AI Search Strategy Questions

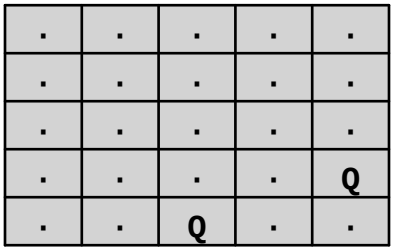
Problem: N-Queens

Generated from Knowledge Graph Analysis

This document contains 3 instance(s) of the N-Queens problem with questions about the most appropriate solving strategies. Each instance includes visualizations and detailed answers based on knowledge graph analysis.

Instance 1:

Board Size: 5×5, **Pre-placed Queens:** 2



Question: For the N-Queens problem and the given instance, which is the most appropriate solving strategy among those mentioned in the course (BFS, DFS, UCS, A*, GBFS, IDA*, Hill Climbing, Simulated Annealing)?

Answer:

Best Strategy: DFS
✓ Complete - finds solution if one exists | ✓ DFS/Backtracking perfect for CSP

Properties: Optimal, Complete

Alternative Strategies:

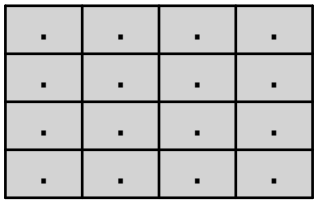
• **Backtracking**: For medium instances

• **UCS**: When actions have varying costs

Recommended Heuristics: Number of Conflicts, Attacking Pairs

Instance 2:

Board Size: 4×4, **Pre-placed Queens:** 0



Question: For the N-Queens problem and the given instance, which is the most appropriate solving strategy among those mentioned in the course (BFS, DFS, UCS, A*, GBFS, IDA*, Hill Climbing, Simulated Annealing)?

Answer:

Best Strategy: DFS
✓ Complete - finds solution if one exists | ✓ DFS/Backtracking perfect for CSP

Properties: Optimal, Complete

Alternative Strategies:

• **Backtracking**: For small instances

• **UCS**: When actions have varying costs

Recommended Heuristics: Number of Conflicts, Attacking Pairs

Instance 3:

Board Size: 6×6, **Pre-placed Queens:** 4

.	.	.	.	.	.
.	.	.	Q	.	.
.	.	.	.	.	Q
Q	.	.	.	.	.
.	.	Q	.	.	.
.	.	.	.	.	.

Question: For the N-Queens problem and the given instance, which is the most appropriate solving strategy among those mentioned in the course (BFS, DFS, UCS, A*, GBFS, IDA*, Hill Climbing, Simulated Annealing)?

Answer:

Best Strategy: DFS
✓ *Complete - finds solution if one exists* | ✓ *DFS/Backtracking perfect for CSP*

Properties: Optimal, Complete

Alternative Strategies:

• **Backtracking**: For small instances

• **UCS**: When actions have varying costs

Recommended Heuristics: Number of Conflicts, Attacking Pairs