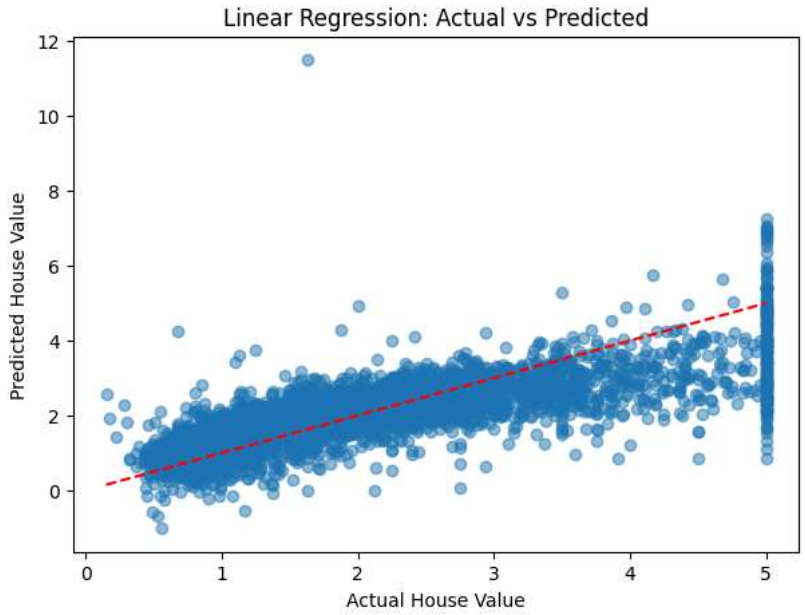
```
from sklearn.datasets import load_breast_cancer
from sklearn.linear_model import LogisticRegression
from sklearn.metrics import accuracy_score, confusion_matrix, classification_report
from sklearn.model_selection import train_test_split

# Load dataset
cancer = load_breast_cancer()
X = cancer.data
y = cancer.target

# Train-test split
X_train, X_test, y_train, y_test = train_test_split(
    X, y, test_size=0.2, random_state=42
)

# Model
log_reg = LogisticRegression(max_iter=5000)
log_reg.fit(X_train, y_train)

# Predictions
y_pred = log_reg.predict(X_test)

# Evaluation
accuracy = accuracy_score(y_test, y_pred)
cm = confusion_matrix(y_test, y_pred)

print("Logistic Regression Results")
print("Accuracy:", accuracy)
print("Confusion Matrix:\n", cm)
print("\nClassification Report:\n", classification_report(y_test, y_pred))
```

```
Logistic Regression Results
Accuracy: 0.956140350877193
Confusion Matrix:
 [[39  4]
 [ 1 70]]

Classification Report:
              precision    recall  f1-score   support

           0       0.97      0.91      0.94        43
           1       0.95      0.99      0.97        71

    accuracy                           0.96       114
   macro avg       0.96      0.95      0.95       114
weighted avg       0.96      0.96      0.96       114
```

```
import numpy as np
import pandas as pd
from sklearn.datasets import fetch_california_housing
from sklearn.model_selection import train_test_split
from sklearn.linear_model import LinearRegression
from sklearn.metrics import mean_squared_error, r2_score

# Load dataset
housing = fetch_california_housing()
X = housing.data
y = housing.target

# Train-test split
X_train, X_test, y_train, y_test = train_test_split(
    X, y, test_size=0.2, random_state=42
)

# Model
lin_reg = LinearRegression()
lin_reg.fit(X_train, y_train)

# Predictions
y_pred = lin_reg.predict(X_test)

# Evaluation
mse = mean_squared_error(y_test, y_pred)
r2 = r2_score(y_test, y_pred)

print("Linear Regression Results")
print("MSE:", mse)
print("R² Score:", r2)
```

```
Linear Regression Results
MSE: 0.5558915986952422
R² Score: 0.5757877060324524
```

```
import matplotlib.pyplot as plt

plt.figure(figsize=(7,5))
plt.scatter(y_test, y_pred, alpha=0.5)
plt.plot([y_test.min(), y_test.max()],
         [y_test.min(), y_test.max()],
         'r--')

plt.xlabel("Actual House Value")
plt.ylabel("Predicted House Value")
plt.title("Linear Regression: Actual vs Predicted")
plt.show()
```




```
import seaborn as sns
from sklearn.metrics import confusion_matrix

# The 'cm' variable from the Logistic Regression (breast cancer dataset) is already available in the kernel.
# We avoid recalculating it here with continuous values from Linear Regression (housing dataset).

plt.figure(figsize=(5,4))
sns.heatmap(cm, annot=True, fmt='d', cmap='Blues',
            xticklabels=cancer.target_names,
            yticklabels=cancer.target_names)

plt.xlabel("Predicted Label")
plt.ylabel("True Label")
plt.title("Logistic Regression: Confusion Matrix")
plt.show()
```