

sl-support-vector-mechanism-1

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#Project Title: ## Using the Support Vector Mechanism algorithm of supervised Machine Learning, predict iris.csv dataset to find out the species is same or different.

#Project Statement: ##A american based botnical garden a grow iris flower in their labs but using Bio-Technology in a single tree different type of varity flower is grow as a data science engineer find out how much accuracy is their all categories contain same species.

#Task-1 ##Preprocess the data in skit.learn library. **#Tast-2:** ##Load the data using Sklearn model selection default argument **#Task-3:** ##On the basis of your datasets or data train,test and split SVM model **#Task-4:** ##Implement Support Vector Mechanism Classifier using svm_classifier.The SVM must be “Linear” **#Task-5:** ##Train the classifier on the training data **#Task-6:** ##Find out the prediciton value on the test data **#Task-7:** ##Test the model with the help of accuracy, accuracy should be lie in the range 0 to 1.

```
[1]: from sklearn.datasets import load_iris
      from sklearn.model_selection import train_test_split
      from sklearn.svm import SVC
      from sklearn.metrics import accuracy_score

[2]: # Load the Iris dataset
      iris = load_iris()
      X = iris.data
      y = iris.target

[3]: # Consider only two classes for simplicity
      X = X[y != 2]
      y = y[y != 2]

[4]: # Split the dataset into training and testing sets
      X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2,
      ↪random_state=42)

[5]: # Create an SVM classifier
      svm_classifier = SVC(kernel='linear')
```

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[6]: # Train the classifier on the training data
svm_classifier.fit(X_train, y_train)
```

```
[6]: SVC(kernel='linear')
```

```
[7]: # Make predictions on the test data
y_pred = svm_classifier.predict(X_test)
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[9]: # Calculate accuracy
accuracy = accuracy_score(y_test, y_pred)
print(f"Accuracy: {accuracy:.2f}")
```

Accuracy: 1.00

#Conclusion: ##According to my Support Vector Mechanism model the species are “Linear”.With the accuracy of 1.00. ##Hence proved model was successfully implement.

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[ ]:
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