Seaborn

```
import seaborn as sns
```

Read CSV files

```
sns.get_dataset_names()
```

To get a dataset provided by Seaborn

→['anagrams', 'anscombe', 'attention', 'brain_networks',....]

```
tips = sns.load_dataset("tips")
iris = sns.load_dataset("iris")
titanic = sns.load_dataset("titanic")
planets = sns.load_dataset("planets")
#or for a custum dataset:
data = pd.read_csv("data.csv")
tips.columns
```

```
→ Index(['total_bill', 'tip', 'sex', 'smoker', 'day', 'time', 'size'], dtype='object')
```

Scatter Plot

```
sns.scatterplot(x="tip", y="total_bill", data=tips, hue="day"

x="column name", y= "column name" ⇒ sets the column name as the variable on the x and y-axis

data="name of the dataset"

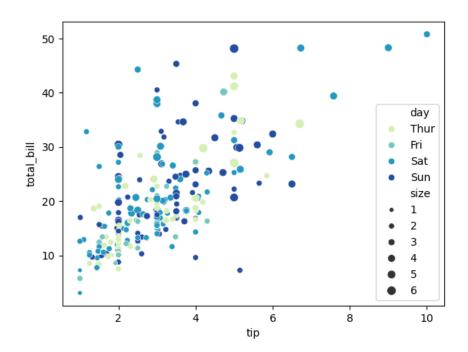
hue="day" ⇒ adds color to the points based on the day column

size="size" ⇒ sets the size of the points based on the size column.
```

palette="YlGnBu" ⇒ sets the color palette ranging from yellow to green to blue for the plot.

OR

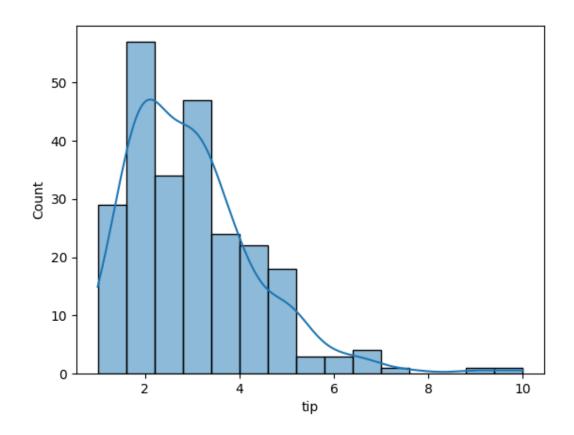
```
sns.scatterplot(data, x, y , hue, size, style, palette,....)
```



Histograms & Distribution Plots

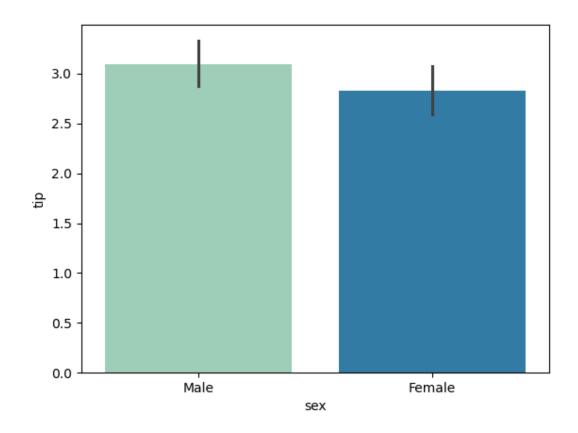
```
sns.histplot(tips['tip'], kde=True, bins=30)
# histplot is similar to displot
sns.displot(tips['tip'], kde=True, bins=30)
# but don't use distplt with t
```

 $kde=True \Rightarrow To get the line.$



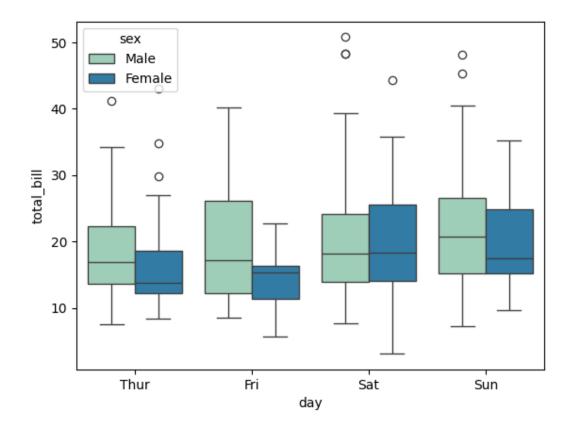
Bar Plot

sns.barplot(x="sex", y="tip", data=tips, palette="YlGnBu")



Box Plot

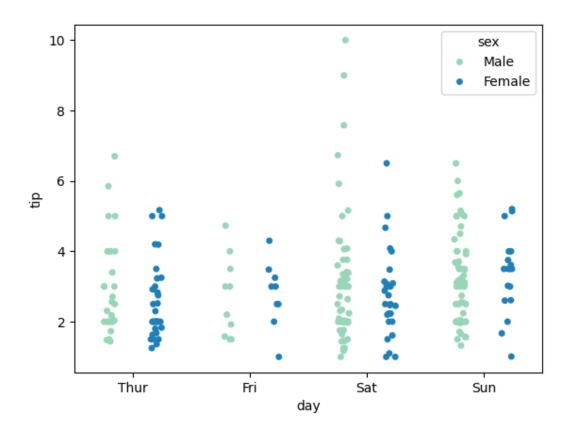
sns.boxplot(x="day", y="total_bill", data=tips, hue="sex", pa



Strip Plot

sns.stripplot(x="day", y="tip", data=tips, hue="sex", palette

dodge=True ⇒ To seperate the males and females in this code

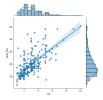


Join Plot

Join Plot ⇒ a powerful data visualization tool that combines multiple plot types. Typically, a Scatter plot and Histogram

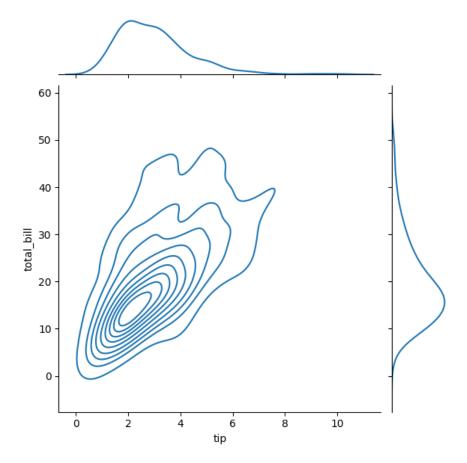
```
sns.jointplot(x="tip", y="total_bill", data=tips, kind="reg")
```

kind="reg" ⇒ to add a regression line



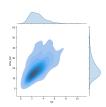
```
sns.jointplot(x="tip", y="total_bill", data=tips, kind="kde")
```

kind="kde" ⇒ To make it like a 3-Dimentional plot to show better where the concentration of values is.



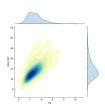
sns.jointplot(x="tip", y="total_bill", data=tips, kind="kde",

fill=True ⇒ To make it visually better.

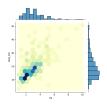


sns.jointplot(x="tip", y="total_bill", data=tips, kind="kde",

cmap="YlGnBu" ⇒ To make the fill function influenced by setting a color map

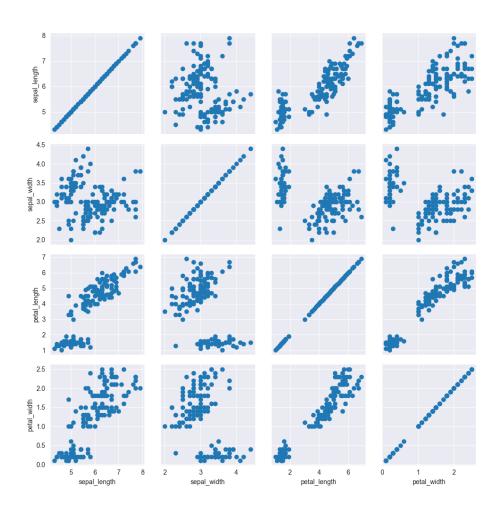


sns.jointplot(x="tip", y="total_bill", data=tips, kind="hex",



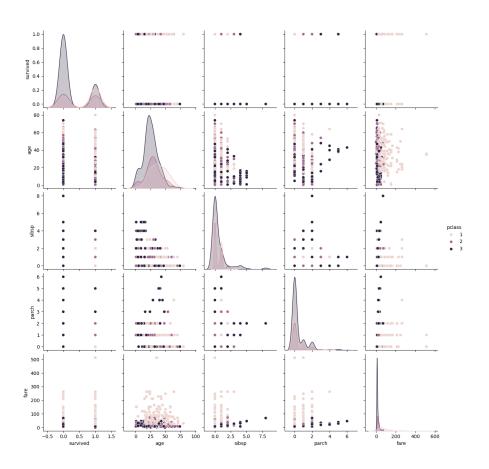
Pair Grid

```
# Create a PairGrid
h = sns.PairGrid(iris)
# Map a scatter plot to the grid
h = h.map(plt.scatter)
```



Piar Plot

sns.pairplot(titanic.select_dtypes(['number']), hue="pclass")



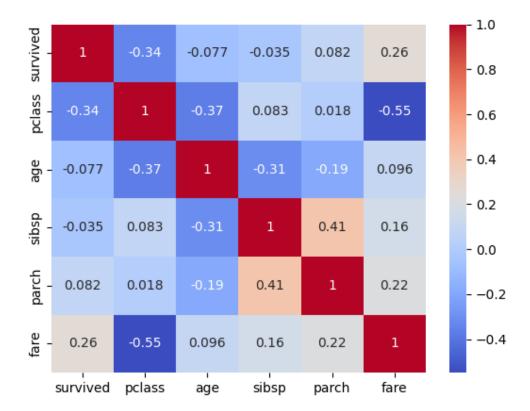
Heat Map

Heat Map ⇒ Used in identifing patterns, trends, and correlations within the data, and making predections.

```
sns.heatmap(titanic.corr(), annot=True, cmap="coolwarm")
```

titanic.corr() ⇒ To get the correlations but may not be easy to get information from.

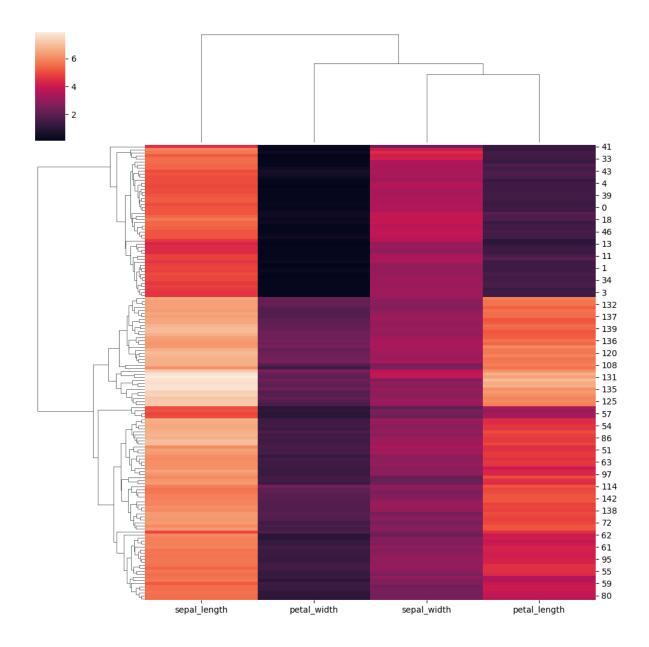
 $annot=True \Rightarrow to display the values of the cells in the heatmap.$



Cluster Map

Cluster Map ⇒ combines heatmaps with hierarchical clustering. It displays data in a matrix format where both rows and columns are clustered to show similarities. The dendrograms (tree-like diagrams) on the sides of the heatmap indicate how data points are grouped together based on similarity ⇒ clustring the individual instances.

sns.clustermap(iris.drop("species", axis=1))

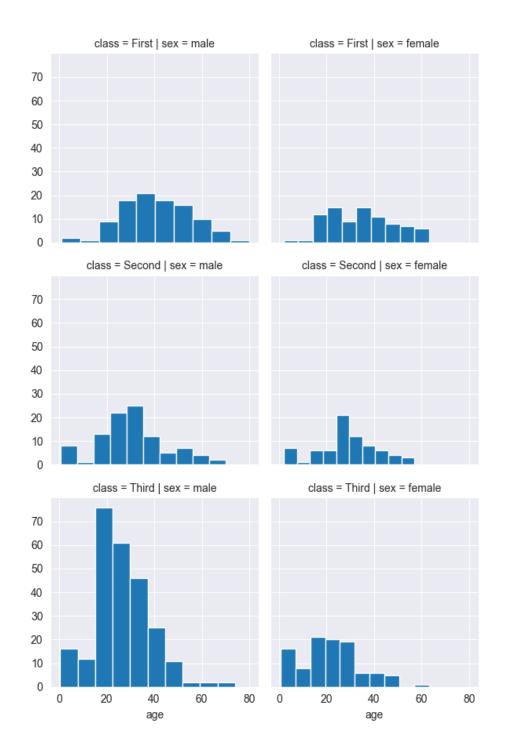


FacetGrid

FacetGrid ⇒ Creates a grid of plots based on the values of two categorical variables

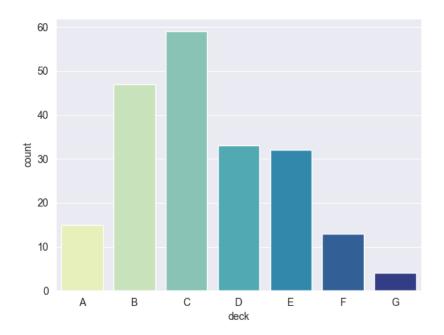
map: Maps a plotting function (here, plt.hist) to each subplot in the grid Displaying the distribution of age for each combination of sex and class.

```
g = sns.FacetGrid(titanic, col="sex", row="class")
g = g.map(plt.hist, "age")
```



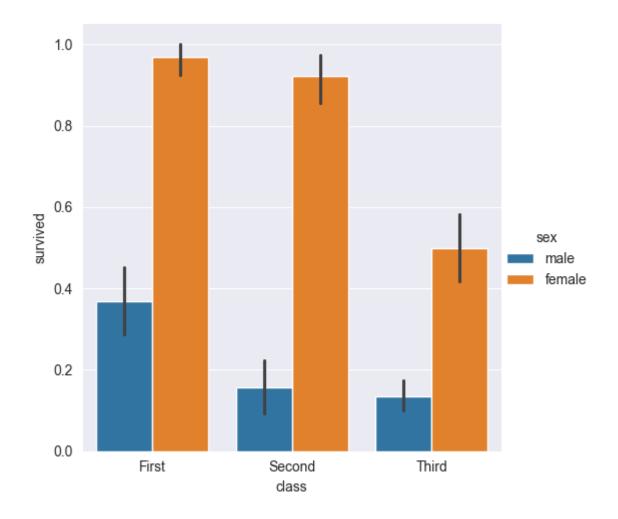
Count Plot

sns.countplot(x="deck", data=titanic, palette="YlGnBu")



Factor Plot / Cat Plot

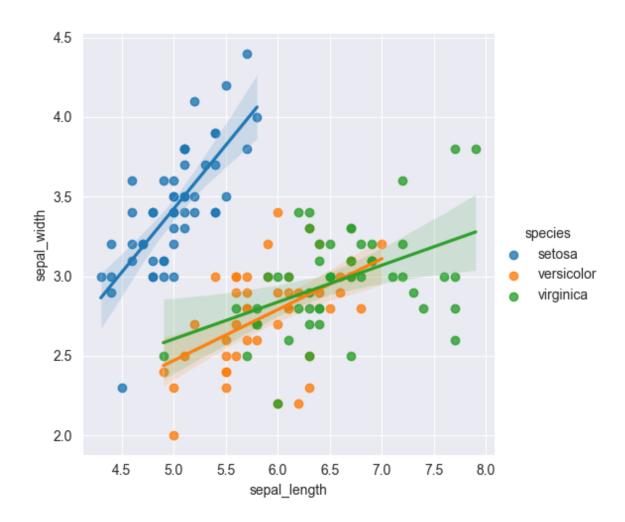
sns.catplot(x="class", y="survived", hue="sex", data=titanic,



Implot (Linear Model Plot)

Implot ⇒ Plot data and regression model fits across a FacetGrid

sns.lmplot(x="sepal_length", y="sepal_width", hue="species",



Customizations

```
sns.set() #(Re)set the seaborn default
sns.set_style("whitegrid")
sns.set_style("ticks", {"xtick.major.size":8,"ytick.major.size
sns.axes_style("whitegrid") #Return a dict of params or use w.
```

The first

"whitegrid" style is set globally, affecting all subsequent plots. The second "whitegrid" style affects only the plot inside the context.

```
-> plt.despine(left=True) # Remove left spine
```

Save Plot

```
>>> plt.savefig("Plot.png") #Save the plot as a figure
>>> plt.savefig("Plot.png", transparent=True) #Save transpare
```

Close & Clear

```
>>> plt.cla() #Clear an axis
>>> plt.clf() #Clear an entire figure
>>> plt.close() #Close a window
```