**Checking if graph has a cycle:**

// Take inputs and create a graph using vectors in the main function

// Assuming the adjacency list and vis array is declared globally

// The following function will check if a node has a non-parent neighbor, if yes, it will mean the graph has a cycle

bool dfs\_cycle\_check (int node, int parent) {

mark the node visited in the visited array

for (this node’s child) {

if (not visited) {

if (dfs call to this child==true)

return true;

}

else (i.e., visited) {

if (child node is not its parent)

return true; (cycle exists)

}

//If the function goes on and all the calls are made but still doesn’t return

return false; (not a cycle)

}

}