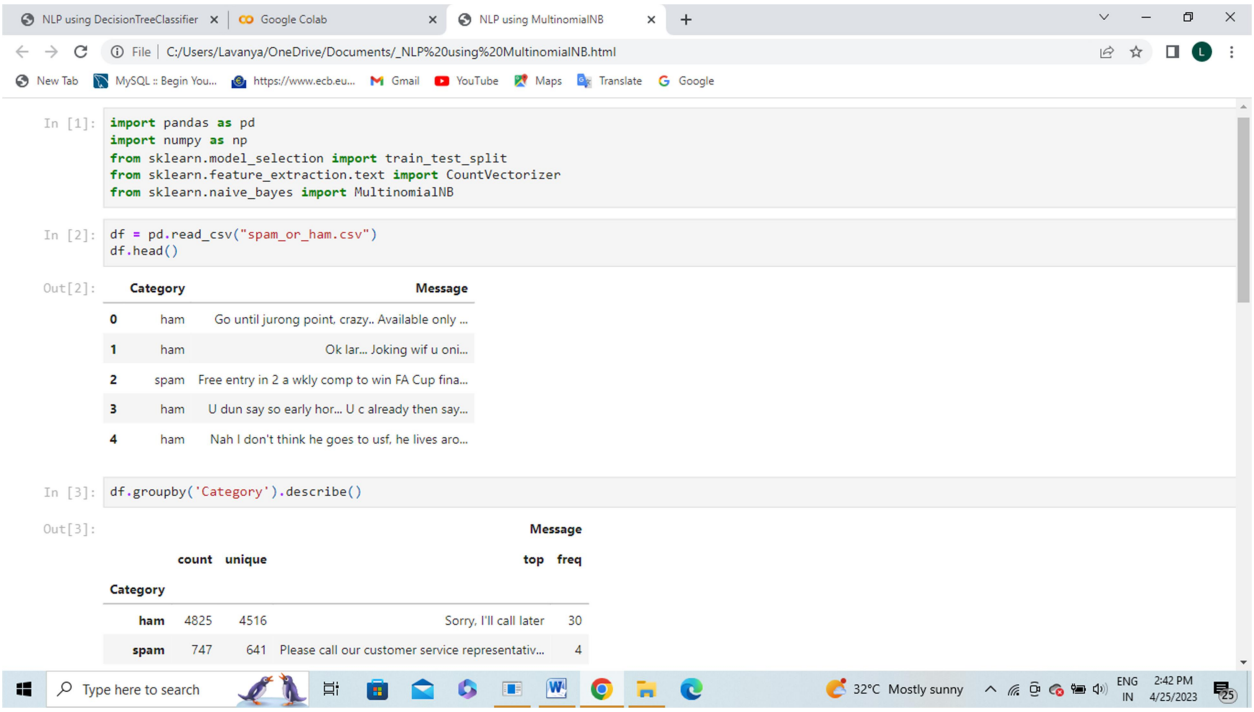
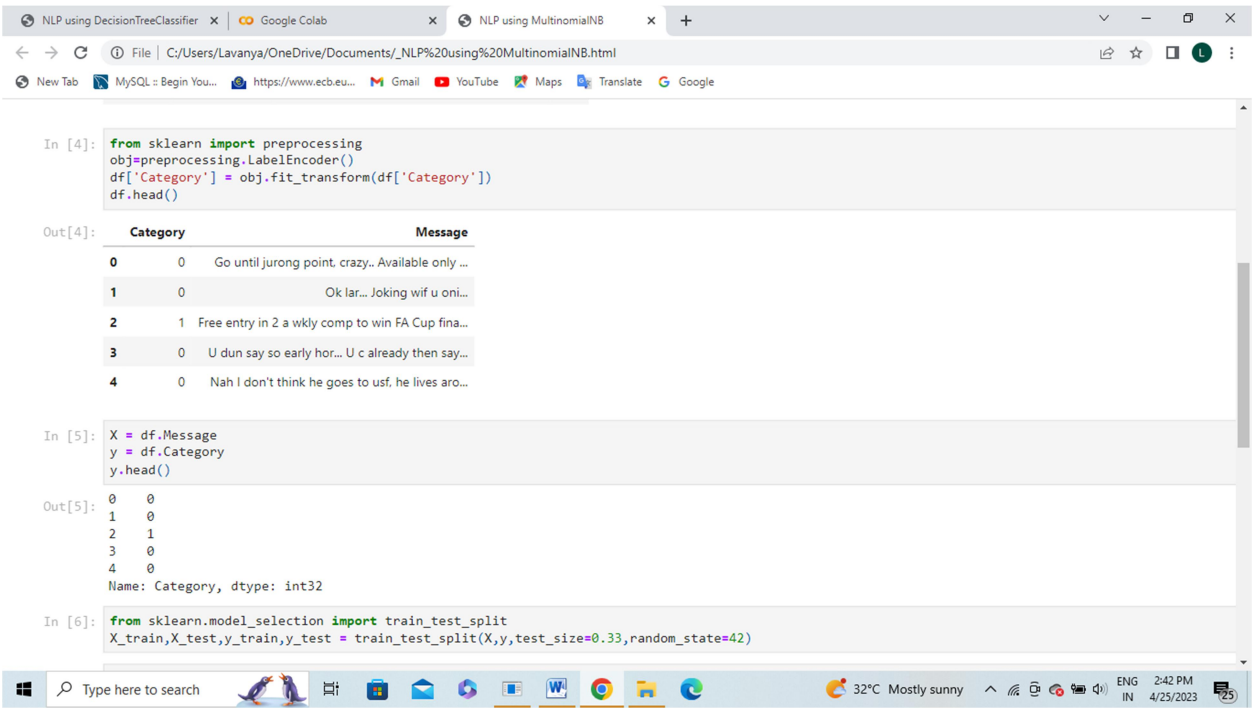
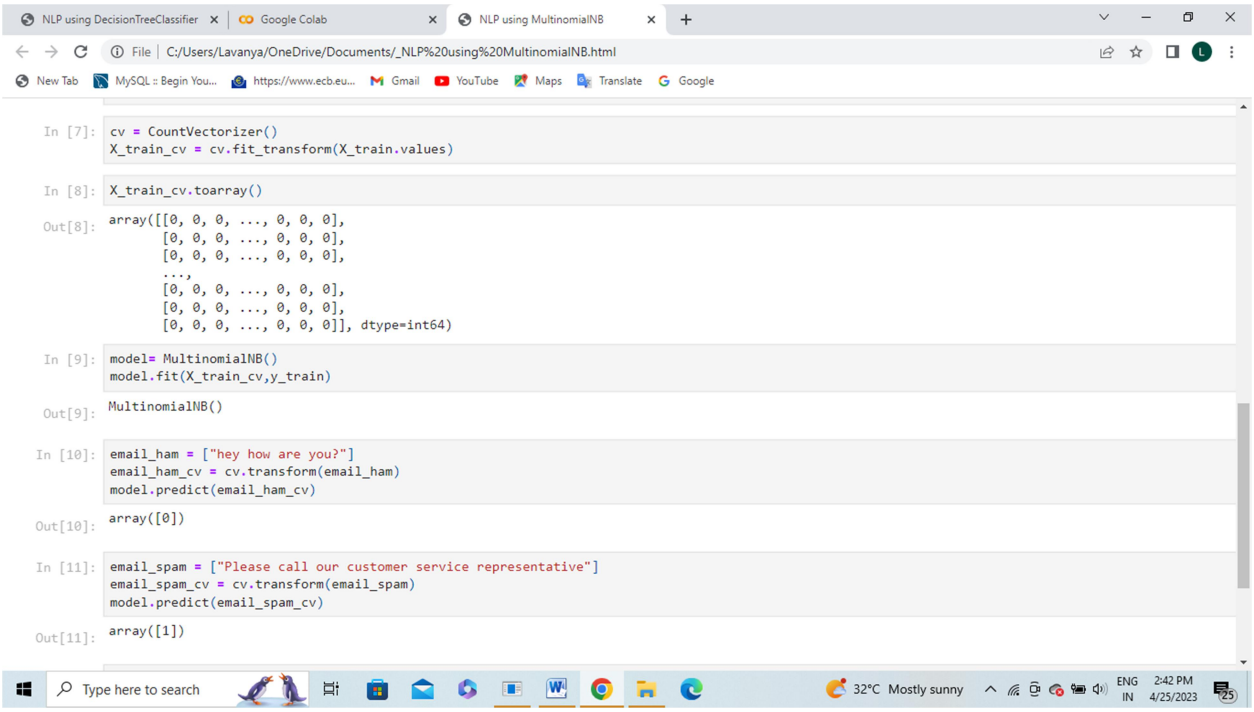
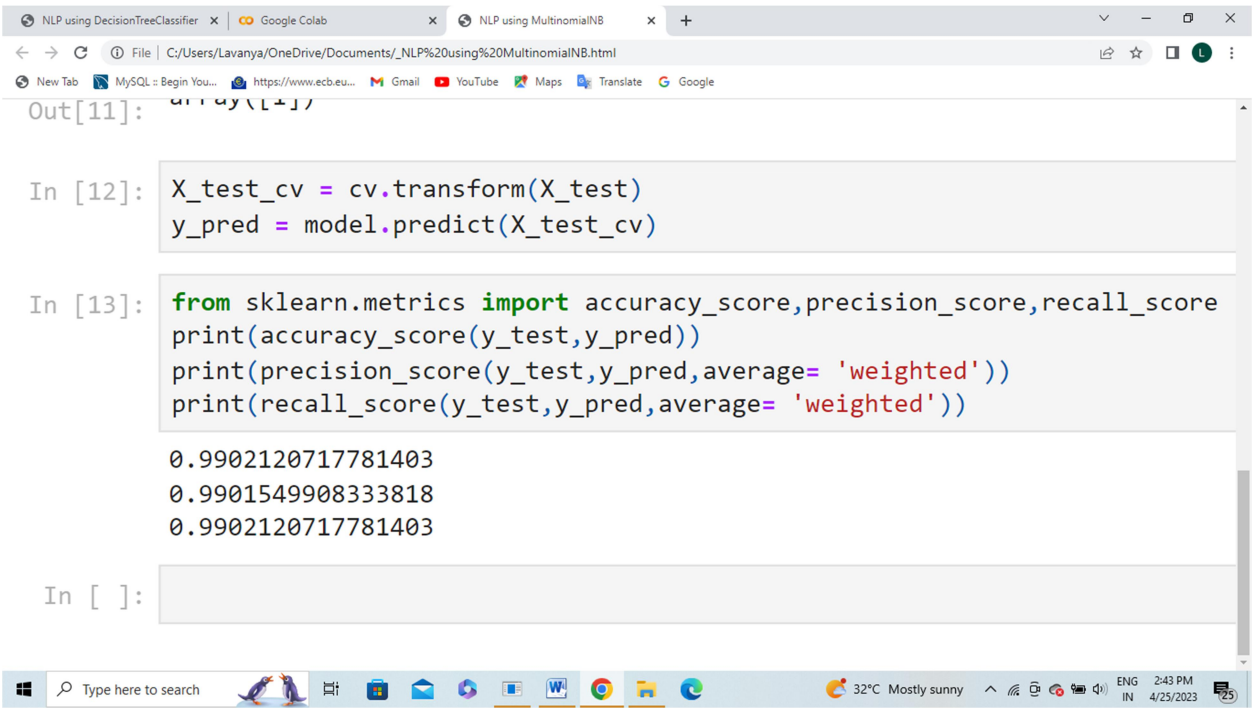

NLP using DecisionTreeClassifier
Google Colab
NLP using MultinomialNB
File | C:/Users/Lavanya/OneDrive/Documents/_NLP%20using%20MultinomialNB.html
New Tab
MySQL :: Begin You...
https://www.ecb.eu...
Gmail
YouTube
Maps
Translate
Google
In [1]:
import pandas as pd
import numpy as np
from sklearn.model_selection import train_test_split
from sklearn.feature_extraction.text import CountVectorizer
from sklearn.naive_bayes import MultinomialNB
In [2]:
df = pd.read_csv("spam_or_ham.csv")
df.head()
Out[2]:
Category Message
0 ham Go until jurong point, crazy.. Available only ...
1 ham Ok lar... Joking wif u oni...
2 spam Free entry in 2 a wkly comp to win FA Cup fina...
3 ham U dun say so early hor... U c already then say...
4 ham Nah I don't think he goes to usf, he lives aro...
In [3]:
df.groupby('Category').describe()
Out[3]:
Message
count unique top freq
Category
ham 4825 4516 Sorry, I'll call later 30
spam 747 641 Please call our customer service representativ... 4
Type here to search
32°C Mostly sunny
ENG IN
2:42 PM 4/25/2023


NLP using DecisionTreeClassifier
Google Colab
NLP using MultinomialNB
File | C:/Users/Lavanya/OneDrive/Documents/_NLP%20using%20MultinomialNB.html
New Tab
MySQL :: Begin You...
https://www.ecb.eu...
Gmail
YouTube
Maps
Translate
Google
In [4]:
from sklearn import preprocessing
obj=preprocessing.LabelEncoder()
df['Category'] = obj.fit_transform(df['Category'])
df.head()
Out[4]:
Category Message
0 0 Go until jurong point, crazy.. Available only ...
1 0 Ok lar... Joking wif u oni...
2 1 Free entry in 2 a wkly comp to win FA Cup fina...
3 0 U dun say so early hor... U c already then say...
4 0 Nah I don't think he goes to usf, he lives aro...
In [5]:
X = df.Message
y = df.Category
y.head()
Out[5]:
0 0
1 0
2 1
3 0
4 0
Name: Category, dtype: int32
In [6]:
from sklearn.model_selection import train_test_split
X_train,X_test,y_train,y_test = train_test_split(X,y,test_size=0.33,random_state=42)
Type here to search
32°C Mostly sunny
ENG IN
2:42 PM 4/25/2023


NLP using DecisionTreeClassifier
Google Colab
NLP using MultinomialNB
File | C:/Users/Lavanya/OneDrive/Documents/_NLP%20using%20MultinomialNB.html
New Tab
MySQL :: Begin You...
https://www.ecb.eu...
Gmail
YouTube
Maps
Translate
Google
In [7]:
cv = CountVectorizer()
X_train_cv = cv.fit_transform(X_train.values)
In [8]:
X_train_cv.toarray()
Out[8]:
array([[0, 0, 0, ..., 0, 0, 0],
[0, 0, 0, ..., 0, 0, 0],
[0, 0, 0, ..., 0, 0, 0],
...,
[0, 0, 0, ..., 0, 0, 0],
[0, 0, 0, ..., 0, 0, 0],
[0, 0, 0, ..., 0, 0, 0]], dtype=int64)
In [9]:
model= MultinomialNB()
model.fit(X_train_cv,y_train)
Out[9]:
MultinomialNB()
In [10]:
email_ham = ["hey how are you?"]
email_ham_cv = cv.transform(email_ham)
model.predict(email_ham_cv)
Out[10]:
array([0])
In [11]:
email_spam = ["Please call our customer service representative"]
email_spam_cv = cv.transform(email_spam)
model.predict(email_spam_cv)
Out[11]:
array([1])
Type here to search
32°C Mostly sunny
ENG
IN
2:42 PM
4/25/2023


NLP using DecisionTreeClassifier
Google Colab
NLP using MultinomialNB
File | C:/Users/Lavanya/OneDrive/Documents/_NLP%20using%20MultinomialNB.html
New Tab
MySQL :: Begin You...
https://www.ecb.eu...
Gmail
YouTube
Maps
Translate
Google
Out[11]:
In [12]:
X_test_cv = cv.transform(X_test)
y_pred = model.predict(X_test_cv)
In [13]:
from sklearn.metrics import accuracy_score,precision_score,recall_score
print(accuracy_score(y_test,y_pred))
print(precision_score(y_test,y_pred,average= 'weighted'))
print(recall_score(y_test,y_pred,average= 'weighted'))
0.9902120717781403
0.9901549908333818
0.9902120717781403
In [ ]:
Type here to search
32°C Mostly sunny
ENG
IN
2:43 PM
4/25/2023