

Violin Plots

violin plots are a method of plotting numeric data and can be considered a combination of the box plot with a kernel density plot.

The unquestionable advantage of the violin plot over the box plot is that aside from showing the abovementioned statistics it also shows the entire distribution of the data.

Violin plots are often used to compare the distribution of a given variable across some categories.

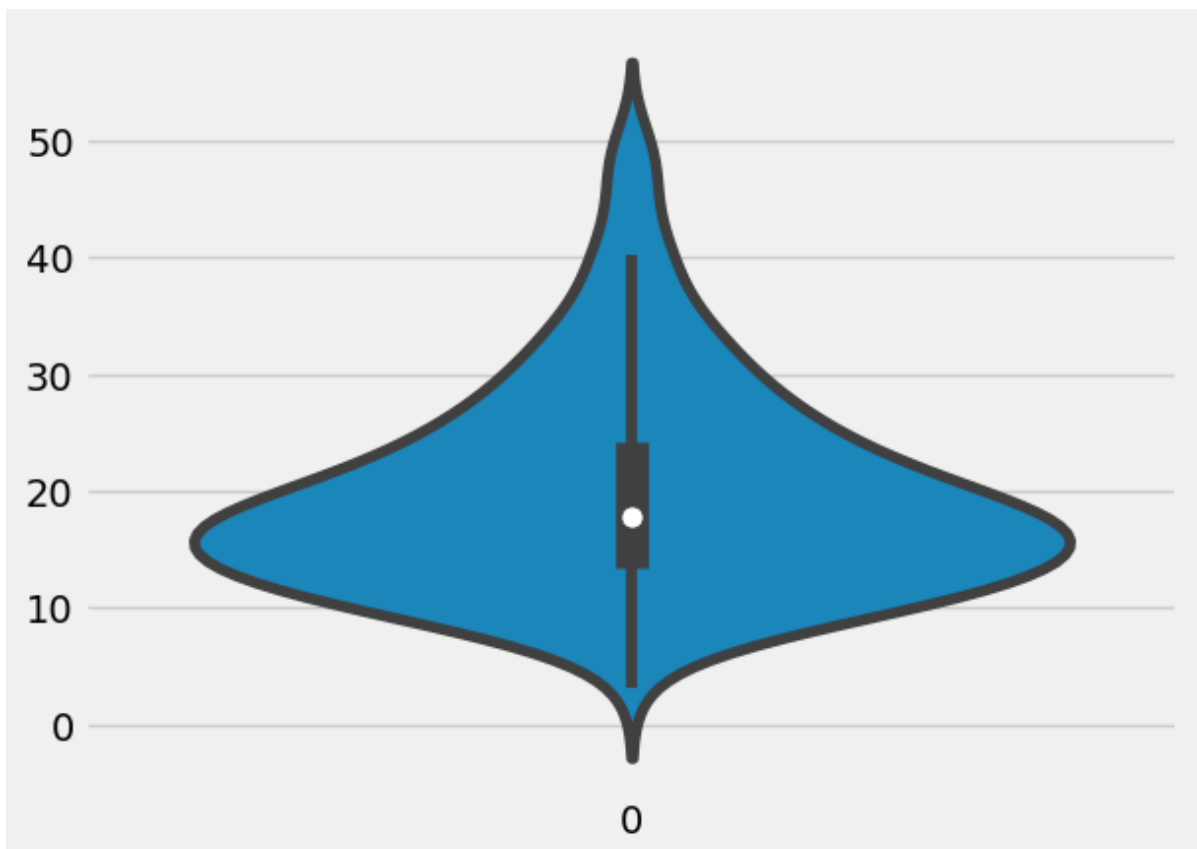
```
In [1]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

```
In [2]: plt.style.use('fivethirtyeight')
```

```
In [3]: tips=sns.load_dataset('tips')
```

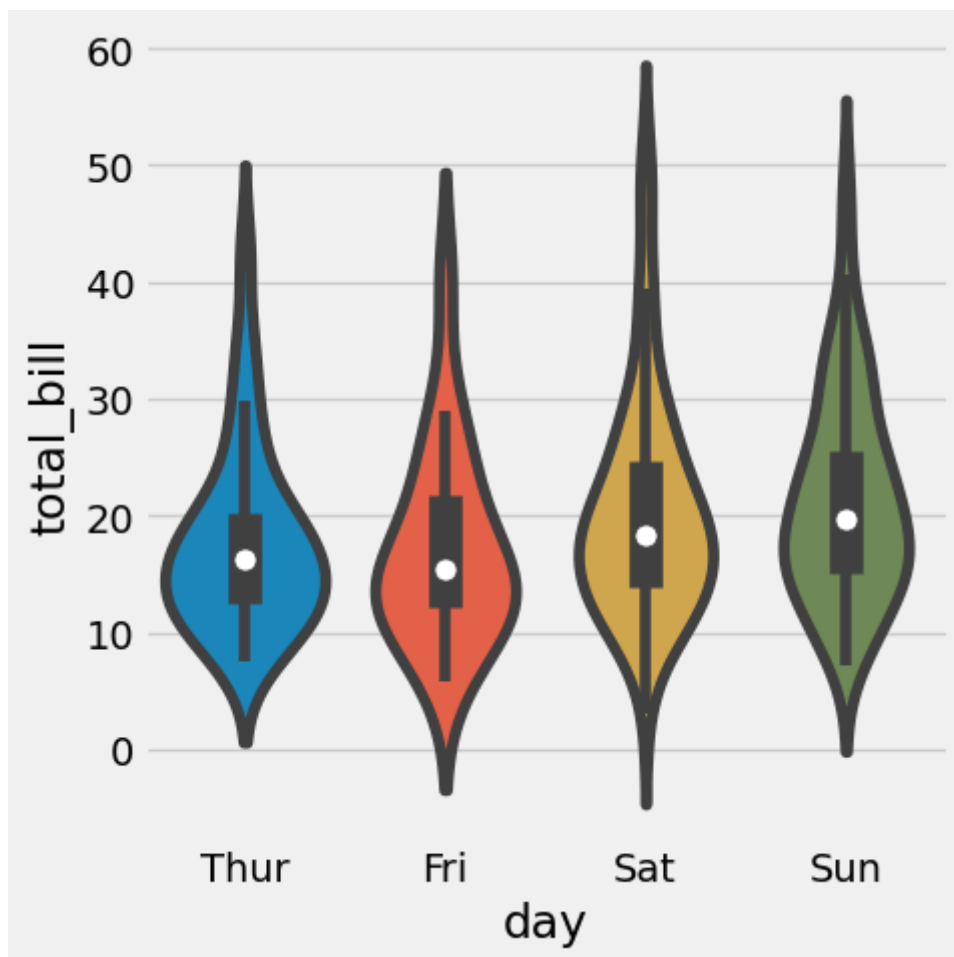
```
In [6]: sns.violinplot(tips['total_bill'])
```

```
Out[6]: <Axes: >
```



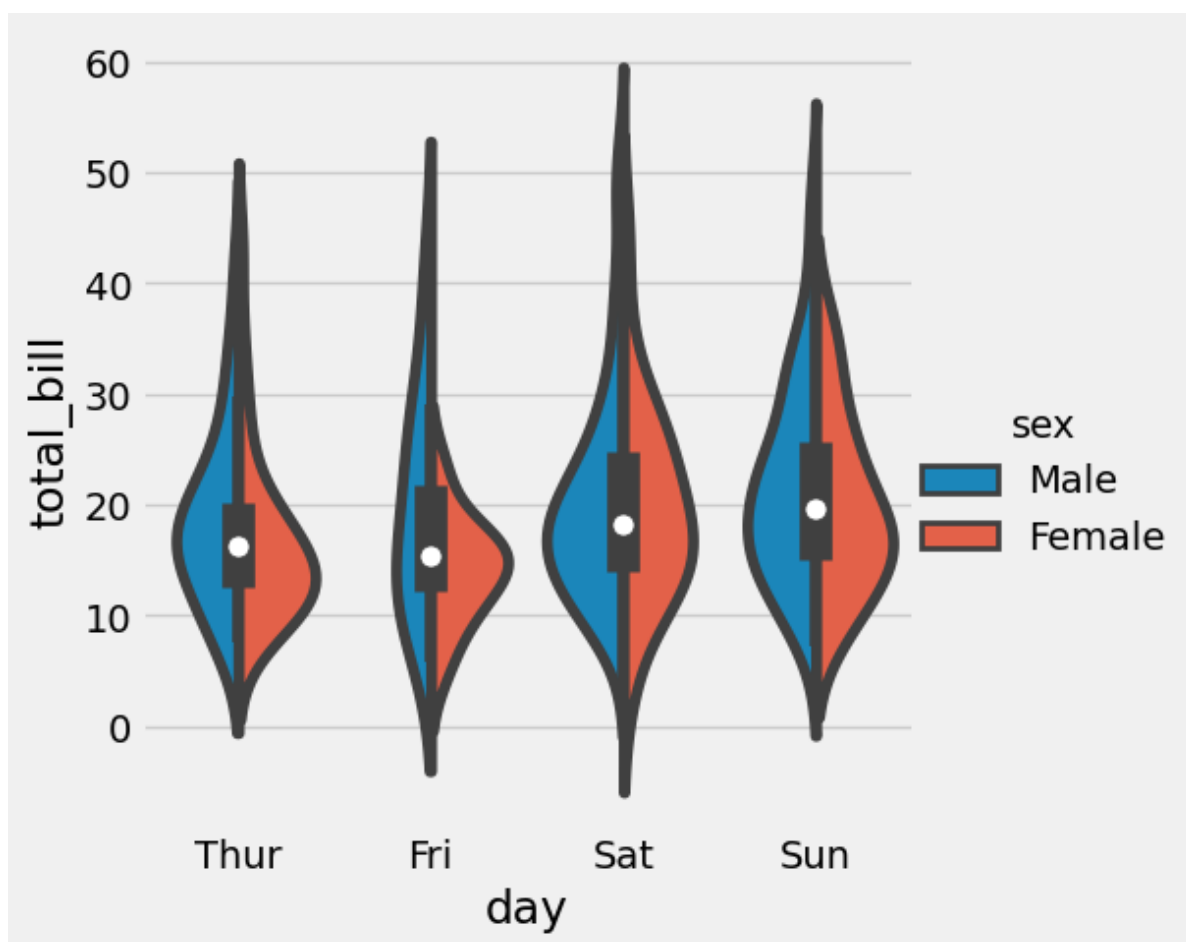
```
In [7]: sns.catplot(x='day', y='total_bill', kind='violin', data=tips)
```

Out[7]: <seaborn.axisgrid.FacetGrid at 0x1e8fd024970>



In [9]: `sns.catplot(x='day', y='total_bill', kind='violin', hue='sex', split=True, data=tips)`

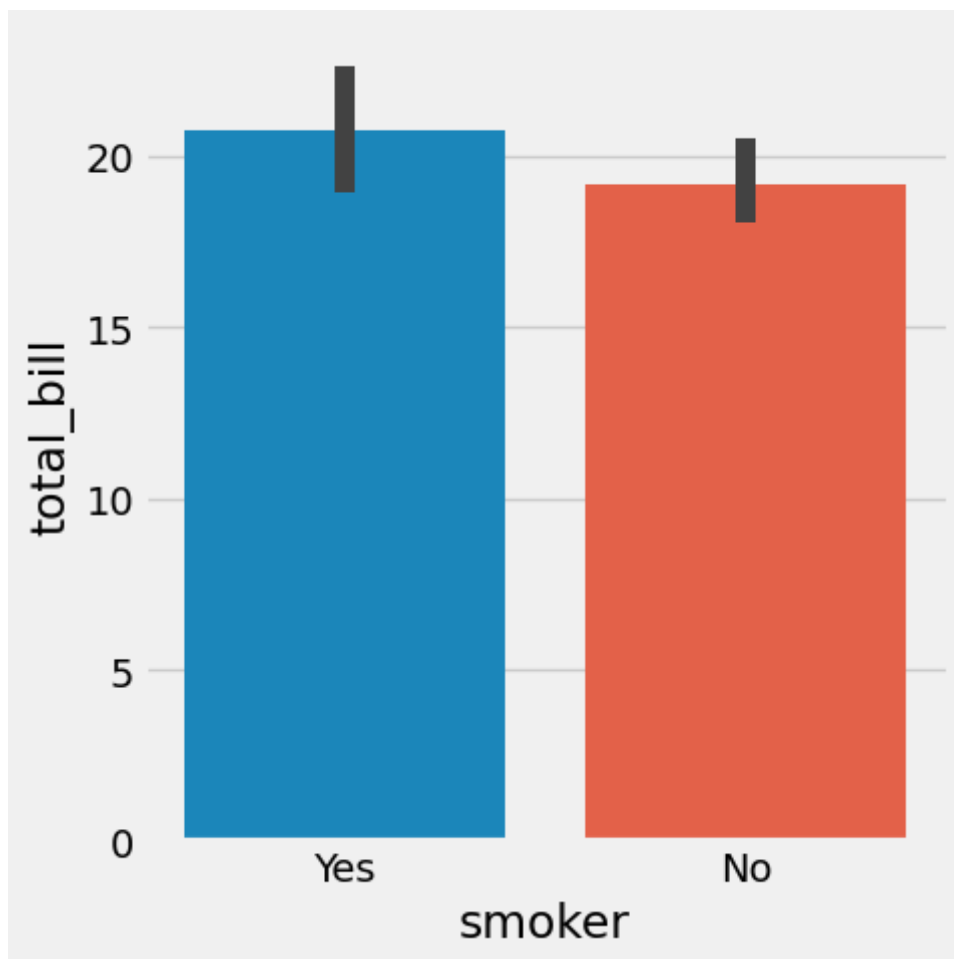
Out[9]: <seaborn.axisgrid.FacetGrid at 0x1e8fb2486a0>



Barplot and Countplot

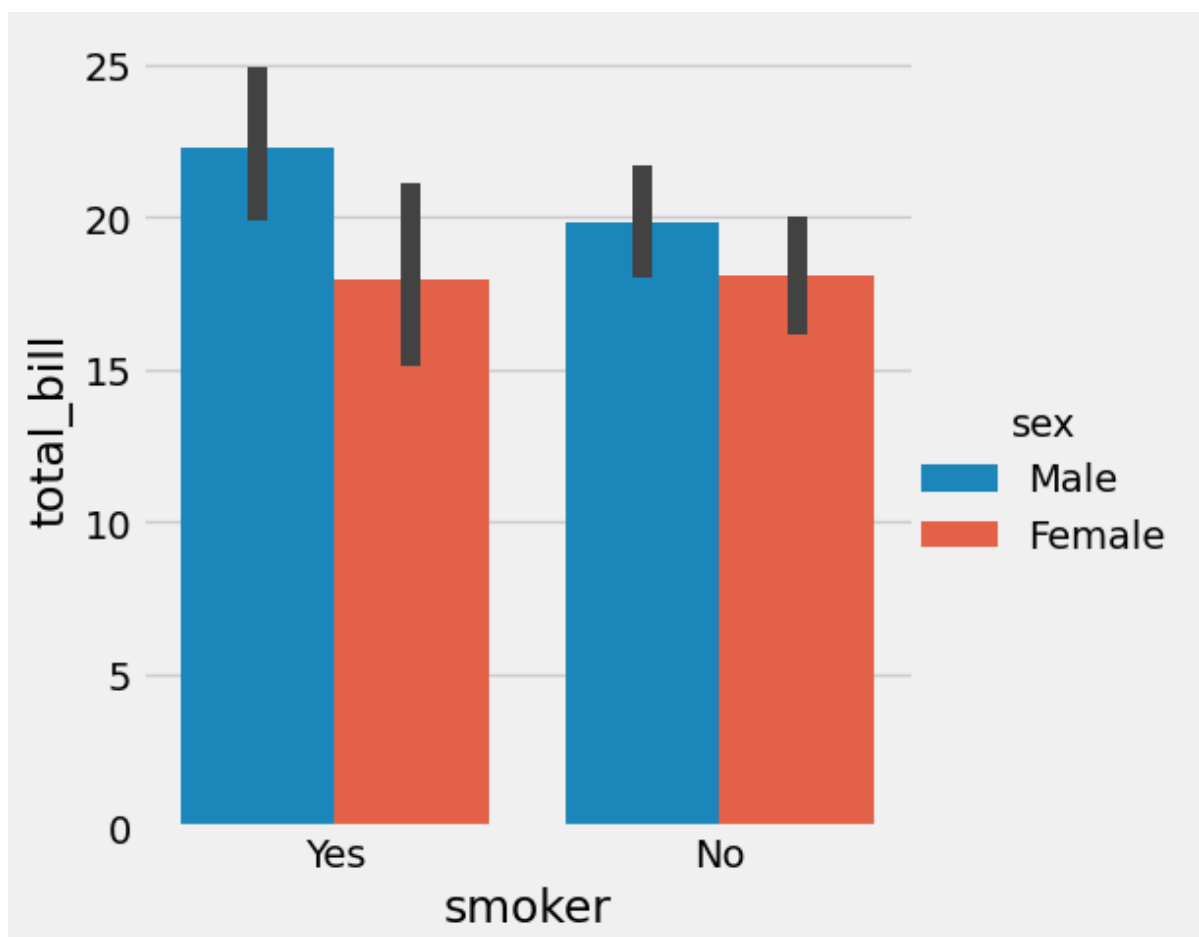
```
In [11]: sns.catplot(x='smoker', y='total_bill', kind='bar', data=tips)
```

```
Out[11]: <seaborn.axisgrid.FacetGrid at 0x1e8fd6fa890>
```



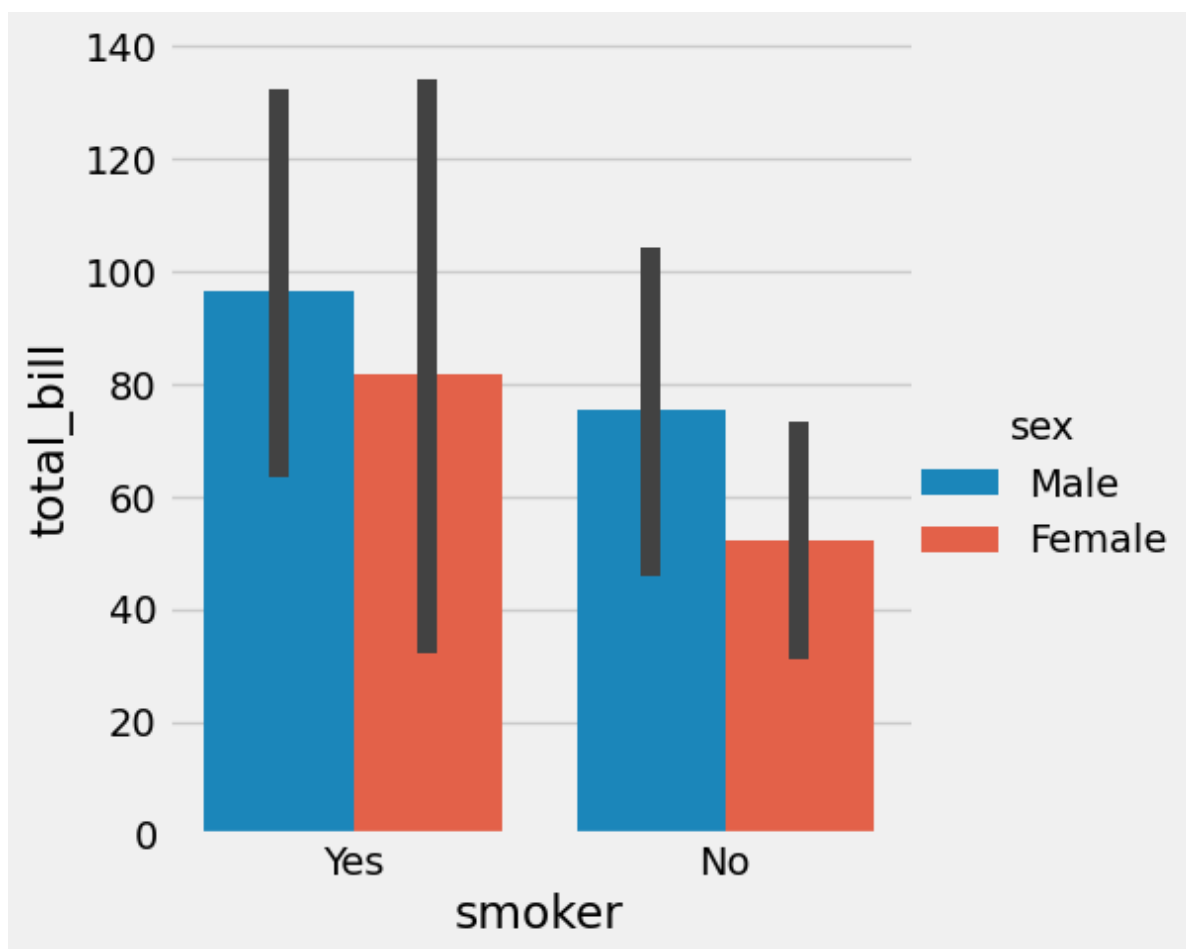
```
In [12]: sns.catplot(x='smoker', y='total_bill', hue='sex', kind='bar', data=tips)
```

```
Out[12]: <seaborn.axisgrid.FacetGrid at 0x1e8fd768c10>
```



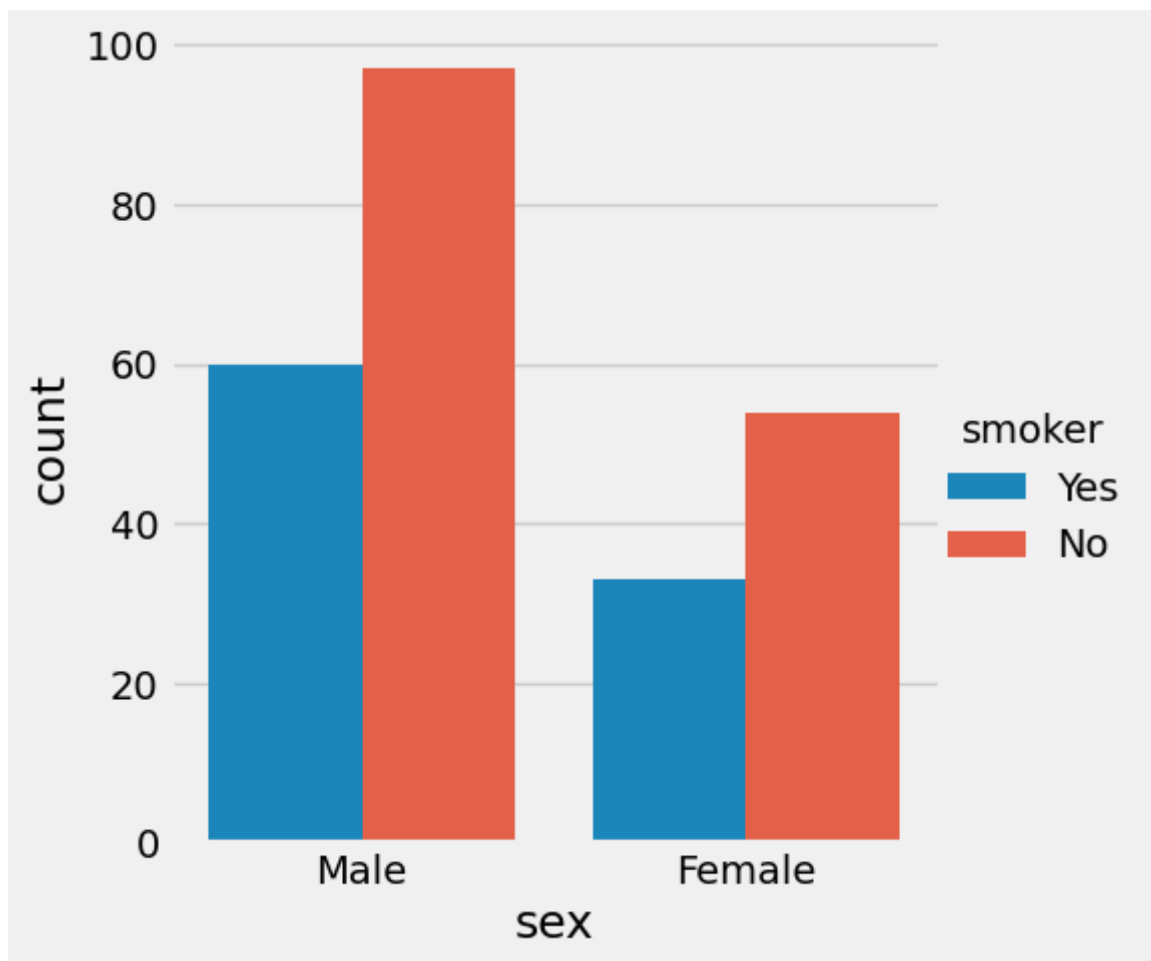
```
In [18]: sns.catplot(x='smoker', y='total_bill', hue='sex', estimator=np.var, kind='bar', data=tips)
```

```
Out[18]: <seaborn.axisgrid.FacetGrid at 0x1e8824f8970>
```



```
In [20]: sns.catplot(x='sex', hue='smoker', kind='count', data=tips)
```

```
Out[20]: <seaborn.axisgrid.FacetGrid at 0x1e8ff7b9c30>
```



In []: