In [1]:
```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
import numpy as np
%matplotlib inline
import sklearn
from IPython.display import Image, display
file_to_open=r'C:\Users\dell\Desktop\data sets\iris.csv'
iris=pd.read_csv(file_to_open)
```

In [2]:
```
iris.shape
```

Out[2]: (150, 5)

In [3]:
```
iris.head()
```

Out[3]:

	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

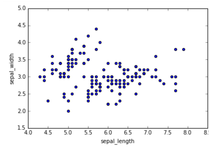
In [4]:
```
iris.columns #to get info about columns
```

Out[4]:
```
Index(['sepal_length', 'sepal_width', 'petal_length', 'petal_width',
       'species'],
      dtype='object')
```

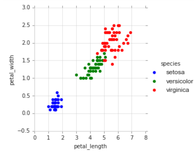
In [5]:
```
iris["species"].value_counts() #to count values
```

Out[5]:
```
versicolor    50
setosa        50
virginica     50
Name: species, dtype: int64
```

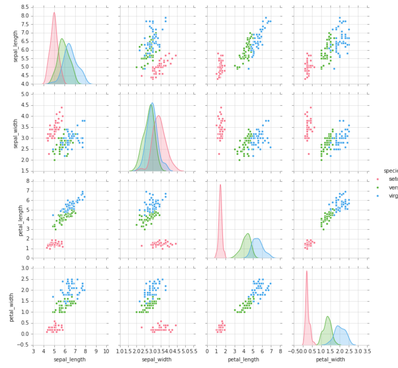
In [6]:
```
iris.plot(kind='scatter',x='sepal_length',y='sepal_width');  #scatter plot sepal_width vs sepal_leng
th
plt.show()
```



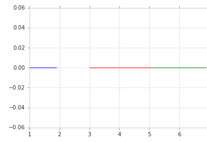
In [7]:
```
sns.set_style("whitegrid");
sns.FacetGrid(iris,hue='species',height=4)\
    .map(plt.scatter,'petal_length','petal_width')\
    .add_legend();
plt.show()

#using seaborn  plot a grph between  petal length vs petal width
```



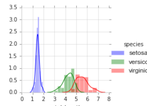
In [8]:
```
g = sns.pairplot(iris, hue="species", palette="husl") #pair plot
```



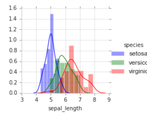
In [9]:
```
import numpy as np
iris_setosa=iris.loc[iris["species"]=="setosa"];
iris_virginica=iris.loc[iris["species"]=="virginica"]
iris_versicolor=iris.loc[iris["species"]=="versicolor"]
plt.plot(iris_setosa['petal_length'], np.zeros_like(iris_setosa['petal_length']))
plt.plot(iris_virginica['petal_length'], np.zeros_like(iris_virginica['petal_length']))
plt.plot(iris_versicolor['petal_length'], np.zeros_like(iris_versicolor['petal_length']))
plt.show()
#id scatter plot the problem with this is we cannot count how many point
#we have in a region due toh high overlapping thats why it is hard to read
```



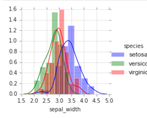
In [10]:
```
#dist plot of petal length
sns.FacetGrid(iris,hue="species",height=3)\
    .map(sns.distplot,"petal_length")\
    .add_legend()
plt.show()
```



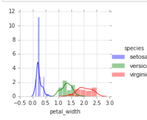
In [11]:
```
sns.FacetGrid(iris,hue="species",height=3)\
    .map(sns.distplot,"sepal_length")\
    .add_legend()
plt.show()
```



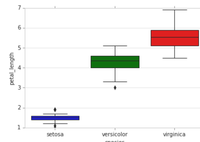
In [12]:
```
sns.FacetGrid(iris,hue="species",height=3)\
    .map(sns.distplot,"sepal_width")\
    .add_legend()
plt.show()
```



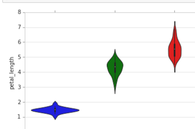
In [13]:
```
sns.FacetGrid(iris,hue="species",height=3)\
    .map(sns.distplot,'petal_width')\
    .add_legend()
plt.show()
```



In [14]:
```
sns.boxplot(x="species",y="petal_length",data=iris)
plt.show()
```



In [15]:
```
sns.violinplot(x="species",y='petal_length',data=iris)
plt.show()
```



In [ ]:
```
```