AI for Games – Individual Assignment

# Part 1: 8 Puzzle and 15 Puzzle

Research the 8 and 15 puzzles, and what the Manhattan Distance heuristic means in this context. Then implement the following:

1. Solve the 8 Puzzle using Breadth-First Search. [20 marks]
2. Solve the 8 Puzzle and 15 Puzzle using A\* with:
   1. Manhattan Distance Heuristic [20 marks]
   2. Pattern Databases [20 marks]

You will find information about pattern databases in the paper “Pattern Databases” on Blackboard. Feel free to use any language to implement, though I do want to be able to see the puzzles being solved visually.

# Part 2: Slime Volleyball

Download the Unity Slime Volleyball project from Blackboard. You can play against my AI by using ‘a’, ‘d’ and ‘w’ for left, right and jump. Your job is to replace my AI with something better.

1. Create a fun scripted AI for Slime Volleyball [20 marks]
2. Use WEKA to learn an AI from observation [20 marks]