Aim: Implement POS Tagging

Objective: To study POS tagging and implement POS tagging using NLTK package in python.

Theory: The primary target of POS tagging is to identify the grammatical group of a given word. Whether it is a NOUN, PRONOUN, ADVERB, ADJECTIVE, VERB etc. based on the context. POS tagging looks for relationships within the sentence and assigns a corresponding tag to a word.

POS Tagging(Parts of speech tagging) is the process to make up the words in the text format for a particular part of speech based on its definition and context. It is responsible for the text reading in a language and assigning some specific token to each word. It is also called grammatical tagging.

Steps involved in the POS tagging Example:

- Tokenize text
- Apply POS tag to above step, that is nltk pos tag.

Program:

```
import nltk

from nltk import word_tokenize

text = "The teens wondered what was kept in the red shed on the far edge of the school grounds."

tokensied_text = word_tokenize(text)

tokensied_text


pos_tagged_text = nltk.pos_tag(tokensied_text)

pos_tagged_text

!pip3 install svgling

parsed_text = regParse.parse(pos_tagged_text)

parsed_text
```

Output:

[('The', 'DT'),

('teens', 'NNS'),

('wondered', 'VBD'),

('what', 'WP'),

('was', 'VBD'),

('kept', 'VBN'),

('in', 'IN'),

('the', 'DT'),

('red', 'JJ'),

('shed', 'VBN'),

('on', 'IN'),

('the', 'DT'),

('far', 'RB'),

('edge', 'NN'),

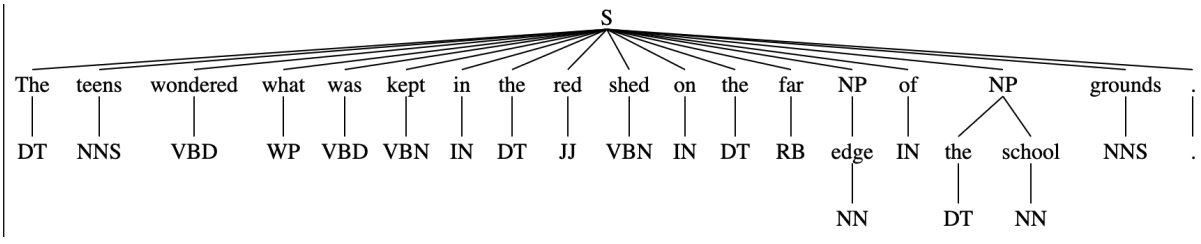
('of', 'IN'),

('the', 'DT'),

('school', 'NN'),

('grounds', 'NNS'),

('.', '.')]



Conclusion: Part-of-Speech (POS) tagging is a vital NLP task that assigns grammatical categories (e.g., noun, verb, adjective) to each word in a text. It helps in understanding the syntactic structure and semantics of a sentence. Below is the result of POS tagging for the given input text:

Input text: "The teens wondered what was kept in the red shed on the far edge of the school grounds."

POS tagging result:

- "The" -> DET (determiner)
- "teens" -> NOUN (noun)
- "wondered" -> VERB (verb)
- "what" -> PRON (pronoun)
- "was" -> VERB (verb)
- "kept" -> VERB (verb)
- "in" -> ADP (adposition)
- "the" -> DET (determiner)
- "red" -> ADJ (adjective)
- "shed" -> NOUN (noun)
- "on" -> ADP (adposition)
- "the" -> DET (determiner)
- "far" -> ADJ (adjective)
- "edge" -> NOUN (noun)
- "of" -> ADP (adposition)
- "the" -> DET (determiner)
- "school" -> NOUN (noun)
- "grounds" -> NOUN (noun)
- "." -> PUNCT (punctuation)

Each word in the input text has been assigned a part-of-speech category based on its grammatical role in the sentence. This information is crucial for various NLP tasks, such as syntactic parsing, information extraction, and sentiment analysis, as it helps in understanding the structure and meaning of the text.