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NLP EXPERIMENT NO : 07

```
pip install nltk
```

```
Requirement already satisfied: nltk in /usr/local/lib/python3.12/dist-packages (3.9.1)
Requirement already satisfied: click in /usr/local/lib/python3.12/dist-packages (from nltk) (8.2.1)
Requirement already satisfied: joblib in /usr/local/lib/python3.12/dist-packages (from nltk) (1.5.2)
Requirement already satisfied: regex>=2021.8.3 in /usr/local/lib/python3.12/dist-packages (from nltk) (2024.11.6)
Requirement already satisfied: tqdm in /usr/local/lib/python3.12/dist-packages (from nltk) (4.67.1)
```

```
import nltk
from nltk import word_tokenize, pos_tag, ne_chunk
from nltk.chunk import RegexpParser
from nltk.tree import Tree

nltk.download('punkt')
nltk.download('averaged_perceptron_tagger')
nltk.download('punkt_tab') # Added this line to download the missing resource
nltk.download('averaged_perceptron_tagger_eng') # Added this line to download the missing resource
```

```
[nltk_data] Downloading package punkt to /root/nltk_data...
[nltk_data]   Package punkt is already up-to-date!
[nltk_data] Downloading package averaged_perceptron_tagger to
[nltk_data]     /root/nltk_data...
[nltk_data]   Package averaged_perceptron_tagger is already up-to-
[nltk_data]       date!
[nltk_data] Downloading package punkt_tab to /root/nltk_data...
[nltk_data]   Package punkt_tab is already up-to-date!
[nltk_data] Downloading package averaged_perceptron_tagger_eng to
[nltk_data]     /root/nltk_data...
[nltk_data]   Unzipping taggers/averaged_perceptron_tagger_eng.zip.
True
```

```
text = """
Suddenly, the young boy ran quickly through the narrow alley, shouting with excitement.
He had been searching for his lost dog since morning, but he had not expected to find it so soon.
"Wow! There you are!" he exclaimed, as the brown puppy, wagging its tail, leaped into his arms.
To find the dog was a relief, but he still needed to explain everything clearly to his mother,
who had been worrying all day. Although he was tired, he decided to walk home instead of calling a taxi,
because the weather was pleasant and the sun was setting beautifully.
By walking, he hoped to calm his nerves and reflect on the day's adventure.
"""

# Sentence Tokenization
sentences = nltk.sent_tokenize(text)
```

```
chunk_grammar = r"""
    NP: {<DT>?<JJ>*<NN.*>}     # Chunk determiners, adjectives and noun
    VP: {<VB.*><NP|PP|CLAUSE>+$}  # Chunk verbs and their arguments
"""

chunk_parser = RegexpParser(chunk_grammar)
```

```
import nltk
from nltk import word_tokenize, pos_tag

nltk.download('punkt')
nltk.download('averaged_perceptron_tagger')

# Your paragraph
text = """
Suddenly, the young boy ran quickly through the narrow alley, shouting with excitement.
He had been searching for his lost dog since morning, but he had not expected to find it so soon.
"Wow! There you are!" he exclaimed, as the brown puppy, wagging its tail, leaped into his arms.
To find the dog was a relief, but he still needed to explain everything clearly to his mother,
who had been worrying all day. Although he was tired, he decided to walk home instead of calling a taxi,
because the weather was pleasant and the sun was setting beautifully.
By walking, he hoped to calm his nerves and reflect on the day's adventure.
"""
```

```
# Tokenize and POS-tag
tokens = word_tokenize(text)
tagged = pos_tag(tokens)

# Print results as a table
print("{:<15} {:<10}".format("Word", "POS Tag"))
print("-" * 30)
for word, tag in tagged:
    print("{:<15} {:<10}".format(word, tag))
```

```
Word            POS Tag
------------------------------
Suddenly        RB
,               ,
the             DT
young           JJ
boy             NN
ran             VBD
quickly         RB
through         IN
the             DT
narrow          JJ
alley           NN
,               ,
shouting        VBG
with            IN
excitement      NN
.               .
He              PRP
had             VBD
been            VBN
searching       VBG
for             IN
his             PRP$
lost            VBN
dog             NN
since           IN
morning         NN
,               ,
but             CC
he              PRP
had             VBD
not             RB
expected        VBN
to              TO
find            VB
it              PRP
so              RB
soon            RB
.               .
``              ``
Wow             JJ
!               .
There           EX
you             PRP
are             VBP
!               .
''              ''
he              PRP
exclaimed       VBD
,               ,
as              IN
the             DT
brown           NN
puppy           JJ
,               ,
wagging         VBG
its             PRP$
```