INTELLIGENT SYSTEMS LABORATORY PROJECT

GROUP A1-04

1.Brief explanation about the project goal

In this project we must perform a program that search the route between two directions of a street map.

The idea is to make this with the towns and cities of the province of Ciudad Real.

2.Tools

We will use Java as programming language to develop the project.

We will use OSM[1] (Open Street Map) as source for the data of the cities and towns.

To manage the version control and the sharing of the project we use a repository in GitHub.

3.Implementation

OSM provides the graphs that we need in graphml files.

Graphml is a variation of the xml language used for the representation of graphs.

These graphs contain nodes and edges.

The nodes are the different intersections of streets, and, the edges are the streets.

To read the data from the graph files we use a collection of interfaces and implementations built in Java called Tinkerpop Blueprints[2].

We build 3 classes in Java (TSFGraph, Arc and Node), according to the requirements of the problem.

- TSFGraph: We use this class to read the values of the graphs files and to represent the graph structure.
- Arc: This class represent the edges of the graphs (The streets), contains information about the nodes between which is, the name and the length.
- Node: This class represent the nodes of the graphs (The street junctions) and contains the coordinates of the node.

We use a Hashmap to manage the “structure” of the graph, since the graph structure itself is very complex and it would be worse both in resources consumed and in the difficulty to develop the necessary methods.

1 : https://www.openstreetmap.org

2: https://github.com/tinkerpop/blueprints/wiki

4.Participants

This project is done by:

- Sergio Herrera Piqueras
- Juan Mena Patón
- Pablo Rodríguez Solera

5.Resources

Github page:

https://github.com/A1-04/towngraph