

NLP PROGRAM-5

A program to get antonyms from WordNet

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Downloading and Importing Wordnet

```
# Downloading wordnet
import nltk
nltk.download('wordnet')
nltk.download('wordnet_ic')
nltk.download('genesis')
```

```
[nltk_data] Downloading package wordnet to /root/nltk_data...
[nltk_data]   Unzipping corpora/wordnet.zip.
[nltk_data] Downloading package wordnet_ic to /root/nltk_data...
[nltk_data]   Unzipping corpora/wordnet_ic.zip.
[nltk_data] Downloading package genesis to /root/nltk_data...
[nltk_data]   Unzipping corpora/genesis.zip.
True
```

```
# Importing required libraries
import re
import pandas as pd
from nltk.corpus import wordnet
from nltk.corpus import wordnet_ic
from nltk.corpus import genesis
```

Antonyms

To find a word's synonym and antonym.

```
def word_details():
    antonyms = []
    synonyms = []
    word=input("Please enter a word : ")
    for syn_set in wordnet.synsets(word):
        for l in syn_set.lemmas():
            synonyms.append(l.name())
```

```

    if l.antonyms():
        antonyms.append(l.antonyms()[0].name())
print("\nSet of synonyms of the word:", set(synonyms))
print("\nSet of antonyms of the word:", set(antonyms))

```

word_details()

Please enter a word : light

Set of synonyms of the word: {'short', 'spark', 'sluttish', 'Light', 'visible_light', 'f

Set of antonyms of the word: {'heavy', 'dark', 'extinguish'}



word_details()

Please enter a word : jump

Set of synonyms of the word: {'spring', 'skip', 'parachute', 'parachuting', 'climb_up',

Set of antonyms of the word: set()



We can see that not every word we give, we get a antonym. It is because only limited words are available in the wordnet

▼ Main Code

To find a word's synonym, part of speech, definition and antonym. The words returned in range Minimum 10 Words-Maximum N Words.

```

def About_word():
    user_word = input("Enter the word: ")
    syn = wordnet.synsets(user_word)

    word_list = []
    pos_list = []
    antonym_list = []
    defn_list = []
    #rank_list = []

    pos_dict = {'n': 'noun', 'v': 'verb', 'a': 'adjective', 'r': 'adverb', 's': 'singular'}

    syn = list(syn)
    list1 = []
    for k in syn:

```

```

for k in syn:
    list1.append(k)

for i in range(len(list1)):
    value = str(list1[i])
    chunks = re.split("['.]",value)
    word_list.append(chunks[1])
    pos_list.append(pos_dict[chunks[2]])
    #rank_list.append(chunks[3])
    defn_list.append(list1[i].definition())

for syn_set in wordnet.synsets(user_word):
    for l in syn_set.lemmas():
        if l.antonyms():
            antonym_list.append(l.antonyms()[0].name())

df = pd.DataFrame(list(zip(word_list, pos_list,defn_list, antonym_list)),
                   columns =['Synonym Word', 'POS','Definition','Antonym'])

return df

```

About_word()

Enter the word: happy

	Synonym Word	POS	Definition	Antonym
0	happy	adjective	enjoying or showing or marked by joy or pleasure	unhappy
1	felicitous	singular	marked by good fortune	unhappy
2	glad	singular	eagerly disposed to act or to be of service	unhappy
3	happy	singular	well expressed and to the point	unhappy

About_word()

Enter the word: software

	Synonym Word	POS	Definition	Antonym
0	software	noun	(computer science) written programs or procedu...	hardware

About_word()

Enter the word: find

	Synonym Word	POS	Definition	Antonym
0	discovery	noun	a productive insight	lose
1	discovery	noun	the act of discovering something	lose
2	find	verb	come upon, as if by accident; meet with	lose
3	detect	verb	discover or determine the existence, presence,...	lose
4	find	verb	come upon after searching; find the location o...	lose
5	determine	verb	establish after a calculation, investigation, ...	lose
6	find	verb	come to believe on the basis of emotion, intui...	lose
7	witness	verb	perceive or be contemporaneous with	lose
8	line_up	verb	get something or somebody for a specific purpose	lose
9	discover	verb	make a discovery, make a new finding	lose
10	discover	verb	make a discovery	lose
11	find	verb	obtain through effort or management	lose
12	rule	verb	decide on and make a declaration about	lose
13	receive	verb	receive a specified treatment (abstract)	lose
14	find	verb	perceive oneself to be in a certain condition ...	lose
15	recover	verb	get or find back; recover the use of	lose
16	find	verb	succeed in reaching; arrive at	lose
17	find_oneself	verb	accept and make use of one's personality, abil...	lose