# rpro17qqy

February 5, 2025

[1]:
```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

[2]:
```
df = pd.read_csv("train.tsv", sep='\t')
df.head()
#0 negative
#1 somewhat -ve
#2 neutral
#3 somewhat +ve
#4 +ve
```

[2]:
```
   PhraseId  SentenceId                                             Phrase  \
0         1           1  A series of escapades demonstrating the adage …
1         2           1  A series of escapades demonstrating the adage …
2         3           1                                           A series
3         4           1                                                  A
4         5           1                                             series

   Sentiment
0          1
1          2
2          2
3          2
4          2
```

[3]:
```
df.shape
```

[3]:
```
(156060, 4)
```

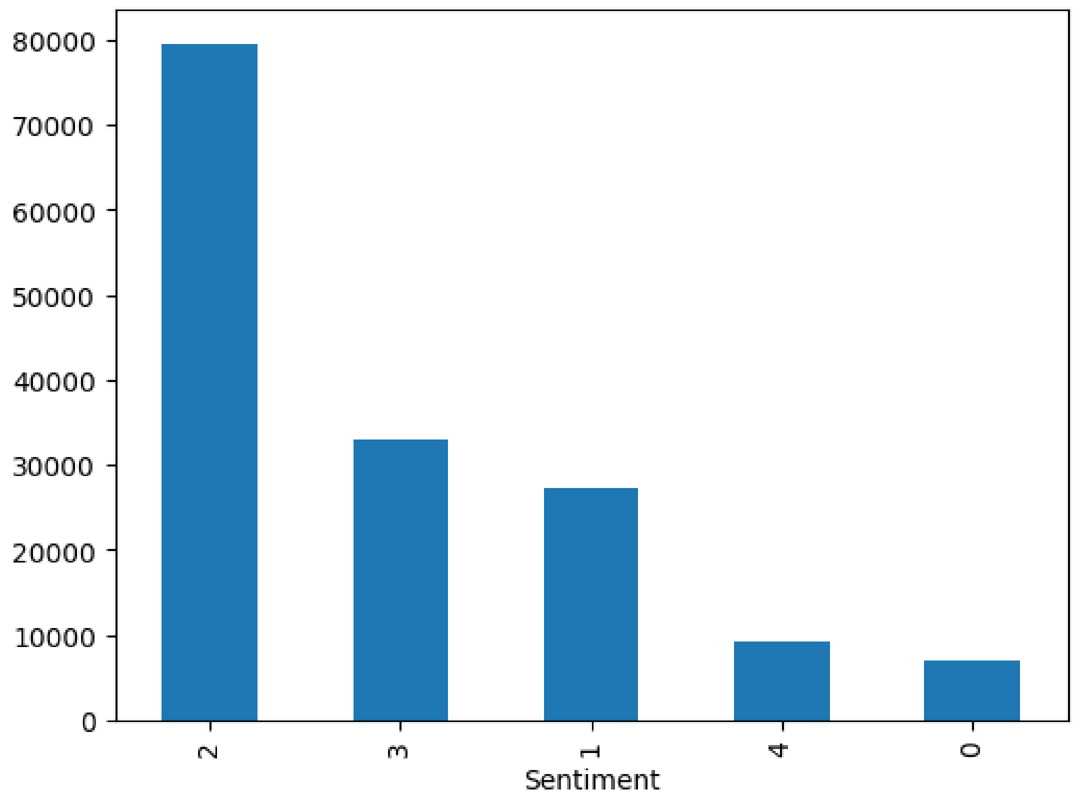
[4]:
```
df['Sentiment'].value_counts()
```

[4]:
```
Sentiment
2    79582
3    32927
1    27273
```

```
4     9206
0     7072
Name: count, dtype: int64
```

[5]:
```
df['Sentiment'].value_counts().plot(kind='bar')
```

[5]:
```
<Axes: xlabel='Sentiment'>
```



[6]:
```
df=df.iloc[:150000,:]
```

[7]:
```
df=df.drop(columns=['PhraseId','SentenceId'])
```

[8]:
```
df.head(10)
```

[8]:
```
                                              Phrase  Sentiment
0  A series of escapades demonstrating the adage …          1
1  A series of escapades demonstrating the adage …          2
2                                           A series          2
3                                                  A          2
4                                             series          2
5  of escapades demonstrating the adage that what…          2
```

```
6                                                 of          2
7  escapades demonstrating the adage that what is…          2
8                                          escapades          2
9  demonstrating the adage that what is good for …          2
```

[9]:
```
import random
from collections import Counter
```

[10]:
```
def sample_phrase(idx= -1):
    l=df.shape[0]
    if idx == -1:
        idx=random.randint(0,l)
        print(f"the index is {idx}")
    print(df['Phrase'][idx])
```

[11]:
```
sample_phrase()
```

```
the index is 107331
a bit of thematic meat on the bones of Queen of the Damned
```

[12]:
```
import re
import nltk
from nltk.stem.porter import PorterStemmer
from nltk.corpus import stopwords
```

[13]:
```
stopwords_set=set(stopwords.words('english'))
emoji_pattern=re.compile('(?::|;|=)(?:-)?(?:\)|\(|D|P)')


def preprocessing(txt):
    txt=re.sub('<[^>]*>','',txt)
    emojis=emoji_pattern.findall(txt)
    txt=re.sub('[\W+]',' ',txt.lower())+" ".join(emojis).replace('-','')

    prtr=PorterStemmer()
    txt=[prtr.stem(word) for word in txt.split() if word not in stopwords_set]

    return " ".join(txt)
```

[14]:
```
preprocessing('his is my tag :) <h1>Hello world</h1>')
```

[14]:
```
'tag hello world:)'
```

[15]:
```
df['Phrase']=df['Phrase'].apply(lambda x:preprocessing(x))
```

[16]:
```
#getting most common +ve & -ve words
positivedata=df[df['Sentiment']==4]
```

```
negativedata=df[df['Sentiment']==0]
```

[17]:
```
positivedata=positivedata['Phrase']
positive_words=' '.join(positivedata).split()
negativedata=negativedata['Phrase']
negative_words=' '.join(negativedata).split()
```

[18]:
```
# positive_words
positive_count=Counter(positive_words)
negative_count=Counter(negative_words)
```

[19]:
```
#positive_count.most_common(10)
#negative_count.most_common(10)
```

[20]:
```
def common_words(data,n=10):
    words=data.most_common(n)

    for word,cnt in words:
        print(word,end=" , ")
```

[21]:
```
common_words(positive_count)
```

```
film , movi , one , perform , best , funni , good , well , work , make ,
```

[22]:
```
from sklearn.feature_extraction.text import TfidfVectorizer

tfidf=TfidfVectorizer(strip_accents=None,lowercase=False,use_idf=True,norm='l2',smooth_idf=Tru
y=df.Sentiment.values
x=tfidf.fit_transform(df.Phrase)
```

[23]:
```
from sklearn.model_selection import train_test_split

X_train,X_test,y_train,y_test=train_test_split(x,y,random_state=1,test_size=0.4)
```

[24]:
```
# from sklearn.linear_model import LogisticRegression

# model = LogisticRegression(multi_class='ovr', solver='lbfgs')
# model.fit(X_train, y_train)
```

[25]:
```
from sklearn.svm import SVC

model = SVC(kernel='rbf',C=1.0,decision_function_shape='ovr')
```

[26]:
```
model.fit(X_train, y_train)
```

[26]:
```
SVC()
```

[27]:
```
!pip install joblib
```

```
Requirement already satisfied: joblib in
c:\users\shivam\pycharmprojects\deep\venv\lib\site-packages (1.4.2)
```

[28]:
```
y_pred=model.predict(X_test)
```

[29]:
```
from sklearn import metrics

print(f"Accuracy {metrics.accuracy_score(y_test,y_pred)}")
```

```
Accuracy 0.6510333333333334
```

[33]:
```
def predict(comment):
    prepr=preprocessing(comment)
    comment_lst=[prepr]
    comment_vector=tfidf.transform(comment_lst)
    pred=model.predict(comment_vector)[0]

    ans="NOne"
    if pred==0:
        ans="Negative"
    elif pred==1:
        ans="Somewhat Negative"
    elif pred==2:
        ans="Neutral"
    elif pred==3:
        ans="Somewhat Postive"
    elif pred==4:
        ans="Positive"

    return ans
```

[31]:
```
import joblib

joblib.dump(model,"model.pkl")
joblib.dump(tfidf,'vectorizer.pkl')
```

[31]:
```
['vectorizer.pkl']
```

[34]:
```
predict("This is a good movie.")
```

[34]:
```
'Somewhat Postive'
```

[ ]:
```

```