**Department of Computer Science and Engineering** **Data Science**

**Academic Year:** 2024-2025 **Name of Student:** Diya Thakkar

**Semester:** VI **Student ID:** 22107040

**Class / Branch:** TE CSE (DS) **Date of Performance:**10-2-25 **Subject:** ML Lab **Date of Submission:**10-1-25

**Name of Instructor:** Prof.Ujwala Pagare

**Experiment No. 4**

**Aim:**- To implement Support Vector Machine using Python.

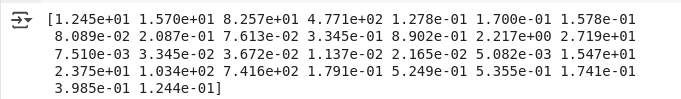
**Program:-**

*from sklearn import datasets*

cancer\_data = datasets.load\_breast\_cancer()

print(cancer\_data.data[5])

*Output:*

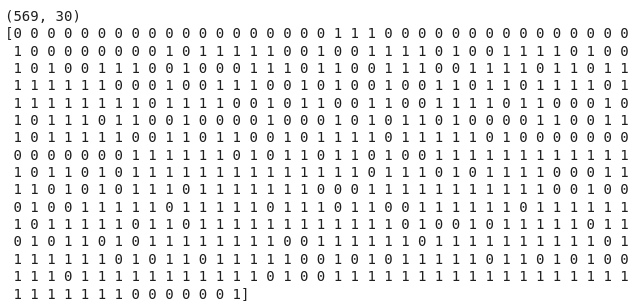
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*print(cancer\_data.data.shape)*

#target set

print(cancer\_data.target)

*ouput:*

**

*from sklearn.model\_selection import train\_test\_split*

cancer\_data = datasets.load\_breast\_cancer()

X\_train, X\_test, y\_train, y\_test = train\_test\_split(cancer\_data.data,

cancer\_data.target, test\_size=0.4,random\_state=109)

*from sklearn import svm*

#create a classifier

cls = svm.SVC(kernel="linear") # Uncomment this line

#train the model

cls.fit(X\_train,y\_train)

#predict the response

pred = cls.predict(X\_test)

*from sklearn.metrics import accuracy\_score, precision\_score, recall\_score*

# Assuming 'pred' and 'y\_test' are defined from your previous code

accuracy = accuracy\_score(y\_test, pred)

precision = precision\_score(y\_test, pred)

recall = recall\_score(y\_test, pred)

print(f"Accuracy: {accuracy}")

print(f"Precision: {precision}")

print(f"Recall: {recall}")

*Output:*

