













Answer:

All features are conditionally independent given the class label





Answer:

Gaussian Navie Bayes (for continuous features assuming normal distribution)

Multinominal Navie Bayes (for count data, like text classification)

Bernoulli Navie Bayes (for binary features)







Answer:

Computationally efficient and performs well even with many features, due to the independence assumption.









Answer:

To assess model performance and generalization ability on unseen data by reducing bias and variance in model evaluation.







Answer:

In k-fold the dataset is split into k parts, and the model is trained or tested k times, each fold is used once for testing. In a traditional split, data is divided once only.







Answer:

It maintains the same class distribution in each fold as in the original dataset useful for imbalanced data.







Answer:

K is the number of folds. Higher the k in folds lower the bias and higher variance. The lower the k higher is the bias and lower variance.







Answer:

By testing the model on multiple subsets of data, it ensures that the model generates well and isn’t turned to just one subset.







Answer:

It provides a reliable estimate of model performance, helping compare models and hyperparameters on consistent evaluation criteria.





Answer:

Its computationally expensive, especially for large datasets or complex models.









Answer:

It shows the number of correct and incorrect predictions made by the classifier, broken down by class.







Answer:

TP: correctly predicted positives

TN: correctly predicted negatives







Answer:

FP: incorrectly predicted positives

FN: incorrectly predicted negatives





Answer:

Accuracy=TP+TN/TP+TN+FP+FN







Answer:

Precision=TP/TP+FP







Answer:

Recall=TP/TP+FN







Answer:

F1=2. (Precision.Recall/Precision+Recall)

It’s the harmonic mean of precision and recall







Answer:

The model is often incorrectly predicting negatives as positives.

It may be a concern in spam detection, fraud detection, etc.







Answer:

The model is good at identifying actual positives important in medical diagnosis and safety systems.







Answer:

Bcz it can be misleading the model may predict the majority class well but fail completely in the minority class.