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# Step 1: Import the required modules
from sklearn.datasets import make_classification
from matplotlib import pyplot as plt
from sklearn.linear_model import LogisticRegression
from sklearn.model_selection import train_test_split
from sklearn.metrics import confusion_matrix
import pandas as pd

# Step 2: Generate the dataset
x, y = make_classification(
    n_samples=100,
    n_features=1,
    n_classes=2,
    n_clusters_per_class=1,
    flip_y=0.03,
    n_informative=1,
    n_redundant=0,
    n_repeated=0
)
print(y)

# Step 3: visualize the data
plt.scatter(x, y, c=y, cmap='rainbow')
plt.title('Scatter Plot of Logistic Regression')
plt.show()

# Step 4: Split the dataset
x_train, x_test, y_train, y_test = train_test_split(x, y, random_state=1)

x_train.shape

# Step 4: Perform Logistic Regression
log_reg = LogisticRegression()
log_reg.fit(x_train, y_train)

# Step 5: Make prediction using the model
y_pred = log_reg.predict(x_test)

# Step 6: Display the Confusion Matrix
confusion_matrix(y_test, y_pred)
```

Python 3.10.11 (tags/v3.10.11:7d4cc5a, Apr 5 2023, 00:38:17) [MSC v.1929 64 bit (AMD64)] on win32

Type "help", "copyright", "credits" or "license()" for more information.

>>>

===== RESTART: C:\Users\Raghul\Desktop\ML\Logistic Regression(7).py =====

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