

Greedy Best-First Search – Exam Solution (Romania Map)

Question: Find the cheapest path from Oradea to Bucharest using Greedy Best-First Search with straight-line distance heuristic.

Heuristic Function: $h(n)$ = Straight-line distance from city n to Bucharest.

Heuristic Values Used:

- 1 Oradea = 380
- 2 Zerind = 374
- 3 Sibiu = 253
- 4 Fagaras = 176
- 5 Rimnicu Vilcea = 193
- 6 Pitesti = 100
- 7 Bucharest = 0

Search Steps:

- 1 Start at Oradea (380). Expand Sibiu (253).
- 2 Expand Sibiu. Choose Fagaras (176).
- 3 Expand Fagaras. Reach Bucharest (0).

Solution Path:

Oradea → Sibiu → Fagaras → Bucharest

Note: Greedy Best-First Search is not optimal because it considers only heuristic values and ignores path cost.