

→ Algorithm

let x be the newly inserted node.

1. Perform standard BST insertion and make the color of newly inserted node as red.
2. If x is root, change the color of x as black.
3. Do the following if the color of x 's parent is not black and not root.
 - a) if x 's uncle is RED (GP must have been black)
 - i) change the color of parent and uncle as black.
 - ii) color of grandparent as Red.
 - iii) Change $x = x$'s grandparent, repeat steps 2,3 for new x .
 - b) if x 's uncle is black, then there can be 4 conf^g cases
 - i) left-left case
 - ii) left-right case
 - iii) right-right case
 - iv) right-left case