RIPHAH INTERNATIONAL UNIVERSITY, ISLAMABAD

Lab#11

Bachelors of Computer Science – 6th Semester

Course: Artificial Intelligence

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Date of Submission: 22-04-2025

Naive Bayes Algorithm:

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

Dataset: https://tinyurl.com/y2r9vzde

```python
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

df = pd.read_csv("Iris Dataset - Public Livelihood Data.csv")
df.dropna(inplace=True)

label_encoders = {}
for column in df.columns:
    le = LabelEncoder()
    df[column] = le.fit_transform(df[column])
    label_encoders[column] = le

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

X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

model = GaussianNB()
model.fit(X_train, y_train)

y_pred = model.predict(X_test)

accuracy = accuracy_score(y_test, y_pred)
print(f"Model Accuracy: {accuracy}")
print("\nClassification Report:")
print(classification_report(y_test, y_pred))
```