In [1]:

```
import pandas
import numpy
import seaborn as sns
import sklearn
import matplotlib.pyplot as plt
%matplotlib inline
```

In [2]:

```
import pandas as pd
iris = pd.read_csv('iris_csv.csv')
```

In [3]:

```
iris.head(15)
```

Out[3]:

	sepallength	sepalwidth	petallength	petalwidth	class
0	5.1	3.5	1.4	0.2	Iris-setosa
1	4.9	3.0	1.4	0.2	Iris-setosa
2	4.7	3.2	1.3	0.2	Iris-setosa
3	4.6	3.1	1.5	0.2	Iris-setosa
4	5.0	3.6	1.4	0.2	Iris-setosa
5	5.4	3.9	1.7	0.4	Iris-setosa
6	4.6	3.4	1.4	0.3	Iris-setosa
7	5.0	3.4	1.5	0.2	Iris-setosa
8	4.4	2.9	1.4	0.2	Iris-setosa
9	4.9	3.1	1.5	0.1	Iris-setosa
10	5.4	3.7	1.5	0.2	Iris-setosa
11	4.8	3.4	1.6	0.2	Iris-setosa
12	4.8	3.0	1.4	0.1	Iris-setosa
13	4.3	3.0	1.1	0.1	Iris-setosa
14	5.8	4.0	1.2	0.2	Iris-setosa

In [4]:

```
print(len(iris['class']))
```

```
150
```

In [5]:

```
for col in iris.columns:
    print(col)
```

```
sepallength
sepalwidth
petallength
petalwidth
class
```

In [6]:

```
print(iris.groupby('class').size())
```

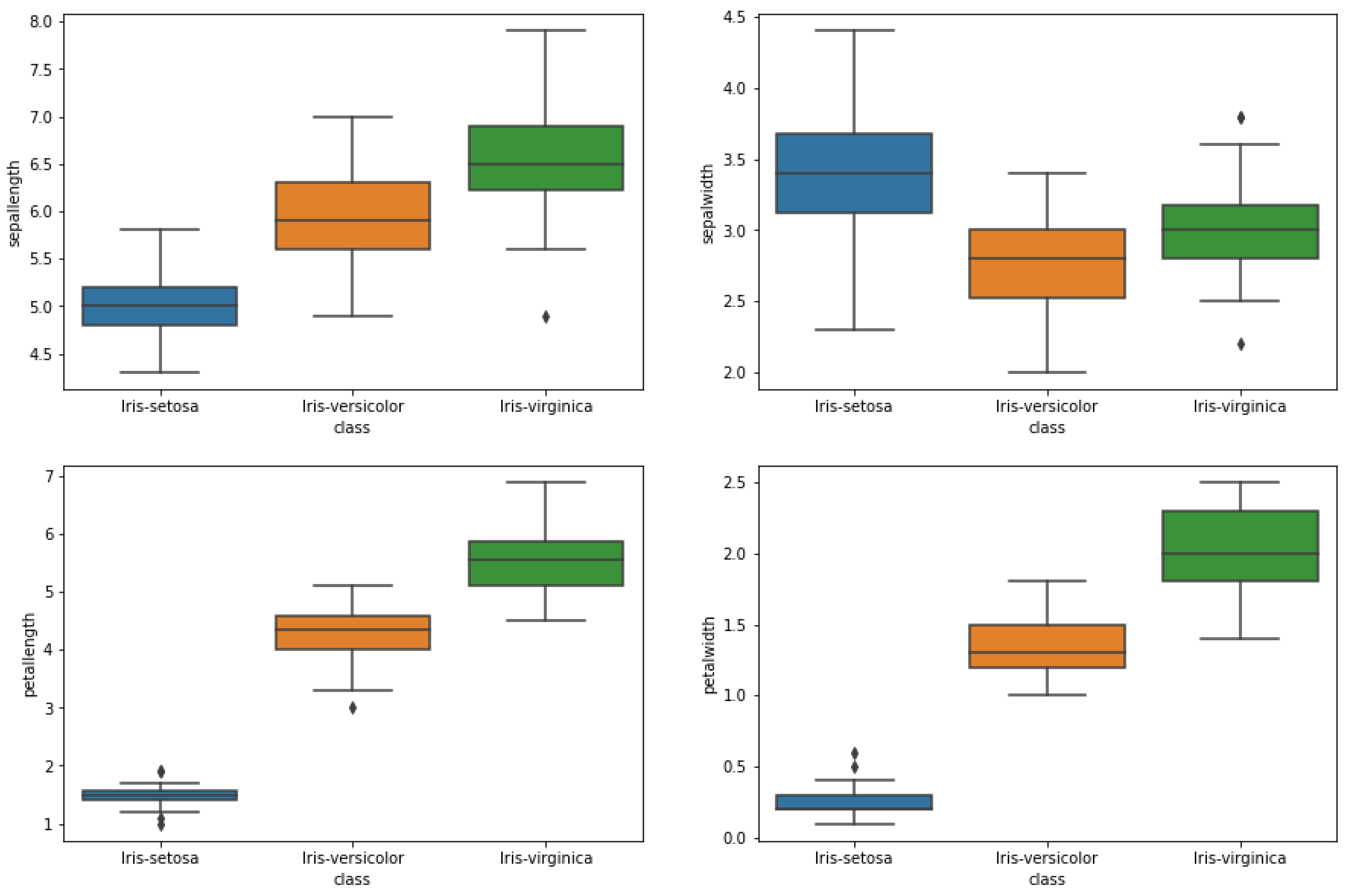
```
class
Iris-setosa        50
Iris-versicolor    50
Iris-virginica     50
dtype: int64
```

In [7]:

```
plt.figure(figsize=(15,10))
plt.subplot(2,2,1)
sns.boxplot(x='class',y='sepallength', data=iris)
plt.subplot(2,2,2)
sns.boxplot(x='class',y='sepalwidth', data=iris)
plt.subplot(2,2,3)
sns.boxplot(x='class',y='petallength', data=iris)
plt.subplot(2,2,4)
sns.boxplot(x='class',y='petalwidth', data=iris)
```

Out[7]:

```
<AxesSubplot:xlabel='class', ylabel='petalwidth'>
```



In [8]:

```
#data cleaning
```

In [9]:

```
iris.isnull().values.any()
```

Out[9]:

```
False
```

In [10]:

```
iris.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149
Data columns (total 5 columns):
 #   Column       Non-Null Count  Dtype
---  ------       --------------  -----
 0   sepallength  150 non-null    float64
 1   sepalwidth   150 non-null    float64
 2   petallength  150 non-null    float64
 3   petalwidth   150 non-null    float64
 4   class        150 non-null    object
dtypes: float64(4), object(1)
memory usage: 6.0+ KB
```

In [11]:

```
from sklearn.model_selection import train_test_split
array = iris.values
X = array[:,0:4]
Y = array[:,4]
x_train,x_test,y_train,y_test = train_test_split(X,Y,test_size=0.3,random_state=0)
```

In [12]:

```
# Support vector classifier
```

In [13]:

```
from sklearn.svm import SVC
from sklearn.metrics import accuracy_score
svc = SVC(max_iter=1000,gamma='auto')
svc.fit(x_train,y_train)
y_pred = svc.predict(x_test)
acc_svc = round(accuracy_score(y_pred,y_test),2)*100
print('Accuracy: ',acc_svc)
```

```
Accuracy:  98.0
```

In [14]:

```
#decision tree classifier
```

In [15]:

```
from sklearn.tree import DecisionTreeClassifier
dtc = DecisionTreeClassifier(random_state=0)
dtc.fit(x_train,y_train)
y_pred = dtc.predict(x_test)
acc_dtc = round(accuracy_score(y_pred,y_test),2)*100
print('Accuracy: ',acc_dtc)
```

```
Accuracy:  98.0
```

In [ ]: