Tutorial Artificial Intelligence WS 13/14
Wirtschaftsinformatik und Maschinelles Lernen (ISMLL)
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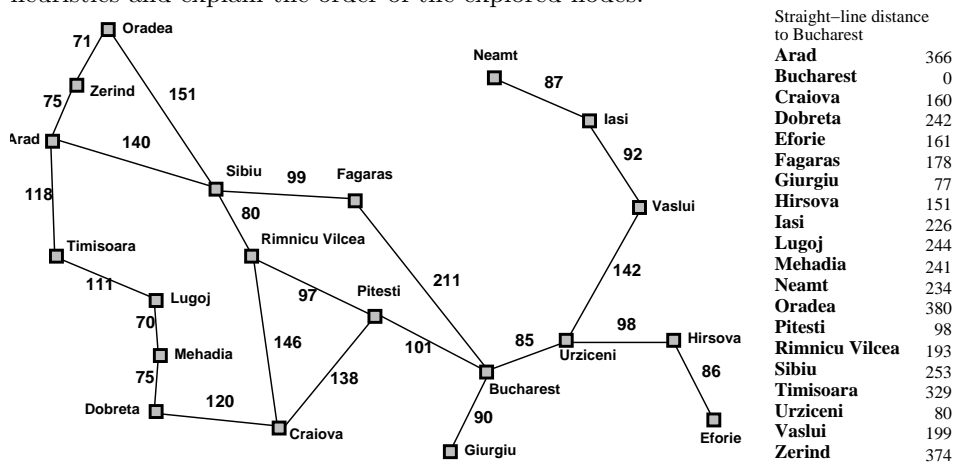
Exercise Sheet 4

Submission: Monday, 25.11.2013, 23:00

Exercise 1   Informed Search and Heuristics   (17 Points)

a) Explain with your own words (a) generally and (b) with an example what means,

  - if an heuristic is admissible
  - if an heuristic dominates the others

(6 Points)

b) Mention two *admissible heuristics* for A* Search. Using the proof explain why A* Search is optimal. (5 Points)

c) Use on the map Greedy Best-First Search und A* Search for traveling from Oreda to Bucharest. Use the straight-line distance between the cities as heuristics and explain the order of the explored nodes.

Straight–line distance to Bucharest

Arad	366
Bucharest	0
Craiova	160
Dobreta	242
Eforie	161
Fagaras	178
Giurgiu	77
Hirsova	151
Iasi	226
Lugoj	244
Mehadia	241
Neamt	234
Oradea	380
Pitesti	98
Rimnicu Vilcea	193
Sibiu	253
Timisoara	329
Urziceni	80
Vaslui	199
Zerind	374

Which is the best strategy and why? (6 Points)