



Detecting Spam Emails

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The screenshot shows a Jupyter Notebook interface with the following code cells:

```
import warnings
warnings.simplefilter('ignore')

import numpy as np
import pandas as pd
import matplotlib.pyplot as plt

from sklearn.model_selection import train_test_split
from sklearn.feature_extraction.text import TfidfVectorizer

from sklearn.metrics import accuracy_score
from sklearn.metrics import precision_score
from sklearn.metrics import recall_score
from sklearn.metrics import f1_score

[46]: from sklearn.linear_model import LogisticRegression
      from sklearn.tree import DecisionTreeClassifier
      from sklearn.svm import SVC
      from sklearn.neighbors import KNeighborsClassifier
      from sklearn.ensemble import RandomForestClassifier

      from sklearn.ensemble import StackingClassifier

[47]: df = pd.read_csv("../content/SPAM.csv")
      df
```

The output of the last cell is a DataFrame with the following columns: Category, Message, Unnamed: 2, Unnamed: 3, Unnamed: 4.

	Category	Message	Unnamed: 2	Unnamed: 3	Unnamed: 4
0	ham	Go until Jurong point, crazy.. Available only...	NaN	NaN	NaN
1	ham	OK, am... looking off a on...	NaN	NaN	NaN
2	spam	Free entry in 2 a wkly comp to win FA Cup final...	NaN	NaN	NaN

The status bar at the bottom indicates: Disk 81.52 GB available, Js completed at 12:41 PM.

THANK YOU!