Natural Language Processing

with NuPIC

NLTK

Python Natural Language Tool Kit

NLTK Part of Speech Tagging

That	DET	determiner
is	V	verb
the	DET	determiner
way	N	noun
Thor	NP	proper noun
got	VD	past tense
his	PRO	pronoun
wonderful	ADJ	adjective
hammer	N	noun
.	.	.

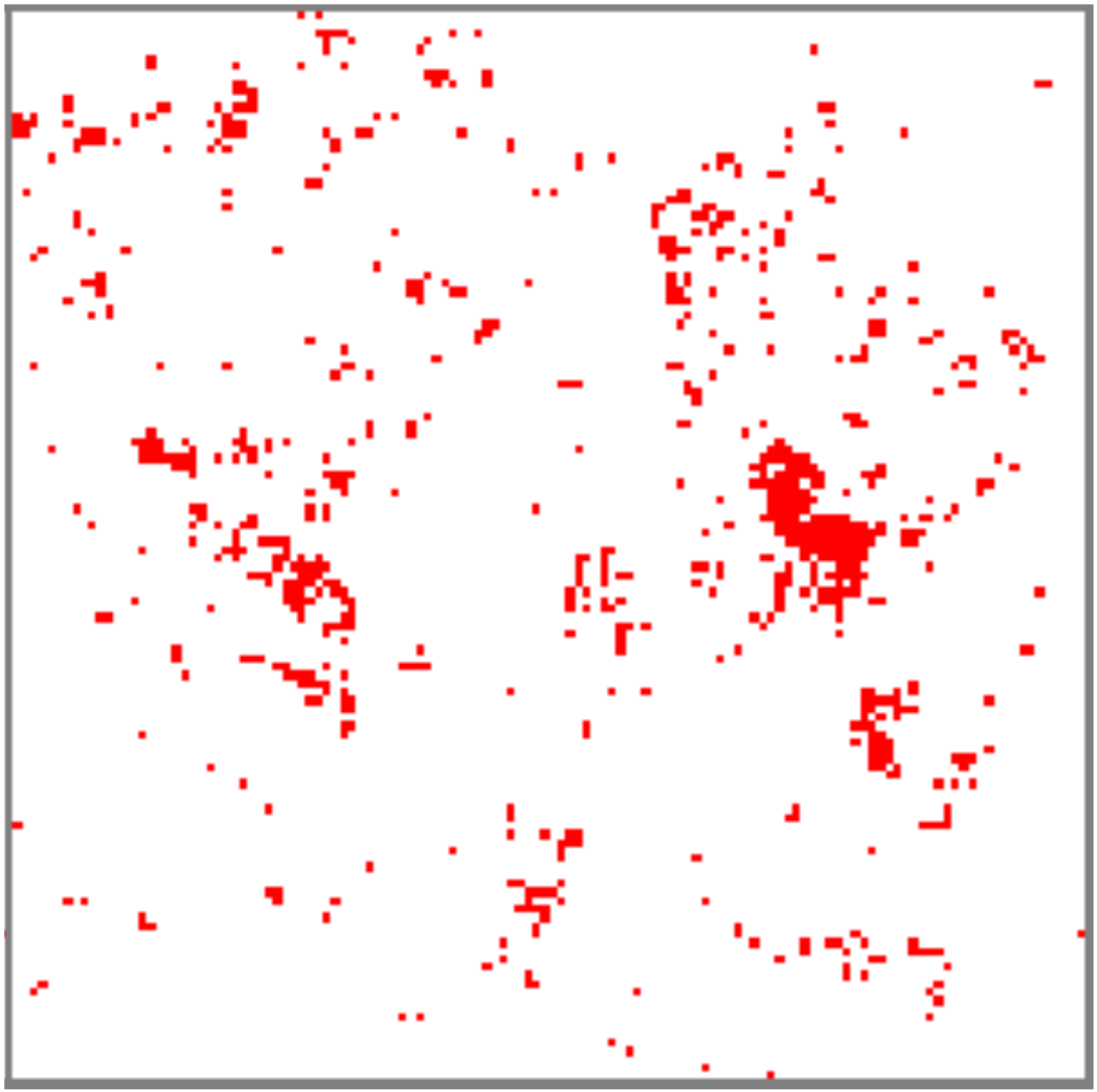
nupic_nlp

word POS demo

CEPT

Word SDRs

“metal”



“metal”

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“metal”

“metal”

{'height': 128, 'width': 128, 'sparsity': 5.0,
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15408, 15469, 15815, 15945, 16210,
16346]}

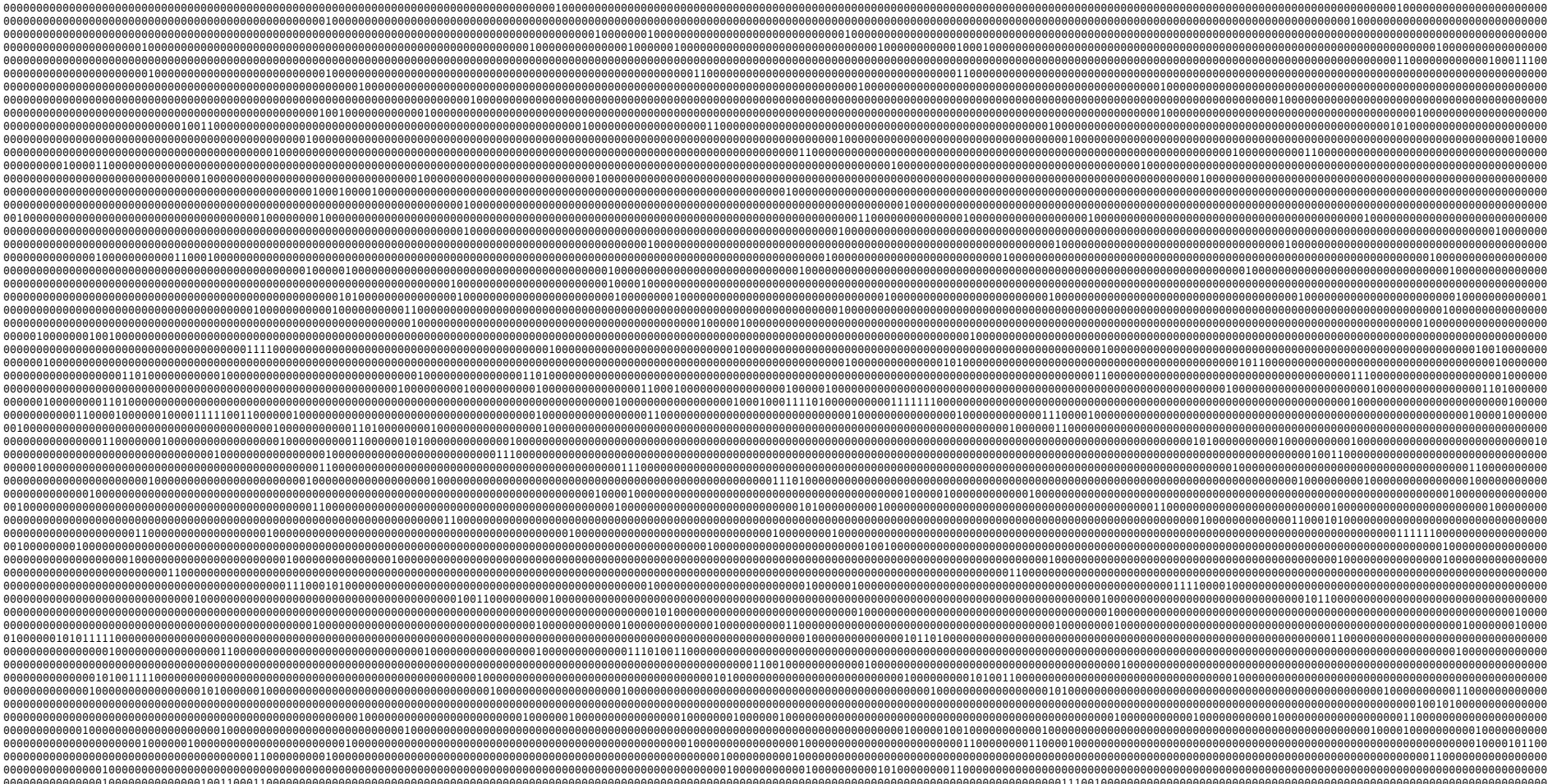
metal | 0
metals | 1
materials | 2
metallic | 3
material | 4
alloys | 5
solid | 6
oxide | 7
aluminium | 8
copper | 9
corrosion | 10
oxides | 11
thin | 12
steel | 13
alloy | 14
chemical | 15
nickel | 16
platinum | 17
carbon | 18
halides | 19
heavy metal | 20
oxidation | 21
plastic | 22
heating | 23

pycept

Python CEPT API Client

pycept: get SDR from term

```
import pycept
ceptClient = pycept.Cept("your_app_id", "your_app_key")
catSdr = ceptClient.getSdr("cat")
```



pycept: get bitmap from term

```
catBitmap = ceptClient.getBitmap ("cat")
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pycept: similar terms from bitmap

```
similar = ceptClient.bitmapToTerms(catBitmap)
```


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{'term': u'bred', 'rank': 99}]
```

pycept: similar terms from bitmap

```
similar = ceptClient.bitmapToTerms(catBitmap)
```

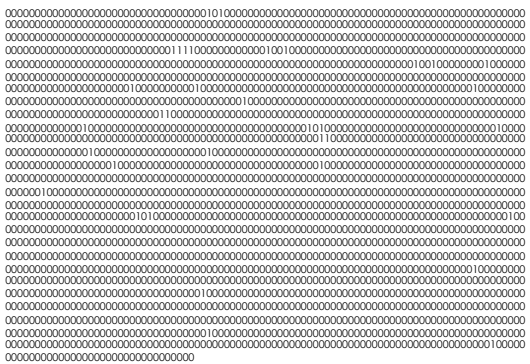
cat | 0
cats | 1
dog | 2
dogs | 3
animals | 4
animal | 5
rabbits | 6
pet | 7
feline | 8
rabbit | 9
pets | 10
mouse | 11
canine | 12
mice | 13
mammals | 14
rodents | 15
prey | 16
canines | 17
humans | 18
monkey | 19
adult | 20
other animals | 21
hares | 22
mammal | 23
predators | 24

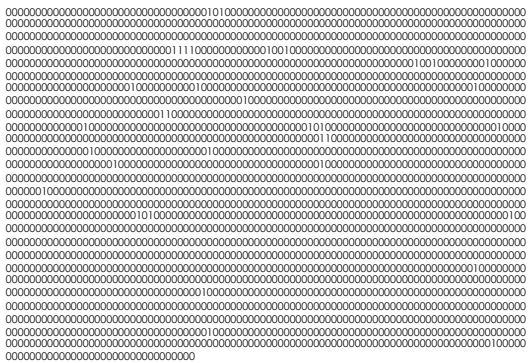
Word association experiment

Two Lists

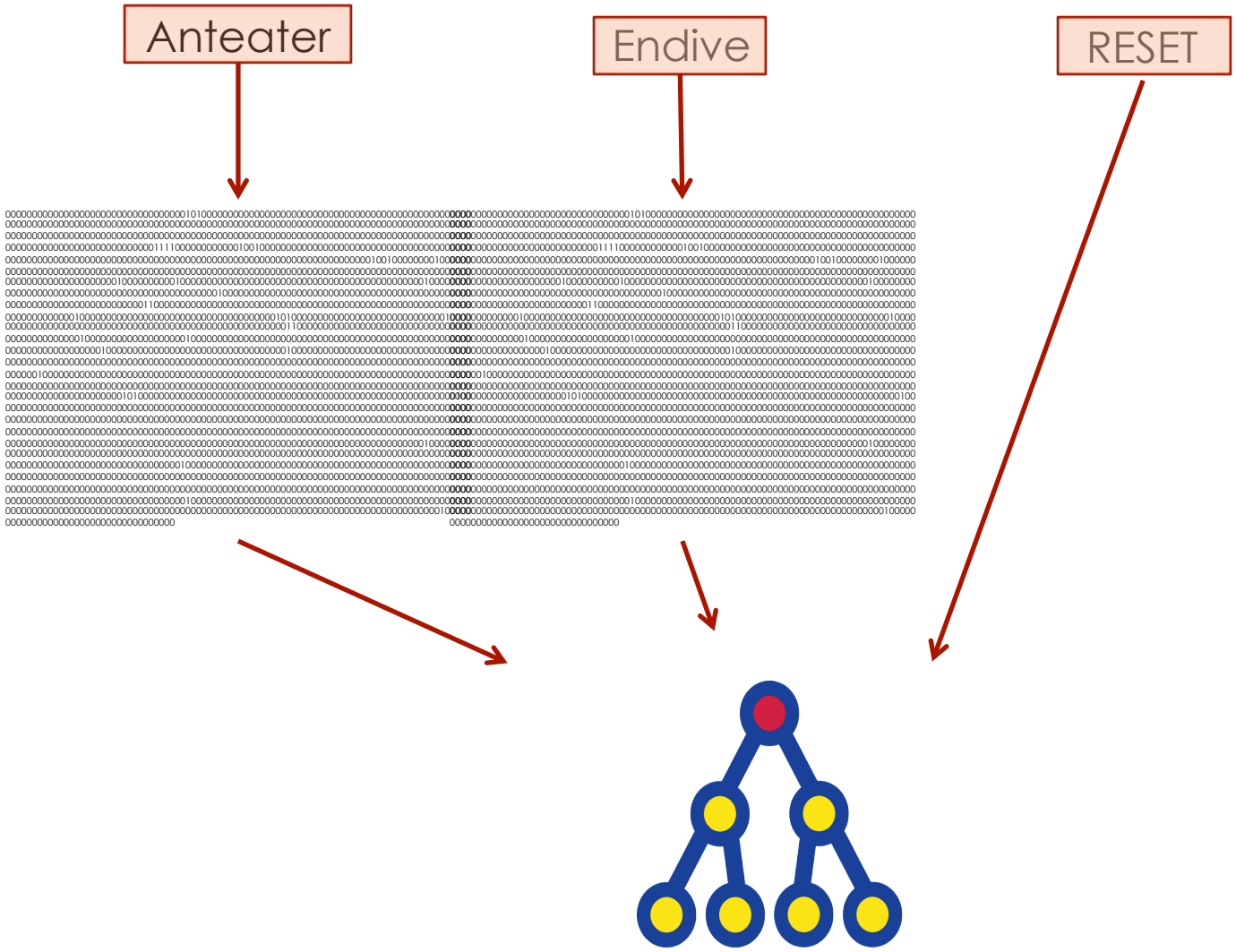
Aardvark
Albatross
Alligator
Alpaca
Ant
Anteater
Antelope
Ape
Armadillo
Donkey
Baboon
Badger
Barracuda
Bat
Bear
Beaver
Bee
Bison
Boar
Buffalo
…

Amaranth
Arugula
Beet
Borage
Cabbage
Catsear
Celery
Celtuce
Chaya
Chickweed
Chicory
Chrysanthemum
Purslane
Corn
Cress
Dandelion
Endive
Fiddlehead
Kale
Komatsuna
…





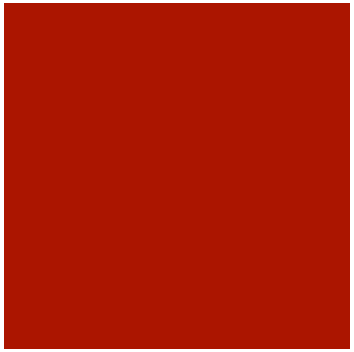
Two Lists



nupic_nlp

word association demo

NLP Resources



- Tools
- Experiments
- Challenges