- Maria Alejandra Mantilla Coral - A00395792
- Rafaela Sofia Ruiz Pizarro - A00395368
- Andres David Parra Garcia - A00395676

Graph tests

Name	Class	Scenario
initSetup	GraphTest	Empty graph

Test cases				
Class	**Method**	**Scenario**	**Input Values**	**Result**
Graph	addVertex	initSetup	vertices: ["A","B","C"]	The graph contains 3 vertices. It contains "A", contains "B" and contains "C".
Graph	addEdge	initSetup	vertices: ["A","B","C"] edges:[["A","B",10],["A","C",5]]	The vertex "A" has 2 neighbors: "B" and "C".
Graph	removeVertex	initSetup	vertices: ["A","B","C"] vertexToRemove: "B"	The graph contains 2 vertices: "A" and "C". It does not contain "B".
Graph	removeEdge	initSetup	vertices: ["A","B","C"] edges: [["A","B",10], ["A","C",5]] edgeToRemove: ["A","B",10]	The vertex "A" has 1 neighbor: "C". The graph no longer contains the edge ["A","B",10].
Graph	getNeighbors	initSetup	vertices: ["A","B","C"] edges: [["A","B",10], ["A","C",5]] vertex: "A"	The neighbors of vertex "A" are "B" and "C".
Graph	dfs	initSetup	vertices: ["A","B","C","D"] edges: [["A","B",10], ["B","C",5], ["C","D",3]]	The output of the execution of the dfs("A") method is "A B C D".
Graph	Bfs	initSetup	vertices: ["A","B","C","D"] edges: [["A","B",10], ["A","C",5], ["B","D",7]]	The execution output of the bfs("A") method is "A B C D".
Graph	Dijkstra	initSetup	vertices: ["A","B","C","D"] edges: [["A","B",10], ["A","C",5], ["B","C",2], ["C","D",4]]	The shortest distance from "A" to "B" is 10, to "C" is 5, to "D" is 9.
Graph	emptyGraph	initSetup	No vertices were added to the graph.	The vertex list is empty. The list of neighbors of vertex "A" is empty. BFS and DFS do not produce output.

- Maria Alejandra Mantilla Coral - A00395792
- Rafaela Sofia Ruiz Pizarro - A00395368
- Andres David Parra Garcia - A00395676

Graph	negativeEdgeWeights	initSetup	vertices: ["A","B"] edges: [["A","B",-5]]	The shortest distance from "A" to "B" is -5.
Graph	testDisconnectedGraph	initSetup	vertices: ["A","B","C","D"] edges: [["A","B",10], ["C","D",5]]	The vertex "A" has 1 neighbor: "B". The vertex "C" has 1 neighbor: "D". The vertex "B" has no neighbor. The vertex "D" has no neighbor.
Graph	testAddAndRemoveVerticesAndEdges	initSetup	vertices: ["A","B","C"] edges: [["A","B",10], ["B","C",5], ["C","A",3]]	The vertex "A" has 1 neighbor: "B". The vertex "B" has 1 neighbor: "C". The vertex "C" has 1 neighbor: "A". --Removing Vertex “B”-- The vertex "A" has no neighbor. The vertex "C" has 1 neighbor: "A". --Clear the graph-- The vertex list is empty. Therefore, the graph is empty.
Graph	testLargeGraph	initSetup	vertices: 0 to 999. Edges: [“i”,”i+1”, 1] where the iteration goes from 0 to I<999.	The vertex "0" has 1 neighbor: "1". The vertex "999" has no neighbor. --Removing Vertex “500”-- The quantity of vertices is 999 (in the graph). And the assertFalse about containing the vertex “500” is correct. --Removing edge 998 -> 999 -- The vertex "998" has no neighbor.
Graph	testDuplicaEdges	initSetup	vertices: ["A","B"] edges: [["A","B",5], ["A","B",10]]	The vertex "A" has 1 neighbor: "B".
Graph	testDirectedCyclicGraph	initSetup	vertices: ["A","B","C","D"] edges: [["A","B",1], ["B","C",2], [“C”, ”D”, 3], ["D","A",4]]	The vertex "A" has 1 neighbor: "B". The vertex "B" has 1 neighbor: "C". The vertex "C" has 1 neighbor: "D". The vertex "D" has 1 neighbor: "A".

- Maria Alejandra Mantilla Coral - A00395792
- Rafaela Sofia Ruiz Pizarro - A00395368
- Andres David Parra Garcia - A00395676

Graph	testGraphWithSelfLoops	initSetup	vertices: ["1","2","3","4"] edges: [["1","1",0], ["2","3",5], [“3”, ”4”, 2], ["4","2",3]]	The vertex "1" has 1 neighbor: "1". The vertex "2" has 1 neighbor: "3". The vertex "3" has 1 neighbor: "4". The vertex "4" has 1 neighbor: "2".
Graph	testLargeDenseGraph	initSetup	vertices: 1 to 100. Edges: Connect each vertex to every other vertex with an edge of weight 1	--With vertices “1”, “50” and “100”-- The vertex "1" has 99 neighbors. The vertex "50" has 99 neighbors. The vertex "100" has 99 neighbors. Every vertex contains all vertices in the graph except itself.
Graph	testKruskalMST	initSetup	vertices: ["A","B","C","D", “E”] edges: [["A","B",10], ["A","C",6], ["A","D",5], [“B”,D”, 15], [“C”,”D”, 4], [“C”,”E”,2,], [“D”,”E”, 8]]	The size of mst is 4. And the total weight is 21.
Graph	testPrimMST	initSetup	Vertices: [“1”,”2”,”3”, “4”] Edges: [["1","2",10], ["2","3"15], ["1","3",5], [“2”,4”, 2], [“3”,”4”, 6]]	The size of mst is 4.
Graph	testFloydWarshall	initSetup	vertices: ["A","B","C","D", “E”]edges: [["A","B",10], ["A","C",6], ["A","D",5], [“B”,D”, 15], [“C”,”D”, 4], [“C”,”E”,2,], [“D”,”E”, 8]]	The size of mst is 4. And the total weight is 21.

Maze tests

Case 1:
- input:
4
4
1 2 4 2
3 -1 2 1
-1 -1 3 8
2 -1 1 0
3
1 0
0 3
3 0

- Maria Alejandra Mantilla Coral - A00395792
- Rafaela Sofia Ruiz Pizarro - A00395368
- Andres David Parra Garcia - A00395676

3 2
- output:
'2'
'(0,3)-> (1,3) -> (1,2) -> (2,2) -> (3,2)'
'7'

Case 2:
4
5
1 2 4 2 1
3 -1 2 1 3
-1 5 3 -1 2
2 1 1 0 -1
3
0 0
1 1
3 3
3 2
- output:
'2'
'(3,3)-> (3,2)'
'1'

Case 3:
- input:
3
3
1 2 3
-1 -1 -1
3 2 1
1
0 0
2 2
- output:
'-1'

Case 4:
- input:
3
3
1 2 3
-1 -1 2
3 -1 1
2
0 0
2 0
2 2
- output:
'1'
'(0,0) -> (0,1) -> (0,2) -> (1,2) -> (2,2)'
'8'

Case 5:
- input:
4
4
1 2 4 2
3 -1 2 1
-1 -1 3 8
2 -1 1 0
3
0 0
0 2
3 0
3 2
- output:
'2'
'(0,2)-> (1,2)-> (2,2)-> (3,2)'

- Maria Alejandra Mantilla Coral - A00395792
- Rafaela Sofia Ruiz Pizarro - A00395368
- Andres David Parra Garcia - A00395676

'6'

Case 6:
- input:
3
3
1 -1 3
2 -1 -1
3 2 -1
1
0 0
2 2
- output:
'-1'

Case 7:
- input:
3
3
-1 -1 -1
-1 -1 -1
-1 -1 -1
2
1 0
1 2
2 2
- output:
'-1'