

NAME: GANESH KACHARE

ROLL NO : 12

## PRACTICAL 2

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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_report)

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

Classification Report:

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