START OF QUIZ
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Question 1

Topic: Lecture 3
Source: Lecture 3

Describe the noisy channel model, and how it can be used to represent ASR. (1)

Question 2

Topic: Lecture 4
Source: Lecture 4

Why can we use logarithms for the Viterbi algorithm, but not the forward algorithm? (1)

Question 3

Topic: Lecture 3
Source: Lecture 3

Explain the purpose of padding in language modeling. (1)

Question 4

Topic: Lecture 4
Source: Lecture 4

What makes dynamic programming methods, such as the Viterbi algorithm, more efficient for sequence prediction tasks compared to brute-force approaches? (1)

Question 5

Topic: Lecture 2
Source: Lecture 2

Describe the intuition behind K-means++ (ie, why do we use it, and what is it trying to accomplish?) (1)

Question 6

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 7

Let's consider a variant of the string alignment problem where instead of aligning characters, we're aligning sequences of characters (maybe we're doing machine translation...). What would need to be modified to handle a situation where we likely have a much higher vocabulary, and there's a lot less copying going on? What assumptions would we be making about the data? Would any of these assumptions make Levensthein distance inappropriate? (2)

Question 8

What is the primary concern of a semantic vector space (ie, a vector space representing meaning), and how does it relate to our use of cosine similarity to measure word similarity? Can you think of any sorts of words for which it might be very difficult to satisfy this concern? (2)

Question 9

In class, we built a collocation matrix for a bigram language model. Modify the function so that it can handle a trigram language model and implements "add-alpha" smoothing, instead of "add-one" smoothing. (3)

END OF QUIZ