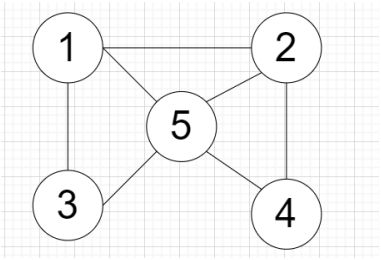
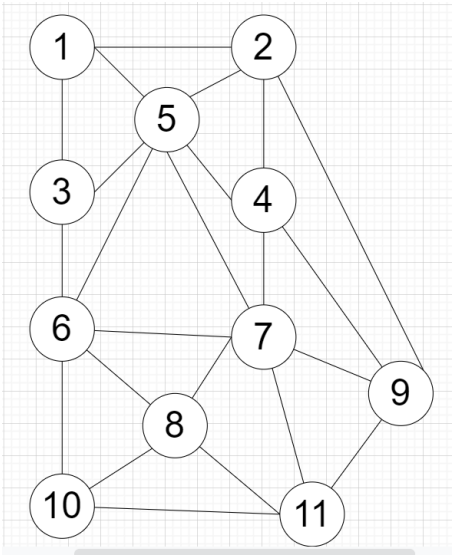
DESIGN OF UNIT TESTS

Stages

Name	Class	Stage
Scenery 1	GraphTest	Empty graph
Stage 2	GraphTest	
Stage 3	GraphTest	

Test Cases

Test Objective: Validate the correct insertion of a vertex in graph

Class	Method	Stage	Input Values	Result
Graph	insert (Vertex<String>)	Stage1	Vertex=”1” Vertex=”2”	The graph is empty

Graph	insert (Vertex<String>)	Stage2	Vertex=”1” Vertex=”2” Vertex=”3” Vertex=”4” Vertex=”5”	The graph contains vertices 1,2,3,4 and 5.
Graph	insert (Vertex<String>)	Stage3	Vertex=”7” Vertex=”8” Vertex=”9” Vertex=”10” Vertex=”11”	The graph contains vertices 7,8,9,10 and 11.

Test Objective: Validate the correct search of a vertex in graph

Class	Method	Stage	Input Values	Result
Graph	Search (Vertex<String>)	Stage3	Vertex=”4” Vertex=”10”	Vertices found

Test Objective: Validate the correct insertion of a edge in graph

Class	Method	Stage	Input Values	Result
Graph	insert (Edge<String>)	Stage1	Edge=(8,7,1) Edge=(8,10,1) Edge=(8,11,1)	The graph don’t have edges
Graph	insert (Edge<String>)	Stage2	Edge=(3,4,1)	The graph contains edge 3-4.

Graph	insert (Edge<String>)	Stage3	Edge=(1,10,1)	The graph contains edge 1-10.

Test Objective: Validate the correct remove of a vertex in graph

Class	Method	Stage	Input Values	Result
Graph	delete (Vertex<String>)	Stage1	Vertex=”2”	Vertex 2 don’t exist
Graph	delete (Vertex<String>)	Stage2	Vertex=”1” Vertex=”6”	Vertex 1 has been deleted Vertex 6 don’t exist
Graph	delete (Vertex<String>)	Stage3	Vertex=”1” Vertex=”6”	Vertex 1 has been deleted Vertex 6 has been deleted

Test Objective: Verify the Dijkstra method

Class	Method	Stage	Input Values	Result
Graph	Dijkstra (Vertex<V> initial, Vertex<V> final)	Stage3	Vertex=”1” Vertex=”11”	A stack with the minimum path length from the given starting node to the end node.