B- Tree

→ Balanced m-way tree. (m → order)

→ Generalization of BST in which a node can have more than one key & more than two children.

→ maintains sorted data.

→ all leaf node must be at same level.

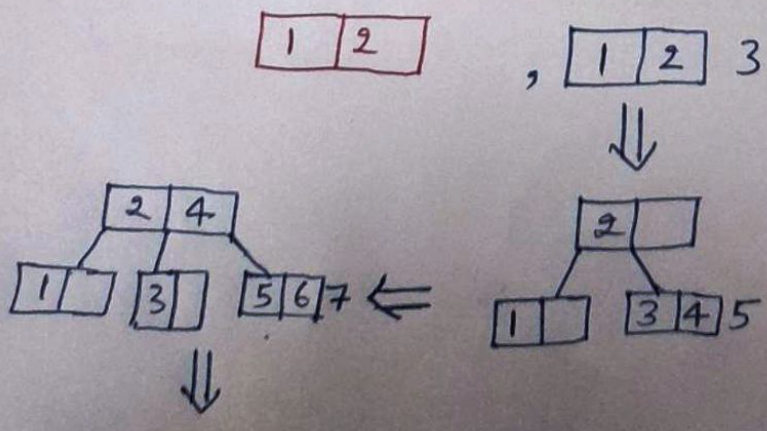
→ B tree of order m has following properties.

- Every node has maximum m children
- Min Children: leaf → 0
  root → 2
  internal nodes → $\lceil \frac{m}{2} \rceil$
- Every node has max (m-1) keys
- Min key: root node → 1
  all other nodes → $\lceil \frac{m}{2} \rceil - 1$

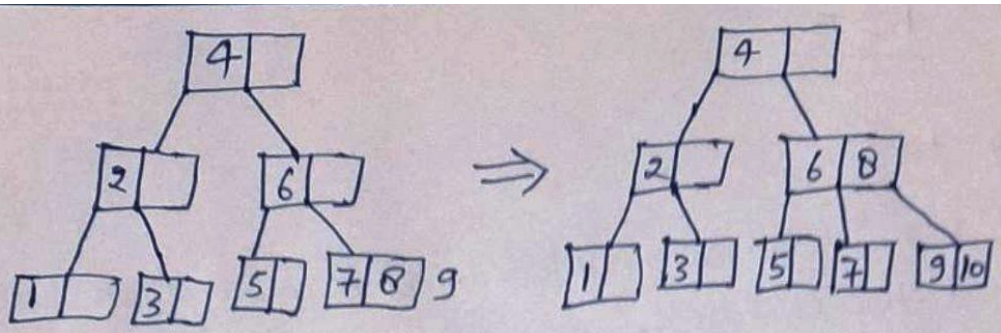
→ Create a B-tree of order 3 by inserting values from 1 to 10.

$m = 3$

max key = $(m-1) \Rightarrow (3-1) = 2$



- Tree will be split from the middle element
- Element will be inserted always in leaf node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