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| **TAD Graph** |
| Graph<V,E> = {V v=null, E e=null, int w=0} |
| { inv : } |
| Operaciones Primitivas   * Graph empty 🡪 Graph * Insert Object, Object , int 🡪 Graph * dijkistra Object , object 🡪 int * floydWarshall int [][] 🡪 int * bfs Object 🡪 boolean * dfs Object 🡪 boolean * primMST Object 🡪 object * kruskalMST Object 🡪 object * delete object 🡪boolean |

Build

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| Graph()  “Initialize the constructor of the Graph class”  {pre : none}  { post : Graph= { v=null,e=null,w=0 } } |

Modifier

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| insert(V v, E e, int w)  “Connect two vertices by an edge with a certain weight”  {pre : w!=0,v!=null,e!=null}  { post : Graph= { v connected with 3 with an edge of weight w} |

Analyzer

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| dijkistra (V v, V v)  “From vertex v, travel the minimum distance to another vertex v”  {pre : v!=null, v!=null}  { post : int= { distance between both vertices } |

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| floydWarshall (int [][])  “Determines the minimum distance in a graph”  {pre : int!=[0][0]}  { post : int= { minimum distance in the graph } |

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| bfs (V v)  “Traces the graph to determine if the vertex is contained in the graph, this algorithm performs a width search”  {pre : v!null}  { post : boolean= { true if the vertex is in the graph, false if not} |

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| Dfs (V v)  “Traces the graph to determine if the vertex is contained in the graph, this algorithm performs an in-depth search”  {pre : v!null}  { post : boolean= { true if the vertex is in the graph, false if not} |

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| primMST(v Object);  “Minimum weight that would be traveled between all vertices”  {pre : v!= null}  { post : Object containing the tree of minimum travels} |

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| KruskalMST (v object)  “Finds the lowest cost between each vertex until it visits all vertices”  {pre: v!=null}  { post : Object containing the tree of minimum travels } |

Destroyer

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| Delete(V object)  “Eliminate the vertex that is received as a parameter”  {pre: v!=null}  { post : boolean indicating if the object has been removed or not} |