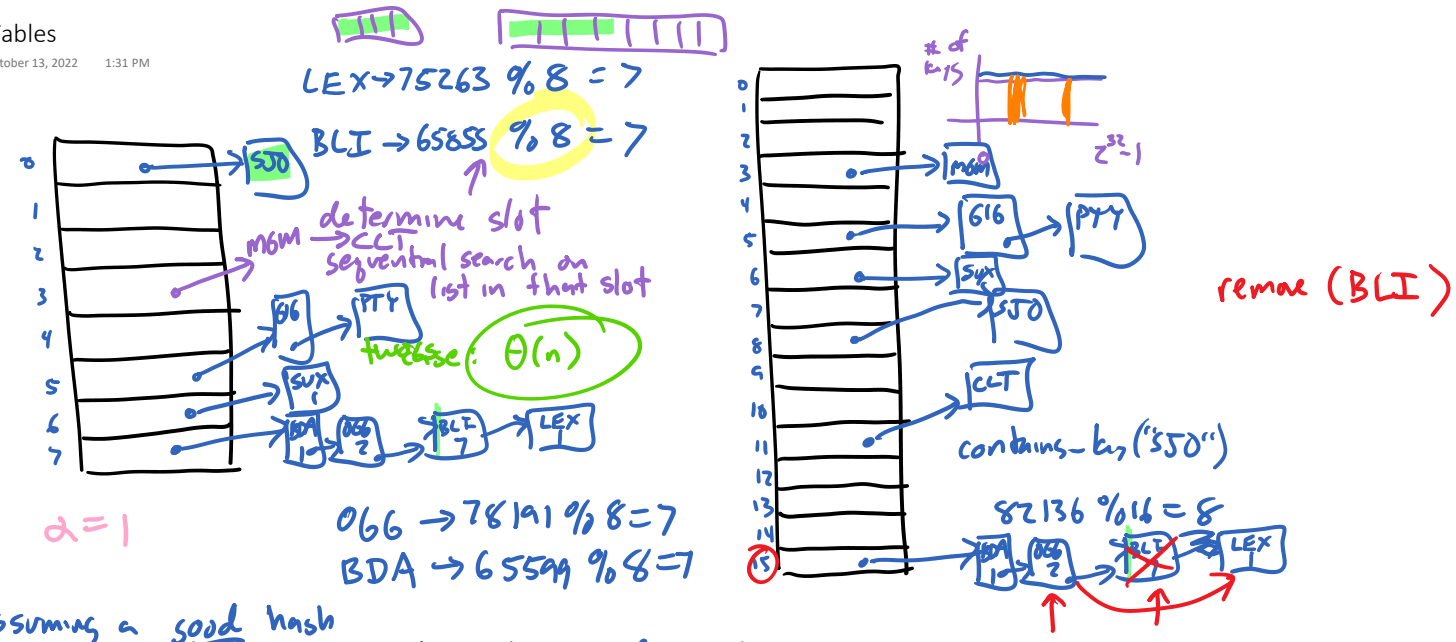
Hash Tables

Thursday, October 13, 2022 1:31 PM



assuming a good hash
↳ each slot equally likely for our keys

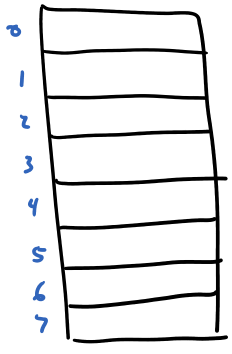
n keys in m slots → avg. length = $\frac{n}{m} = \alpha$

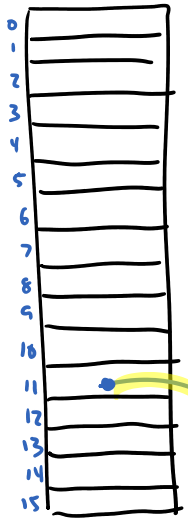
average case: $O(\alpha)$

resize/rehash whenever $\alpha \geq 1$ to make $\alpha < 1$

$O(1)$

PWM BOS ISP HPN SAT LHR CDG PEK





key: age, loc, visits, last

value: 20, NE, 143, Eddie Murray

$49xF3
-:96$!zx

same hash
10^6 strings w/ = hash

all collide in same slot
$O(n^2)$ to store those n key/value pairs

h

hash(s_1) = hash(s_2)

hash($s+s_1$) = hash($s+s_2$)

Salt: random thing added to hash

~~hash(s)~~

hash(salt+s)

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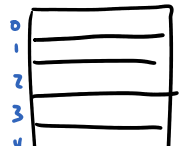

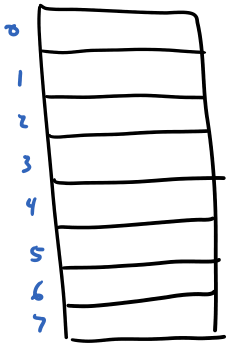
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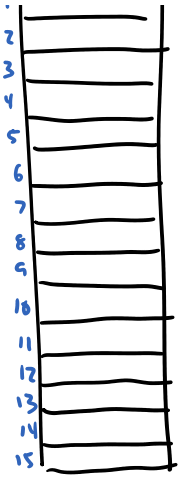
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