BICOL UNIVERSITY COLLEGE OF SCIENCE

CS Elective – Artificial Intelligence

Class Participation #4

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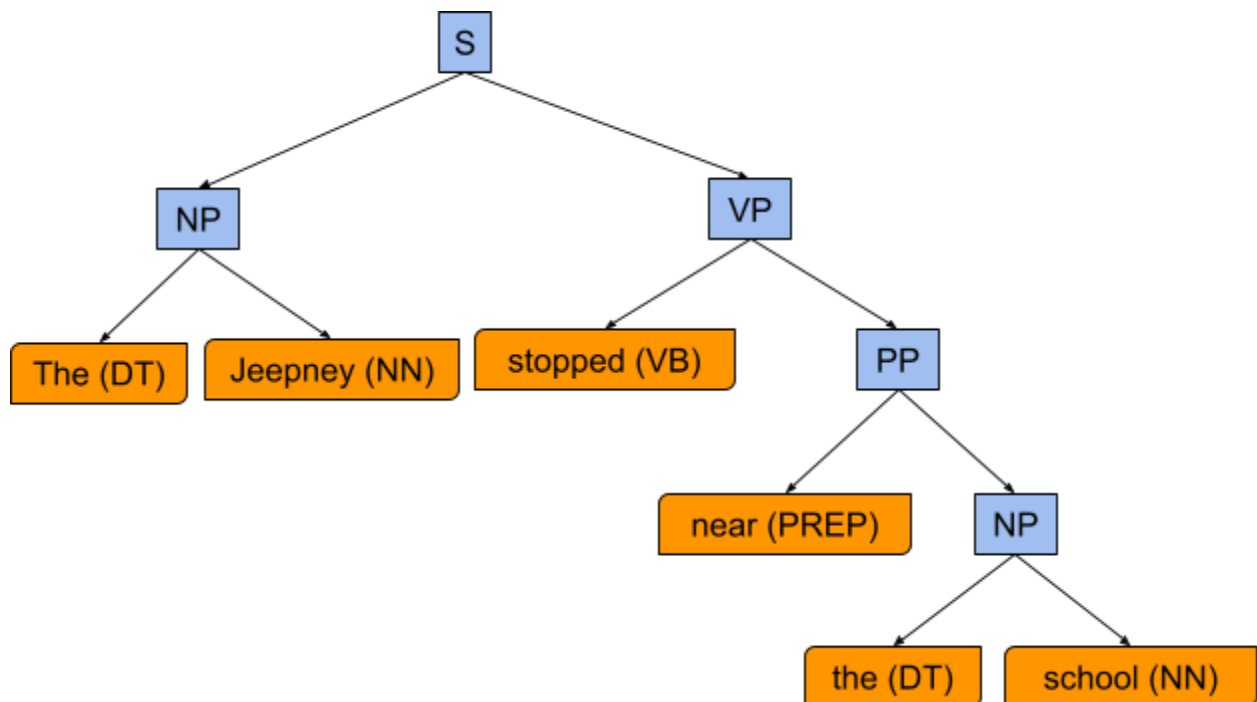
PART A. Application
Answer based on your experiences with apps or devices you already use.
1. Perform **POS Tagging** on the sentence:
   "The jeepney stopped near the school."
   - The | Determiner
   - jeepney | Noun
   - stopped | Verb
   - near | Preposition
   - the | Determiner
   - school | Noun
2. Draw or describe the **Parsing tree structure** for the same sentence.

3. Provide one example for **Word Sense Disambiguation**, showing at least **two different meanings** of the same word in two sentences.
   Word: "Nuts"
   1) "The Cloudflare engineer went completely nuts when he realized his prod deployment nuked Asia-region nodes."
   2) "He added extra nuts to the brownie batter for extra crunch"

Part B: Higher-Order Thinking
Write your answer in 2–3 sentences each.
1. Why is Machine Learning important for NLP?
   - ML is one of the key components that contribute to making NLP understand, interpret, and generate human language. ML algorithms can learn patterns from datasets, which is important as languages are extremely complex. While at the same time automatically processing it real time.
2. Give one Philippine-based real-world application for either:
   ● Dialogue Management
      Philippine platforms like Lazada and Shopee have integrated chatbots that help users track orders, handle returns, and answer FAQs.
   ● Explain why NLP is useful in that scenario.
      NLP is the foundation for chatbots. It's the core component that allows the chatbot to understand the user's queries and give proper answers.

Part C: Semantic Analysis
1. Identify the sentiment of this statement:

"The BRT system in Cebu will reduce traffic, but construction is causing delays."
A) Positive
B) Negative
C) Mixed
Explain briefly:

   C, Mixed. The sentences express both positive (BRT reduces traffic) and negative (construction delays) sentiments. And the word "but" is used to contrast the two ideas, so the overall sentiment is mixed.

2. Do **Named Entity Recognition (NER)** on this:
   • President Marcos met mayors in Albay during the Mayon response operations.
   • List at least 3 named entities and label them.
      1) President Marcos | PERSON
      2) Albay | LOCATION
      3) Mayon | LOCATION

3. Provide an example of a real-world situation where pragmatics enables chatbots to produce more polite or context-aware responses.

> Example: Ecommerce Customer Service Chatbot. User: "My order hasn't arrived yet."
>
> A chat bot without pragmatics would reply something like "Your order is delayed", giving a direct and literal response. But with pragmatics, it allows the chatbot to respond with empathy and offer assistance, allowing it to sound more human-like. A sample response could be "I'm sorry your order hasn't arrived yet. Let me check the status for you and provide an update".