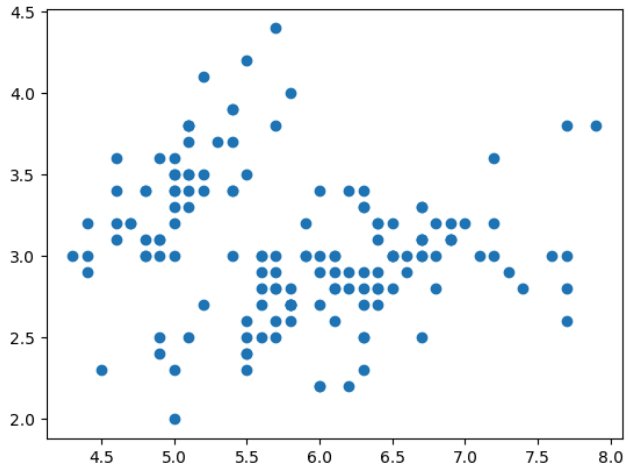
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt


from pandas import DataFrame
from sklearn import datasets
from sklearn.mixture import GaussianMixture
```

```
iris=datasets.load_iris()
```

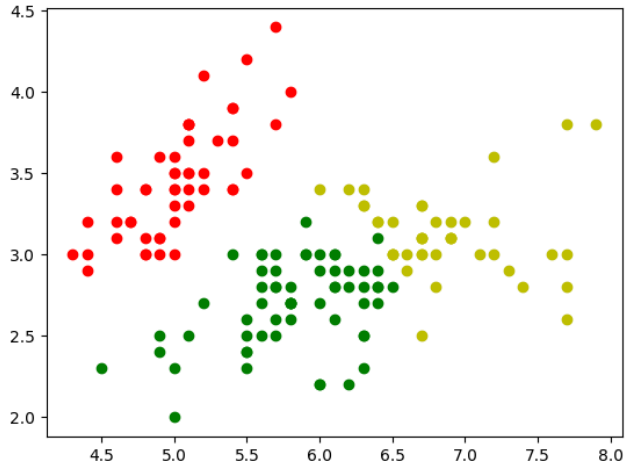
```
X=iris.data[:,:2]
d=pd.DataFrame(X)
```

```
plt.scatter(d[0],d[1])
plt.show()
```




```
gmm=GaussianMixture(n_components=3)

gmm.fit(d)

labels=gmm.predict(d)

d['labels']=labels

d0=d[d['labels']==0]
d1=d[d['labels']==1]
d2=d[d['labels']==2]
```

```
plt.scatter(d0[0],d0[1],c='r')
plt.scatter(d1[0],d1[1],c='y')
plt.scatter(d2[0],d2[1],c='g')
plt.show()
```




```
print(gmm.lower_bound_)
print(gmm.n_iter_)
```

```
-1.4985672470486968
8
```