① Token Bucket :

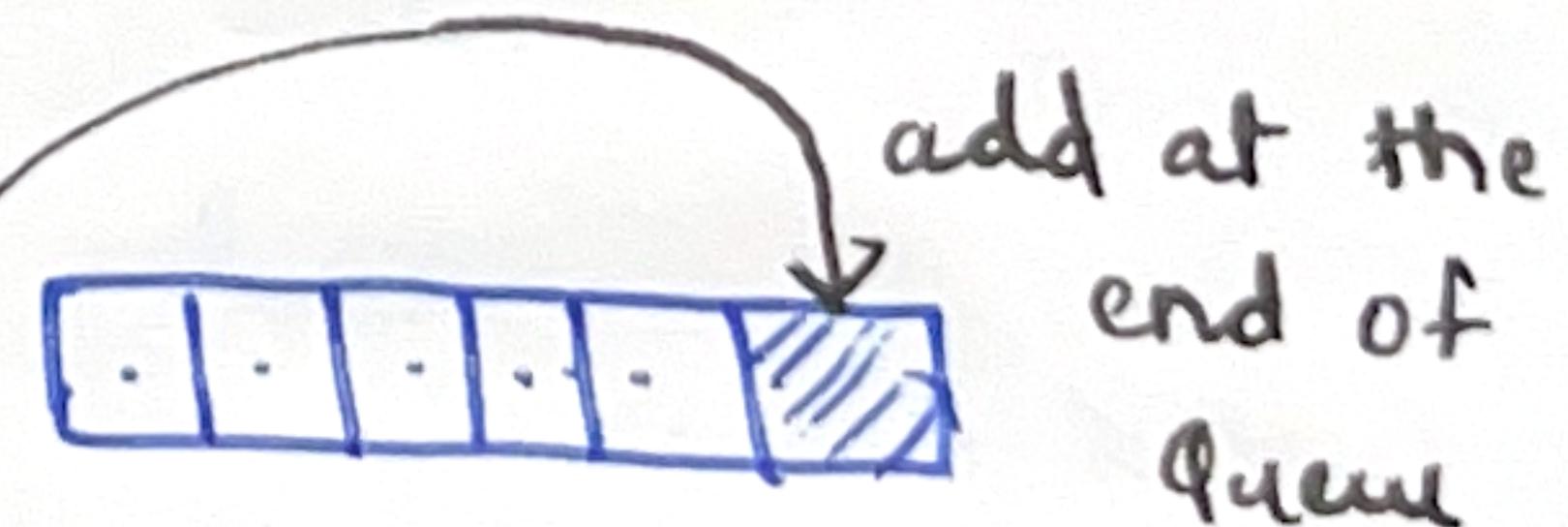
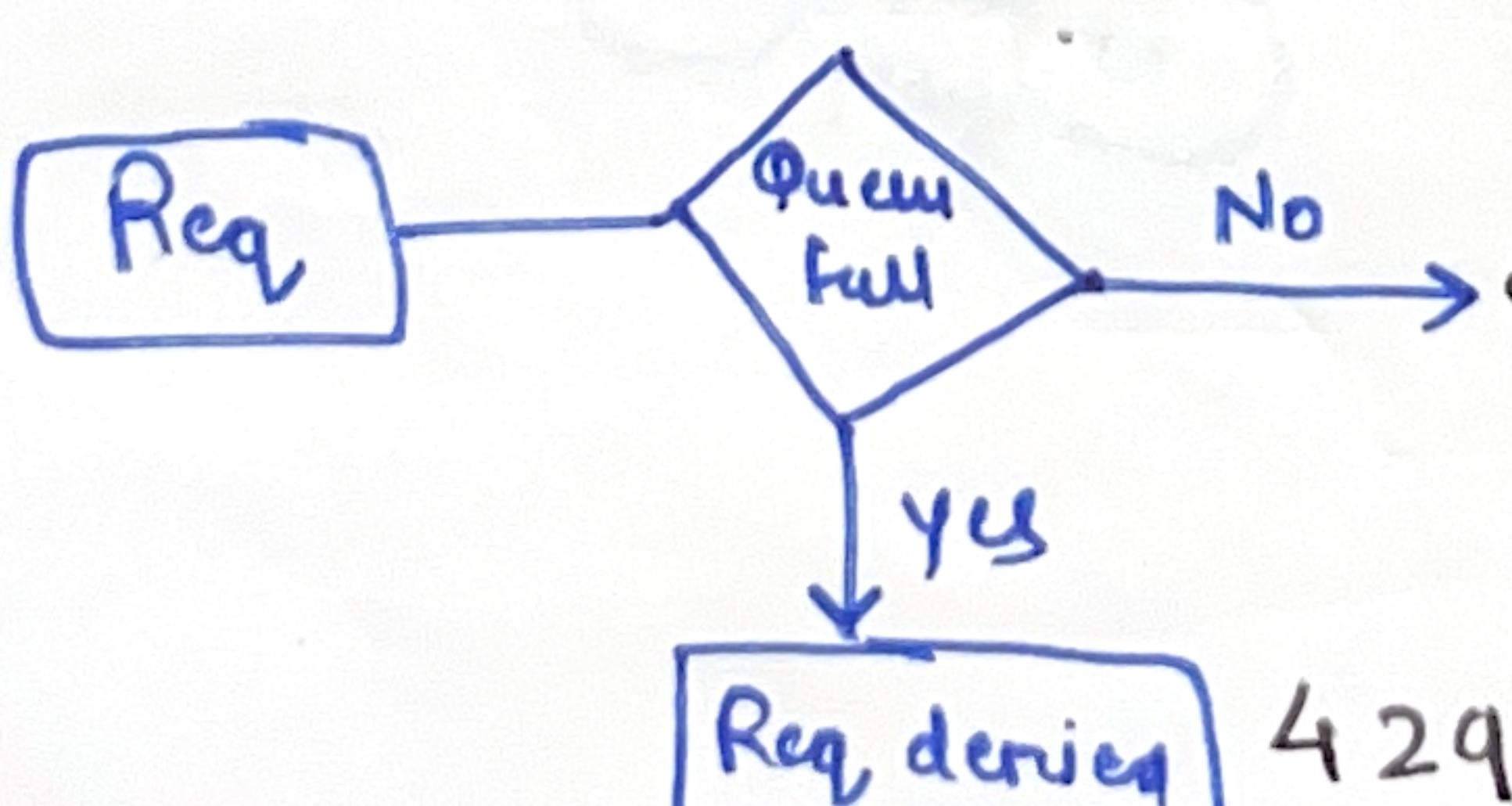
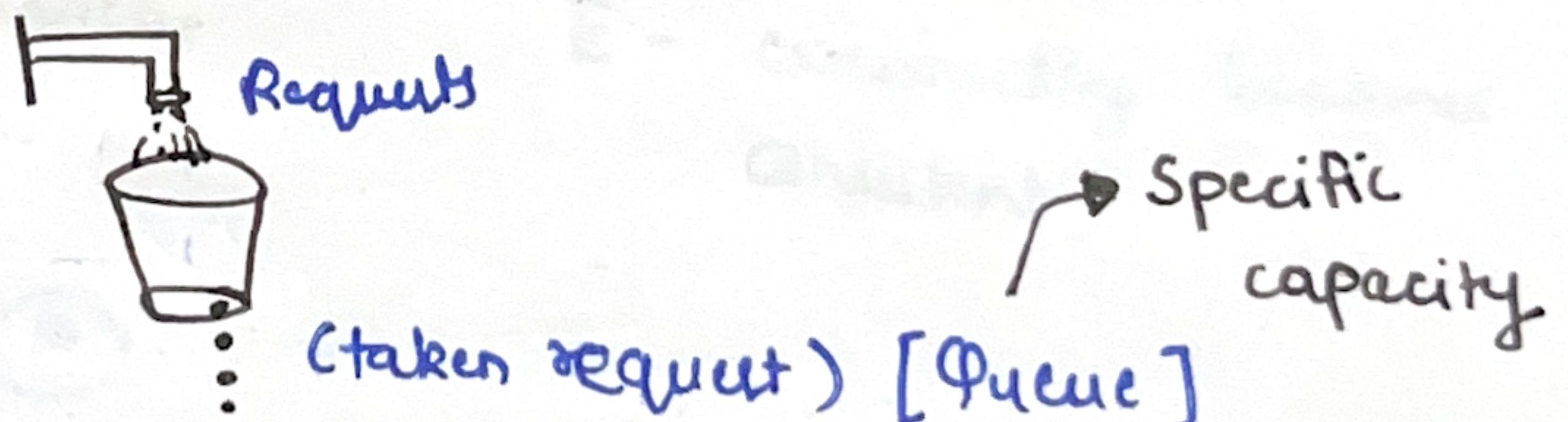


Impl via Counter



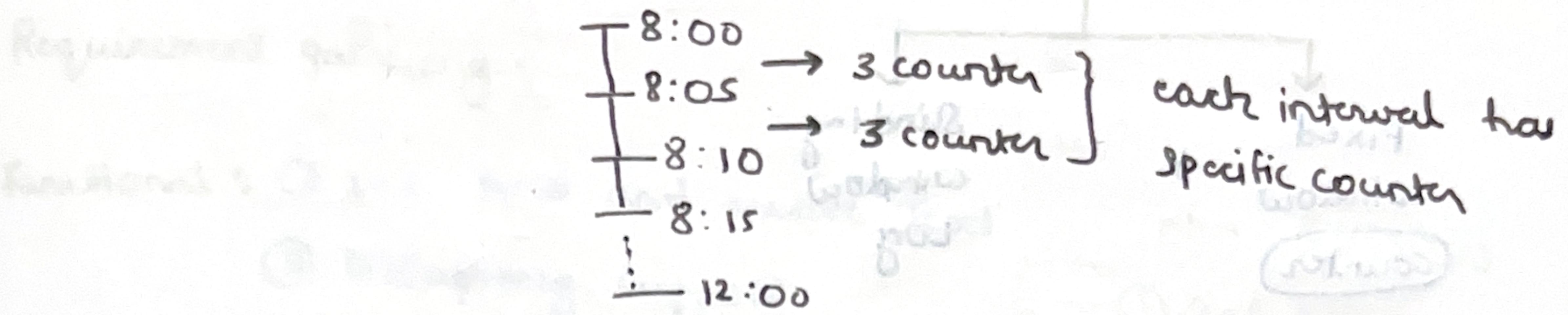
we can configure one bucket per user.

### ② Leaking bucket :



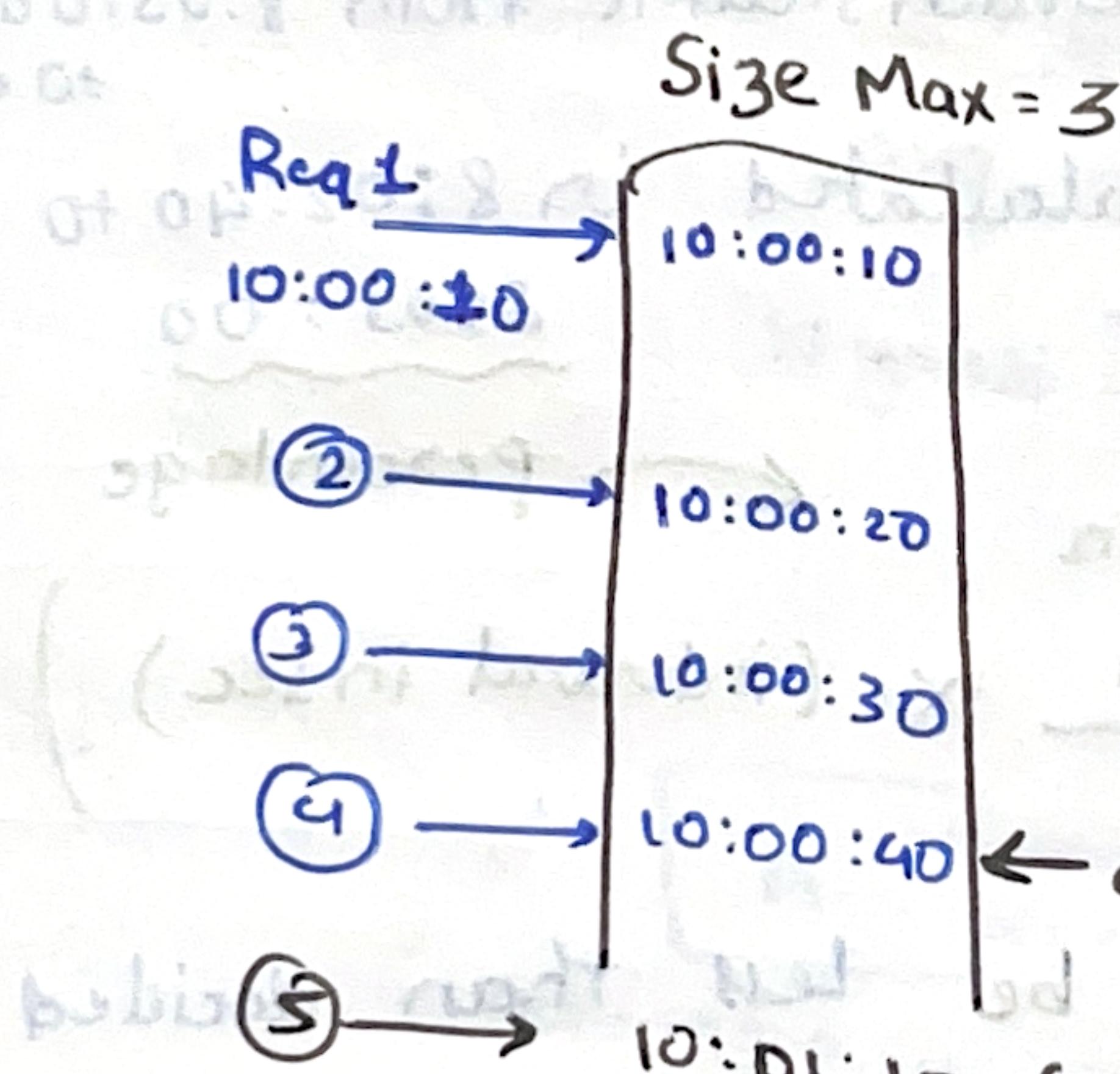
\* performs badly for burst of traffic

③ fixed window counter:      fixed window = 5 mins



\* Here the disadvantage is during middle 5 min window like 8:07 to 8:12, amount can go upto double the counter

④ Sliding window log: 3 req/min (for Eg)

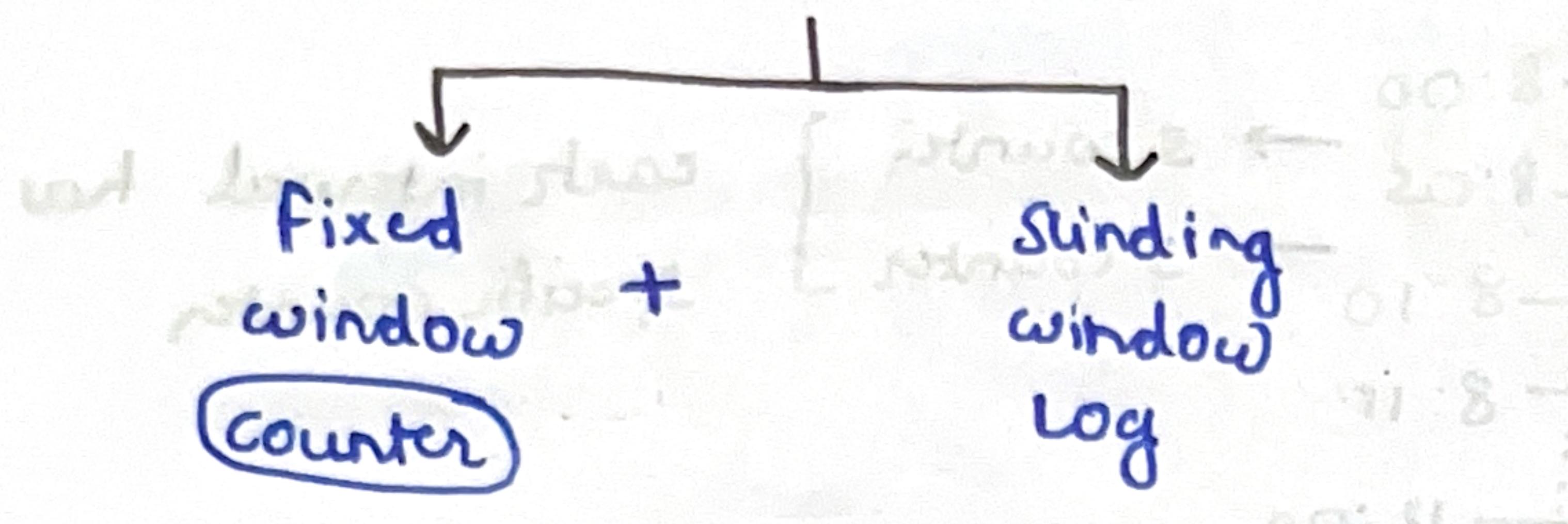


disadvantage:

- this will log the declined requests as well.

as we have already passed the 1 min marker we will slide window to neglect all the Req in past min and we will slide the window

## ⑤ Sliding window Counter:



it computes the request in a minute (decided interval) of 60s and also keep tracks of requests in each minute interval (8:00 to 8:01, 8:01 to 8:02).

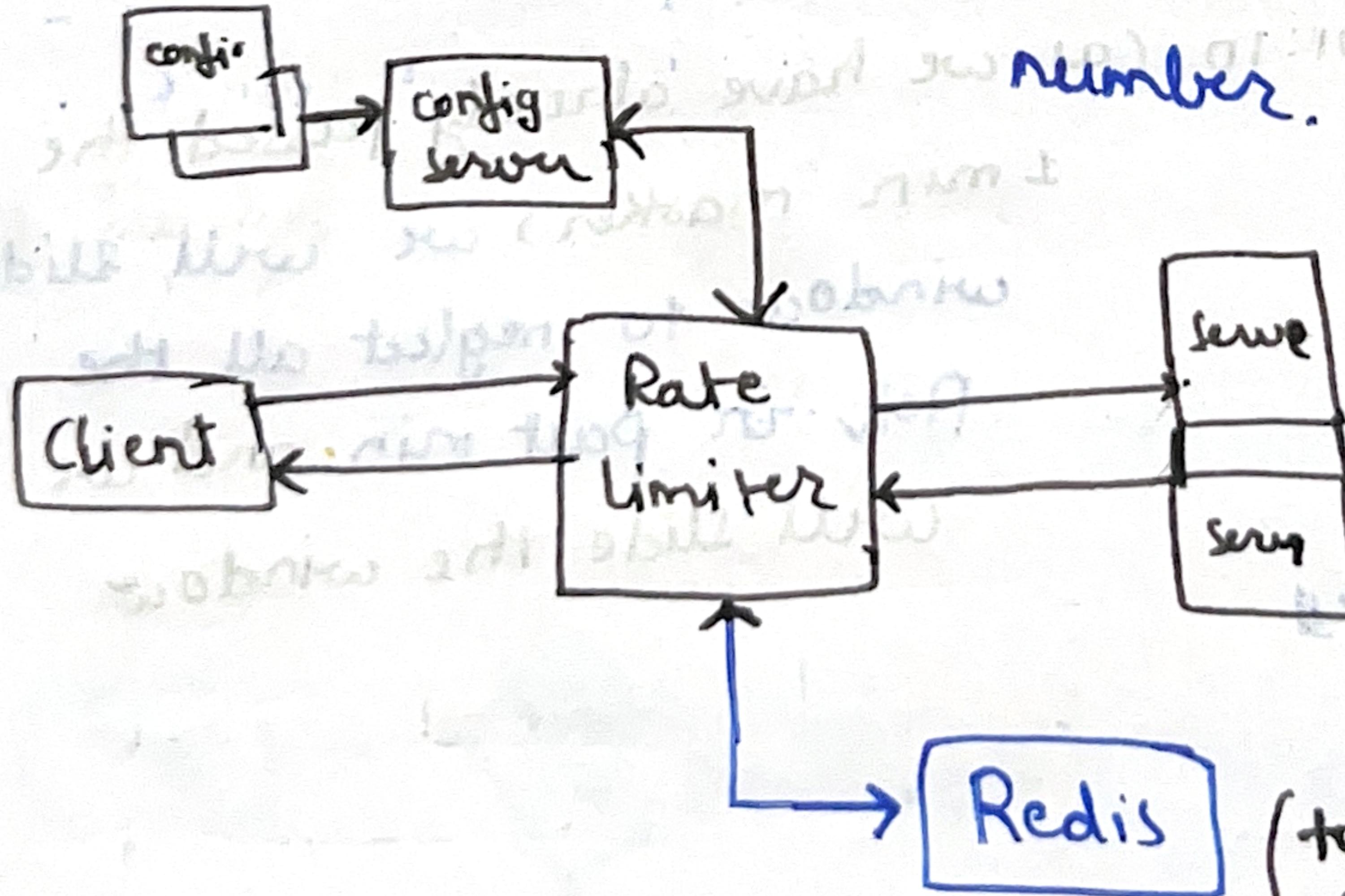
so when we are at 8:03:40 it would take all the request which came from 8:03:00

& percentage of req. calculated in 8:02:40 to 8:03:00

$$\left( \text{amount of absolute request in } 8:03 \text{ to } 8:03:40 \right) + \left( \frac{\text{total req. in that min}}{60} \times (\text{interval in sec}) \right)$$

← Percentage

should be less than decided number.



atomicity??