In [1]:

```
mport pandas as pd
mport seaborn as sns
mport matplotlib.pyplot as plt
mport numpy as np
```

In [2]:

```
rom sklearn.datasets import load_iris
ris=load_iris()
ata=pd.DataFrame(iris.data,columns=iris.feature_names)
abel=pd.DataFrame(list(map(lambda x: iris.target_names[x],iris.target)),colum
s=['Species'])
ris=pd.concat([data,label],axis=1)
rint(iris.head())
```

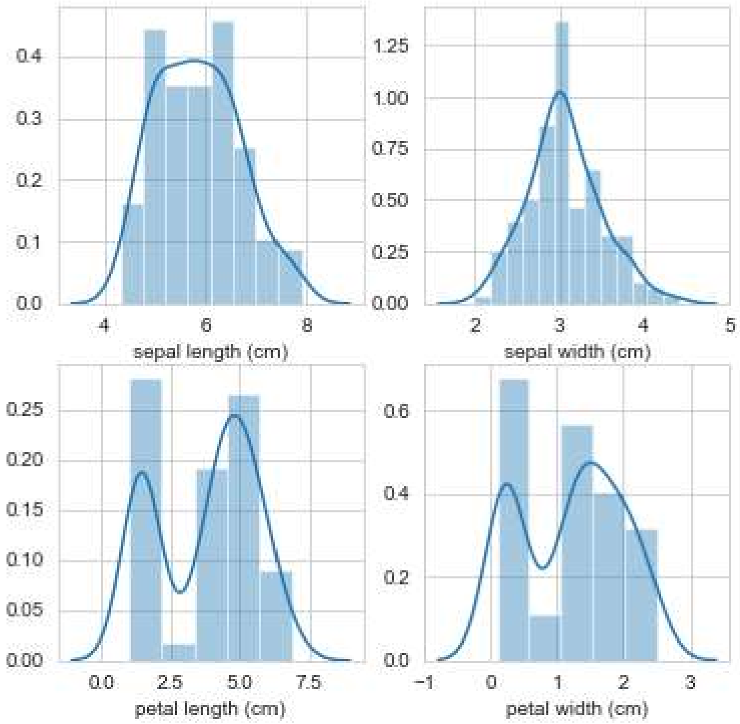
```
   sepal length (cm)  sepal width (cm)  petal length (cm)  petal width (cm)

                5.1               3.5                1.4               0.2
                4.9               3.0                1.4               0.2
                4.7               3.2                1.3               0.2
                4.6               3.1                1.5               0.2
                5.0               3.6                1.4               0.2

  Species
   setosa
   setosa
   setosa
   setosa
   setosa
```

1.Use the distplot() to see the distribution of the SepalLengthCm, SepalWidthCm, PetallengthCm,PetalwidthCm. Plot them as subplots in a single image

In [12]:

```
ns.set_style("whitegrid");
ig, axs = plt.subplots(figsize=(6,6), ncols=2, nrows=2)
ns.distplot(iris['sepal length (cm)'],ax=axs[0, 0])
ns.distplot(iris['sepal width (cm)'], ax=axs[0, 1])
ns.distplot(iris['petal length (cm)'], ax=axs[1, 0])
ns.distplot(iris['petal width (cm)'], ax=axs[1, 1])
lt.show();
```

```
:\Users\Acer\Anaconda3\lib\site-packages\scipy\stats\stats.py:1713: FutureWa
ning: Using a non-tuple sequence for multidimensional indexing is deprecate
; use `arr[tuple(seq)]` instead of `arr[seq]`. In the future this will be in
erpreted as an array index, `arr[np.array(seq)]`, which will result either i
 an error or a different result.
 return np.add.reduce(sorted[indexer] * weights, axis=axis) / sumval
```



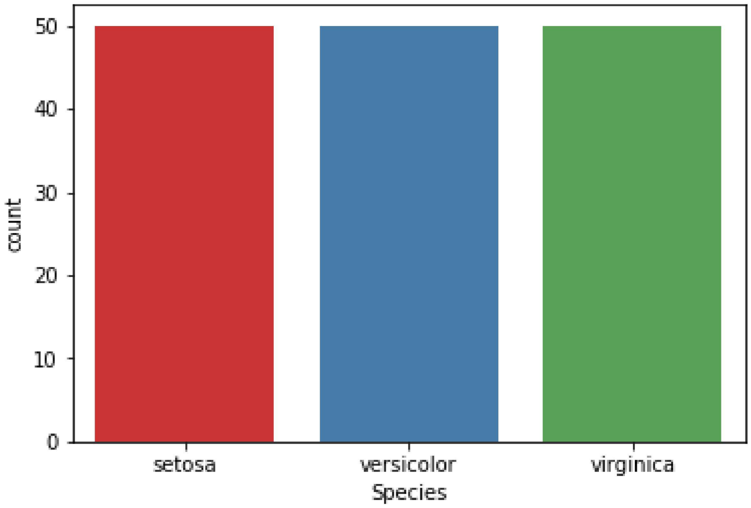
3)Do a countplot for the feature 'Species'

In [3]:

```
ns.countplot(x='Species',data=iris,palette="Set1")
```

Out[3]:

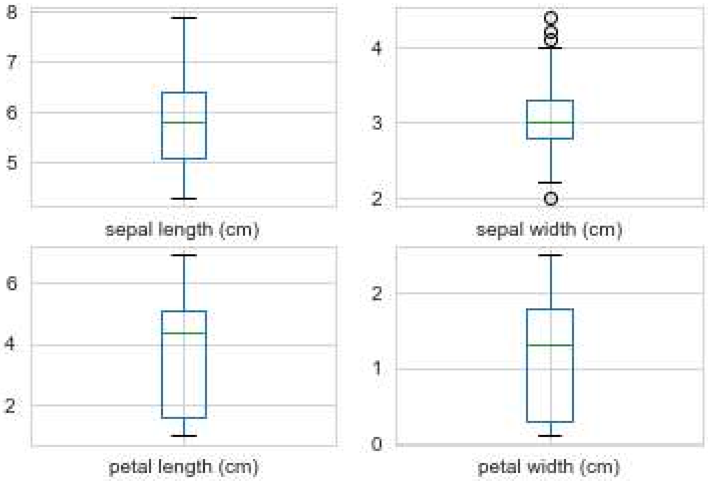
```
<matplotlib.axes._subplots.AxesSubplot at 0x219e8896ba8>
```



2) Do a boxplot of all the features except 'Species"

In [13]:

```
ig, axes = plt.subplots(2,2)
or i,el in enumerate(list(iris.columns.values)[:-1]):
   a = iris.boxplot(el, ax=axes.flatten()[i])

lt.show()
```

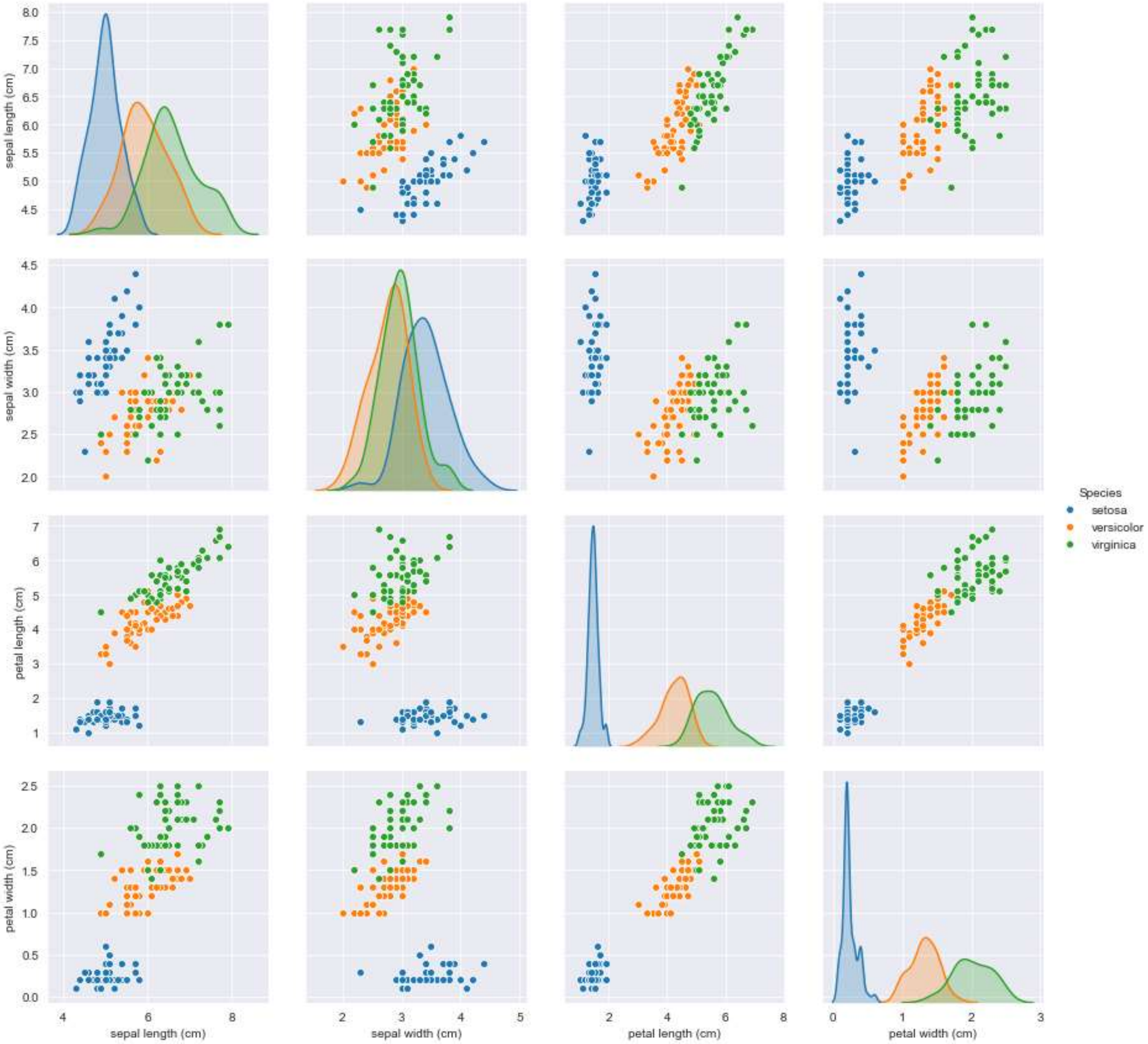


4.Do a pairplot on the features 'Sepallengthcm',' Sepalwidthcm','PetalLengthcm','Petalwidthcm','Species'

In [8]:

```
ns.set_style("darkgrid");
ns.pairplot(iris, hue="Species", height=3);
```

```
:\Users\Acer\Anaconda3\lib\site-packages\scipy\stats\stats.py:1713: FutureWa
ning: Using a non-tuple sequence for multidimensional indexing is deprecate
; use `arr[tuple(seq)]` instead of `arr[seq]`. In the future this will be in
erpreted as an array index, `arr[np.array(seq)]`, which will result either i
 an error or a different result.
 return np.add.reduce(sorted[indexer] * weights, axis=axis) / sumval
```



6. Do a bar plot of Species vs sepal length (cm)

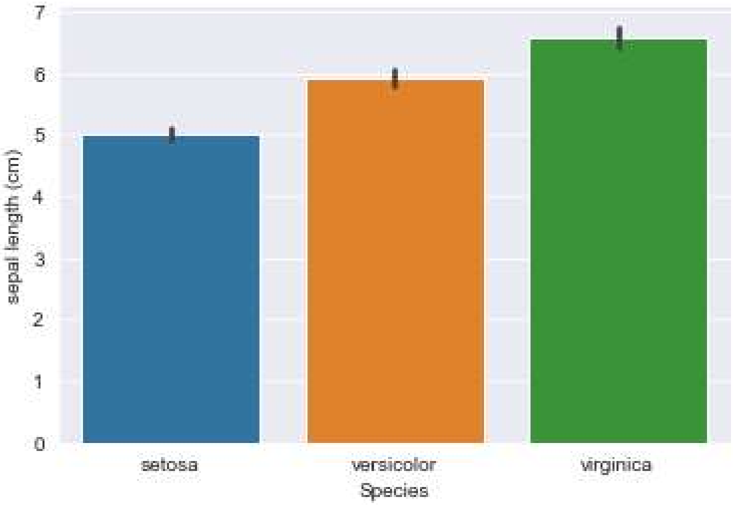
In [9]:

```
ns.barplot(x='Species',y='sepal length (cm)',data=iris)
```

```
:\Users\Acer\Anaconda3\lib\site-packages\scipy\stats\stats.py:1713: FutureWa
ning: Using a non-tuple sequence for multidimensional indexing is deprecate
; use `arr[tuple(seq)]` instead of `arr[seq]`. In the future this will be in
erpreted as an array index, `arr[np.array(seq)]`, which will result either i
 an error or a different result.
 return np.add.reduce(sorted[indexer] * weights, axis=axis) / sumval
```

Out[9]:

```
<matplotlib.axes._subplots.AxesSubplot at 0x219ea7a8438>
```



5. Do an lmplot on the following SepalLengthcm, PetalLengthcm. Using hue, display the different species in different colours

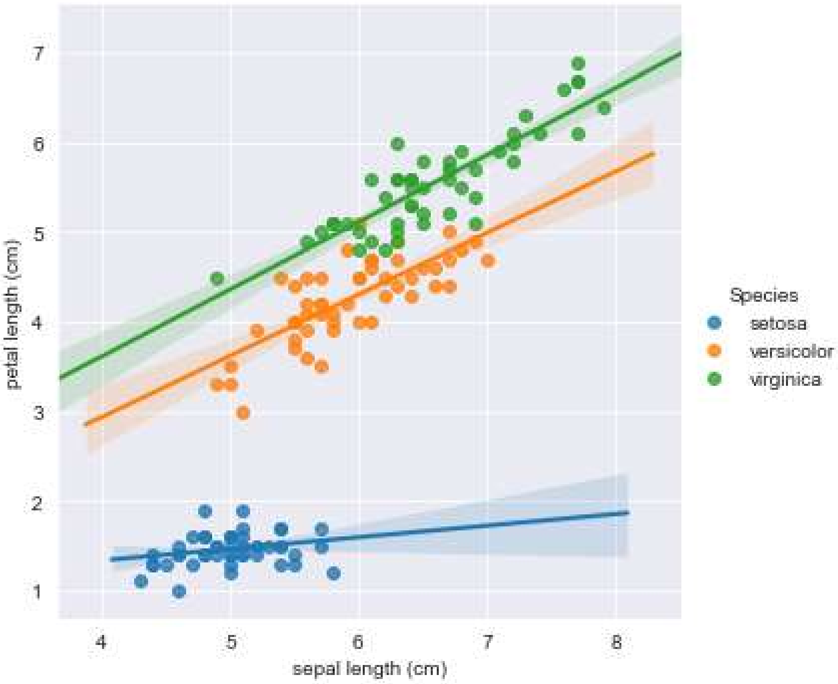
In [10]:

```
ns.lmplot(x='sepal length (cm)',y='petal length (cm)',data=iris,hue='Species'
```

```
:\Users\Acer\Anaconda3\lib\site-packages\scipy\stats\stats.py:1713: FutureWa
ning: Using a non-tuple sequence for multidimensional indexing is deprecate
; use `arr[tuple(seq)]` instead of `arr[seq]`. In the future this will be in
erpreted as an array index, `arr[np.array(seq)]`, which will result either i
 an error or a different result.
 return np.add.reduce(sorted[indexer] * weights, axis=axis) / sumval
```

Out[10]:

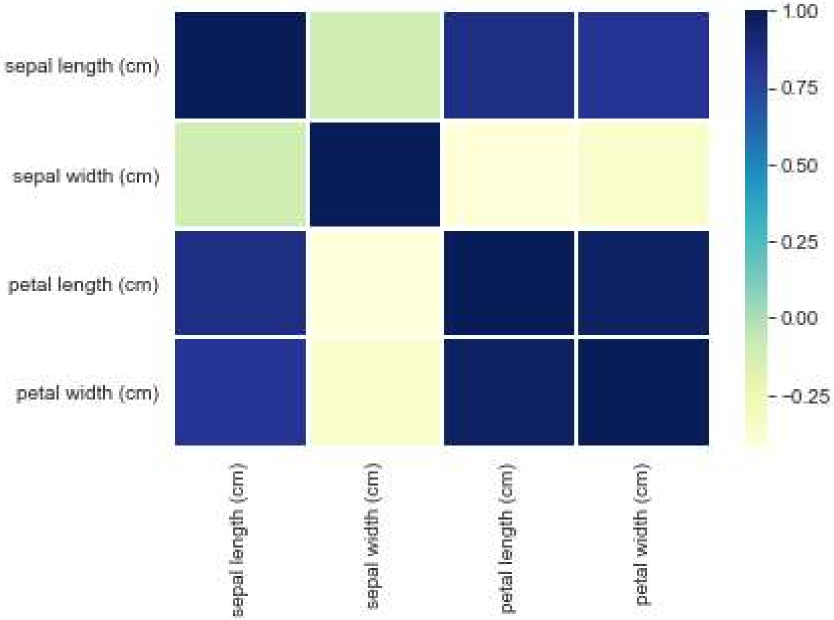
```
<seaborn.axisgrid.FacetGrid at 0x219eaea46d8>
```



7. Using heatmap, plot the correlation matrix calculate the correlation matrix

```
In [11]: ns.heatmap(iris.corr(),cmap="YlGnBu", linecolor='white', linewidths=1)
```

```
Out[11]: <matplotlib.axes._subplots.AxesSubplot at 0x219eaf830f0>
```


sepal length (cm)
sepal width (cm)
petal length (cm)
petal width (cm)
sepal length (cm)
sepal width (cm)
petal length (cm)
petal width (cm)