ral-language-processing-with-spacy

March 5, 2024

[1]:
```
from nltk.corpus import wordnet
```

[2]:
```
import nltk
nltk.download('wordnet')
```

```
[nltk_data] Downloading package wordnet to
[nltk_data]     C:\Users\Soubhik\AppData\Roaming\nltk_data…
[nltk_data]   Package wordnet is already up-to-date!
```

[2]:
```
True
```

[3]:
```
nltk.download('omw-1.4')
```

```
[nltk_data] Downloading package omw-1.4 to
[nltk_data]     C:\Users\Soubhik\AppData\Roaming\nltk_data…
[nltk_data]   Package omw-1.4 is already up-to-date!
```

[3]:
```
True
```

0.1 Synonym Sets

[4]:
```
wordnet.synsets('Book')
```

[4]:
```
[Synset('book.n.01'),
 Synset('book.n.02'),
 Synset('record.n.05'),
 Synset('script.n.01'),
 Synset('ledger.n.01'),
 Synset('book.n.06'),
 Synset('book.n.07'),
 Synset('koran.n.01'),
 Synset('bible.n.01'),
 Synset('book.n.10'),
 Synset('book.n.11'),
 Synset('book.v.01'),
 Synset('reserve.v.04'),
 Synset('book.v.03'),
 Synset('book.v.04')]
```

[5]:
```
wordnet.synsets('love')
```

[5]:
```
[Synset('love.n.01'),
 Synset('love.n.02'),
 Synset('beloved.n.01'),
 Synset('love.n.04'),
 Synset('love.n.05'),
 Synset('sexual_love.n.02'),
 Synset('love.v.01'),
 Synset('love.v.02'),
 Synset('love.v.03'),
 Synset('sleep_together.v.01')]
```

[6]:
```
synonyms_book = wordnet.synsets('Book')
print(type(synonyms_book))
print(synonyms_book[0])
```

```
<class 'list'>
Synset('book.n.01')
```

[7]:
```
print(synonyms_book[0].definition())
```

```
a written work or composition that has been published (printed on pages bound
together)
```

[8]:
```
synonyms_car = wordnet.synsets('Car')
print(synonyms_car[0].definition())
print("Synonyms", "  ", synonyms_car[0], "  ", synonyms_car[1], "  ",␣
 ↪synonyms_car[2], "  ",synonyms_car[3])
```

```
a motor vehicle with four wheels; usually propelled by an internal combustion
engine
Synonyms    Synset('car.n.01')    Synset('car.n.02')    Synset('car.n.03')
Synset('car.n.04')
```

[9]:
```
for syn in synonyms_car:
    print(syn.lemmas())
```

```
[Lemma('car.n.01.car'), Lemma('car.n.01.auto'), Lemma('car.n.01.automobile'),
Lemma('car.n.01.machine'), Lemma('car.n.01.motorcar')]
[Lemma('car.n.02.car'), Lemma('car.n.02.railcar'),
Lemma('car.n.02.railway_car'), Lemma('car.n.02.railroad_car')]
[Lemma('car.n.03.car'), Lemma('car.n.03.gondola')]
[Lemma('car.n.04.car'), Lemma('car.n.04.elevator_car')]
[Lemma('cable_car.n.01.cable_car'), Lemma('cable_car.n.01.car')]
```

[10]:
```
synonyms = []

for syn in wordnet.synsets('Car'):
    for lemma in syn.lemmas():
        synonyms.append(lemma.name())

print(synonyms)
```

```
['car', 'auto', 'automobile', 'machine', 'motorcar', 'car', 'railcar',
'railway_car', 'railroad_car', 'car', 'gondola', 'car', 'elevator_car',
'cable_car', 'car']
```

[11]:
```
happy_synonyms = []

for syn in wordnet.synsets('Happy'):
    for lemma in syn.lemmas():
        happy_synonyms.append(lemma.name())

print(happy_synonyms)
```

```
['happy', 'felicitous', 'happy', 'glad', 'happy', 'happy', 'well-chosen']
```

[13]:
```
happy_antonyms = []

for ant in wordnet.synsets('Good'):
    for antonyms in ant.lemmas():
        if lemma.antonyms():
            print(lemma.antonyms())
```

[14]:
```
ant=[]
for a in wordnet.synsets('Healthy'):
    for lemma in a.lemmas():
        if lemma.antonyms():
            ant.append(lemma.antonyms()[0].name())
```

[15]:
```
print(ant)
```

```
['unhealthy']
```

[16]:
```
happy_antonyms = []

for ant in wordnet.synsets('Good'):
    for antonyms in ant.lemmas():
        if lemma.antonyms():
            happy_antonyms.append(lemma.antonyms())
```

[17]:
```
print(happy_antonyms)
```

```
[]
```

[19]:
```
rich_antonyms = []

for ant in wordnet.synsets('rich'):
    for antonyms in ant.lemmas():
        if lemma.antonyms():
            rich_antonyms.append(lemma.antonyms())
```

[20]:
```
print(happy_antonyms)
```

```
[]
```

[21]:
```
print(rich_antonyms)
```

```
[]
```

[22]:
```
Large_ant=[]
for a in wordnet.synsets('Large'):
    for lemma in a.lemmas():
        if lemma.antonyms():
            Large_ant.append(lemma.antonyms()[0].name())
```

[24]:
```
print(Large_ant)
```

```
['small', 'little']
```

[25]:
```
for a in wordnet.synsets('Happy'):
    for lemma in a.lemmas():
        if lemma.antonyms():
            happy_antonyms.append(lemma.antonyms()[0].name())
```

[26]:
```
print(happy_antonyms)
```

```
['unhappy']
```

[27]:
```
for a in wordnet.synsets('Rich'):
    for lemma in a.lemmas():
        if lemma.antonyms():
            happy_antonyms.append(lemma.antonyms()[0].name())
```

[28]:
```
print(happy_antonyms)
```

```
['unhappy', 'poor_people', 'poor', 'poor', 'poor', 'lean', 'poor']
```