

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import nltk
from nltk.corpus import stopwords
from nltk.stem.porter import PorterStemmer
import csv
```

```
from google.colab import files
uploaded = files.upload()
```

Choose Files

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Saving spam11.csv to spam11.csv

```
df=pd.read_csv("spam[1].csv", encoding="latin")
df.head()
```

	v1	v2	Unnamed: 2	Unnamed: 3	Unnamed: 4
0	ham	Go until jurong point, crazy.. Available only ...	NaN	NaN	NaN
1	ham	Ok lar... Joking wif u oni...	NaN	NaN	NaN
2	spam	Free entry in 2 a wkly comp to win FA Cup fina...	NaN	NaN	NaN
3	ham	U dun say so early hor... U c already then say...	NaN	NaN	NaN
4	ham	Nah I don't think he goes to usf, he lives aro...	NaN	NaN	NaN

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 5572 entries, 0 to 5571
Data columns (total 5 columns):
#   Column      Non-Null Count  Dtype
---  -
0    v1          5572 non-null   object
1    v2          5572 non-null   object
2    Unnamed: 2  50 non-null    object
3    Unnamed: 3  12 non-null    object
4    Unnamed: 4   6 non-null     object
dtypes: object(5)
memory usage: 217.8+ KB
```