An undirected graph is a tree if it is acyclic and connected. In other words, a grap,h is a tree if it has no cycles and every pair of nodes is connected by exactly one path, to determine if an undirected graph is a tree, a two-step process is followed. First, the graph is traversed using depth-first search (DFS) or breadth-first search (BFS), checking for cycles during the traversal. If a previously visited node (excluding the current node's parent) is encountered, the graph has a cycle. Second, the connectivity of the graph is confirmed by ensuring that all nodes are visited during the traversal. Additionally, the number of edges is verified to be one less than the number of nodes. If these conditions are satisfied, the graph is considered a tree. The running time for this process, using DFS or BFS, is $O(V + E)$, where V is the number of vertices (nodes) and E is the number of edges in the graph.