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ARTIFICIAL INTELLIGENCE CS-410

Assignment 2: - 2048 python game

Description of Heuristics used, i used 3 heuristics, weighted sum, sum of squares and number of empty tiles. I will explaina little on each of them in a few sentences.

Weighted product heuristic: basically does a product of the board with a weighted matrix. My motivation for using this was trying to solve the 2048 in a faster time as weighted approach trades optimality for speed, although i didnt seem to get to my goal.

Max tiles heuristic: returns max tile at left most corner.

Number of empty tiles heuristic: returns the number of empty tiles in the board

Heuristic name	Goal 8: steps/sec	Goal 16: steps/sec	Goal 32: steps/sec
(4x4) Weighted product	6 / 0.03	11 / 0.88	20 / 78.43
(4x) Max tiles	6 / 0.04	11 / 1.26	20 / 117.83
(4x4) Number of empty tiles	6 / 0.04	11 / 1.24	20 / 114.91

I only did readings for 8 through to 32 as my laptop begins to hang when i attempt to go above goal for 32, i used a hp envy 13 dual core. You can run each of them one at a time. I noticed my results took a lot of time to print the results compared to what i expected