

## Seminar 7: NLP

Question 1:

Tokenize the following sentence: "Natural Language Processing is fascinating."

Question 2:

Remove stop words from the sentence: "The quick brown fox jumps over the lazy dog."

Question 3:

Lemmatize the words: "running," "better," "went," "driven."

Question 4:

Assign parts of speech to the words in the sentence: "She walked to the store."

Question 5:

In the sentence "Apple Inc. was founded by Steve Jobs in Cupertino," identify and label the named entities.

Question 6:

Given a dataset of customer reviews, create a text classification model to classify reviews as positive or negative.

Review	Sentiment
"I love this product, it's fantastic!"	Positive
"The quality of this item is terrible."	Negative
"This is the best thing I've ever purchased!"	Positive
"I'm very disappointed with the service."	Negative
"The product arrived in perfect condition."	Positive
"This is a waste of money."	Negative

Question 7:

Create bigrams (2-grams) from the sentence: "Natural language processing is interesting."

Question 8:

Create a simplified three-dimensional representation of the words "king," "queen," and "man" in a vector space and explain their relationships in the vector space.

Instructions:

1. Represent the words "king," "queen," and "man" as vectors in a three-dimensional vector space.
2. Provide a brief explanation of the dimensions and how you've assigned values to each word.
3. Explain the relationships between these words in the vector space based on their meanings and similarities.