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Exercise 3.1 (Heuristics)

a) Defintion of Heuristic

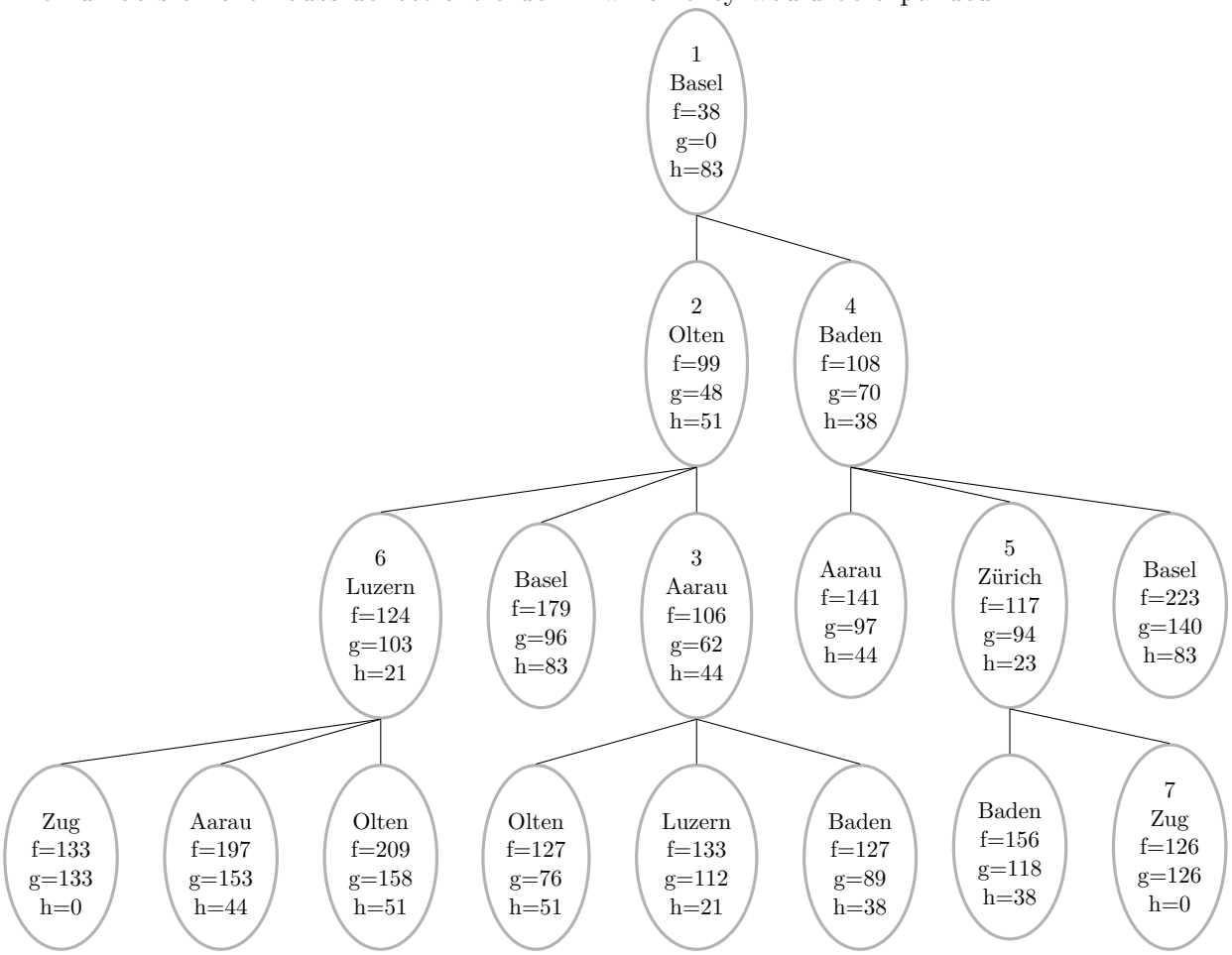
b) Admissible Heuristic

c) Consitent Heuristic

Exercise 3.2 (Informed Search Algorithms: Practice)

a) A* without reopening

The numbers on the nodes denote the order in which they would be expanded.



b) Greedy Best First Search Algorithm

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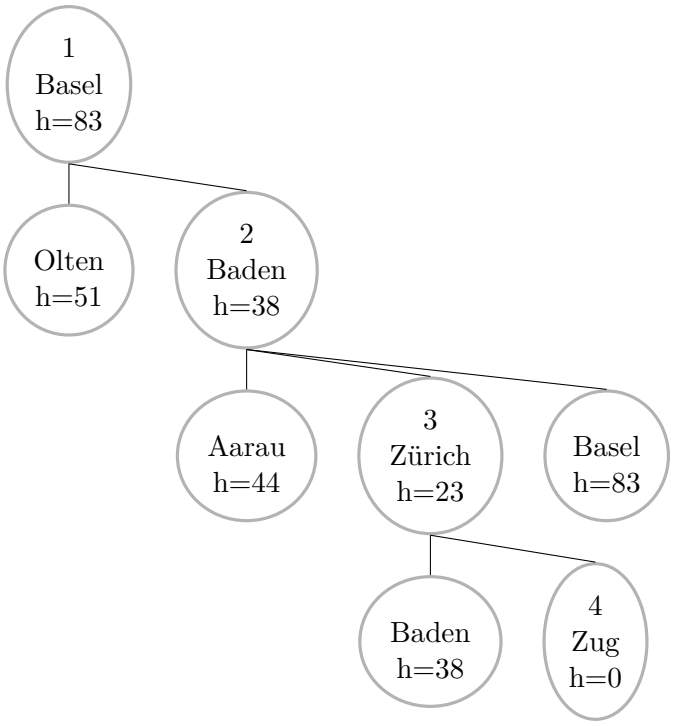

c) Comparison

In this case it is visible that the heuristics were chosen well, such that the greedy algorithm was faster while generating less nodes and still arriving to the optimal solution. The Greedy-Best-First-Search Algorithm only guarantees to arrive to a solution, but it is not guaranteed to find the optimal solution, but rather the first one it finds.

Exercise 3.3 (Informed Search Programming)

b) Analysis