



Alexandre Petit

Mechanical engineering, Data science, Machine Learning,
Computer Vision

Barplot, Boxplots, Violinplots and more



seaborn

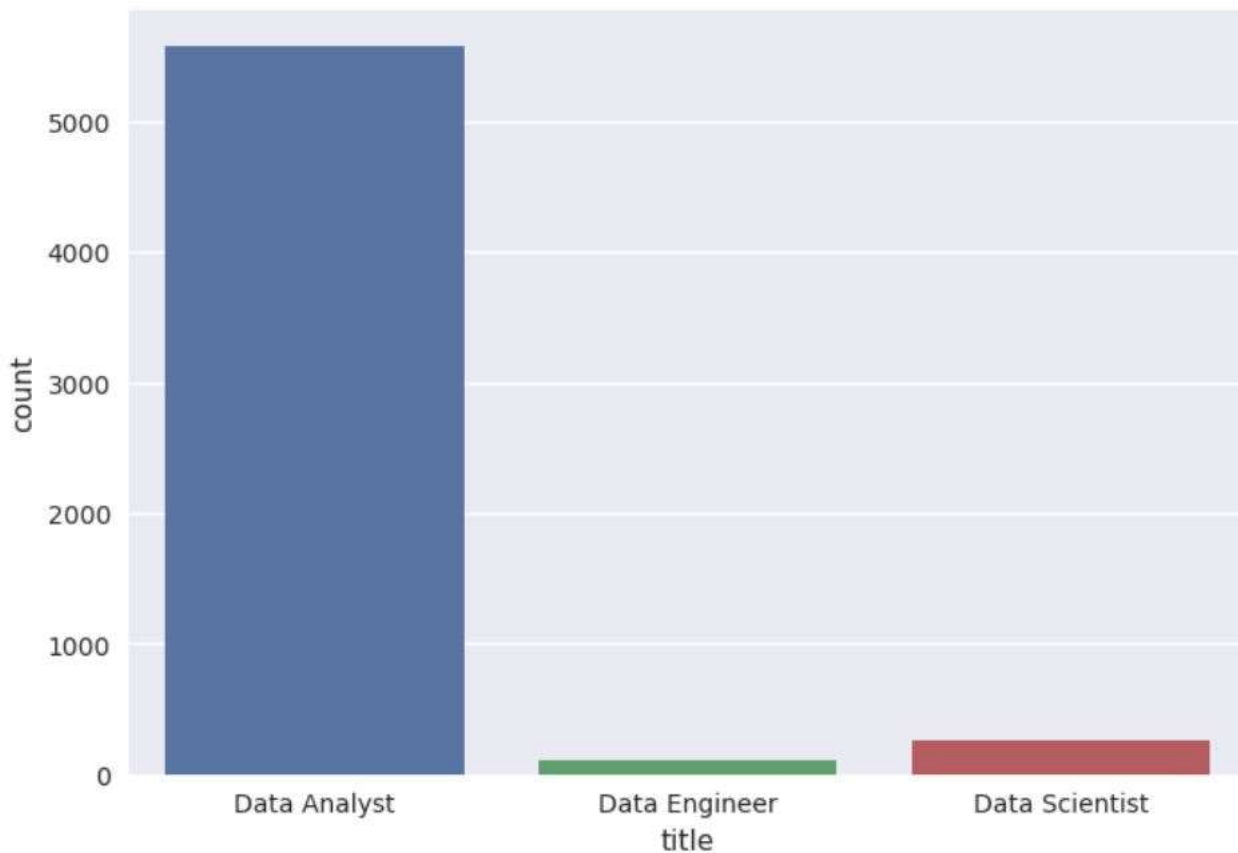


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```
import seaborn as sns  
  
sns.countplot(data=df, x='title')  
  
plt.show()
```





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Countplot is a simple graph used to count the occurrence of categorical variable in the dataset

The hue parameter allow comparaison between two categorical variables. It is perfect to see how a variable influences the outcome in a classification problem

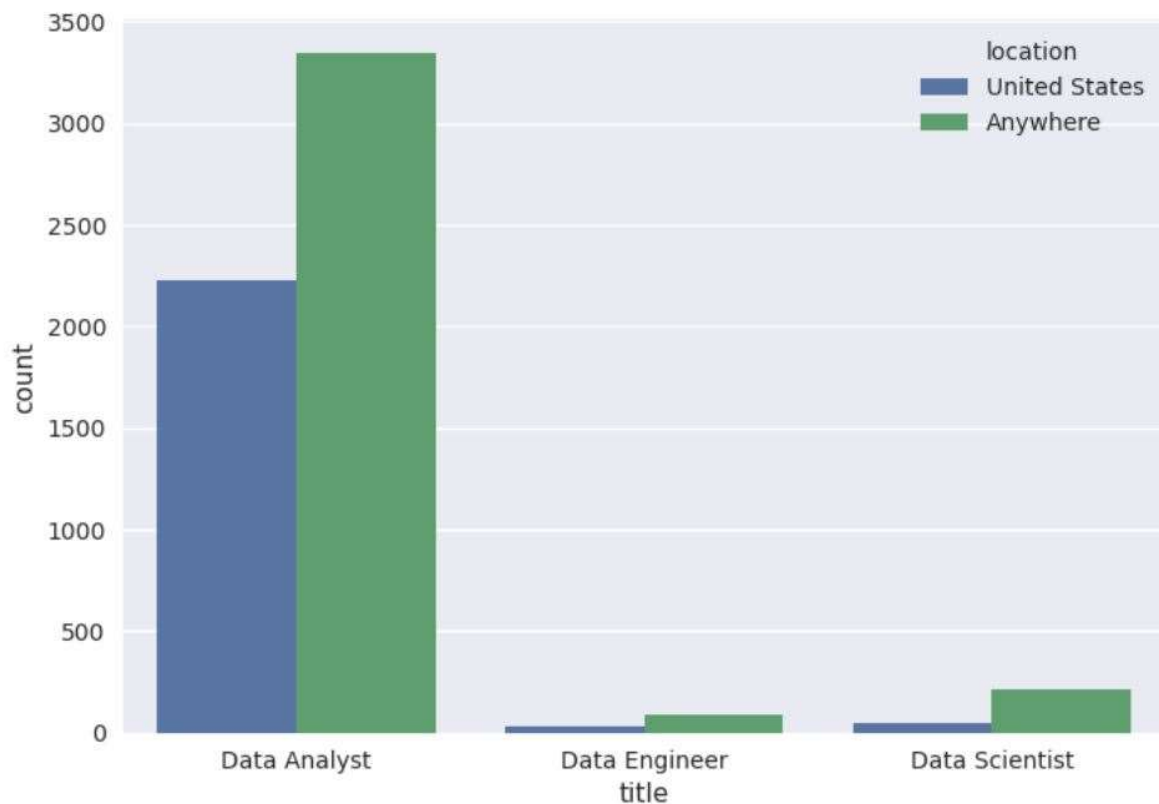


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```
import seaborn as sns  
  
sns.countplot(data=df, x='title', hue='location')  
  
plt.show()
```





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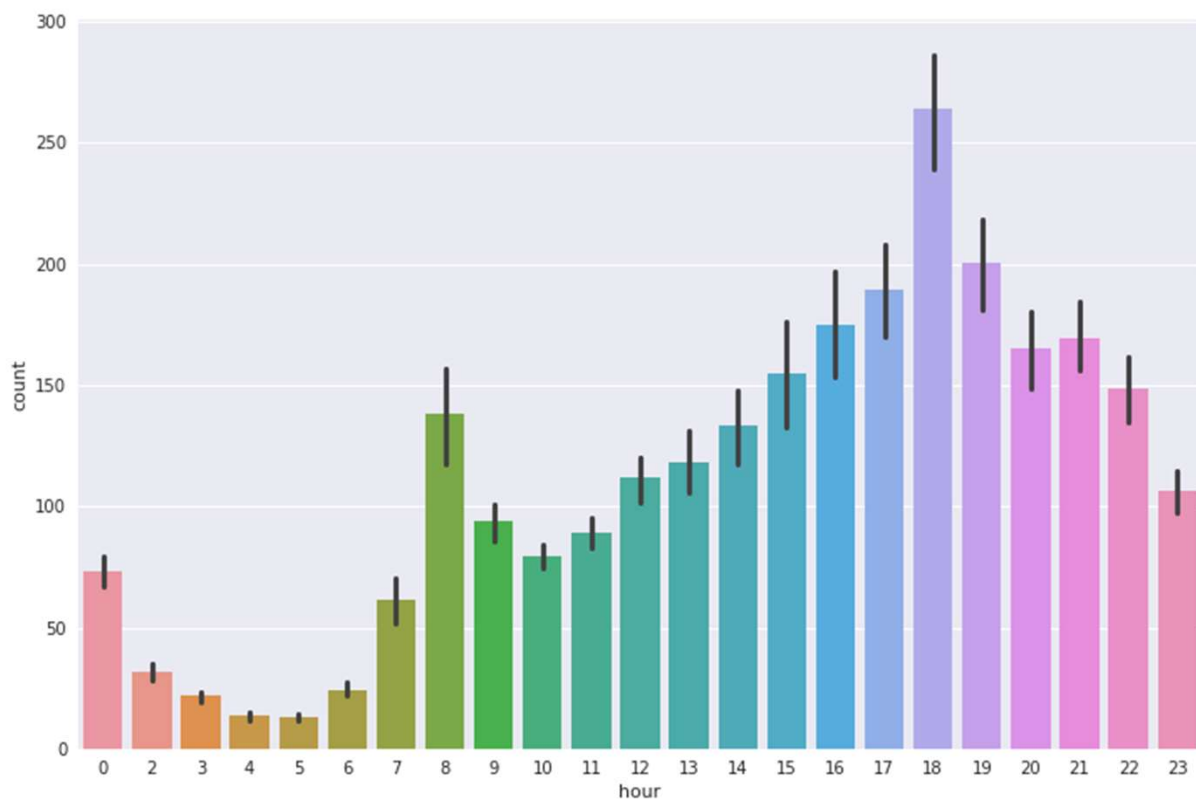
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```
import seaborn as sns

sns.barplot(data=df, x='hour', y='count')

plt.show()
```





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Seaborn barplot will represent the mean of the y parameter (x if orient='h' is used) over a categorical or discrete numerical column.

The function used can be changed with the parameter estimator to display another statistic (median, sum, min, max, etc.)



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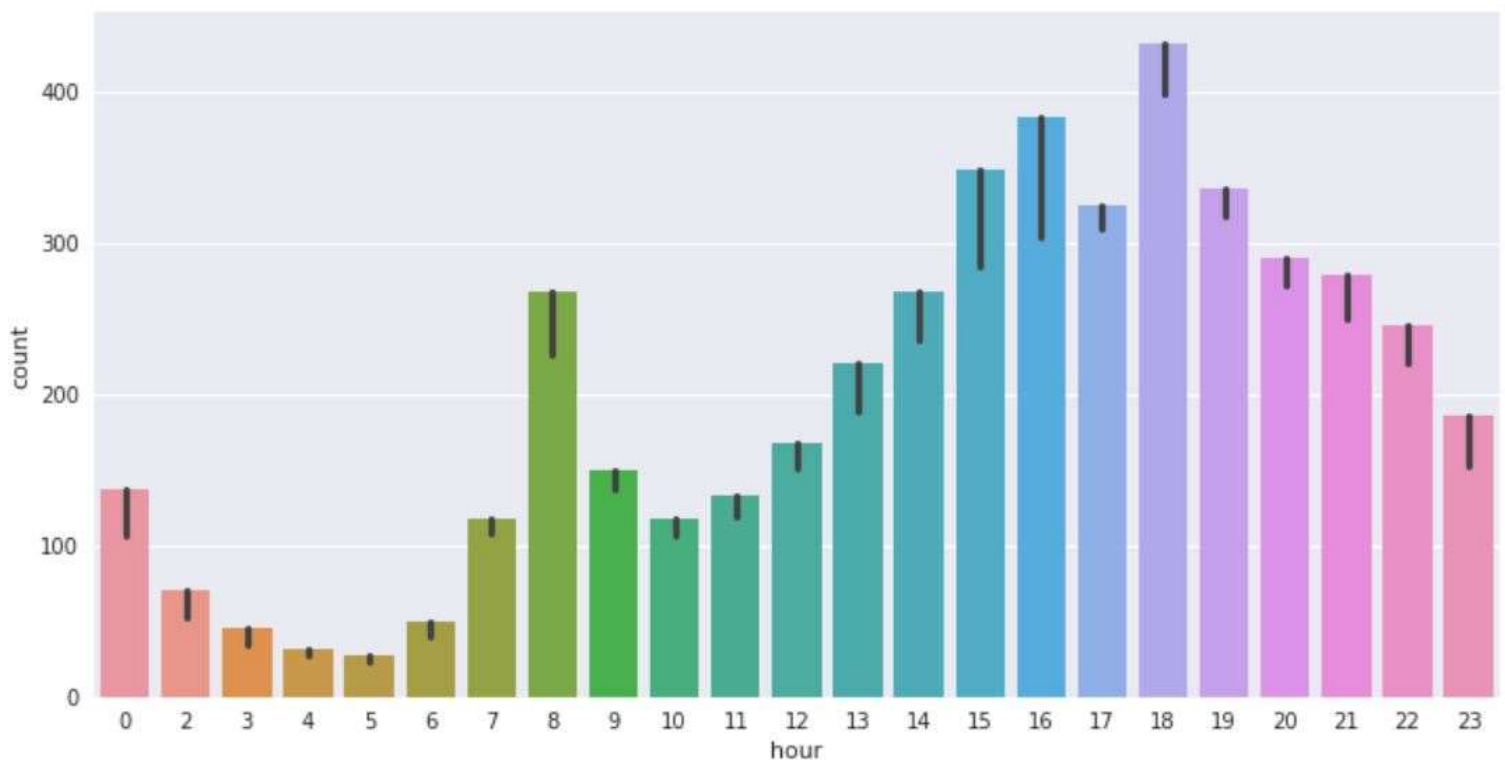
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```
import seaborn as sns

sns.barplot(data=df, x='hour', y='count',
            estimator=np.max)

plt.show( )
```





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Barplot are not as detailed as boxplot
however they are simpler to understand
for the general public.

Boxplot display multiple metrics on the
same graph (median, quartiles,
interquartile range).

It is harder to understand than barplot
but show more details about the data
distribution

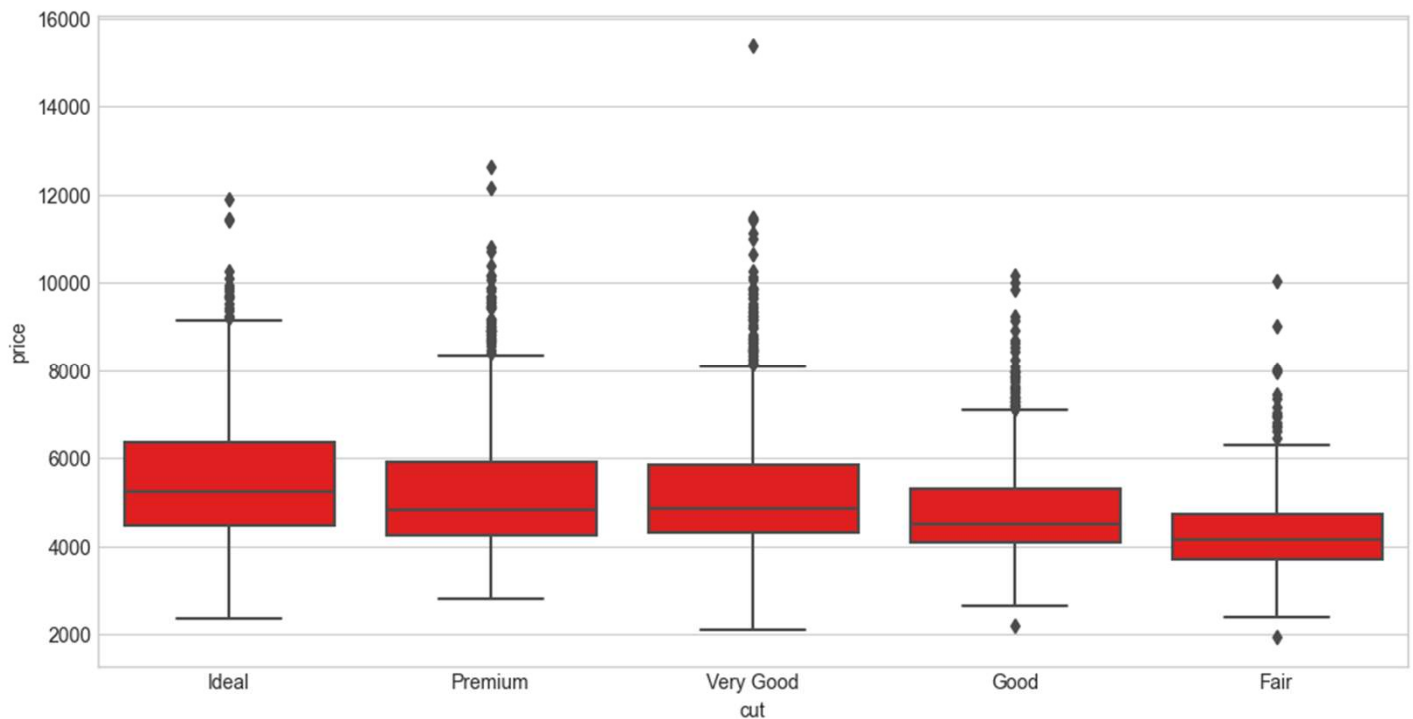


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```
import seaborn as sns  
  
sns.boxplot(data=df, x='cut', y='price')  
  
plt.show( )
```





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Two functions similar with boxplot are
violinplot and boxenplot

Violinplot will display the distribution with
a curve, similar with a kde plot

Boxenplot is a graph with more quantile
displayed than the boxplot

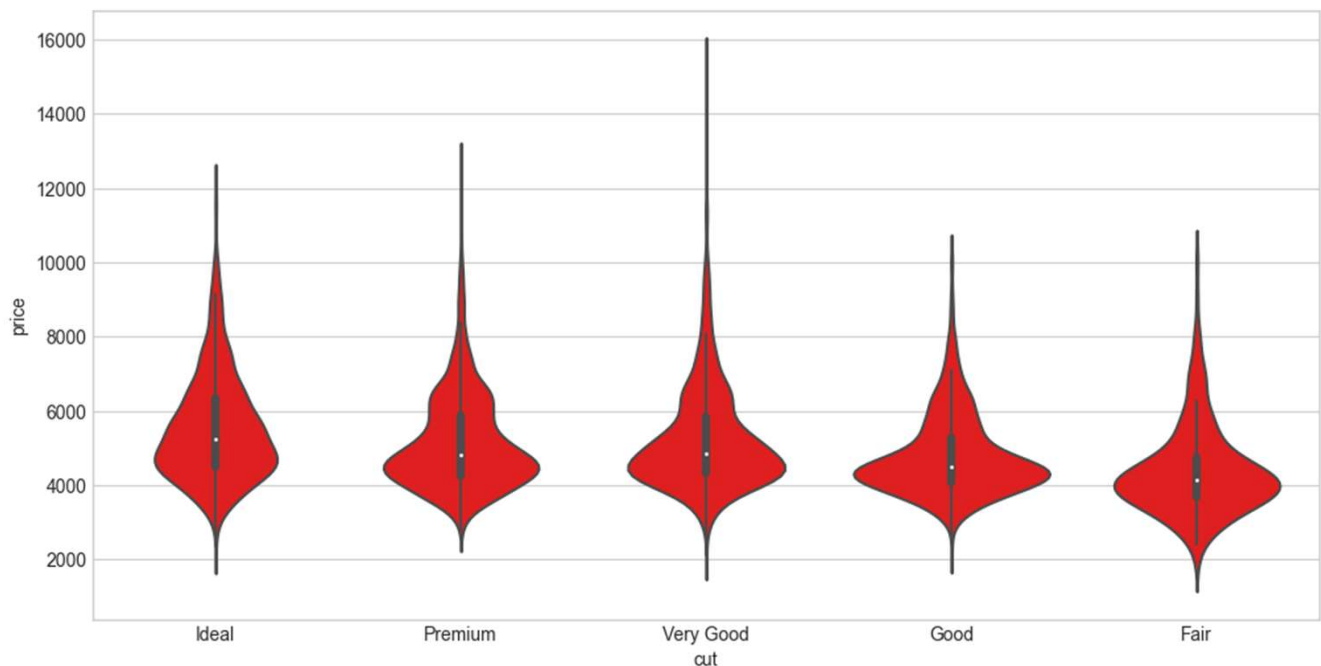


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```
import seaborn as sns  
  
sns.violinplot(data=df, x='cut', y='price')  
  
plt.show( )
```



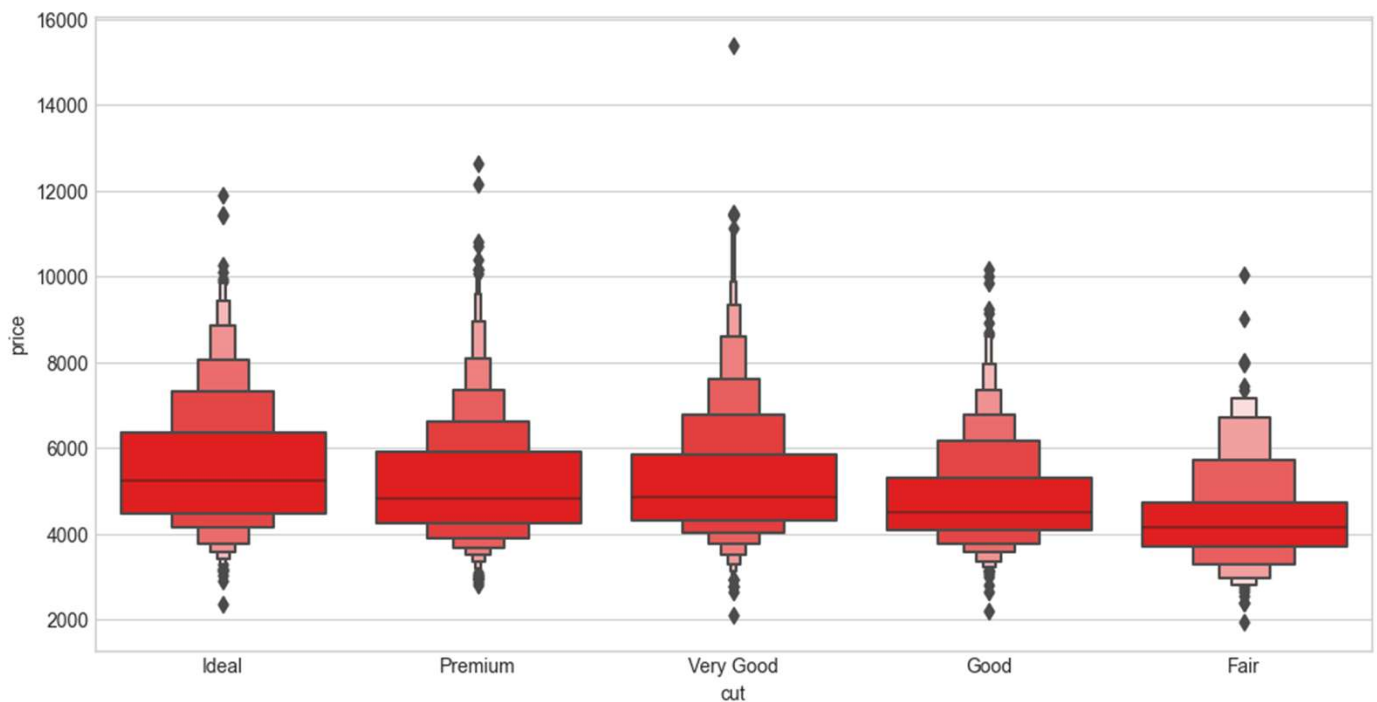


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```
import seaborn as sns  
  
sns.boxenplot(data=df, x='cut', y='price')  
  
plt.show( )
```





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The last two functions we are going to see are variations of scatterplot.

The scatterplot function does not give a good result with categorical data and discrete numeric data because the points overlap too much.

To solve this problem, we can use swarmplot and stripplot.

Swarmplot is better with a small number of points and stripplot manage better large number of points. The latter has a parameter jitter to further spread the points



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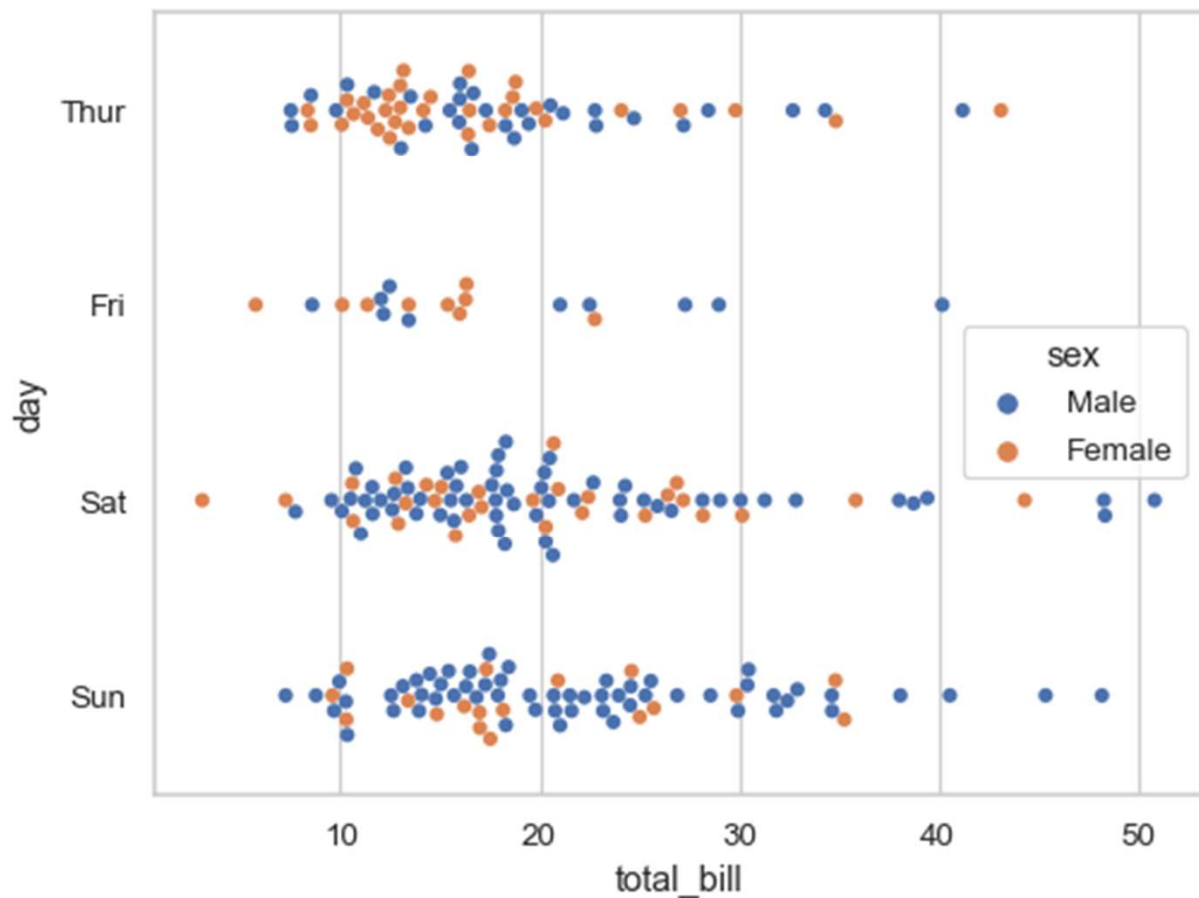
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```
import seaborn as sns

sns.swarmplot(data=df, x='total_bill', y='day',
              hue='sex')

plt.show()
```





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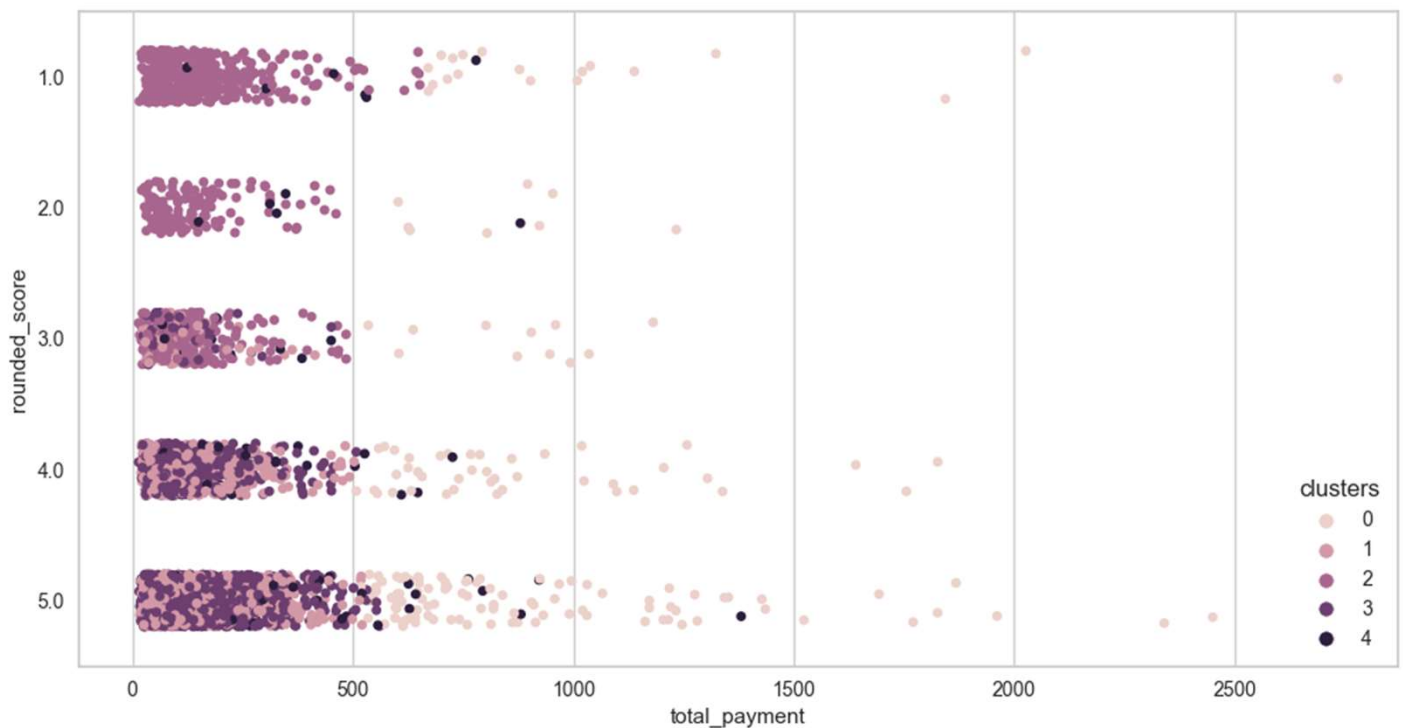
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```
import seaborn as sns

sns.stripplot(data=df, x='total', y='rounded_score',
              hue='cluster', jitter=0.2)

plt.show()
```





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Thank you for reading until
the end 😊

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