In [1]:
```python
import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib.pyplot as plt
```

In [2]:
```python
import warnings
warnings.filterwarnings('ignore')
```

In [3]:
```python
iris=pd.read_csv(r"C:\Users\Sonu\OneDrive\Desktop\Iris.csv")
```

In [4]:
```python
iris
```

Out[4]:

	Id	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
0	1	5.1	3.5	1.4	0.2	Iris-setosa
1	2	4.9	3.0	1.4	0.2	Iris-setosa
2	3	4.7	3.2	1.3	0.2	Iris-setosa
3	4	4.6	3.1	1.5	0.2	Iris-setosa
4	5	5.0	3.6	1.4	0.2	Iris-setosa
...	...	...	...	...	...	...
145	146	6.7	3.0	5.2	2.3	Iris-virginica
146	147	6.3	2.5	5.0	1.9	Iris-virginica
147	148	6.5	3.0	5.2	2.0	Iris-virginica
148	149	6.2	3.4	5.4	2.3	Iris-virginica
149	150	5.9	3.0	5.1	1.8	Iris-virginica

150 rows × 6 columns

In [5]:
```python
iris.drop('Id',axis=1,inplace=True)
```

In [6]:
```python
iris.head()
```

Out[6]:

	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
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

In [7]:
```
iris.info()
```

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

In [8]:
```
iris['Species'].value_counts()
```

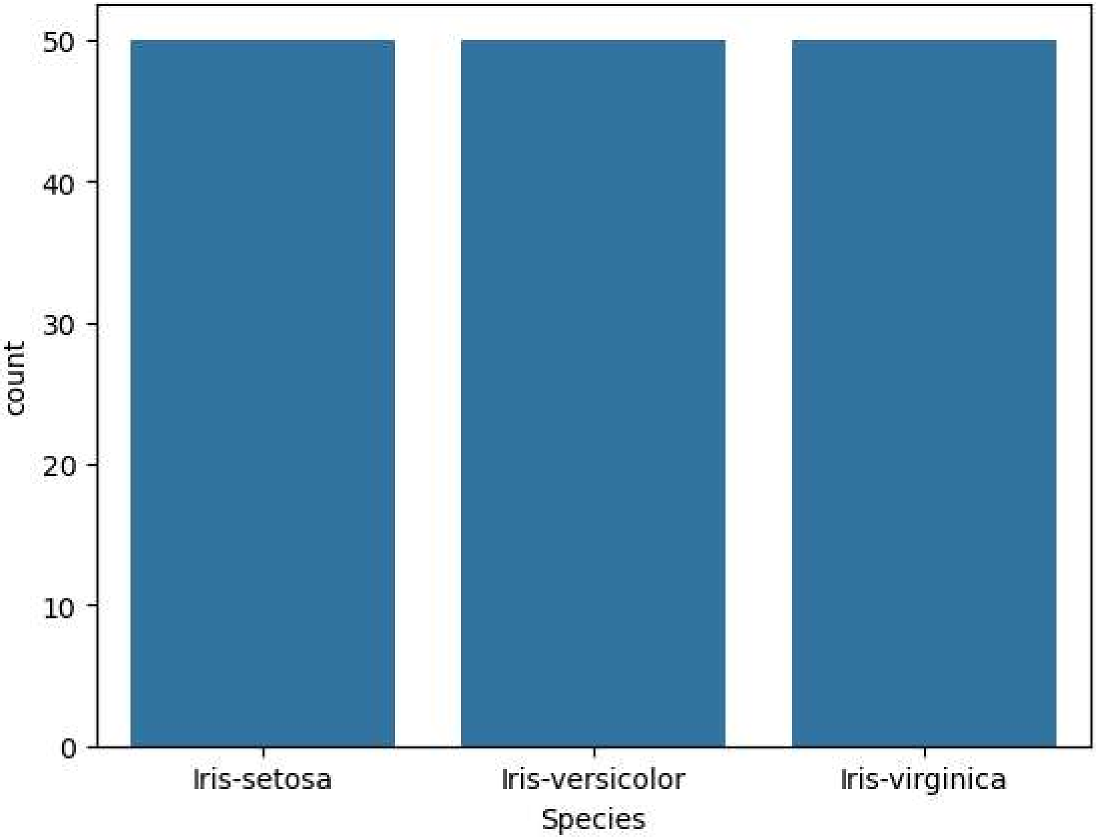
Out[8]:
```
Species
Iris-setosa        50
Iris-versicolor    50
Iris-virginica     50
Name: count, dtype: int64
```

In [9]:
```
iris.describe()
```

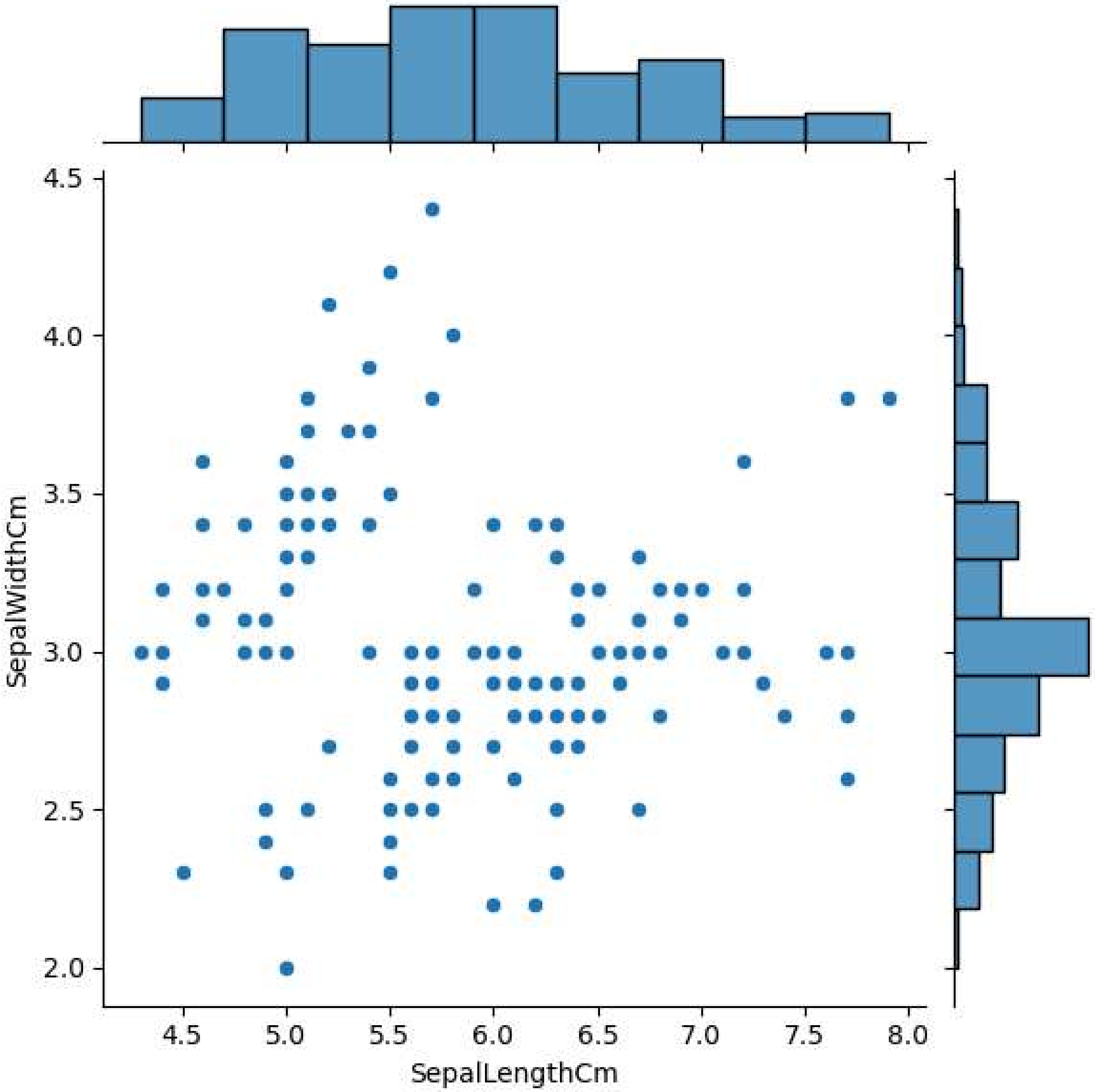
Out[9]:

	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm
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

In [10]:
```
sns.countplot(x='Species',data=iris)
plt.show()
```

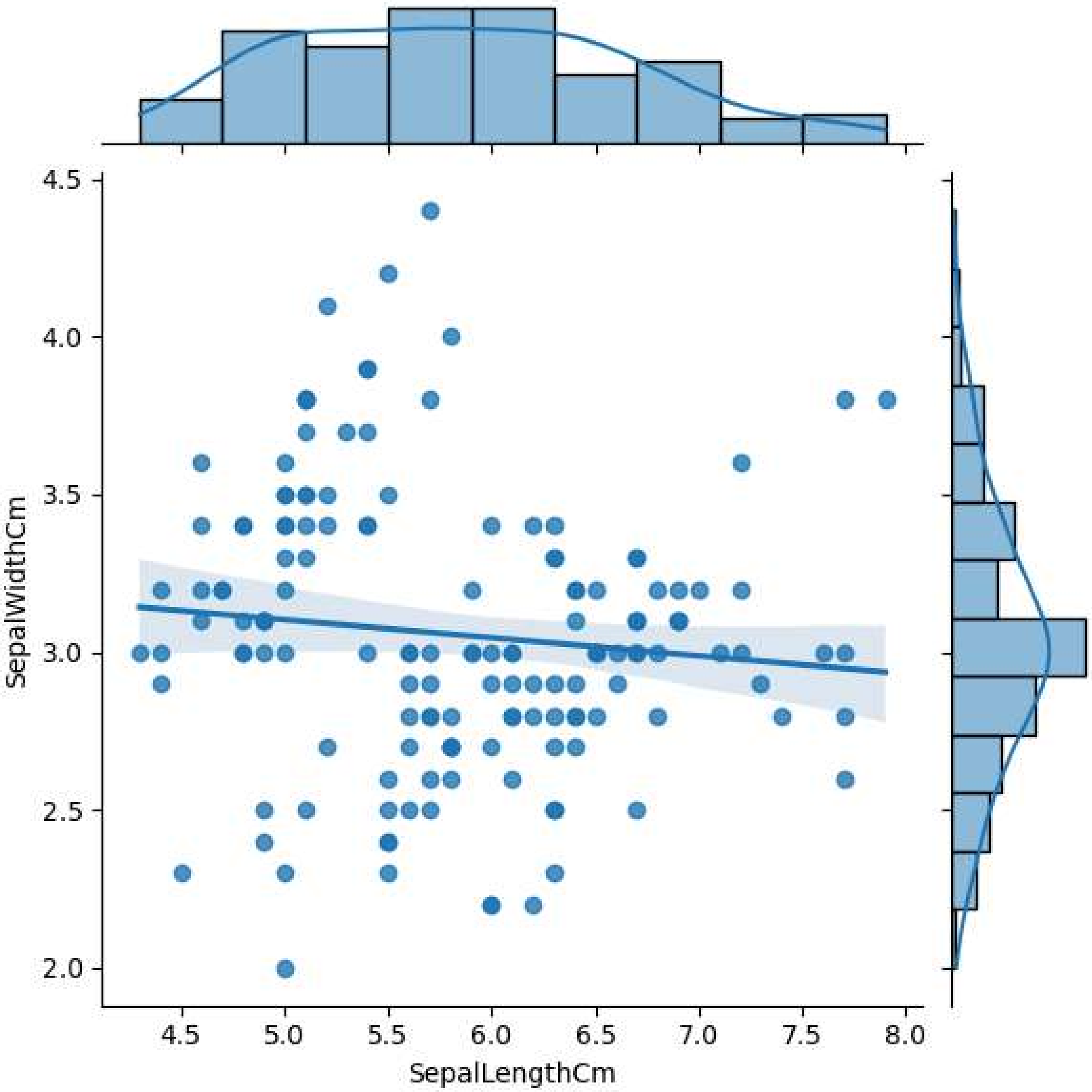


```
In [11]: fig=sns.jointplot(x='SepalLengthCm',y='SepalWidthCm',data=iris)
```

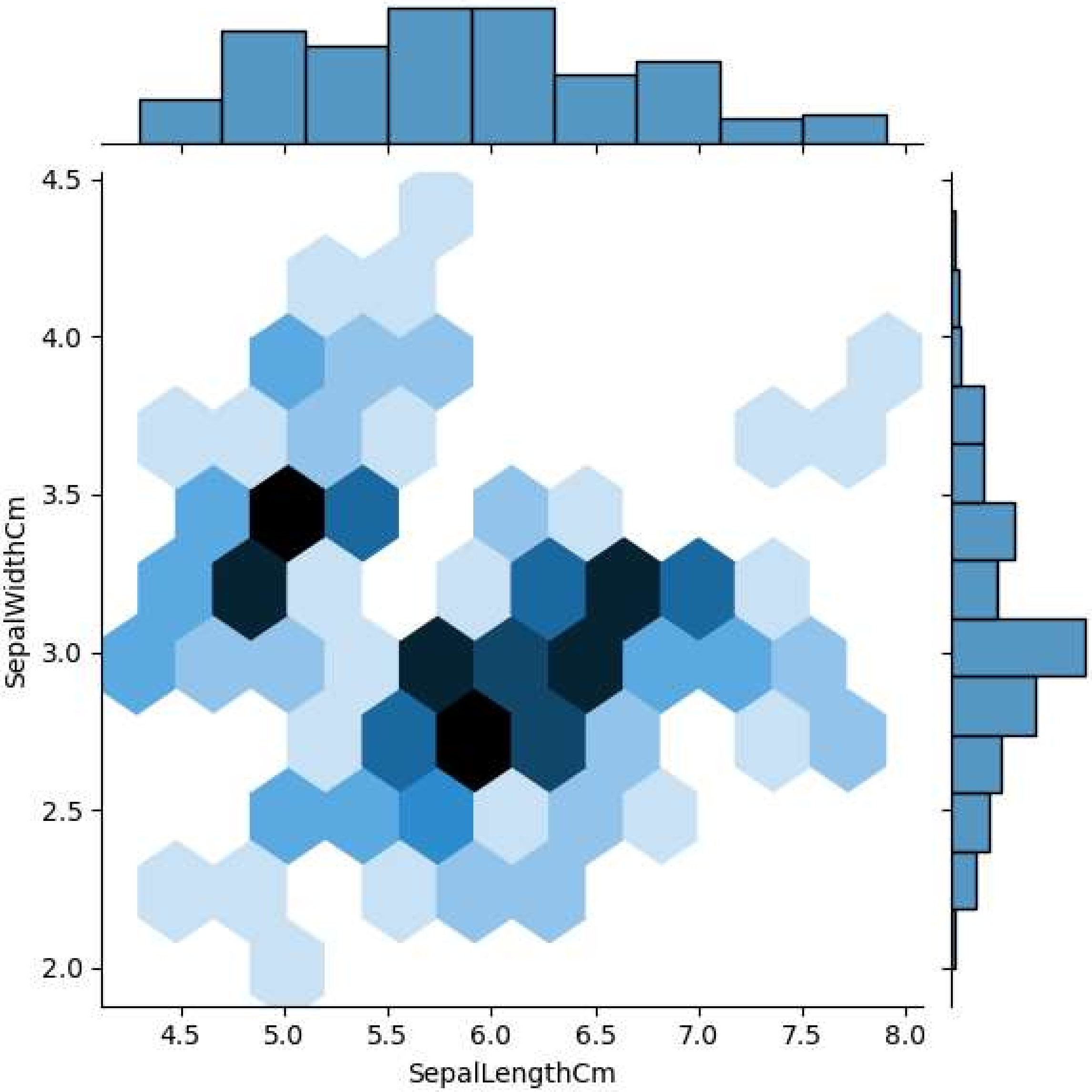


```
In [12]: sns.jointplot(x='SepalLengthCm',y='SepalWidthCm',data=iris,kind='reg')
```

```
Out[12]: <seaborn.axisgrid.JointGrid at 0x2018a8778c0>
```

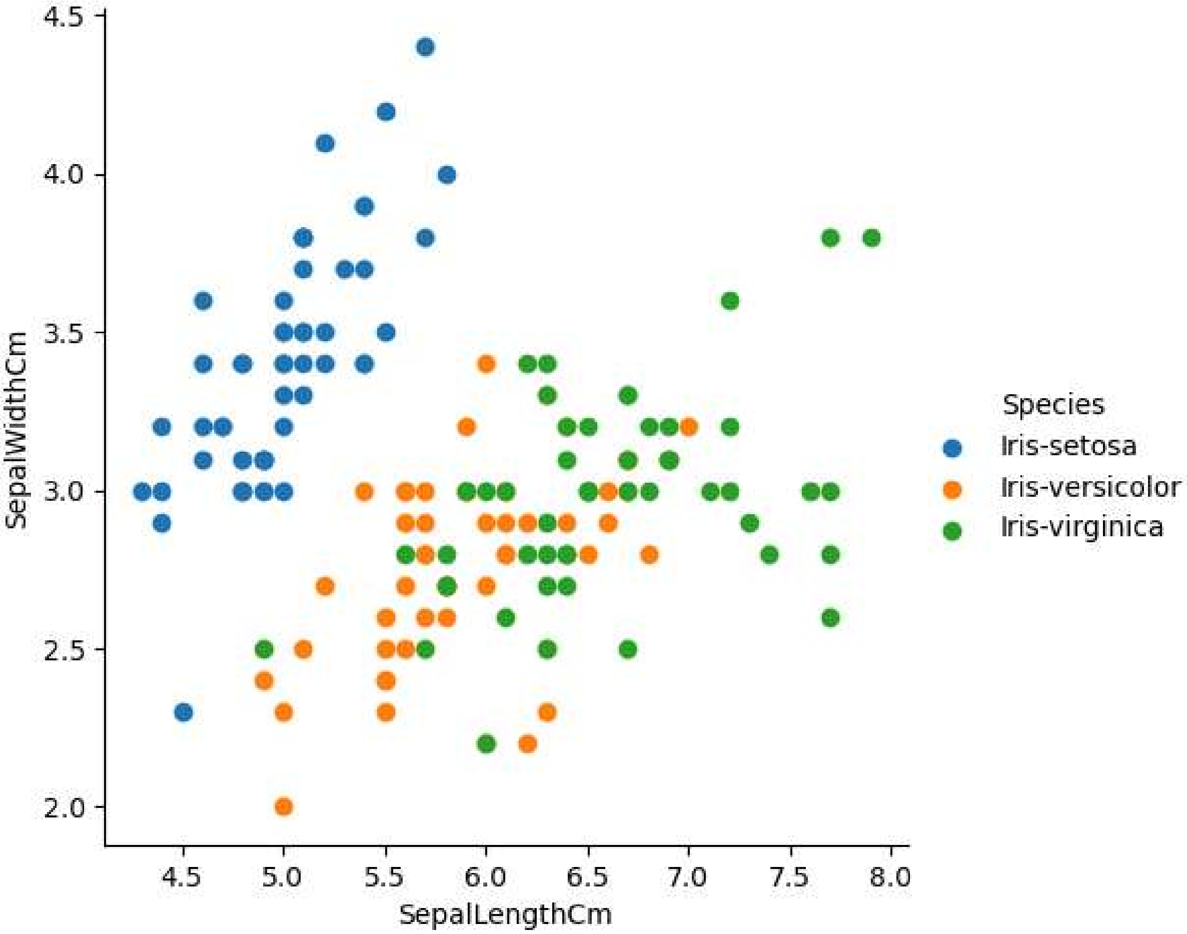


In [13]:
```
x1=sns.jointplot(x='SepalLengthCm',y='SepalWidthCm',kind='hex',data=iris)
```



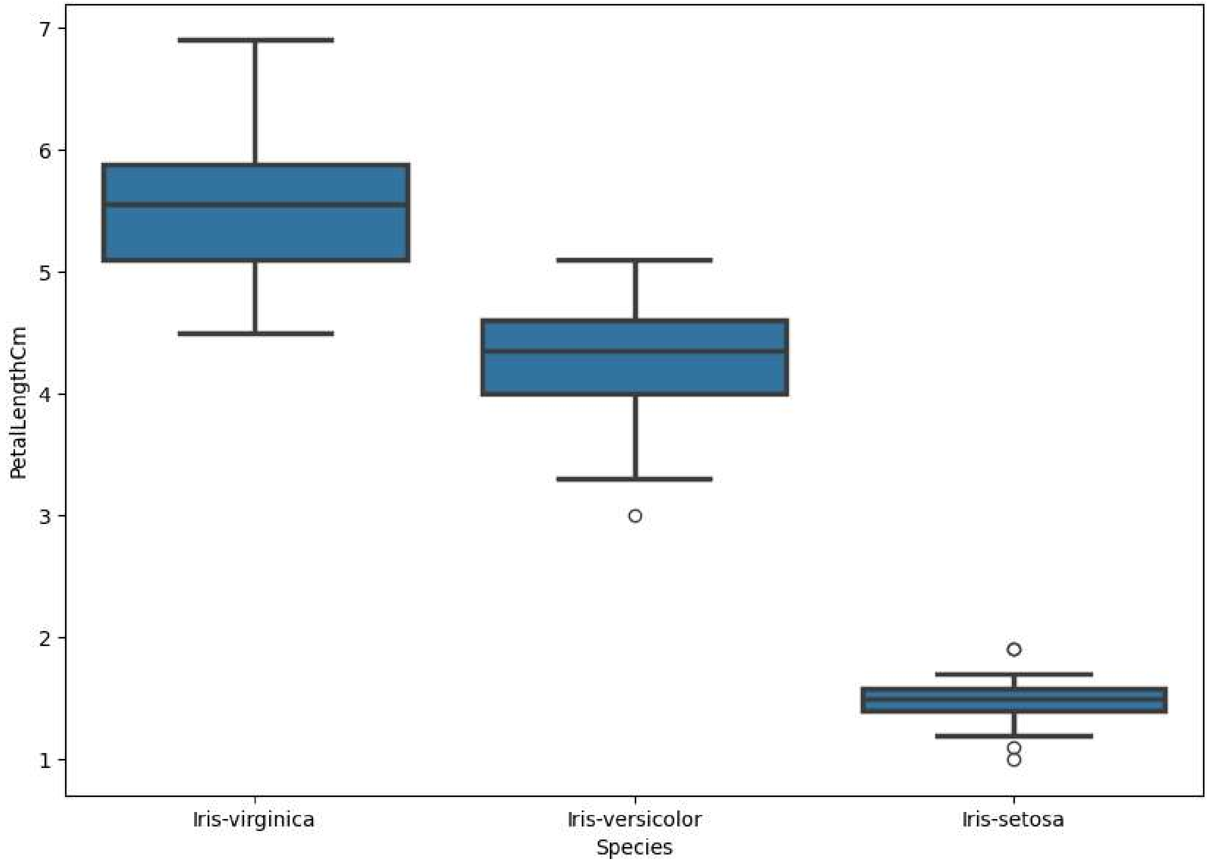
FacetGrid

```
In [14]: g=sns.FacetGrid(iris,hue='Species',height=5)
         g.map(plt.scatter,'SepalLengthCm','SepalWidthCm')
         g.add_legend()
         plt.show()
```



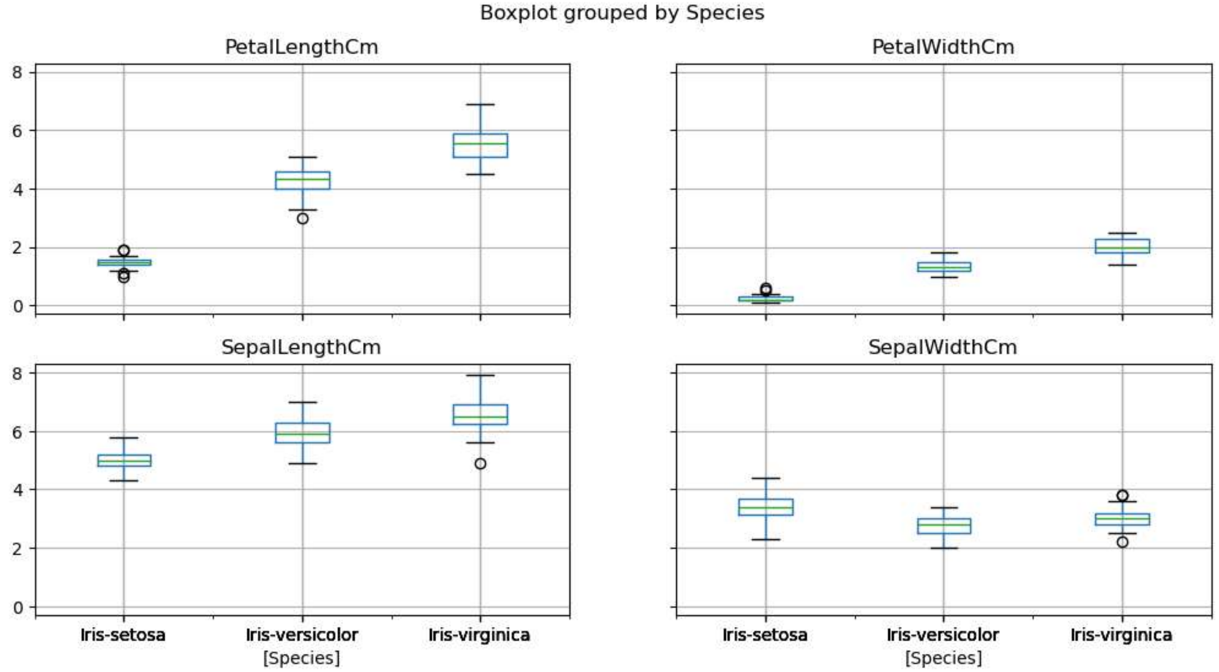
BoxPlot

In [15]:
```
fig=plt.gcf()
fig.set_size_inches(10,7)
fig=sns.boxplot(x='Species',y='PetalLengthCm',data=iris,order=['Iris-virginica','Ir
```



```
In [16]: iris.boxplot(by='Species',figsize=(12,6))
```

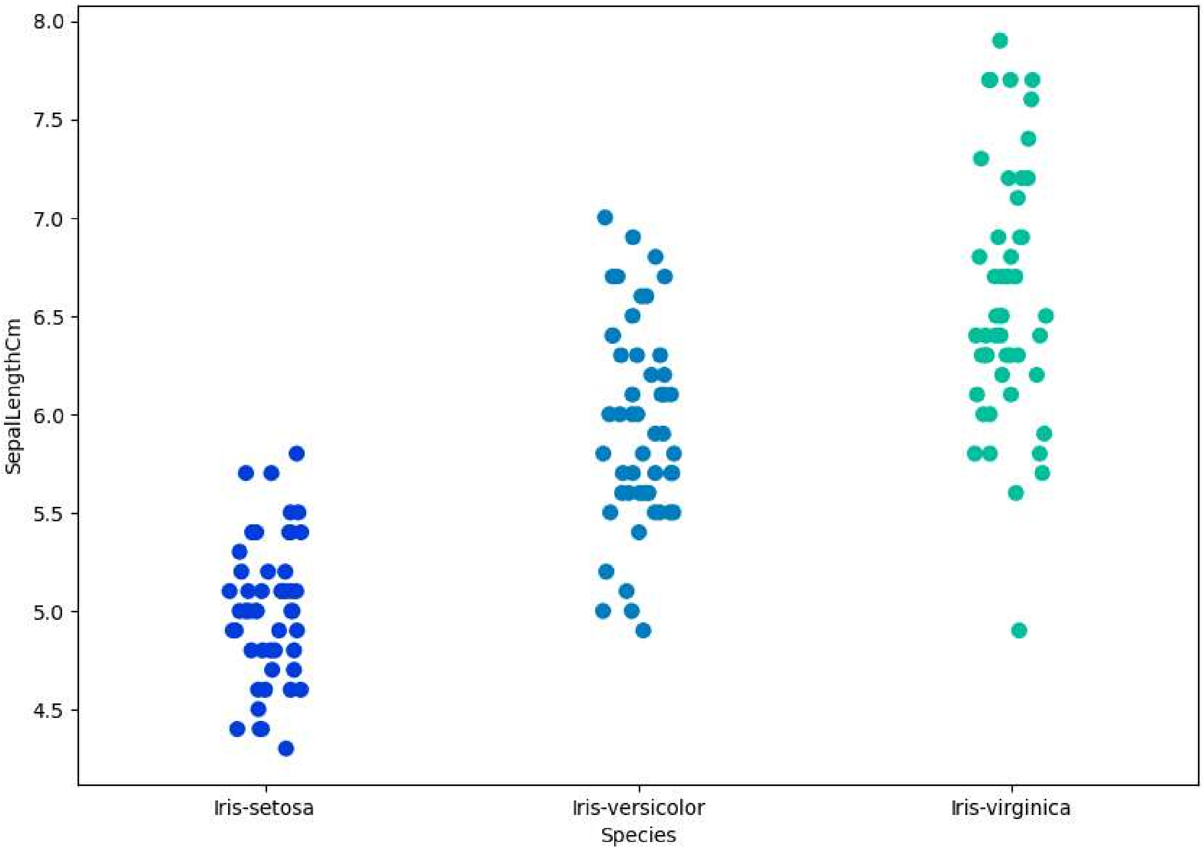
```
Out[16]: array([[<Axes: title={'center': 'PetalLengthCm'}, xlabel='[Species]'>,
                 <Axes: title={'center': 'PetalWidthCm'}, xlabel='[Species]'>],
                [<Axes: title={'center': 'SepalLengthCm'}, xlabel='[Species]'>,
                 <Axes: title={'center': 'SepalWidthCm'}, xlabel='[Species]'>]],
               dtype=object)
```



Stripplot

In [17]:

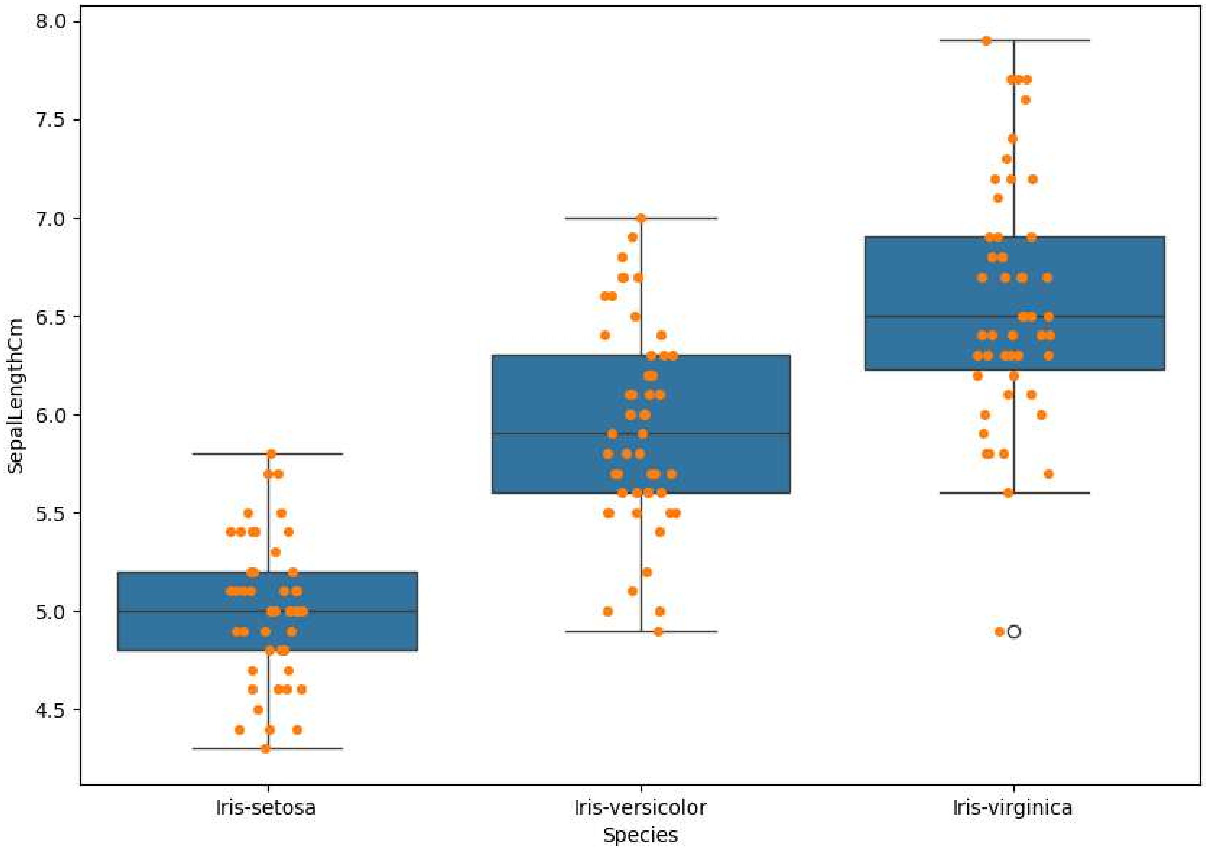
```
fig=plt.gcf()
fig.set_size_inches(10,7)
fig=sns.stripplot(x='Species',y='SepalLengthCm',data=iris,jitter=True,edgecolor='gr
```



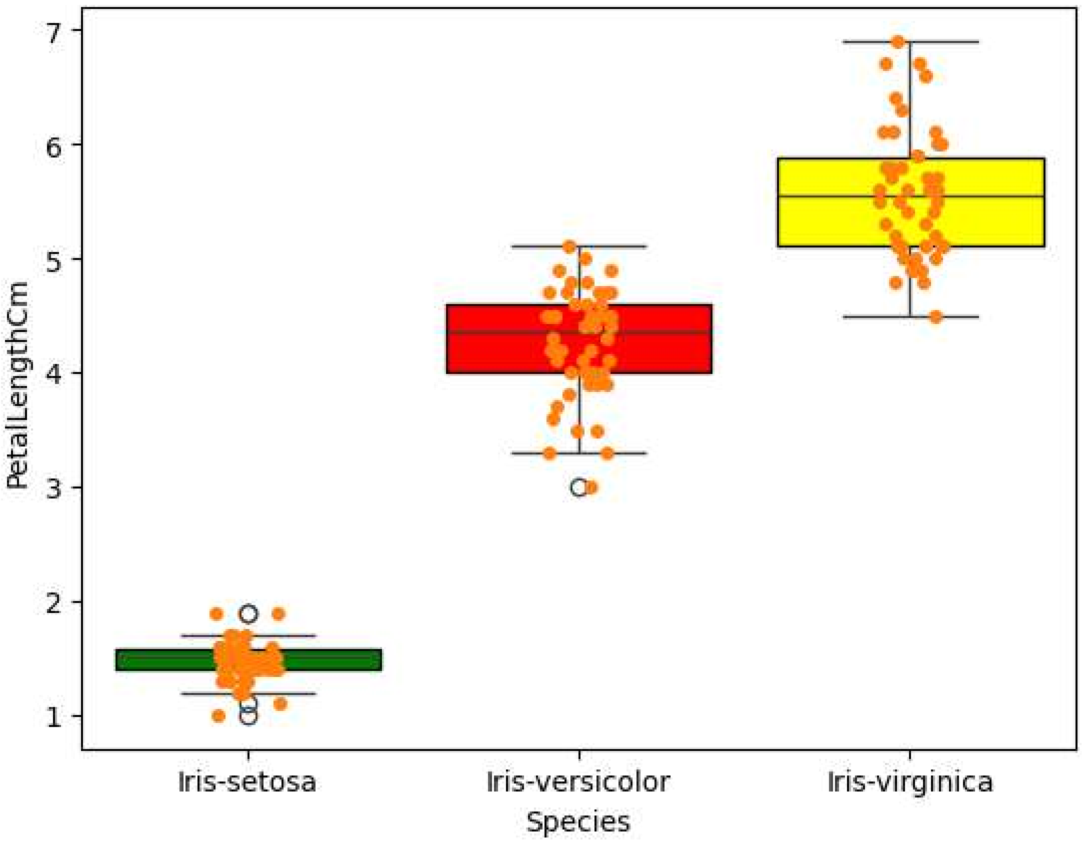
Combining Box And Strip Plot

In [18]:

```
fig=plt.gcf()
fig.set_size_inches(10,7)
fig=sns.boxplot(x='Species',y='SepalLengthCm',data=iris)
fig=sns.stripplot(x='Species',y='SepalLengthCm',data=iris,jitter=True,edgecolor='gr
```

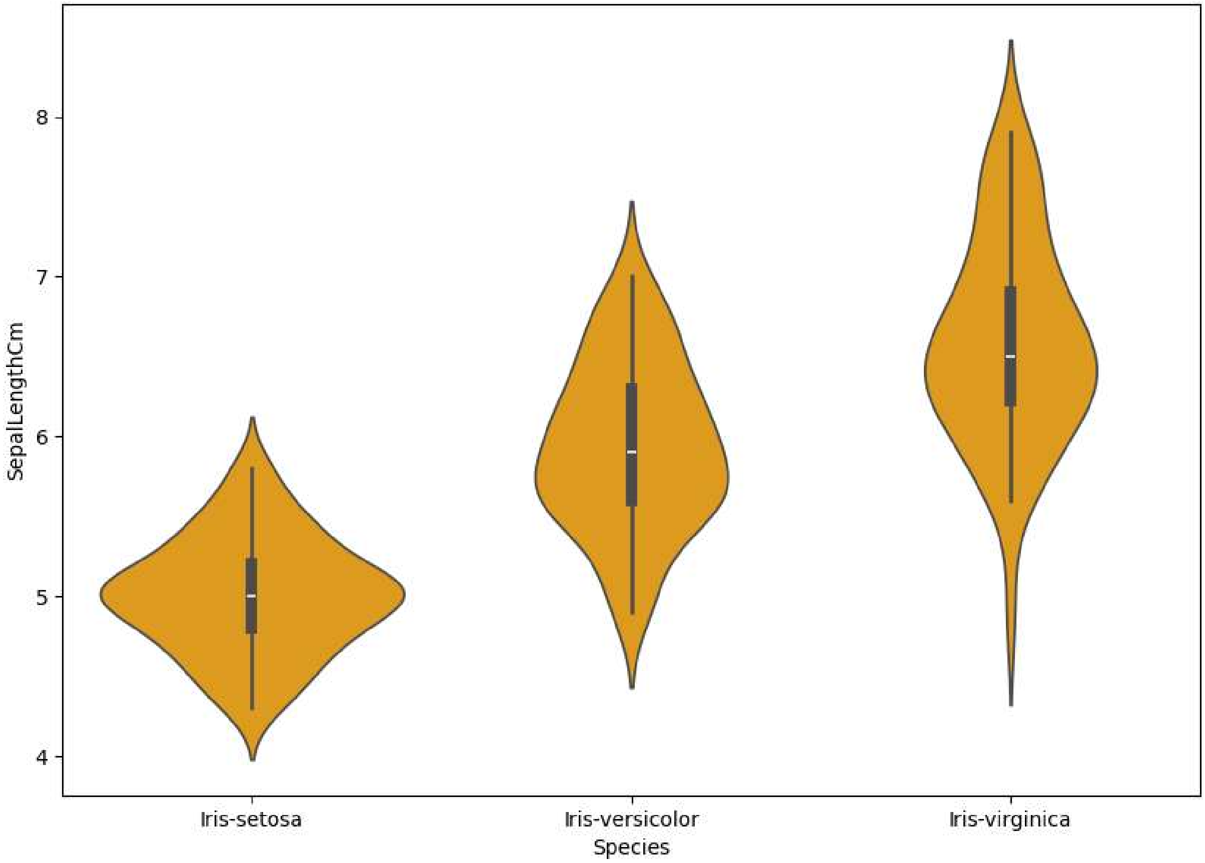


In [19]:
```
ax=sns.boxplot(x='Species',y='PetalLengthCm',data=iris)
sns.stripplot(x='Species',y='PetalLengthCm',data=iris,jitter=True,edgecolor='gray')
boxes=ax.patches
boxes[0].set_facecolor('green')
boxes[0].set_edgecolor('black')
boxes[1].set_facecolor('red')
boxes[1].set_edgecolor('black')
boxes[2].set_facecolor('yellow')
boxes[2].set_edgecolor('black')
plt.show()
```



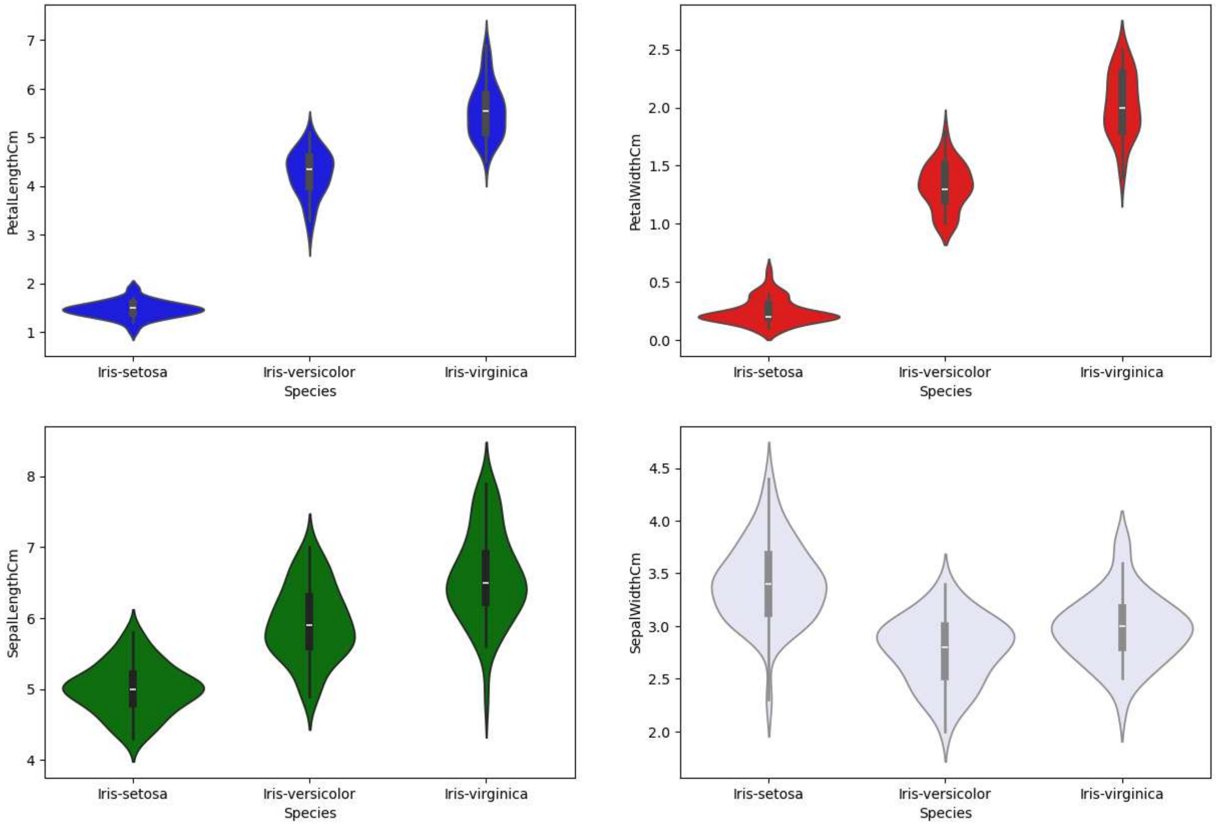
Violin Plot

In [20]:
```
fig=plt.gcf()
fig.set_size_inches(10,7)
sns.violinplot(x='Species',y='SepalLengthCm',data=iris,color='orange')
plt.show()
```



In [21]:
```
plt.figure(figsize=(15,10))
plt.subplot(2,2,1)
sns.violinplot(x='Species',y='PetalLengthCm',data=iris,color='blue')
plt.subplot(2,2,2)
sns.violinplot(x='Species',y='PetalWidthCm',data=iris,color='red')
plt.subplot(2,2,3)
sns.violinplot(x='Species',y='SepalLengthCm',data=iris,color='green')
plt.subplot(2,2,4)
sns.violinplot(x='Species',y='SepalWidthCm',data=iris,color='lavender')
```

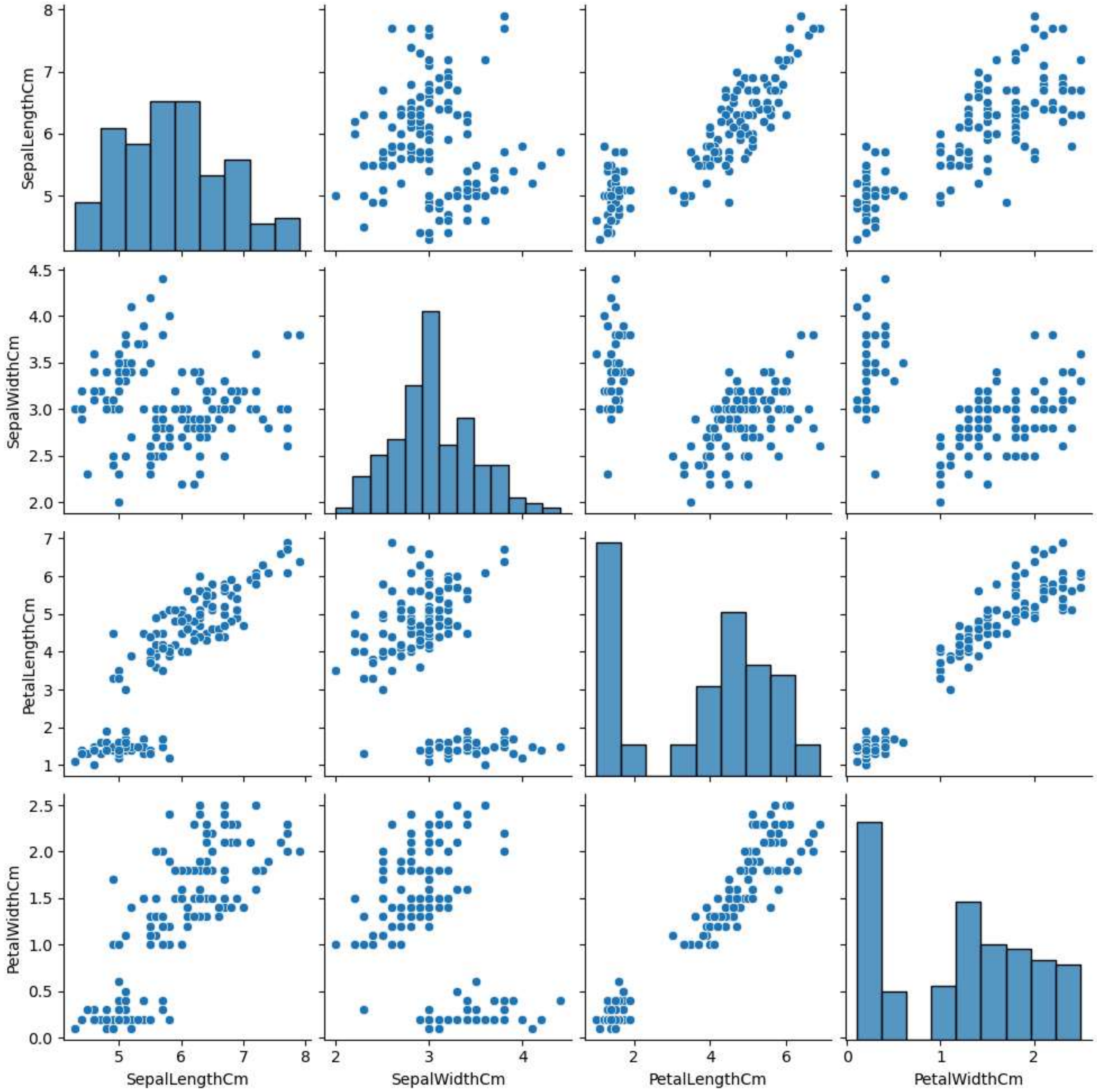
Out[21]:
```
<Axes: xlabel='Species', ylabel='SepalWidthCm'>
```



PairPlot

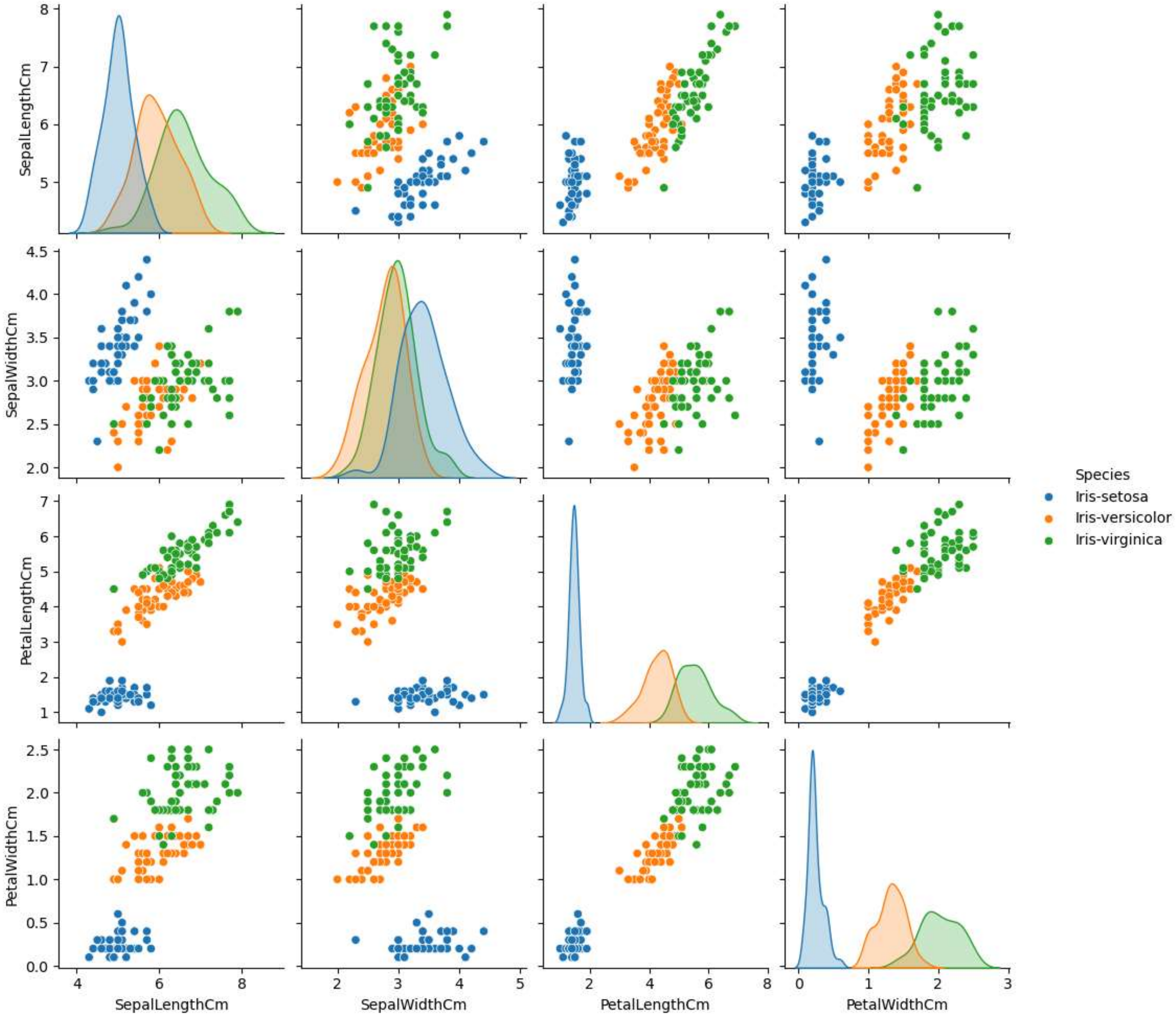
```
In [22]: sns.pairplot(data=iris,kind='scatter')
```

```
Out[22]: <seaborn.axisgrid.PairGrid at 0x2018bf09910>
```



In [23]:
```
sns.pairplot(iris,hue='Species')
```

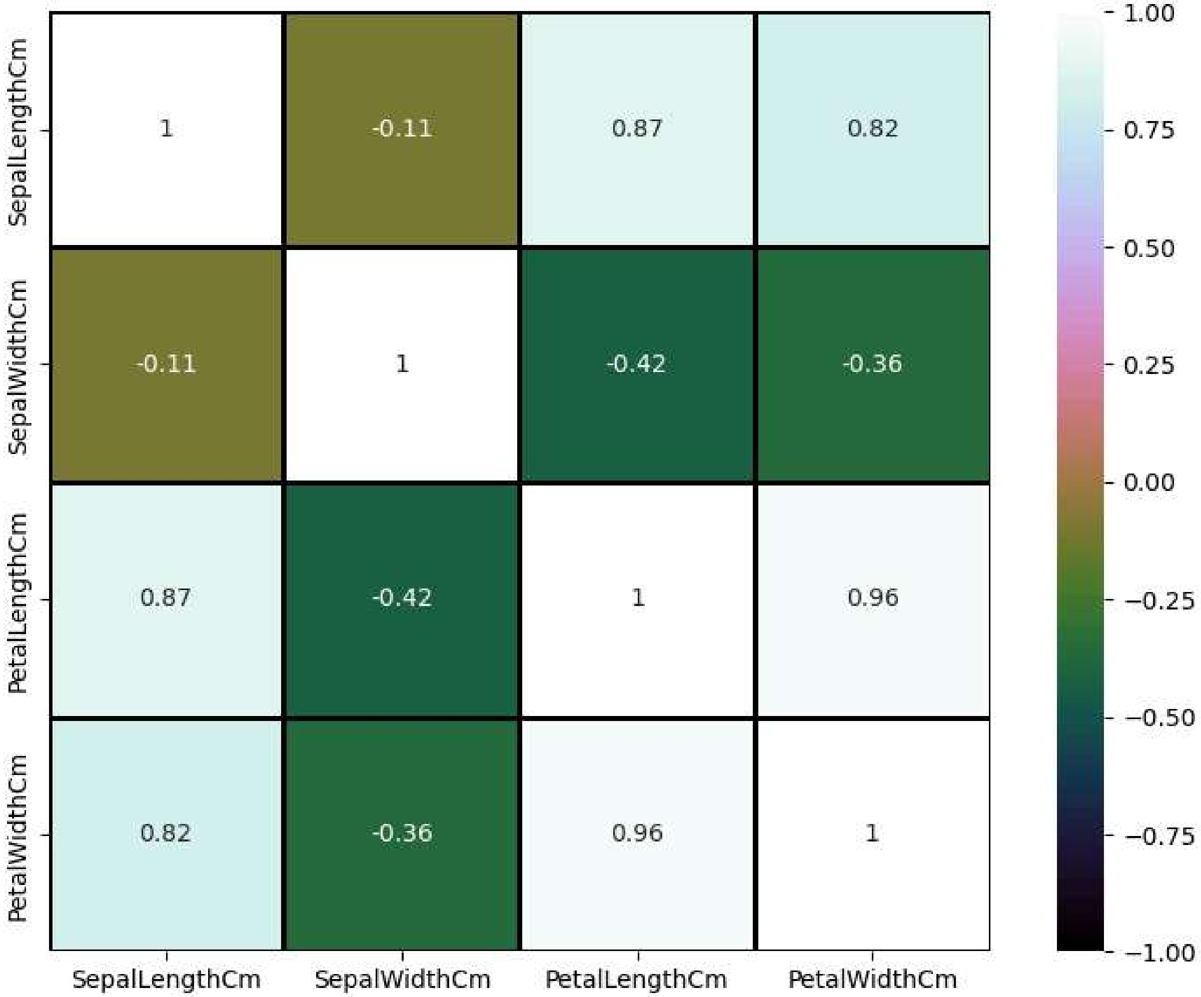
Out[23]:
```
<seaborn.axisgrid.PairGrid at 0x2018c623830>
```



HeatMap

In [24]:

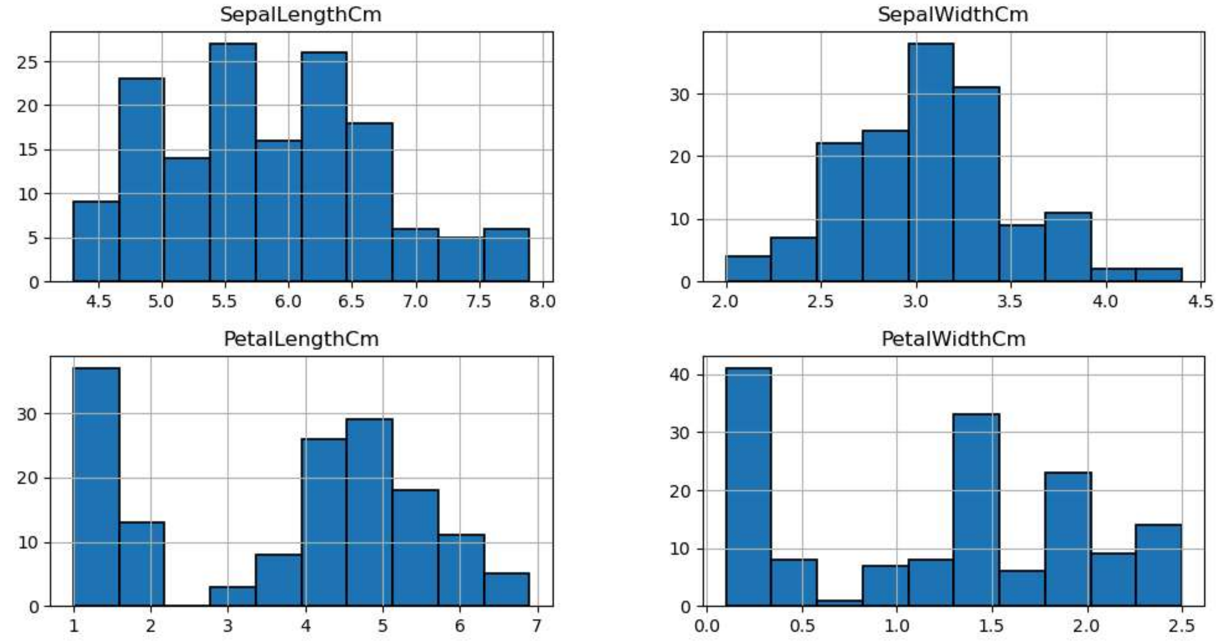
```
fig=plt.gcf()
fig.set_size_inches(10,7)
fig=sns.heatmap(iris.corr(numeric_only=True),annot=True,cmap='cubehelix',linewidths
plt.show()
```



Distribution Plot

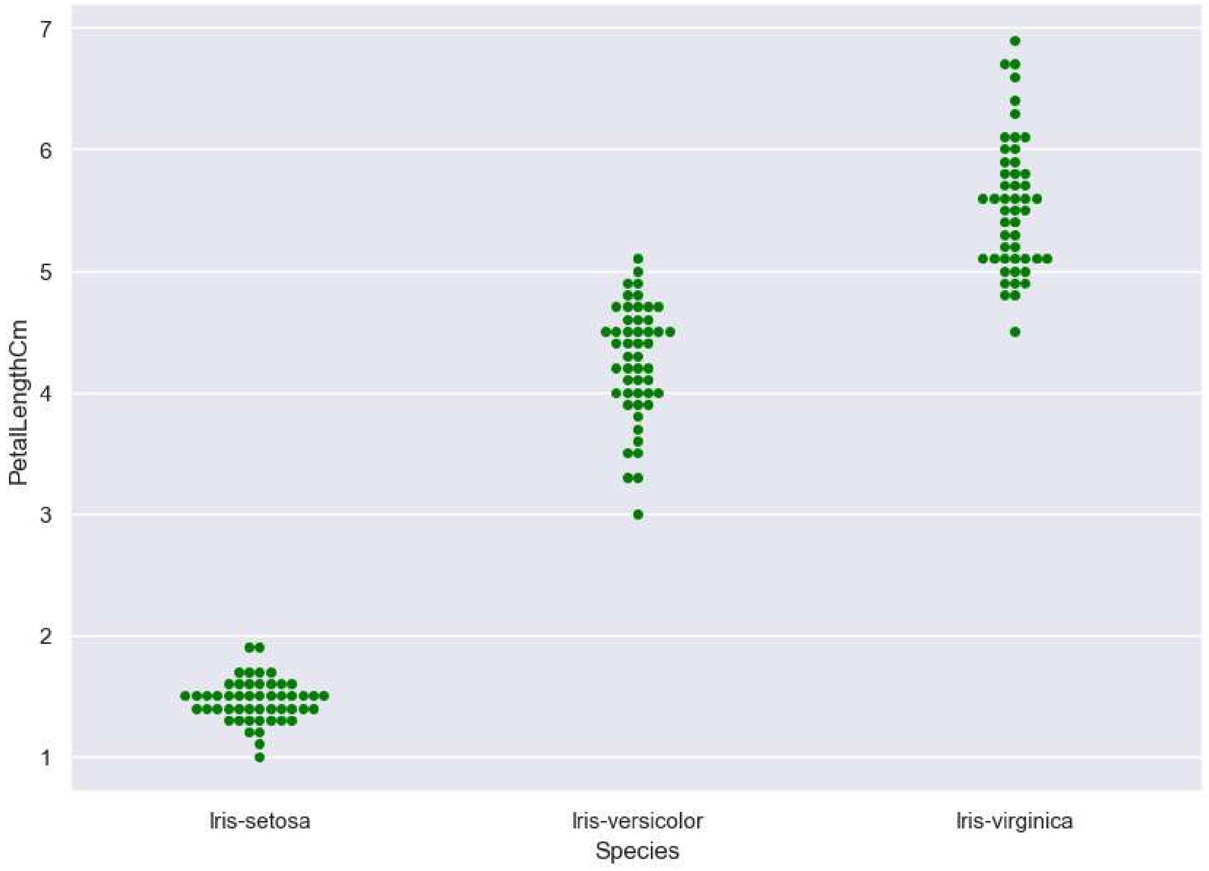
In [25]:

```
iris.hist(edgecolor='black',linewidth=1.2)
fig=plt.gcf()
fig.set_size_inches(12,6)
```



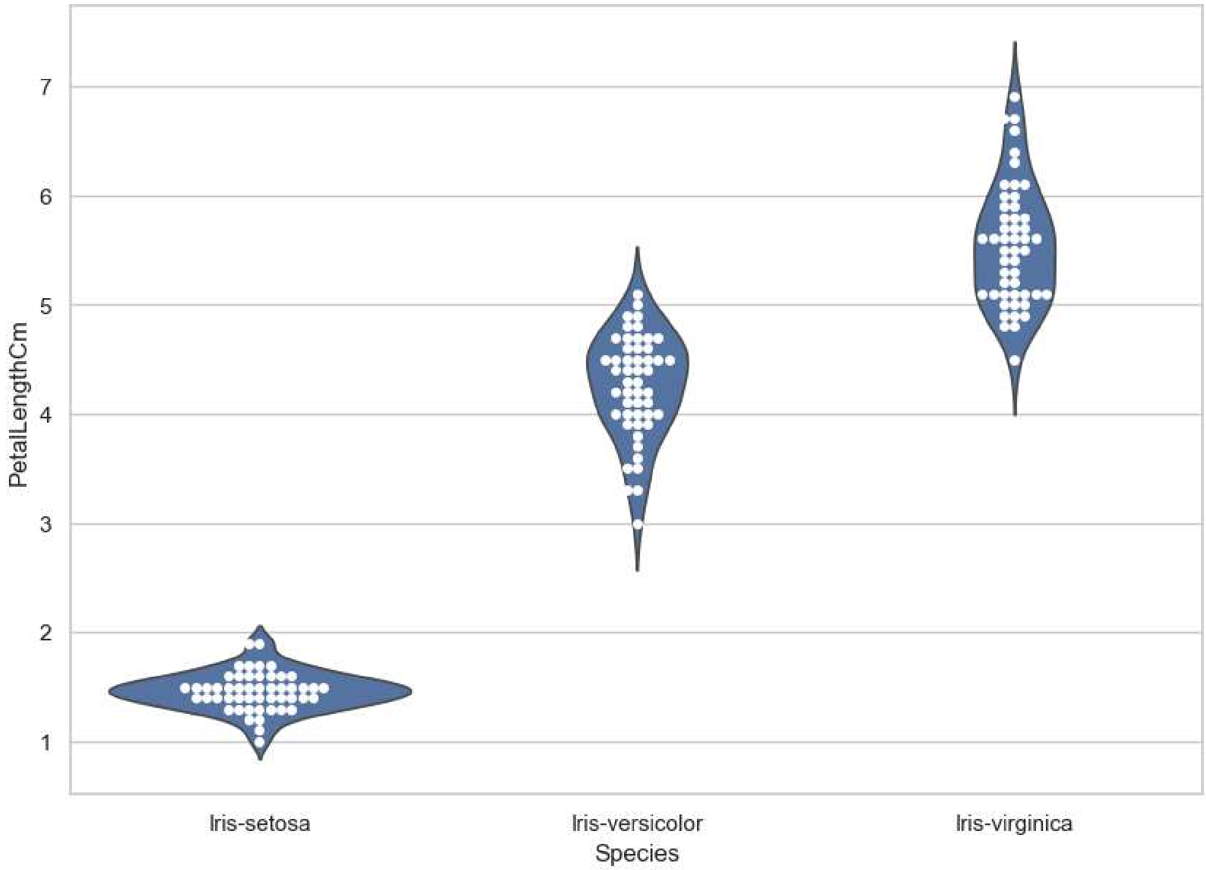
Swarm plot

In [26]:
```
sns.set(style="darkgrid")
fig=plt.gcf()
fig.set_size_inches(10,7)
fig=sns.swarmplot(x='Species',y='PetalLengthCm',data=iris,color='green')
plt.show()
```



In [27]:

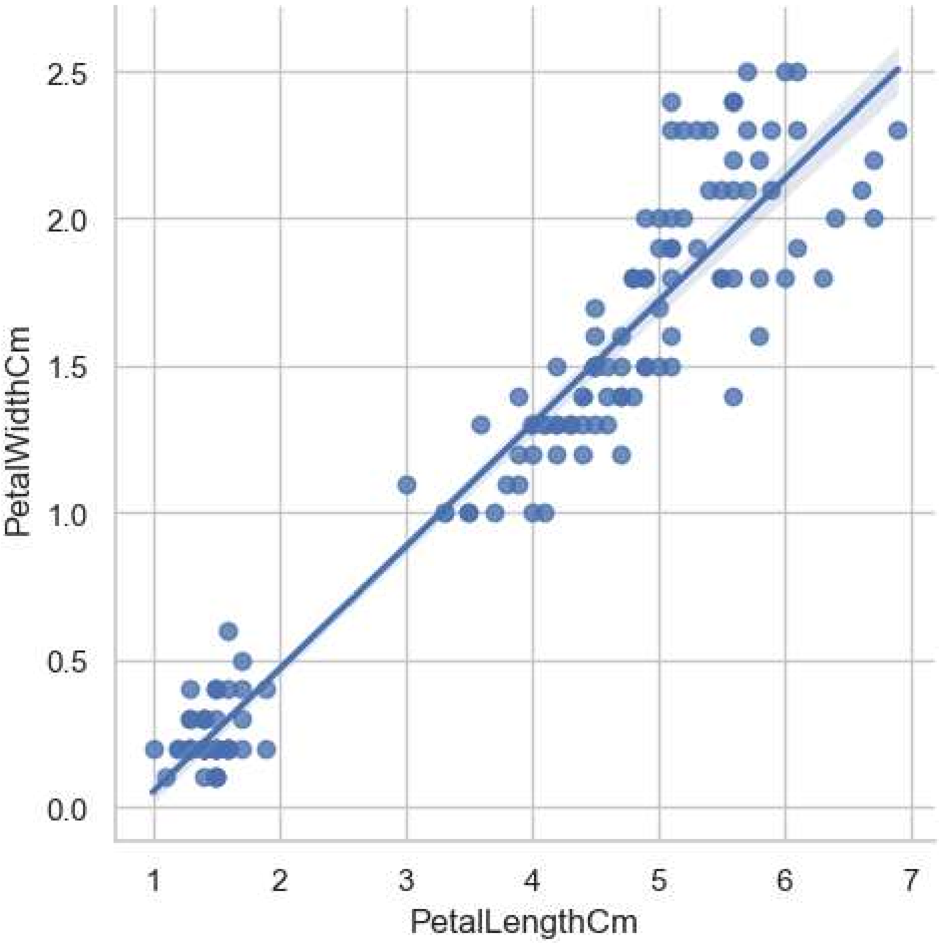
```
sns.set(style="whitegrid")
fig=plt.gcf()
fig.set_size_inches(10,7)
ax=sns.violinplot(x='Species',y='PetalLengthCm',data=iris,inner=None)
ax=sns.swarmplot(x='Species',y='PetalLengthCm',data=iris,color='white',edgecolor='b
```



LM plot

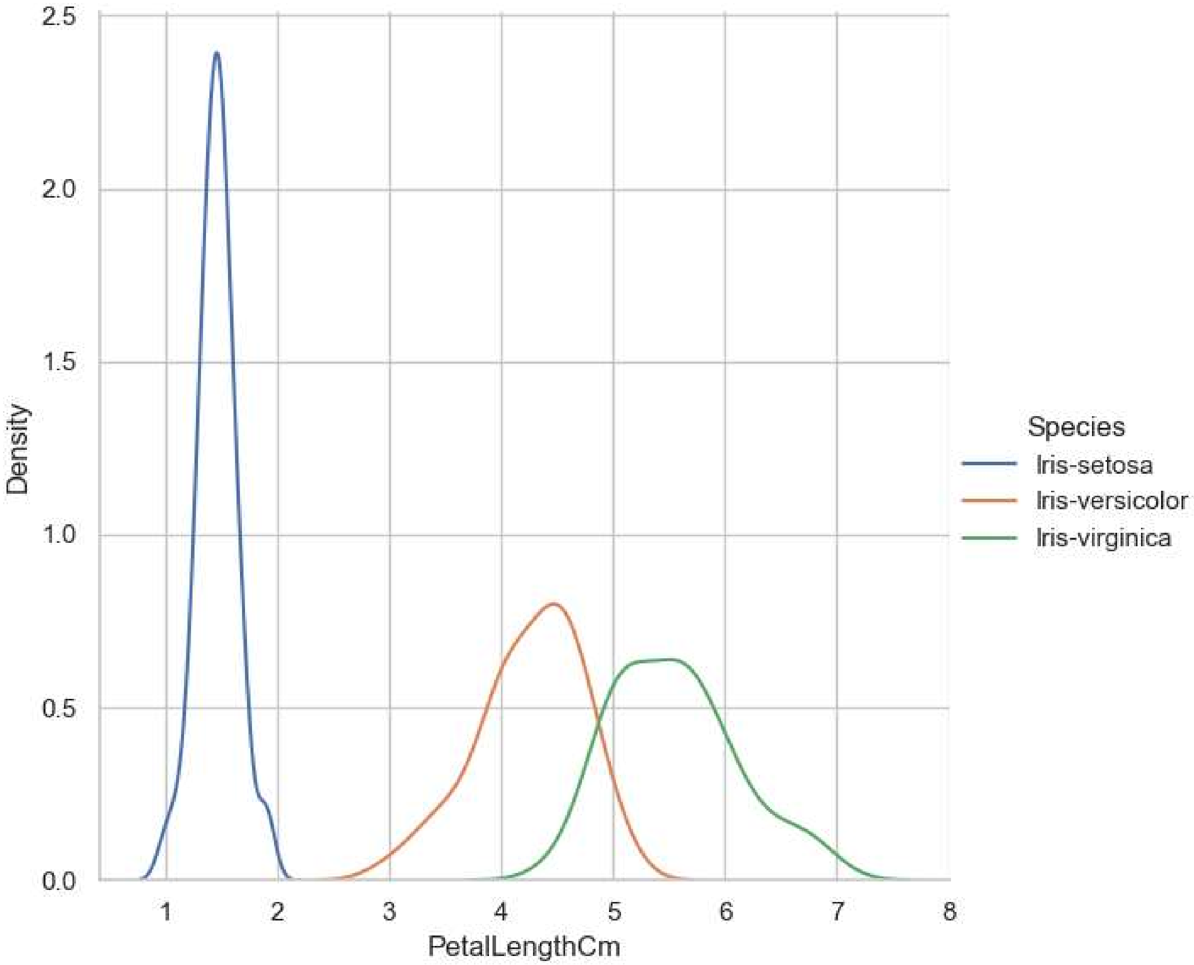
In [28]:

```
fig=sns.lmplot(x='PetalLengthCm',y='PetalWidthCm',data=iris)
```



FacetGrid

```
In [29]: g=sns.FacetGrid(iris,hue='Species',height=6)
         g.map(sns.kdeplot,'PetalLengthCm')
         g.add_legend()
         plt.show()
```



Factor Plot

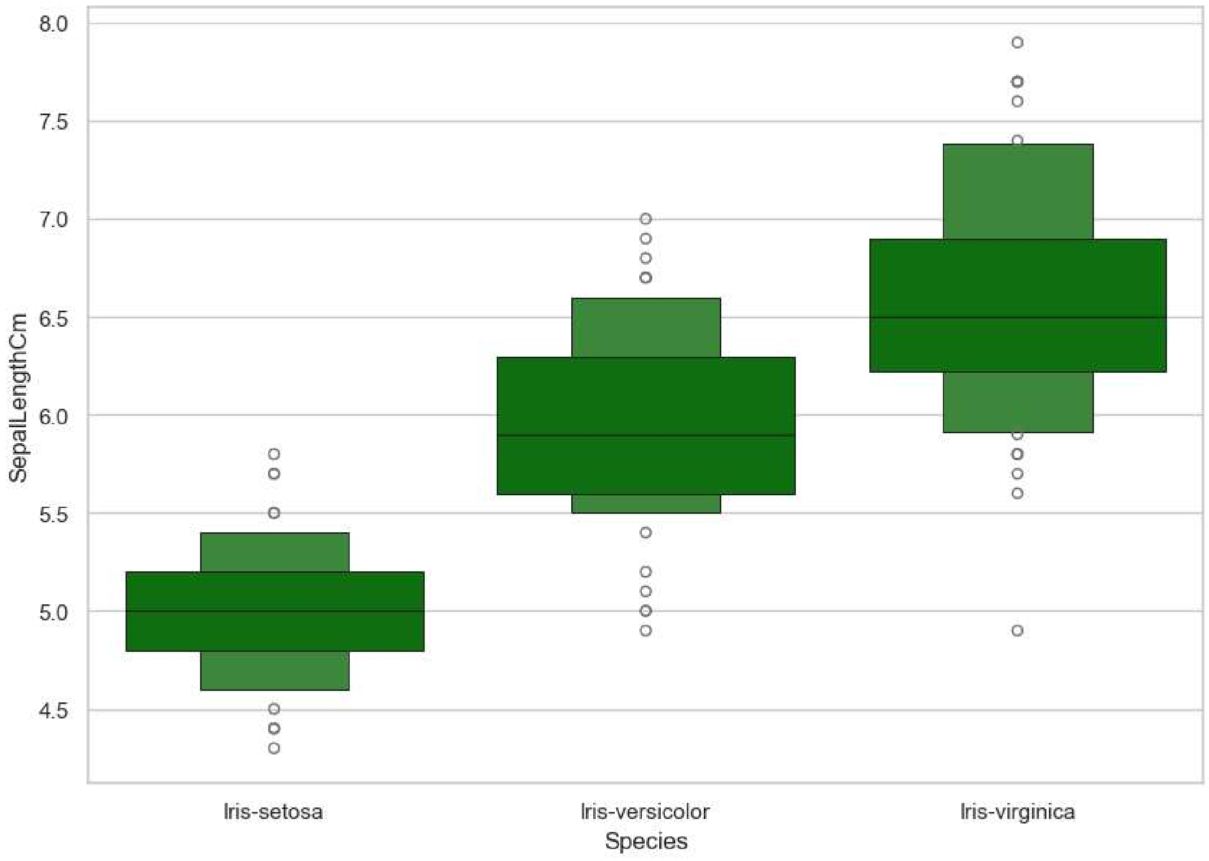
```
In [30]: sns.factorplot('Species','SepalLengthCm',data=iris)
         plt.ioff()
         plt.show()
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
Cell In[30], line 1
----> 1 sns.factorplot('Species','SepalLengthCm',data=iris)
      2 plt.ioff()
      3 plt.show()

AttributeError: module 'seaborn' has no attribute 'factorplot'
```

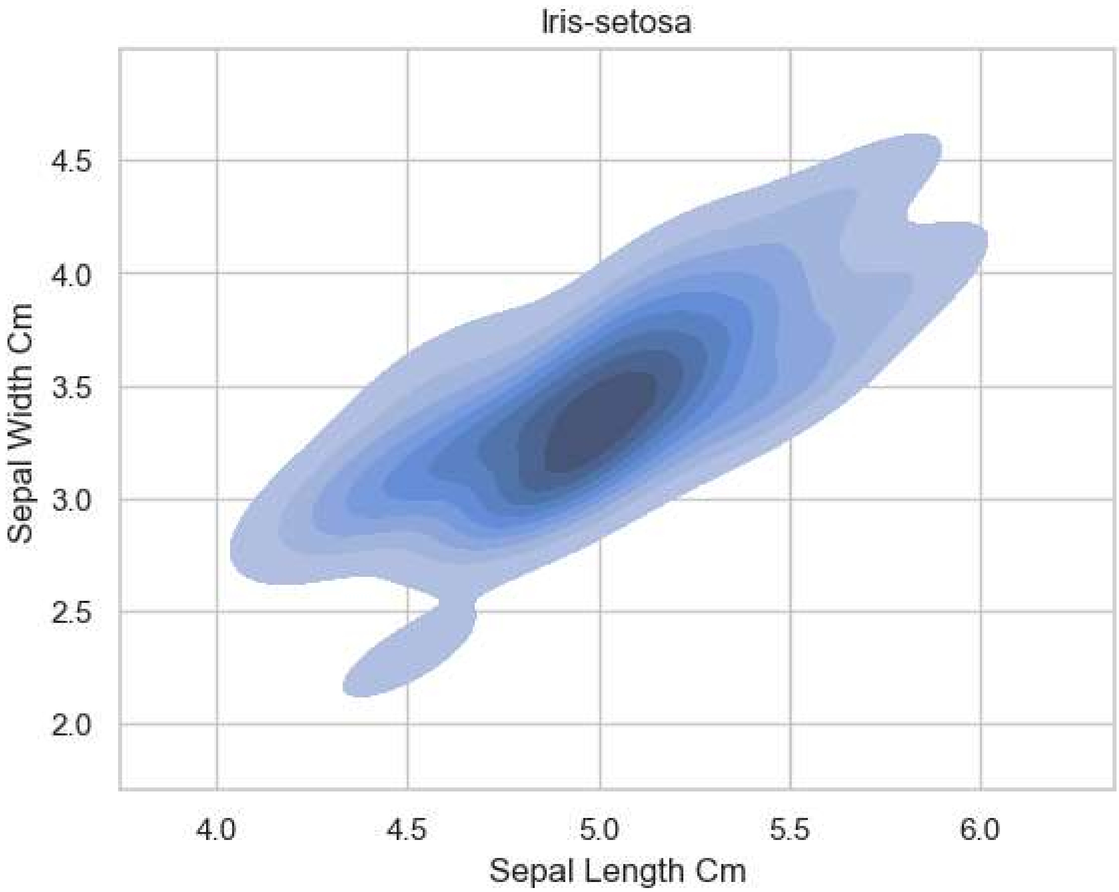
Boxen Plot

```
In [31]: fig=plt.gcf()
         fig.set_size_inches(10,7)
         fig=sns.boxenplot(x='Species',y='SepalLengthCm',data=iris,color='green')
         plt.show()
```



KDE Plot

```
In [32]: sub=iris[iris['Species']=='Iris-setosa']
         sns.kdeplot(x='SepalLengthCm',y='SepalWidthCm',data=sub,fill=True)
         plt.title('Iris-setosa')
         plt.xlabel('Sepal Length Cm')
         plt.ylabel('Sepal Width Cm')
         plt.show()
```

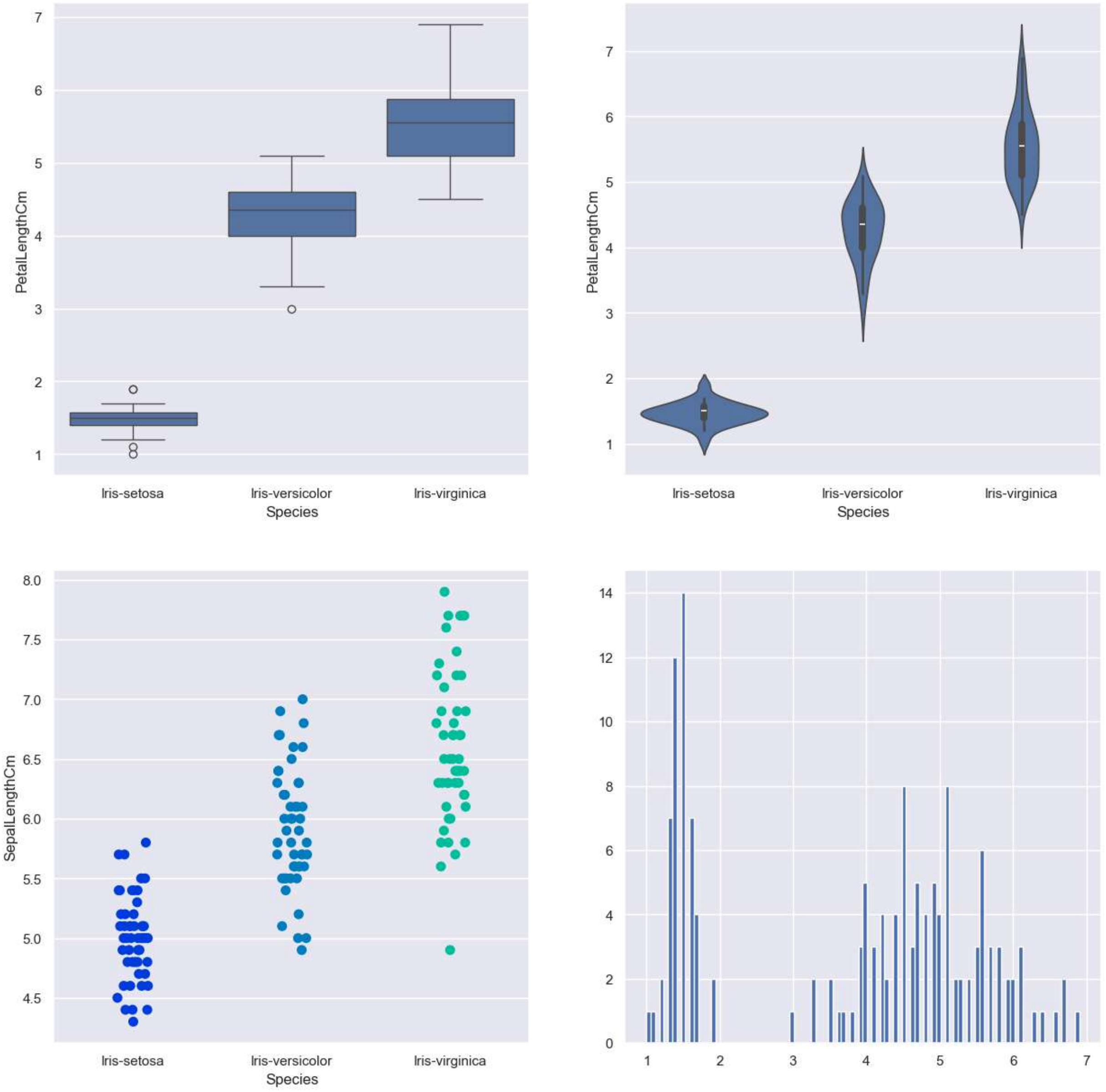


DashBoard

In [33]:

```
sns.set_style('darkgrid')
f,axes=plt.subplots(2,2,figsize=(15,15))

k1=sns.boxplot(x="Species", y="PetalLengthCm", data=iris,ax=axes[0,0])
k2=sns.violinplot(x='Species',y='PetalLengthCm',data=iris,ax=axes[0,1])
k3=sns.stripplot(x='Species',y='SepalLengthCm',data=iris,jitter=True,edgecolor='gra
#axes[1,1].hist(iris.hist,bin=10)
axes[1,1].hist(iris.PetalLengthCm,bins=100)
#k2.set(xlim=(-1,0.8))
plt.show()
```



Stacked Histogram

In [34]:
```
iris['Species']=iris['Species'].astype('category')
iris.head()
```

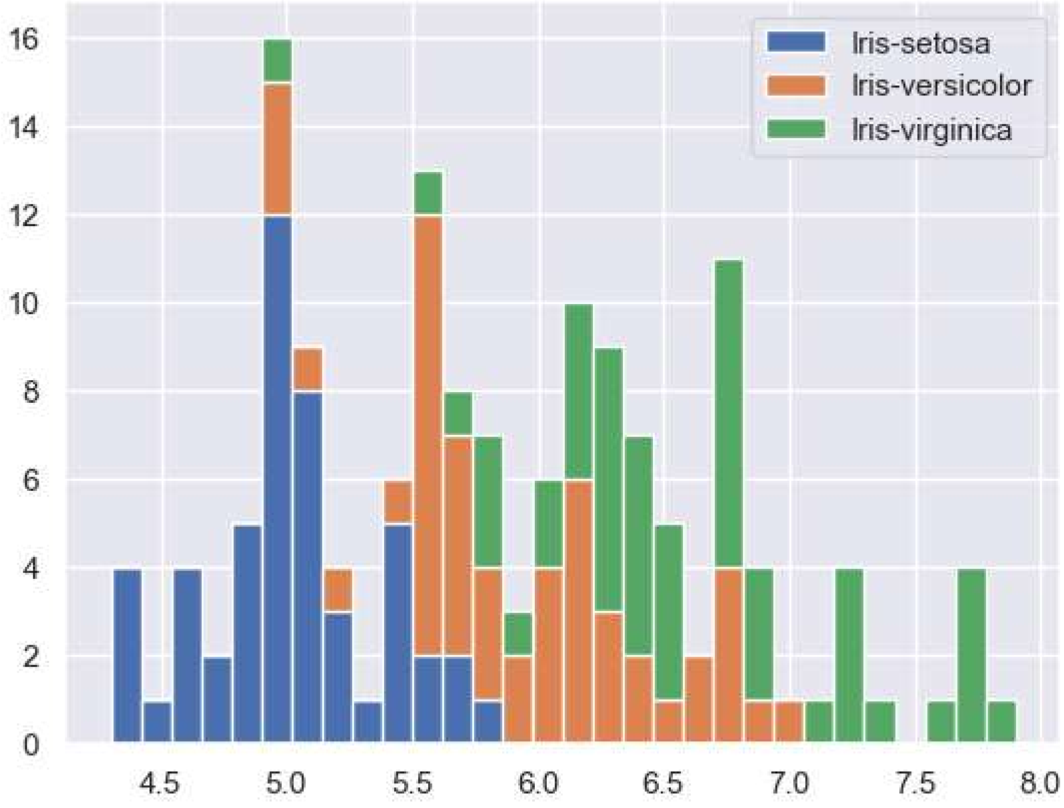
Out[34]:

	SepalLengthCm	SepalWidthCm	PetalLengthCm	PetalWidthCm	Species
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

In [35]:
```
list1=list()
mylabels=list()
```

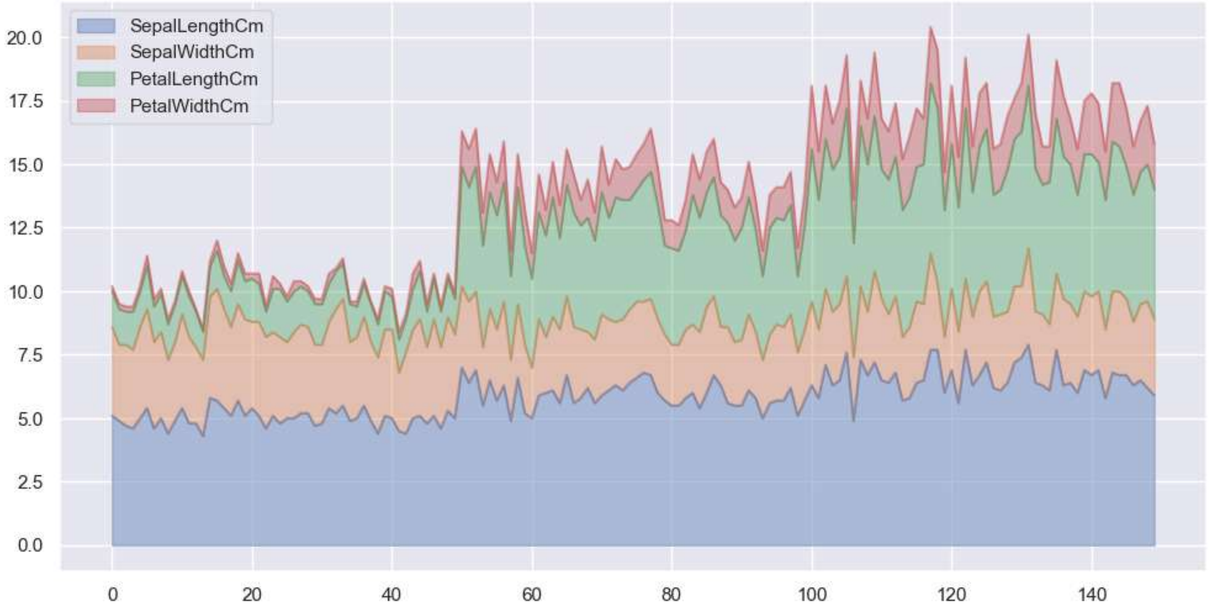
```
for gen in iris.Species.cat.categories:
    list1.append(iris[iris.Species==gen].SepalLengthCm)
    mylabels.append(gen)

h=plt.hist(list1,bins=30,stacked=True,rwidth=1,label=mylabels)
plt.legend()
plt.show()
```

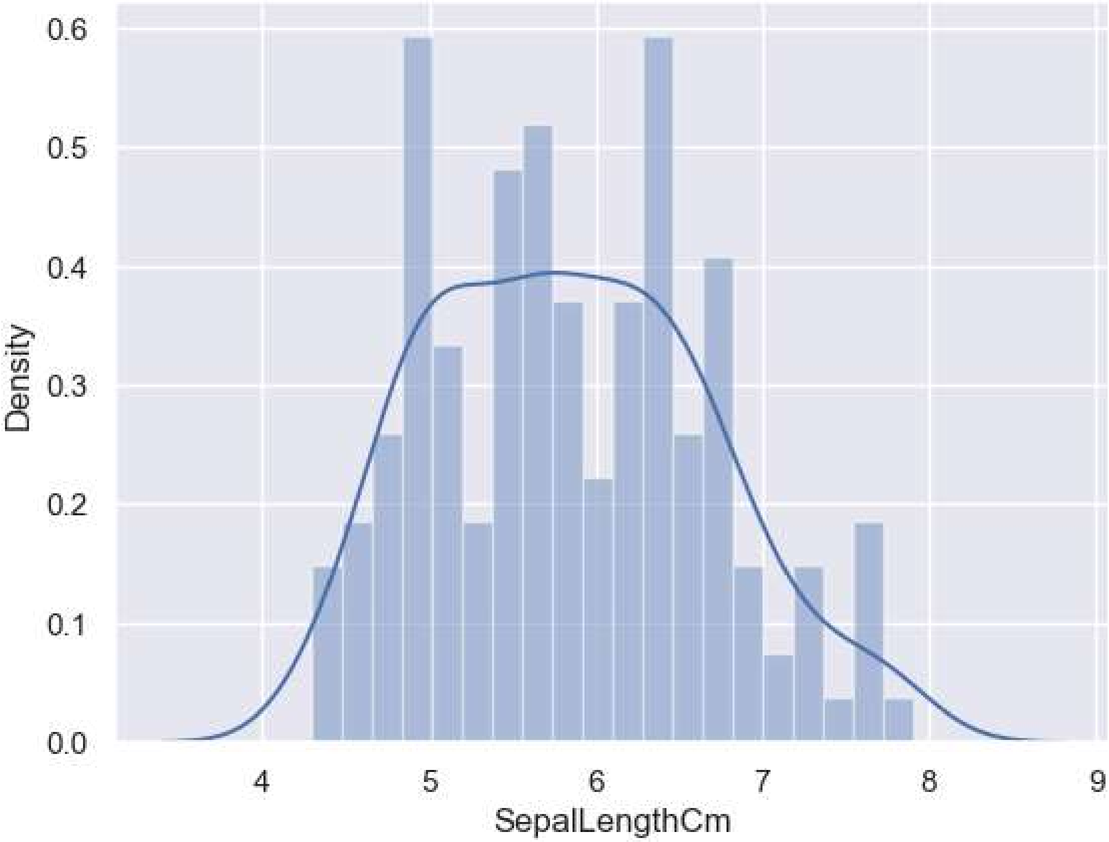


Area Plot

```
In [36]: #iris['SepalLengthCm'] = iris['SepalLengthCm'].astype('category')
         #iris.head()
         #iris.plot.area(y='SepalLengthCm',alpha=0.4,figsize=(12, 6));
         iris.plot.area(y=['SepalLengthCm','SepalWidthCm','PetalLengthCm','PetalWidthCm'],al
```



In [37]:
```
sns.distplot(iris['SepalLengthCm'],kde=True,bins=20);
plt.show()
```



In [ ]:

In [ ]: