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MyAgentState Fields

MyAgentStateclass has the following fields added to them:

- StateWorld, a 30x30 array that contains our own class Node (each node has a parent, position, and distance)
- qNodes, a linked list used for storing nodes during breadth first search.
- bool mapDone, true if we are fully done.

Main loop

The main decision loop consists of the following steps:

- If there is dirt, remove it. Else
- Go towards the goal if there is one defined by following the currentNodes parent (as specified by the BFS-algorithm). Else
- Use breadth first search for finding the closest available unexplored tile, abort search when one is found.

Design

Our BFS is aborted as soon as we find an unexplored tile, however we first search in the direction that we are currently facing. This improves the performance score.

Another thing we do is that we keep track of our x and y coordinates when we bump, if we get enough on the same maximum x or y coordinate then we consider that the outer wall, this make it so that our agent does not have to bump into the whole outer wall to know that it is done.

Possible improvements

An improvement that could be made but have not is to totally consider the direction we are facing in our BFS-algorithm, as of now we don't consider it at all when moving more than one tile.

Another improvement could be to change priorities in our decision-making, for example we could do some more calculations when we have parts of the map in memory.