XCS221 Assignment 2

JUAN RICARDO PEDRAZA ESCOBAR

Artificial Intelligence: Principles and Techniques

Stanford Center for Professional Development

November,2021

1.a

We can construct an example as:

***tryingtounderstandsearchProblems***

and we stablish the following cost set:

[try: 5, ying: 100, rying: 180 tryi: 100, to: 5, understand: 6, understands: 5, ing: 120, search: 5, searchP: 5, searc: 100, Problems: 5, Pro: 4, Problem: 5, Proble: 130, Probl: 10].

For this example, the greedy algorithm would pick *try* rather than *tryi* since the weights of try is only 5 and *tryi* is 100. Then the algorithm will pick *ying* rather than *rying* since the string one has lower weights. Therefore, we will have a false segmentation and we can say that the greedy algorithm is suboptional.

2.a

If we have the following example,

***cp,s,dwn***

with a bigram cost function as,

cost (SATART,cup)=1 cost(START,cap)=800

cost(cup,is)=9000 cost(cap,is)=1

cost(is,down)=1

The greedy algorithm would return *cup is down* for cost 9002, while the optimal path is *cap is down* for cost 802. It means that the algorithm is suboptional.

1.f

The lowest error is obtained with n=5. The error begins to remain at the same value from iteration 6, tests were performed with smaller and lower values of n=5 to show that larger errors were presented, it should be noted that the average word size is 5 characters, which can be associated with the error reuction at n=5.

In order to report the results, we got:

n=4

n=5

N=6