Bloom Filters

Learning Objectives

1. Understand how Bloom Filters implement insert and find

Storage Structure

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

Similar to a hash table

Data is mapped to the Bloom Filter by a hash function (SUHA)

Store a bit saying whether an element exists in the data or not (1 or 0)

Insert

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

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

Search

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

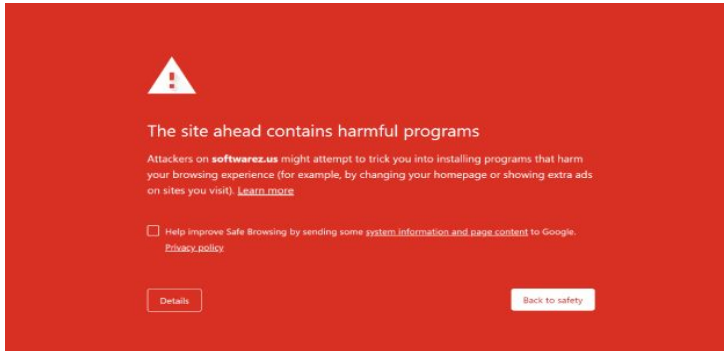
0	0
1	1
2	1
3	0
4	1
5	0
6	1

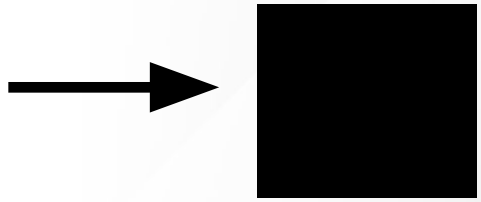
_find(16)

_find(20)

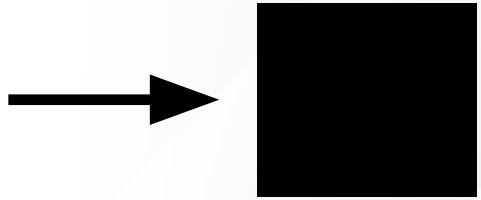
_find(3)

Imagine we have a detection system that identifies if a site is malicious





“Not malicious”



“Malicious”