# Adding to AVL tree

Original Tree

Diagram, schematic

Description automatically generated

Balanced tree

# Adding value 41:

Diagram, schematic

Description automatically generated

The tree became imbalance at node (57) with value 2, at node (42) with value 2, node (25) with value -2 and node (30) with value -2.

We will perform balance on the node (30) the inserted node used RR insertion so RR balance will take place on nodes [30, 36, 41]:

Diagram, schematic

Description automatically generated

Now the tree is balanced.

Nodes balance factor:

(41): 0

(30): 0

(36): 1-1= 0

(17): 0

(25): 1-2= -1

(42): 3-2= 1

(49): 1-0= 1

(45): 0

(57): 4-3= 1

(78): 2-1= 1

(63): 1-1= 0

(85): 0

(60): 0

(72): 0

# Adding value 50:

Diagram

Description automatically generated

The tree is balanced.

Nodes balance factor:

(41): 0

(30): 0

(36): 1-1= 0

(17): 0

(25): 1-2= -1

(42): 3-2= 1

(49): 1-1= 0

(45): 0

(50): 0

(57): 4-3= 1

(78): 2-1= 1

(63): 1-1= 0

(85): 0

(60): 0

(72): 0