**Test cases**

**Graph tests every test is implemented in Matrix Graph and Adjacency List Graph:**

* addNode():

| **addTest1** | |
| --- | --- |
| **Scenario** | |
| V={0,1,2,3,4,5,6} | |
| **Operation** | **Result** |
| G.add() | V={0,1,2,3,4,5,6,7}  size=8 |

| **addTest2** | |
| --- | --- |
| **Scenario** | |
| V={} | |
| **Operation** | **Result** |
| G.add() | V={0}  size=1 |

* getNode():

| **getNodeTest1** | |
| --- | --- |
| **Scenario** | |
| V={0,1,2,3,4,5,6} | |
| **Operation** | **Result** |
| G.get(1) | node.getKey=1 |

| **getNodeTest2** | |
| --- | --- |
| **Scenario** | |
| V={0,1,2,3,4} | |
| **Operation** | **Result** |
| G.get(3) | node.getKey=1 |

* removeNode():

| **removeTest1** | |
| --- | --- |
| **Scenario** | |
| V={0,1,2,3,4,5,6} | |
| **Operation** | **Result** |
| G.removeNode(1) | V.contains(1)=false |

| **removeTest2** | |
| --- | --- |
| **Scenario** | |
| V={0,1,2,3,4} | |
| **Operation** | **Result** |
| G.removeNode(3)  G.removeNode(4) | V.contains(3)=false  V.contains(4)=false |

* addRelation():

| **relationTest1** | |
| --- | --- |
| **Scenario** | |
| V={0,1,2,3,4,5,6} | |
| **Operation** | **Result** |
| G.addRelation(1,5) | E={(1,5)} |

| **relationTest2** | |
| --- | --- |
| **Scenario** | |
| V={0,1,2,3,4,5,6} | |
| **Operation** | **Result** |
| G.addRelation(1,6) | E={(1,6)} |

* dijkstra():

| **testDijkstra1** | |
| --- | --- |
| **Scenario** | |
|  | |
| **Operation** | **Result** |
| predecessors = graph.dijkstra("a","z");  predecessors .get(0).getPriority | 13 |

| **testDijkstra2** | |
| --- | --- |
| **Scenario** | |
|  | |
| **Operation** | **Result** |
| predecessors = graph.dijkstra("a","z");  predecessors .get(0).getPriority | 6 |

* bfs():

| **testBFSHardlyRelated** | |
| --- | --- |
| **Scenario** | |
|  | |
| **Operation** | **Result** |
| graph.isHardlyRelatedBoolean() | true |

| **testBFSNOTHardlyRelated** | |
| --- | --- |
| **Scenario** | |
|  | |
| **Operation** | **Result** |
| graph.isHardlyRelatedBoolean() | false |

* dfs():

| **testDFS** | |
| --- | --- |
| **Scenario** | |
|  | |
| **Operation** | **Result** |
| graph.DFS() | 12 |

* krus():

| **krusTest1** | |
| --- | --- |
| **Scenario** | |
|  | |
| **Operation** | **Result** |
| G.krus() | weight=12 |

| **krusTest2** | |
| --- | --- |
| **Scenario** | |
|  | |
| **Operation** | **Result** |
| G.krus() | weight=150 |

* floydWarshall():

| **floydTest1** | |
| --- | --- |
| **Scenario** | |
|  | |
| **Operation** | **Result** |
| G.floydWarshall |  |

* prim():

| **primTest1** | |
| --- | --- |
| **Scenario** | |
|  | |
| **Operation** | **Result** |
| G.prim() | weight=3600 |