RUSH HOUR

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START MENU

Implemented Functions

astar

A star algorithm is a pathfinding algorithm used in a big variety of search problems.The A star algorithm uses a combination of the distance and the estimated distance, known as the heuristic, to find the shortest path to the goal.

blocking_and_distance_heuristc

Guesses the distance to the goal based on the number of cars blocking the goal and the distance to the goal.

generate_new_nodes

To find new possible solutions it's needed to explore new possibilities. This function is responsible to "explore" and search for new neighbors of the current state.

agent_loop

The agent loop is responsible to communicate the orders to the server by JSON messages. Besides that, it's responsible for moving the cursor, calling the astar algorithm and when crazy step moves checks if the solution is still reliable.

Implemented Functions

reconstruct_path

This method is responsible to convert the solution of astar to a list of commands which agent_loop will send to the server.

move_cursor

After finding the path and reconstruct it, there will be a list of moves. Move_cursor is responsible to move the cursor to the car, select it and drag the piece to the position desired.

vehicle_type and vehicle_size

Vehicle_type checks if the vehicle is vertical or horizontal. It will return 0 if the car is horizontal and 1 is vertical.

Vehicle_size checks the size of the vehicle being moved.

calc_row_size

Calculates the row size for every type of grid available and the goal position.

Final thoughts

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After making this project we can assure that our solution is pretty good and efficent.

And as long there is time in memory there will exist a solution.



Thanks for playing :)

Do you wish to play again?

YES

NO