Pie Chart

In [61]:
```
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
import seaborn as sns
```

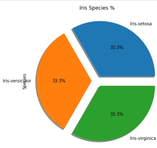
In [3]:
```
data=pd.read_excel(r'D:\Class 2020\Iris.xlsx')
```

In [4]:
```
data.head()
```

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

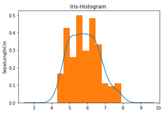
In [5]:
```
ax=plt.subplots(1,1,figsize=(10,8))
data['Species'].value_counts().plot.pie(explode=[0.1,0.1,0.1],autopct='%1.1f%%',shadow=True,figsize=(6,6))
plt.title("Iris Species %")
plt.show()
```



Line Histogram

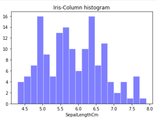
In [6]:
```
ax=plt.subplot()
data['SepalLengthCm'].plot.kde(ax=ax,legend=False,title='Iris-Histogram ')
data['SepalLengthCm'].plot.hist(density=True, ax=ax)
#ax.grid(axis='y')
ax.set_ylabel('SepalLengthCm')
plt.show
```

Out[6]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```



column Histogram

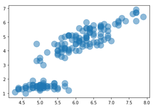
In [7]:
```
ax=plt.gca()
ax.hist(data['SepalLengthCm'],color='blue' ,alpha=0.5,bins=20,edgecolor='white')
plt.title('Iris-Column histogram')
plt.xlabel('SepalLengthCm')
plt.show()
```



Bubble Chart

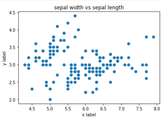
In [19]:
```
#s : size of bubble
# alpha : blending value
plt.scatter('SepalLengthCm','PetalLengthCm',s=200,alpha=0.5,data=data)
```

Out[19]:
```
<matplotlib.collections.PathCollection at 0x2efcf590280>
```



scatter chart:-

In [54]:
```
#RGB = [255 153 153]/256 ;
plt.scatter(data['SepalLengthCm'], data['SepalWidthCm'])
plt.title("Sepal width vs sepal length")
plt.xlabel('x label')
plt.ylabel('y label')
plt.show()
```



Tree chart:-

In [97]:
```
# install squarify module
!pip install squarify
import matplotlib.pyplot as plt
import squarify
```

```
Requirement already satisfied: squarify in c:\users\zeiad\anaconda3\lib\site-packages (0.4.3)
```

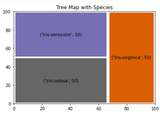
In [33]:
```
# in this case we must classification by species
tree_data=data.groupby('Species').size().reset_index(name='counts')
tree_data
```

Out[33]:

	Species	counts
0	Iris-setosa	50
1	Iris-versicolor	50
2	Iris-virginica	50

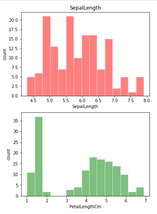
In [36]:
```
# should convert dataframe to list
sizes=tree_data.counts.to_list()
```

In [44]:
```
np.random.seed(seed=12345)
color = plt.cm.Dark2(np.random.rand(len(sizes)))
label = list(zip(tree_data.Species,tree_data.counts))
squarify.plot(sizes=sizes,color=color,label=label,pad=True)
plt.title('Tree Map with Species')
# Show the plot
plt.show()
```



SubPlots :-

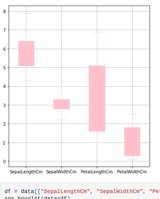
In [98]:
```
fig, axes = plt.subplots(nrows=2, ncols=2,figsize=(12,8))
axes[0,0].hist('SepalLengthCm',bins=15,color='red',alpha=.5,edgecolor='white',data=data)
axes[0,0].set_title('SepalLength')
axes[0,0].set_xlabel('SepalLength')
axes[0,0].set_ylabel('count')

axes[0,1].hist('SepalWidthCm',bins=15,color='blue',alpha=.5,edgecolor='white',data=data)
axes[0,1].set_title('SepalWidth')
axes[0,1].set_xlabel('SepalWidthCm')
axes[0,1].set_ylabel('count')

axes[1,0].hist('PetalLengthCm',bins=15,color='green',alpha=.5,edgecolor='white',data=data)
#axes[1,0].set_title('PetalLength')
axes[1,0].set_xlabel('PetalLengthCm')
axes[1,0].set_ylabel('count')

axes[1,1].hist('PetalWidthCm',bins=15,color='orange',alpha=.5,edgecolor='white',data=data)
#axes[1,1].set_title('PetalWidth')
axes[1,1].set_xlabel('PetalWidthCm')
axes[1,1].set_ylabel('count')

plt.show()
```



Box Plot

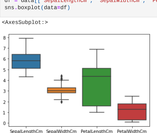
In [123...
```
df = data[["SepalLengthCm", "SepalWidthCm", "PetalLengthCm", "PetalWidthCm"]]
plt.figure(figsize = (6, 7))
df.boxplot(color = "pink",patch_artist=True,vert=True,showfliers=False)
```

Out[123...
```
<AxesSubplot:>
```



In [131...
```
df = data[["SepalLengthCm", "SepalWidthCm", "PetalLengthCm", "PetalWidthCm"]]
sns.boxplot(data=df)
```

Out[131...
```
<AxesSubplot:>
```



In [ ]:
```

```

In [ ]:
```

```