WPI

CS 534 Artificial Intelligence
Assignment 1

Group 10

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Content

1 N Queens Problem

1.1 Methodology

1.1.1 Hill Climbing Algorithm

1.1.2 A star Algorithm

1.2 Write Up Questions

1.2.1 The size of Puzzle

1.2.2 Effective Branching Factor

1.2.3 Cheaper Solutions

1.2.4 Solutions With Less Time Complexity

2 Urban Planning

2.1 Methodology

2.1.1 Hill Climbing

2.1.2 Genetic Algorithm

2.2 Write Up Question

2.2.1 Genetic Algorithm Mechanism

Selection The selection from a population is to select the individuals according to a probability sequence. The probability is determined by the score of each individual in a certain population.

In a certain population, the higher score will lead to the higher probability to be fetched.

Crossover

Elitism

Culling

Mutation

2.2.2 Program Performance

2.2.3 Effects of Elitism and Culling

Effects of Elitism

Effects of Culling

2.2.4 Selection and Crossover

Perform of Selection

Perform of Crossover