Dynamically changing graphs are used in many applications of graph algorithms. The scope of these graphs are in graphics, communication networks and in VLSI designs where graphs are subjected to change, such as addition and deletion of edges and vertices. There is a rich body of the algorithms and data structures used for dynamic graphs. The paper overview the techniques and data structures used in various dynamic algorithms. The effort is tried to find out the comparison in these techniques namely the hierarchical decomposition of graphs and highlighting the ingenuity used in designing these algorithms.

References

- Monika R. Henzinger and Valerie King. Randomized fully dynamic graph algorithms with
Comparative Analysis of Dynamic Graph Techniques and Data Structure

polylogarithmic time per operation. J. ACM 46(4) (1999), 502–516.
- Stephen Alstrup, Jacob Holm, Kristian De Lichtenberg, and Mikkel Thorup, Maintaining information in fully dynamic trees with top trees, ACM Transactions on Algorithms (TALG).

Index Terms

Computer Science
Algorithms

Keywords
 Dynamic graph algorithm  Dynamic graphs  Undirected Graph  Trees