Abstract

Data structure is being used for designing of databases, software system etc. Different data structures are being used for different kinds of applications and some data structures are particular used for specific tasks. B-trees are particularly used for implementation of databases. Hash tables are widely used for implementations of compilers. Tree is non linear data structure which is better than array, linked list because the time complexity for different operations like searching, insertion, deletion etc. is less in the case of tree. The time complexity for dynamic operations like searching, insertion, deletion, updating a node etc. is directly proportional to the height of red black tree. As the height(h) of red black tree is directly proportional to the $O(\lg(n))$ where n represents the total number of nodes in a particular red black tree. So the time complexity for different dynamic operations like searching, insertion, deletion, updating a node etc. is directly proportional to the $O(\lg(n))$. In this paper, Minimum and maximum ratio of number of red internal nodes to black internal nodes in Red Black tree is determined and explained with the help of diagram.
Reference

- N. Wirth, "Algorithms and Data Structures" Prentice-Hall, 1986
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Index Terms

Computer Science  Data Structures

Key words

Tree  Red black
tree
time complexity