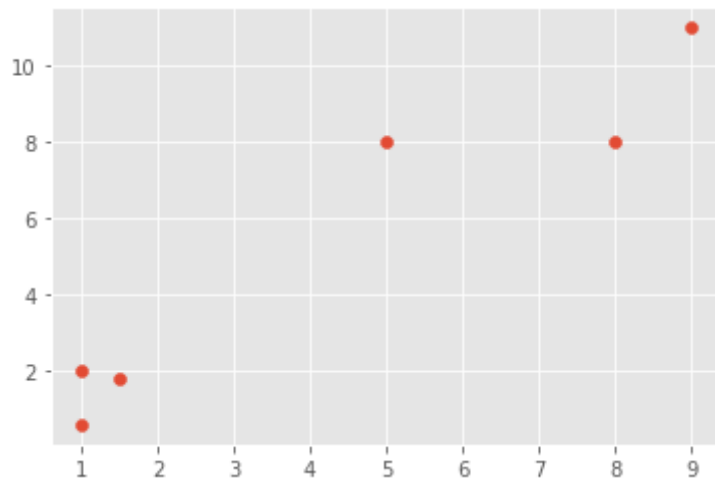```python
import numpy as np
import matplotlib.pyplot as plt
from matplotlib import style
style.use("ggplot")
from sklearn import svm
```

```python
x = [1, 5, 1.5, 8, 1, 9]
y = [2, 8, 1.8, 8, 0.6, 11]
```

```python
plt.scatter(x,y)
plt.show()
```



```python
X = np.array([[1,2],
              [5,8],
              [1.5,1.8],
              [8,8],
              [1,0.6],
              [9,11]])
```

X

```
array([[ 1. ,  2. ],
       [ 5. ,  8. ],
       [ 1.5,  1.8],
       [ 8. ,  8. ],
       [ 1. ,  0.6],
       [ 9. , 11. ]])
```

y = [0,1,0,1,0,1]

clf = svm.SVC(kernel='linear', C = 1.0)

clf

```
SVC(kernel='linear')
```

print(clf.fit(X,y))

```
SVC(kernel='linear')
```

print(clf.predict([[9,11]]))

```
[1]
```

print(clf.predict([[10.58,10.76]]))

```
[1]
```

```
#We use Support Vector classifier as a classifier
from sklearn.svm import SVC
from sklearn.metrics import confusion_matrix
```

```
#training the classifier using X_Train and y_train
clf = SVC(kernel = 'linear').fit(X,y)
clf.predict(X)
```

```
        array([0, 1, 0, 1, 0, 1])
```

```
# Splitting the dataset to Train and test
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.3, random_state=0)
```

```
cm = confusion_matrix(y_train,y_test)
```

```
import pandas as pd
```

```
data = {'y_actual':     [[1,2],
                [5,8],
                [1.5,1.8],
                [8,8],
                [1,0.6],
                [9,11]],
        'y_predicted': [0,1,0,1,0,1]
        }
```

```
df = pd.DataFrame(data)
```

```
confusion_matrix = pd.crosstab(df['y_actual'], df['y_predicted'])
print(confusion_matrix)
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
<ipython-input-31-bb44fb2e2289> in <module>
     12 df = pd.DataFrame(data)
     13
---> 14 confusion_matrix = pd.crosstab(df['y_actual'], df['y_predicted'])
     15 print(confusion_matrix)
```

⬍ 18 frames

```
/usr/local/lib/python3.7/dist-packages/pandas/core/algorithms.py in factorize_array(values, na_sentinel, size_hint, na_value, mask)
    562     table = hash_klass(size_hint or len(values))
    563     uniques, codes = table.factorize(
--> 564         values, na_sentinel=na_sentinel, na_value=na_value, mask=mask
    565     )
    566
```

```
pandas/_libs/hashtable_class_helper.pxi in pandas._libs.hashtable.PyObjectHashTable.factorize()
```

```
pandas/_libs/hashtable_class_helper.pxi in pandas._libs.hashtable.PyObjectHashTable._unique()
```

```
TypeError: unhashable type: 'list'
```

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