Abstract

One of the primary concerns of the software industry lies in producing good quality software within estimated budget and time. With increased complexity of function rich software systems being developed and client’s emphasis on quality and conformance, lot of effort is invested in testing of a software product. In Object Oriented Graph, the graph data is stored in the form of a 3 dimensional matrix, i.e. sparse matrix. To address that problem, an enhancement of Object Oriented Graph is done, where our result shows a more efficient and effective Data Structure called Hierarchical Graph Adjacency List i.e. HGAL in which for each vertex in the graph, a list of all other vertices which it has an edge to (that vertex’s adjacency list). In this paper, we have proposed three algorithm called Implementation of Hierarchical Graph into Adjacency List i.e., IHGAL for representation of an OOG to adjacency list and Identifying Constructs of Hierarchical Graph i.e., ICHG to identify different constructs and analyze the OOG, Test Path Search (TPS) and Traversal of Trace Path i.e. TTP. On the basis of HGAL data structure our result shows all best possible paths with minimum test cases and detect minimum no. of independent paths in line with the definition of McCabe’s Cyclomatic complexity and measure the number of test path of different nodes.
Representation and Analysis of Object Oriented Graph (OOG): A Graph Algorithmic Approach

in the OOG for finding the traceability among different phases of SDLC.

References

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Index Terms

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Keywords

Hierarchical graphs  
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Graph based Trace path and Graph based analysis