```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
sns.set(color_codes = True)
%matplotlib inline
```

```
df = pd.read_csv('iris.csv')
```

```
df.head(10)
```

	5.1	3.5	1.4	0.2	Iris-setosa
0	4.9	3.0	1.4	0.2	Iris-setosa
1	4.7	3.2	1.3	0.2	Iris-setosa
2	4.6	3.1	1.5	0.2	Iris-setosa
3	5.0	3.6	1.4	0.2	Iris-setosa
4	5.4	3.9	1.7	0.4	Iris-setosa
5	4.6	3.4	1.4	0.3	Iris-setosa
6	5.0	3.4	1.5	0.2	Iris-setosa
7	4.4	2.9	1.4	0.2	Iris-setosa
8	4.9	3.1	1.5	0.1	Iris-setosa
9	5.4	3.7	1.5	0.2	Iris-setosa

```
df= pd.read_csv('iris.csv',header= None)
```

```
df.head()
```

	0	1	2	3	4
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

```
df.info()
```

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

```
df.describe()
```

	0	1	2	3
count	150.000000	150.000000	150.000000	150.000000
mean	5.843333	3.054000	3.758667	1.198667
std	0.828066	0.433594	1.764420	0.763161
min	4.300000	2.000000	1.000000	0.100000
25%	5.100000	2.800000	1.600000	0.300000
50%	5.800000	3.000000	4.350000	1.300000
75%	6.400000	3.300000	5.100000	1.800000
max	7.900000	4.400000	6.900000	2.500000

```
col_name=['sepal_length','sepal_width','petal_length','petal_width','class']
```

```
df.columns=col_name
```

```
df.head()
```

	sepal_length	sepal_width	petal_length	petal_width	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

```
iris=sns.load_dataset('iris')
```

```
iris.head()
```

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3.0	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa

```
iris.info()
```

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

```
iris.describe()
```

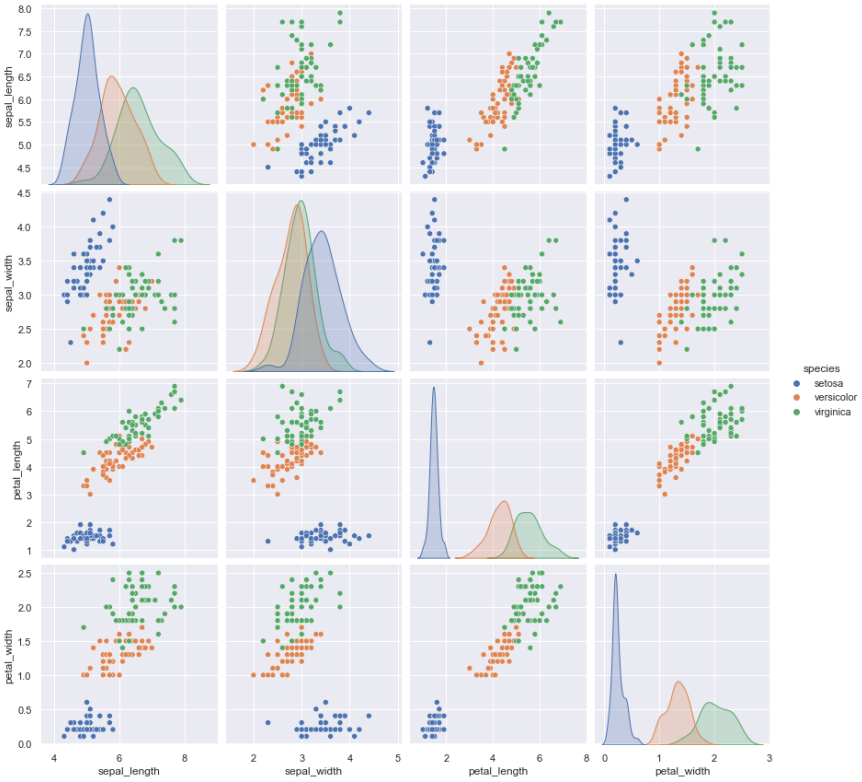
	sepal_length	sepal_width	petal_length	petal_width
count	150.000000	150.000000	150.000000	150.000000
mean	5.843333	3.057333	3.758000	1.199333
std	0.828066	0.435866	1.765298	0.762238
min	4.300000	2.000000	1.000000	0.100000
25%	5.100000	2.800000	1.600000	0.300000
50%	5.800000	3.000000	4.350000	1.300000
75%	6.400000	3.300000	5.100000	1.800000
max	7.900000	4.400000	6.900000	2.500000

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

```
species
setosa        50
versicolor    50
virginica     50
dtype: int64
```

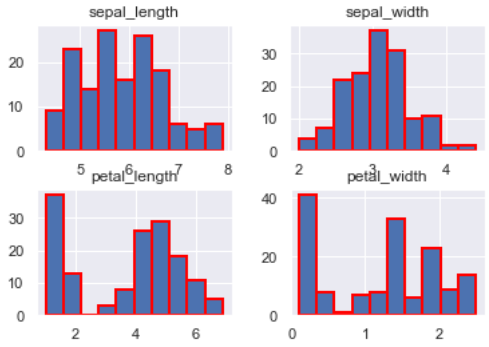
```
sns.pairplot(iris,hue='species',size=3,aspect=1)
```

```
C:\Users\DIVYA\anaconda3\lib\site-packages\seaborn\axisgrid.py:2076: UserWarning: The
  warnings.warn(msg, UserWarning)
<seaborn.axisgrid.PairGrid at 0x153b902ee80>
```



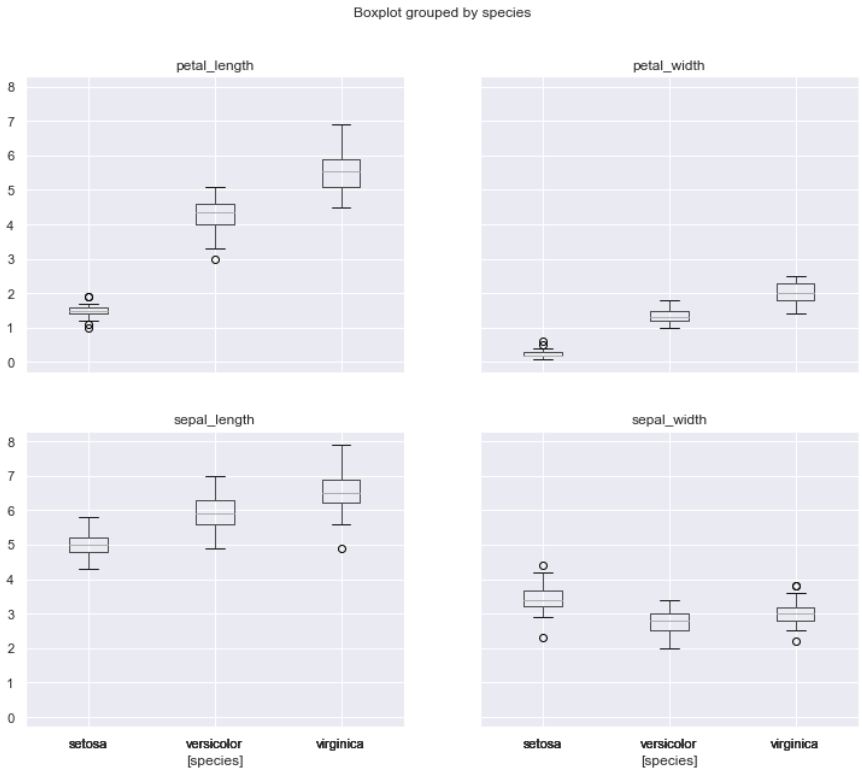

```
iris.hist(edgecolor='red',linewidth =2)
```

```
array([[<AxesSubplot:title={'center':'sepal_length'}>,
        <AxesSubplot:title={'center':'sepal_width'}>],
       [<AxesSubplot:title={'center':'petal_length'}>,
        <AxesSubplot:title={'center':'petal_width'}>]], dtype=object)
```

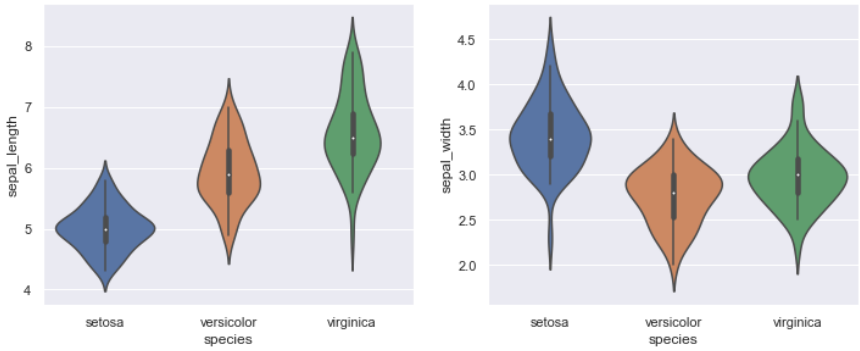



```
iris.boxplot(by='species',figsize=(12,10))
```

```
array([[<AxesSubplot:title={'center':'petal_length'}, xlabel='[species]'>,
        <AxesSubplot:title={'center':'petal_width'}, xlabel='[species]'>],
       [<AxesSubplot:title={'center':'sepal_length'}, xlabel='[species]'>,
        <AxesSubplot:title={'center':'sepal_width'}, xlabel='[species]'>]],
      dtype=object)
```




```
plt.figure(figsize=(12,10))
plt.subplot(2,2,1)
sns.violinplot(x='species',y='sepal_length',data = iris)
plt.subplot(2,2,2)
sns.violinplot(x='species',y='sepal_width', data = iris)
plt.subplot(2,2,3)
sns.violinplot(x='species',y='petal_length',data = iris)
plt.subplot(2,2,4)
sns.violinplot(x='species',y='petal_width', data = iris)
plt.show()
```


sepal_length
8
7
6
5
4
setosa
versicolor
virginica
species
sepal_width
4.5
4.0
3.5
3.0
2.5
2.0
setosa
versicolor
virginica
species