Question 2.a - B-Tree

Step 0 - Empty

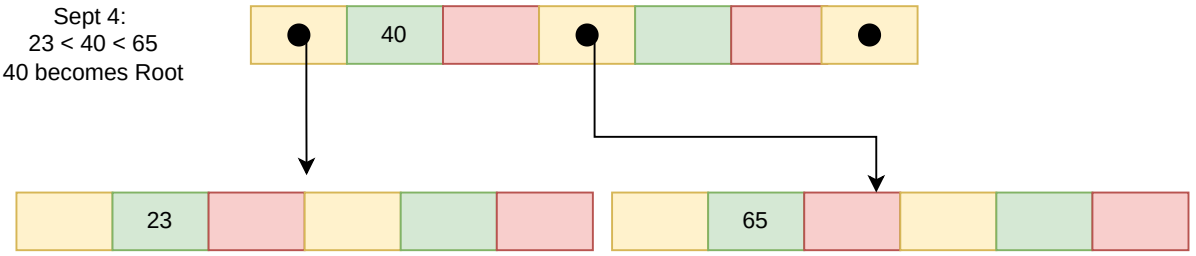
Construct and draw a B-tree of order 3 (m=3) for the following set of key values:
40 23 65 35 55

Step 1 - Add 40

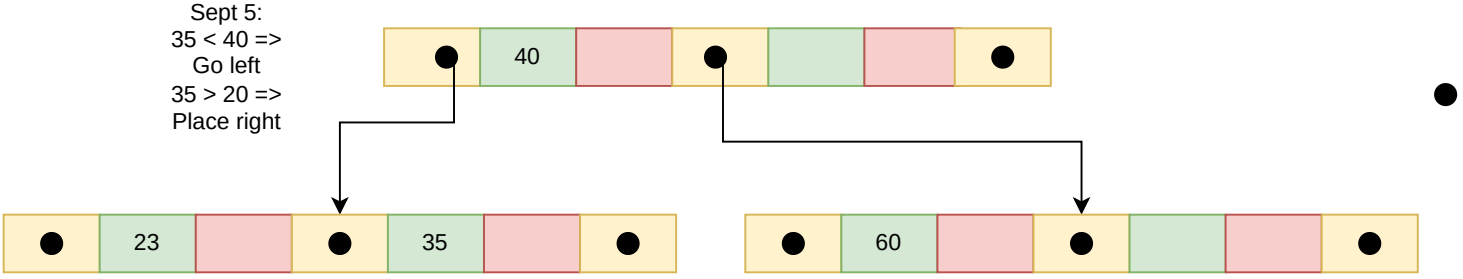
Step 2 - Add 23
23<40 => Add left

NODE FULL.
More additions => splitting

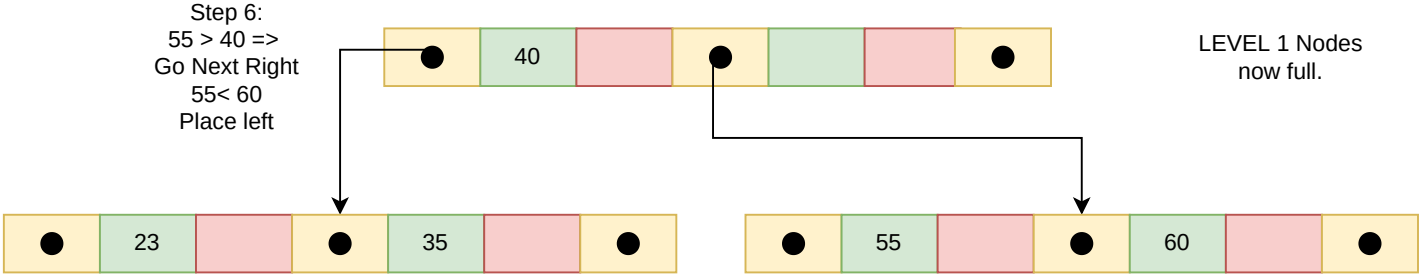
Sept 4:
23 < 40 < 65
40 becomes Root



Sept 5:
35 < 40 =>
Go left
35 > 20 =>
Place right



Step 6:
55 > 40 =>
Go Next Right
55< 60
Place left



LEVEL 1 Nodes now full.

Note to Self.

If there was more numbers, then Level1.Right would need to split in two

Say next was 'x'. If x > 60 then 60 promoted to Level 0. Else if x < 55, then 55 promoted up. But if 55 < x < 60, then x promoted.

Question 2.b B+-Tree

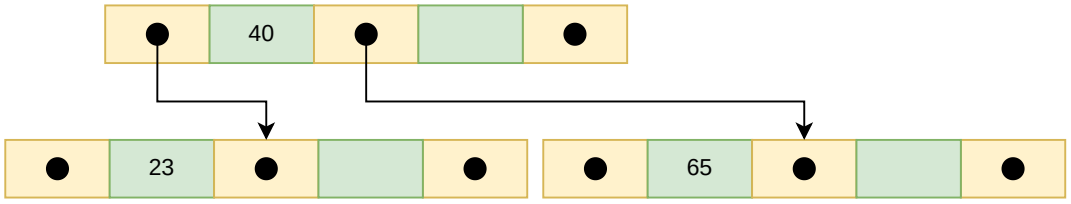
Construct and draw a B+-tree of order 3 (m=3) for the following set of key values:
40 23 65 35 55

Step 0 - Empty

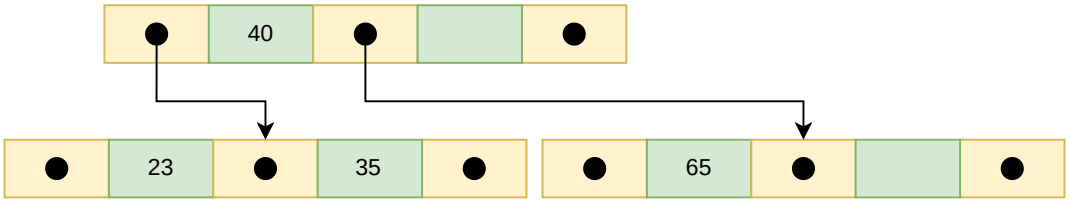
Step 1, 40

Step 2,
23<40
Go left

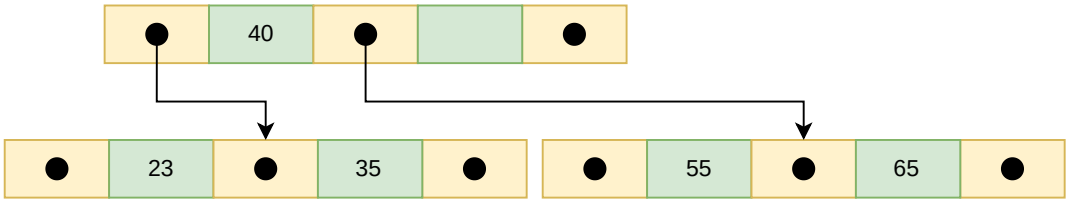
Step 3
23<65
40<65
Promote 40



Step 4 - 35
35<40 =>
Go left
23< 35 =>
Place right



Step 5 - 55:
55 > 40 =>
Go right
55<65 =>
Place Left



Step 6 - Construct Leaf nodes to hold data