The Manhattan Heuristic is a very good default starting point. It tells you how far everything is from it’s goal, and lets everything get sorted out from there. For our particular problem, the 8 piece puzzle, there were some things that could be improved upon. First and foremost, the empty space itself doesn’t need to be factored into the heuristic scoring system. We know the blank tile will wander away from its final position as a natural part of solving the puzzle, and giving it a value for being in the wrong place only makes the program less likely to move it. We also upped the priority of moving vastly out of place tiles by making the score for those tiles the square of their distance out of place. Since the furthest a piece could be out of place is four spaces, this value was capped at 8. It was particularly helpful for greedy solutions, helping them find more optimal solutions, particularly in cases where a piece would end up in the opposite corner from where it should be.