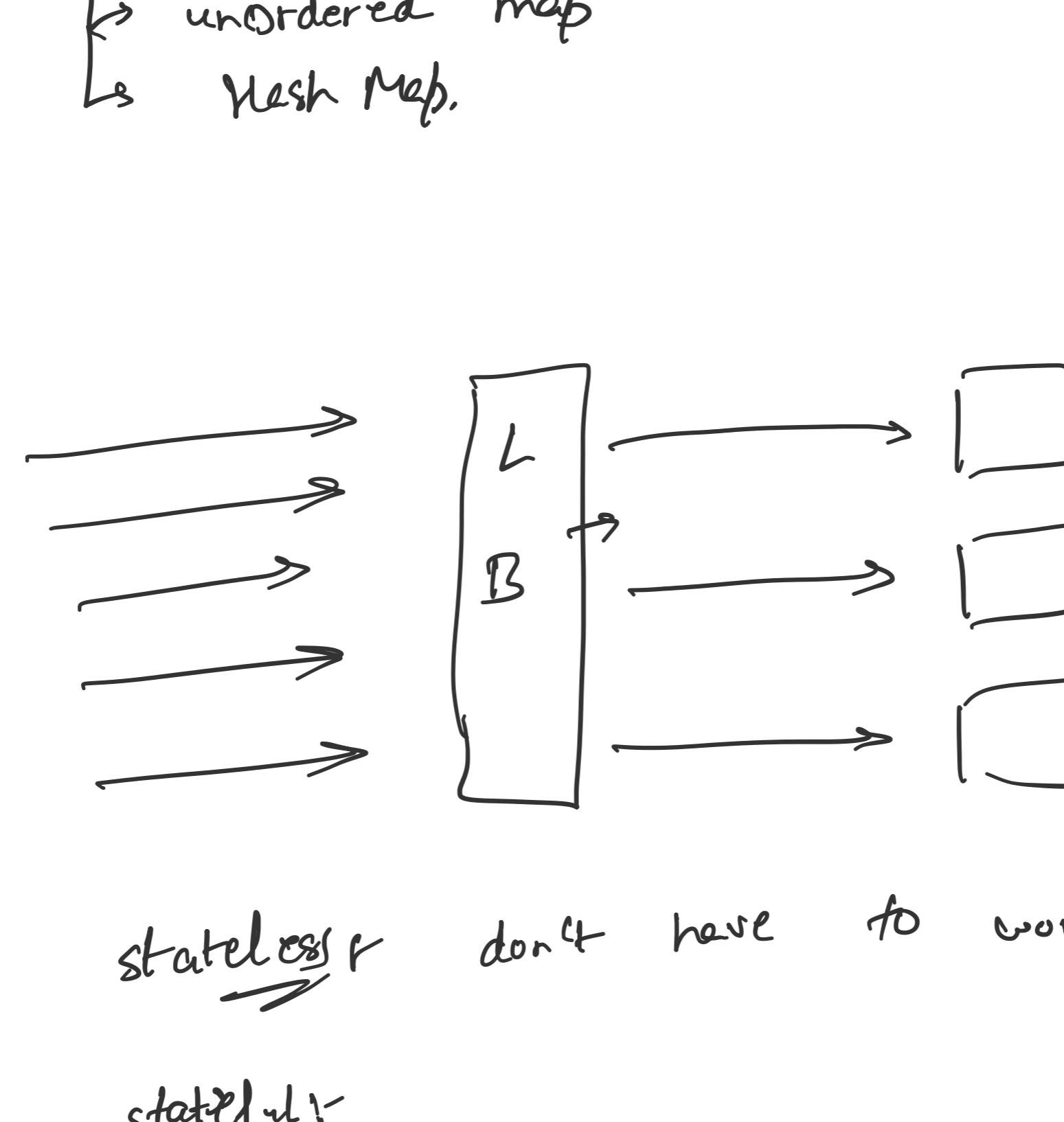


# Hashing

Saturday, 25 October 2025 10:01 AM

Q. What is Hashing?

→ a conversion function which converts some input space to a set of particular values in a output space.

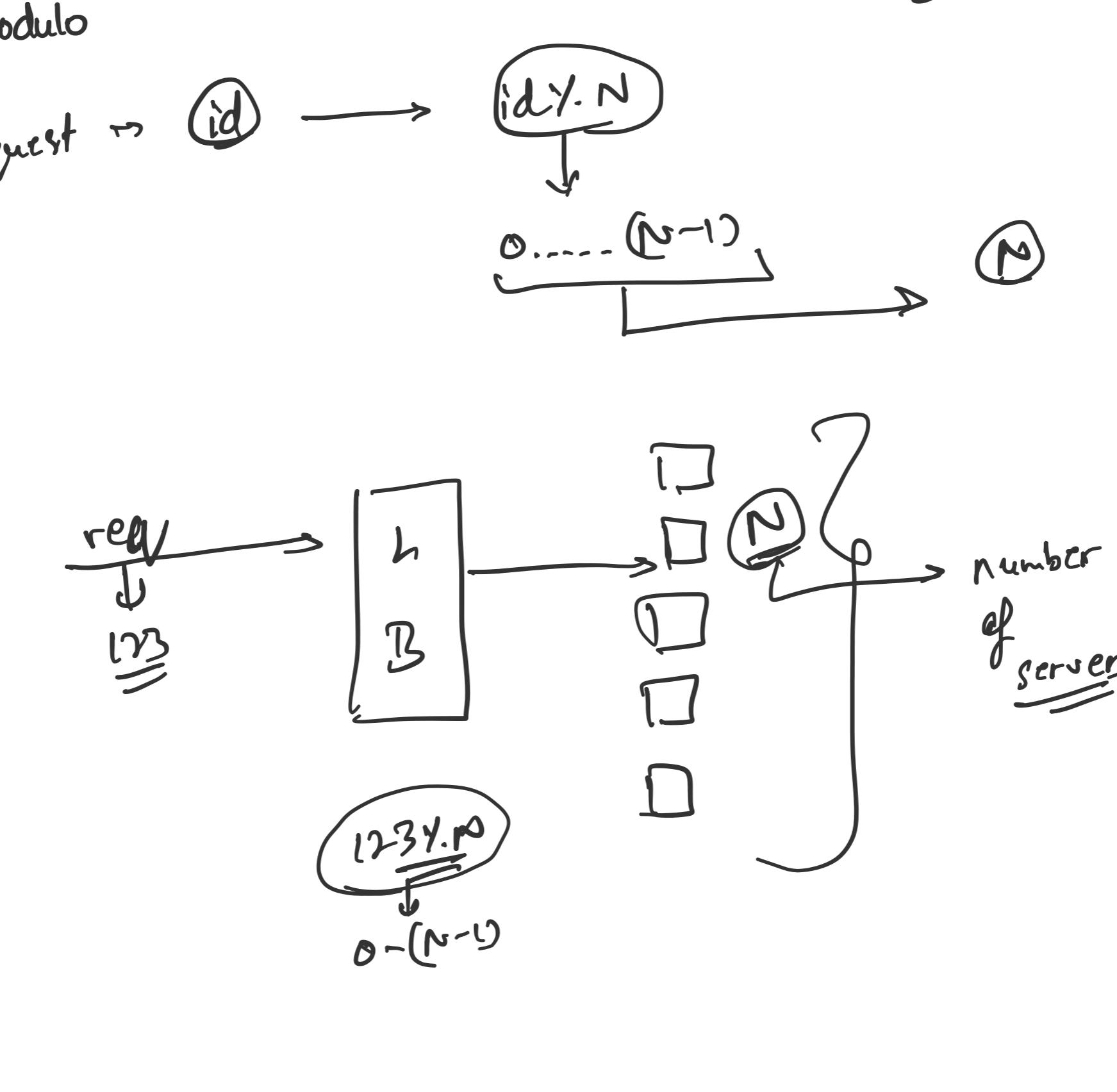


$$f(x) = y$$

↳ hash function

① Map

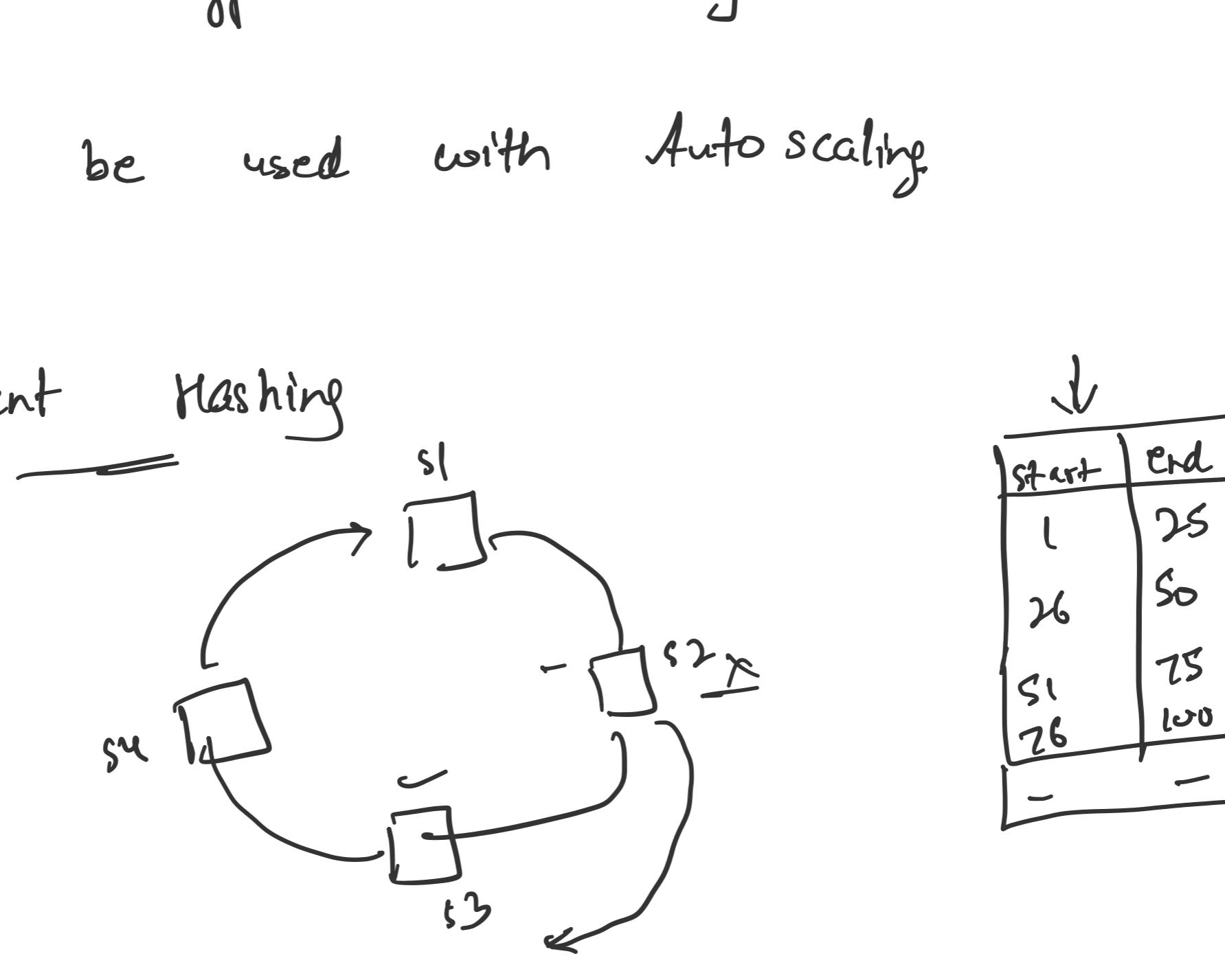
↳ unordered map  
↳ Hash Map.



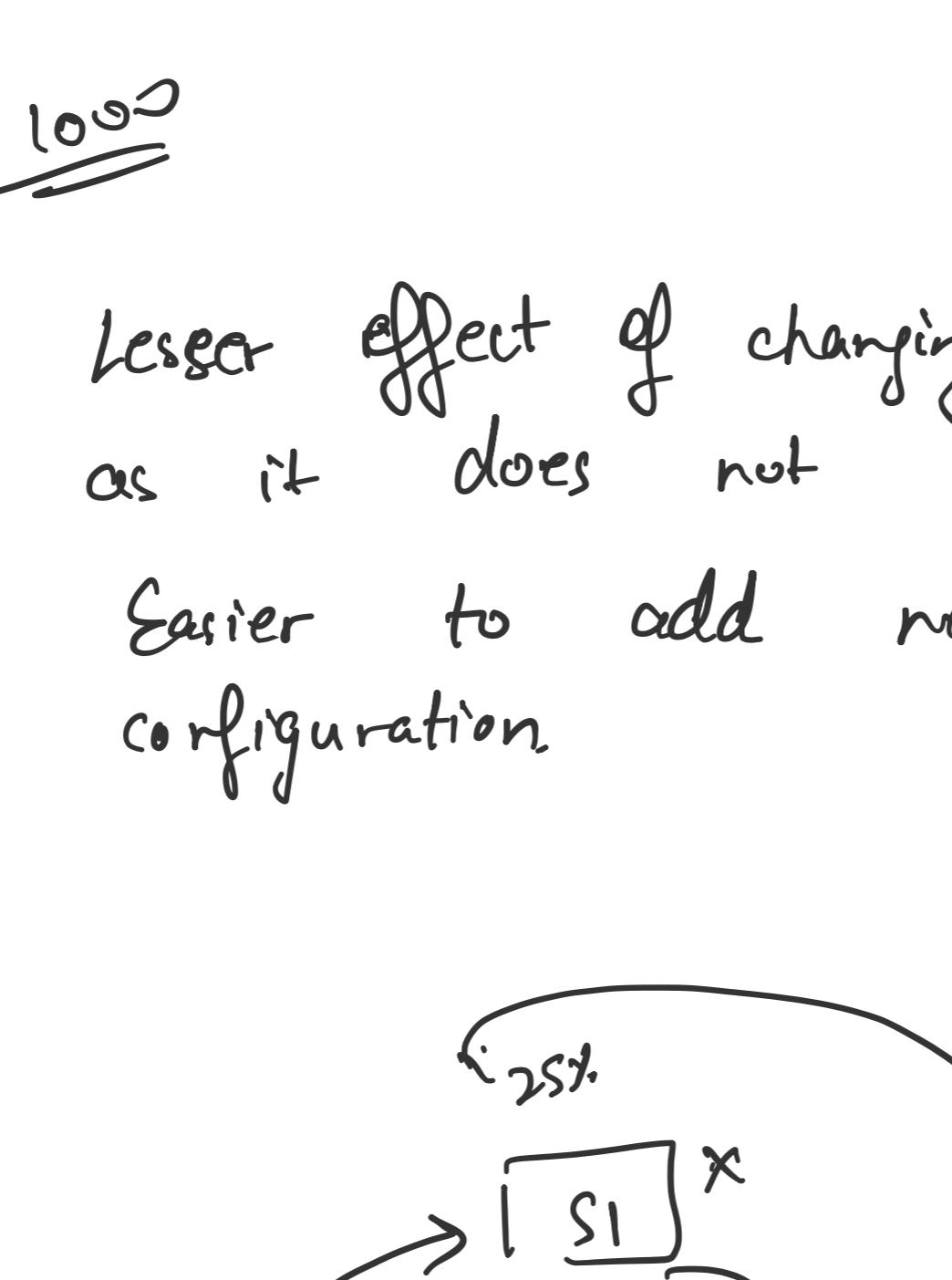
stateless & don't have to worry

stateful?  
sticky!

google query → stateless



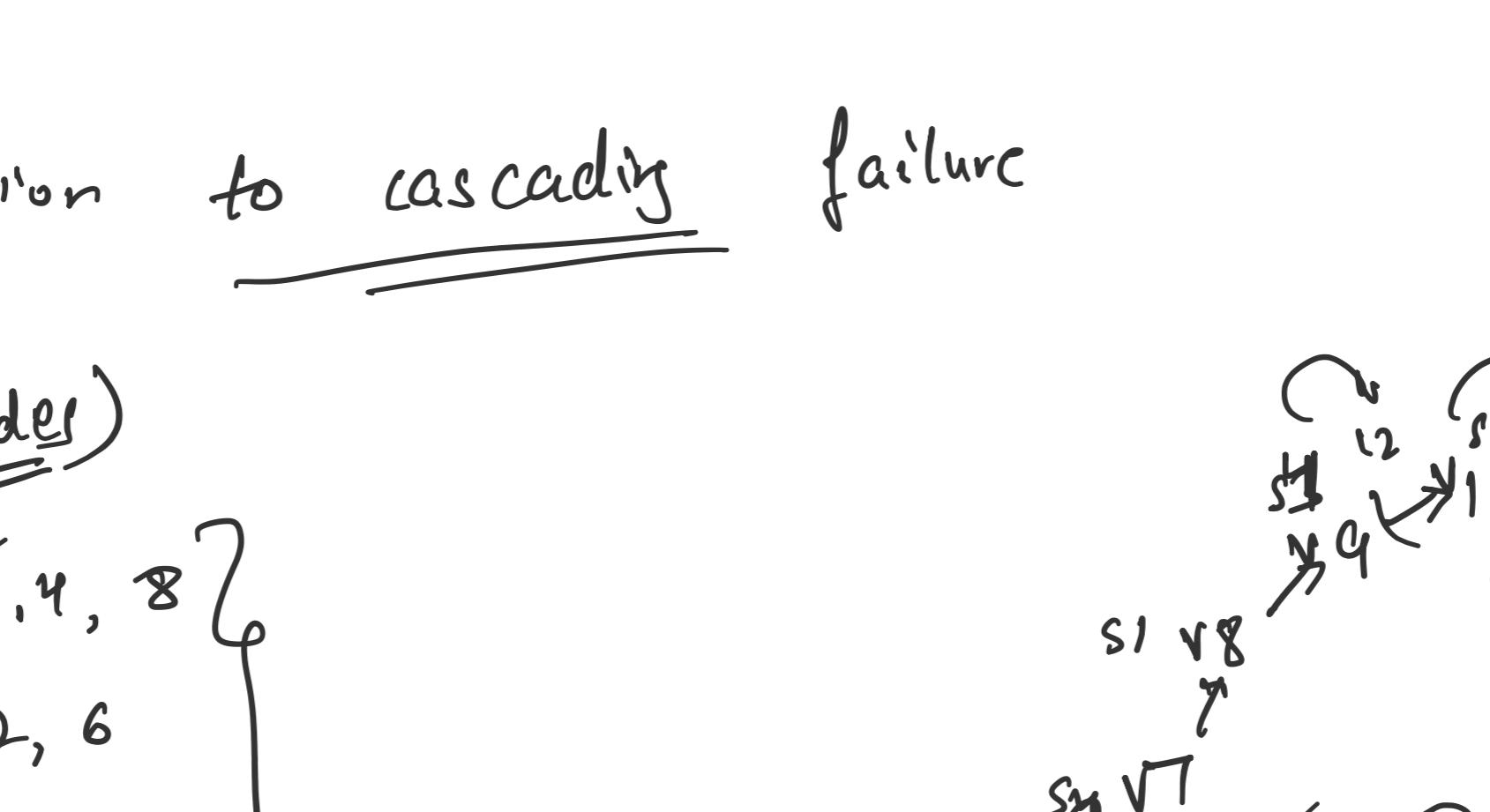
→ Linear Hashing



Modulo  
request →  $\text{id} \mod N$

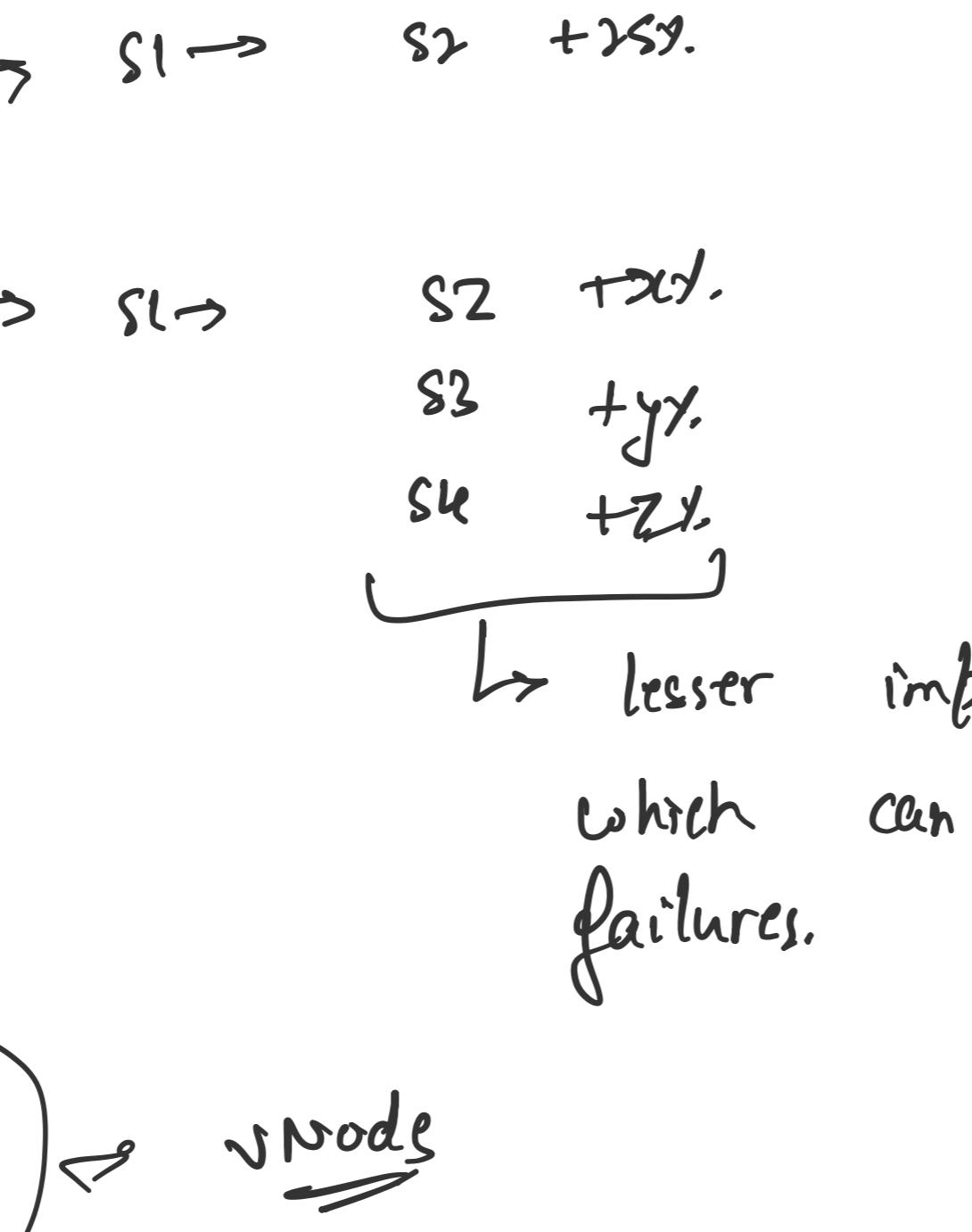
$0 \dots (N-1)$

(1)



Pros  
① Simple function - fast & easy to calculate.  
② very little info needs to be stored on LB.

Consistent Hashing



start	end	server
1	25	S1
26	50	S2
51	75	S3
76	100	S4
101	125	S3

whenever upscaling or downscaling the number

of server change.

This will cause a redistribution of keys.

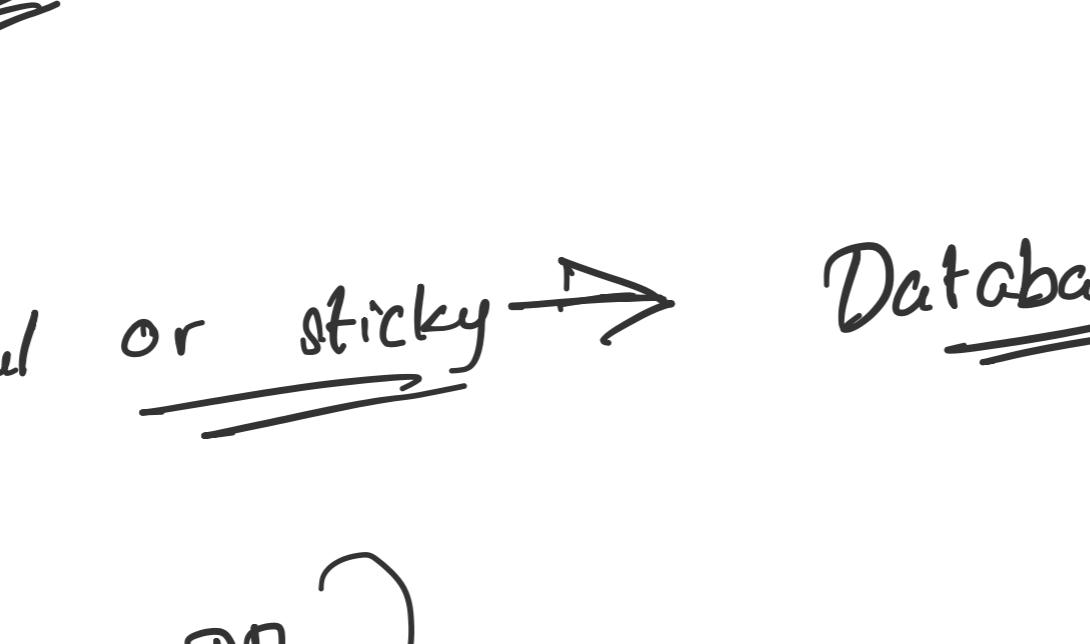
Now, we would have to take downtime

on application to move user's data.

This would affect availability.

→ Cannot be used with Auto scaling

# Consistent Hashing



start	end	server
1	25	S1
26	50	S2
51	75	S3
76	100	S4

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