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ITA-6016 Machine Learning

Digital Assignment –Lab-3

SUBMITTED TO: Dr_Dominic Savio M

SUPPORT VECTOR MACHINE:

CODE OF THE PROGRAM AND OUTPUT:

```
In [1]: import numpy as np
        from sklearn import datasets
        from sklearn.model_selection import train_test_split
        from sklearn.svm import SVC
        from sklearn.metrics import accuracy_score, precision_score, recall_score, f1_score

        # Load the dataset
        iris = datasets.load_iris()
        X = iris.data
        y = iris.target

        # 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)

        # Create an SVM classifier
        svm = SVC()

        # Train the SVM classifier
        svm.fit(X_train, y_train)

        # Make predictions on the test set
        y_pred = svm.predict(X_test)

        # Calculate evaluation metrics
        accuracy = accuracy_score(y_test, y_pred)
        precision = precision_score(y_test, y_pred, average='weighted')
        recall = recall_score(y_test, y_pred, average='weighted')
        f1 = f1_score(y_test, y_pred, average='weighted')

        # Print the evaluation metrics
        print("Accuracy:", accuracy)
```

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recall = recall_score(y_test, y_pred, average='weighted')
f1 = f1_score(y_test, y_pred, average='weighted')

# Print the evaluation metrics
print("Accuracy:", accuracy)
print("Precision:", precision)
print("Recall:", recall)
print("F1-measure:", f1)
```

```
Accuracy: 1.0
Precision: 1.0
Recall: 1.0
F1-measure: 1.0
```
