import pandas as pd

from sklearn.model\_selection import train\_test\_split

from sklearn.linear\_model import LogisticRegression

from sklearn.metrics import accuracy\_score

data = {'CustomerID': [1, 2, 3, 4, 5, 6, 7, 8],

'MonthlyCharges': [20, 65, 40, 75, 30, 80, 55, 90],

'Tenure': [12, 5, 24, 3, 18, 7, 30, 1],

'Churn': [0, 1, 0, 1, 0, 1, 0, 1]} # 0: No Churn, 1: Churn

df = pd.DataFrame(data)

X = df[['MonthlyCharges', 'Tenure']]

y = df['Churn']

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.3, random\_state=42)

model = LogisticRegression()

model.fit(X\_train, y\_train)

y\_pred = model.predict(X\_test)

accuracy = accuracy\_score(y\_test, y\_pred)

print(f"Model Accuracy: {accuracy:.2f}")

new\_customers = pd.DataFrame({'MonthlyCharges': [45, 85], 'Tenure': [10, 2]})

predictions = model.predict(new\_customers)

print("\nChurn Predictions for New Customers:")

for i, pred in enumerate(predictions):

print(f"Customer {i+1}: {'Churn' if pred == 1 else 'No Churn'}")

**OUTPUT:**

**Model Accuracy: 1.00**

**Churn Predictions for New Customers:**

**Customer 1: No Churn**

**Customer 2: Churn**

Model Accuracy: 1.00

Churn Predictions for New Customers:

Customer 1: No Churn

Customer 2: Churn

Model Accuracy: 1.00

Churn Predictions for New Customers:

Customer 1: No Churn

Customer 2: Churn