Homework 6

Due: 11 November 2019

Problem 6.1

Consider a tangram puzzle, with the standard seven physical pieces in geometric shapes, along with the silhouette of a more complex shape to arrange the pieces into.

Building on the example of the frog-jumping-puzzle and program we wrote to solve the computer game "Alnilam" in class, how would you encode the tangram puzzle to be solved using problem space search? How would you model states and actions (and what would the initial state be)? How would you detect a "win"? Design a plan for how you'd implement this.

Problem 6.2

Consider the game Connect-Four: played on a grid, players take turns marking squares in the grid, with each player trying to mark four spaces in a row. (The actual game has a constraint that your token takes the lowest available spot in a column, but you can ignore that if you prefer.) What would be an appropriate heuristic for use in a minimax algorithm for that game? Discuss the strengths (and weaknesses, if any) of your heuristic.

Collaboration policy: group work! If you work with other people on this homework, you can just hand in one copy and put all your names on top. There will be a revision cycle for this.