

START OF QUIZ

Student ID:

31181845, Yuan, Su

Question 1

Topic: Lecture 7

Source: Lecture 7

In class, we built a POS tagger that tries to give a majority tag to a word; if it's out-of-vocabulary, it backs-off to Regexes. This is clearly overly simplistic. List two assumptions that are being violated by this model. (1)

Question 2

Topic: Lecture 7

Source: Lecture 7

What is the difference between a stem and a lemma? What impacts does that have on our algorithms? (1)

Question 3

Topic: Lecture 6

Source: Lecture 6

What kinds of tags might be useful in the following text (describe at least two): "But you liked Rashomon!" "That's not how I remember it!" (1)

Question 4

Topic: Lecture 5

Source: Lecture 5

List one advantage that regular expressions have over string comparison, and one disadvantage to using them. (1)

Question 5

Topic: Lecture 8

Source: Lecture 8

Give 2 reasons to use a zip file. (1)

Question 6

Topic: Lecture 5

Source: Lecture 5

Imagine you are processing a text document where dates are written in multiple formats, such as "12-05-2024", "05/12/2024", or "12 December 2024". How would you write a regex to capture these date formats (just the logic)? What assumptions would you make? (2)

Question 7

Topic: Lecture 8

Source: Lecture 8

In class, I mentioned that we always want to close a file correctly. Beyond freeing up system resources, it also "flushes the buffer", which ensures that any current read or write operations that are in the job queue, but haven't yet been processed, are completed. Knowing what you do about encodings, what is a possible ramification of not flushing the buffer? Explain at least 2. (2)

Question 8

Topic: Lecture 6

Source: Lecture 6

Consider using XML to represent a machine learning model's architecture. What XML tags might be useful for representing layers, activation functions, and connections between layers (you don't need to describe a deep-learning architecture - describe one you're familiar with)? If this doesn't seem possible, explain why not. (2)

Question 9

Topic: Long

Source: Lecture 8

Imagine that you find an important file buried on a hard drive found in the basement of a university. You are trying to access the data, but realize it is corrupted. Some of the bits have been flipped (switched from 0 to 1, or 1 to 0), and others have been completely deleted. You don't know the encoding, and you don't know the language the data is written in. What are some tests you could run to try to establish and restore at least some of the data? (Hint: remember that a "byte" is 8-bits, and that UTF-8 is 1 byte, or 8 bits, UTF-16 is 2 bytes, or 16 bits, and UTF-32 is 4 bytes, or 32 bits). (3)

END OF QUIZ