**RIPHAH INTERNATIONAL UNIVERSITY, ISLAMABAD**

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**Lab 11**

**Bachelors of Computer science – 6th semester**

**Subject:** Artificial Intelligence Lab

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**Question 01:**

**Naive Bayes Algorithm:**

Implement the naive Bayes algorithm on the dataset shared via the given link.

**Dataset**:<https://tinyurl.com/y2r9vzde>

import pandas as pd

from sklearn.model\_selection import train\_test\_split

from sklearn.preprocessing import LabelEncoder

from sklearn.naive\_bayes import GaussianNB

from sklearn.metrics import accuracy\_score, classification\_report

# Step 1: Load the dataset

df = pd.read\_csv("Iris Dataset - Public Livelihood Data.csv")

df.dropna(inplace=True)

# Step 2: Encode all columns (categorical to numeric using LabelEncoder)

label\_encoders = {}

for column in df.columns:

le = LabelEncoder()

df[column] = le.fit\_transform(df[column])

label\_encoders[column] = le # Save encoders if needed later

# Step 3: Split features and target

X = df.drop("Salary", axis=1)

y = df["Salary"]

# Step 4: Train-Test Split

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.2, random\_state=42)

# Step 5: Apply Gaussian Naive Bayes

model = GaussianNB()

model.fit(X\_train, y\_train)

# Step 6: Predictions

y\_pred = model.predict(X\_test)

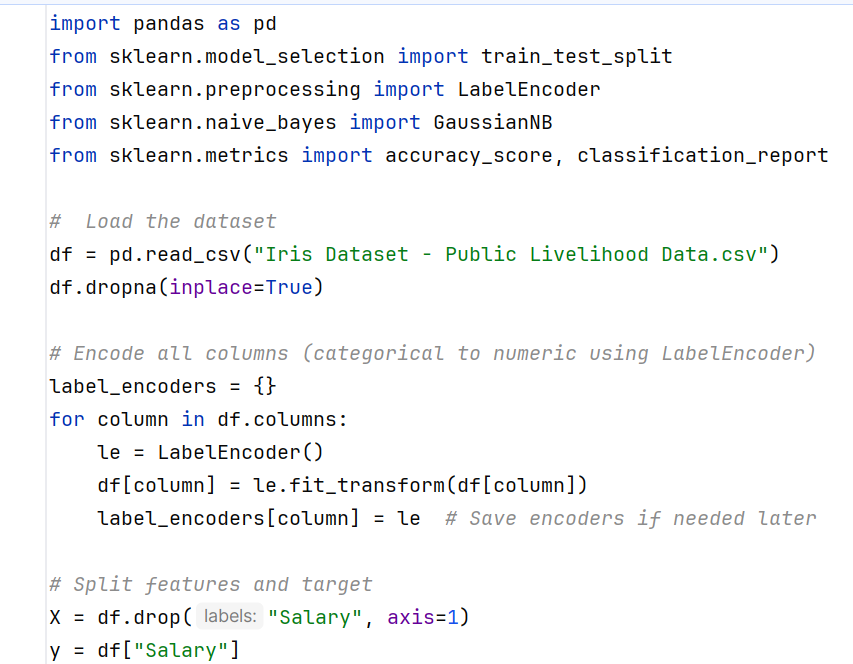
# Step 7: Evaluation

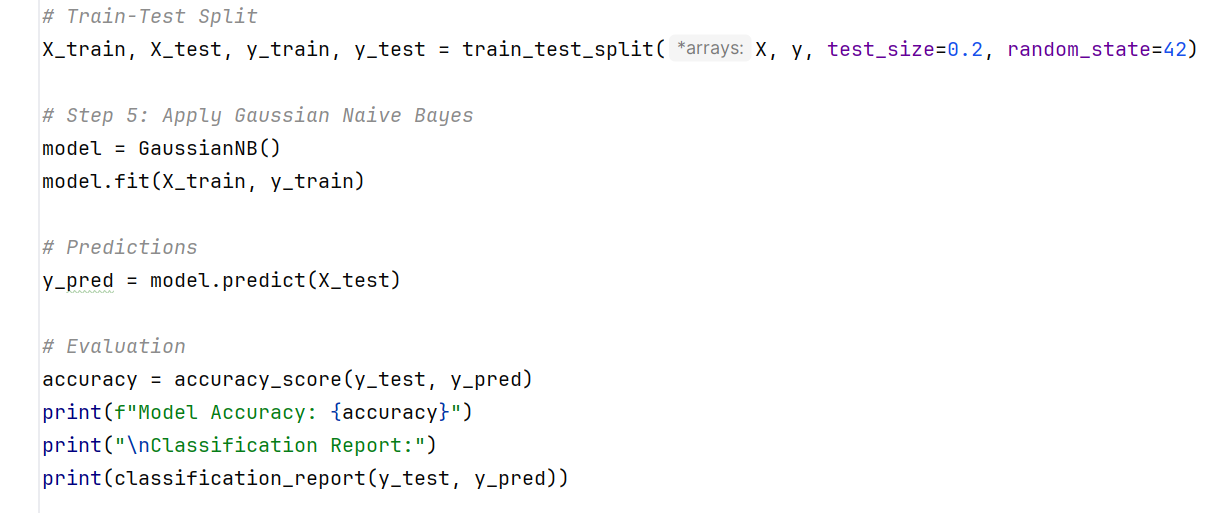
accuracy = accuracy\_score(y\_test, y\_pred)

print(f"Model Accuracy: {accuracy}")

print("\nClassification Report:")

print(classification\_report(y\_test, y\_pred))





**Output:**

