FNC Methods & Packages

Two-step classification

Step 1: Classify related/unrelated
Step 2: Classify agree/disagree/discuss

What methods could you try for each one? Discuss!

Two-step classification

Step 1: Classify related/unrelated

Possible methods:

Two-step classification

Step 2: Classify agree/disagree/discuss

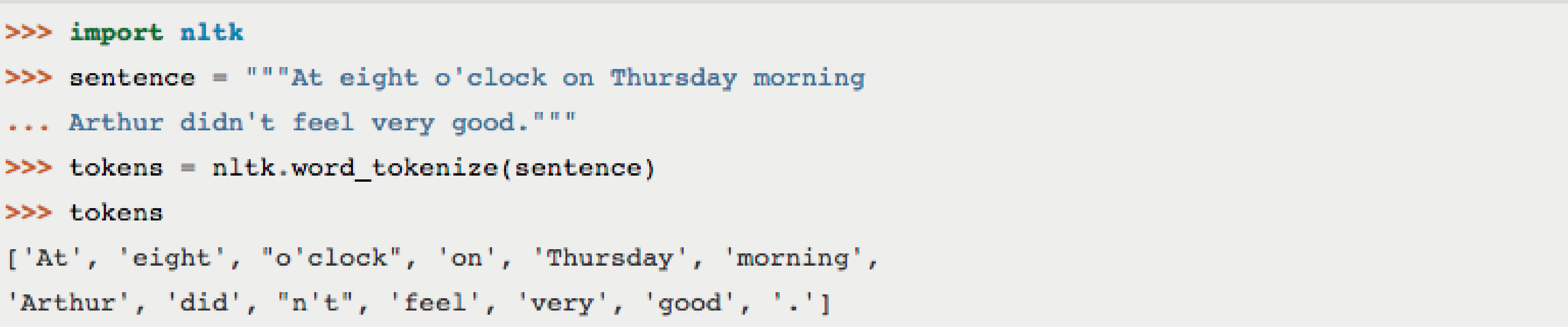
Possible methods:

Packages Recap

- A bunch of useful Python scripts bundled together for your convenience
- “Black box” = details of implementation are hidden
- Have to rely on documentation
- Installation method?

Why use packages for NLP?

- Saves you from doing statistical calculations by hand!
- Saves time on NLP-specific repeated tasks

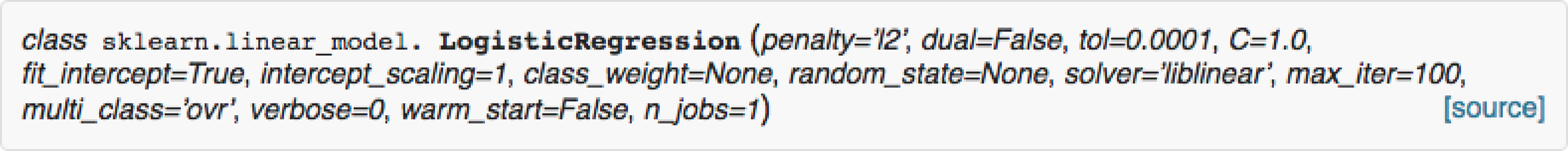


```
>>> import nltk
>>> sentence = """At eight o'clock on Thursday morning
... Arthur didn't feel very good."""
>>> tokens = nltk.word_tokenize(sentence)
>>> tokens
['At', 'eight', "o'clock", 'on', 'Thursday', 'morning',
'Arthur', 'did', "n't", 'feel', 'very', 'good', '.']
```

- Fast and easy to try and compare different methods on the same data

Why is it still important to know what a package does?

- Understand which methods are the best fit for your data
- Understand what the parameters are



```
class sklearn.linear_model. LogisticRegression (penalty='l2', dual=False, tol=0.0001, C=1.0,
fit_intercept=True, intercept_scaling=1, class_weight=None, random_state=None, solver='liblinear', max_iter=100,
multi_class='ovr', verbose=0, warm_start=False, n_jobs=1)                                              [source]
```

- Customize the parameters to get better results
- If something goes wrong, you will notice and can troubleshoot

scikit-learn (sklrn)

- Machine learning package in Python
- Methods for (among others):
  - Classification (SVM, Nearest Neighbor, Naïve Bayes, Decision Trees, etc.)
  - Clustering (K-Means, etc.)
  - Pre-processing (normalize data, obtain best features, etc.)

nltk

- Natural language processing toolkit
- Provides access to data like corpora (bodies of example text for statistical analysis)
- Methods for:
  - Classification
  - Sentence parsing
  - Tokenization
  - Most natural language applications!