[1]
```
from sklearn.datasets import load_iris
```

[2]
```
iris = load_iris()
```

[3]
```
import pandas as pd
```

[4]
```
data = pd.DataFrame(iris.data,columns = iris.feature_names)
```

[5]
```
data.head()
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)
0	5.1	3.5	1.4	0.2
1	4.9	3.0	1.4	0.2
2	4.7	3.2	1.3	0.2
3	4.6	3.1	1.5	0.2
4	5.0	3.6	1.4	0.2

[6]
```
data['Species'] = pd.DataFrame(iris.target)
```

[7]
```
data.head()
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	Species
0	5.1	3.5	1.4	0.2	0
1	4.9	3.0	1.4	0.2	0
2	4.7	3.2	1.3	0.2	0
3	4.6	3.1	1.5	0.2	0
4	5.0	3.6	1.4	0.2	0

[8]
```
X = data.iloc[:,:-1]
y = data.iloc[:,-1]
```

```
from sklearn.neural_network import MLPClassifier
model = MLPClassifier(hidden_layer_sizes=(10,),
 max_iter = 5000,
 activation='logistic',
 solver='sgd',
 learning_rate_init=0.001
 )
```

```
from sklearn.model_selection import cross_val_score
scores = cross_val_score(model, X, y, cv = 10) #10-fold cross validation
```

```
print('Iteration\tAccuracy')
for idx,score in enumerate(scores):
 print('%d\t\t%0.2f'%(idx,score))
```

```
Iteration       Accuracy
0               0.80
1               1.00
2               0.93
3               0.93
4               0.87
5               0.80
6               0.87
7               0.93
8               0.93
9               1.00
```

```
print("Average Accuracy: %0.2f Standard deviation of Accuracy: %0.2f" % (scores.mean(), scores.std()))
```

```
Average Accuracy: 0.91 Standard deviation of Accuracy: 0.07
```

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

```
iris = load_iris()
```

```
import pandas as pd
```

[18]
```
data = pd.DataFrame(iris.data,columns = iris.feature_names)
```

[19]
```
data.head()
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)
0	5.1	3.5	1.4	0.2
1	4.9	3.0	1.4	0.2
2	4.7	3.2	1.3	0.2
3	4.6	3.1	1.5	0.2
4	5.0	3.6	1.4	0.2

[20]
```
data['Species'] = pd.DataFrame(iris.target)
```

[21]
```
data.head()
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	Species
0	5.1	3.5	1.4	0.2	0
1	4.9	3.0	1.4	0.2	0
2	4.7	3.2	1.3	0.2	0
3	4.6	3.1	1.5	0.2	0
4	5.0	3.6	1.4	0.2	0

[22]
```
data['Species'] = pd.DataFrame(iris.target)
```

[23]
```
data.head()
```

	sepal length (cm)	sepal width (cm)	petal length (cm)	petal width (cm)	Species
0	5.1	3.5	1.4	0.2	0
1	4.9	3.0	1.4	0.2	0
2	4.7	3.2	1.3	0.2	0
3	4.6	3.1	1.5	0.2	0
4	5.0	3.6	1.4	0.2	0

[24]
```
X = data.iloc[:,:-1]
y = data.iloc[:,-1]
```

[25]
```
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)
```

[26]
```
from sklearn.naive_bayes import GaussianNB
model = GaussianNB()
```

[27]
```
model_fit = model.fit(X_train,y_train)
y_pred = model.predict(X_test)
```

[29]
```
from sklearn.metrics import accuracy_score, confusion_matrix, precision_score, recall_score
print(confusion_matrix(y_pred,y_test))
print('Accuracy: ',accuracy_score(y_pred,y_test).round(2)*100)
print('Accuracy: ',precision_score(y_pred,y_test,average = 'macro').round(2)*100)
print('Accuracy: ',recall_score(y_pred,y_test,average = 'macro').round(2)*100)
```

```
[[18  0  0]
 [ 0 12  1]
 [ 0  1 13]]
Accuracy:  96.0
Accuracy:  95.0
Accuracy:  95.0
```