| Application | GraphIn Phases and APIs | | | | | | |
|---|---|---|---|---|---|---|---|
| | | Phase I | Phase II | Phase III | Phase IV | | Phase V |
| | Type | *meta_computation()* | *build_inconsistency_list()* | *CheckProperty()* | *frontier_activate()* | *update_inconsistency_list()* | *merge_state()* |
| Breadth First Search (BFS) | All-merge | Parent id and vertex degree | **1.** Inconsistency list contains vertices with incorrect depth values with MIN_PRIORITY.<br><br>**2.** G' = G | Check BFS depth property | Activate inconsistent vertices with minimum depth value-Ramalingam and Reps | Remove frontier vertices and add inconsistent successors to inconsistency list | **1.** Apply all insertions and deletions to G. |
| Connected Components (CC) | Delete-only-merge | Vertex degree | **1.** For each edge insertion add an edge in G' if the endpoints belong to different components.<br><br>**2.** G' is also known as component graph. | Check disjoint component property | Activate all the vertices in G' | Clear inconsistency list | **1.** Apply only deletions to G.<br><br>**2.** Relabel components in G using G' |
| Triangle Counting (TC) | No-merge | Vertex degree | **1.** Inconsistency list contains endpoints of every edge inserted and/or deleted and their respective neighbors.<br><br>**2.** G' consists of inconsistent vertices and edge incident on them in G. | Check vertex degree property | Activate all the vertices in G' | Clear inconsistency list | **1.** Applying insertions and deletions to G not required<br><br>**2.** Update triangle counts and degree information in G using G' |