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Group 9

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**Project Description**

2048 (<https://gabrielecirulli.github.io/2048/>) is a viral game that briefly took the world by storm circa 2014. The game is played on a 4x4 grid, and tiles with a value of either 2 or 4 appear in random positions. Players slide the tiles such that like tiles combine, summing into a new tile and adding to the current score. Creating the “2048” tile is the stated end-goal, but the game can continue indefinitely until no legal moves can be made. The “simple yet difficult-to-master” quality of the game makes it an appropriate challenge for an AI agent to tackle.

Since various implementations using MCTS and heuristics are easily found in a cursory Internet search, we propose developing our agent using reinforcement learning, and comparing its performance to 1) a naïve human player, and 2) one of these existing implementations. (Potentially if time permits, we might also develop a heuristic-based approach of our own to compare to.)