MAPF workshop in evacuation

1 User Interface

2 Load Map

The project works best with the benchmark problem maps that can be found HERE
Simply select a .map file and ti will be loaded to the screen

3 Placing Agents and Exits

In order to place agents on the map, simply click to the icon of the agent that is located at the top right corner. Then right-click on the place to place (Agents can only be placed on WHITE cells).

Same thing goes if you want to place exit cells first click the exit sign icon and place the exit where use want by clicking right click on the map.

If you wish to remove exit or agent from the map simply right click on it again when the correct icon is highlighted.

4 Begin! Menu

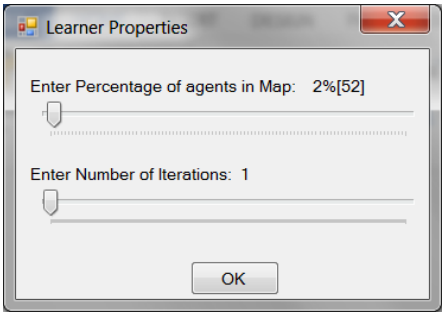
4.1 A*

In order to run A* you first need to place agents and exits on the map. After that you can run the normal A* and see how it plays run.
First you will notice that some of the cells will turn yellow and red this indicated the expanded cells and generated cells.
When the algorithm will finish running you will see the path that was chosen for each agent.

4.2 Direction Map

4.2.1 Learn

In order to run the learning algorithm first you must include some exits on the map (exits are features of the map they must be chosen wisely and not changed).
After you have placed some exits on the map you can run the Learning algorithm,



- choose the number of agents that will cover the map (their location will be selected randomly)
- choose the number of iterations that would run with the number of agents that you've chosen

4.2.2 Export to file

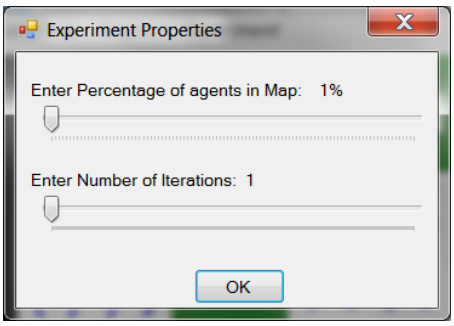
After you've ran the learning algorithm you can export the Direction map that was created into txt file that will contain the exits you've chosen in the map and also the vector that were thought.

4.2.3 Import from file

If a map you load data file that was previously exported the program will detect it automatically and enable this feature incase you want to import that file

5 Experiment

After you've imported the datafile for the direction map you can run an experiment using the following dialog



- choose the number of agents that will cover the map (their location will be selected randomly)
- choose the number of experiment iterations that would run with the number of agents that you've chosen

6 Simulation!

Currently works best only after running A star.
It will simulate the way the agents would run after each of them have chosen a path.

7 Agents List Window

This window will give you information regarding the agents solution.
Their location, The number of nodes they've expanded, generated and their solution cost

You can also choose to ignore some of the agents by uncheck their visibility checkbox