In [ ]:
```
import numpy as nm
import matplotlib.pyplot as mtp
import pandas as pd
from sklearn.metrics import confusion_matrix
from sklearn.preprocessing import StandardScaler
from sklearn.model_selection import train_test_split
from sklearn.svm import SVC
from matplotlib.colors import ListedColormap
```

In [ ]:
```
data_set = pd.read_csv("datasets/Mall_Customers.csv")
```

In [ ]:
```
x = data_set.iloc[:,[2,3]].values
y = data_set.iloc[:,4].values
```

In [ ]:
```
x_train,x_test,y_train,y_test = train_test_split(x,y,test_size = 0.25,random_state
```

In [ ]:
```
st_x = StandardScaler()
x_train = st_x.fit_transform(x_train)
x_test = st_x.transform(x_test)
```

In [ ]:
```
classifier = SVC(kernel = 'linear', random_state = 0)
classifier.fit(x_train,y_train)
```

Out[ ]:
```
SVC(kernel='linear', random_state=0)
```

In [ ]:
```
y_pred = classifier.predict(x_test)
print(y_pred)
```

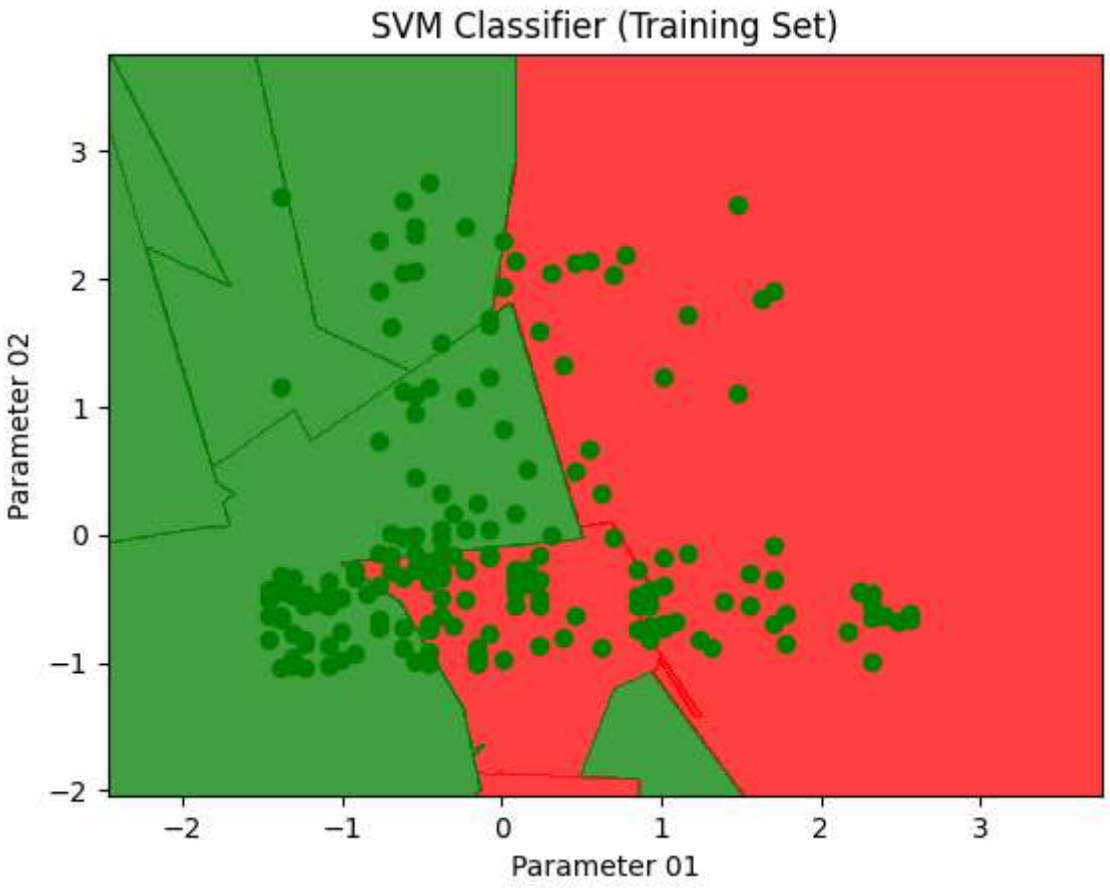
```
[86 42 42 42 42 42 75 42 14 42 75 86 14 14 14 14 75 42 42 42 42 73 13 73
 42 14 14 42 13 73 13 42 14 42 42 42 42 73 42 42 14 14 14 14 14 73 73 14
 14 75 42 14 75 73 14 42 86 14 75 73 75 14 73]
```

In [ ]:
```
cm = confusion_matrix(y_test,y_pred)
print(cm)
```

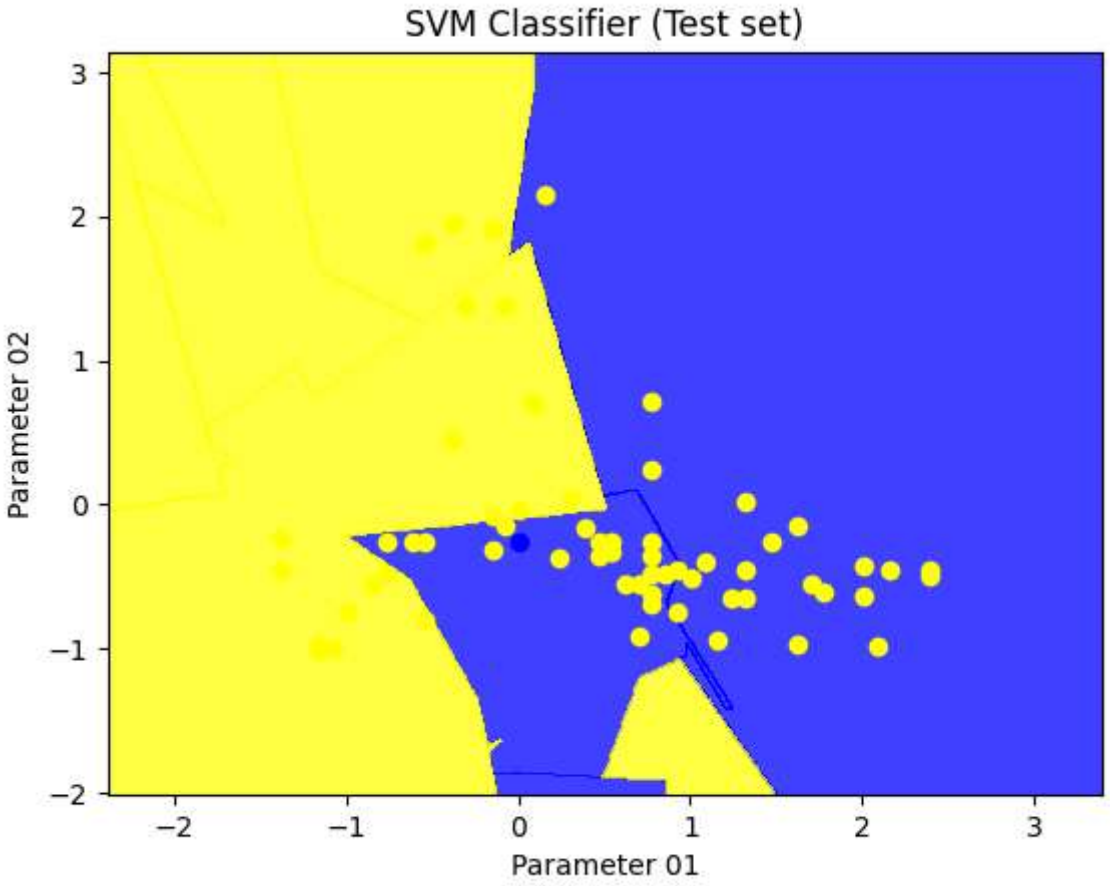
```
[[0 0 0 ... 0 0 0]
 [0 0 0 ... 0 0 0]
 [0 0 0 ... 0 0 0]
 ...
 [0 0 0 ... 0 0 0]
 [0 0 0 ... 0 0 0]
 [0 0 0 ... 0 0 0]]
```

In [ ]:
```
x_set,y_set = x_train,y_train
x1,x2 = nm.meshgrid(nm.arange(start =x_set[:,0].min() - 1 ,stop = x_set[:,1].max()
nm.arange(start=x_set[:,1].min() - 1, stop = x_set[:,1].max() + 1,step = 0.01))

mtp.contourf(x1,x2,classifier.predict(nm.array([x1.ravel(),x2.ravel()]).T).reshape(
alpha = 0.75,cmap = ListedColormap(('red','green')))

mtp.xlim(x1.min(),x1.max())
```

```
mtp.ylim(x2.min(),x2.max())

for i,j in enumerate(nm.unique(y_set)):
    mtp.scatter(x_set[y_set == j,0],x_set[y_set == j,1], color = ListedColormap(('r

mtp.title('SVM Classifier (Training Set)')
mtp.xlabel("Parameter 01")
mtp.ylabel("Parameter 02")

mtp.show()
```



In [ ]:
```
xset,yset = x_test,y_test
x1,x2 = nm.meshgrid(nm.arange(start = xset[:,0].min() - 1,stop = xset[:,0].max() +
nm.arange(start=xset[:,1].min() - 1,stop = xset[:,1].max() + 1, step = 0.01))
mtp.contourf(x1,x2,classifier.predict(nm.array([x1.ravel(),x2.ravel()]).T).reshape(
alpha = 0.75, cmap = ListedColormap(('blue','yellow')))

mtp.xlim(x1.min(),x1.max())
mtp.ylim(x2.min(),x2.max())
for i,j in enumerate (nm.unique(yset)):
    mtp.scatter(xset[yset == j,0], xset[yset == j,1],
    color = ListedColormap(('blue','yellow'))(i),label = j)

mtp.title("SVM Classifier (Test set)")
mtp.xlabel("Parameter 01")
mtp.ylabel("Parameter 02")
mtp.show()
```


SVM Classifier (Test set)
Parameter 02
Parameter 01
3
2
1
0
−1
−2
−2
−1
0
1
2
3