a. NLP (Natural Language Processing) is the branch of AI that focuses on how computers understand and process written or spoken human language.
b. NLP is a specific field of AI.
c. NLU involves the machine making sense of data gathered in the form of natural language while NLG is concerned with generating output based on the language given as input. They both contribute to the machine being able to appropriately interact with the use.
d. Chatbots, automatic text summarization, sentiment analysis, smart assistants
e.
    a. Rules-based approaches
        i. These were the oldest NLP techniques. They used rules such rules that you would follow to create a sentence for creation or analysis. Evolution was difficult for these approaches because human language is too complex to be completely contained in rules.
        ii. Examples: Eliza
    b. Statistical and probabilistic approaches
        i. These techniques used the probabilities of words and their patterns to create language models. They are useful for machine translation systems, predictive text, and machine learning algorithms. Based on the size of the data set, they can even outdo deep learning algorithms.
        ii. Examples: Google search engine
    c. Deep learning
        i. Deep learning became possible thanks to the enormous amounts of data available through neural networks. Small scale deep learning is still used in NLP applications. The goal of deep learning is for the machine to sound just like a human.
        ii. Examples: Facial recognition, self-driving cars
f. As a hobbyist artist, I don't like how recent AI trends have been imposing on online art. I want to learn more about how machine learning works because I believe it can be used to benefit people and human creativity. I would like to understand how the technology evolves and find out whether I have an interest in pursuing it as a career option.