LinksTuto

I.   Installation

- First you have to install a MongoDB server on your computer. (https://www.mongodb.com/).
- Installation procedure: https://docs.mongodb.com/manual/installation/
- JDK 1.5 or over.
- You have to add the jar of Links in your project

II.   Begin

```
//First we have to create an Object Links

// You can precise the name of the experience, the path to the css and if you want
to show the window

// Links links = new Links("Tutorial", "myCss.css");
Links links = new Links("Tutorial");

/* Now you have to create an Object Snapshot
 *
 * The snapshot is the object which will be shown on the window
* Links will show one Snapshot at a time
* You can watch all the snapshot with the buttons previous and next
 * The snapshot is composed of Entity and relation
 */
Snapshot snapshot = new Snapshot();



/* Creation of an Entity
 * The Entity has a name and a type
* An Entity can have several attribute
* WARNING Never create an entity without the method addEntity
 */
Entity a = snapshot.addEntity("Toto", "Human");

/* We had several attribute
* An attribute has an id,a name, a value (String or double) and a style (optional)
*/
a.addOneAttribute("Charct", "Age", 24);
a.addOneAttribute("Charct", "Bonbons", 2., AttributeStyle.BAR);
a.addOneAttribute("Charct", "Nom", "Toto");

/*
 * Now we add this Snapshot to links
*/
links.addSnapshot(snapshot);

/*
 * In links we have currently one snapshot
 * Lets add another
 */
```

```java
Entity b = snapshot.addEntity("Rufus", "Dog");
/*
 * We can add a relation between our two entities
 */
Relation r = snapshot.addRelation("Toto", "Rufus", "TotoPossedeRufus", false,
"possede");

links.addSnapshot(snapshot);

/*
 * Lets add more Snapshot
 */

int i = 0;

snapshot.addEntity("0", "Bip");
snapshot.getEntity("0").addOneAttribute("Attribut1", "Attribut 1", "Boop");
snapshot.getEntity("0").addOneAttribute("Attribut double", "Double :", 15);

while(i < 10){
      i++;
      snapshot.addEntity(""+i, "Test");
      Entity e = snapshot.getEntity("0");
      snapshot.addRelation("0",""+i,"0Test"+i,true,"RelTest");
      links.addSnapshot(snapshot);
            }
}
```
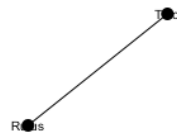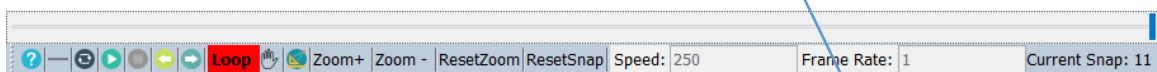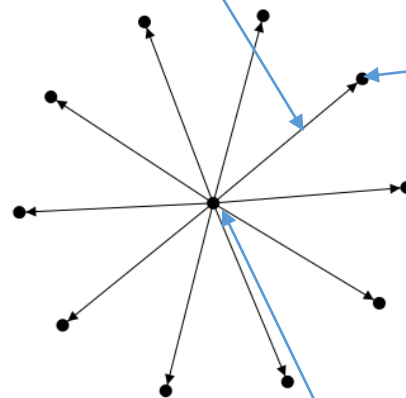
The result is :
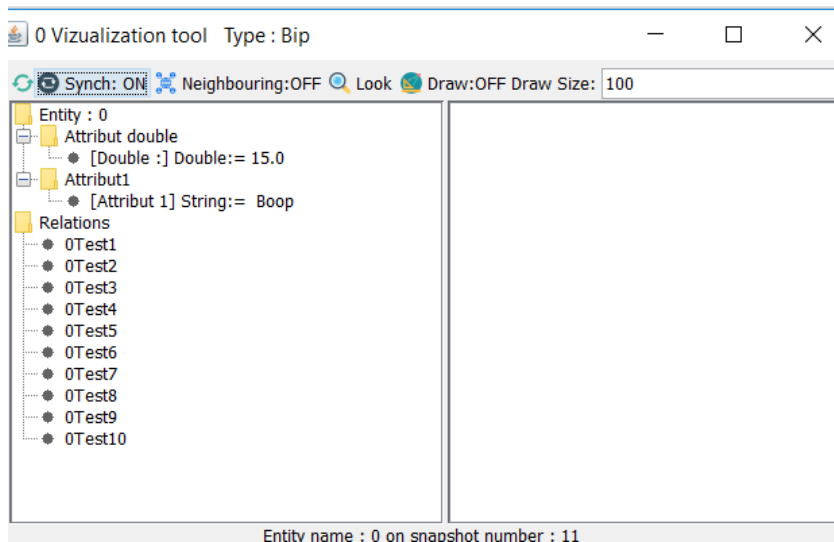
Links : Vizualizing agents' life Tutorial

Too

Rous

Relation

Entity

Entity "0"

Previous/Next

Loop Zoom+ Zoom - ResetZoom ResetSnap Speed: 250   Frame Rate: 1   Current Snap: 11

When you click on an Entity, a window open with all the relations and attributes of this Entity.

Example when you click on the Entity 0.

If you click on an Attribute Double and you set Draw to ON, a chart is open.

III.   More

```
/*
 * We can precise the coordinate of an Entity
 * But if you do so, you have to precise a coordinate for all
 */

Entity c = snapshot.addEntity("Bob", "Humain",1, 1);

links.addSnapshot(snapshot);


/*
 * You can choose to which experience you add your snapshot
 * WARNING the experience need to be created
 */
links.createExperiment("NewXp");
links.addSnapshot(snapshot, "NewXp");
```

IV.   Graphstream

Links use Graphstream to show the Entities and the Relations, you can change the visualization with a ".css" file. You will have to precise this file in your experience.

http://graphstream-project.org/doc/Advanced-Concepts/GraphStream-CSS-Reference/