Axel RIBES
B00376499

AI 1st Assignment

1 – Choices

I chose to develop this program object oriented because during my 2 years in France I had a lot of projects in Java or C++ object oriented so it was the native way for me to do this. I tried to understand the astar cities code, but it was hard, so I decided to use the Redblob implementation.cpp file as a guideline for my project.

2 – Actual code

First, I wasn't aware on how to implement a path search program using A*. But I needed at least to read the file and to exploit it.

Writing my own parser was not that hard as last year we had to create a candy crush game in C++ and my team was using text files to store levels.

I used the examples of the course to first just read the file. Then, when I was sure that the stream was working, I started scanning each line and used Regex to extract the ID, the coordinates and finally the weights. I had a little memory exception due to my regex while using %[0-9] instead of %d, but I don't know why.

I needed to have a few different classes such as:

A file reader: that is supposed to read the whole dot file and to store all the data is corresponding objects

Node: So, I could store their ID, their coordinates and their edges

Graph: That is the heart of the program as you are storing all the nodes and will be used to implement the A* path finder

I had real trouble when it came to the graph class because I was particularly struggling with the A* path finder.

Finally, I managed to do half of the astar path search. But when I was close to the end, I wasn't able to finish this, so I asked Simon and I used the end of his program to make it work.

I also added the feature to chose yourself the start and the end Nodes. Obviously, you can't enter an invalid value.

You can see the results in the next page.

Axel RIBES
B00376499

Here is the path that is given by my program: