Rapport individuel de Projet Long à l'itération 1

« Simulation de systèmes routiers »

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1. Introduction.

Our project involves simulating the road system and optimizing it based on the generated data. After the road system to be studied is established, the user inputs the simulation data, and then the interface will propose a graphical representation to visualize the simulation and display the analyzed data.

I conducted with the user interface-related work with Mlle Célia Djilali in the group. In this part, I used a toolbox named WindowBuilder powered by Eclipse to program.

2. What is WindowBuilder ?

Traditional Java language is not flexible and accurate enough to realize the control of controls only by code statements in the development of form applications, and it is difficult to efficiently develop applications with good user interfaces. Therefore, we should find a drag-and-drop control to achieve Plug-in for form. And I found a toolbox named WindowBuilder.

WindowBuilder is a powerful and easy to use bi-directional Java GUI designer. It is a Java GUI design plug-in software based on the Eclipse platform. It has three major functions: SWT / JFACE development, Swing development and GWT development.

3. The structure of interface.

Our project consists of three parts : « Création du système routier », « Simulation » and « Analyse des données ». Therefore, the user interface will also focus on them.

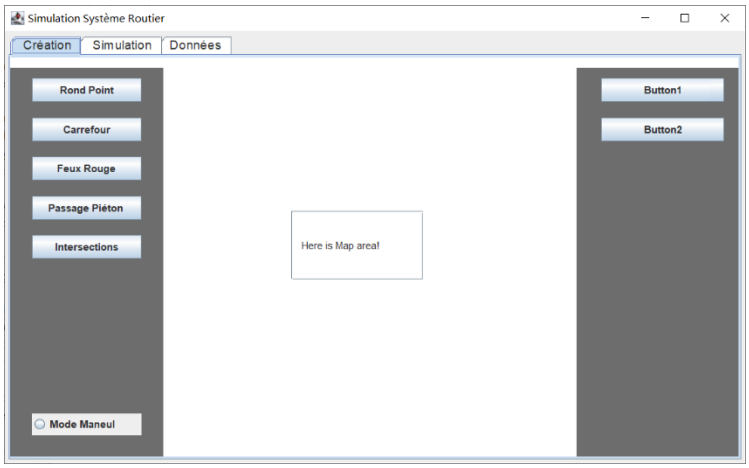

Figure 1

a) The part of « Création du système routier » (Figure 1).

i. The program generation mode can automatically create the system according to the user's constraints.

ii. In the “Mode Maneul”, users can select the elements they want to add through the area on the left and drag them to the middle map area to create roads to simulate.

iii. At present, this part is still under construction and has not been associated with specific code. Secondly, regarding the map of the middle area, we have not yet discussed how to achieve the result of "creating simulation by dragging and dropping by the user".

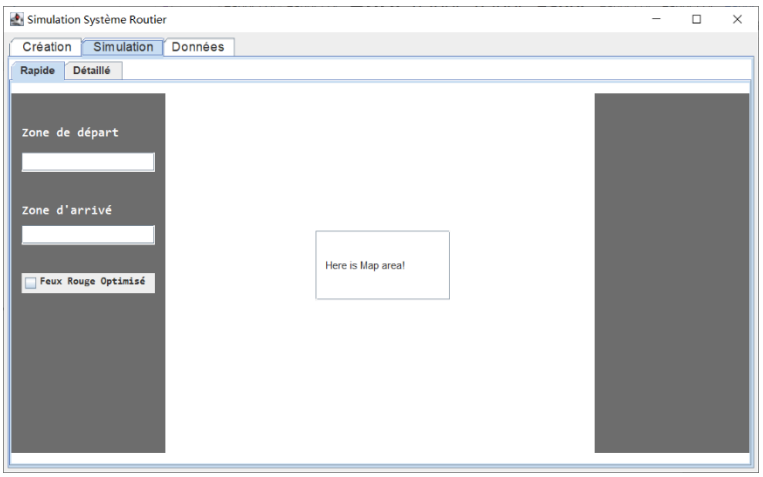

Figure 2

b) The part of « Simulation » (Figure 2).

There are two types of simulations in this section:

i. Fast simulation: users can directly view the results after simulation.

ii. Display real-time data simulation.

iii. In addition to the cars generated in the start and end areas, users can also add cars by specifying the start and destination.

iv. Each car has a route from the start to the end (according to the traffic density on the route, it can be updated in real time)

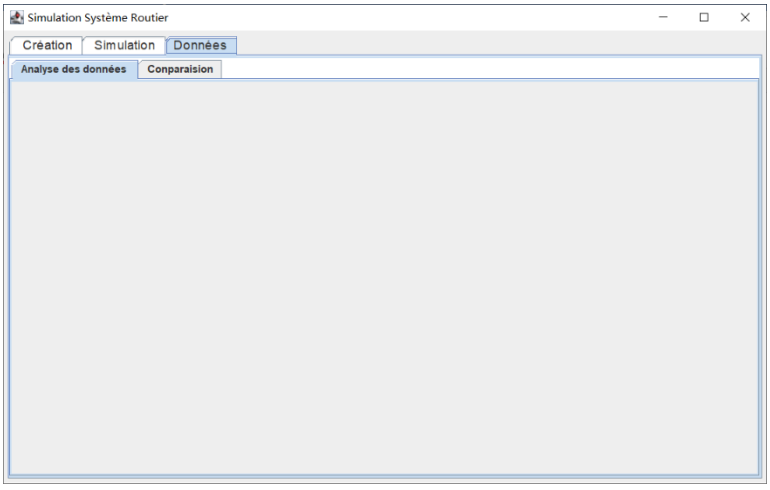

Figure 3

c) The part of « Analyse des données » (Figure 3).

i. After the simulation, users can view the icons of various analysis data:

ii. Global network analysis (system fluidity, tension point, etc.)

iii. Analyze a part of the network (e.g. intersection).

iv. Analyze the routes on the network or connect point A to point B several possibilities.

v. Users can also compare their results with those generated by other systems.

4. The work of the next iteration

a) In the next iteration, I will continue to refine the user interface and try to connect with the parts that the team members have already completed.

b) As for the part of creating models by dragging and dropping elements, I will continue to find methods and communicate with team members to solve problems.

c) The current problems are:

i. I should discuss the assignment of tasks further with my colleague, some parts of what we did in the first iteration was repeated.

ii. I just roughly completed the framework of the user interface, and did not connect with the code implementation. I should finish this part as soon as possible.