

14. Write a program to implement Support Vector Machines (SVM) and Principal Component Analysis (PCA)

```
import numpy as np

import matplotlib.pyplot as plt

from sklearn import datasets

from sklearn.model_selection import train_test_split

from sklearn.decomposition import PCA

from sklearn.svm import SVC

from sklearn.metrics import accuracy_score


# Load the Iris 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=0.3, random_state=42)


# Apply PCA to reduce the dimensionality of the dataset

pca = PCA(n_components=2)

X_train_pca = pca.fit_transform(X_train)

X_test_pca = pca.transform(X_test)


# Train an SVM classifier on the reduced dataset

svm = SVC(kernel='linear')

svm.fit(X_train_pca, y_train)


# Make predictions on the test set

y_pred = svm.predict(X_t
```