

# Write the programme for support vector machine classifier

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from sklearn.svm import SVR # Importing Support Vector Regression for
regression
from sklearn.svm import SVC # Importing Support Vector Classifier for
classification
from sklearn.metrics import r2_score, mean_squared_error,
accuracy_score
import matplotlib.pyplot as plt
import numpy as np

# Generating random data for demonstration
np.random.seed(0)
X = 2 * np.random.rand(100, 1)
y = np.where(X > 1, 1, 0).reshape(-1,) # Generating binary
classification labels based on X values

# Creating a Support Vector Machine Classifier
model = SVC(kernel='linear', random_state=42) # Using a linear kernel
for simplicity
model.fit(X, y)

# Making predictions using the model
y_pred = model.predict(X)

# Evaluating the model
accuracy = accuracy_score(y, y_pred)

print("Accuracy:", accuracy)

Accuracy: 1.0

# Plotting the original data and the decision boundary (for 2D data)
plt.figure(figsize=(8, 6))
plt.scatter(X, y, alpha=0.7, label='Original Data')
plt.xlabel('X')
plt.ylabel('y')
plt.title('Support Vector Machine Classifier Example')
plt.legend()
plt.show()
```

