

HUL242:: Tutorial-5

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Q1. Draw the inflection/derivation trees for the following words: recalibration, centrality, dishonesty.

Q2. Use the NLTK and WordNet corpus that you have downloaded to explore the relations between verbs. What is the similarity score for the following verbs:

1. *cat* and *whale*
2. *sleep* and *doze*; *sleep* and *eat*
3. *limp* and *walk*
4. What do the similarity scores indicate about the nouns/verbs and their positions in the verbal hierarchy?
5. Can we explain the difference in pairs *sleep-doze* and *limp-walk* based on the hierarchical relations?

To compute similarity, choose the first (most frequent) synset ID. The example code below is adapted from: <http://www.nltk.org/howto/wordnet.html>

```
>>> import nltk
>>> from nltk.corpus import wordnet as wn
>>> wn.synsets('run')
[Synset('run.n.01'), Synset('test.n.05'), Synset('footrace.n.01'),
....
>>> wn.synsets('run',pos=wn.VERB) #constrained by part of speech
[Synset('run.v.01'), Synset('scat.v.01'), Synset('run.v.03') .....
>>> wn.synset('run.v.06') #finds the particular synset
Synset('run.v.06') ...
>>>wn.synset('run.v.06').lemma_names()
[u'run', u'flow', u'feed', u'course']
>>>wn.synset('run.v.01').hypernyms()
>>> wn.synset('run.v.01').hypernyms()
[Synset('travel_rapidly.v.01')]
>>> wn.synset('run.v.01').hyponyms()
[Synset('amble.v.01'), Synset('ambulate.v.01') ...
```

Compute similarity with respect to two words:

```
>>> dog = wn.synset('dog.n.01')
>>> cat = wn.synset('cat.n.01')

>>> hit = wn.synset('hit.v.01')
>>> slap = wn.synset('slap.v.01')
>>> dog.path_similarity(cat)
0.2...
>>> wn.path_similarity(cat,dog)
0.2
>>> wn.path_similarity(hit, slap)
0.142...
```