

W10 Assignment – Distributional Semantics II

Computational Linguistics

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1 Concepts

1.1 Lemmas e Lexemes

Regarding the concepts of homonymy and polysemy, we could say that...

(choose *TRUE* or *FALSE*)

- a) The set {cat, cats} forms the *lemma* associated with the *lexeme* cat
answer: -----
- b) The set {cat, cats} forms the *lexeme* associated with the *lemma* cat
answer: -----
- c) The set {snow, snowed, snowing, snowed} is a lexeme because it contains the forms associated with the word *snow*
answer: -----
- d) Each of the elements of a given lexeme is a lemma
answer: -----
- e) Each of the elements of a given lexeme *could, by convention* be a lemma
answer: -----

f) Each of the elements of a given lemma is a lexeme

answer: -----

2 Wordnet

2.1 Concepts

Regarding the concepts of homonymy and polysemy, we could say that...

(choose *TRUE* or *FALSE*)

a) The Wordnet contains only words of the classes *nouns*, *verbs*, *adjectives*, *adverbs*

answer: -----

b) The remaining classes of words (pronouns, prepositions, determiners) are referred to as *content words*

answer: -----

c) The Wordnet is organized into synsets in order to be able to make distinctions between homonymy and polysemy

answer: -----

d) The Wordnet is organized into synsets

answer: -----

e) The Wordnet makes no distinction between homonymy and polysemy

answer: -----

2.2 Semantic Relations

First, you will need the following code

```
from nltk.corpus import wordnet as wn
```

Using the Wordnet, get

a) The definition of the synset *sun.n.01*

answer: -----

- b) An example for the synset *get.v.01*
answer:
- c) All lemmas of the synset *break.v.02*
answer:
- d) The relation between *cold.n.01* and *respiratory_disease.n.01*
answer:
- e) The relation between *freeze.v.02* and *solidify.v.02*
answer:

3 Word Sense Disambiguation

Consider the sentence

The quick brown fox had been already domesticated and become like the common dog:
unpleasant and prehistoric like the lazy wolf.

And the definitions of dog (from the Wordnet):

dog.n.01: a member of the genus *Canis* (probably descended from the common wolf) that
has been domesticated by man since prehistoric times; occurs in many breeds

dog.n.02: a dull unattractive unpleasant girl or woman

Run the Lesk algorithm, showing the results for each of the definitions.

Count for dog.n.01:

Count for dog.n.02:

Final answer: