



Bloom Filters

Learning Objectives

1. Understand how to lower error rate of Bloom Filters



Search

$h(k) = k \% 7$ $S = \{ 16, 8, 4, 13, 29, 11, 22 \}$

0	0
1	1
2	1
3	0
4	1
5	0
6	1

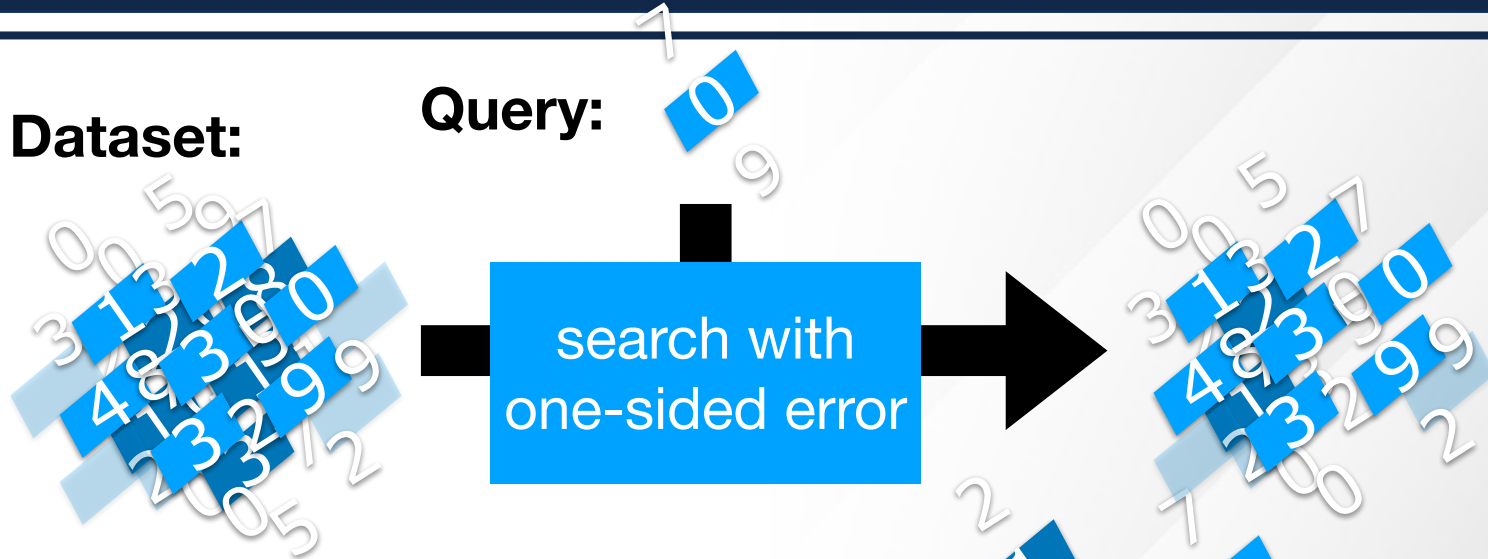
$_find(16)$ - True Positives

$_find(20)$ - False Positives

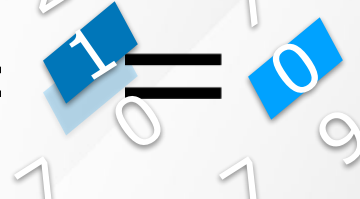
$_find(3)$ - True Negatives



One - Sided Error



We will get some False Positives:


$$1 = 0$$

$$0 \neq 0$$

We will NEVER have a False Negative:



Repeated Trials

Use many hashes/filters; add each item to each filter

