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ROLL NO : 07

PRACTICAL 2

```
from sklearn.datasets import load_breast_cancer from
sklearn.model_selection import train_test_split from
sklearn.neighbors import KNeighborsClassifier
from sklearn.metrics import accuracy_score, classification_report,
confusion_matrix
# Load the Breast Cancer dataset breast_cancer
= load_breast_cancer()
X = breast_cancer.data y = breast_cancer.target

# Split the data into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y,
test_size=0.2, random_state=42)
# Instantiate and train a classifier (e.g., K-Nearest Neighbors)
classifier = KNeighborsClassifier() classifier.fit(X_train,
y_train)
# Make predictions on the test set
y_pred = classifier.predict(X_test) #
Calculate evaluation metrics
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"Accuracy: {accuracy:.4f}") print("\nConfusion
Matrix:\n", conf_matrix) print("\nClassification
Report:\n", classification_rep)
```

```
Accuracy: 0.9561
Confusion Matrix:
 [[38    5]
[ 0 71]]
```

```
Classification Report:

              precision    recall  f1-score   support
0 1.00       0.88       0.94         43 1 0.93       1.00
0.97       71    accuracy                           0.96
114 macro avg       0.97      0.94      0.95       114
weighted avg       0.96      0.96      0.96       114
```