

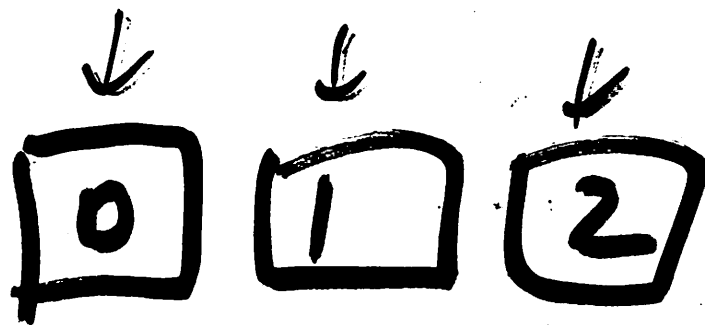
$$5 \% 2 = 1$$

$$5 \% 3 = 2$$

$$6 \% 3 = 0$$

$$7 \% 3 = 1$$

$$8 \% 3 = 2$$



$$\mathbb{Z} \% N$$



$N=4$

$h(x) \% 4$



$N=5$

$h(x) \% 5$



$$\underline{5\ 3\ 2\ 4\ 4\ 2\ 1\ 6\ 9} \% 3 = 2$$

$$\underline{5\ 3\ 2\ 9\ 4\ 2\ 1\ 7\ 2} \% 3 = 2$$

!

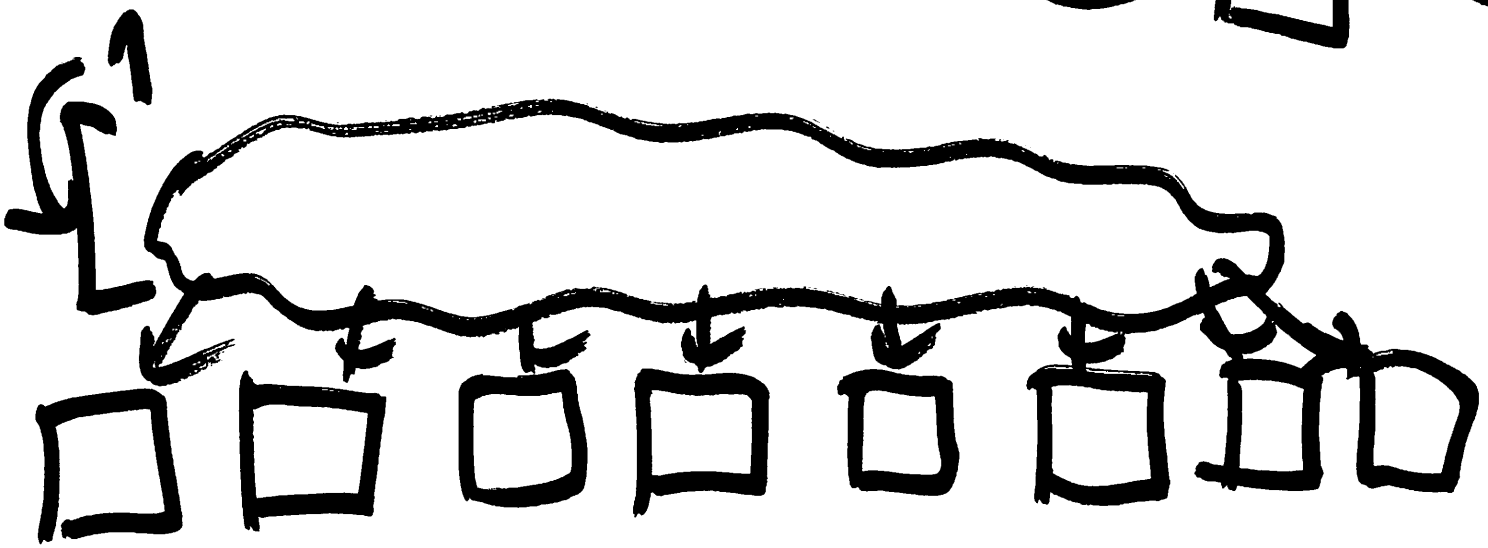
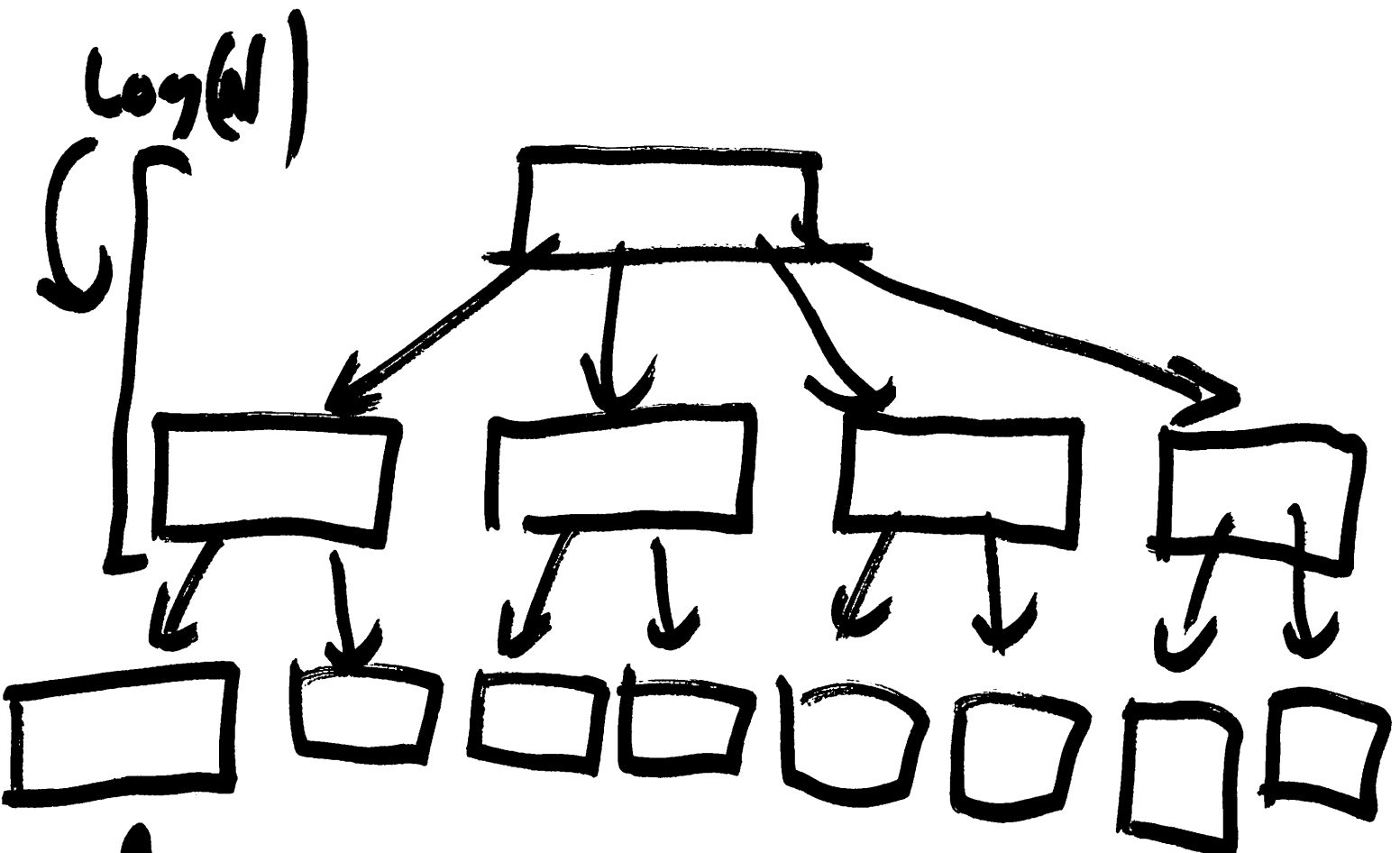
hash - pseudorandom
fn + deterministic

Thurs Feb 23

11:AM

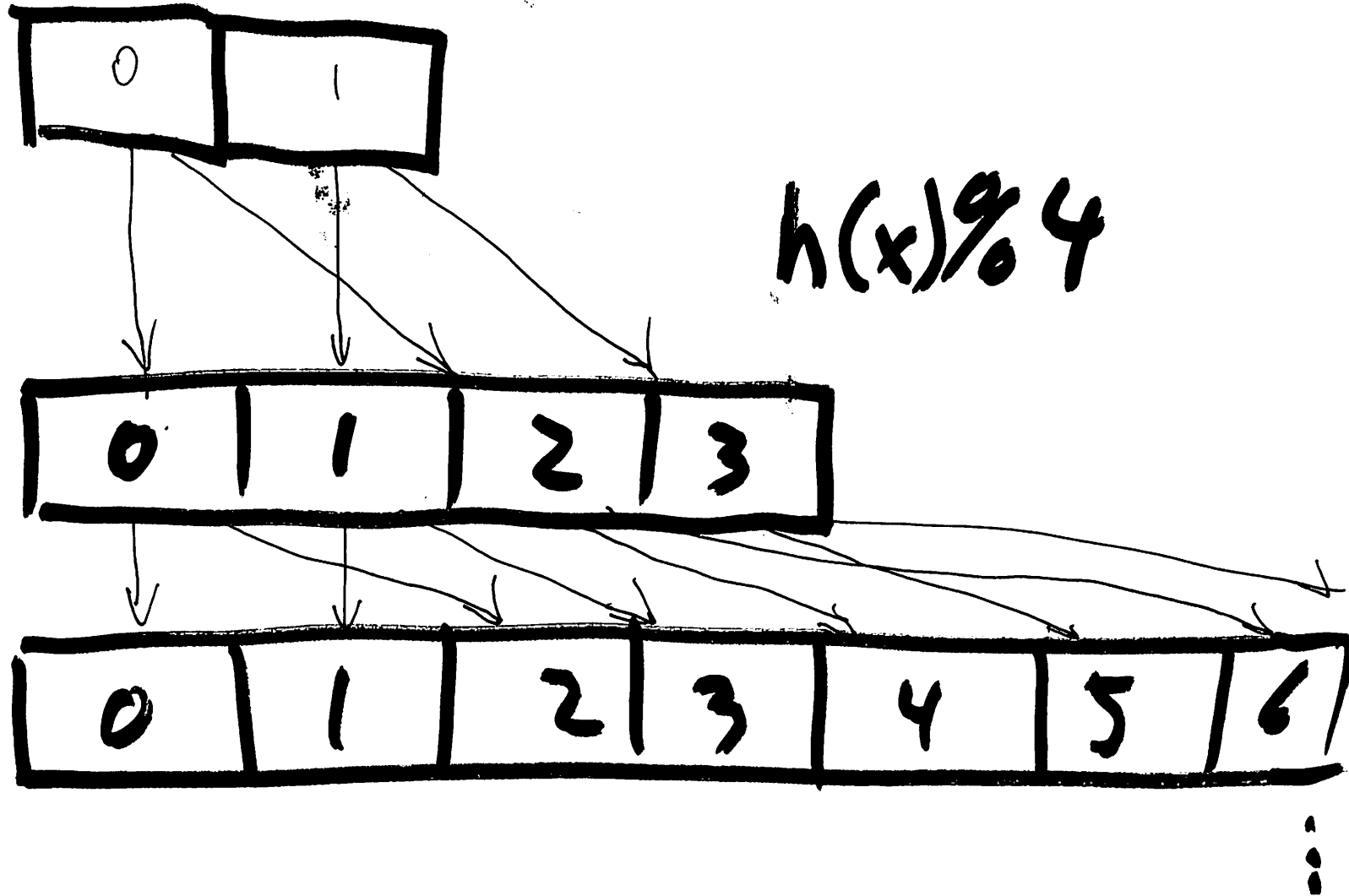
A. Erdem Sariyuce

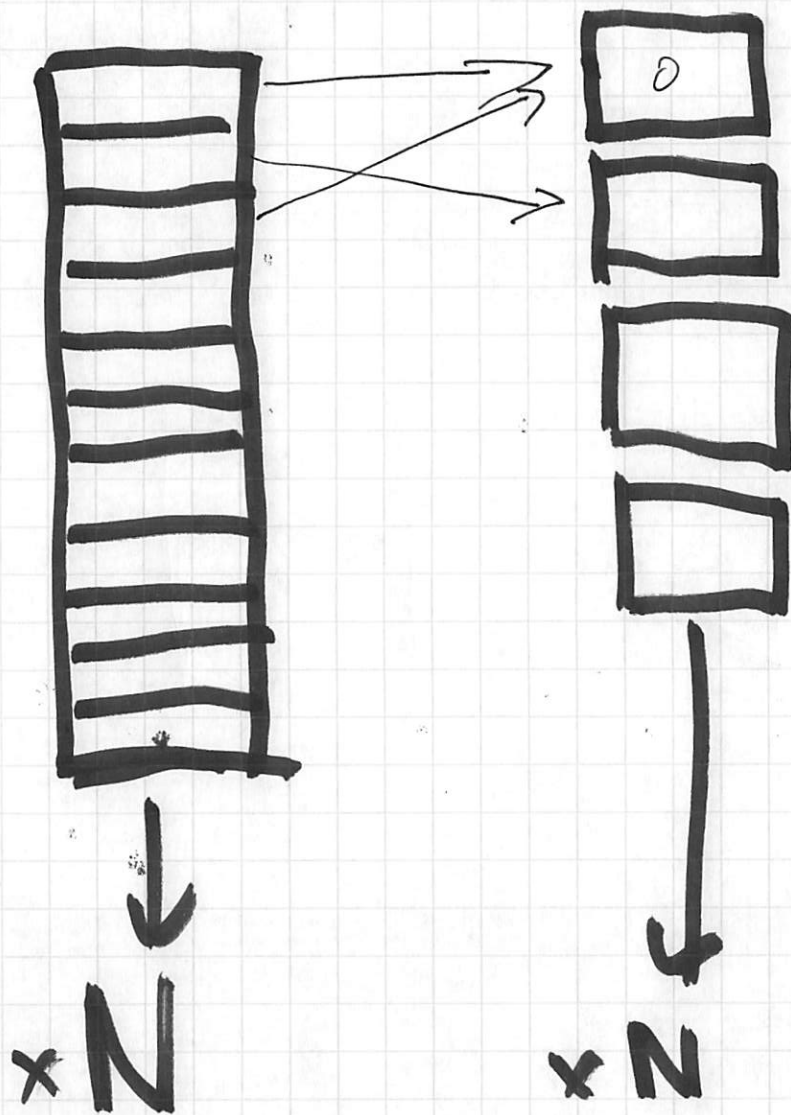
"Fast Algorithms for
Processing Real World Graphs"



$$h(x) \% 2$$

	Old	New
$h(1) \% 2 = 1$		$\%4 = 1$
$h(2) \% 2 = 0$		2
$h(3) \% 2 = 1$		3
4	0	0
5	1	1
6	0	2
7	1	3
8	0	0
9	1	1
10	0	2





$$N = 2^k$$

playing i
 index entry i
 points to one of
 i or $i \bmod \frac{N}{2}$ or $i \bmod \frac{N}{4}$...
 or $i \bmod \frac{N}{k}$