# Experiment No : 02

Aim:
To perform Morphological Analysis.

Theory:

Morphological parsing, in natural language processing, it is the process of determining the morphemes from which a given words is constructed.It must be able to distinguish between orthographic rules and morphological rules, for example, the word 'foxes' can be decomposed into fox (the stem) and 'es' (a suffix indicating plurality).

The generally accepted approach to morphological parsing is through the use of a finite state transducer (FSI), which inputs words and outputs their stem and modifiers. The FSI is initially created through algorithmic parsing of the same word source. Such as a dictionary, complete with modifier mark-ups.

Another approach is through the use of an indexed lookup method, which uses a constructed radix tree. This is not an often-taken route because it breaks down for morphologically complex languages.

With the advancement of neural networks in natural language processing. It is becoming less common to use FSI for morphological analysis, especially for languages for which there is a lot of available training data. For such languages. It is possible to build character level language models without explicit use of a morphological parser.
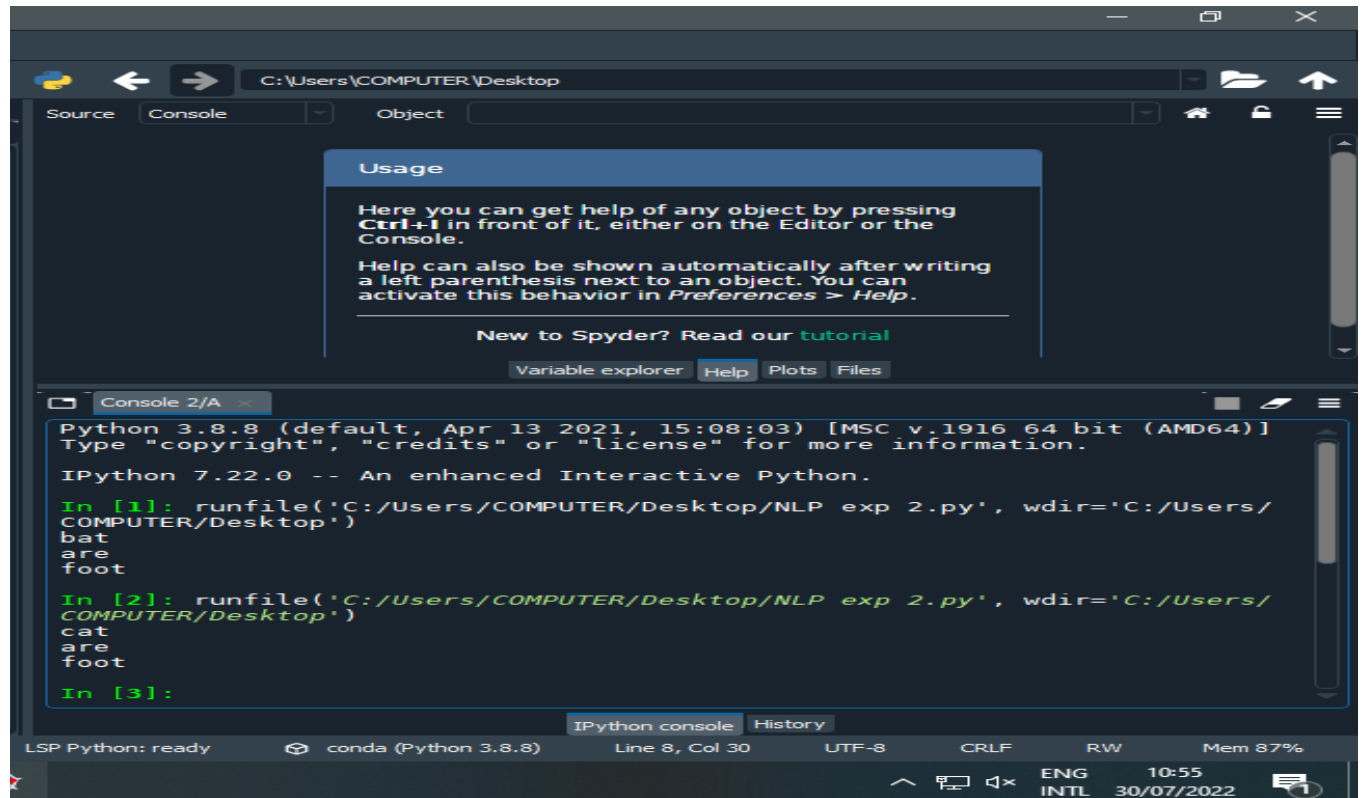
Code :

```python
from nltk.stem import WordNetLemmatizer
lemmatizer = WordNetLemmatizer()

print("rocks :", lemmatizer.lemmatize("rocks"))
print("corpora :", lemmatizer.lemmatize("corpora"))
print("bats :",lemmatizer.lemmatize("bats"))

# a denotes adjective in "pos"
print("better :", lemmatizer.lemmatize("better", pos ="a"))
print("feet :",lemmatizer.lemmatize("feet"))
print("cat :",lemmatizer.lemmatize("cat"))
```

Output:



Conclusion: Thus I have performed morphological analysis on sentences.