Classify the email using the binary classification method. Email Spam detection has two states:

a) Normal State – Not Spam b) Abnormal State – Spam. Use K-Nearest Neighbors for classification. Analyze their performance.

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

In [ ]:
```
df = pd.read_csv("emails.csv")
```

In [ ]:
```
df.head()
```

In [ ]:
```
df.info()
```

In [ ]:
```
df.isnull().sum()
```

In [ ]:
```
x = df.iloc[:, 1:-1].values
y = df.iloc[:, -1].values
```

In [ ]:
```
from sklearn.model_selection import train_test_split
x_train, x_test, y_train, y_test = train_test_split(x,y,test_size = 0.3,r
```

In [ ]:
```
from sklearn.preprocessing import StandardScaler
sc_X = StandardScaler()
x_train = sc_X.fit_transform(x_train)
x_test = sc_X.fit_transform(x_test)
```

In [ ]:
```
from sklearn.neighbors import KNeighborsClassifier
kn = KNeighborsClassifier(n_neighbors = 5)
kn.fit(x_train, y_train)
```

In [ ]:
```
y_pred = kn.predict(x_test)
y_pred
```

In [ ]:
```
from sklearn.metrics import confusion_matrix, accuracy_score, classificat
cm = confusion_matrix(y_test, y_pred)
cm
```

In [ ]:
```
print(classification_report(y_test, y_pred))
```