import sys  
import pandas as pd  
  
from sklearn.linear\_model import LogisticRegression  
from sklearn.model\_selection import train\_test\_split  
  
  
from sklearn.metrics import confusion\_matrix, mean\_squared\_error, r2\_score, ConfusionMatrixDisplay

df = pd.read\_csv("./data/Iris.csv")  
df.set\_index("Id", inplace=True)  
df.head()

x = df.iloc[:, 0:3]  
y = df.iloc[:, 4]

x\_train, x\_test, y\_train, y\_test = train\_test\_split(x, y, test\_size=0.2, random\_state=10)

classifier = LogisticRegression(random\_state=10)  
classifier.fit(x\_train, y\_train)

classifier.intercept\_

classifier.coef\_

print("Intercept: \n", classifier.intercept\_)  
print("\nCoefficients: \n", classifier.coef\_)

y\_pred = classifier.predict(x\_test)  
y\_pred

cm = confusion\_matrix(y\_test, y\_pred)  
  
print("Confusion Matrix: ", cm)  
  
  
confusion = ConfusionMatrixDisplay(confusion\_matrix=cm, display\_labels=classifier.classes\_)  
confusion.plot()

print("Mean Squared Error: %.2f" % mean\_squared\_error(y\_test, y\_pred))  
print("Coefficient of Correlation: %.2f" % r2\_score(y\_test, y\_pred))