

snGraph

Software óptimo para manipulación de redes libres de escala

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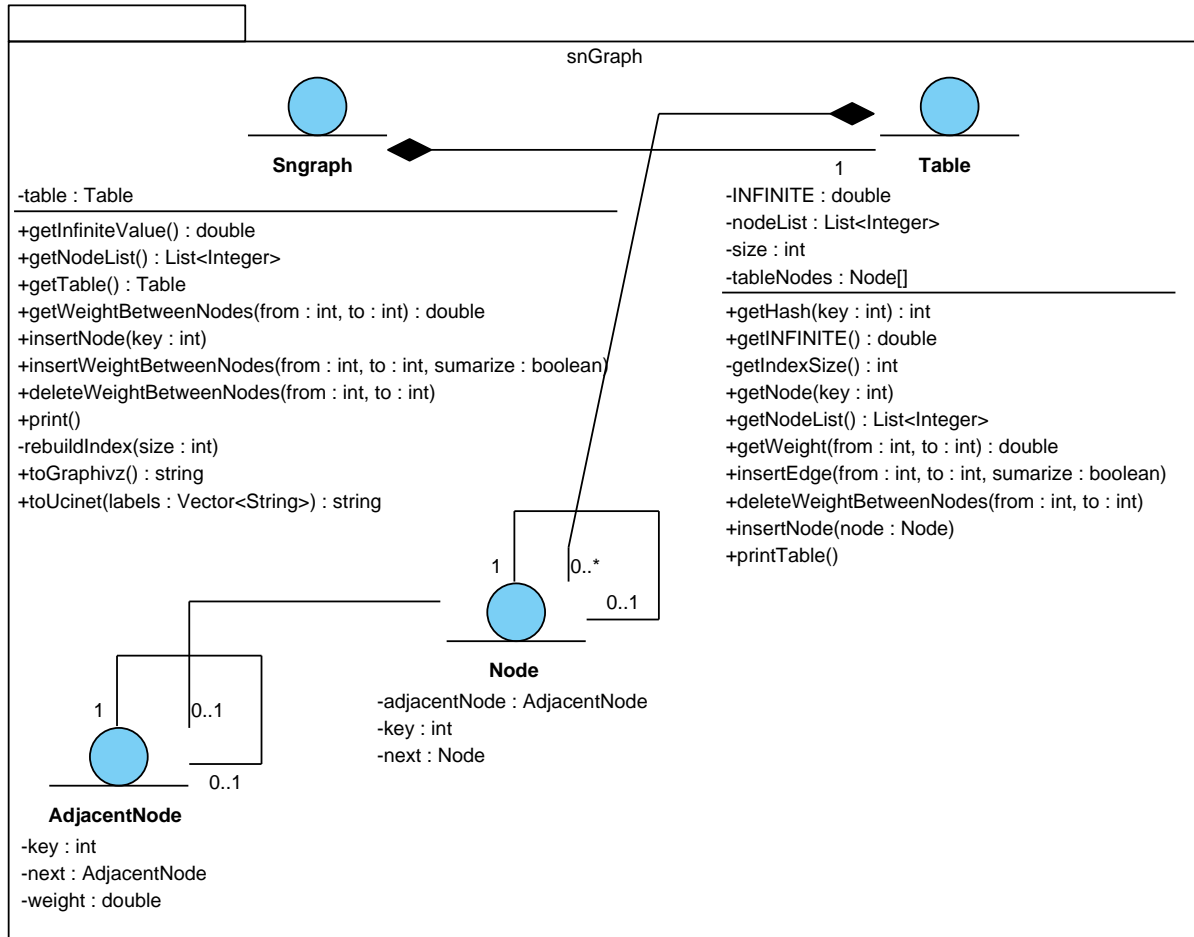
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Class Diagram

Classes



Summary

Name	Documentation
snGraph	
Sngraph	Representa el nivel del programador, con los métodos para manipular un grafo como si fuera una matriz.
Table	Estructura para la tabla hash. Encapsulas las funciones para insertar nodos y aristas y funciones propias de la tabla hash como la función de colisión.
Node	Representa un nodo que podrá estar en lazos con los nodos que colisionen en la tabla hash.





 AdjacentNode	Estructura para representar las aristas entre nodos.
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Details

snGraph

Name	Value
Abstract	false
Leaf	false
Root	false
Visibility	public


Children

Name	Documentation
 Sngraph	Representa el nivel del programador, con los métodos para manipular un grafo como si fuera una matriz.
 Table	Estructura para la tabla hash. Encapsulas las funciones para insertar nodos y aristas y funciones propias de la tabla hash como la función de colisión.
 Node	Representa un nodo que podrá estar enlazados con los nodos que colisionen en la tabla hash.
 AdjacentNode	Estructura para representar las aristas entre nodos.

Sngraph

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Stereotypes	entity
Documentation	Representa el nivel del programador, con los métodos para manipular un grafo como si fuera una matriz.

Attributes

private table : Table			
Type	 Table		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Operations

public getInfiniteValue () : double	
Static	false
Leaf	false
Documentation	Devuelve el valor infinito que indica la no existencia de arista entre nodos
Ordered	false
Unique	true
Query	false

public getNodeList () : List	
Static	false
Leaf	false
Documentation	Devuelve la lista de claves de los vertices insertados en el grafo por orden
Template Type Bind Info	N/A
Ordered	false
Unique	true
Query	false




public getTable () : Table	
Static	false
Leaf	false
Ordered	false
Unique	true
Query	false



public getWeightBetweenNodes (from : int, to : int) : double	
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Parameters	from	
	Multiplicity	Unspecified
	Documentation	Identifica la clave del vertice origen de la arista
	Type	<input checked="" type="radio"/> int
	Direction	inout
	to	
	Multiplicity	Unspecified
	Documentation	Identifica la clave del vertice destino de la arista
	Type	<input checked="" type="radio"/> int
	Direction	inout
Static	false	
Leaf	false	
Ordered	false	
Unique	true	
Query	false	


public insertNode (key : int)		
Parameters	key	
	Multiplicity	Unspecified
	Documentation	Clave del nodo que se va a insertar en el grafo
	Type	<input checked="" type="radio"/> int
	Direction	inout
Static	false	
Leaf	false	
Ordered	false	
Unique	true	
Query	false	

public insertWeightBetweenNodes (from : int, to : int, summarize : boolean)

Parameters	from	
	Multiplicity	Unspecified
	Documentation	Identifica la clave del vertice origen de la arista
	Type	 int
	Direction	inout
	to	
	Multiplicity	Unspecified
	Documentation	Identifica la clave del vertice destino de la arista
	Type	 int
	Direction	inout
	sumarize	
	Multiplicity	Unspecified
	Documentation	Si existe una arista entre "from" y "to" y "sumarize=true" suma el nuevo valor al antiguo, si no, lo sobrescribe
	Type	 boolean
	Direction	inout
Static	false	
Leaf	false	
Ordered	false	
Unique	true	
Query	false	

public deleteWeightBetweenNodes (from : int, to : int)		
Parameters	from	
	Multiplicity	Unspecified
	Type	 int
	Direction	inout
	to	
	Multiplicity	Unspecified
Type	 int	
Direction	inout	
Static	false	
Leaf	false	
Ordered	false	
Unique	true	
Query	false	


public print ()	
Static	false
Leaf	false
Documentation	Metodo que imprime por pantalla en modo texto la estructura de datos interna utilizada para soportar el grafo
Ordered	false
Unique	true
Query	false

private rebuildIndex (size : int)		
Parameters	size	
	Multiplicity	Unspecified
	Type	 int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Crea una nueva estructura de datos vacia con un nuevo valor para el índice hash "size" e inserta uno a uno los nodos de la estructura antigua	
Ordered	false	
Unique	true	
Query	false	

public toGraphviz () : string	
Static	false
Leaf	false
Documentation	Devuelve un String con el código asociado para representar el grafo en el programa Graphviz
Ordered	false
Unique	true
Query	false

public toUcinet (labels : Vector) : string		
Parameters	labels	
	Multiplicity	Unspecified
	Template Type Bind Info	N/A
	Type	Vector
	Direction	inout
Static	false	
Leaf	false	
Documentation	Devuelve un String con el código asociado para representar el grafo en el programa Ucinet	
Ordered	false	
Unique	true	
Query	false	


Relationships

Unnamed Association		
To	Name	Value
	End Model Element	 Table
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	1
	Visibility	Unspecified
	Aggregation Kind	None
	Navigable	true
	Derived	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	


Table


Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Stereotypes	entity
Documentation	Estructura para la tabla hash. Encapsulas las funciones para insertar nodos y aristas y funciones propias de la tabla hash como la función de colisión.

Attributes

private INFINITE : double			
Documentation	Representa el valor infinito del grafo		
Type	 double		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		


private nodeList : List			
Documentation	Lista con las claves de los nodos que se insertan		
Template Type Bind Info	N/A		
Type	List		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private size : int			
Documentation	Tamaño del índice hash		
Type	 int		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private tableNodes : Node			
Documentation	Nodos enlazados, asociados a cada índice de la tabla hash		
Type Modifier	[]		
Type	 Node		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		


Operations

public getHash (key : int) : int			
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Parameters	key	
	Multiplicity	Unspecified
	Type	 int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Devuelve el hash de una determinada clave	
Ordered	false	
Unique	true	
Query	false	



public getINFINITE () : double		
Static	false	
Leaf	false	
Ordered	false	
Unique	true	
Query	false	

private getIndexSize () : int		
Static	false	
Leaf	false	
Documentation	Devuelve el tamaño de la tabla hash	
Ordered	false	
Unique	true	
Query	false	

public getNode (key : int)		
Parameters	key	
	Multiplicity	Unspecified
	Type	 int
	Direction	inout
Static	false	
Leaf	false	
Documentation	Devuelve el Node asociado a una clave	
Ordered	false	
Unique	true	
Query	false	


public getNodeList () : List	
Static	false
Leaf	false
Documentation	Devuelve la lista de claves de la tabla
Template Type Bind Info	N/A
Ordered	false
Unique	true
Query	false

public getWeight (from : int, to : int) : double			
Parameters	from		
	Multiplicity	Unspecified	
	Type	 int	
	Direction	inout	
	to		
	Multiplicity	Unspecified	
	Type	 int	
	Direction	inout	
	Static	false	
	Leaf	false	
Documentation	Devuelve el peso de una arista		
Ordered	false		
Unique	true		
Query	false		

public insertEdge (from : int, to : int, summarize : boolean)		
Parameters	from	
	Multiplicity	Unspecified
	Type	 int
	Direction	inout
	to	
	Multiplicity	Unspecified
	Type	 int
	Direction	inout


sumarize	
Multiplicity	Unspecified
Type	<input checked="" type="radio"/> boolean
Direction	inout
Static	false
Leaf	false
Documentation	Inserta una arista desde una clave hasta otra, teniendo en cuenta el boolean summarize.
Ordered	false
Unique	true
Query	false


public deleteWeightBetweenNodes (from : int, to : int)		
Parameters	from	
	Multiplicity	Unspecified
	Type	<input checked="" type="radio"/> int
	Direction	inout
	to	
	Multiplicity	Unspecified
	Type	<input checked="" type="radio"/> int
Direction	inout	
Static	false	
Leaf	false	
Ordered	false	
Unique	true	
Query	false	

public insertNode (node : Node)		
Parameters	node	
	Multiplicity	Unspecified
	Documentation	Inserta un nodo en la tabla
	Type	 Node
	Direction	inout
Static	false	
Leaf	false	
Ordered	false	
Unique	true	
Query	false	

public printTable ()	
Static	false
Leaf	false
Documentation	Metodo que imprime por pantalla en modo texto la estructura de datos interna utilizada para soportar el grafo
Ordered	false
Unique	true
Query	false

Relationships


Unnamed Association		
To	Name	Value
	End Model Element	 Node
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	0..*
	Visibility	Unspecified
	Aggregation Kind	None
	Navigable	true
	Derived	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	


Unnamed Association		
From	Name	Value
	End Model Element	 Sngraph
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	Unspecified
	Aggregation Kind	Composited
	Navigable	true
	Derived	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	


Node

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Stereotypes	entity
Documentation	Representa un nodo que podrá estar enlazados con los nodos que colisionen en la tabla hash.


Attributes


private adjacentNode : AdjacentNode			
Documentation	Primer nodo adyacente		
Type	 AdjacentNode		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		


private key : int			
Documentation	Clave del nodo		
Type	 int		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private next : Node			
Documentation	Siguiete nodo enlazado por colisión en la tabla hash		
Type	 Node		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Relationships

Unnamed Association		
To	Name	Value
	End Model Element	 AdjacentNode
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	0..1
	Visibility	Unspecified
	Aggregation Kind	None
	Navigable	true
	Derived	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	


Unnamed Association		
To	Name	Value
	End Model Element	 Node
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	0..1
	Visibility	Unspecified
	Aggregation Kind	None
	Navigable	true
	Derived	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	


Unnamed Association		
From	Name	Value
	End Model Element	 Table
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	Unspecified
	Aggregation Kind	Composited
	Navigable	true
	Derived	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	


AdjacentNode

Name	Value
Active	false
Business Model	false
Visibility	public
Leaf	false
Root	false
Stereotypes	entity
Documentation	Estructura para representar las aristas entre nodos.


Attributes


private key : int			
Documentation	Clave del nodo adyacente		
Type	 int		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private next : AdjacentNode			
Documentation	Representa la siguiente clave enlazada por ser adyacente		
Type	 AdjacentNode		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

private weight : double			
Documentation	El peso de la arista		
Type	 double		
Getter	false	Setter	false
Derived	false		
Multiplicity	Unspecified		
Aggregation	None		

Relationships

Unnamed Association		
To	Name	Value
	End Model Element	 AdjacentNode
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	0..1
	Visibility	Unspecified
	Aggregation Kind	None
	Navigable	true
	Derived	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	

Unnamed Association		
From	Name	Value
	End Model Element	 Node
	Provide Property Getter Method	false
	Provide Property Setter Method	false
	Multiplicity	Unspecified
	Visibility	Unspecified
	Aggregation Kind	None
	Navigable	true
	Derived	false
Abstract	false	
Leaf	false	
Visibility	Unspecified	
Derived	false	