

COMP300024 - Artificial Intelligence Project Part A Report

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1. - use A* search, queuing states in an inbuilt python priority queue (priority derived from a combination of current count of moves taken(g) and heuristic(h) to calculate how much closer to the goal from a current state.

For a single red tile, there are 164 possible next moves

Time complexity: $f(n) = h(n) + g(n)$

2. our heuristics try to create all possible tetromino therefore we will reach an optimal end goal

heuristic: $a = \text{distance to target x-axis} + \text{free cells in y-axis}$

$b = \text{distance to target y-axis} + \text{free cells in y axis}$

$\text{path} = \min(a,b)$

3. - all the blue tokens will be the target and we use the same search from the source to remove all of them