AI Search Strategy Questions

Problem: Tower of Hanoi

Generated from Knowledge Graph Analysis

This document contains 2 instance(s) of the Tower of Hanoi problem with questions about the most appropriate solving strategies. Each instance includes visualizations and detailed answers based on knowledge graph analysis.

Instance 1:

Number of Disks: 4

Initial Configuration:
Peg A: []
Peg B: [2]
Peg C: [4, 3, 1]

Goal: All disks on Peg C

> **Question: For the Tower of Hanoi 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**
> *✓ Guarantees optimal solution (required) | ✓ Complete - finds solution if one exists | ✓ DFS matches recursive structure of Hanoi*
>
> **Properties:** Optimal, Complete
>
> **Alternative Strategies:**
>
> • **BFS**: For guaranteed optimal when no heuristic
>
> • **UCS**: When actions have varying costs
>
> **Recommended Heuristics:** Number of Disks to Move

Instance 2:

Number of Disks: 4

Initial Configuration:
Peg A: [4, 3, 2, 1]
Peg B: []
Peg C: []

Goal: All disks on Peg C

> **Question: For the Tower of Hanoi 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**
> *✓ Guarantees optimal solution (required) | ✓ Complete - finds solution if one exists | ✓ DFS matches recursive structure of Hanoi*
>
> **Properties:** Optimal, Complete

Alternative Strategies:

• **BFS**: For guaranteed optimal when no heuristic

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

Recommended Heuristics: Number of Disks to Move