

# Naive-Bayes model using title data vectorized with TF-IDF

## importing data and packages

```
In [ ]: #import data

%store -r x_text_train_tf
%store -r x_text_test_tf
%store -r y_text_train_tf
%store -r y_text_test_tf

In [ ]: #rename variables more simply for easier interpretation

x_train = x_text_train_tf
x_test = x_text_test_tf
y_train = y_text_train_tf
y_test = y_text_test_tf

In [ ]: from sklearn.metrics import (accuracy_score, recall_score, precision_score, confusion_matrix, ConfusionMatrixDisplay, f1_score)
from sklearn.naive_bayes import MultinomialNB
```

## Naive-Bayes

```
In [ ]: nb = MultinomialNB()

nb.fit(x_train, y_train)

Out[ ]: ▾ MultinomialNB
MultinomialNB()

In [ ]: y_pred = nb.predict(x_test)

In [ ]: print("Accuracy:", accuracy_score(y_test, y_pred))

print("Precision:", precision_score(y_test, y_pred))

print("Recall:", recall_score(y_test, y_pred))

print("Recall:", f1_score(y_test, y_pred))

Accuracy: 0.8575309715279287
Precision: 0.845608360288629
Recall: 0.8311323061873319
Recall: 0.8383078441045881
```