```
import nltk
from nltk.tokenize import word_tokenize


import pandas as pd


df=pd.read_csv('IMDB Dataset.csv', index=False, encoding='utf-8')
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-1-96cab77d1e7f> in <module>()
----> 1 df.to_csv('movie_data.csv', index=False, encoding='utf-8')

NameError: name 'df' is not defined
```

```
df.head()
```

	review	sentiment
0	I haven't seen every single movie that Burt Re...	1
1	Russian actress TATIANA SAMOILOVA reminds me s...	1
2	A bunch of full-length movies featuring the Mu...	1
3	I'm out of words to describe the beauty of "Th...	1
4	What happened to Ava Gardner in the 1940s and ...	1

```
reviews = df.review.str.cat(sep=' ')
#function to split text into word
tokens = word_tokenize(reviews)
vocabulary = set(tokens)
print(len(vocabulary))
frequency_dist = nltk.FreqDist(tokens)
sorted(frequency_dist,key=frequency_dist.__getitem__, reverse=True)[0:50]
```

```
199786
['the',
 ',',
 '.',
 'a',
 'and',
 'of',
 'to',
 'is',
 '/',
 '>',
 '<',
 'br',
 'in',
 'I',
 'it',
 'that',
```

```
        "'s",
        'this',
        'was',
        'The',
        'as',
        'with',
        'movie',
        'for',
        'film',
        ')',
        '(',
        'but',
        "''",
        "n't",
        '``',
        'on',
        'you',
        'are',
        'not',
        'have',
        'his',
        'be',
        '!',
        'he',
        'one',
        'at',
        'by',
        'an',
        'all',
        'who',
        'they',
        'from',
        'like',
        'It']
```

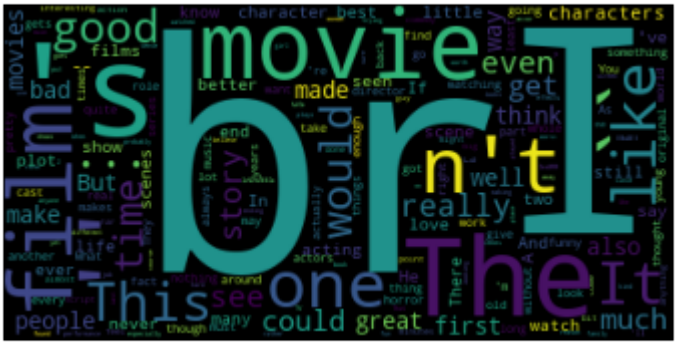
```
import string
from nltk.corpus import stopwords
stop_words = set(stopwords.words('english'))
tokens = [w for w in tokens if not w in stop_words]

frequency_dist = nltk.FreqDist(tokens)
tokens = list(filter(lambda token: token not in string.punctuation, tokens))
tokens=[tokens for word in tokens if word.isalpha()]
sorted(frequency_dist,key=frequency_dist.__getitem__, reverse=True)[0:50]
```

```
['br',
 'I',
 "'s",
 'The',
 'movie',
 'film',
 "''",
 "n't",
 '``',
 'one',
 'like',
 'It',
 'This',
```

```
 'good',
 'would',
 '...',
 'time',
 'really',
 'see',
 'even',
 'story',
 'much',
 'could',
 'get',
 'people',
 'bad',
 'great',
 'well',
 'first',
 'made',
 'also',
 'make',
 'way',
 'movies',
 'But',
 'think',
 'characters',
 'character',
 'And',
 'films',
 'seen',
 'watch',
 'many',
 'acting',
 'plot',
 'know',
 'never',
 'two',
 'A',
 'There']
```

```
from wordcloud import WordCloud
import matplotlib.pyplot as plt
wordcloud = WordCloud().generate_from_frequencies(frequency_dist)
plt.imshow(wordcloud)
plt.axis("off")
plt.show()
```



```
X_train = df.loc[:24999, 'review'].values
y_train = df.loc[:24999, 'sentiment'].values
X_test = df.loc[25000:, 'review'].values
y_test = df.loc[25000:, 'sentiment'].values
```

```
from sklearn.feature_extraction.text import TfidfTransformer
from sklearn.feature_extraction.text import TfidfVectorizer
vectorizer = TfidfVectorizer()
train_vectors = vectorizer.fit_transform(X_train)
test_vectors = vectorizer.transform(X_test)
print(train_vectors.shape, test_vectors.shape)
```

```
(25000, 73822) (25000, 73822)
```

```
from sklearn.naive_bayes import MultinomialNB
clf = MultinomialNB().fit(train_vectors, y_train)
```

```
from  sklearn.metrics  import accuracy_score
predicted = clf.predict(test_vectors)
print(accuracy_score(y_test,predicted))
```

```
0.83664
```

```
from sklearn import metrics
from sklearn.metrics import confusion_matrix,classification_report
from sklearn.metrics import accuracy_score
```