START OF QUIZ
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Question 1

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 2

Topic: Lecture 4
Source: Lecture 4

How does semi-supervised learning differ from unsupervised and fully-supervised learning? (1)

Question 3

Topic: Lecture 1
Source: Lecture 1

When is dynamic programming more efficient than brute force programming? (ie, what assumptions do we make about a problem when we use dynamic programming?) (1)

Question 4

Topic: Lecture 1
Source: Lecture 1

Suppose we are filling the table for the Levenshtein distance algorithm. We are in cell (x, y). The values of cell (x-1, y-1), (x-1, y), and (x, y-1) are 4, 3, and 3, respectively. What is the value we will put in cell (x, y), given that the letters are NOT equal? (1)

Question 5

Topic: Lecture 2
Source: Lecture 2

What is the impact of choosing a poor value for k in k-means clustering? How can we determine a more appropriate k? (1)

Question 6

Topic: Lecture 3
Source: Lecture 3

Imagine you were trying to pitch a new version of Scrabble to Hasbro that included "digraphs" (ie, combinations of two consecutive letters, like "th"). Do you think that you could score them as a simple combination of the single letter scores (ie, "th" is worth "t" + "h"), or would you need to do some more complex scoring calculations? Explain. (2)

Question 7

Topic: Lecture 3
Source: Lecture 3

Imagine that we have a trigram model that encounters a trigram where none of the tokens are in the vocabulary. How do you think that might impact our probability calculation for the sentence? How might we go about finding a solution? (2)

Question 8

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 9

Topic: Long
Source: Lecture 2

Imagine you are tasked with clustering social media posts to identify trends or topics. You have access to a large amount of unstructured text data. What kind of features do you think would be helpful, how would you preprocess the data, and how would you verify that the clustering is a good one? (3)

END OF QUIZ