

Regression plots

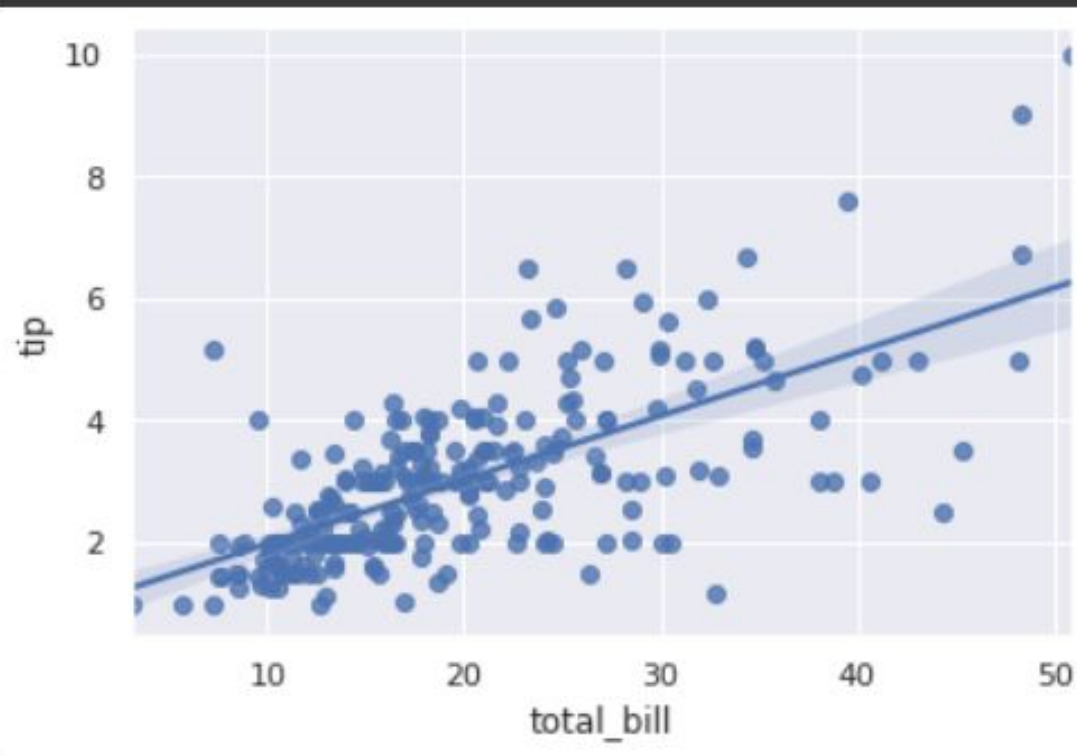
Seaborn



regplot()

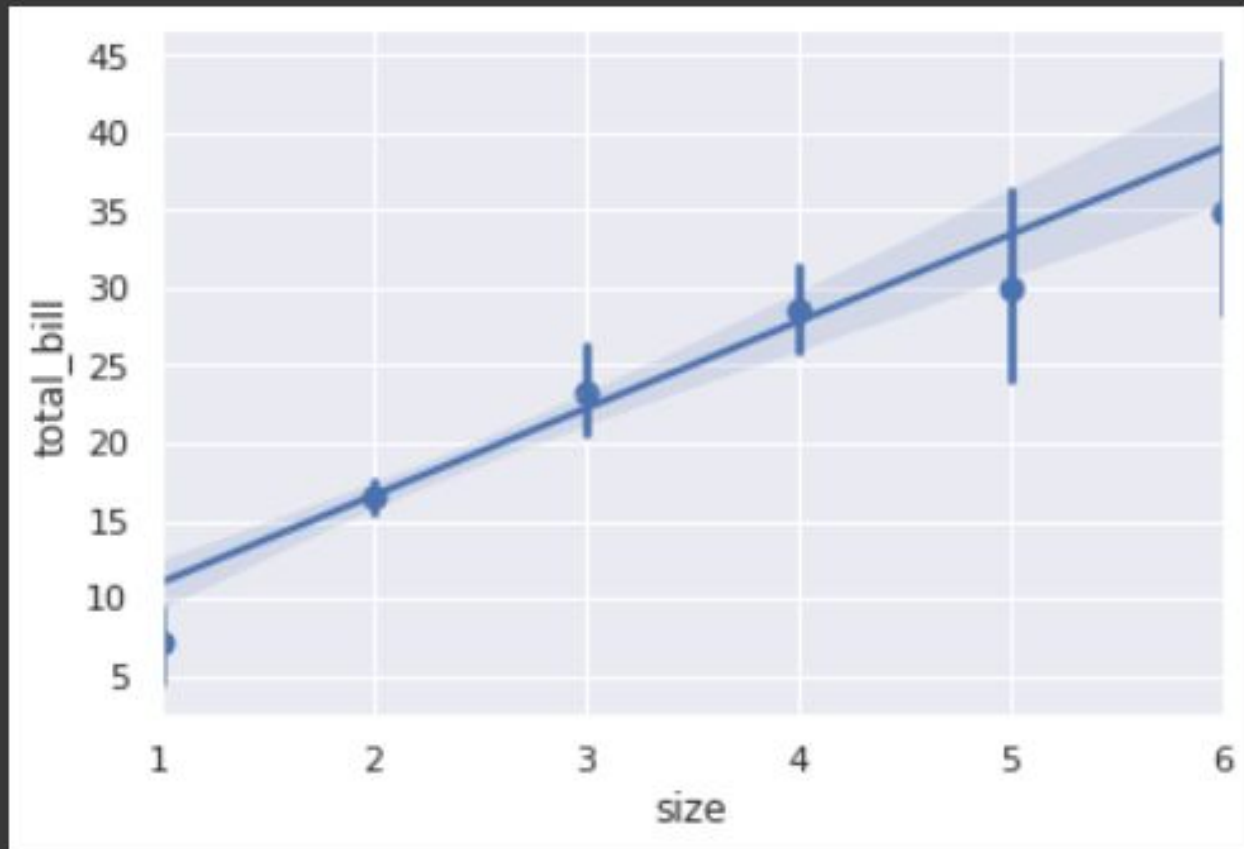
```
[2] sns.set(color_codes=True)  
tips = sns.load_dataset("tips")
```

```
[3] sns.regplot(x="total_bill", y="tip", data=tips);
```



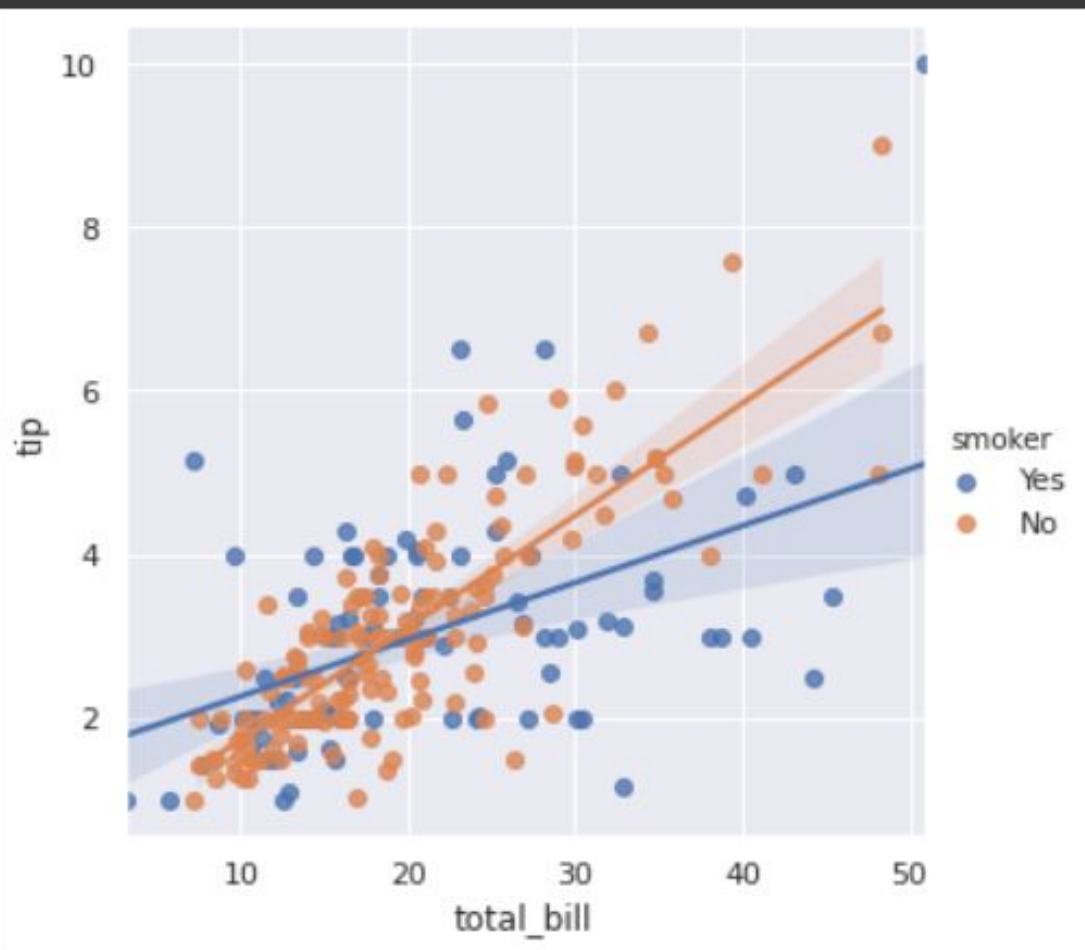
regplot()

```
ax = sns.regplot(x="size", y="total_bill", data=tips,  
                 x_estimator=np.mean);
```



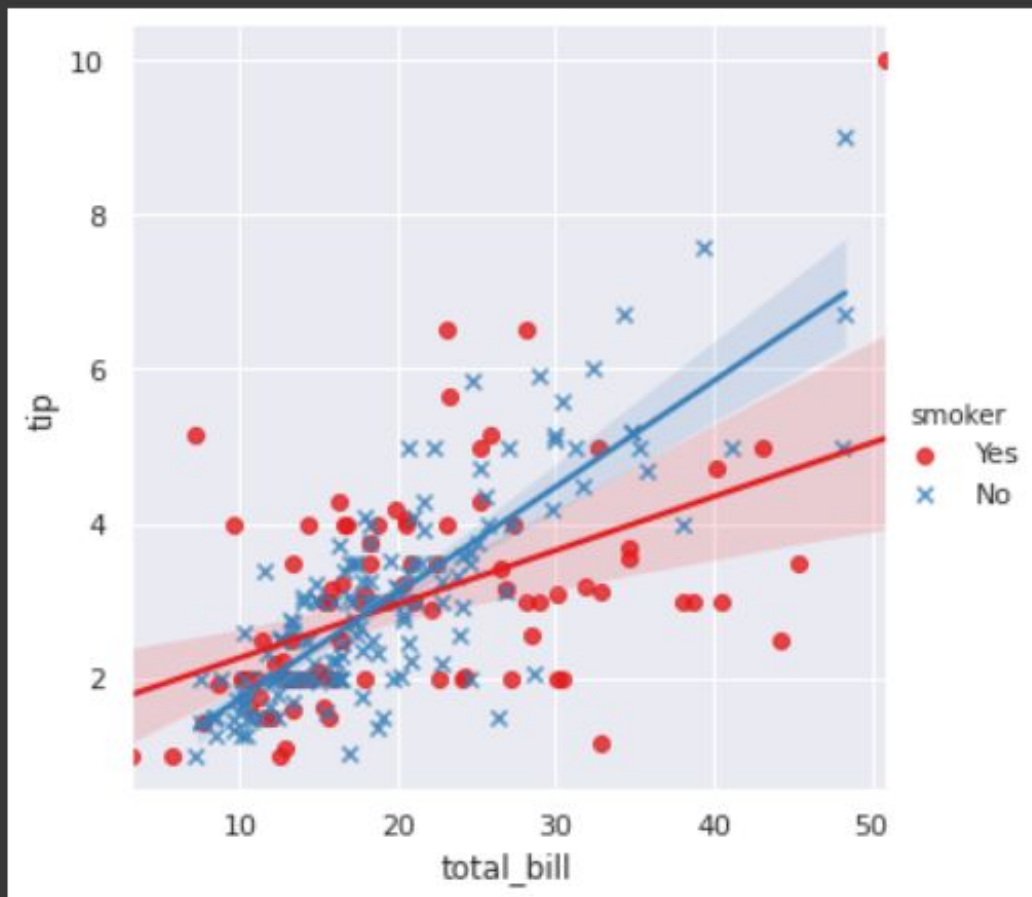
Implot()

```
] sns.lmplot(x="total_bill", y="tip", hue="smoker", data=tips)
```



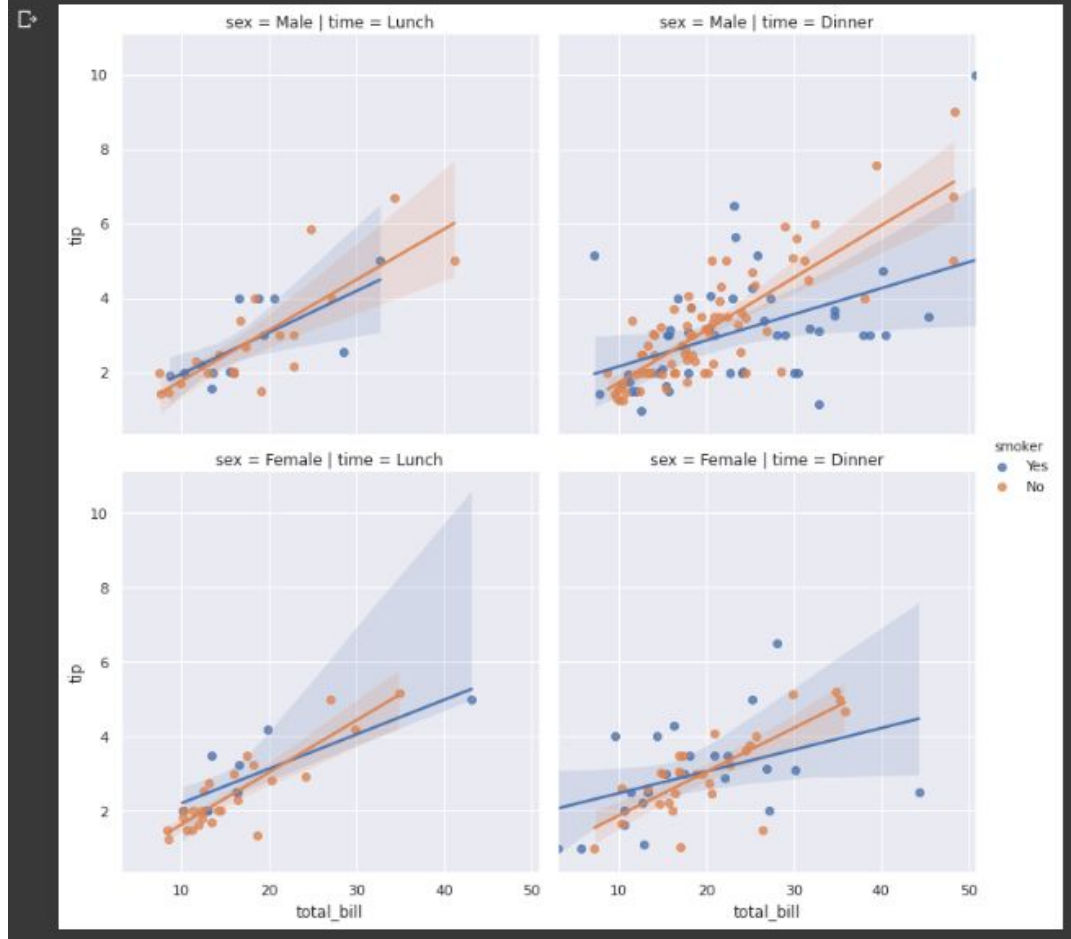
Implot()

```
[6] sns.lmplot(x="total_bill", y="tip", hue="smoker", data=tips,  
            markers=["o", "x"], palette="Set1");
```



Implot()

```
[8] sns.lmplot(x="total_bill", y="tip", hue="smoker",  
            col="time", row="sex", data=tips);
```



Advantages & Disadvantages

Advantages:

- Simple and easy to understand
- Cheap computational cost
- Ground for more complex machine learning algorithms

Disadvantage:

- Oversimplify or fail in non-linear problems (only do well in linear modeling)
- Sensitive to outliers and noises
- Before using Linear Regression, We have to ensure the linear relationship between the dependent and the independent variables. If not, the model will perform poorly. This can be done using the feature transformation.