Wk3_SLP3_WordNet with NLTK

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[ ]:
```
student_name = "Nikki Fitzherbert"
student_id = "13848336"
```

Steps 1 and 2 Import wordnet and use the term "program" to find synsets (groups of synonymous words expressing the same concept).

[3]:
```
from nltk.corpus import wordnet

syns = wordnet.synsets("program")
print(syns[0].name())
```

```
plan.n.01
```

Step 3

[4]:
```
# the word
print(syns[0].lemmas()[0].name())

# definition of the first synset
print(syns[0].definition())

# example of the word in use
print(syns[0].examples())
```

```
plan
a series of steps to be carried out or goals to be accomplished
['they drew up a six-step plan', 'they discussed plans for a new bond issue']
```

Step 4 Lemmas of a word are therefore its synonyms and antonyms are its antonyms.

[6]:
```
synonyms = []
antonyms = []

for syn in wordnet.synsets("good"):
    for l in syn.lemmas():
        synonyms.append(l.name())
        if l.antonyms():
            antonyms.append(l.antonyms()[0].name())
```

```
print(set(synonyms))
print(set(antonyms))
```

```
{'unspoiled', 'goodness', 'salutary', 'undecomposed', 'skilful', 'well',
'expert', 'estimable', 'proficient', 'serious', 'commodity', 'trade_good',
'just', 'adept', 'effective', 'right', 'dependable', 'upright', 'thoroughly',
'in_force', 'secure', 'respectable', 'dear', 'safe', 'honorable', 'full',
'soundly', 'practiced', 'beneficial', 'skillful', 'good', 'sound', 'unspoilt',
'in_effect', 'ripe', 'near', 'honest'}
{'evil', 'evilness', 'bad', 'ill', 'badness'}
```

Step 5 Wordnet can also be used to easily compare the similarity of words and their tenses by incorporating the Wu and Palmer method for semantic relatedness. The following example compares the similarity of the words "ship" and "boat".

[7]:
```
# comparing the words 'ship' and 'boat'
w1 = wordnet.synset('ship.n.01')
w2 = wordnet.synset('boat.n.01')
print(w1.wup_similarity(w2))

# comparing the words 'ship' and 'car'
w1 = wordnet.synset('ship.n.01')
w2 = wordnet.synset('car.n.01')
print(w1.wup_similarity(w2))

# comparing the words 'ship' and 'cat'
w1 = wordnet.synset('ship.n.01')
w2 = wordnet.synset('cat.n.01')
print(w1.wup_similarity(w2))
```

```
0.9090909090909091
0.6956521739130435
0.32
```