

In [1]:

```
%matplotlib inline
import numpy as np
import matplotlib.pyplot as plt
```

In [34]:

```
from sklearn.datasets import load_iris
```

In [35]:

```
iris = load_iris()
```

In [36]:

```
X = iris.data
```

In [37]:

```
X[0]
```

Out[37]:

```
array([5.1, 3.5, 1.4, 0.2])
```

In [38]:

```
Y = iris.target
```

In [39]:

```
X = X[:,0:2]
```

In [40]:

```
X[0]
```

Out[40]:

```
array([5.1, 3.5])
```

In [41]:

```
from sklearn.model_selection import train_test_split
```

In [42]:

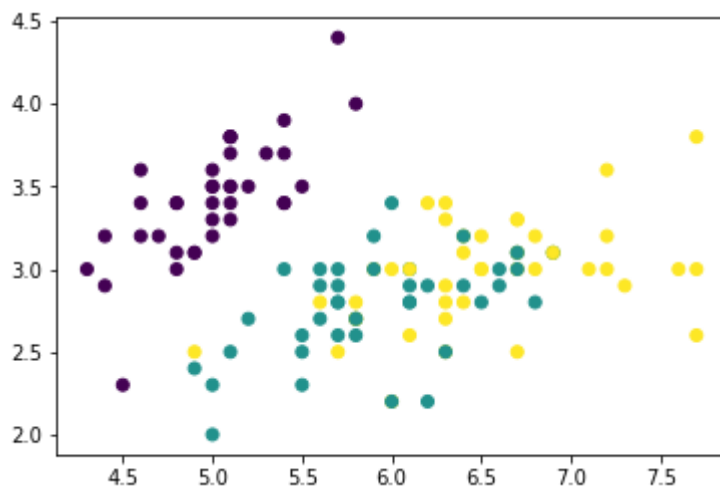
```
x_train, x_test, y_train, y_test = train_test_split(X,Y,
                                                    test_size=0.2,
                                                    random_state=87)
```

In [43]:

```
plt.scatter(x_train[:,0], x_train[:,1],c=y_train)
```

Out[43]:

<matplotlib.collections.PathCollection at 0x1df2f859d90>



In [44]:

```
from sklearn.svm import SVC
```

In [45]:

```
clf = SVC()
```

In [46]:

```
clf.fit(x_train, y_train)
```

Out[46]:

SVC()

In [47]:

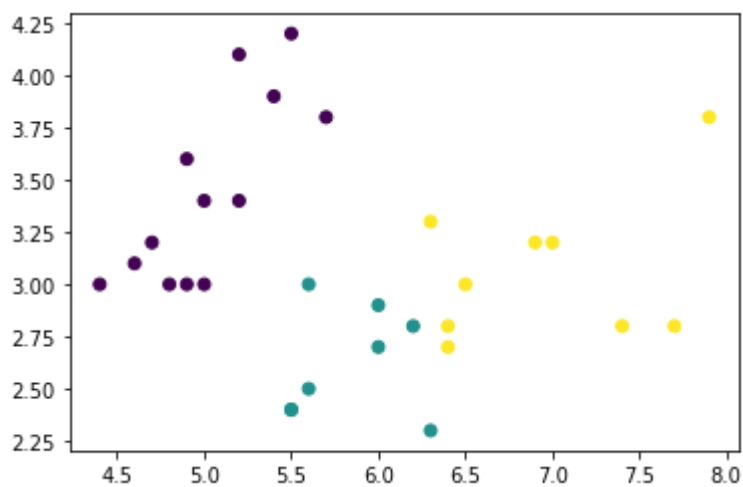
```
y_predict = clf.predict(x_test)
```

In [48]:

```
plt.scatter(x_test[:,0],x_test[:,1],c=y_predict)
```

Out[48]:

<matplotlib.collections.PathCollection at 0x1df31166730>

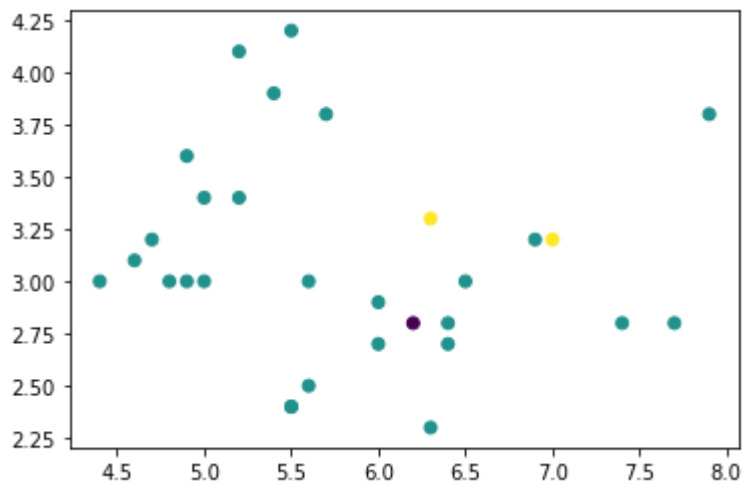


In [49]:

```
plt.scatter(x_test[:,0],x_test[:,1],c=y_predict - y_test)
```

Out[49]:

<matplotlib.collections.PathCollection at 0x1df311cb850>



In [50]:

```
x1,x2 = np.meshgrid(np.arange(4,8,0.02), np.arange(2,4.5,0.02))
```

In [51]:

```
Z = clf.predict(np.c_[x1.ravel(),x2.ravel()])
```

In [52]:

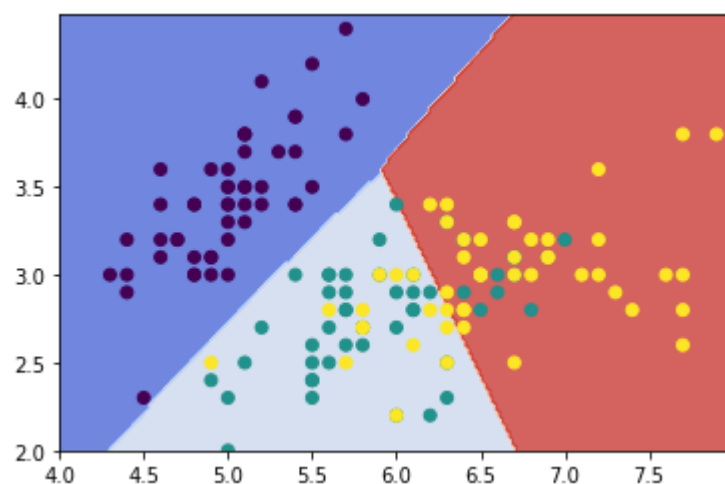
```
Z = Z.reshape(x1.shape)
```

In [53]:

```
plt.contourf(x1,x2,Z,cmap=plt.cm.coolwarm,alpha=0.8)  
plt.scatter(X[:,0],X[:,1],c=Y)
```

Out[53]:

<matplotlib.collections.PathCollection at 0x1df3125d370>



In []: