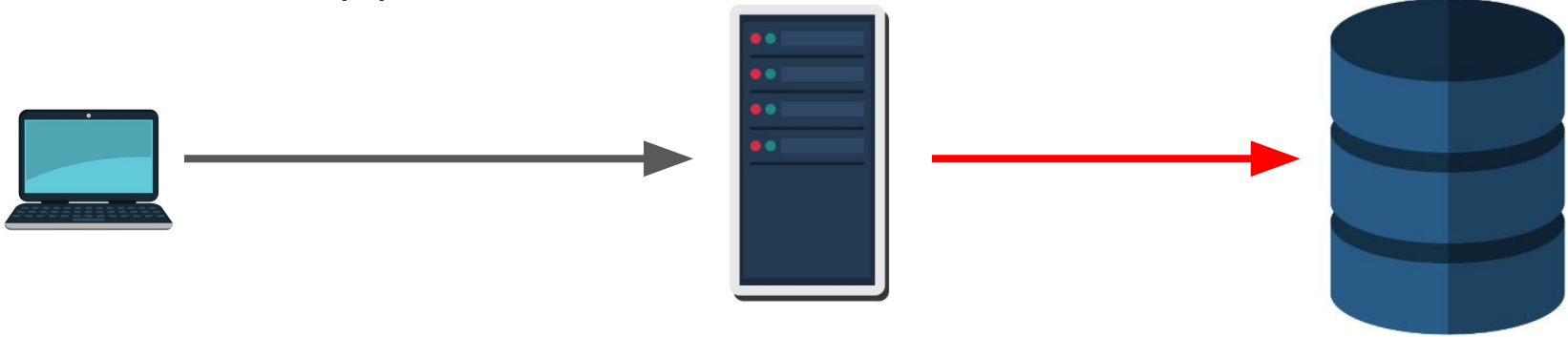# Bloom filters

Why should I learn yet another thing?

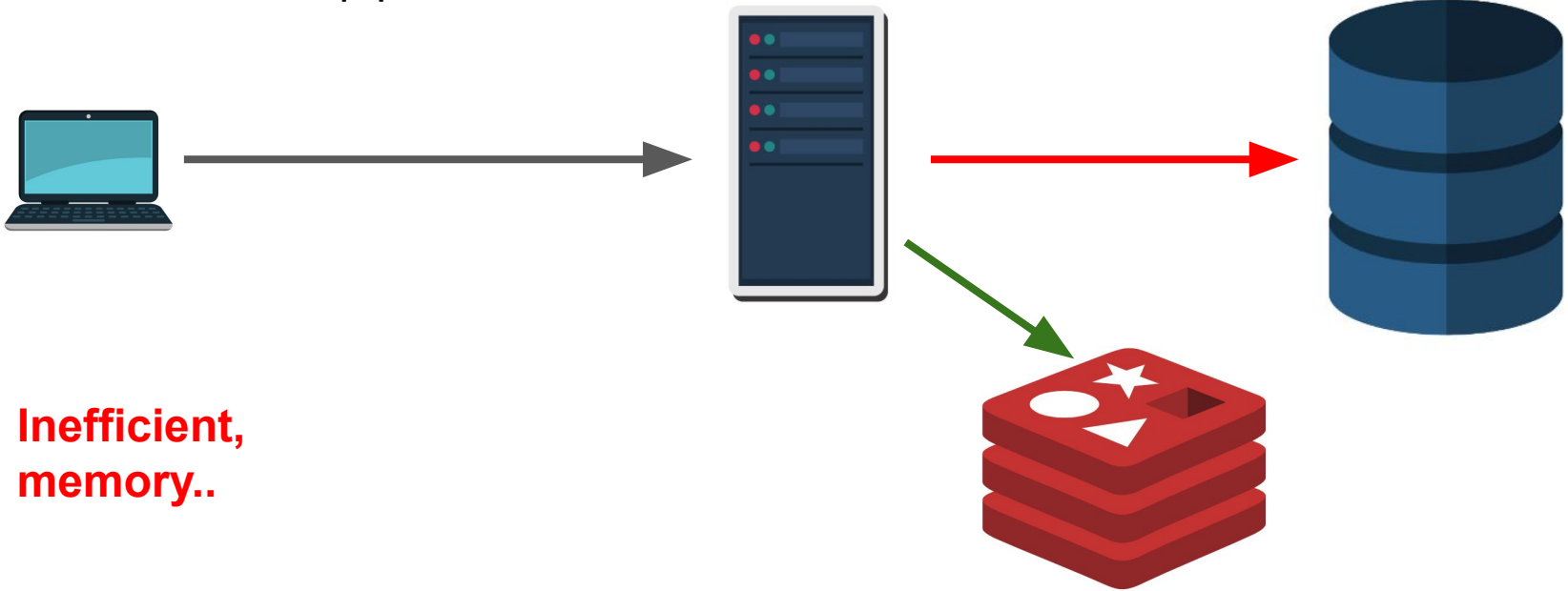# Does this username exist?

GET /username?q=paul

Slow..

Does this username exist? - Cache?
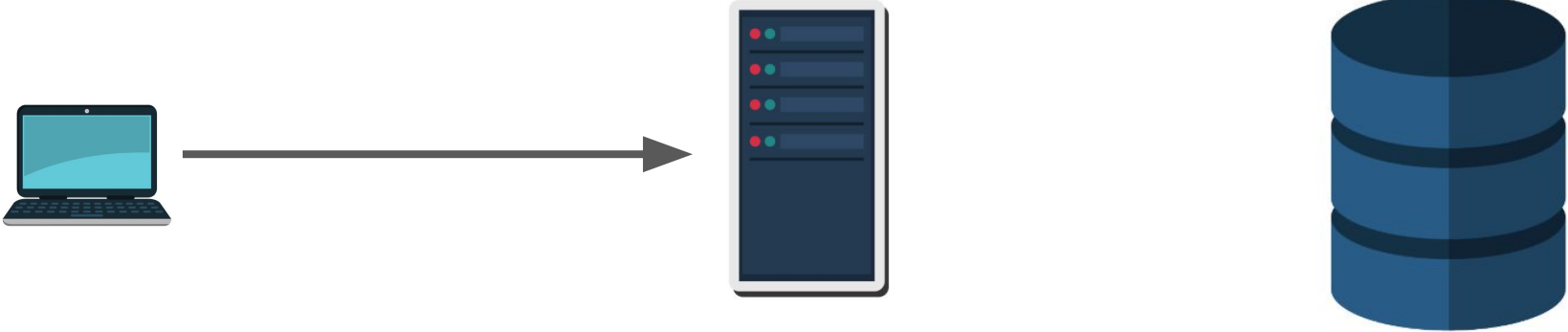
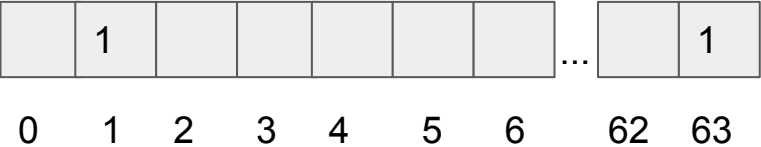**GET** /username?q=paul

Inefficient, memory..

Does this username exist? Bloom filter
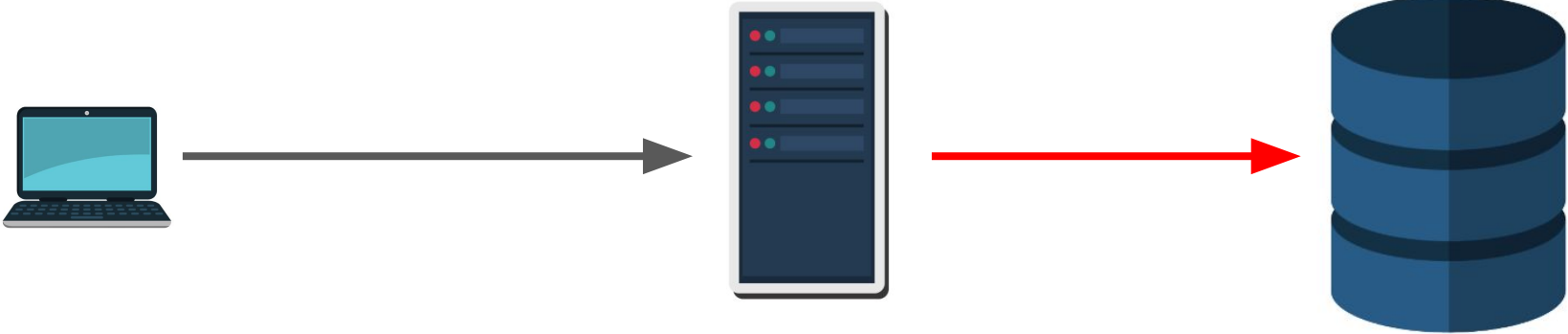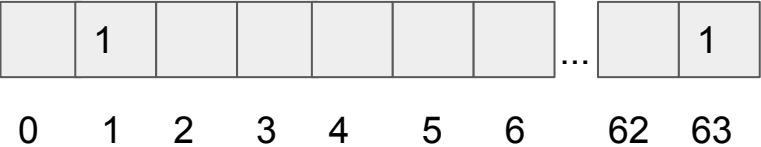
GET /username?q=paul

Hash(paul) % 64 = 3

	1						...		1
0	1	2	3	4	5	6		62	63

Does this username exist? Bloom filter

GET /username?q=jack

Hash(jack) % 64 = 63

	1						...		1
0	1	2	3	4	5	6		62	63

Create user bloom filter

POST /username?q=jack

Hash(jack) % 64 = 63

							...		1

0   1   2   3   4   5   6   62   63
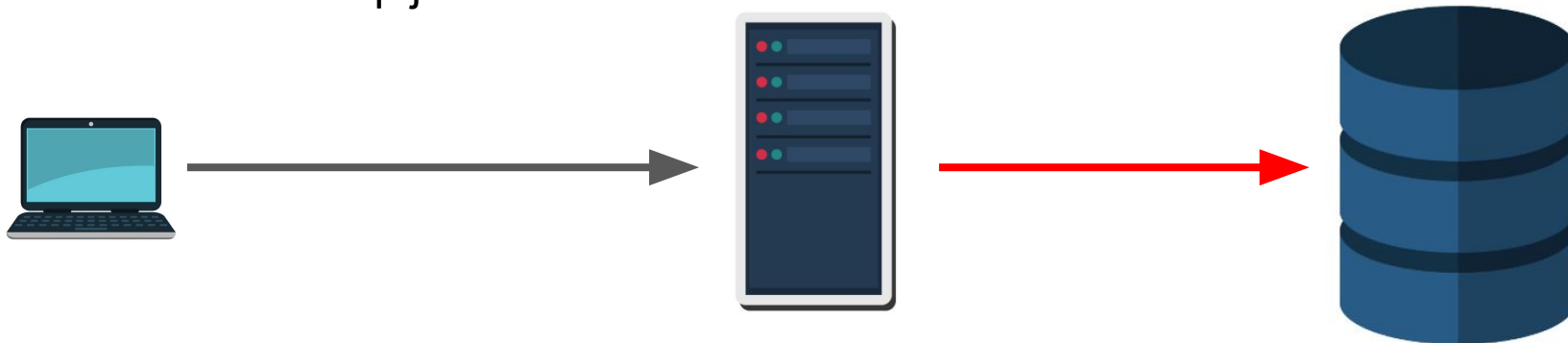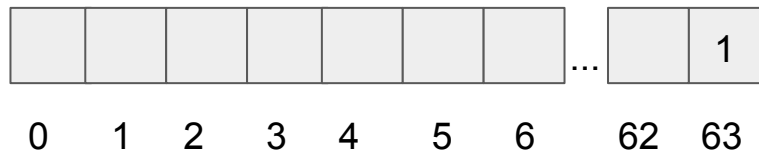
Create user bloom filter

POST /username?q=paul

Hash(paul) % 64 = 3

			1				...		1
0	1	2	3	4	5	6		62	63
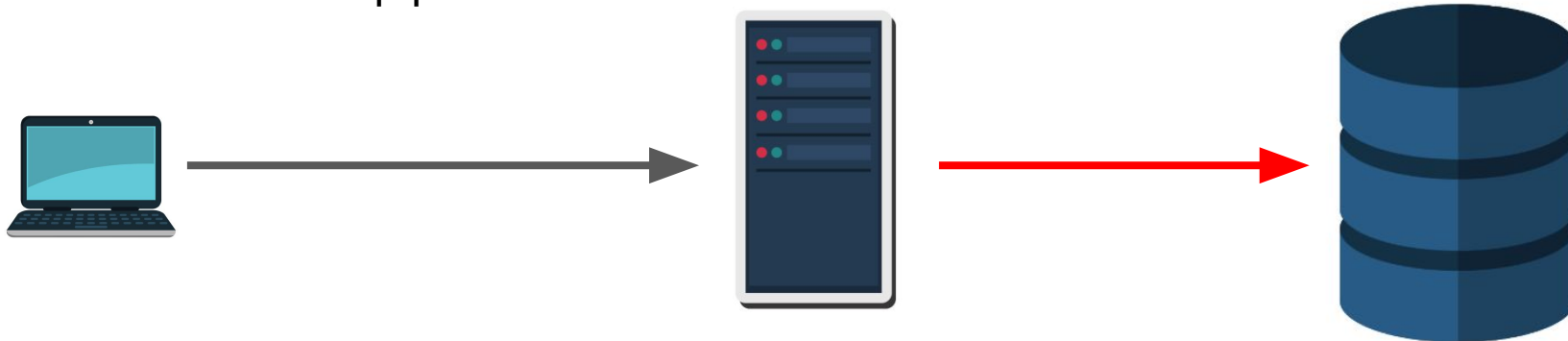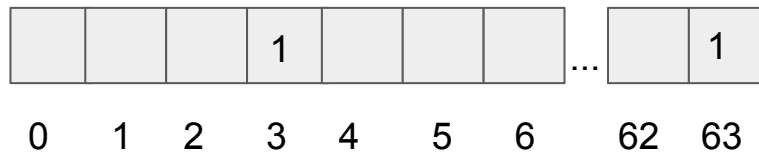
Create user bloom filter

POST /username?q=Tim

Hash(Tim) % 64 = 63

			1				...		1
0	1	2	3	4	5	6		62	63
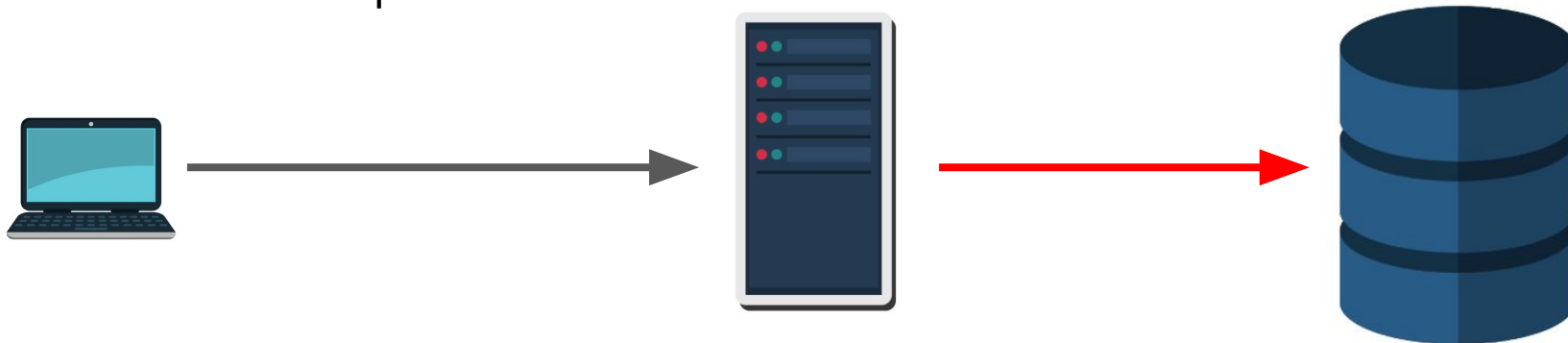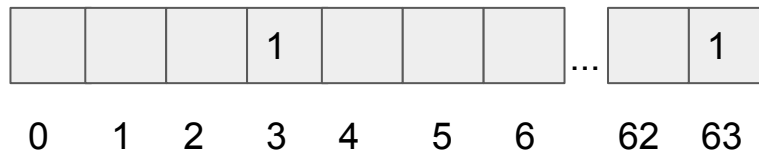
Create user bloom filter

POST /username?q=Ali

Hash(ali) % 64 = 4

			1	1			...		1
0	1	2	3	4	5	6		62	63