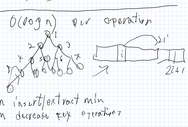
2/23/2021

Fibonacci heaps

Heap
- insert (x, k) — k: key
- min — return element with min value in the heap
- extract_min: get it and delete it
- decrease_key(x, k'): updates the key of x to be k' ; $k' \le k(x)$

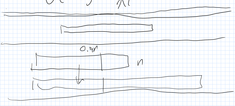
$O(\log n)$ per operation



n insert/extract min
m decrease key operations

$O((n+m)\log n)$ Dijkstra

insert	$O(1)$	constant
extract min	$O(\log n)$	"amortized"
decreaseKey	$O(1)$	"amortized"

Dijkstra

$O(n \log n + m)$ time