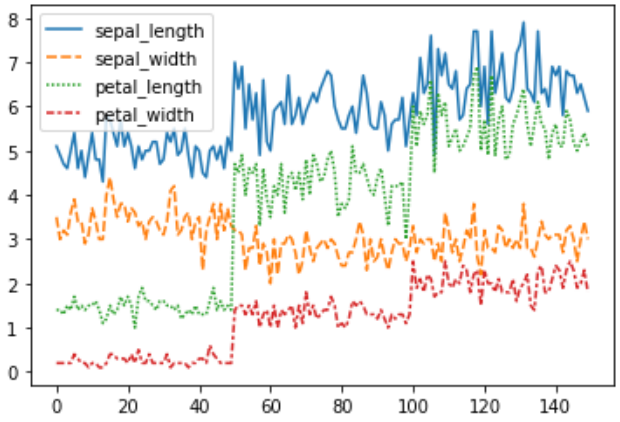
1. Write a Python program to create a plot to get a general Statistics of Iris data. (Using the dataset “iris.csv”).

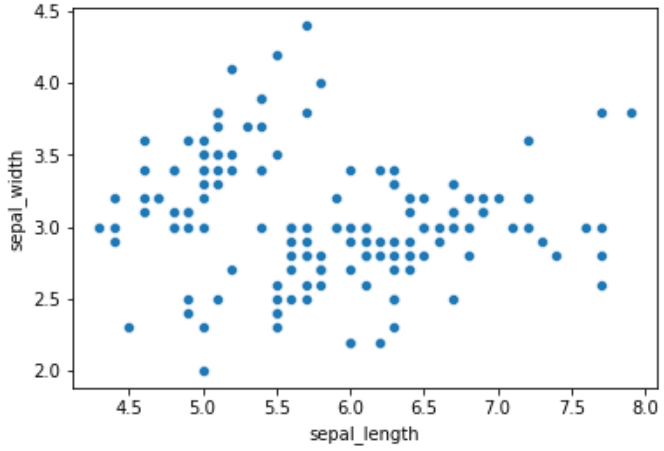
In [3]:
```
import matplotlib.pyplot as plt
import seaborn as sns
data = sns.load_dataset("iris")
sns.lineplot(data)
plt.show()
```



2. Write a Python program to create a graph to find relationship between the sepal length and width. (Using the dataset “iris.csv”).

In [7]:
```
import matplotlib.pyplot as plt
import seaborn as sns
data = sns.load_dataset("iris")
print(data[:5])
sns.scatterplot(x="sepal_length",y="sepal_width",data=data)
plt.show()
```

```
   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
```

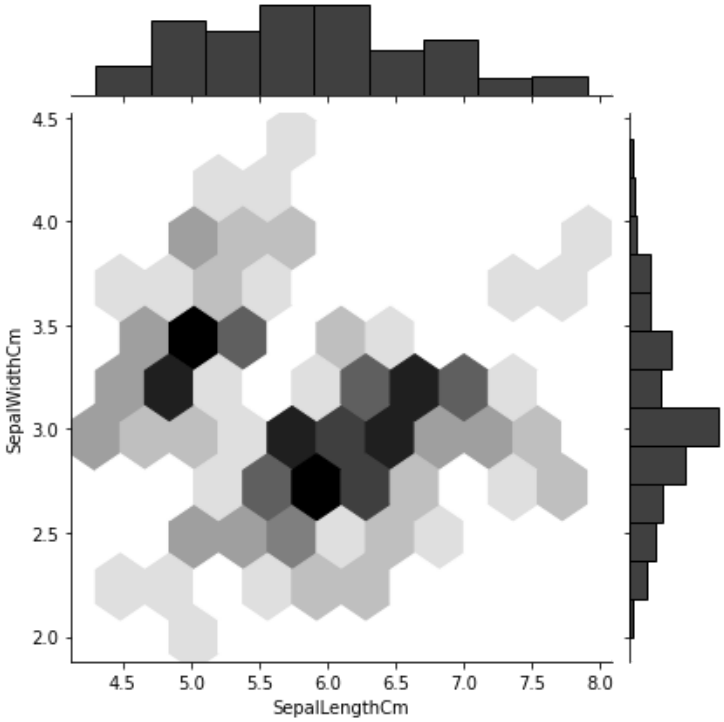


Discussion:

from the above scatter plot we see that when the sepal length increases, the sepal width also increases.

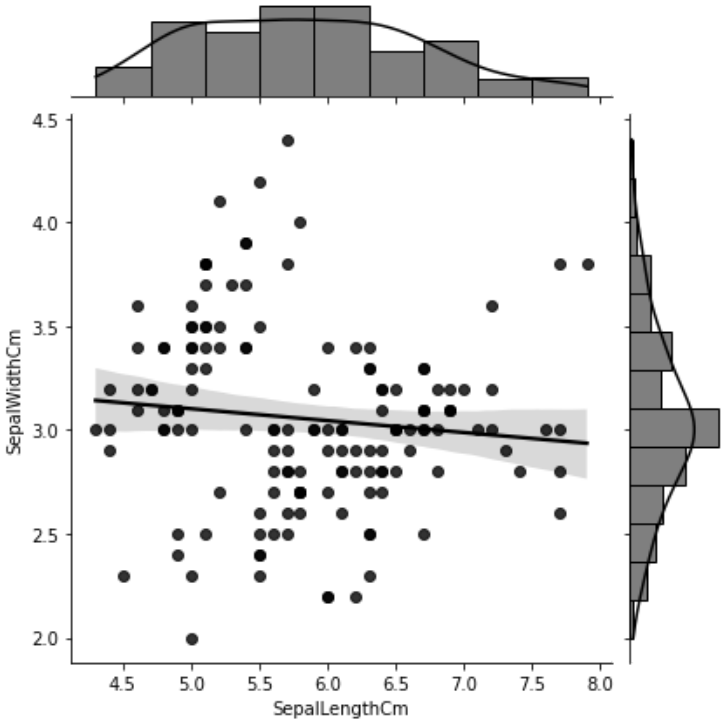
3. Write a Python program to create a join plot using "hexbin" to describe individual distributions on the same plot between Sepal length and Sepal width. (Using the dataset “iris.csv”).

In [22]:
```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
iris = pd.read_csv(r'C:\Users\Nirmalya Majhi\Desktop\Advanced IT Workshop\iris.csv')
fig=sns.jointplot(x='SepalLengthCm', y='SepalWidthCm', kind="hex", color="black", data=iris)
plt.show()
```



4. Write a Python program to create a joinplot and add regression and kernel density fits using "reg" to describe individual distributions on the same plot between Sepal length and Sepal width. (Using the dataset "iris.csv").

In [23]:
```
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
iris = pd.read_csv(r'C:\Users\Nirmalya Majhi\Desktop\Advanced IT Workshop\iris.csv')
fig=sns.jointplot(x='SepalLengthCm', y='SepalWidthCm', kind="reg", color="black", data=iris)
plt.show()
```



5. Write a Python program to find the correlation between variables of iris data. Also create a heatmap using Seaborn to present their relations (Using the dataset "iris.csv").

In [29]:
```
import pandas as pd
import seaborn as sns
import numpy as np
import matplotlib.pyplot as plt
iris = pd.read_csv(r'C:\Users\Nirmalya Majhi\Desktop\Advanced IT Workshop\iris.csv')
X = iris.iloc[:, 1:5]
f, ax = plt.subplots(figsize=(10, 8))
corr=X.corr()
print(corr)
sns.heatmap(corr, mask=np.zeros_like(corr), cmap=sns.diverging_palette(220,10,as_cmap=True),
            square=True, ax=ax, linewidths=0.5)
plt.show()
```

```
                SepalLengthCm  SepalWidthCm  PetalLengthCm  PetalWidthCm
SepalLengthCm       1.000000     -0.109369       0.871754      0.817954
SepalWidthCm       -0.109369      1.000000      -0.420516     -0.356544
PetalLengthCm       0.871754     -0.420516       1.000000      0.962757
PetalWidthCm        0.817954     -0.356544       0.962757      1.000000
```