START OF QUIZ
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Question 1

Topic: Lecture 1
Source: Lecture 1

Explain why edit distance (given our formulation) will always choose a substitution, if it can. (1)

Question 2

Topic: Lecture 2
Source: Lecture 2

Imagine we were using k-means to cluster misspellings around their correct spellings. How many clusters would we need, and what would be a good distance function? Explain. (2)

Question 3

Topic: Lecture 3
Source: Lecture 3

Explain why HMMs are a generative model, and how that differs from a discriminative model. (1)

Question 4

Topic: Lecture 1
Source: Lecture 1

Explain what modifications would need to be made to our dynamic edit distance algorithm to incorporate weighted edit distance. (2)

Question 5

Topic: Lecture 3
Source: Lecture 3

Explain the purpose of Laplace smoothing, and how it accomplishes its goal. (1)

Question 6

Topic: Lecture 4
Source: Lecture 4

Imagine that we are doing ASR instead of POS tagging. Briefly describe what the emissions and transitions would be. (2)

Question 7

Topic: Lecture 4
Source: Lecture 4

What is the main difference between the Viterbi algorithm and the Forward algorithm, and why does it allow us to find the optimal path through a sequence? (1)

Question 8

Topic: Lecture 2
Source: Lecture 2

Why is the Forgy initialization sub-optimal? (1)

Question 9

Topic: Long
Source: Lecture 2

Imagine that we are creating a bilingual dictionary, and we want to cluster words that are likely translations of each other (this task is known as "Bilingual Lexicon Induction", or BLI). What kind of features might be good features for this task, and how would we convert them to numerical representations? You can assume that we have a large bilingual corpus that is sentence aligned, but no further information. Do you think we could use K-Means for this task? If not, why not? If so, what kind of special considerations would we need to make, if any?

END OF QUIZ