

✓ Support Vector Machine (SVM)

✓ Importing the libraries

```
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
```

✓ Importing the dataset

```
dataset = pd.read_csv('Data_class.csv')
X = dataset.iloc[:, :-1].values
y = dataset.iloc[:, -1].values
```

✓ Splitting the dataset into the Training set and Test set

```
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size = 0.25, random_state = 0)
```

```
print(X_train)
```

```
[[ 142932      7      6 ...      9      10      2]
 [1120559      8      3 ...      8      9      8]
 [1254538      8     10 ...     10     10     1]
 ...
 [1214092      1      1 ...      1      1      1]
 [1303489      3      1 ...      2      1      1]
 [ 378275     10      9 ...      7      7     1]]
```

```
print(y_train)
```

```
[4 4 4 2 2 2 4 2 2 4 4 2 4 4 2 2 4 4 2 2 2 2 2 2 2 2 2 2 4 2 2 2 2 2 4 4 2 4
 2 2 2 4 2 2 2 2 4 4 2 2 4 4 2 2 4 4 2 2 2 4 4 2 2 2 4 2 2 2 2 2 2 2 2 2 2 2
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 2 2 2 4 4 2 4 4 4 2 2 4 4 2 2 2 2 2 2 4 2 2 4 2 2 4 2 2 2 2 2 4]
```

```
print(X_test)
```

```
[[1173347      1      1 ...      1      1      1]
 [1156017      3      1 ...      2      1      1]
 [ 706426      5      5 ...      4      4      1]
 ...]
```

```
[ 764974      5      1 ...      3      1      2]
[1137156      2      2 ...      7      1      1]
[1160476      2      1 ...      3      1      1]]
```

```
print(y_test)
```

```
[2 2 4 4 2 2 2 4 2 2 4 2 2 4 4 2 2 2 4 4 2 2 2 4 2 2 2 4 2 2 2 4 4 2 2 2 4
 4 2 4 2 2 2 2 2 2 4 2 2 4 2 2 2 4 2 2 2 2 2 2 2 2 2 2 4 4 2 2 2 2
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 2 2 4 2 2 2 4 2 2 2 4 2 2 4 4 2 4 2 2 4 2 2 4 2 2 4 2 2 2 4 2 2 2 4 2
 4 2 4 4 2 2 2 2 4 4 2 4 4 4 4 4 4 2 2 2 2 2 2]
```

Feature Scaling

```
from sklearn.preprocessing import StandardScaler
sc = StandardScaler()
X_train = sc.fit_transform(X_train)
X_test = sc.transform(X_test)
```

Training the SVM model on the Training set

```
from sklearn.svm import SVC
classifier = SVC(kernel = 'linear', random_state = 0)
classifier.fit(X_train, y_train)
```

SVC

SVC(kernel='linear', random_state=0)

Making the Confusion Matrix

```
from sklearn.metrics import confusion_matrix, accuracy_score
y_pred = classifier.predict(X_test)
cm = confusion_matrix(y_test, y_pred)
print(cm)
accuracy_score(y_test, y_pred)
```

```
[[102  5]
 [ 5 59]]
0.9415204678362573
```

