

# Assignment 4 - SMS SPAM Classification

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```
[1] import pandas as pd
import numpy as np

[2] from google.colab import files
uploaded = files.upload()

Choose Files spam.csv
• spam.csv(text/csv) - 503663 bytes, last modified: 27/10/2022 - 100% done
Saving spam.csv to spam.csv

[3] df= pd.read_csv("spam.csv", encoding="latin-1")
df.drop(['Unnamed: 2', 'Unnamed: 3', 'Unnamed: 4'], axis=1, inplace=True)

[4] print(df.shape)
print(df.head(5))

(5572, 2)
      v1      v2
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...

[5] df['label'] = df['v1'].map({'ham': 0, 'spam': 1})
df['message']=df['v2']
df.drop(['v1', 'v2'],axis=1,inplace=True)
X = df['message']
y = df['label']

[6] from sklearn.feature_extraction.text import CountVectorizer
cv = CountVectorizer()
X = cv.fit_transform(X)

[7] 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)

[8] from sklearn.naive_bayes import MultinomialNB
model = MultinomialNB()
model.fit(X_train,y_train)

MultinomialNB()
```

✓  
0s

```
[10] from sklearn.metrics import accuracy_score  
print("Accuracy of the Model: {0}%".format(accuracy_score(y_test,y_pred)*100))
```

Accuracy of the Model: 97.93365959760739%

✓  
1s

```
[11] from sklearn.metrics import classification_report  
print (classification_report(y_test, y_pred))
```

	precision	recall	f1-score	support
0	0.99	0.99	0.99	1587
1	0.93	0.92	0.92	252
accuracy			0.98	1839
macro avg	0.96	0.95	0.96	1839
weighted avg	0.98	0.98	0.98	1839

✓  
46s



```
txt = (input("Enter the Mail : "))  
email = [txt]  
vect= cv.transform(email).toarray()  
result = model.predict(vect)  
print(result)  
if result == 1:  
    print("Its a Spam Email")  
else:  
    print("Not a Spam Email")
```



```
Enter the Mail : Free Iphone  
[1]  
Its a Spam Email
```