

## **EXPERIMENT – 4 :: EXPLAIN ABOUT WORD ANALYSIS**

### **INTRODUCTION ::**

Analysis of a word into root and affix(es) is called as Morphological analysis of a word. It is mandatory to identify root of a word for any natural language processing task. A root word can have various forms. For example, the word 'play' in English has the following forms: 'play', 'plays', 'played' and 'playing'.

### **Types of Morphology**

Morphology is of two types,

#### **1. Inflectional morphology**

Deals with word forms of a root, where there is no change in lexical category. For example, 'played' is an inflection of the root word 'play'. Here, both 'played' and 'play' are verbs.

#### **2. Derivational morphology**

Deals with word forms of a root, where there is a change in the lexical category. For example, the word form 'happiness' is a derivation of the word 'happy'. Here, 'happiness' is a derived noun form of the adjective 'happy'.

### **Morphological Features:**

All words will have their lexical category attested during morphological analysis. A noun and pronoun can take suffixes of the following features: gender, number, person, case.

## PROGRAM ::

```
# ----- 4. Word Analysis. -----  
  
#word Analysis  
  
import nltk  
  
from nltk.tokenize import word_tokenize  
from nltk import pos_tag  
nltk.download('punkt')  
nltk.download('averaged_perceptron_tagger')  
  
def word_analysis(text):  
    words = word_tokenize(text)  
    pos_tags = pos_tag(words)  
    return pos_tags  
  
if __name__ == "__main__":  
    text = "Eating Natural Language Processing is a sub field of AI " \  
    "1)This is NLP Class" \  
    "2)Good Moring"  
    res = word_analysis(text)  
    for word,pos in res:  
        #wordsList = [w for w in if not w in stop_words]  
        print(f"word: {word}, parts of speech : {pos}")
```

## OUTPUT ::

word: Eating, parts of speech : VBG  
word: Natural, parts of speech : NNP  
word: Language, parts of speech : NNP  
word: Processing, parts of speech : NNP  
word: is, parts of speech : VBZ  
word: a, parts of speech : DT  
word: sub, parts of speech : JJ  
word: field, parts of speech : NN  
word: of, parts of speech : IN  
word: AI, parts of speech : NNP  
word: 1, parts of speech : CD  
word: ), parts of speech : )  
word: This, parts of speech : DT  
word: is, parts of speech : VBZ  
word: NLP, parts of speech : NNP  
word: Class2, parts of speech : NNP  
word: ), parts of speech : )  
word: Good, parts of speech : NNP  
word: Moring, parts of speech : VBG