edu.uci.ics.jung.algorithms.shortestpath

Class DijkstraShortestPath<V,E>

```
java.lang.Object
  └edu.uci.ics.jung.algorithms.shortestpath.DijkstraDistance<V,E>
      └edu.uci.ics.jung.algorithms.shortestpath.DijkstraShortestPath<V,E>
```

All Implemented Interfaces:

Distance<V>, ShortestPath<V,E>

```
public class DijkstraShortestPath<V,E>
extends DijkstraDistance<V,E>
implements ShortestPath<V,E>
```

Calculates distances and shortest paths using Dijkstra's single-source-shortest-path algorithm. This is a lightweight extension of `DijkstraDistance` that also stores path information, so that the shortest paths can be reconstructed.

The elements in the maps returned by `getIncomingEdgeMap` are ordered (that is, returned by the iterator) by nondecreasing distance from `source`.

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Joshua O'Madadhain, Tom Nelson converted to jung2

See Also:

`DijkstraDistance`

Nested Class Summary

`protected class`	**DijkstraShortestPath.SourcePathData** For a given source vertex, holds the estimated and final distances, tentative and final assignments of incoming edges on the shortest path from the source vertex, and a priority queue (ordered by estimaed distance) of the vertices for which distances are unknown.

Nested classes/interfaces inherited from class edu.uci.ics.jung.algorithms.shortestpath.DijkstraDistance

DijkstraDistance.SourceData, DijkstraDistance.VertexComparator<V>

Field Summary

Fields inherited from class edu.uci.ics.jung.algorithms.shortestpath.DijkstraDistance

cached, g, max_distance, max_targets, nev, sourceMap

Constructor Summary

DijkstraShortestPath(Graph<V,E> g)
Creates an instance of `DijkstraShortestPath` for the specified unweighted graph (that is, all weights 1) which caches results locally.

DijkstraShortestPath(Graph<V,E> g, boolean cached) Creates an instance of DijkstraShortestPath for the specified unweighted graph (that is, all weights 1) which caches results locally.	
DijkstraShortestPath(Graph<V,E> g, org.apache.commons.collections15.Transformer<E,Number> nev) Creates an instance of DijkstraShortestPath for the specified graph and the specified method of extracting weights from edges, which caches results locally.	
DijkstraShortestPath(Graph<V,E> g, org.apache.commons.collections15.Transformer<E,Number> nev, boolean cached) Creates an instance of DijkstraShortestPath for the specified graph and the specified method of extracting weights from edges, which caches results locally if and only if cached is true.	

Method Summary	
E	**getIncomingEdge**(V source, V target) Returns the last edge on a shortest path from source to target, or null if target is not reachable from source.
Map<V,E>	**getIncomingEdgeMap**(V source) Returns a LinkedHashMap which maps each vertex in the graph (including the source vertex) to the last edge on the shortest path from the source vertex.
LinkedHashMap<V,E>	**getIncomingEdgeMap**(V source, int numDests) Returns a LinkedHashMap which maps each of the closest numDist vertices to the source vertex in the graph (including the source vertex) to the incoming edge along the path from that vertex.
List<E>	**getPath**(V source, V target) Returns a List of the edges on the shortest path from source to target, in order of their occurrence on this path.
protected DijkstraDistance.SourceData	**getSourceData**(V source)

Methods inherited from class edu.uci.ics.jung.algorithms.shortestpath.DijkstraDistance
enableCaching, getDistance, getDistanceMap, getDistanceMap, getDistanceMap, getEdgesToCheck, reset, reset, setMaxDistance, setMaxTargets, singleSourceShortestPath

Methods inherited from class java.lang.Object
clone, equals, finalize, getClass, hashCode, notify, notifyAll, toString, wait, wait, wait