import pandas as pd

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

from sklearn.linear\_model import LogisticRegression

from sklearn.metrics import accuracy\_score

# Sample patient data (simulated)

data = {

'age': [45, 50, 25, 40, 35, 60, 30, 55],

'bmi': [22.5, 28.1, 24.0, 30.2, 27.5, 31.0, 26.5, 29.0],

'glucose\_level': [85, 140, 90, 160, 135, 180, 95, 150],

'risk': [0, 1, 0, 1, 1, 1, 0, 1] # 0 = Low Risk, 1 = High Risk

}

# Create DataFrame

df = pd.DataFrame(data)

# Features and target

X = df[['age', 'bmi', 'glucose\_level']]

y = df['risk']

# Split the data

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

# Train logistic regression model

model = LogisticRegression()

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

# Predict

predictions = model.predict(X\_test)

# Evaluate

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

print(f"Prediction Accuracy: {accuracy \* 100:.2f}%")

# Predict for a new patient

new\_patient = pd.DataFrame({'age': [38], 'bmi': [29.0], 'glucose\_level': [145]})

risk\_prediction = model.predict(new\_patient)

print("Risk Level:", "High" if risk\_prediction[0] == 1 else "Low")