

In [90]: ► Corpus of English language From GtenBerg Applying Preprocessing and TF IDF

```
In [109]: ►
filename = 'metamorphosis_clean.txt'
file = open(filename, 'rt')
text = file.read()
file.close()
```

```
In [18]: ► filename = 'metamorphosis_clean.txt'
file = open(filename, 'rt')
text = file.read()
file.close()

words = text.split()
print(words)
```

```
['One', 'morning,', 'when', 'Gregor', 'Samsa', 'woke', 'from', 'trouble',
'd', 'dreams,', 'he', 'found', 'himself', 'transformed', 'in', 'his', 'be',
'd', 'into', 'a', 'horrible', 'vermin.', 'He', 'lay', 'on', 'his', 'armour',
'-like', 'back,', 'and', 'if', 'he', 'lifted', 'his', 'head', 'a', 'littl',
'e', 'he', 'could', 'see', 'his', 'brown', 'belly,', 'slightly', 'domed',
'and', 'divided', 'by', 'arches', 'into', 'stiff', 'sections.', 'The', 'b',
'edding', 'was', 'hardly', 'able', 'to', 'cover', 'it', 'and', 'seemed',
'ready', 'to', 'slide', 'off', 'any', 'moment.', 'His', 'many', 'legs,',
'pitifully', 'thin', 'compared', 'with', 'the', 'size', 'of', 'the', 'res',
't', 'of', 'him,', 'waved', 'about', 'helplessly', 'as', 'he', 'looked.',
'"What\'s', 'happened', 'to', 'me?"', 'he', 'thought.', 'It', 'wasn\'t',
'a', 'dream.', 'His', 'room,', 'a', 'proper', 'human', 'room', 'althoug',
'h', 'a', 'little', 'too', 'small,', 'lay', 'peacefully', 'between', 'it',
's', 'four', 'familiar', 'walls.', 'A', 'collection', 'of', 'textile', 'sa',
'mples', 'lay', 'spread', 'out', 'on', 'the', 'table', '-', 'Samsa', 'wa',
's', 'a', 'travelling', 'salesman', '-', 'and', 'above', 'it', 'there', 'h',
'ung', 'a', 'picture', 'that', 'he', 'had', 'recently', 'cut', 'out', 'o',
'f', 'an', 'illustrated', 'magazine', 'and', 'housed', 'in', 'a', 'nice,',
'gilded', 'frame.', 'It', 'showed', 'a', 'lady', 'fitted', 'out', 'with',
'at', 'from', 'that', 'head', 'I', 'just', 'back', 'label', 'last', 'I', 'was', 'in', 'the', 'fina']
```

In [6]:

```
filename = 'metamorphosis_clean.txt'
file = open(filename, 'rt')
text = file.read()
file.close()

import re
words = re.split(r'\W+', text)
print(words)
```

```
['One', 'morning', 'when', 'Gregor', 'Samsa', 'woke', 'from', 'troubled',
'dreams', 'he', 'found', 'himself', 'transformed', 'in', 'his', 'bed', 'i
nto', 'a', 'horrible', 'vermin', 'He', 'lay', 'on', 'his', 'armour', 'lik
e', 'back', 'and', 'if', 'he', 'lifted', 'his', 'head', 'a', 'little', 'h
e', 'could', 'see', 'his', 'brown', 'belly', 'slightly', 'domed', 'and',
'divided', 'by', 'arches', 'into', 'stiff', 'sections', 'The', 'bedding',
'was', 'hardly', 'able', 'to', 'cover', 'it', 'and', 'seemed', 'ready',
'to', 'slide', 'off', 'any', 'moment', 'His', 'many', 'legs', 'pitifull
y', 'thin', 'compared', 'with', 'the', 'size', 'of', 'the', 'rest', 'of',
'him', 'waved', 'about', 'helplessly', 'as', 'he', 'looked', 'What', 's',
'happened', 'to', 'me', 'he', 'thought', 'It', 'wasn', 't', 'a', 'dream',
'His', 'room', 'a', 'proper', 'human', 'room', 'although', 'a', 'little',
'too', 'small', 'lay', 'peacefully', 'between', 'its', 'four', 'familia
r', 'walls', 'A', 'collection', 'of', 'textile', 'samples', 'lay', 'sprea
d', 'out', 'on', 'the', 'table', 'Samsa', 'was', 'a', 'travelling', 'sale
sman', 'and', 'above', 'it', 'there', 'hung', 'a', 'picture', 'that', 'h
e', 'had', 'recently', 'cut', 'out', 'of', 'an', 'illustrated', 'magazin
e', 'and', 'housed', 'in', 'a', 'nice', 'gilded', 'frame', 'It', 'showe
d', 'a', 'lady', 'fitted', 'out', 'with', 'a', 'fur', 'hat', 'and', 'fu
```

```

In [10]: filename = 'metamorphosis_clean.txt'
file = open(filename, 'rt')
text = file.read()
file.close()

words = text.split()

import string
table = str.maketrans('', '', string.punctuation)
stripped = [w.translate(table) for w in words]
print(stripped)

```

a, , , , , was, his, mother, , , , , quarter, , , , , seven  
 n', 'Didnt', 'you', 'want', 'to', 'go', 'somewhere', 'That', 'gentle', 'v  
 oice', 'Gregor', 'was', 'shocked', 'when', 'he', 'heard', 'his', 'own',  
 'voice', 'answering', 'it', 'could', 'hardly', 'be', 'recognised', 'as',  
 'the', 'voice', 'he', 'had', 'had', 'before', 'As', 'if', 'from', 'deep',  
 'inside', 'him', 'there', 'was', 'a', 'painful', 'and', 'uncontrollable',  
 'squeaking', 'mixed', 'in', 'with', 'it', 'the', 'words', 'could', 'be',  
 'made', 'out', 'at', 'first', 'but', 'then', 'there', 'was', 'a', 'sort',  
 'of', 'echo', 'which', 'made', 'them', 'unclear', 'leaving', 'the', 'hear  
 er', 'unsure', 'whether', 'he', 'had', 'heard', 'properly', 'or', 'not',  
 'Gregor', 'had', 'wanted', 'to', 'give', 'a', 'full', 'answer', 'and', 'e  
 xplain', 'everything', 'but', 'in', 'the', 'circumstances', 'contented',  
 'himself', 'with', 'saying', 'Yes', 'mother', 'yes', 'thankyou', 'Im', 'g  
 etting', 'up', 'now', 'The', 'change', 'in', 'Gregors', 'voice', 'probabl  
 y', 'could', 'not', 'be', 'noticed', 'outside', 'through', 'the', 'woode  
 n', 'door', 'as', 'his', 'mother', 'was', 'satisfied', 'with', 'this', 'e  
 xplanation', 'and', 'shuffled', 'away', 'But', 'this', 'short', 'conversa  
 tion', 'made', 'the', 'other', 'members', 'of', 'the', 'family', 'aware',  
 'that', 'Gregor', 'against', 'their', 'expectations', 'was', 'still', 'a  
 t', 'home', 'and', 'soon', 'his', 'father', 'came', 'knocking', 'at', 'on  
 at', 'left', 'that', 'bed', 'down', 'cently', 'that', 'with', 'his', 'first

```
In [12]: filename = 'metamorphosis_clean.txt'
file = open(filename, 'rt')
text = file.read()
file.close()

words = text.split()

words = [word.lower() for word in words]
print(words)
```

['one', 'morning,', 'when', 'gregor', 'samsa', 'woke', 'from', 'trouble  
d', 'dreams,', 'he', 'found', 'himself', 'transformed', 'in', 'his', 'be  
d', 'into', 'a', 'horrible', 'vermin.', 'he', 'lay', 'on', 'his', 'armour  
-like', 'back,', 'and', 'if', 'he', 'lifted', 'his', 'head', 'a', 'littl  
e', 'he', 'could', 'see', 'his', 'brown', 'belly,', 'slightly', 'domed',  
'and', 'divided', 'by', 'arches', 'into', 'stiff', 'sections.', 'the', 'b  
edding', 'was', 'hardly', 'able', 'to', 'cover', 'it', 'and', 'seemed',  
'ready', 'to', 'slide', 'off', 'any', 'moment.', 'his', 'many', 'legs,',  
'pitifully', 'thin', 'compared', 'with', 'the', 'size', 'of', 'the', 'res  
t', 'of', 'him,', 'waved', 'about', 'helplessly', 'as', 'he', 'looked.',  
'"what\'s', 'happened', 'to', 'me?"', 'he', 'thought.', 'it', "wasn't",  
'a', 'dream.', 'his', 'room,', 'a', 'proper', 'human', 'room', 'althoug  
h', 'a', 'little', 'too', 'small,', 'lay', 'peacefully', 'between', 'it  
s', 'four', 'familiar', 'walls.', 'a', 'collection', 'of', 'textile', 'sa  
mples', 'lay', 'spread', 'out', 'on', 'the', 'table', '-', 'samsa', 'wa  
s', 'a', 'travelling', 'salesman', '-', 'and', 'above', 'it', 'there', 'h  
ung', 'a', 'picture', 'that', 'he', 'had', 'recently', 'cut', 'out', 'o  
f', 'an', 'illustrated', 'magazine', 'and', 'housed', 'in', 'a', 'nice',  
'gilded', 'frame.', 'it', 'showed', 'a', 'lady', 'fitted', 'out', 'with',

In [4]:

```
filename = 'metamorphosis_clean.txt'
file = open(filename, 'rt')
text = file.read()
file.close()
```

```
from nltk import sent_tokenize
sentences = sent_tokenize(text)
print(sentences)
```

he room from the left; Gregor tried to imagine whether something of the sort\nthat had happened to him today could ever happen to the chief clerk\ntoo; you had to concede that it was possible.', "But as if in gruff\nreply to this question, the chief clerk's firm footsteps in his\nhighly polished boots could now be heard in the adjoining room.", 'From the room on his right, Gregor\'s sister whispered to him to let\nhim know: "Gregor, the chief clerk is here."', '"Yes, I know", said\nGregor to himself; but without daring to raise his voice loud enough\nfor his sister to hear him.', '"Gregor", said his father now from the room to his left, "the chief\nclerk has come round and wants to know why you didn\'t leave on the\nearly train.', "We don't know what to say to him.", 'And anyway, he\nwants to speak to you personally.', 'So please open up this door.', 'I\'m\nsure he\'ll be good enough to forgive the untidiness of your room."', 'Then the chief clerk called "Good morning, Mr. Samsa".', '"He isn\'t\nwell", said his mother to the chief clerk, while his father\ncontinued to speak through the door.', '"He isn\'t well, please believe\nme.', 'Why else would Gregor have missed a train!', 'The lad only ever\nthinks about the business.', "It nearly makes me cross the way he\nnever goes out in the evenings; he's been in town for a week now but\nstayed home every evening.", 'He sits with us in the kitchen and just\nreads the paper or studies train ti

```
In [6]: # Load data
filename = 'metamorphosis_clean.txt'
file = open(filename, 'rt')
text = file.read()
file.close()

from nltk.tokenize import word_tokenize
tokens = word_tokenize(text)
print(tokens)
```

```
['One', 'morning', ',', 'when', 'Gregor', 'Samsa', 'woke', 'from', 'troubled', 'dreams', ',', 'he', 'found', 'himself', 'transformed', 'in', 'his', 'bed', 'into', 'a', 'horrible', 'vermin', '.', 'He', 'lay', 'on', 'his', 'armour-like', 'back', ',', 'and', 'if', 'he', 'lifted', 'his', 'head', 'a', 'little', 'he', 'could', 'see', 'his', 'brown', 'belly', ',', 'slightly', 'domed', 'and', 'divided', 'by', 'arches', 'into', 'stiff', 'sections', '.', 'The', 'bedding', 'was', 'hardly', 'able', 'to', 'cover', 'it', 'and', 'seemed', 'ready', 'to', 'slide', 'off', 'any', 'moment', '.', 'His', 'many', 'legs', ',', 'pitifully', 'thin', 'compared', 'with', 'the', 'size', 'of', 'the', 'rest', 'of', 'him', ',', 'waved', 'about', 'helplessly', 'as', 'he', 'looked', '.', 'What', 's', 'happened', 'to', 'me', 'he', 'thought', '.', 'It', 'was', 'not', 'a', 'dream', '.', 'His', 'room', ',', 'a', 'proper', 'human', 'room', 'although', 'a', 'little', 'too', 'small', ',', 'lay', 'peacefully', 'between', 'its', 'four', 'familiar', 'walls', '.', 'A', 'collection', 'of', 'textile', 'samples', 'lay', 'spread', 'out', 'on', 'the', 'table', '-', 'Samsa', 'was', 'a', 'travelling', 'salesman', '-', 'and', 'above', 'it', 'the', 're', 'hung', 'a', 'picture', 'that', 'he', 'had', 'recently', 'cut', 'out', 'of', 'an', 'illustrated', 'magazine', 'and', 'housed', 'in', 'a', 'narrow', 'slot', 'between', 'the', 'wall', 'and', 'the', 'ceiling']
```

```
In [7]: # Load data
filename = 'metamorphosis_clean.txt'
file = open(filename, 'rt')
text = file.read()
file.close()

from nltk.tokenize import word_tokenize
tokens = word_tokenize(text)

words = [word for word in tokens if word.isalpha()]
print(words[:100])
```

```
['One', 'morning', 'when', 'Gregor', 'Samsa', 'woke', 'from', 'troubled', 'dreams', 'he', 'found', 'himself', 'transformed', 'in', 'his', 'bed', 'into', 'a', 'horrible', 'vermin', 'He', 'lay', 'on', 'his', 'back', 'and', 'if', 'he', 'lifted', 'his', 'head', 'a', 'little', 'he', 'could', 'see', 'his', 'brown', 'belly', 'slightly', 'domed', 'and', 'divided', 'by', 'arches', 'into', 'stiff', 'sections', 'The', 'bedding', 'was', 'hardly', 'able', 'to', 'cover', 'it', 'and', 'seemed', 'ready', 'to', 'slide', 'off', 'any', 'moment', 'His', 'many', 'legs', 'pitifully', 'thin', 'compared', 'with', 'the', 'size', 'of', 'the', 'rest', 'of', 'him', 'waved', 'about', 'helplessly', 'as', 'he', 'looked', 'What', 'happened', 'to', 'me', 'he', 'thought', 'It', 'was', 'a', 'dream', 'His', 'room', 'a', 'proper', 'human', 'room']
```

```
In [8]: ▶ from nltk.corpus import stopwords
stop_words = stopwords.words('english')
print(stop_words)
```

```
['i', 'me', 'my', 'myself', 'we', 'our', 'ours', 'ourselves', 'you', "you'r
e", "you've", "you'll", "you'd", 'your', 'yours', 'yourself', 'yourselves',
'he', 'him', 'his', 'himself', 'she', "she's", 'her', 'hers', 'herself', 'i
t', "it's", 'its', 'itself', 'they', 'them', 'their', 'theirs', 'themselv
e', 'what', 'which', 'who', 'whom', 'this', 'that', "that'll", 'these', 'th
ose', 'am', 'is', 'are', 'was', 'were', 'be', 'been', 'being', 'have', 'ha
s', 'had', 'having', 'do', 'does', 'did', 'doing', 'a', 'an', 'the', 'and',
'but', 'if', 'or', 'because', 'as', 'until', 'while', 'of', 'at', 'by', 'fo
r', 'with', 'about', 'against', 'between', 'into', 'through', 'during', 'be
fore', 'after', 'above', 'below', 'to', 'from', 'up', 'down', 'in', 'out',
'on', 'off', 'over', 'under', 'again', 'further', 'then', 'once', 'here',
'there', 'when', 'where', 'why', 'how', 'all', 'any', 'both', 'each', 'fe
w', 'more', 'most', 'other', 'some', 'such', 'no', 'nor', 'not', 'only', 'o
wn', 'same', 'so', 'than', 'too', 'very', 's', 't', 'can', 'will', 'just',
'don', "don't", 'should', "should've", 'now', 'd', 'll', 'm', 'o', 're', 'v
e', 'y', 'ain', 'aren', "aren't", 'couldn', "couldn't", 'didn', "didn't",
'doesn', "doesn't", 'hadn', "hadn't", 'hasn', "hasn't", 'haven', "haven't",
'isn', "isn't", 'ma', 'mightn', "mightn't", 'mustn', "mustn't", 'needn', "n
eedn't", 'shan', "shan't", 'shouldn', "shouldn't", 'wasn', "wasn't", 'were
n', "weren't", 'won', "won't", 'wouldn', "wouldn't"]
```

In [10]:

```

filename = 'metamorphosis_clean.txt'
file = open(filename, 'rt')
text = file.read()
file.close()

from nltk.tokenize import word_tokenize
tokens = word_tokenize(text)

tokens = [w.lower() for w in tokens]

import string
table = str.maketrans('', '', string.punctuation)
stripped = [w.translate(table) for w in tokens]

words = [word for word in stripped if word.isalpha()]

from nltk.corpus import stopwords
stop_words = set(stopwords.words('english'))
words = [w for w in words if not w in stop_words]
print(words)

```

```

['one', 'morning', 'gregor', 'samsa', 'woke', 'troubled', 'dreams', 'foun
d', 'transformed', 'bed', 'horrible', 'vermin', 'lay', 'armourlike', 'bac
k', 'lifted', 'head', 'little', 'could', 'see', 'brown', 'belly', 'slight
ly', 'domed', 'divided', 'arches', 'stiff', 'sections', 'bedding', 'hardl
y', 'able', 'cover', 'seemed', 'ready', 'slide', 'moment', 'many', 'leg
s', 'pitifully', 'thin', 'compared', 'size', 'rest', 'waved', 'helplessl
y', 'looked', 'happened', 'thought', 'nt', 'dream', 'room', 'proper', 'hu
man', 'room', 'although', 'little', 'small', 'lay', 'peacefully', 'four',
'familiar', 'walls', 'collection', 'textile', 'samples', 'lay', 'spread',
'table', 'samsa', 'travelling', 'salesman', 'hung', 'picture', 'recentl
y', 'cut', 'illustrated', 'magazine', 'housed', 'nice', 'gilded', 'fram
e', 'showed', 'lady', 'fitted', 'fur', 'hat', 'fur', 'boa', 'sat', 'uprig
ht', 'raising', 'heavy', 'fur', 'muff', 'covered', 'whole', 'lower', 'ar
m', 'towards', 'viewer', 'gregor', 'turned', 'look', 'window', 'dull', 'w
eather', 'drops', 'rain', 'could', 'heard', 'hitting', 'pane', 'made', 'f
eel', 'quite', 'sad', 'sleep', 'little', 'bit', 'longer', 'forget', 'nons
ense', 'thought', 'something', 'unable', 'used', 'sleeping', 'right', 'pr
esent', 'state', 'could', 'nt', 'get', 'position', 'however', 'hard', 'th
rew', 'onto', 'right', 'always', 'rolled', 'back', 'must', 'tried', 'hund

```



In [12]:

```

filename = 'metamorphosis_clean.txt'
file = open(filename, 'rt')
text = file.read()
file.close()

from nltk.tokenize import word_tokenize
tokens = word_tokenize(text)

from nltk.stem.porter import PorterStemmer
porter = PorterStemmer()
stemmed = [porter.stem(word) for word in tokens]
print(stemmed)

```

```

['one', 'morn', ',', 'when', 'gregon', 'samsa', 'woke', 'from', 'troubl',
'dream', ',', 'he', 'found', 'himself', 'transform', 'in', 'hi', 'bed',
'into', 'a', 'horribl', 'vermin', '.', 'He', 'lay', 'on', 'hi', 'armour-l
ik', 'back', ',', 'and', 'if', 'he', 'lift', 'hi', 'head', 'a', 'littl',
'he', 'could', 'see', 'hi', 'brown', 'belli', ',', 'slightli', 'dome', 'a
nd', 'divid', 'by', 'arch', 'into', 'stiff', 'section', '.', 'the', 'be
d', 'wa', 'hardli', 'abl', 'to', 'cover', 'it', 'and', 'seem', 'readi',
'to', 'slide', 'off', 'ani', 'moment', '.', 'hi', 'mani', 'leg', ',', 'pi
ti', 'thin', 'compar', 'with', 'the', 'size', 'of', 'the', 'rest', 'of',
'him', ',', 'wave', 'about', 'helplessli', 'as', 'he', 'look', '.', '``',
'what', "'s", 'happen', 'to', 'me', '?', "'", 'he', 'thought', '.', 'I
t', 'wa', "n't", 'a', 'dream', '.', 'hi', 'room', ',', 'a', 'proper', 'hu
man', 'room', 'although', 'a', 'littl', 'too', 'small', ',', 'lay', 'pea
c', 'between', 'it', 'four', 'familiar', 'wall', '.', 'A', 'collect', 'o
f', 'textil', 'sampl', 'lay', 'spread', 'out', 'on', 'the', 'tabl', '- ',
'samsa', 'wa', 'a', 'travel', 'salesman', '- ', 'and', 'abov', 'it', 'ther
e', 'hung', 'a', 'pictur', 'that', 'he', 'had', 'recent', 'cut', 'out',
'of', 'an', 'illustr', 'magazin', 'and', 'hous', 'in', 'a', 'nice', ',',
'gild', 'frame', '.', 'It', 'show', 'a', 'ladi', 'fit', 'out', 'with',

```

```
In [103]: from sklearn.feature_extraction.text import CountVectorizer
filename = 'metamorphosis_clean.txt'
file = open(filename, 'rt')
text = file.read()
file.close()
# List of text documents
text=[text]
# create the transform
vectorizer = CountVectorizer()
# tokenize and build vocab
vectorizer.fit(text)
# summarize
vectorizer.vocabulary_
# encode document
vector = vectorizer.transform(text)
# summarize encoded vector
print(vector.shape)
print(type(vector))
print(vector.toarray())

(1, 2970)
<class 'scipy.sparse.csr.csr_matrix'>
[[ 2  2  2 ...  6 50  4]]
```

```
In [91]: vectorizer.vocabulary_
```

```
'leaving': 1494,
'hearer': 1226,
'unsure': 2766,
'whether': 2887,
'properly': 2006,
'wanted': 2839,
'give': 1131,
'full': 1100,
'answer': 122,
'explain': 946,
'circumstances': 438,
'contented': 545,
'saying': 2228,
'thank': 2597,
'noticed': 1757,
'outside': 1825,
'wooden': 2933,
'satisfied': 2221,
'explanation': 949,
'shuffled': 2317,
```

In [108]: `from sklearn.feature_extraction.text import TfidfVectorizer`

```
filename = 'metamorphosis_clean.txt'
file = open(filename, 'rt')
text = file.read()
file.close()
```

```
text = [text]
```

```
vectorizer = TfidfVectorizer()
```

```
vectorizer.fit(text)
```

```
print(vectorizer.vocabulary_)
```

```
print(vectorizer.idf_)
```

```
vector = vectorizer.transform([text[0]])
```

```
vector.shape
```

```
vector.toarray()
```

```
rmation': 2690, 'appearance': 138, 'staring': 2451, 'motionless': 1682,
'coming': 479, 'threatened': 2629, 'bite': 279, 'hide': 1247, 'flee': 103
0, 'protruded': 2012, 'carrying': 375, 'bedsheet': 241, 'arranged': 168,
'bent': 268, 'sheet': 2290, 'glimpsed': 1141, 'arrangement': 169, 'fourte
en': 1078, 'appreciated': 146, 'girl': 1129, 'somewhat': 2396, 'useless':
2787, 'behaved': 254, 'improvement': 1336, 'visit': 2819, 'persuaded': 19
03, 'listened': 1539, 'closely': 457, 'approved': 152, 'unfortunate': 274
3, 'courage': 597, 'adult': 61, 'appreciation': 147, 'square': 2436, 'met
ers': 1636, 'crawl': 607, 'entertain': 887, 'freely': 1084, 'relaxed': 21
12, 'happy': 1200, 'letting': 1508, 'crash': 605, 'entertaining': 888, 't
races': 2680, 'removing': 2128, 'dare': 636, 'sixteen': 2346, 'bravely':
311, 'cook': 566, 'helped': 1238, 'unless': 2753, 'choose': 432, 'approac
hed': 150, 'express': 952, 'joy': 1424, 'folds': 1045, 'thrown': 2637, 'r
efrained': 2097, 'spying': 2435, 'pair': 1847, 'feeble': 990, 'heaving':
1232, 'heaviest': 1230, 'warnings': 2845, 'lasted': 1470, 'labouring': 14
55, 'minutes': 1650, 'saddened': 2203, 'heart': 1228, 'abandoned': 18, 'w
hose': 2900, 'whereabouts': 2885, 'tone': 2662, 'added': 52, 'cope': 570,
'comes': 475, 'unchanged': 2726, 'communication': 485, 'monotonous': 167
1, 'months': 1674, 'emptied': 865, 'transform': 2689, 'cave': 389, 'inher
ited': 1368, 'unimpeded': 2748, 'shaken': 2281, 'influence': 1365, 'mindl
```

In [ ]:

In [ ]: