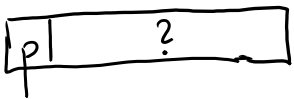
QS PAMĚŤ $O(1)$, ČAS $O(N)$

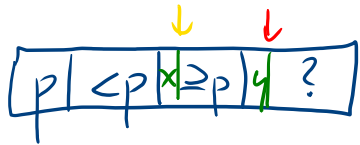


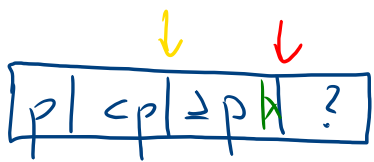
ALG?

$x < p$

$x \geq p$

PARTITION





STABILITA : ✗

PŘIROZENOST : ✗

MERGESORT

1	3	4

+

2	5	8

MERGE

O(N)

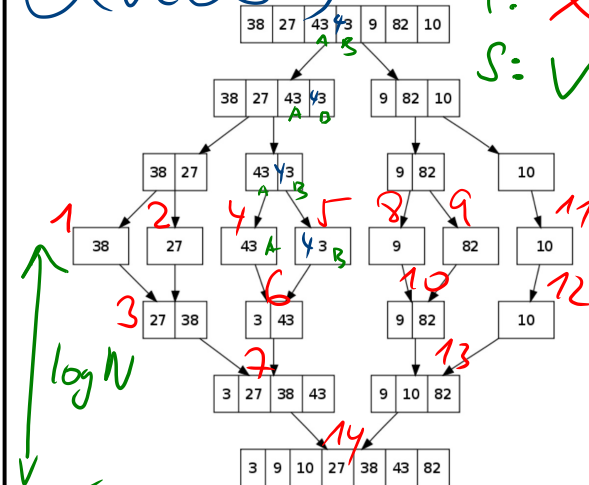
⇓

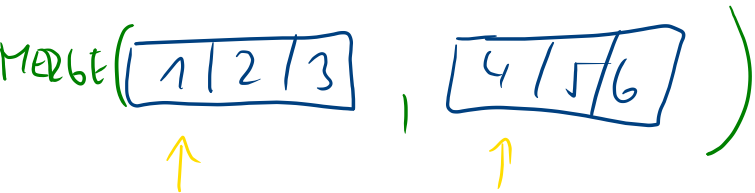
1 2 3 4 5 8

O(N·LOGN)

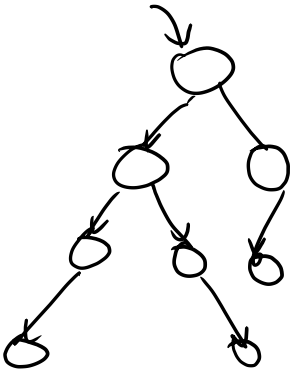
P: X

S: V

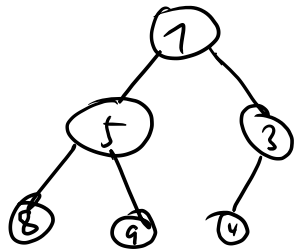


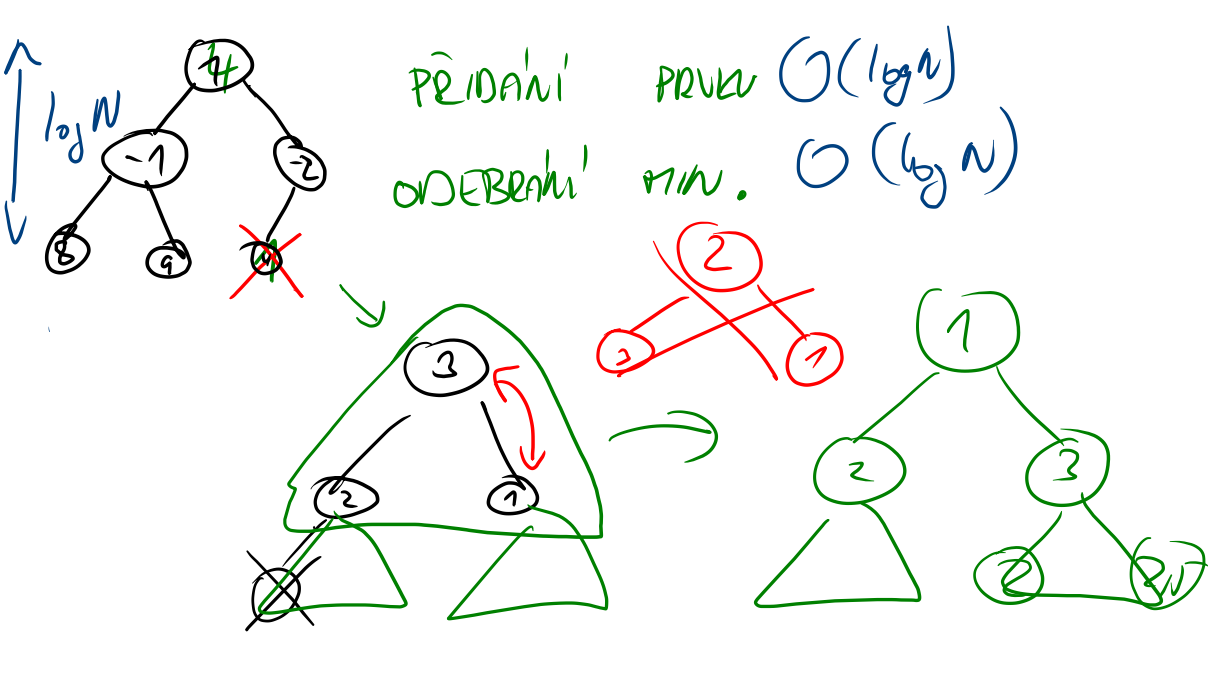

Merge
1 2 3
4 5 6

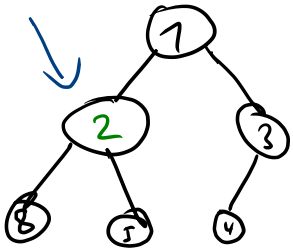
BINÁRNÍ STROM



BINÁRNÍ HALDA
(MINIMOVÁ)




log N
PŘIDÁNÍ PRVKU O(log N)
ODEBRÁNÍ MIN. O(log N)



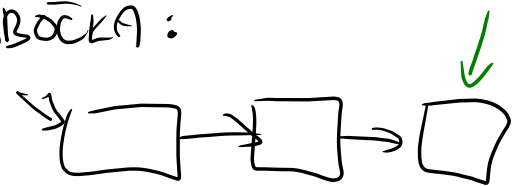
SNÍŽENÍ KLÍČE $O(\log n)$

ODSTRANĚNÍ LIB. PRVKU

= SNÍŽENÍ KLÍČE ($\to -\infty$)

+ ODSTRANĚNÍ MIN.

ODBOČKA:

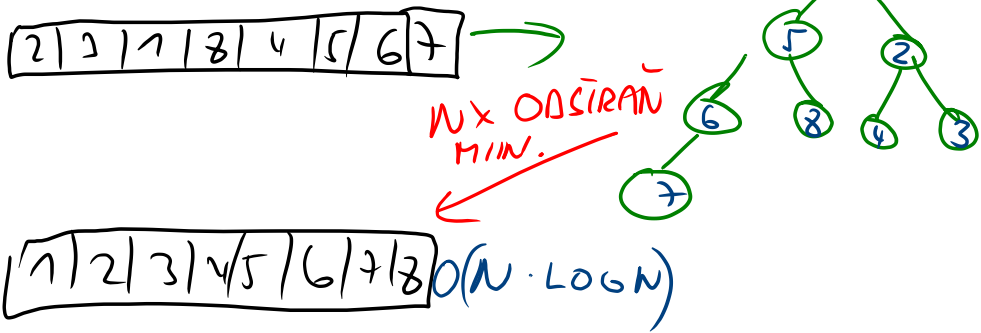


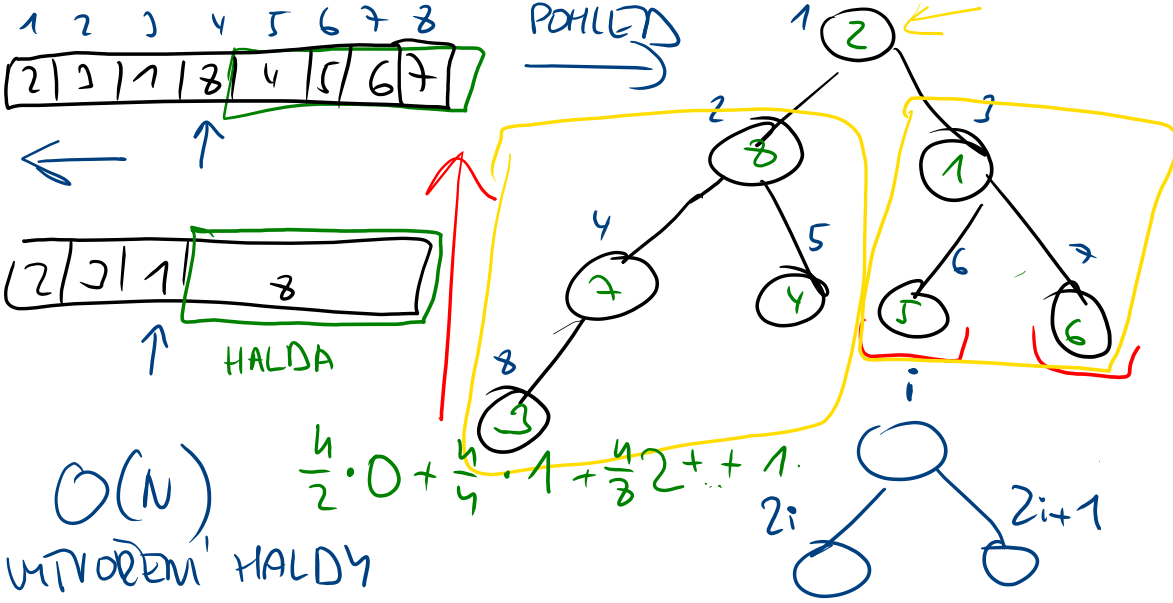
PŘIDÁNÍ PRVKU NA KONEC

→ $O(N)$

→ $O(1)$

HEAPSORT




1 2 3 4 5 6 7 8
2 3 1 8 4 5 6 7
POHLED
1
2
3
8
1
4
5
7
4
6
5
7
6
8
3
HALDA
i
2i
2i+1
O(N)
VYTVOŘENÍ HALDY

$$\frac{N}{2}\cdot 0 + \frac{N}{4}\cdot 1 + \frac{N}{8}\cdot 2 + \dots + 1\cdot \log N \in \mathcal{O}(N)$$

$$\doteq \sum_{h=0}^{\log N} \frac{N}{2^{h+1}} \cdot h$$