START OF QUIZ
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Academic honesty is essential to the continued functioning of the University of British Columbia as an institution of higher learning and research. All UBC students are expected to behave as honest and responsible members of an academic community. Failure to follow the appropriate policies, principles, rules, and guidelines of the University with respect to academic honesty may result in disciplinary action.

I agree that all answers provided are in my own words, and that I will not discuss the contents of this quiz with any of my fellow students until after the exam period has completed for everyone. Furthermore, any response that used generative AI tools has been rephrased into my own interpretation, and has been appropriately cited.

Signature: _____

Question 1

Topic: Lecture 7
Source: Lecture 7

Why do we create a dummy variable for the root of the sentence? (1)

Question 2

Topic: Lecture 7
Source: Lecture 7

What is a projective sentence? Why does this matter for the shift-reduce algorithm? (1)

Question 3

Topic: Lecture 8
Source: Lecture 8

Describe what we mean by a cascaded learning model, and one advantage and disadvantage to using one. (1)

Question 4

Topic: Lecture 6
Source: Lecture 6

The CYK parser only applies those rules that apply to its tokens, but the Earley parser expands its rules to every viable rule, which seems inefficient. Explain why this doesn't lead to a lot of bad parses. Which functionality of the parser shuts those down quickly? (1)

Question 5

Topic: Lecture 5
Source: Lecture 5

What does each cell in the CYK chart represent (ie, what does cell 2,5 represent)? (1)

Question 6

Topic: Lecture 8
Source: Lecture 8

Imagine that we have a dependency parser that has a very good UAS (90+), but a very bad LAS (50-). Do you think that we could use the output of this parser as input to a neural translation model as is, or do you think that we should first re-train the labeling part of the algorithm to increase LAS? Doing both is probably the best solution, but I'm asking if you think that we could use the output of the existing model, even as we try to improve the quality of the labels. Explain. (2)

Question 7

Topic: Lecture 5
Source: Lecture 5

In class, we always assumed one best parse. How does the CYK algorithm change if we end up with multiple parses (ie, what extra information needs to be tracked)? How does it change the complexity? (2)

Question 8

Topic: Lecture 6
Source: Lecture 6

If you have a sentence (or, more generally, a language) with more nesting structures, would you prefer to parse with Earley or CYK? Explain. (2)

Question 9

Topic: Long
Source: Lecture 5

In class, all of our parsing examples contained a single clause, so were relatively easy to parse. Consider the sentence: "The dog that barked all night finally went to sleep.". This sentence has 2 clauses (one relative, and one independent). Given that the subject of the independent clause is separated from its verb by a relative clause, can CYK parse this sentence? If so, provide the rules that would be necessary, and explain how we would represent it in the chart. If not, explain what features make it unparseable using CYK or CFG. (3)

END OF QUIZ