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To implement SVM using python

In [11]:

```
import pandas as pd
df = pd.read_csv("Fish.csv")
df
```

Out[11]:

	Species	Weight	Length1	Length2	Length3	Height	Width
0	Bream	242.0	23.2	25.4	30.0	11.5200	4.0200
1	Bream	290.0	24.0	26.3	31.2	12.4800	4.3056
2	Bream	340.0	23.9	26.5	31.1	12.3778	4.6961
3	Bream	363.0	26.3	29.0	33.5	12.7300	4.4555
4	Bream	430.0	26.5	29.0	34.0	12.4440	5.1340
...
154	Smelt	12.2	11.5	12.2	13.4	2.0904	1.3936
155	Smelt	13.4	11.7	12.4	13.5	2.4300	1.2690
156	Smelt	12.2	12.1	13.0	13.8	2.2770	1.2558
157	Smelt	19.7	13.2	14.3	15.2	2.8728	2.0672
158	Smelt	19.9	13.8	15.0	16.2	2.9322	1.8792

159 rows × 7 columns

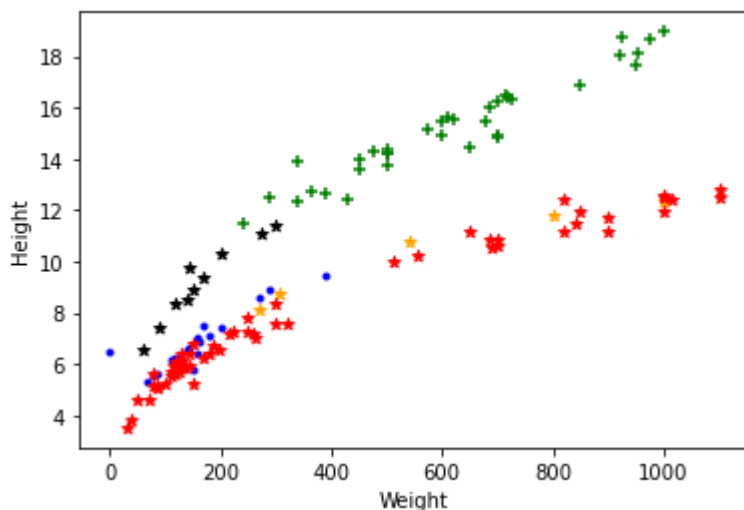
In [20]:

```
import matplotlib.pyplot as plt
%matplotlib inline
df0 = df[0:35]
df1=df[36:55]
df2 = df[56:61]
df3= df[62:72]
df4 = df[73:128]
df5 = df[129:145]
df6 = df[145:]

plt.xlabel('Weight')
plt.ylabel('Height')
plt.scatter(df0['Weight'], df0['Height'],color="green",marker='+')
plt.scatter(df1['Weight'], df1['Height'],color="blue",marker='.')
plt.scatter(df2['Weight'], df2['Height'],color="orange",marker='*')
plt.scatter(df3['Weight'], df3['Height'],color="black",marker='*')
plt.scatter(df4['Weight'], df4['Height'],color="red",marker='*')
```

Out[20]:

<matplotlib.collections.PathCollection at 0x14ec8c1deb0>



In [22]:

```
from sklearn.model_selection import train_test_split
x = df.drop(["Species"],axis = 'columns')
y = df['Species']
```

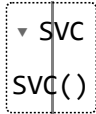
In [24]:

```
X_train, X_test, y_train, y_test = train_test_split(x, y, test_size=0.2)
```

In [26]:

```
from sklearn.svm import SVC
model = SVC()
model.fit(X_train, y_train)
```

Out[26]:



In [27]:

```
model.score(X_test, y_test)
```

Out[27]:

0.40625

In [28]:

```
model.predict([[242.0, 23.2, 25.4, 30.0, 11.5200, 4.0200]])
```

C:\Users\sarvesh\anaconda3\lib\site-packages\sklearn\base.py:439: UserWarning: X does not have valid feature names, but SVC was fitted with feature names
warnings.warn(

Out[28]:

```
array(['Perch'], dtype=object)
```

Conclusion : SVM is implemnted on Given Dataset