

Balanceret BST (BBST)

Programmering-B

Thomas Birk Abildgaard

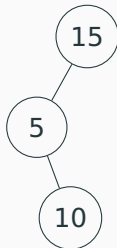
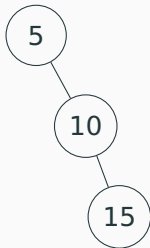
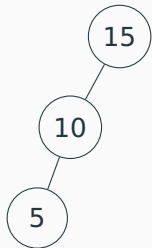
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HTX Frederikshavn

Balancing af BST

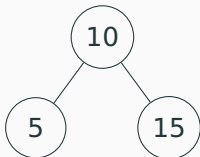
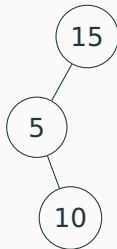
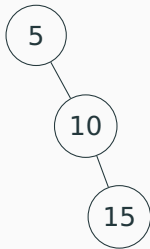
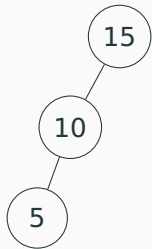
BST og balancering

5,10,15



BST og balancering

5,10,15



Balancering af BST

- Invariant (egenskab/regel)
 - skal være sandt ved hver **insert** og **delete**
- Rotationer

Hvad er højden ?

Rekursiv bestemmelse af højde i BST

- basis-tilfælde
 - $H(\text{null}) = -1$
 - $H(\text{enkelt node}) = 0$
- rekursiv-tilfælde
 - $H(n) = 1 + \max(H(n.\text{Left}), H(n.\text{Right}))$;

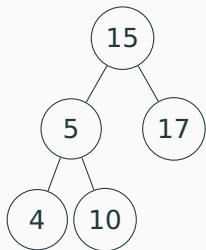
..Hvordan detekterer vi balance/ubalance?

Hvordan defineres balance/ubalance?

Balance

- $B(n) = H(n.Left) - H(n.Right)$
- Tærskel: $|B(n)| \leq 1$
- $B(n) > 0 \rightarrow$ "Left Heavy"
- $B(n) < 0 \rightarrow$ "Right Heavy"

Eksempel



$$B(15) = 1 - 0 = 1$$

I "balance" inden for vores