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ROLL NO: 12

PRACTICAL 8

```python
from sklearn.datasets import load_wine
from sklearn.model_selection import train_test_split
from sklearn.naive_bayes import GaussianNB
from sklearn.metrics import accuracy_score, classification_report,
confusion_matrix

# Load the Wine dataset
wine = load_wine() X =
wine.data y =
wine.target

# Split the data into training and testing sets (80% training, 20%
testing)
X_train, X_test, y_train, y_test = train_test_split(X, y,
test_size=0.2, random_state=42)

# Instantiate the Naive Bayes classifier (Gaussian Naive Bayes for
continuous features)
classifier = GaussianNB()

# Train the classifier on the training set
classifier.fit(X_train, y_train)

# Make predictions on the testing set
y_pred = classifier.predict(X_test)

# Evaluate the classifier
accuracy = accuracy_score(y_test, y_pred)
conf_matrix = confusion_matrix(y_test, y_pred)
classification_rep = classification_report(y_test, y_pred)

# Display the results
print(f"Wine Dataset - Accuracy: {accuracy:.4f}")
print("\nConfusion Matrix:\n", conf_matrix)
print("\nClassification Report:\n", classification_rep)

Wine Dataset - Accuracy: 1.0000
```

```
Confusion Matrix:
 [[14  0  0]
 [ 0 14  0]
 [ 0  0  8]]
Classification Report:


              precision    recall  f1-score     support
0        1.00       1.00       1.00           14
1        1.00       1.00       1.00           14
2        1.00       1.00       1.00            8
    accuracy                              1.00          36
macro avg        1.00       1.00       1.00          36
weighted avg      1.00       1.00       1.00          36
```