seaborn

August 13, 2024

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

[2]:
```
df=sns.load_dataset("tips")   # seaborn load dataset in itself
df
```

[2]:
```
     total_bill   tip     sex smoker   day    time  size
0         16.99  1.01  Female     No   Sun  Dinner     2
1         10.34  1.66    Male     No   Sun  Dinner     3
2         21.01  3.50    Male     No   Sun  Dinner     3
3         23.68  3.31    Male     No   Sun  Dinner     2
4         24.59  3.61  Female     No   Sun  Dinner     4
..          …   …      …    …   …      …   …
239       29.03  5.92    Male     No   Sat  Dinner     3
240       27.18  2.00  Female    Yes   Sat  Dinner     2
241       22.67  2.00    Male    Yes   Sat  Dinner     2
242       17.82  1.75    Male     No   Sat  Dinner     2
243       18.78  3.00  Female     No  Thur  Dinner     2

[244 rows x 7 columns]
```

[3]:
```
df.info
```

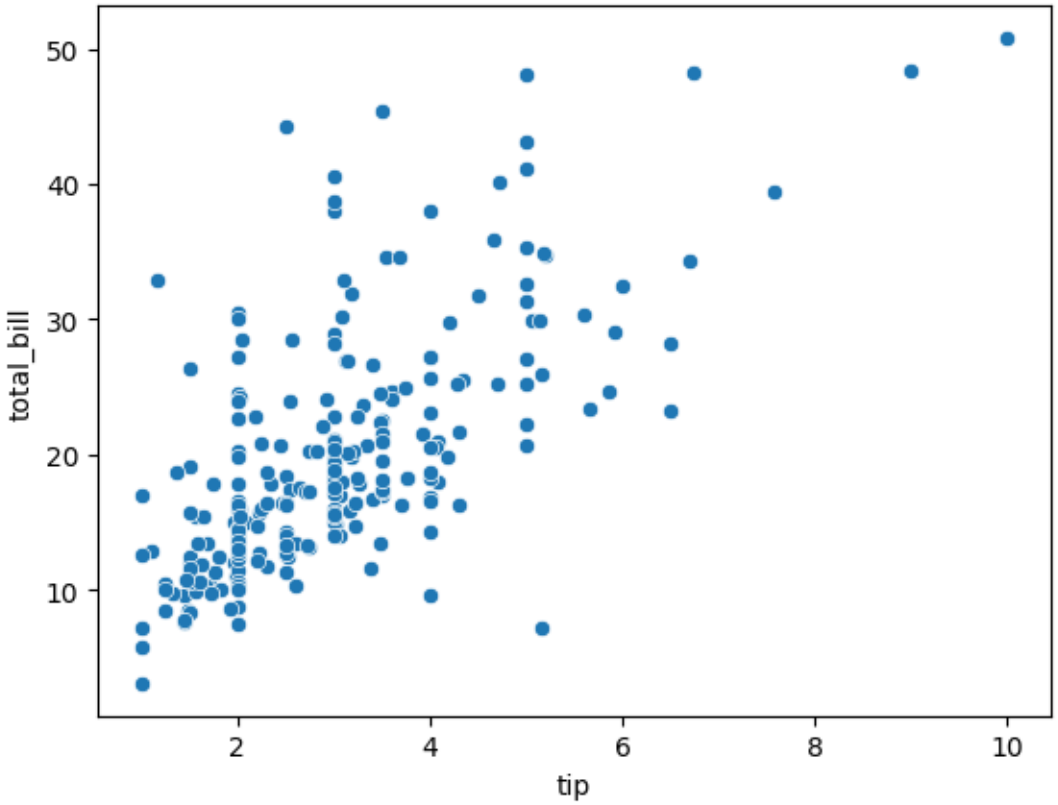
[3]:
```
<bound method DataFrame.info of      total_bill   tip     sex smoker   day
time  size
0         16.99  1.01  Female     No   Sun  Dinner     2
1         10.34  1.66    Male     No   Sun  Dinner     3
2         21.01  3.50    Male     No   Sun  Dinner     3
3         23.68  3.31    Male     No   Sun  Dinner     2
4         24.59  3.61  Female     No   Sun  Dinner     4
..          …   …      …    …   …      …   …
239       29.03  5.92    Male     No   Sat  Dinner     3
240       27.18  2.00  Female    Yes   Sat  Dinner     2
241       22.67  2.00    Male    Yes   Sat  Dinner     2
242       17.82  1.75    Male     No   Sat  Dinner     2
```

```
243       18.78  3.00  Female     No  Thur  Dinner     2

[244 rows x 7 columns]>
```

scatter plot in seaborn

[4]:
```
# plt.scatter()
sns.scatterplot(x="tip",y="total_bill",data=df)
plt.show()
```

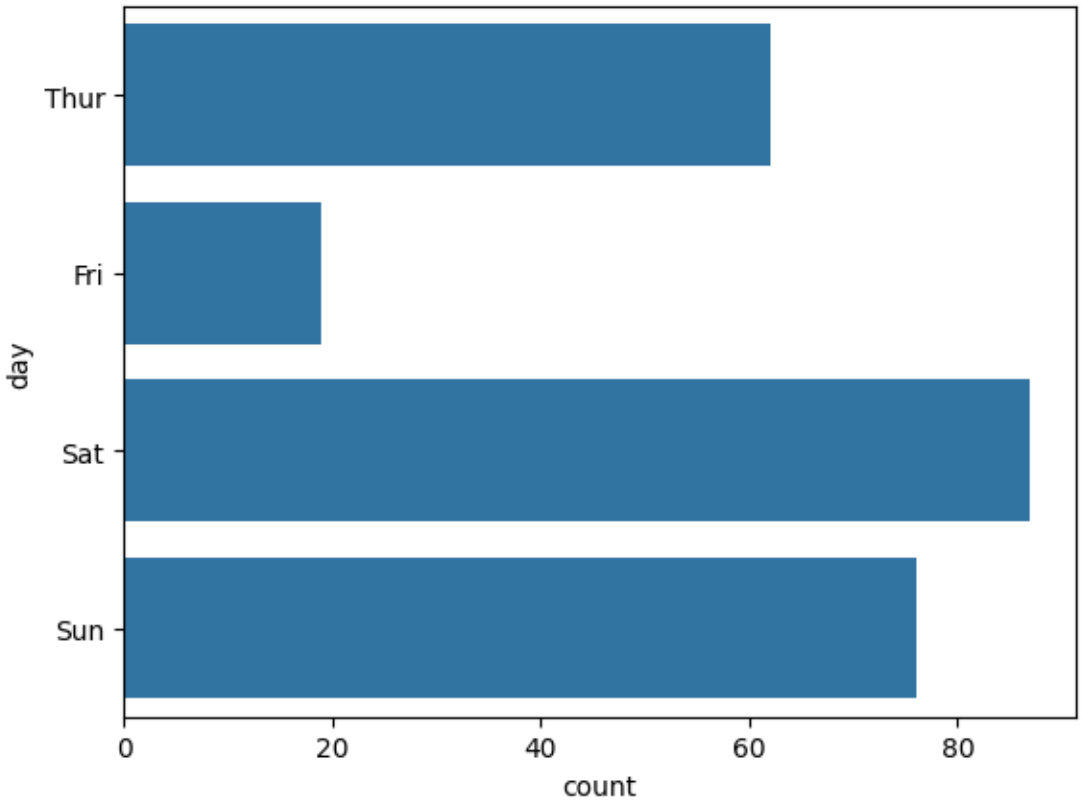


sns.barplot() sns.histplot() ss.lineplot() sns.boxplot() sns.countplot()

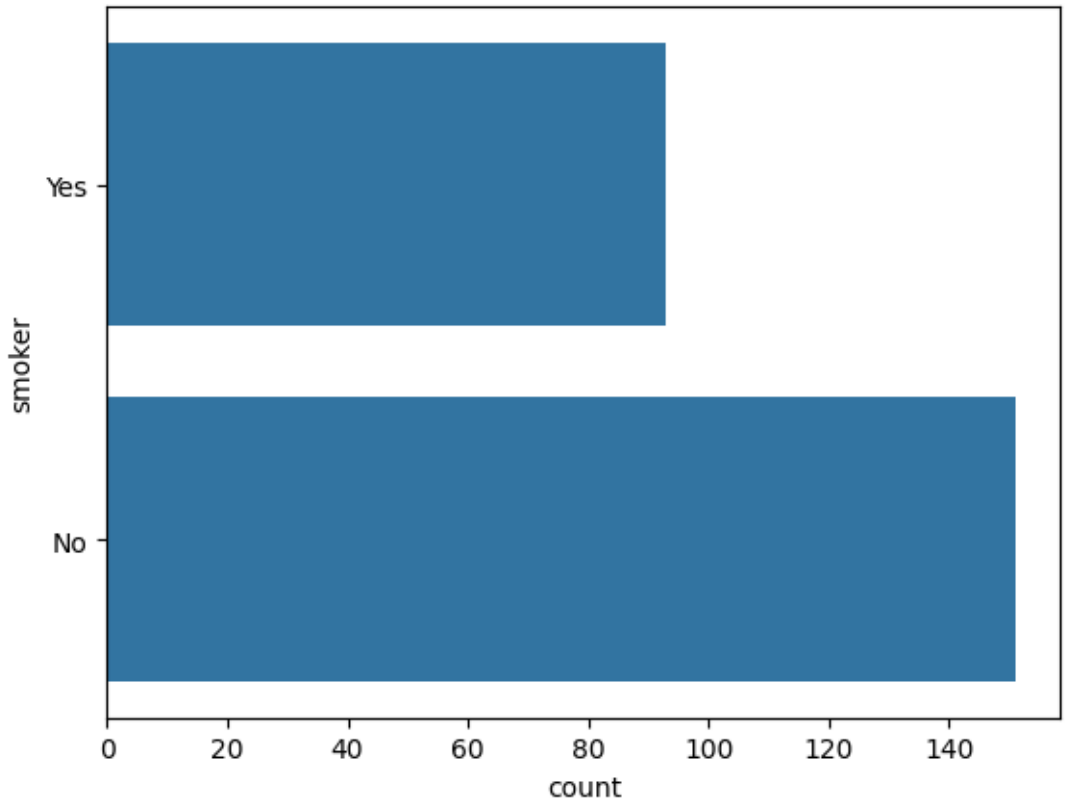
[5]:
```
df["day"].value_counts()
```

[5]:
```
day
Sat     87
Sun     76
Thur    62
Fri     19
Name: count, dtype: int64
```

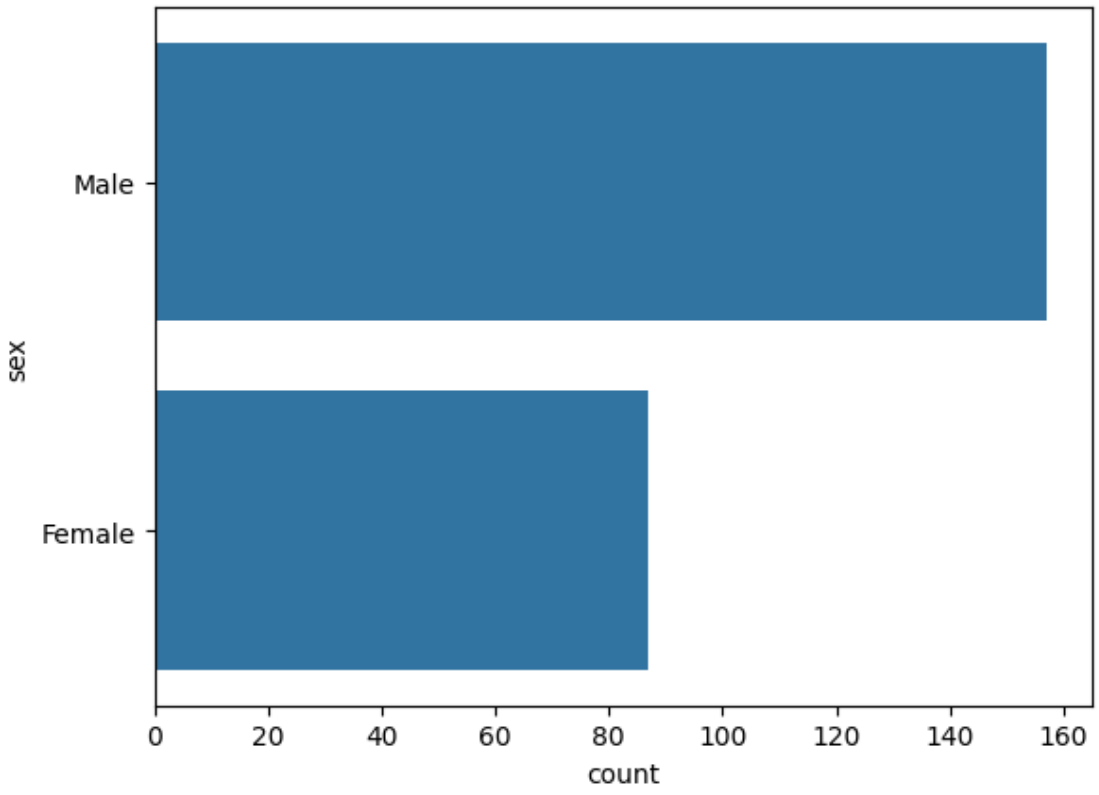
[6]:
```
sns.countplot(df["day"])
plt.show()
```



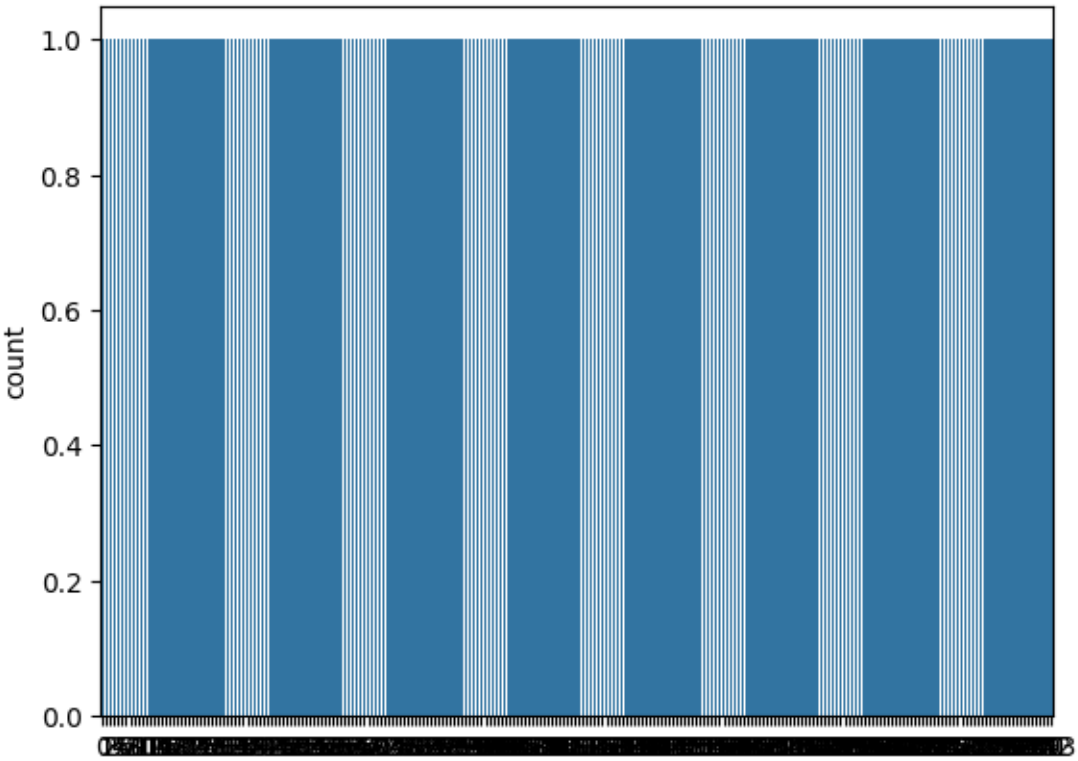
[7]:
```
sns.countplot(df["smoker"])
plt.show()
```



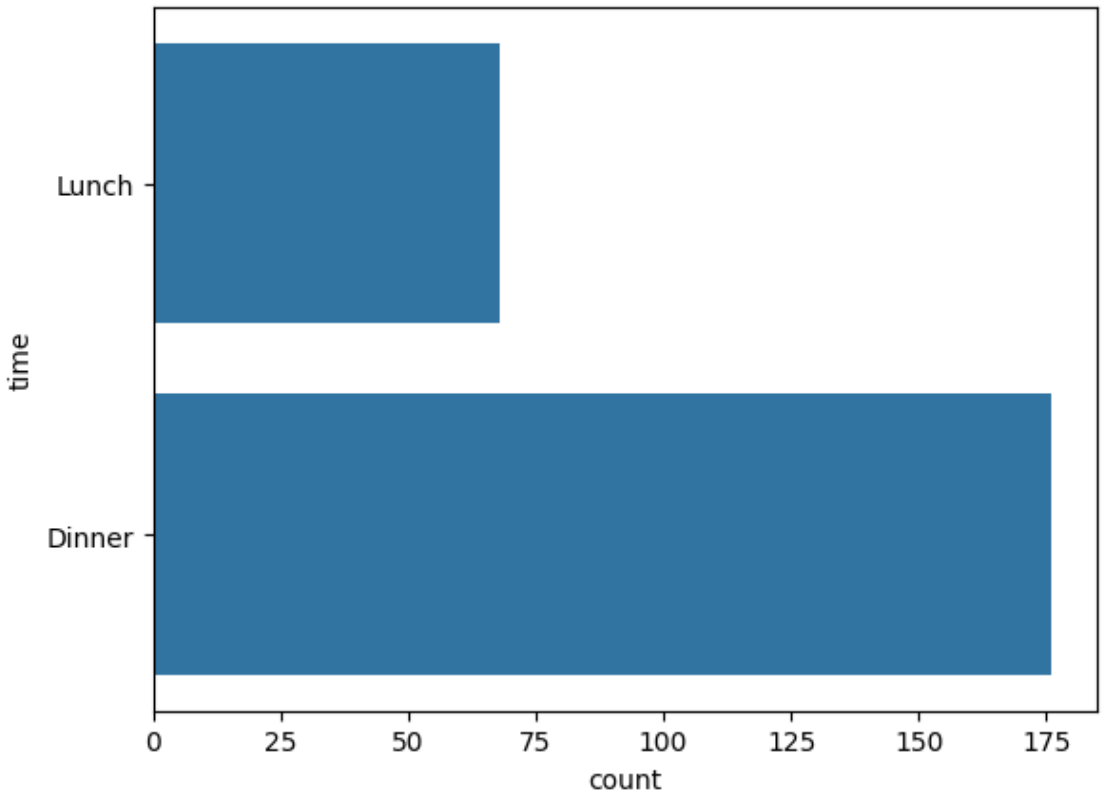
[8]:
```
sns.countplot(df["sex"])
plt.show()
```



[9]:
```
sns.countplot(df["total_bill"])
plt.show()
```



[10]:
```
sns.countplot(df["time"])
plt.show()
```

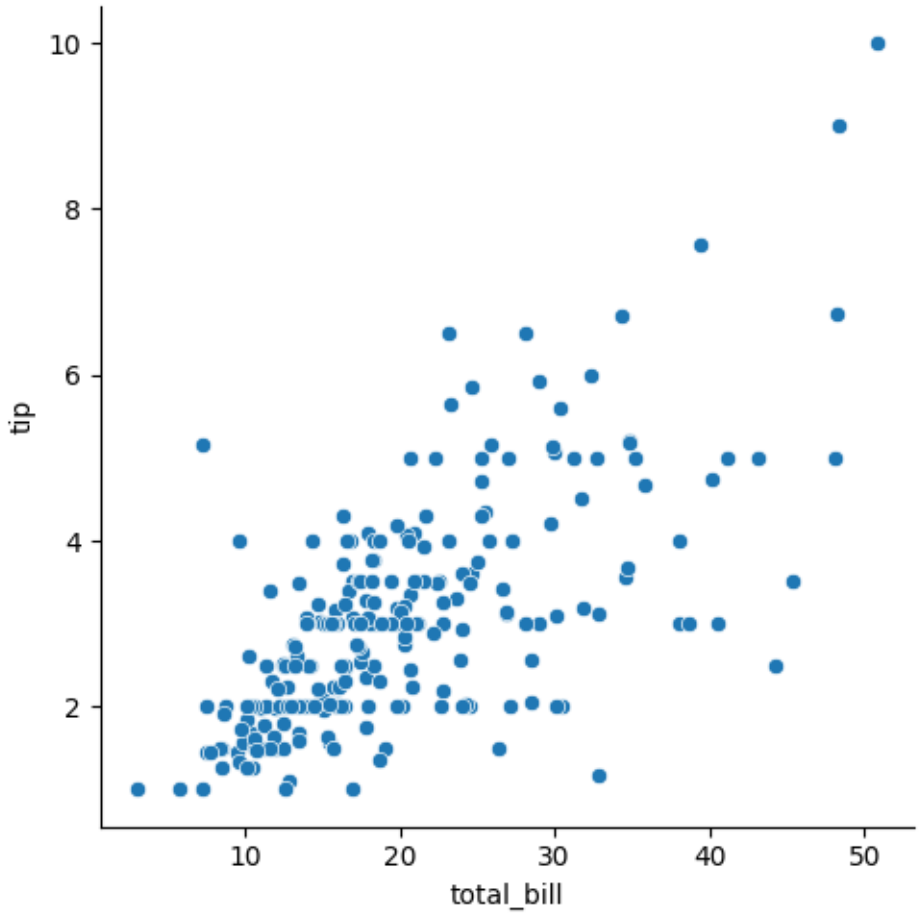


(1) relplot= if both axis values are numerical

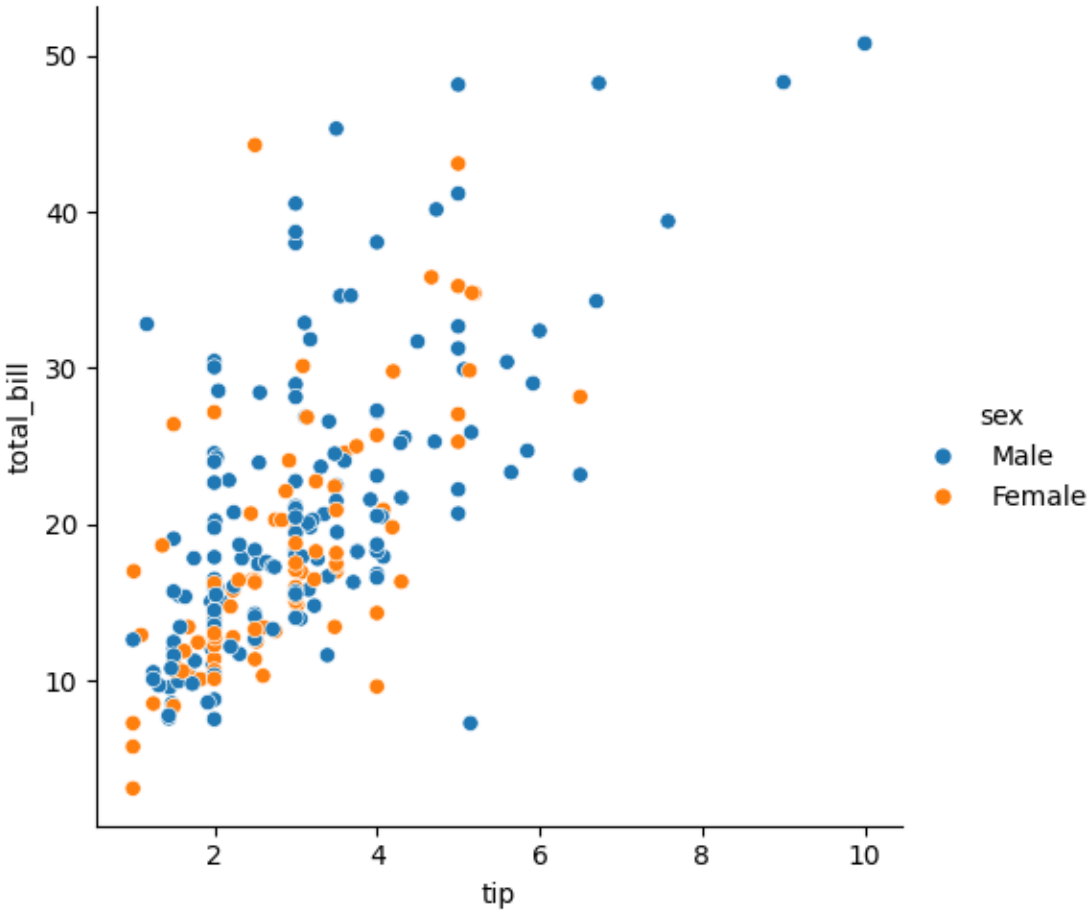
(2) catplot= if only one axis value is numerical and one is catbolical

relplot = relational plot , by default scatter plot

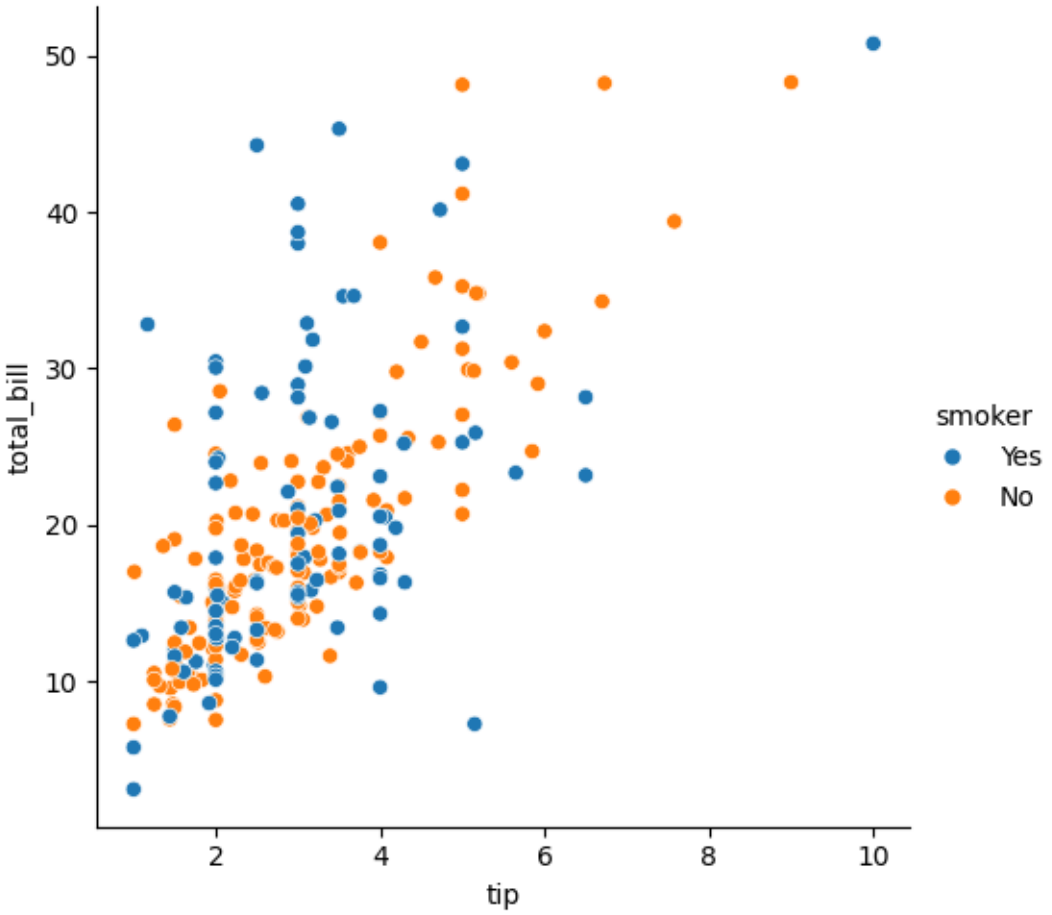
[11]:
```
sns.relplot(x="total_bill",y="tip",data=df)
plt.show()
```



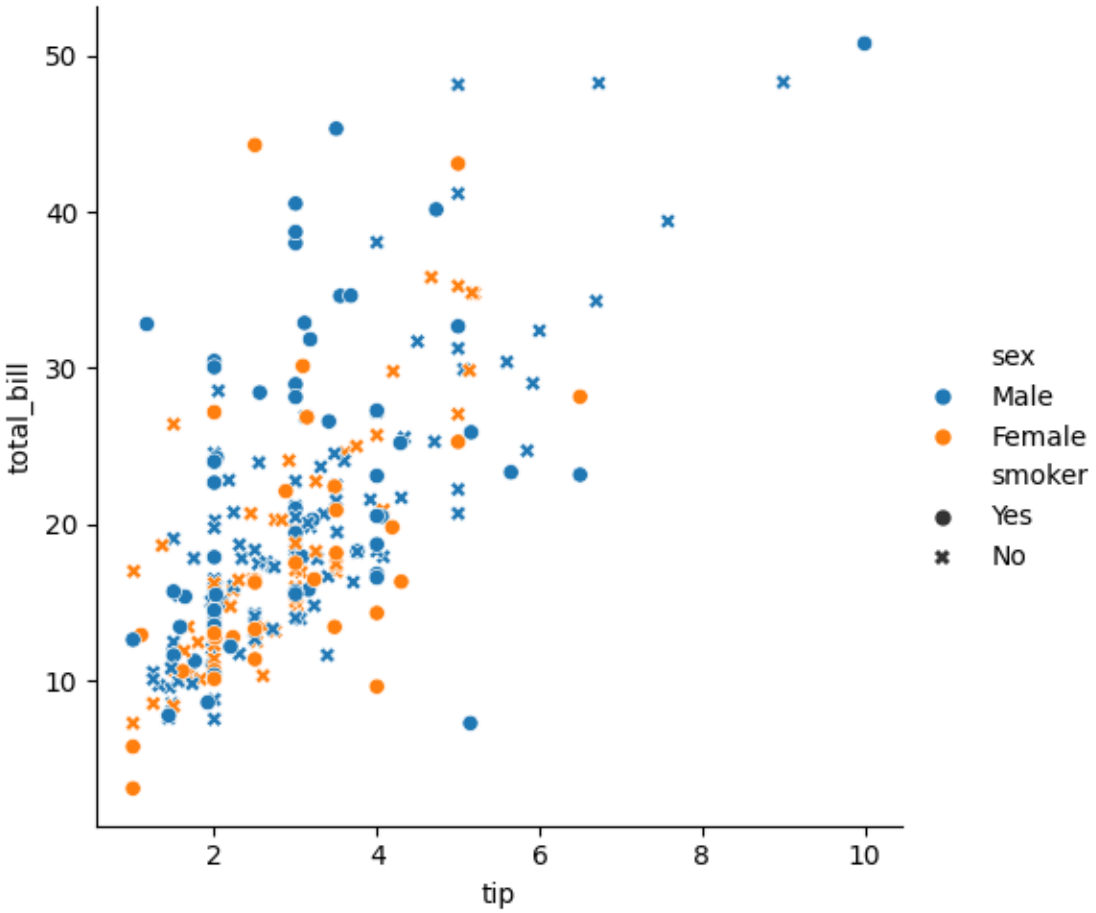
[12]:
```
sns.relplot(x="tip",y="total_bill",data=df,hue="sex")
plt.show()
```



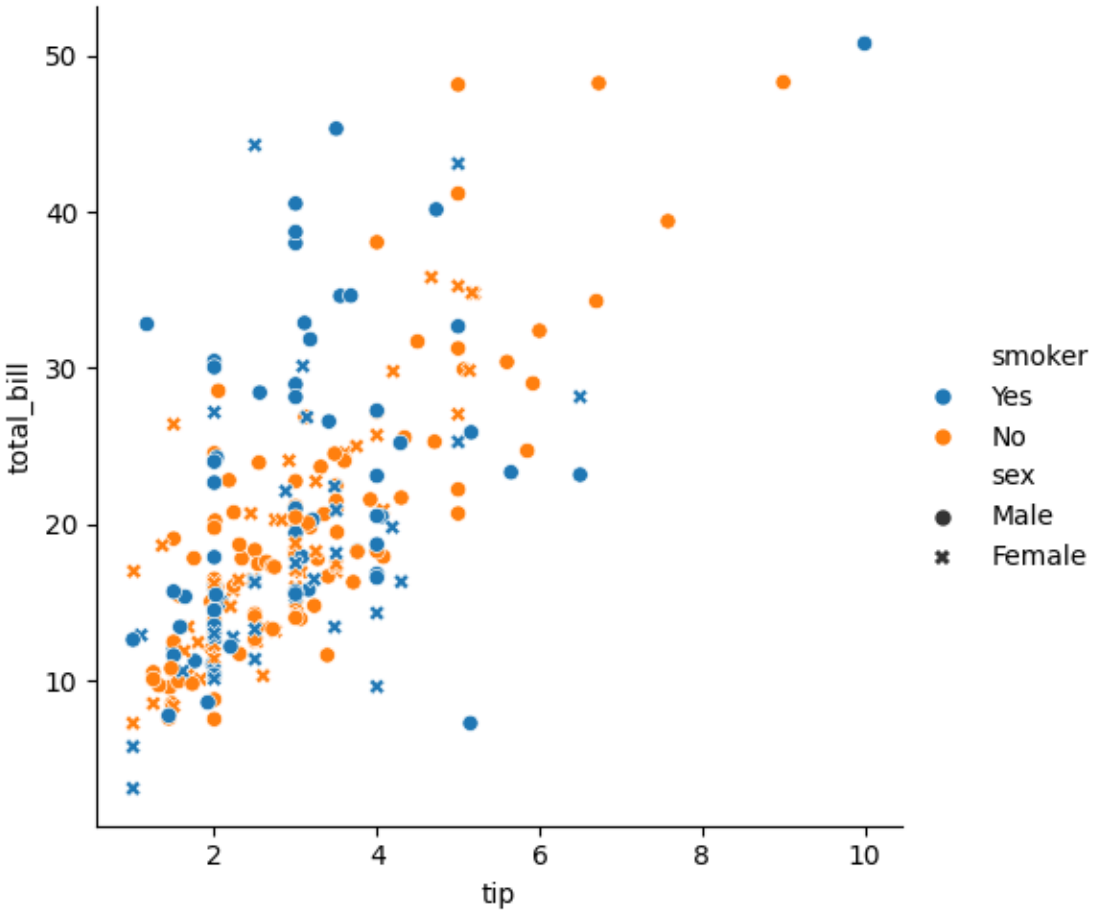
[13]:
```
sns.relplot(x="tip",y="total_bill",data=df,hue="smoker")
plt.show()
```



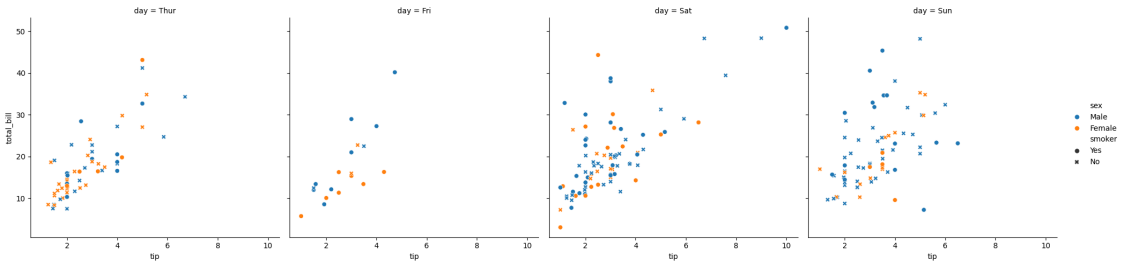
[14]:
```
sns.relplot(x="tip",y="total_bill",data=df,hue="sex",style="smoker")
plt.show()
```



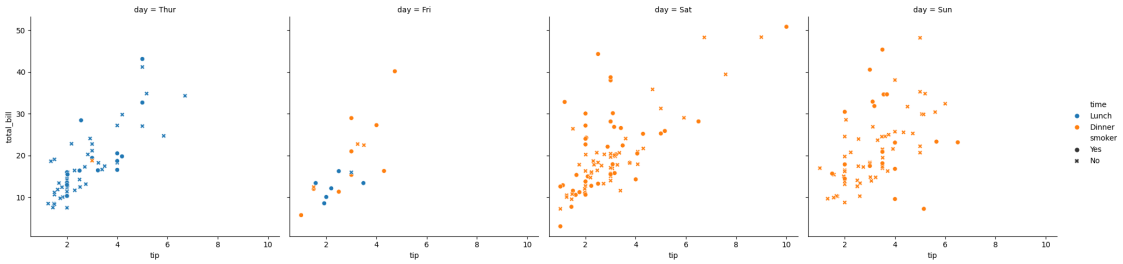
[15]:
```
sns.relplot(x="tip",y="total_bill",data=df,hue="smoker",style="sex")
plt.show()
```



[16]:
```
sns.relplot(x="tip",y="total_bill",data=df,hue="sex",style="smoker",col="day")
plt.show()
```

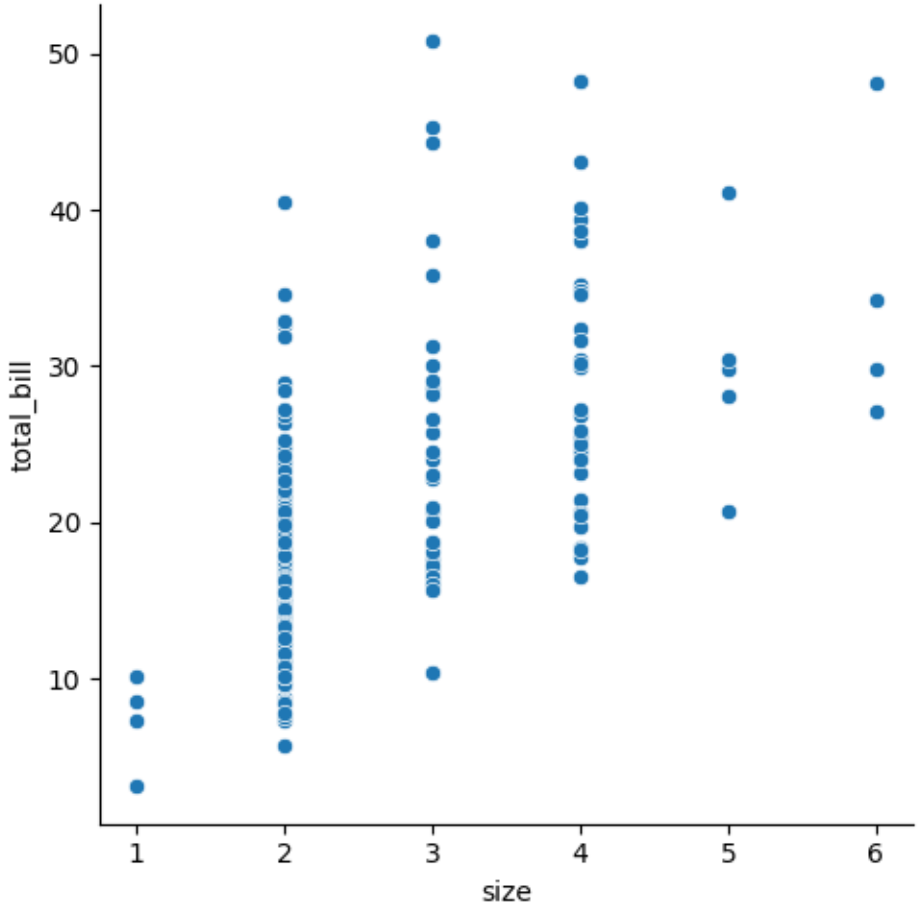


[17]:
```
sns.relplot(x="tip",y="total_bill",data=df,hue="time",style="smoker",col="day")
plt.show()
```



[18]:
```
sns.relplot(x="size",y="total_bill",data=df)
plt.show
```

[18]: <function matplotlib.pyplot.show(close=None, block=None)>

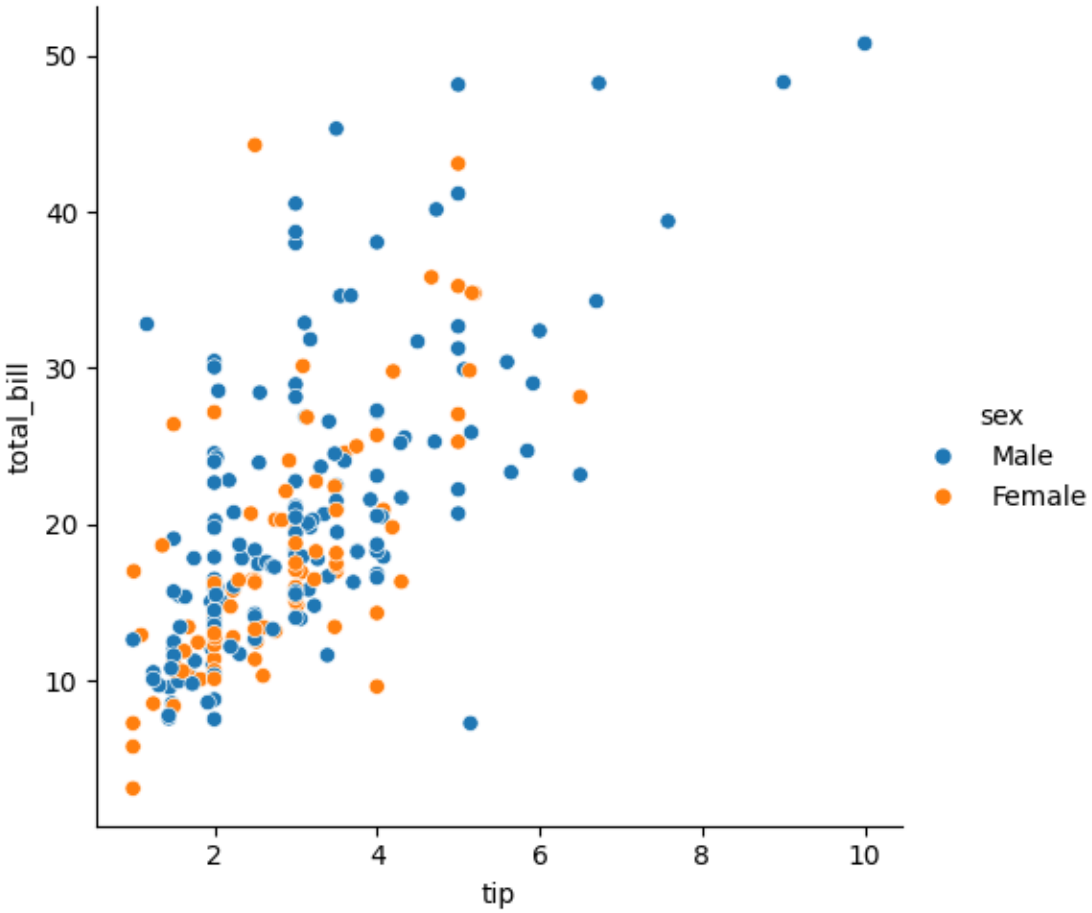


[19]:
```
df[["total_bill","tip","size"]].corr()
```

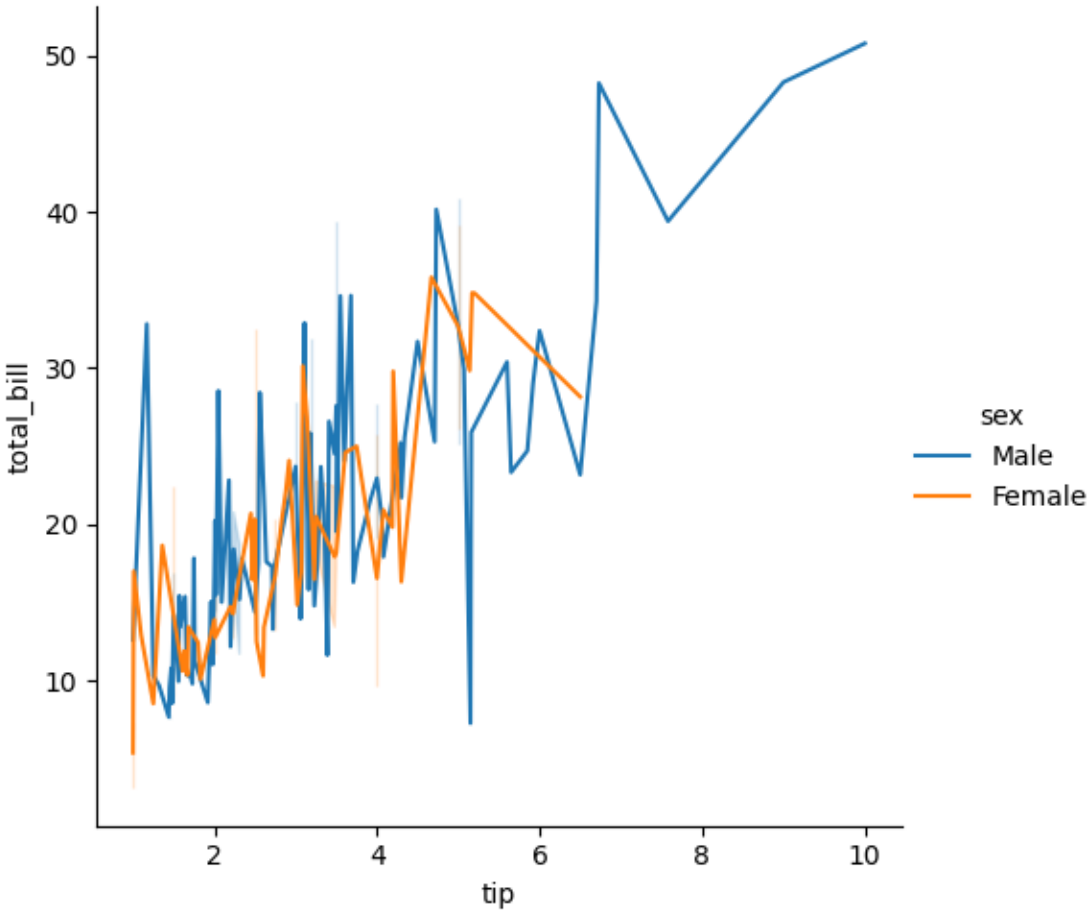
[19]:

	total_bill	tip	size
total_bill	1.000000	0.675734	0.598315
tip	0.675734	1.000000	0.489299
size	0.598315	0.489299	1.000000

[20]:
```
sns.relplot(x="tip",y="total_bill",data=df,hue="sex",kind="scatter")
plt.show()
```



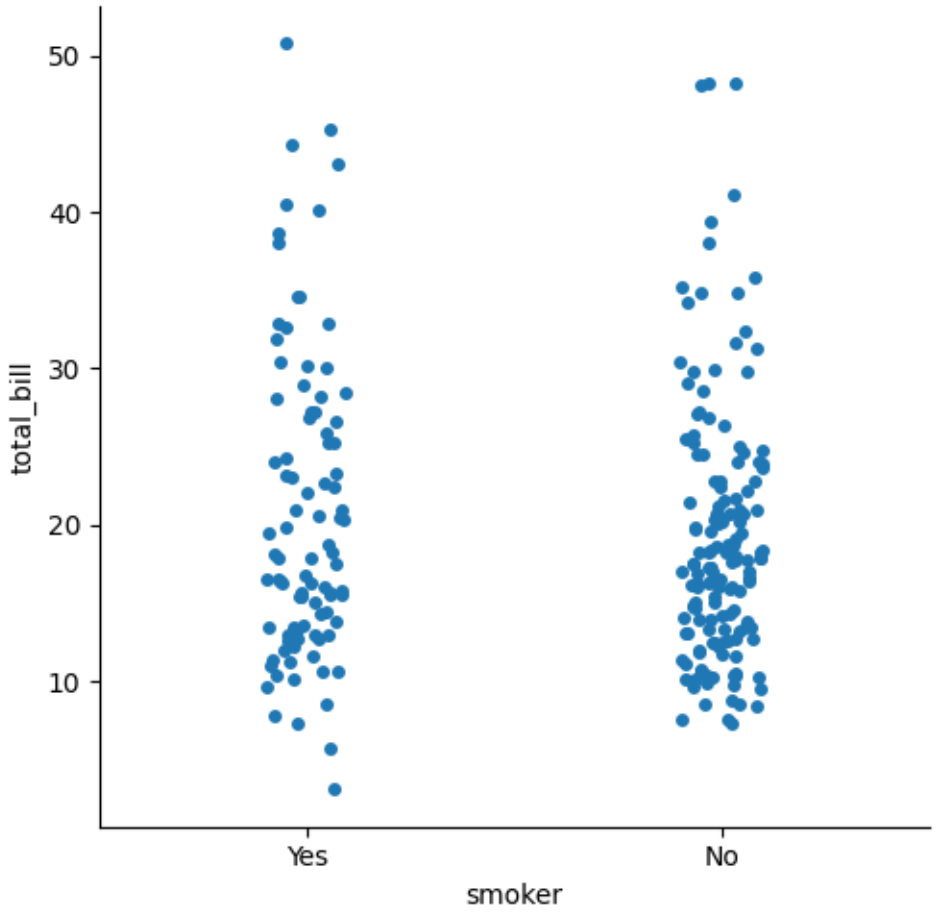
[21]:
```
sns.relplot(x="tip",y="total_bill",data=df,hue="sex",kind="line")
plt.show()
```



Catplot = One column is numerical and other is catbolical

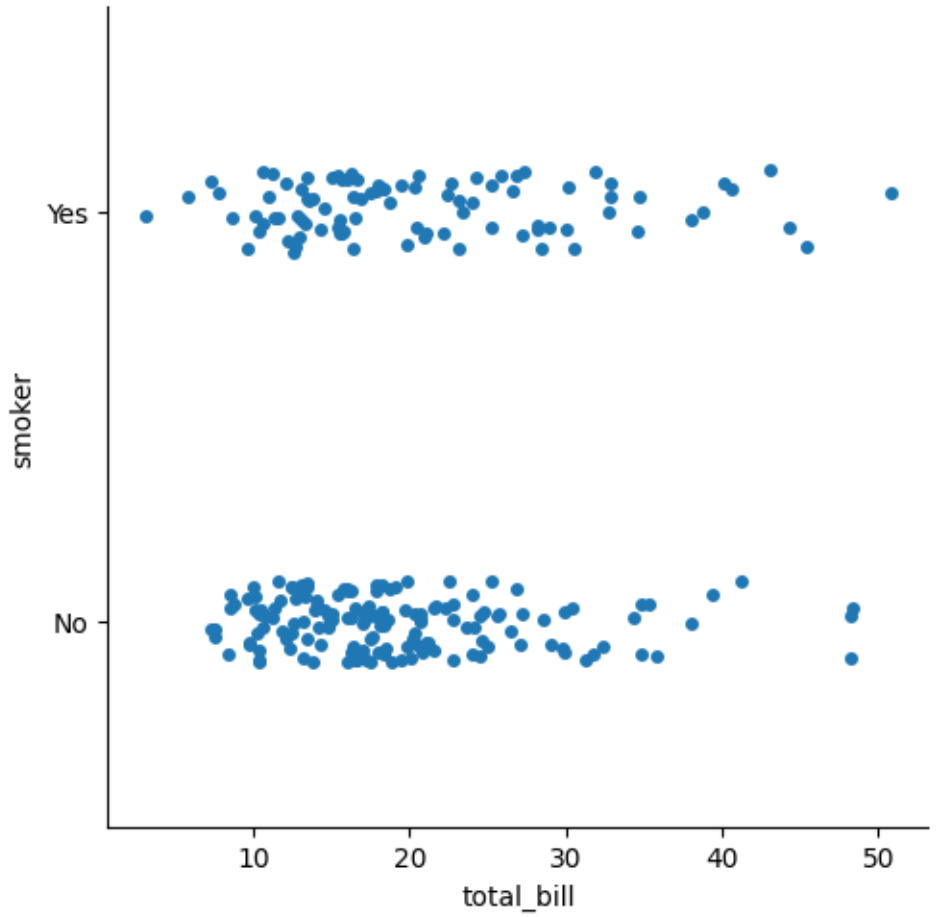
[22]:
```
sns.catplot(x="smoker",y="total_bill",data=df)
```

[22]:
```
<seaborn.axisgrid.FacetGrid at 0x18a7076e660>
```



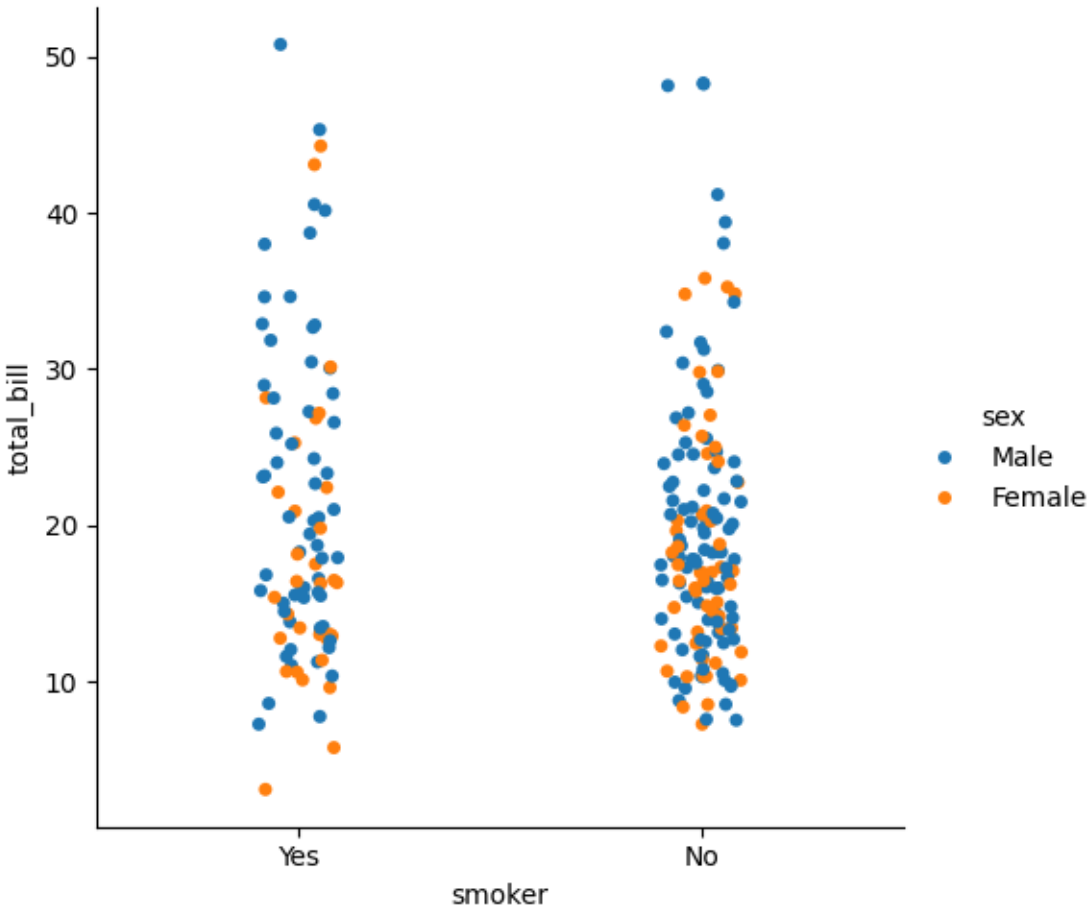
[23]:
```
sns.catplot(x="total_bill",y="smoker",data=df)
```

[23]: <seaborn.axisgrid.FacetGrid at 0x18a70e8f4d0>



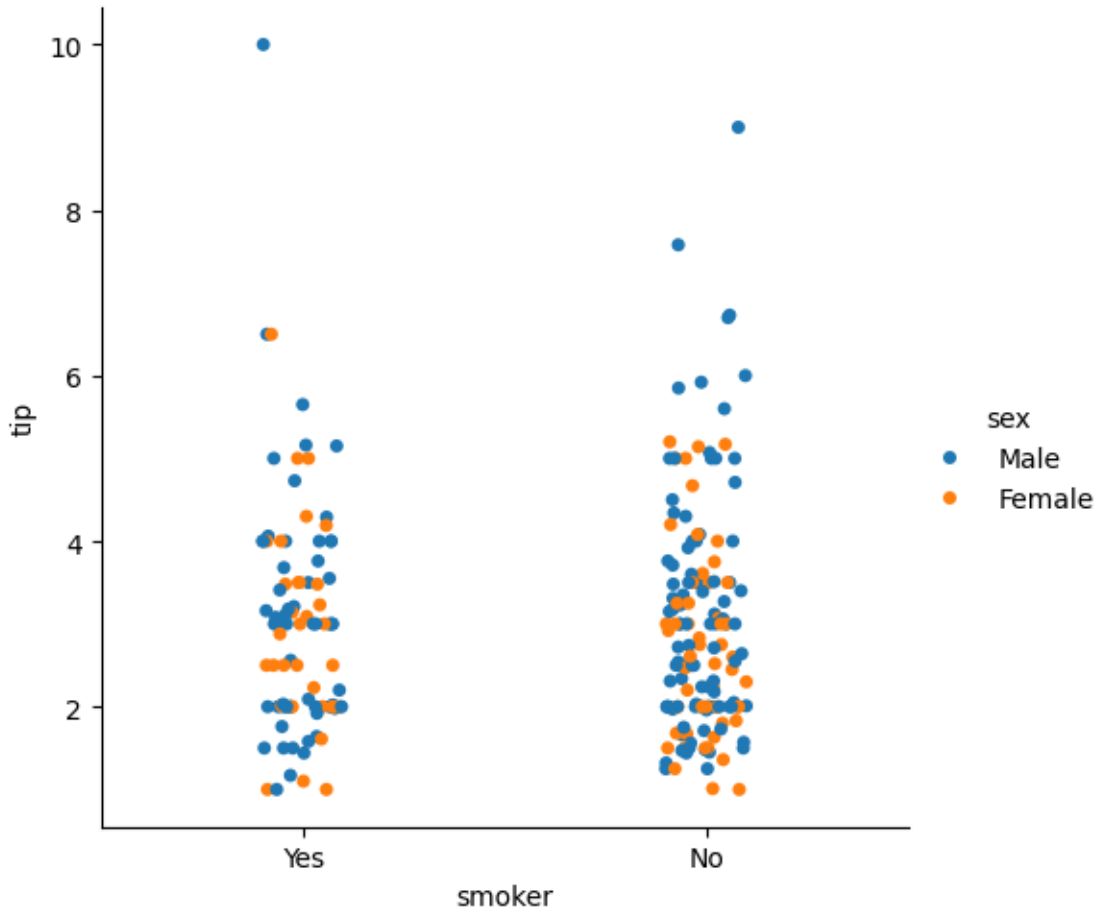
[24]:
```
sns.catplot(x="smoker",y="total_bill",data=df,hue="sex")
```

[24]:
```
<seaborn.axisgrid.FacetGrid at 0x18a70f46930>
```



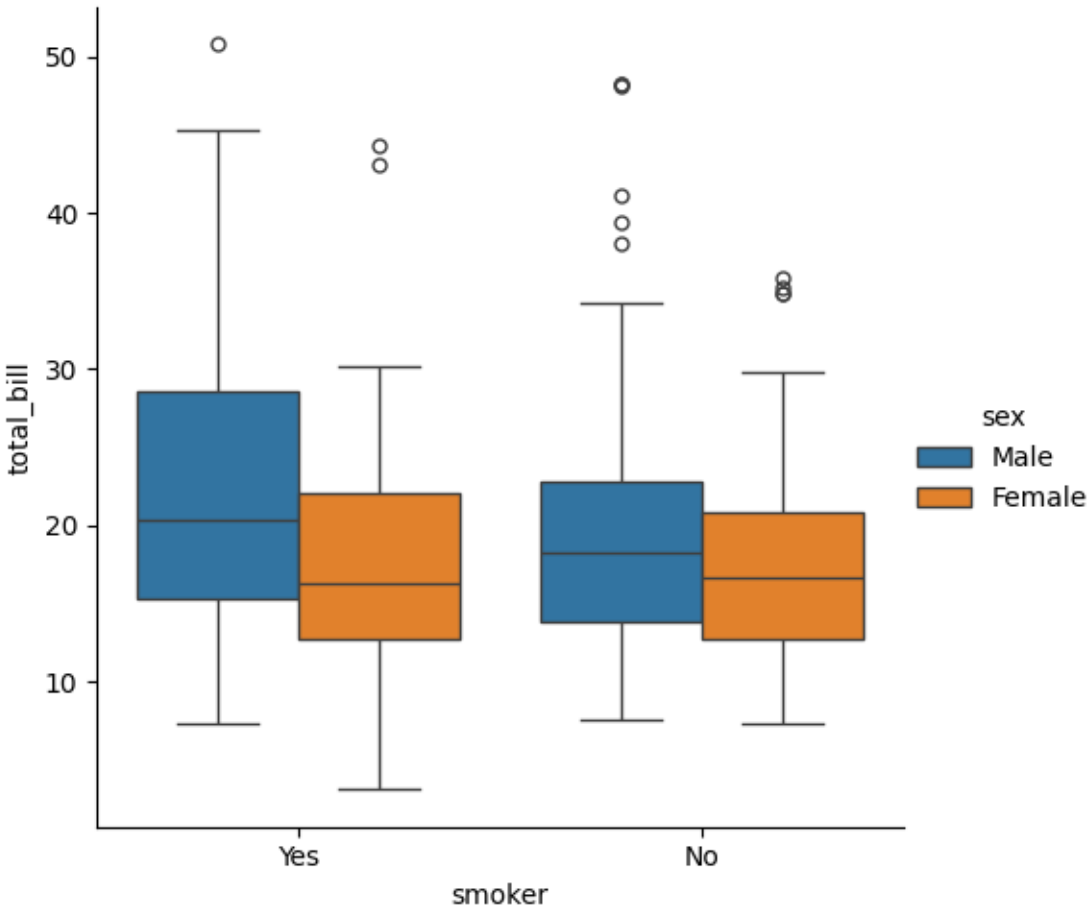
[25]:
```
sns.catplot(x="smoker",y="tip",data=df,hue="sex")
```

[25]:
```
<seaborn.axisgrid.FacetGrid at 0x18a6f040da0>
```



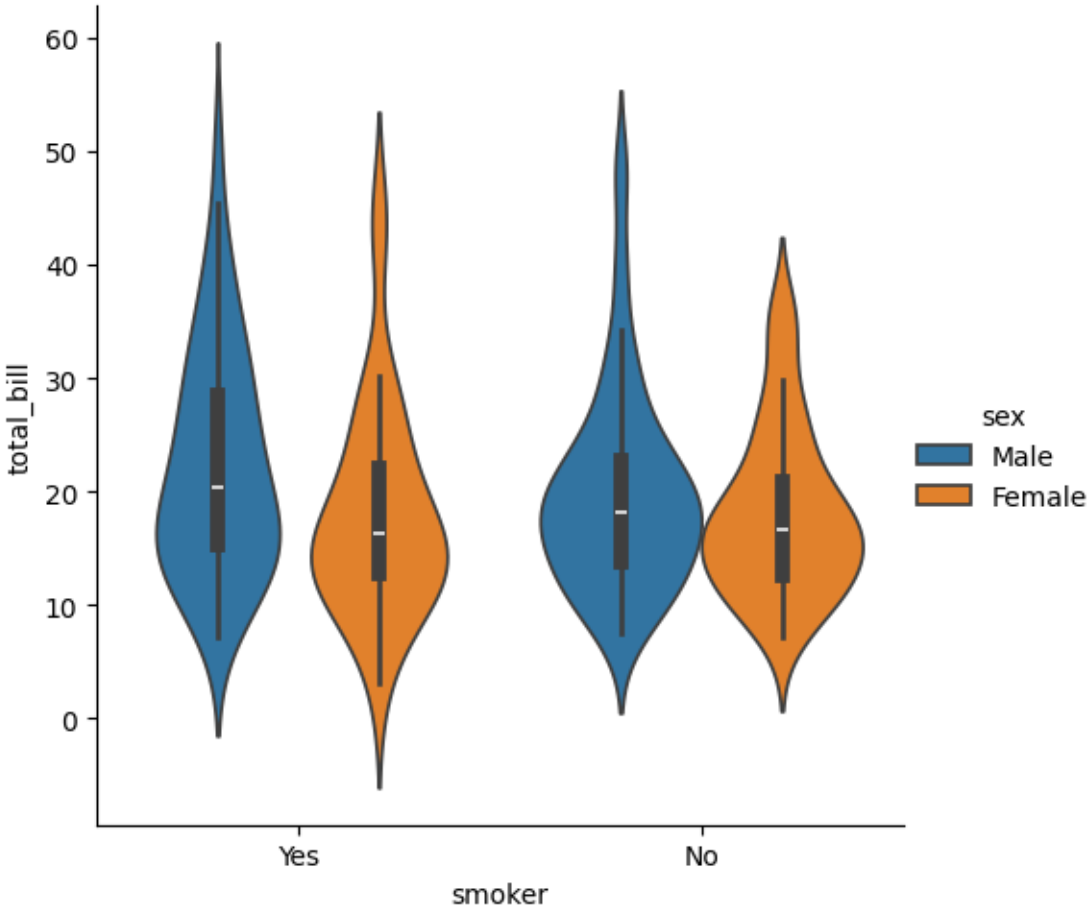
[26]:
```
sns.catplot(x="smoker",y="total_bill",data=df,hue="sex",kind="box")
```

[26]: <seaborn.axisgrid.FacetGrid at 0x18a71056ab0>



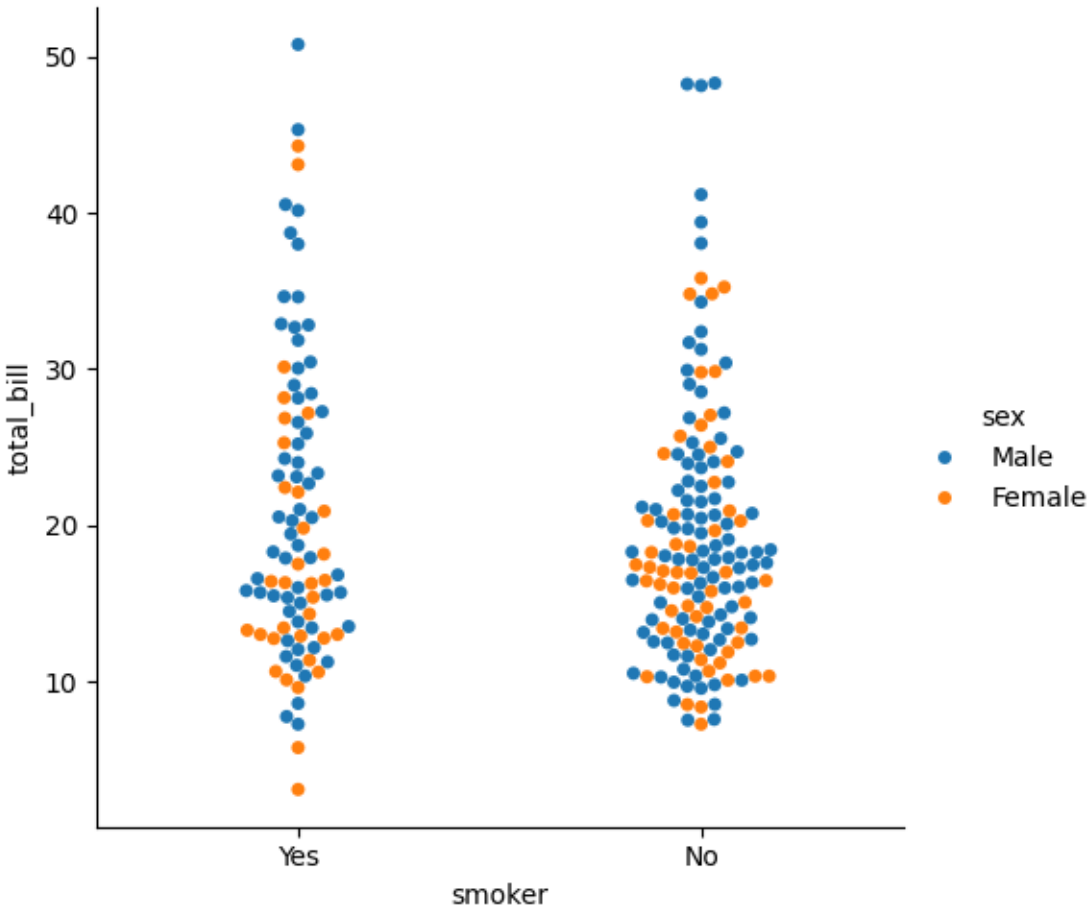
[27]:
```
sns.catplot(x="smoker",y="total_bill",data=df,hue="sex",kind="violin")
```

[27]:
```
<seaborn.axisgrid.FacetGrid at 0x18a6f33aba0>
```



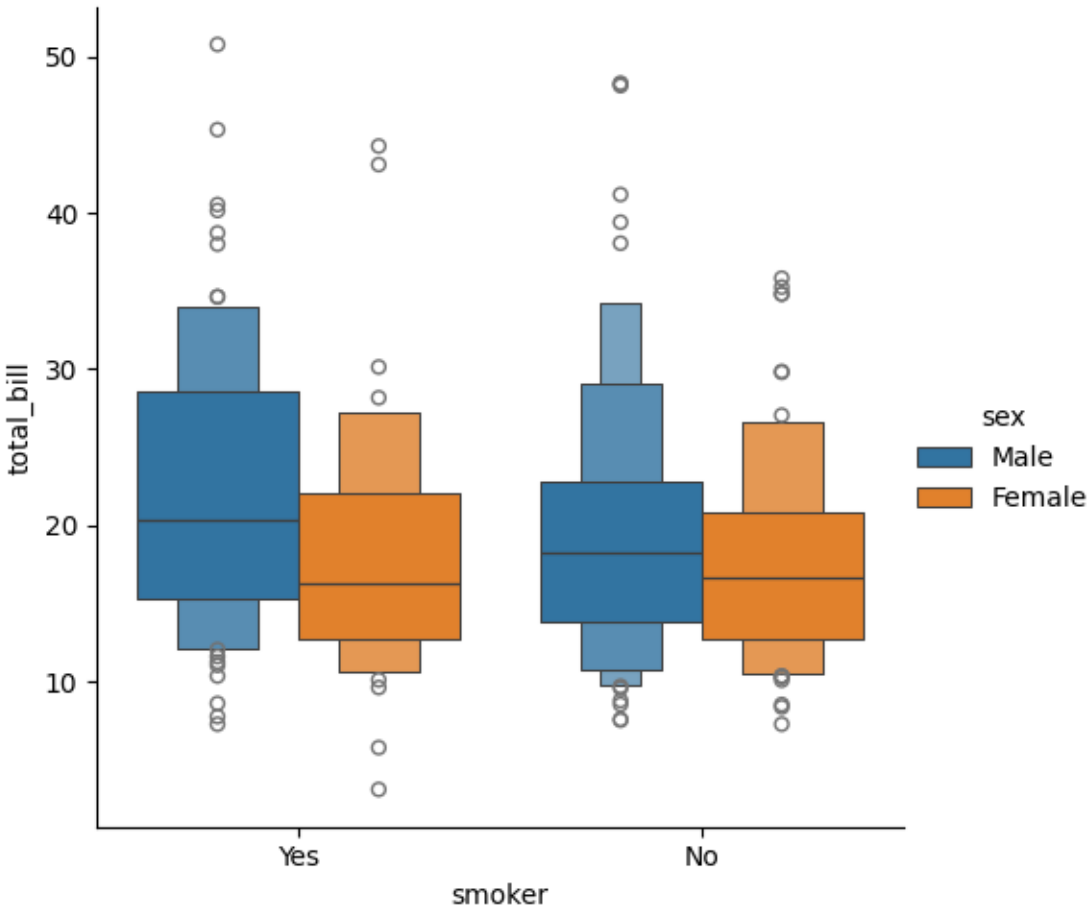
[28]:
```
sns.catplot(x="smoker",y="total_bill",data=df,hue="sex",kind="swarm")
```

[28]:
```
<seaborn.axisgrid.FacetGrid at 0x18a6eee5850>
```



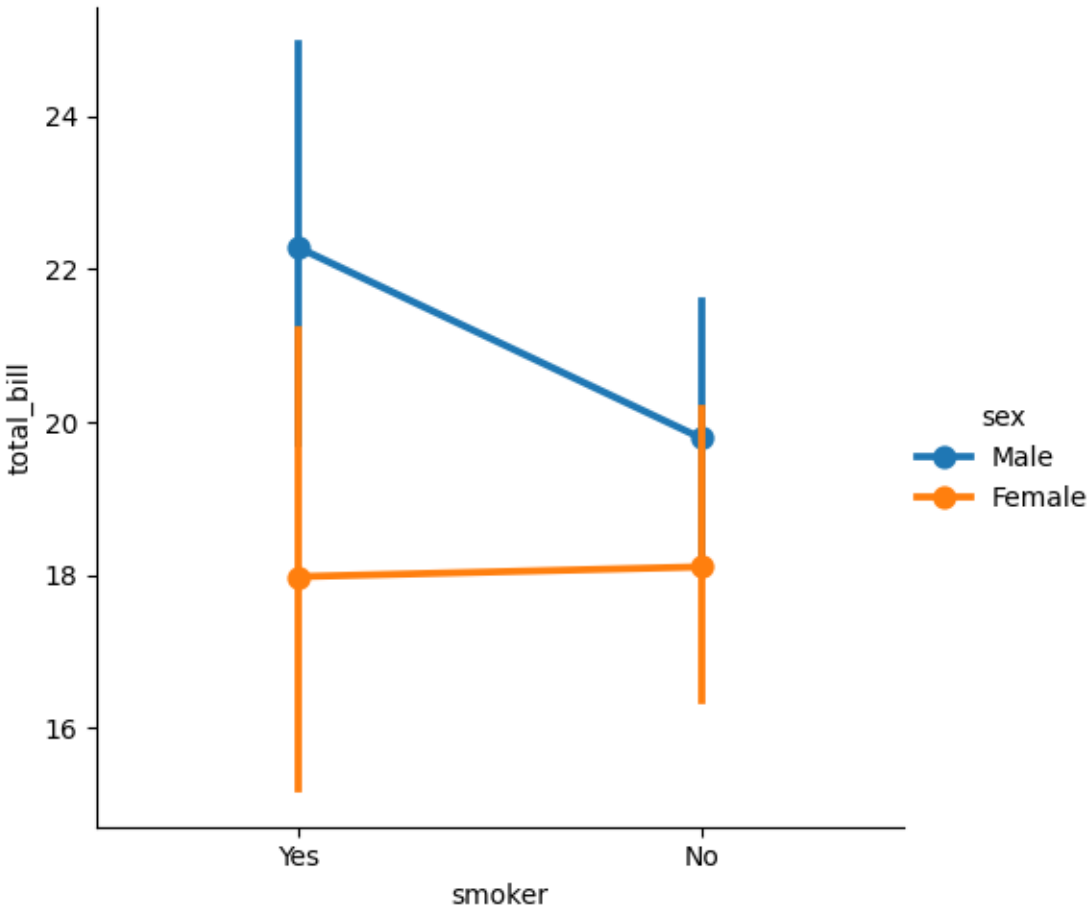
[29]:
```
sns.catplot(x="smoker",y="total_bill",data=df,hue="sex",kind="boxen")
```

[29]: <seaborn.axisgrid.FacetGrid at 0x18a6eb4a3f0>



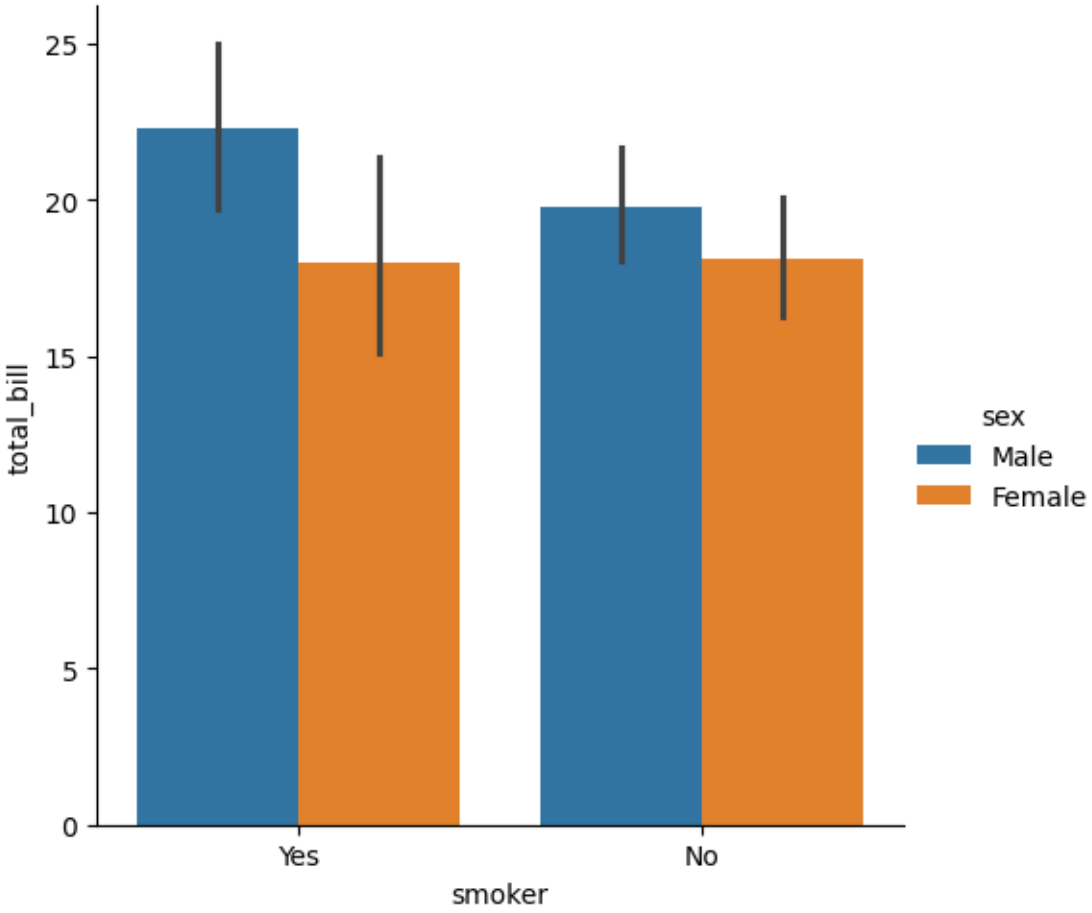
[30]:
```
sns.catplot(x="smoker",y="total_bill",data=df,hue="sex",kind="point")
```

[30]:
```
<seaborn.axisgrid.FacetGrid at 0x18a6f31b830>
```



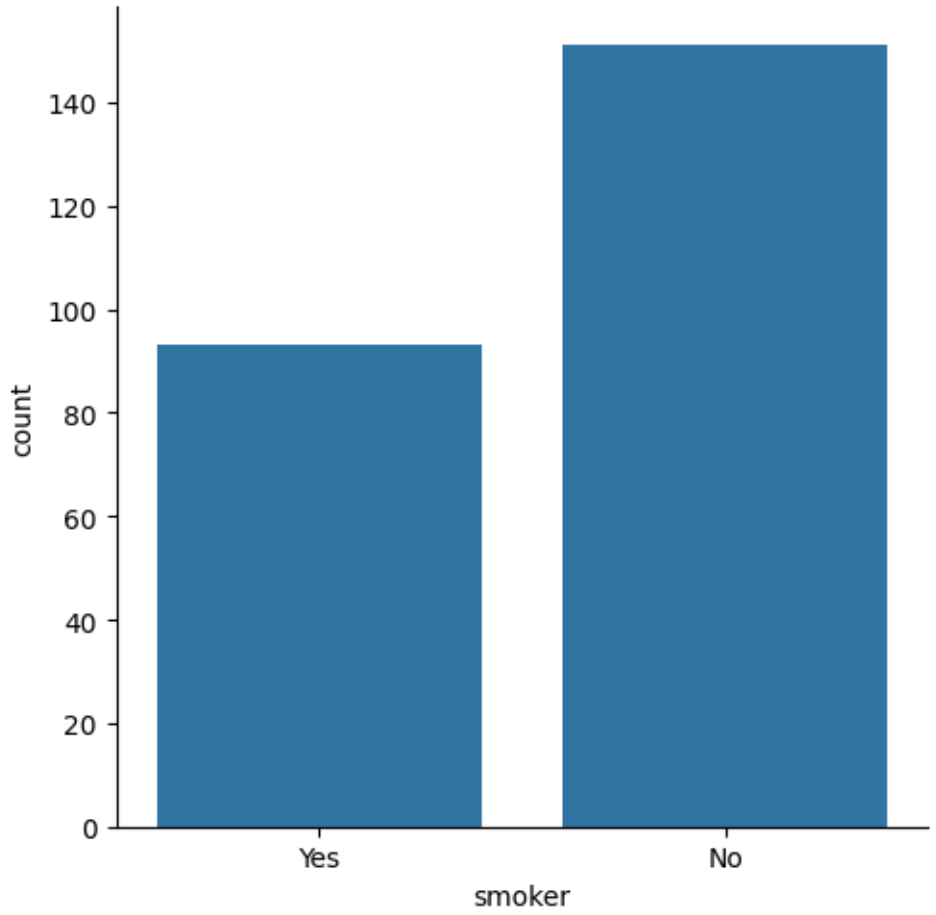
[31]:
```
sns.catplot(x="smoker",y="total_bill",data=df,hue="sex",kind="bar")
```

[31]: <seaborn.axisgrid.FacetGrid at 0x18a6f1a6780>

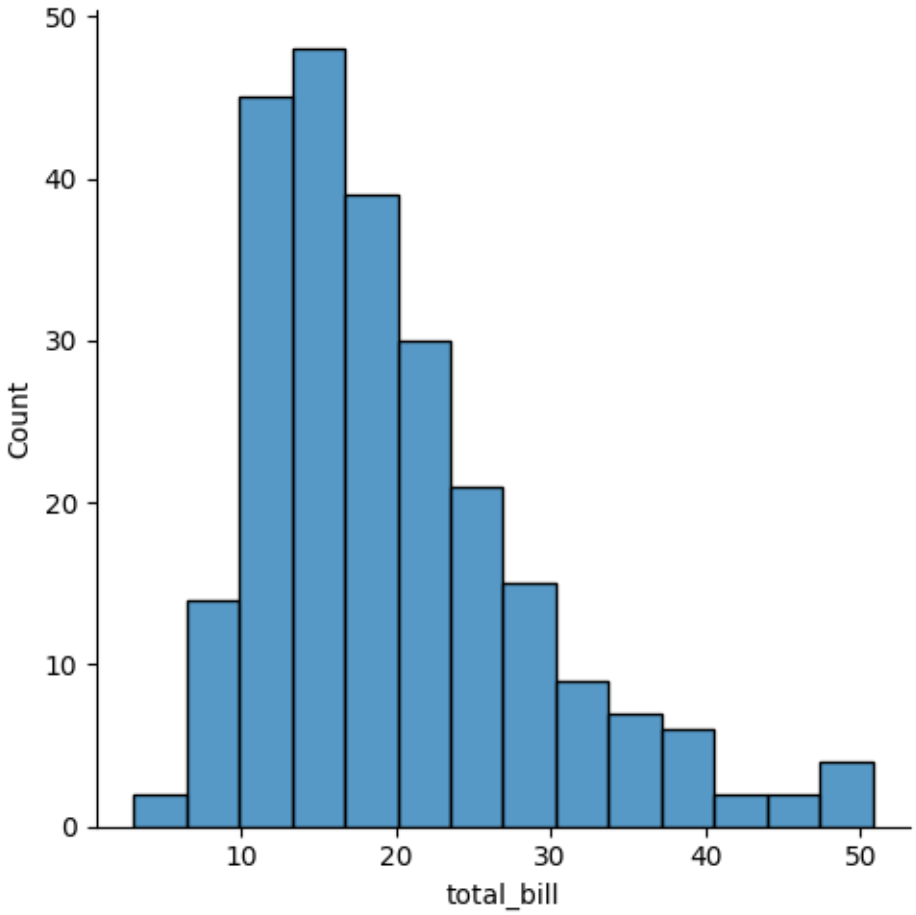


[32]:
```
sns.catplot(x="smoker",data=df,kind="count")
```

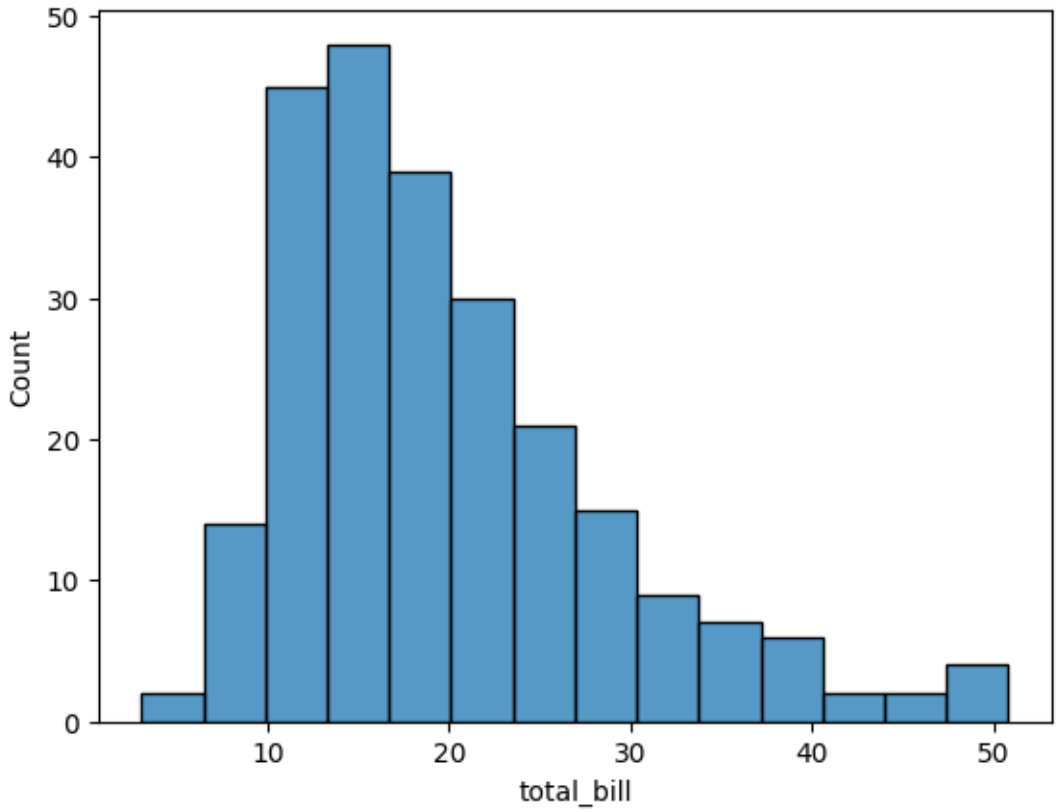
[32]:
```
<seaborn.axisgrid.FacetGrid at 0x18a710b2f00>
```



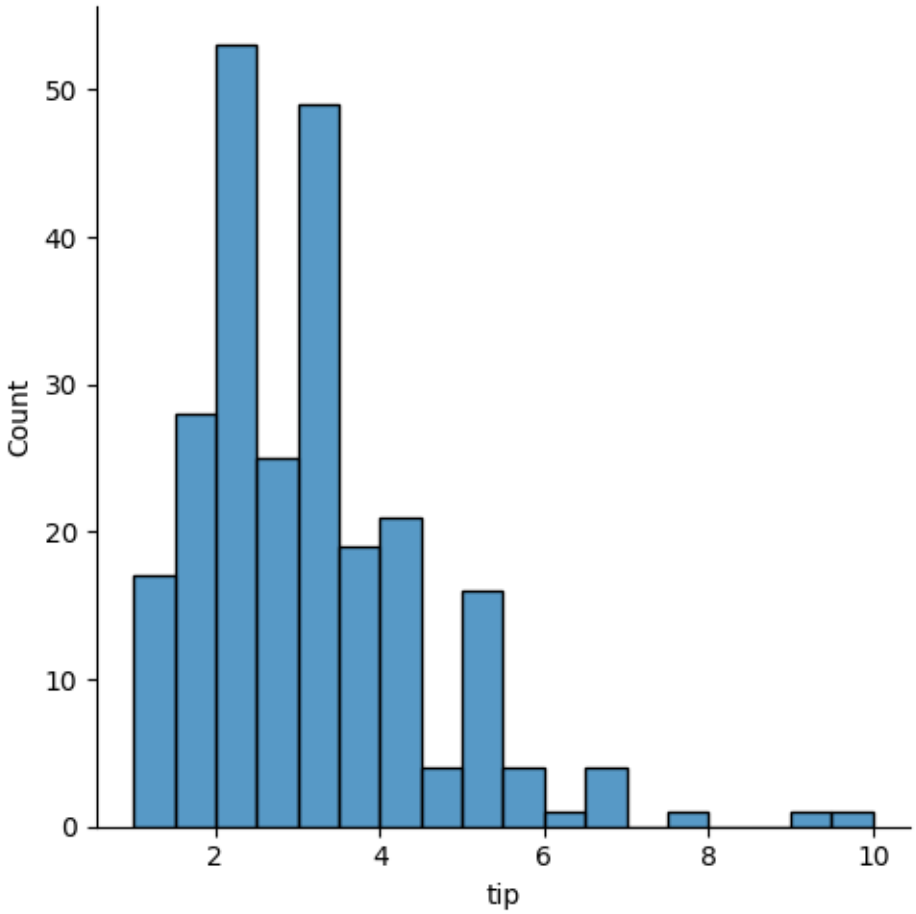
[33]:
```
sns.displot(df["total_bill"])
plt.show()
```



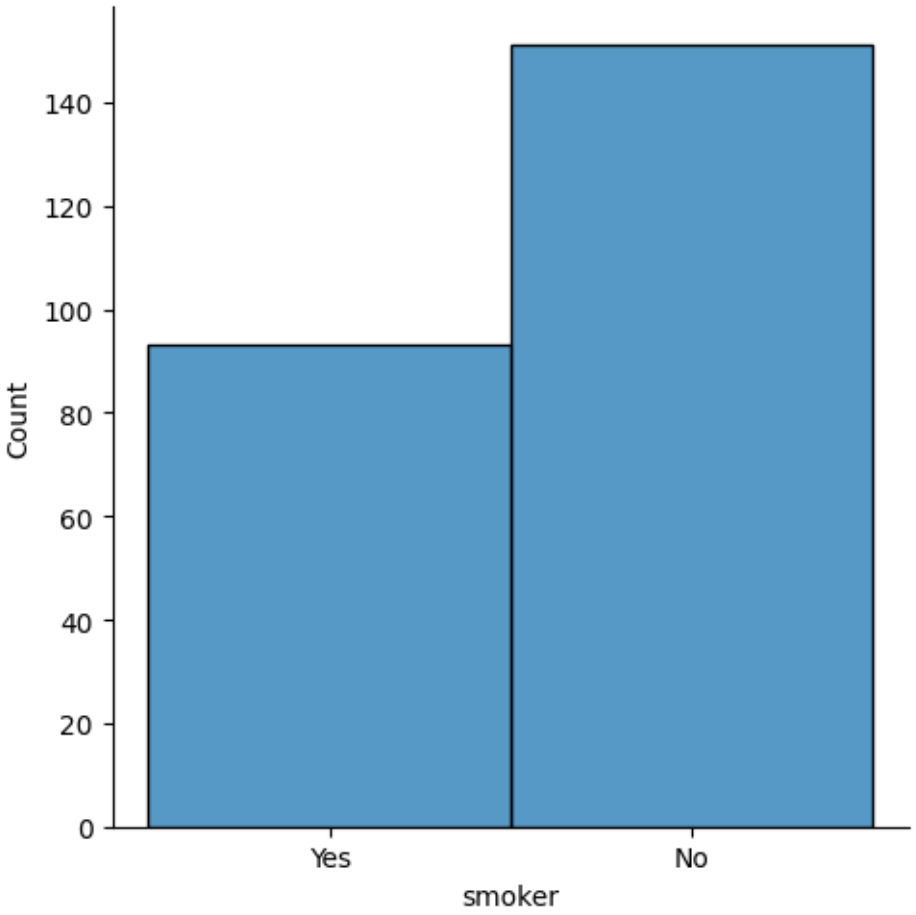
[34]:
```
sns.histplot(df["total_bill"])
plt.show()
```



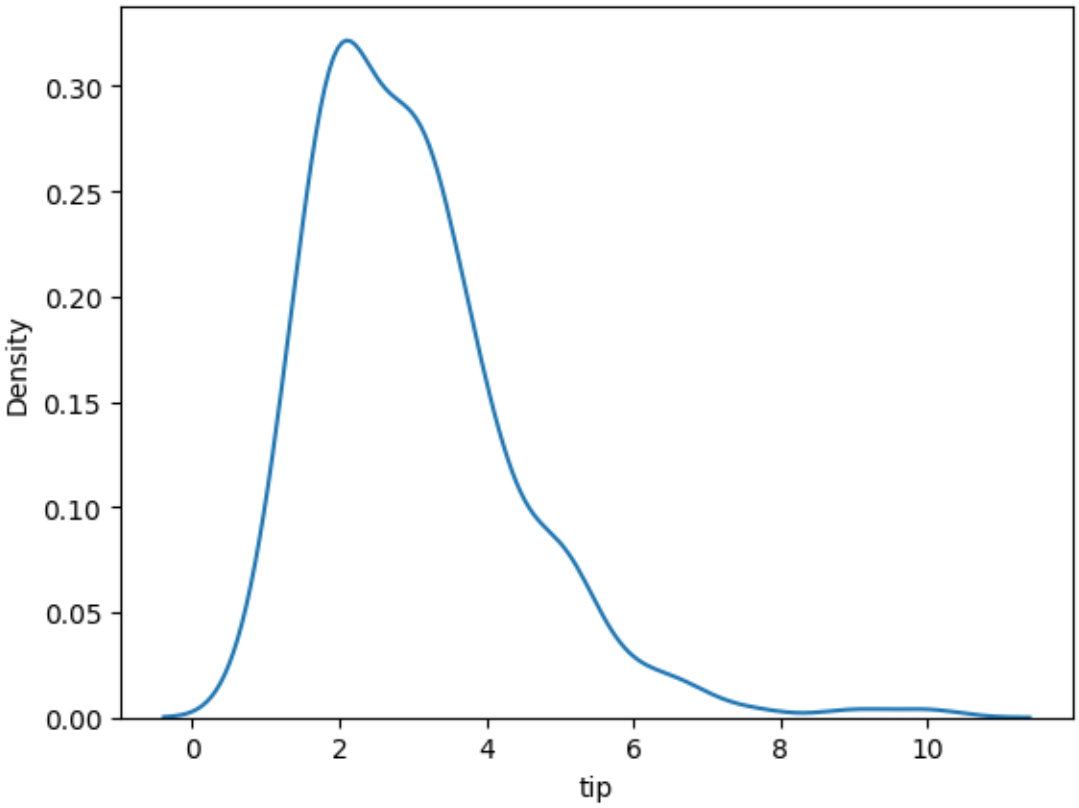
[35]:
```
sns.displot(df["tip"])
plt.show()
```



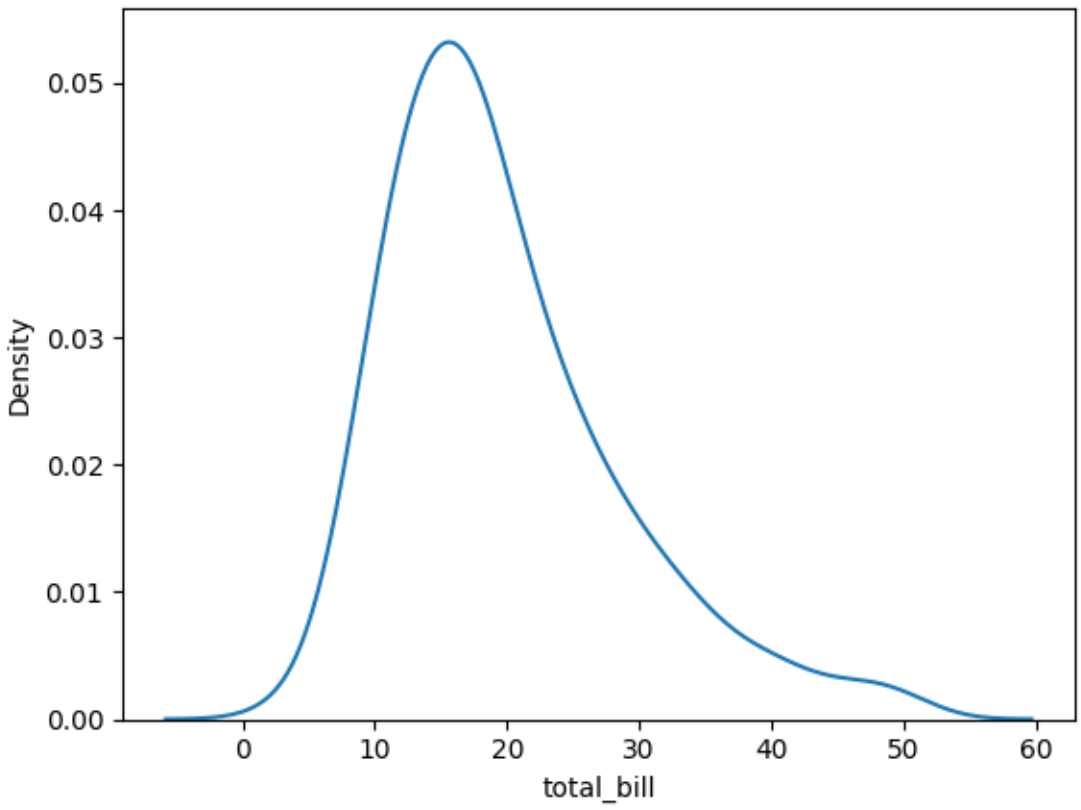
[36]:
```
sns.displot(df["smoker"])
plt.show()
```



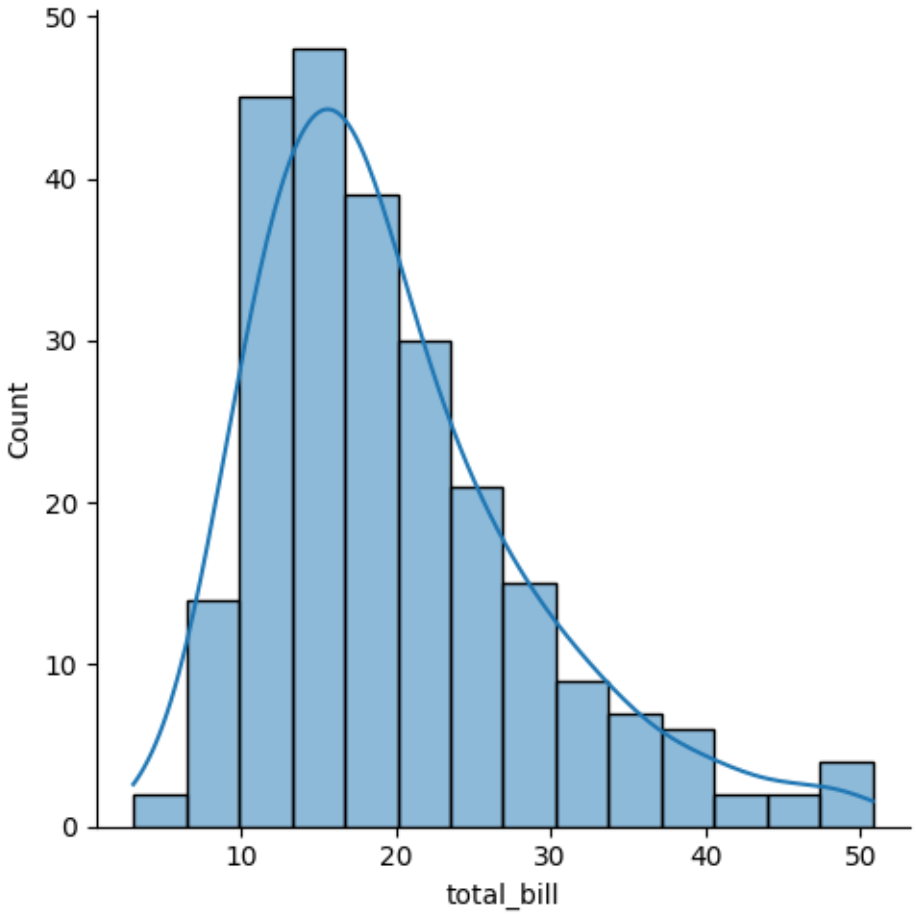
[37]:
```
sns.kdeplot(df["tip"])
plt.show()
```



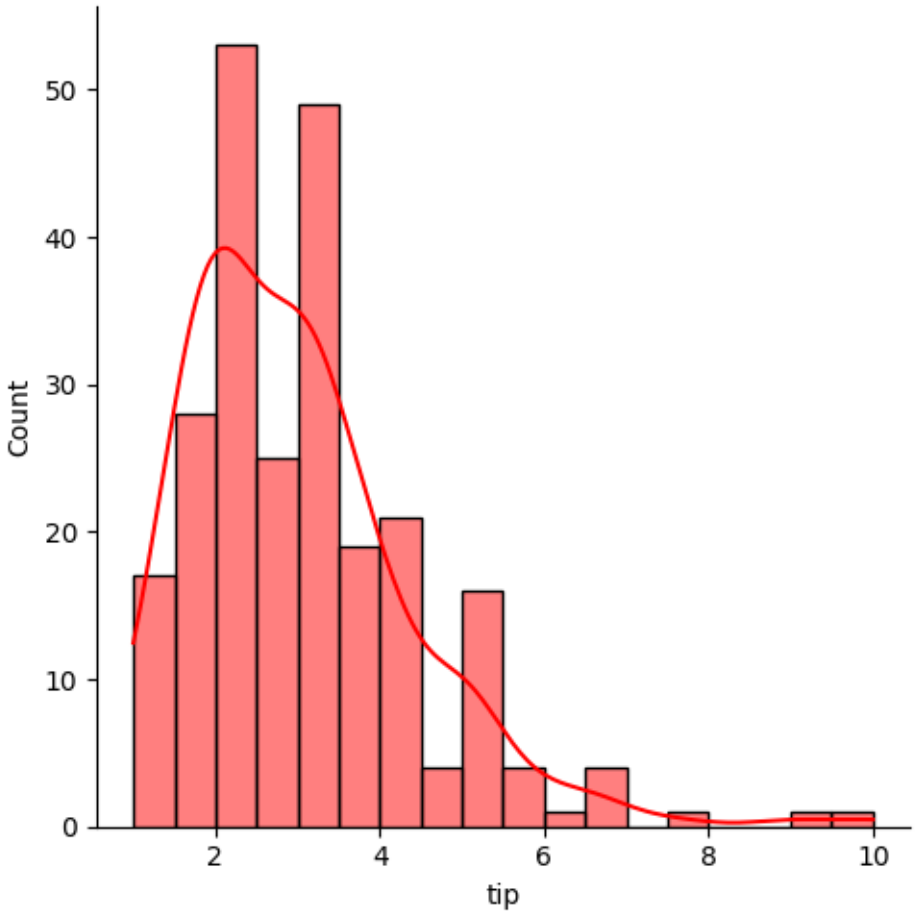
[38]:
```
sns.kdeplot(df["total_bill"],)
plt.show()
```



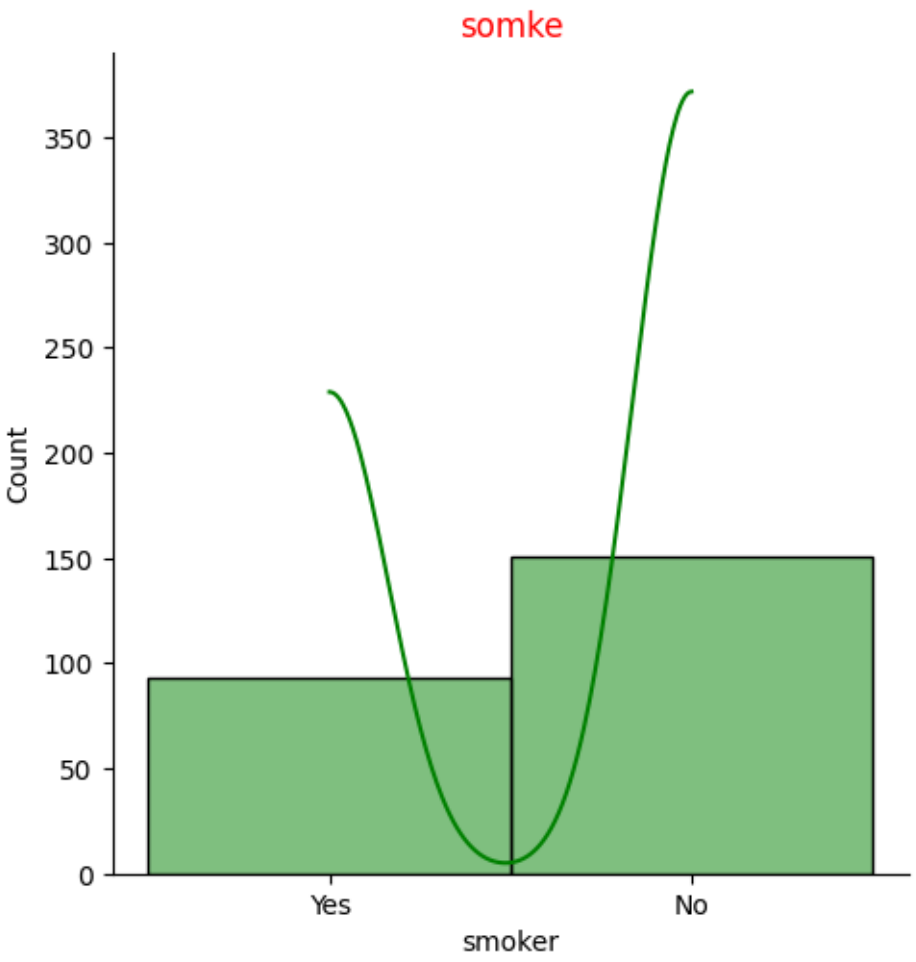
[39]:
```
sns.displot(df["total_bill"],kde=True)
plt.show()
```



[40]:
```
sns.displot(df["tip"],kde=True,color="r")
plt.show()
```

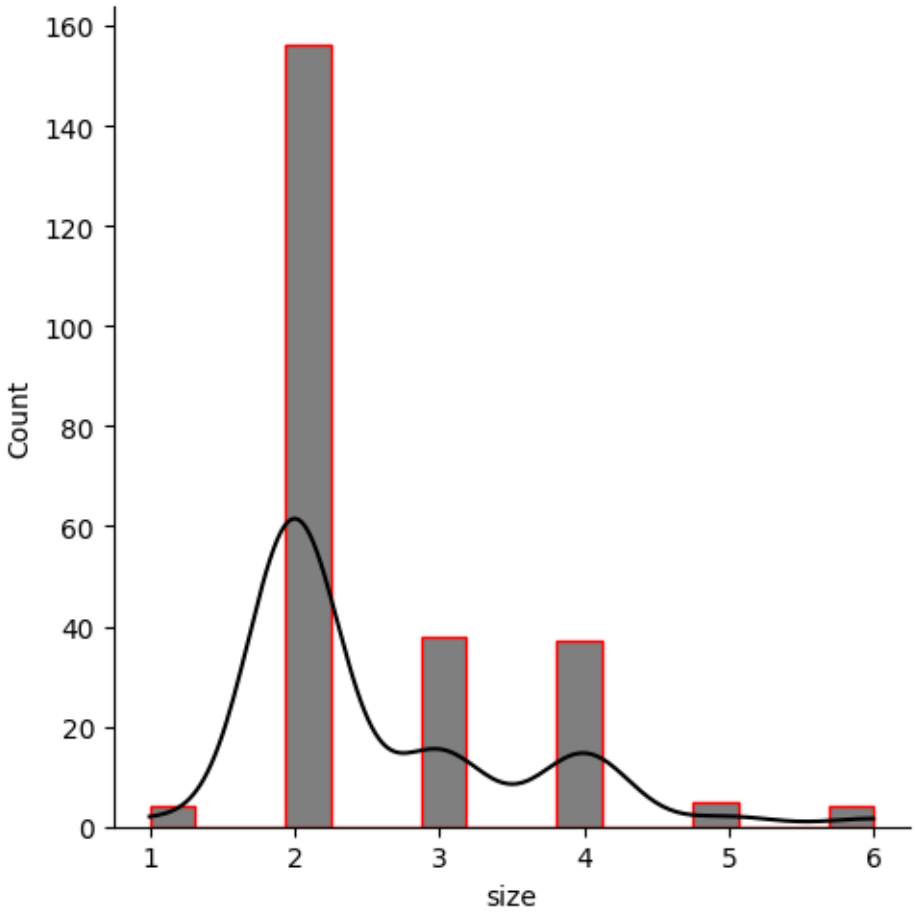


[41]:
```
sns.displot(df["smoker"],kde=True,color="g")
plt.title("somke",color="r")
plt.show()
```



[42]:
```
sns.displot(df["size"],kde=True,color="k",ec="r")
```

[42]: <seaborn.axisgrid.FacetGrid at 0x18a75aecbc0>



1 Work On this both dataset below for practive

[43]:
```
titanic=sns.load_dataset("titanic")
titanic.head()
```

[43]:

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	\
0	0	3	male	22.0	1	0	7.2500	S	Third	
1	1	1	female	38.0	1	0	71.2833	C	First	
2	1	3	female	26.0	0	0	7.9250	S	Third	
3	1	1	female	35.0	1	0	53.1000	S	First	
4	0	3	male	35.0	0	0	8.0500	S	Third	

	who	adult_male	deck	embark_town	alive	alone
0	man	True	NaN	Southampton	no	False
1	woman	False	C	Cherbourg	yes	False
2	woman	False	NaN	Southampton	yes	True
3	woman	False	C	Southampton	yes	False

```
4    man        True  NaN  Southampton    no   True
```

[44]:
```
iris=sns.load_dataset("iris")
iris.head()
```

[44]:

	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

[45]:
```
sns.regplot(x="total_bill",y="tip",data=df)
plt.show()
```