Data visualization. A fancy self-explanatory name. Taking data and turning it into something colorful by using Python libraries such as Matplotlib, Seaborn, Datashader, and others. The best way to get insights in Data Analytics is by visualization.

Seaborn vs Matplotlib

It is summarized that if Matplotlib "tries to make easy things easy and hard things possible", Seaborn tries to make a well-defined set of hard things easy too.

Seaborn helps resolve the two major problems faced by Matplotlib; the problems are −

- Default Matplotlib parameters
- Working with data frames

As Seaborn compliments and extends Matplotlib, the learning curve is quite gradual. If you know Matplotlib, you are already half way through Seaborn.

Important Features of Seaborn

Seaborn is built on top of Python's core visualization library Matplotlib. It is meant to serve as a complement, and not a replacement. Seaborn comes with some very important features. The features help in as following:

- Built in themes for styling matplotlib graphics
- Visualizing univariate and bivariate data
- Fitting in and visualizing linear regression models
- Plotting statistical time series data
- Seaborn works well with NumPy and Pandas data structures
- It comes with built in themes for styling Matplotlib graphics

In most cases, you will still use Matplotlib for simple plotting. The knowledge of Matplotlib is recommended to tweak Seaborn's default plots.

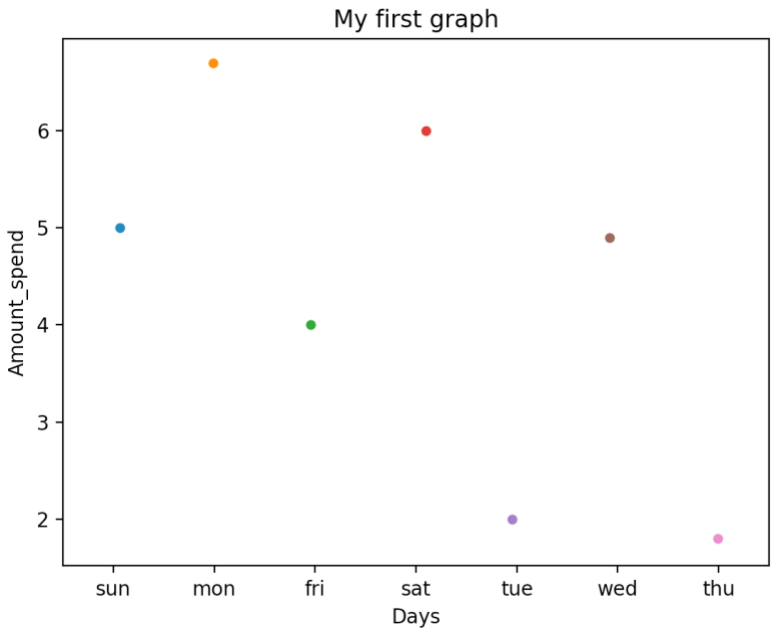
What to install

matplotlib
seaborn
numpy
pandas

Understanding Data Visualizations

https://www.klipfolio.com/resources/articles/what-is-data-visualization

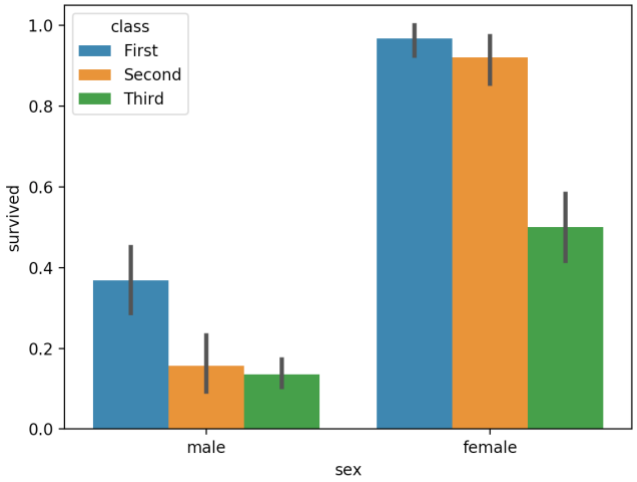
```
'''
This program demonstrates Plotting categorical scatter plots
with Seaborn Python package.
'''

# get required modules
import matplotlib.pyplot as plt
import seaborn as sns

print ("scatter plot...")

# set x axis values
x =['sun', 'mon', 'fri', 'sat', 'tue', 'wed', 'thu']

# set y axis values
y =[5, 6.7, 4, 6, 2, 4.9, 1.8]

# plotting strip plot with seaborn
ax = sns.stripplot(x, y);

# set labels for x-axis and y-axis
ax.set(xlabel ='Days', ylabel ='Amount_spend')

# set title to the plot
plt.title('My first graph');

# function to show plot
plt.show()

'''
Explanation:
This is the one of kind of scatter plot of categorical data with the
help of seaborn.

Categorical data is represented in x-axis and values correspond to
them represented through y-axis.

.striplot() function is used to define the type of the plot and to
plot them on canvas using.
.set() function is use to set labels of x-axis and y-aixs.
.title() function is used to give title to the graph.
To view plot we use .show() function.

The program was retrieved from the following website:
https://www.geeksforgeeks.org/plotting-graph-using-seaborn-python/
'''
```



'''
This program demonstrates various graph types using
Python seaborn library package.
'''
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt

 # Load DATASET titanic - Bar Plot
'''
The bar plot illustrates the average number of survivals of male
and female in each class. The plot shows that there were more females
survivals than males from the first class.
'''
print("Loading titatic dataset...")
titanic = sns.load_dataset("titanic")
sns.barplot(x="sex", y="survived", hue="class", data=titanic)

# Show plot
plt.show()



'''

------- **NOTE** -------

if data is located on seaborn default site; no need to use panda to read data

data = sns.load_dataset("titanic")

if dataset is on local drive, you need to use panda to read the data

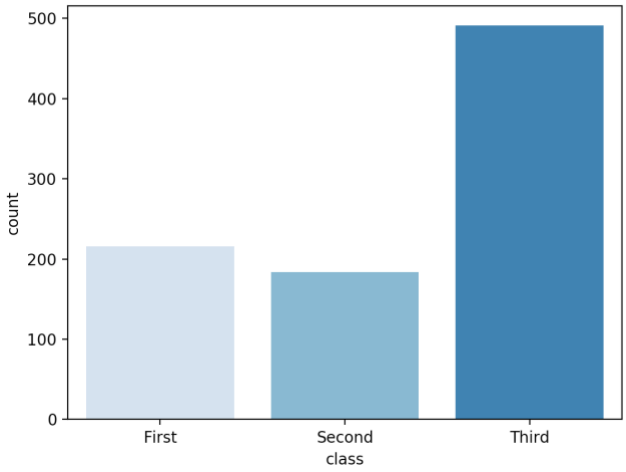
data = pd.read_csv("/Users/staff/downloads/titanic.csv")

'''

'''

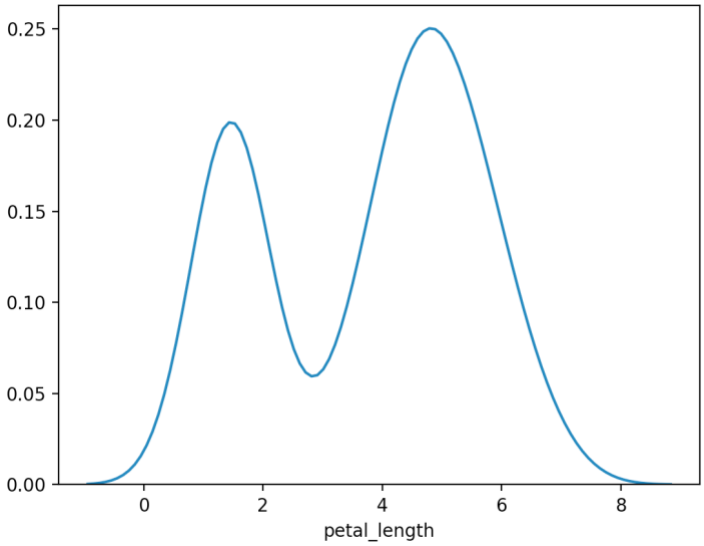
Bar plot to show the number of each class category.
The number of passengers in the third class are higher than
first and second.
'''

sns.countplot(x="class", data=titanic, palette="Blues")
plt.show()

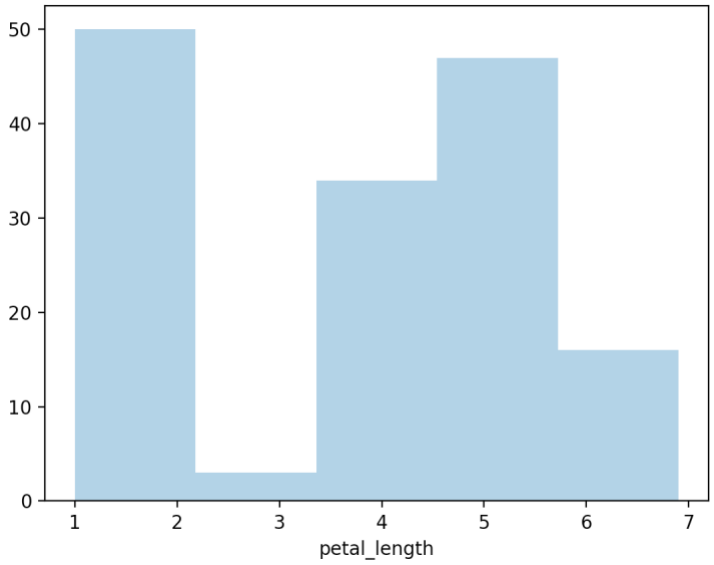


 # Load DATASET iris ----------

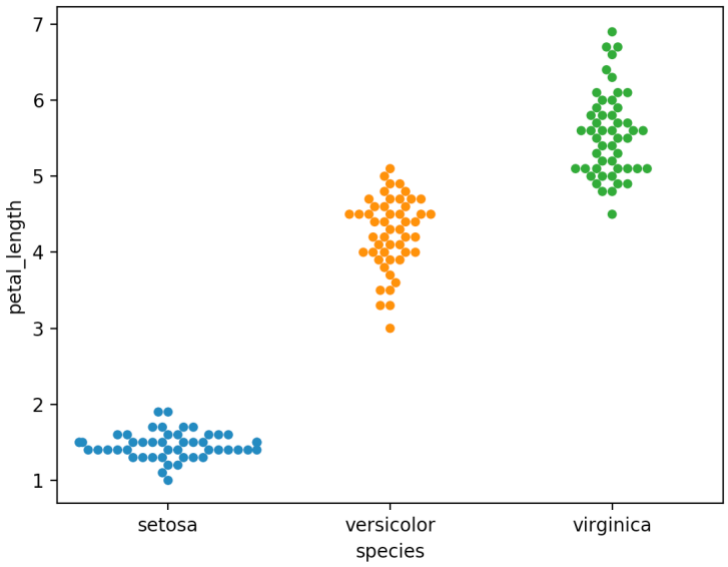
```
print("Loading iris dataset...")
df = sns.load_dataset('iris')
sns.distplot(df['petal_length'],hist=False)
plt.show()
```




```
sns.distplot(df['petal_length'],kde = False)
plt.show()
```

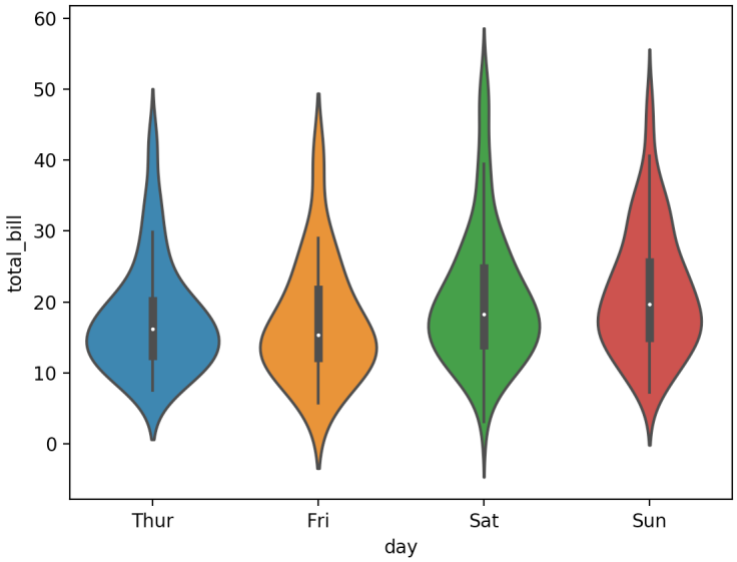


print ("swarm plot...")
df = sns.load_dataset('iris')
sns.swarmplot(x = "species", y = "petal_length", data = df)
plt.show()

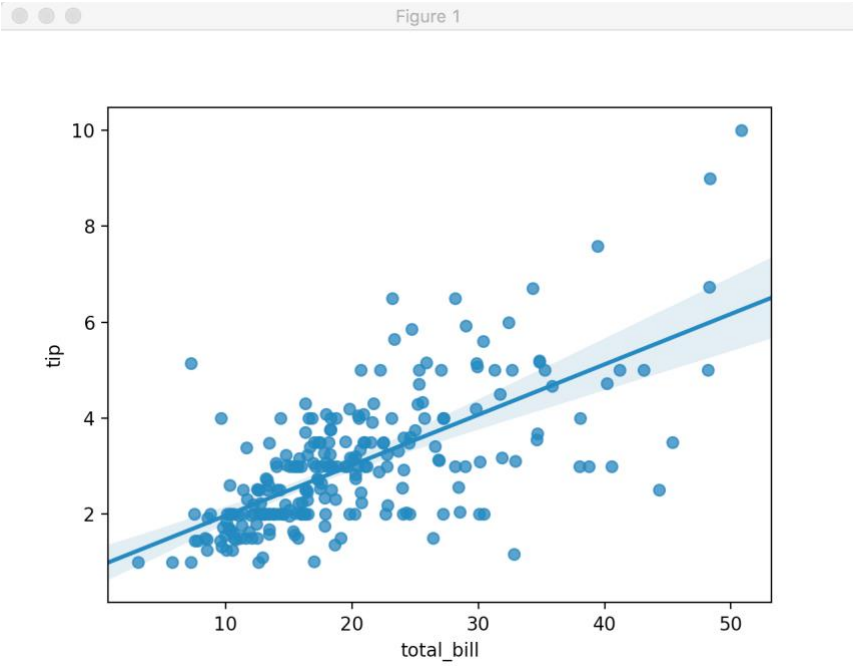


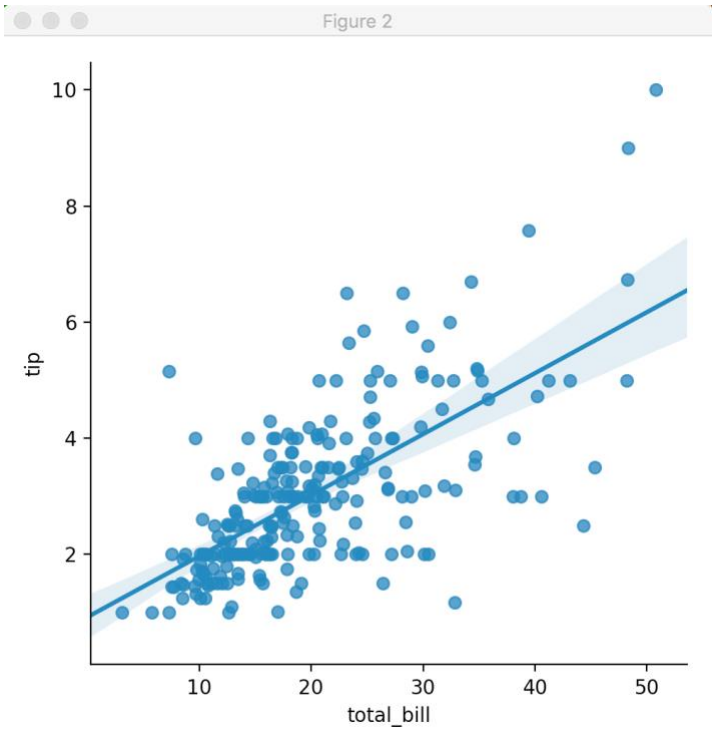
 # Load DATASET tips ----------
print("violin plot...")
df = sns.load_dataset('tips')
sns.violinplot(x = "day", y = "total_bill", data=df)

plt.show()



print ("plotting the regplot and the lmplot...")
df = sns.load_dataset('tips')
sns.regplot(x = "total_bill", y = "tip", data = df)
sns.lmplot(x = "total_bill", y = "tip", data = df)
plt.show()





'''
Useful reference to learn seaborn
https://www.tutorialspoint.com/seaborn/index.htm'''

Exploring using seaborn Python library package
https://seaborn.pydata.org/tutorial/categorical.html