

B+ Tree Insertion Notes

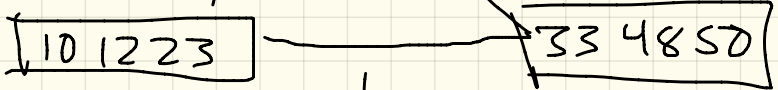
Using Schaffer's
Fig. 10.20
PDF pg 380
Actual pg 361

Explanation of
insertions from
 $b \rightarrow c \rightarrow d$

Mike Wendt
3/29/12

B+ tree order 4
Leaf order 5

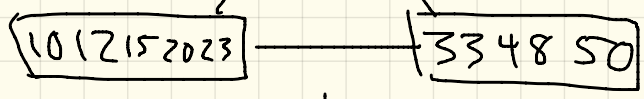
33 | | ← 6 wide node



Add 15, 20

Operation ↑

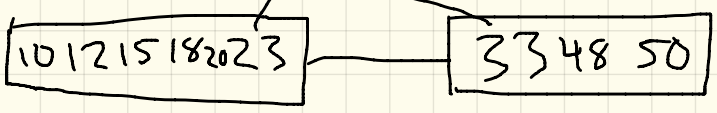
33 | |



Add 18

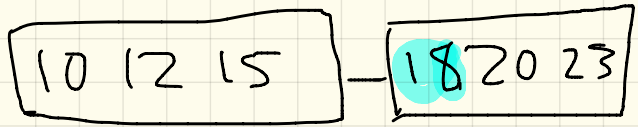
33 | |

Overflow
↓
split →



⇓

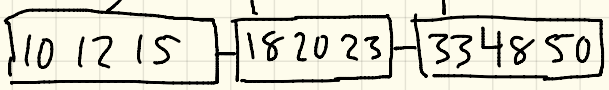
new leaf for split after 18 insert



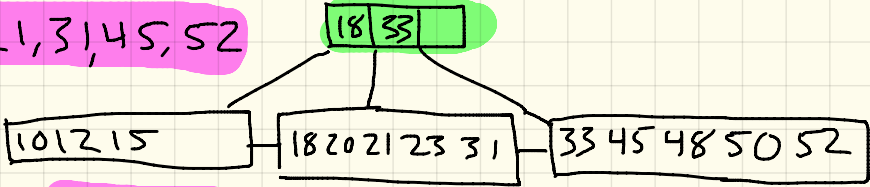
Result:

18 | 33 |

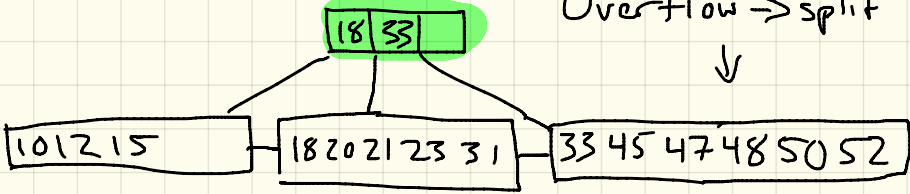
↑ becomes new key promote up



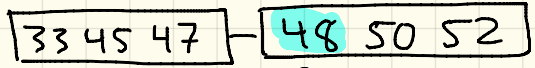
Add 21, 31, 45, 52



Add 47

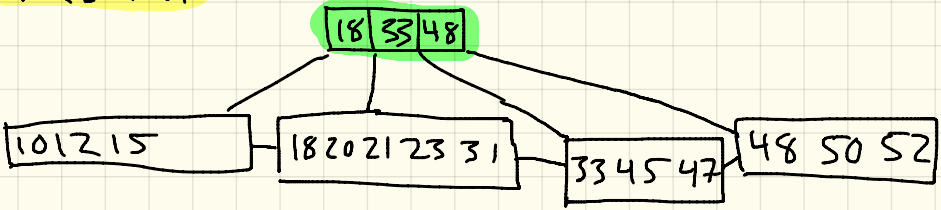


Overflow → split

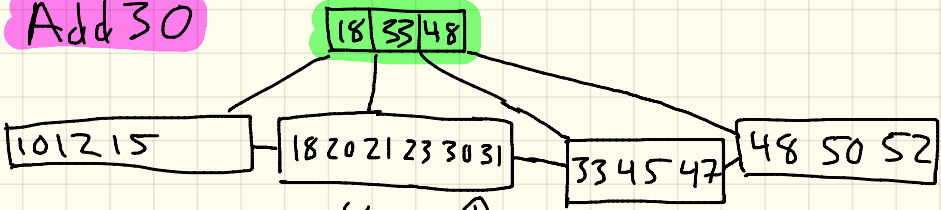


↑ new key promote up

Results:



Add 30



overflow → split



↑ new key promote up

18 | 23 | 33 | 48

← new guide w/promoted key
overflow → split
> 3 keys

Result:

33 | |

33 new key only in this node

18 | 23 | |

48 | |

10 12 15

18 20 21

23 30 31

33 45 47

48 50 52

