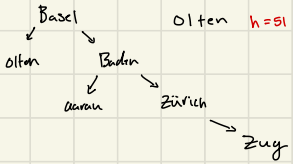
Assignment 1

Q1a

Basel → Baden h=38 → Aarau h=44

Basel → Olten h=51

Baden → Zürich h=23 → Zug h=0



1. Basel → frontier = {Baden, Olten}
2. Baden → frontier {Aarau, Zürich, Olten}
3. Zürich → frontier {Zug, Aarau, Olten}
4. Zug

This is the most optimal path, however Greedy best-first is not always optimal or complete

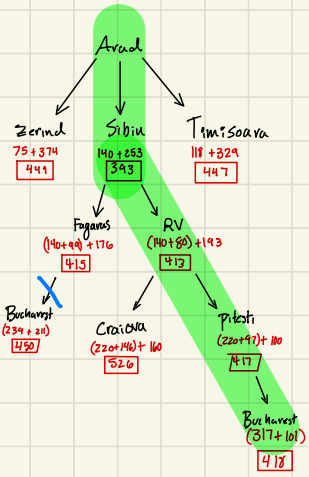
The path cost is (70+24+32) = 126

All other paths Avoiding Baden would have a minimum cost of 142

And all other paths to Baden would be >70 meaning Basel → Baden is optimal

All other paths Baden → ... Zug would have a minimum cost of 107 > 56 of Baden → Zürich → Zug

Q2.



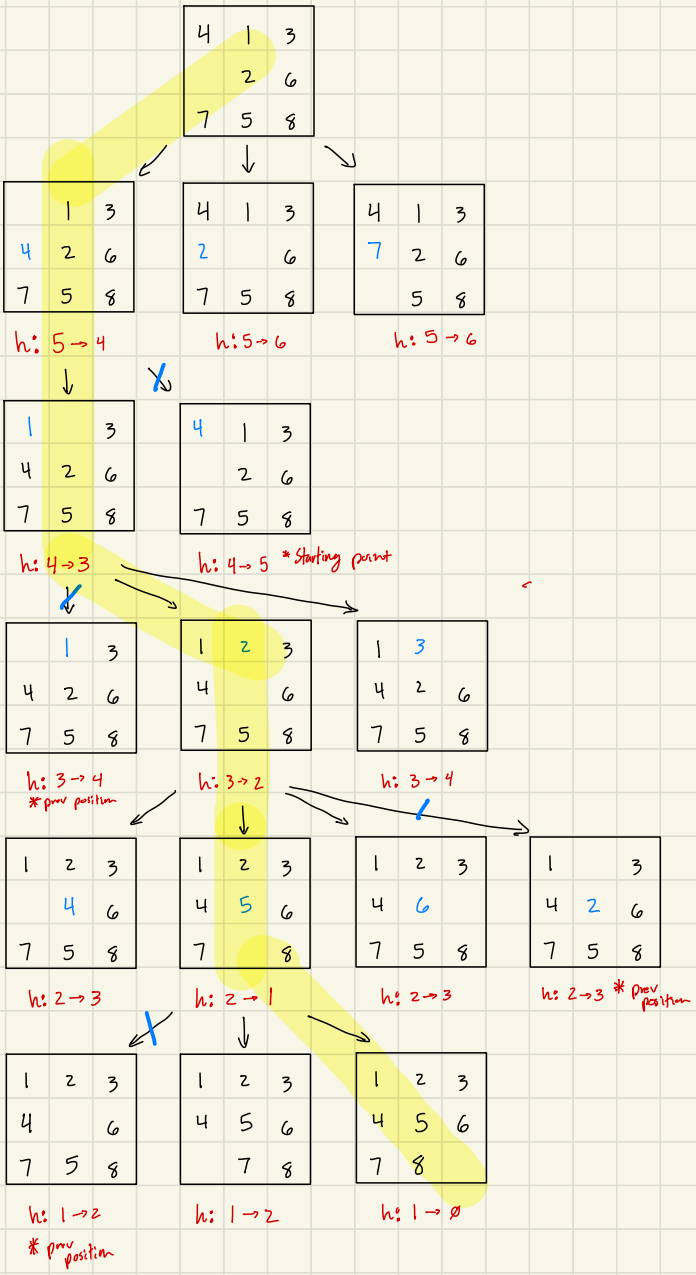
1. Arad → f{Zerind, Sibiu, Timisoara}
2. Sibiu → f{Fagaras, RV, Zerind, timisoara}
3. RV → f{Pitesti, Craiova, Fagaras, Zerind, timisoara}
4. Fagaras → f{Bucharest, Pitesti, Craiova, Zerind, timisoara}
5. Pitesti → f{Bucharest, Craiova, Zerind, timisoara}
6. Bucharest

The heuristics are admissible and therefor the path found is the most optimal

[Bonus].

Starting

h

1	=	1
2	=	1
3.	=	0
4	=	1
5	=	1
6	=	0
7	=	0
8	=	1
		5

Path: 4 → 1 → 2 → 5 → 8