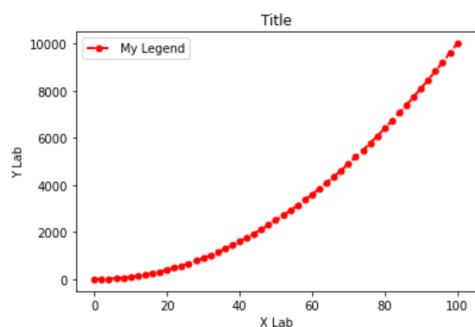


```
In [1]: 1 import pandas as pd
2 import numpy as np
3 import matplotlib.pyplot as plt
4 import seaborn as sns
5 x = np.linspace(0, 100, 51)
6 y = x ** 2
7 df = pd.read_csv("Train_Titanic.csv")
```

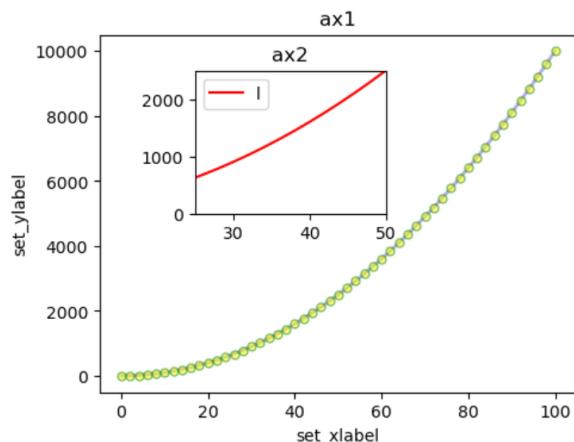
## ▼ way 1

```
In [2]: 1 plt.plot(x, y, ls="--", lw=2, color="red", alpha=1, marker="o", markersize=5, label="My Legend")
2 plt.xlabel("X Lab")
3 plt.ylabel("Y Lab")
4 plt.title("Title")
5 # plt.legend("My Legend")
6 plt.legend()
7 plt.show()
```



## ▼ way 2

```
In [3]: 1 fig = plt.figure(figsize=(4, 3), dpi=100)
2
3 ax1 = fig.add_axes([0, 0, 1, 1]) # [0, 0, 1]
4 ax1.plot(x, y, color="slateblue", lw=2, ls="-",
5           marker="o", markersize=5, markerfacecolor="yellow", markeredgewidth=1,
6           markeredgecolor="green", alpha=0.5)
7 ax1.set_title("ax1")
8 ax1.set_xlabel("set_xlabel")
9 ax1.set_ylabel("set_ylabel")
10
11 ax2 = fig.add_axes([0.2, 0.5, 0.4, 0.4]) # [left x, bottom y, width, height] %
12 ax2.plot(x, y, color="red")
13 ax2.set_title("ax2")
14 ax2.set_xlim([25, 50])
15 ax2.set_ylim([0, 2_500])
16 ax2.legend("legend")
17
18 plt.show()
```



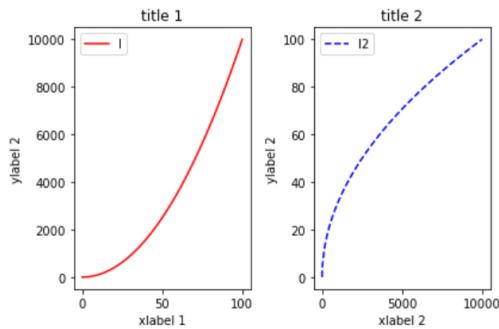
## ▼ way 3

```
In [4]: 1 plt.subplot(1, 2, 1) # Location
2 plt.plot(x, y, ls="--", color="red")
3 plt.title("title 1")
4 plt.xlabel("xlabel 1")
5 plt.ylabel("ylabel 2")
6 plt.legend("l1")
7
```

```

8 plt.subplot(1, 2, 2)
9 plt.plot(y, x, ls="--", color="blue", label="l2")
10 plt.title("title 2")
11 plt.xlabel(" xlabel 2")
12 plt.ylabel(" ylabel 2")
13 plt.legend()
14
15 plt.tight_layout()
16 plt.show()

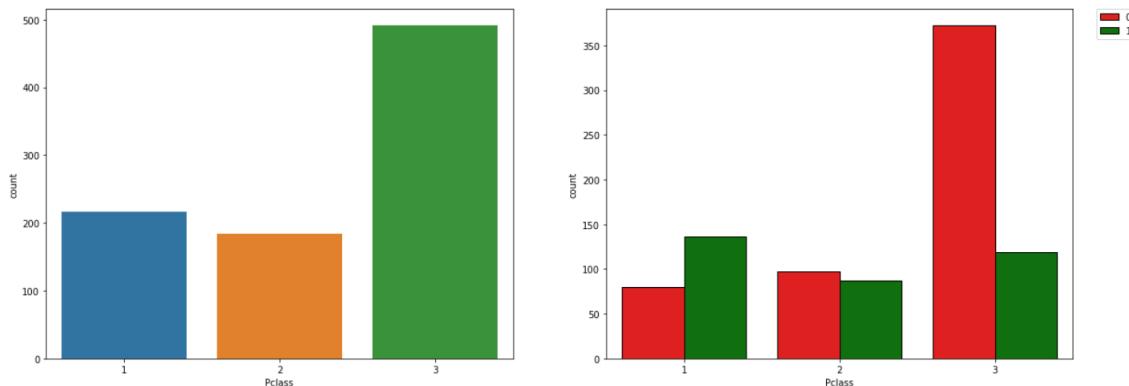
```



```

In [5]: plt.figure(figsize=(20, 7))
1 plt.subplot(1, 2, 1)
2 sns.countplot(data=df, x="Pclass")
3
4 plt.subplot(1, 2, 2)
5 sns.countplot(data=df, x="Pclass", hue="Survived", palette={0: "red", 1: "green"}, edgecolor="black")
6
7 plt.legend(bbox_to_anchor=(1.05, 1), loc=2, borderaxespad=0);

```

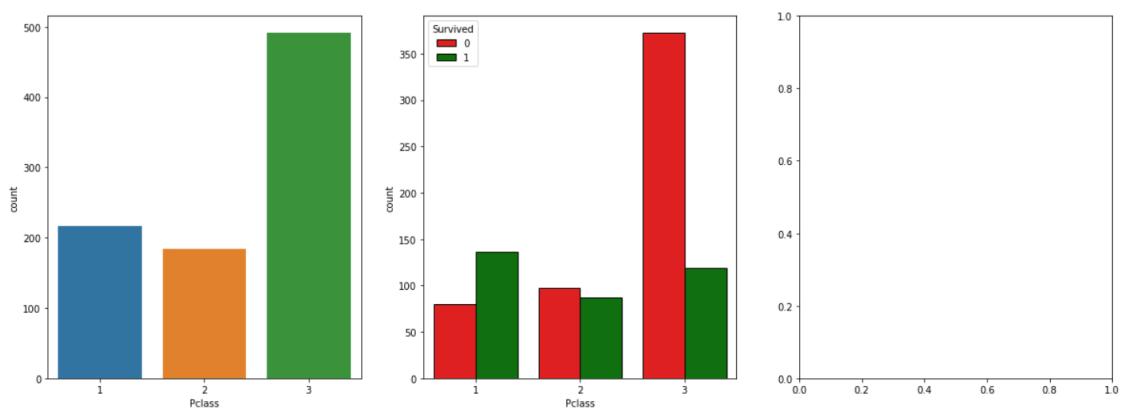


```

In [6]: fig, ax = plt.subplots(1, 3, figsize=(20, 7))
1 sns.countplot(ax=ax[0], data=df, x="Pclass")
2
3 sns.countplot(ax=ax[1], data=df, x="Pclass", hue="Survived", palette={0: "red", 1: "green"}, edgecolor="black")
4
5 plt.legend(bbox_to_anchor=(1.05, 1), loc=2, borderaxespad=0);

```

No handles with labels found to put in legend.



```

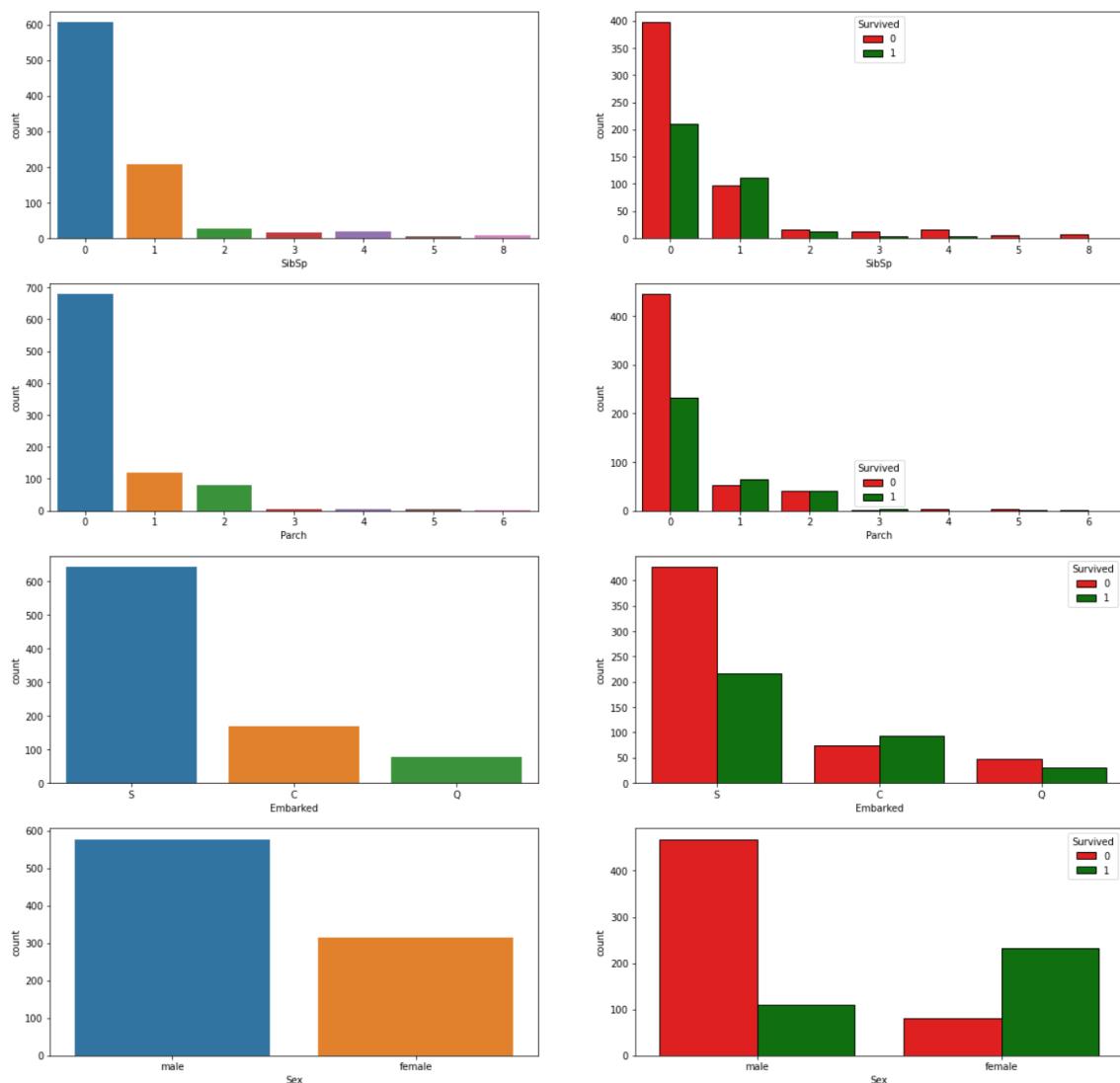
In [7]: fig, ax = plt.subplots(4, 2, figsize=(20, 20))
1 sns.countplot(ax=ax[0][0], data=df, x="SibSp")
2
3 sns.countplot(ax=ax[0][1], data=df, x="SibSp", hue="Survived", palette={0: "red", 1: "green"}, edgecolor="black")
4
5 sns.countplot(ax=ax[1][0], data=df, x="Parch")
6 sns.countplot(ax=ax[1][1], data=df, x="Parch", hue="Survived", palette={0: "red", 1: "green"}, edgecolor="black")
7
8 sns.countplot(ax=ax[2][0], data=df, x="Embarked")
9 sns.countplot(ax=ax[2][1], data=df, x="Embarked", hue="Survived", palette={0: "red", 1: "green"}, edgecolor="black");
10
11

```

```

12 sns.countplot(ax=ax[3][0], data=df, x="Sex")
13 sns.countplot(ax=ax[3][1], data=df, x="Sex", hue="Survived", palette={0: "red", 1: "green"}, edgecolor="black");

```

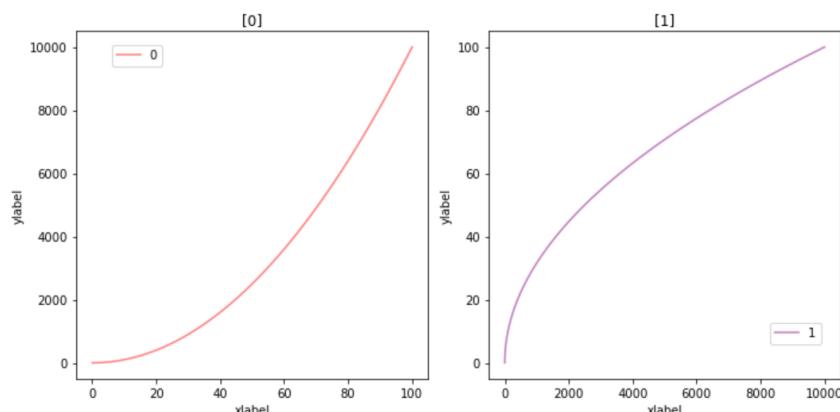


#### ▼ way 4

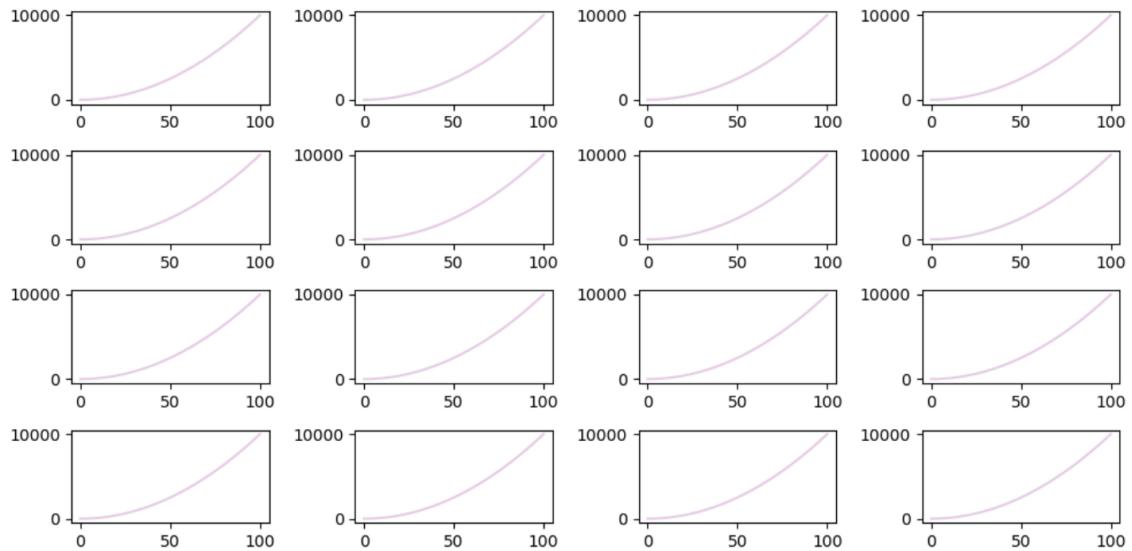
```

In [8]: fig, ax = plt.subplots(1, 2, figsize=(10, 5))
1 fig, ax = plt.subplots(1, 2, figsize=(10, 5))
2
3 ax[0].plot(x, y, color="red", alpha=0.5, label="0")
4 ax[0].set_title("[0]")
5 ax[0].set_xlabel(" xlabel")
6 ax[0].set_ylabel(" ylabel")
7 ax[0].legend(loc=(0.1, 0.9))
8
9 ax[1].plot(y, x, color="purple", alpha=0.5)
10 ax[1].set_title("[1]")
11 ax[1].set_xlabel(" xlabel")
12 ax[1].set_ylabel(" ylabel")
13 ax[1].legend("1", loc=(0.8, 0.1))
14
15 plt.tight_layout()
16 plt.show()

```



```
In [9]: fig, ax = plt.subplots(nrows=4, ncols=4, figsize=(10, 5), dpi=100)
2
3 i, j = 0, 0
4 for i in range(4):
5     for j in range(4):
6         ax[i, j].plot(x, y, color="purple", alpha=0.2)
7
8 fig.tight_layout()
9 fig.savefig("saving1.png") # saving the image
10 plt.savefig("saving2.pdf", transparent=True)
11 plt.show()
```



```
In [10]: iris = sns.load_dataset("iris")
2 flights = sns.load_dataset("flights")
3 diamonds = sns.load_dataset("diamonds").sample(200)
4 titanic = sns.load_dataset(name="titanic")
```

#### ▼ sns.scatterplot

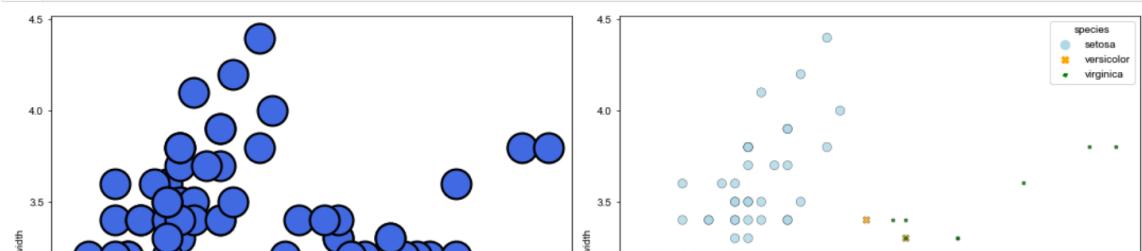
```
In [11]: 1 iris
```

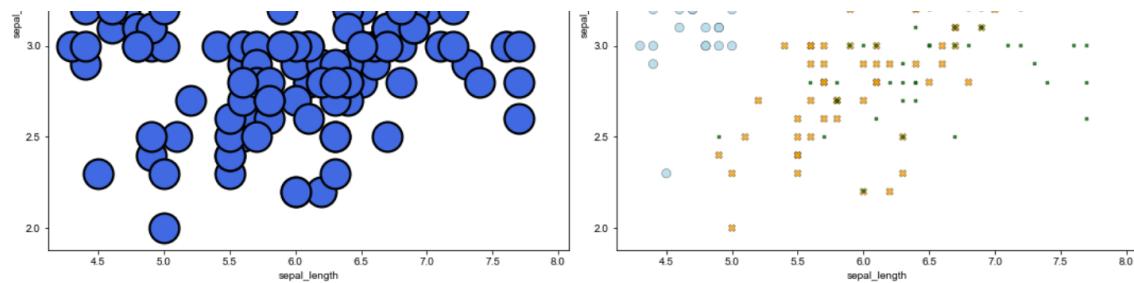
Out[11]:

	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
...	...	...	...	...	...
145	6.7	3.0	5.2	2.3	virginica
146	6.3	2.5	5.0	1.9	virginica
147	6.5	3.0	5.2	2.0	virginica
148	6.2	3.4	5.4	2.3	virginica
149	5.9	3.0	5.1	1.8	virginica

150 rows × 5 columns

```
In [12]: fig, ax = plt.subplots(nrows=1, ncols=2, figsize=(15, 7))
2
3 sns.scatterplot(data = iris, ax=ax[0], x="sepal_length", y="sepal_width", edgecolor="black", s=777, color="royalblue")
4 sns.scatterplot(ax=ax[1], x="sepal_length", y="sepal_width", data=iris, hue="species", style="species", size="species",
5 palette={"setosa": "lightblue", "versicolor": "orange", "virginica": "green"}, alpha=0.8, edgecolor="black")
6 sns.set_style(style="white")
7
8 plt.tight_layout()
# plt.xlim([4, 8.5])
# plt.ylim([1.5, 5])
```

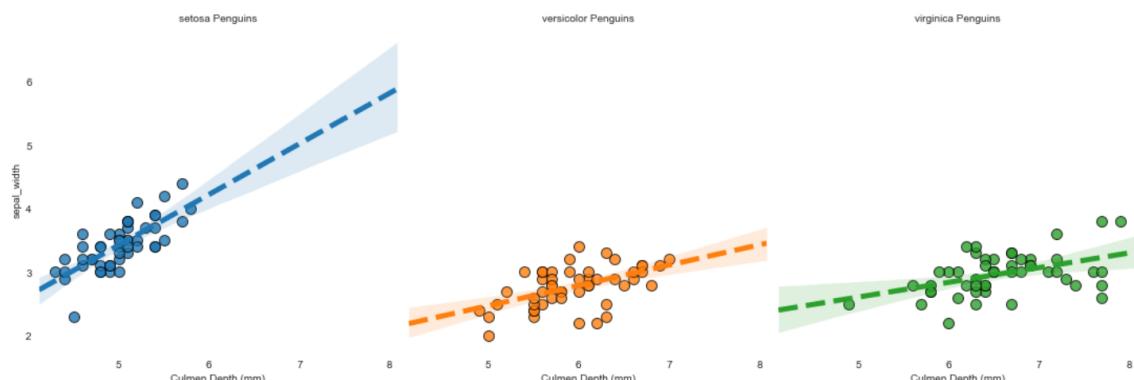




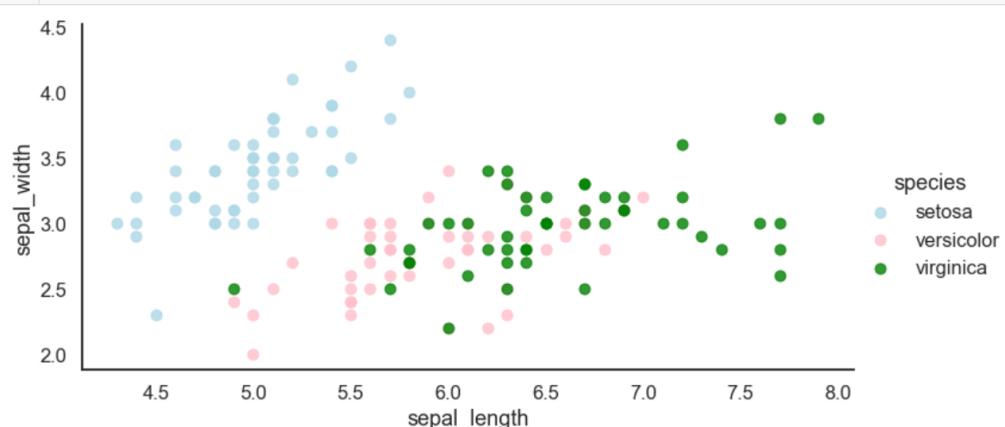
▼ `sns.lmplot`

```
In [13]: plt.figure(figsize=(10, 5))
g = sns.lmplot(x="sepal_length", y="sepal_width", data=iris, col="species", hue="species",
    truncate=False, scatter_kws={"s": 100, "edgecolor": "black"}, 
    line_kws={"lw": 5, "ls": "--"})
g.set_titles(col_template="{col_name} Penguins")
g.set_xlabels("Culmen Depth (mm)")
sns.set_context(context="talk")
sns.despine(left=True, bottom=True);
```

<Figure size 720x360 with 0 Axes>



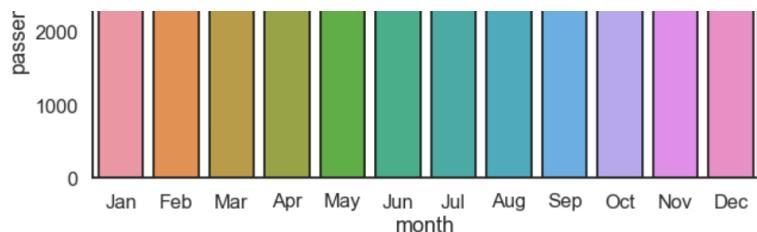
```
In [14]: sns.lmplot(data=iris, x="sepal_length", y="sepal_width", hue="species",
    fit_reg=False, height=5, aspect=2,
    palette={"setosa": "lightblue", "versicolor": "pink", "virginica": "green"});
# aspect -> width
```



▼ `sns.barplot`

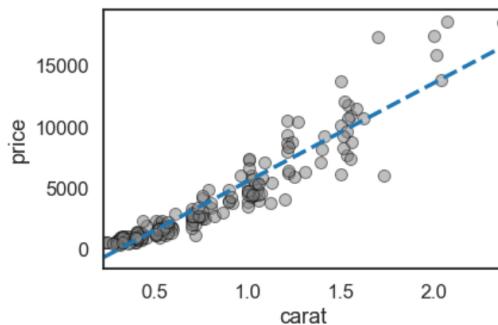
```
In [15]: fig, ax = plt.subplots(figsize=(10, 5))
sns.barplot(ax=ax, x="month", y="passengers", data=flights,
    ci=None, estimator=np.sum, edgecolor="black")
ax.set_title("Passengers by Month")
plt.show()
```





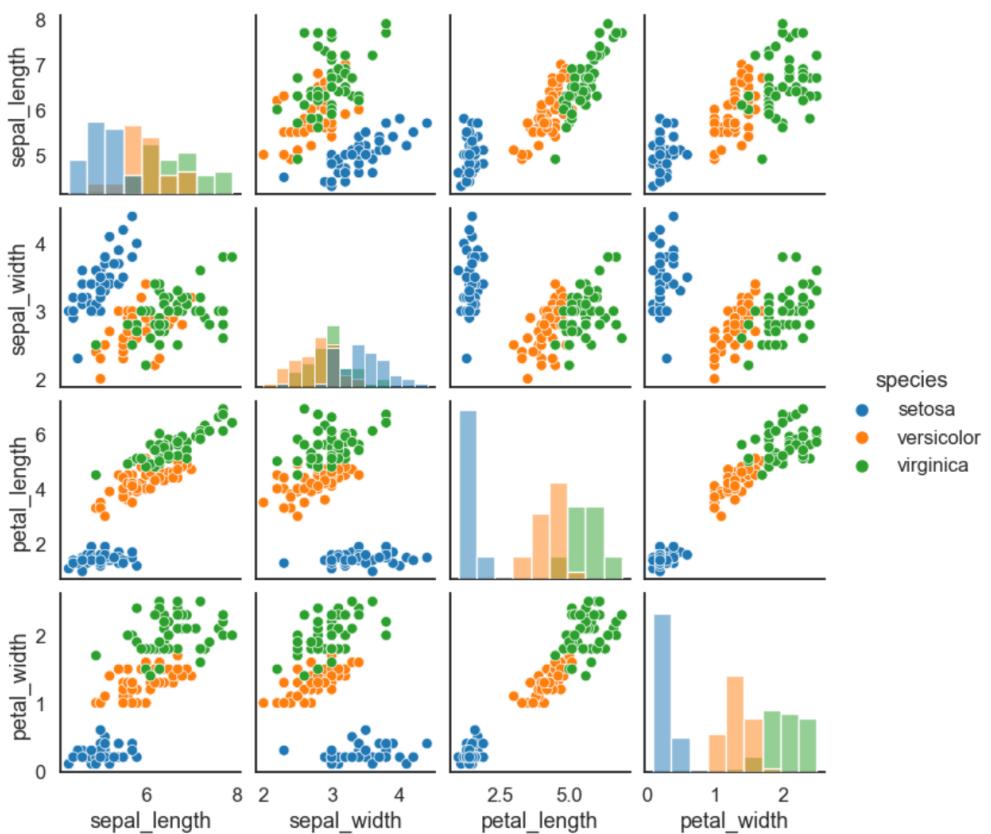
#### ▼ sns.regplot

```
In [16]: 1 sns.regplot(x="carat", y="price", data=diamonds, fit_reg=True, scatter=True, ci=False,
2                      order=1, marker="o",
3                      scatter_kws={ "color": "grey", "alpha": 0.5, "s": 100, "edgecolor": "black"}, 
4                      line_kws={"linestyle": "--"});
```



#### ▼ sns.pairplot

```
In [17]: 1 sns.pairplot(data=iris, hue="species", diag_kind="hist");
```



#### ▼ sns.PairGrid

```
In [18]: 1 g = sns.PairGrid(data=iris, hue="species")
2 g.map_diag(func=sns.histplot)
3 g.map_offdiag(func=sns.scatterplot)
4 g.add_legend();
```



