In [1]:
```
import seaborn as sns
#lets use the sample dataset of seaborn, tips..
tips = sns.load_dataset('tips')
tips.head()
```

Out[1]:

	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

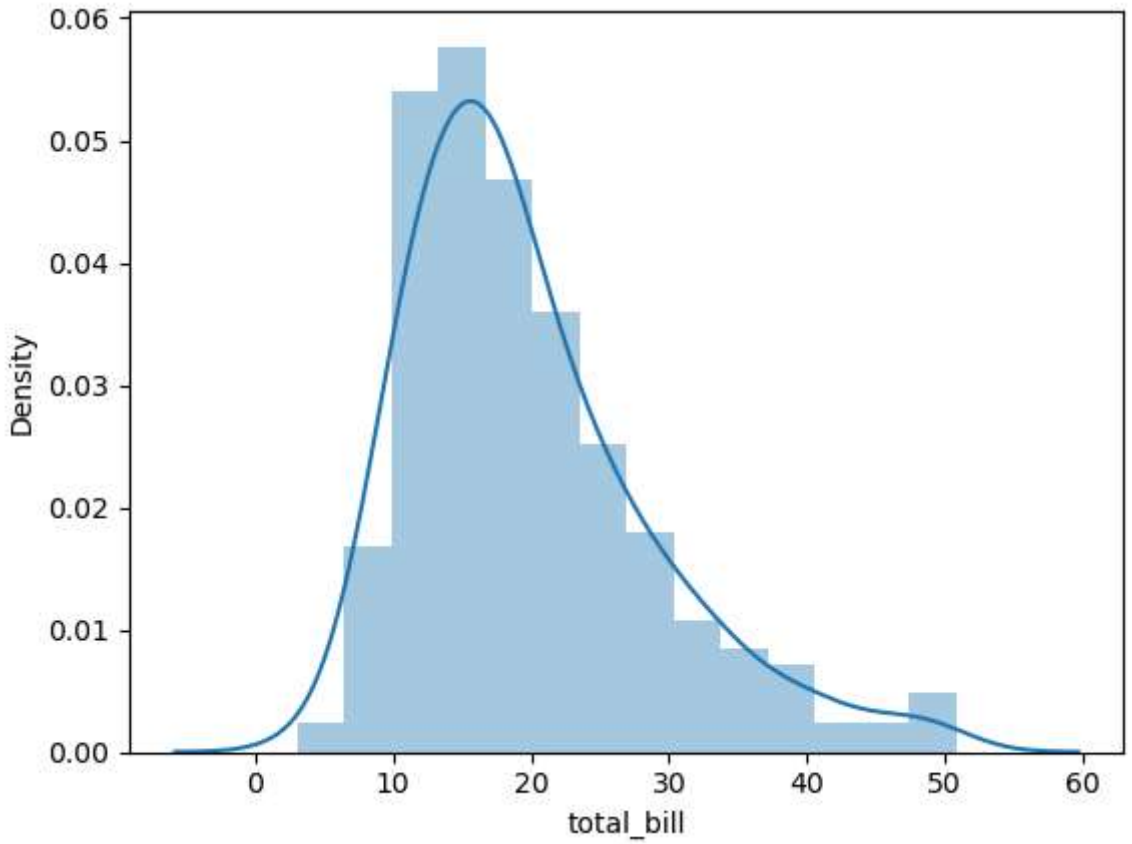
In [2]:
```
tips.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 244 entries, 0 to 243
Data columns (total 7 columns):
 #   Column      Non-Null Count  Dtype   
---  ------      --------------  -----   
 0   total_bill  244 non-null    float64 
 1   tip         244 non-null    float64 
 2   sex         244 non-null    category
 3   smoker      244 non-null    category
 4   day         244 non-null    category
 5   time        244 non-null    category
 6   size        244 non-null    int64   
dtypes: category(4), float64(2), int64(1)
memory usage: 7.4 KB
```

In [3]:
```
sns.distplot(tips['total_bill'])
```

```
C:\Users\UD SYSTEMS\AppData\Local\Temp\ipykernel_29484\4271412032.py:1: UserWarning:

`distplot` is a deprecated function and will be removed in seaborn v0.14.0.

Please adapt your code to use either `displot` (a figure-level function with
similar flexibility) or `histplot` (an axes-level function for histograms).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751

  sns.distplot(tips['total_bill'])
```

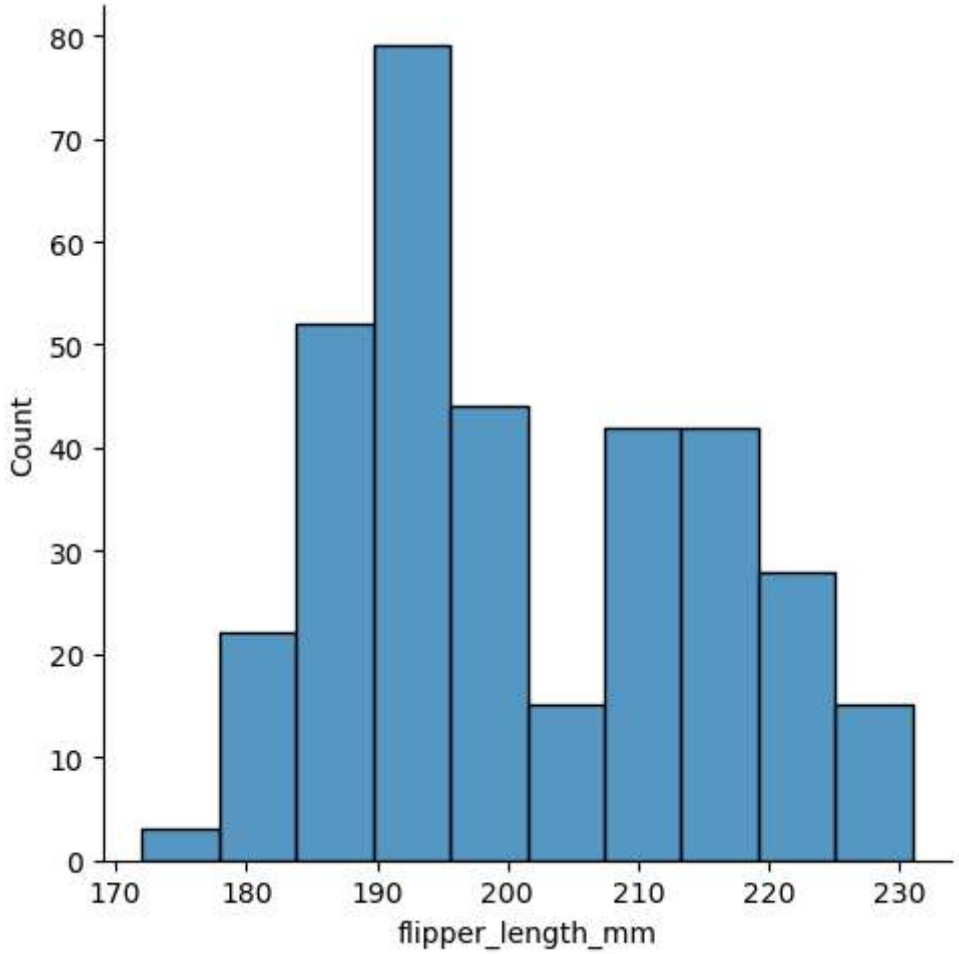
Out[3]: <Axes: xlabel='total_bill', ylabel='Density'>



In [4]:
```
penguins = sns.load_dataset("penguins")
sns.displot(data=penguins, x="flipper_length_mm")
```

```
C:\ProgramData\anaconda3\Lib\site-packages\seaborn\axisgrid.py:118: UserWarning: The figure layout has changed to tight
  self._figure.tight_layout(*args, **kwargs)
```

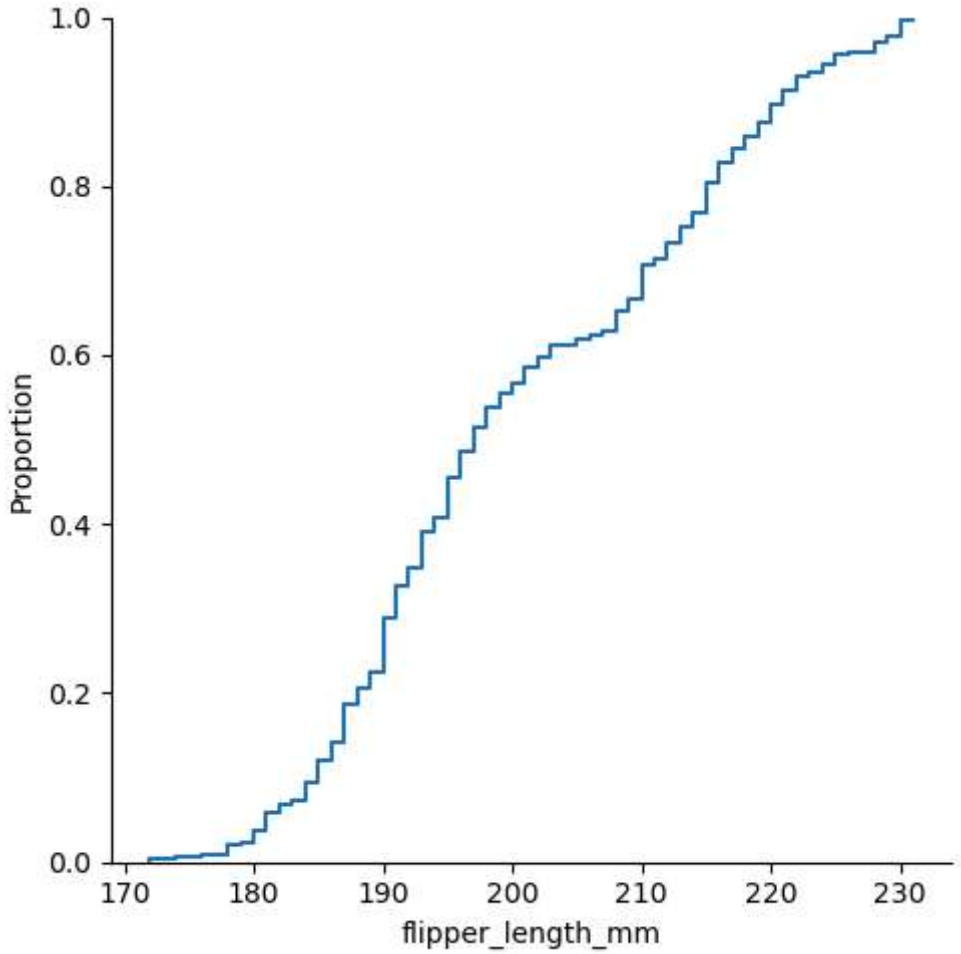
Out[4]:
```
<seaborn.axisgrid.FacetGrid at 0x20505457f90>
```



In [5]:
```
sns.displot(data=penguins, x="flipper_length_mm", kind="ecdf")
```

```
C:\ProgramData\anaconda3\Lib\site-packages\seaborn\axisgrid.py:118: UserWarning: The figure layout has changed to tight
  self._figure.tight_layout(*args, **kwargs)
```

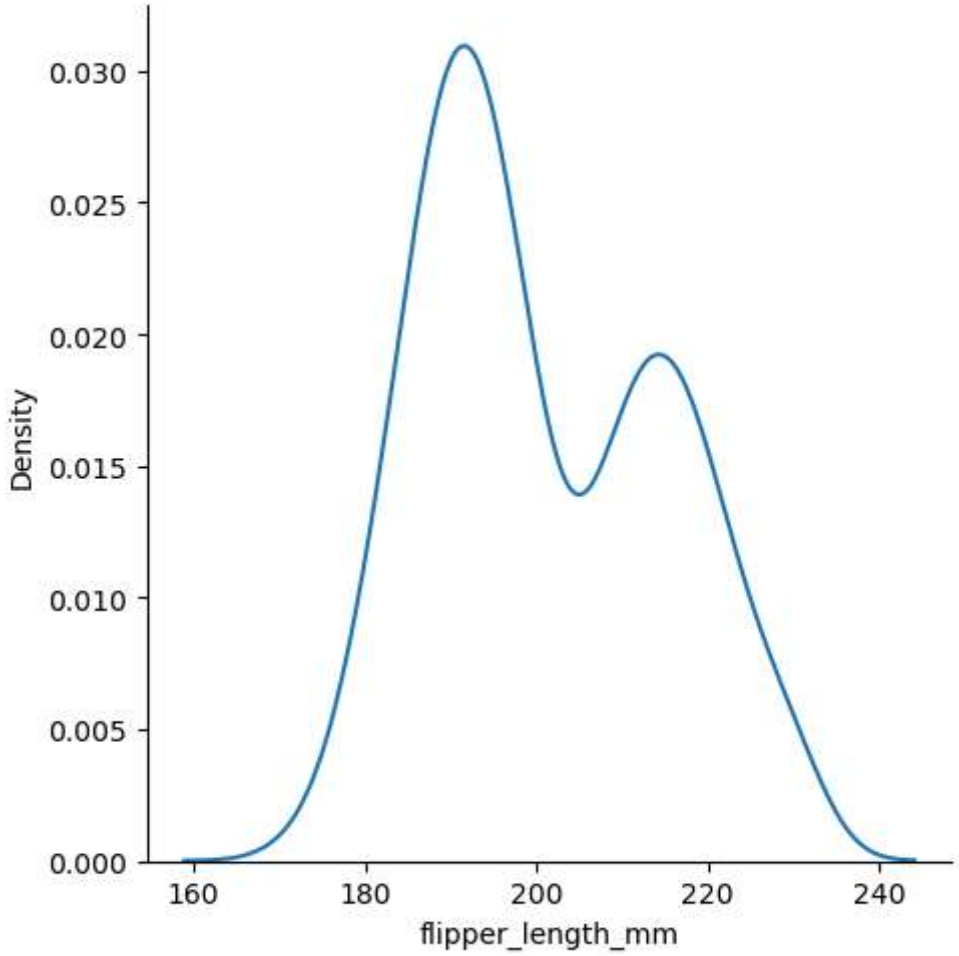
Out[5]:
```
<seaborn.axisgrid.FacetGrid at 0x20505ffa750>
```



In [6]:
```
sns.displot(data=penguins, x="flipper_length_mm", kind="kde")
```

```
C:\ProgramData\anaconda3\Lib\site-packages\seaborn\axisgrid.py:118: UserWarning: The figure layout has changed to tight
  self._figure.tight_layout(*args, **kwargs)
```

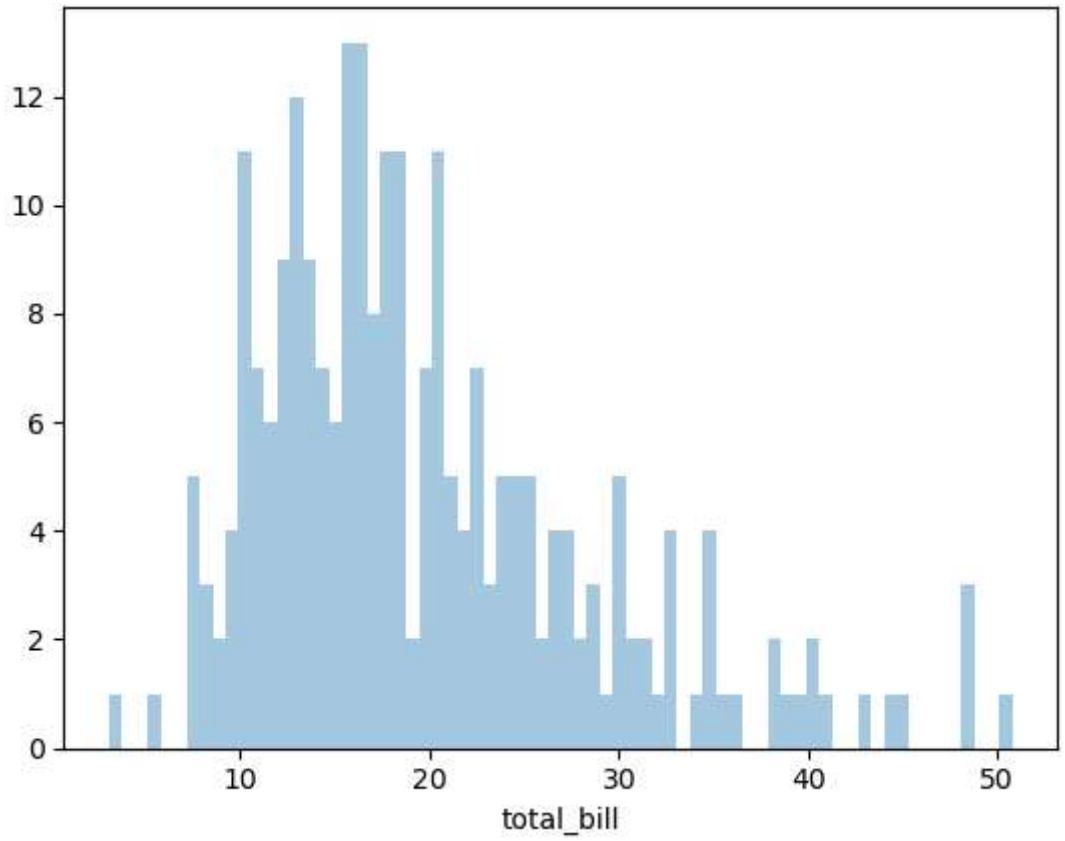
Out[6]:
```
<seaborn.axisgrid.FacetGrid at 0x205060e8750>
```



In [10]:
```
#histogram of where your total bill stands,
sns.distplot(tips['total_bill'],kde=False,bins=70)
#use bins=30 or 100
#Usage of bins shows how many samples you are plotting on the screen...
#Distribution plot, essentially is a histogram...
```

```
C:\Users\UD SYSTEMS\AppData\Local\Temp\ipykernel_29484\2325036420.py:2: UserWarning:

`distplot` is a deprecated function and will be removed in seaborn v0.14.0.

Please adapt your code to use either `displot` (a figure-level function with
similar flexibility) or `histplot` (an axes-level function for histograms).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751

  sns.distplot(tips['total_bill'],kde=False,bins=70)
```

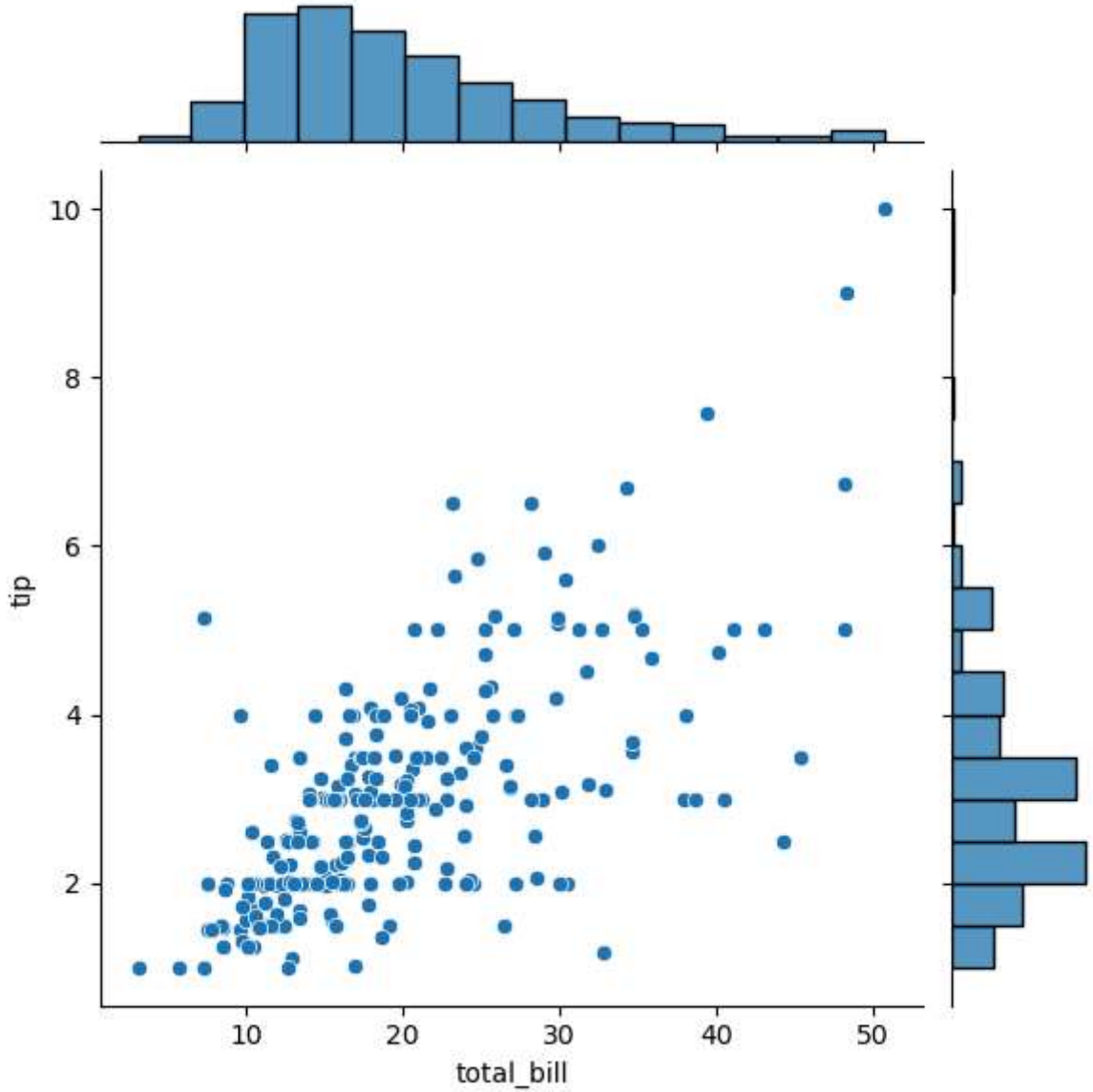
Out[10]: <Axes: xlabel='total_bill'>



In [11]:
```
# Joint PlotDistribution plot on bivariant data
#pass x variable and y variable and dataset as tips
#x and y comparision, distribution of totalbill over tip
```

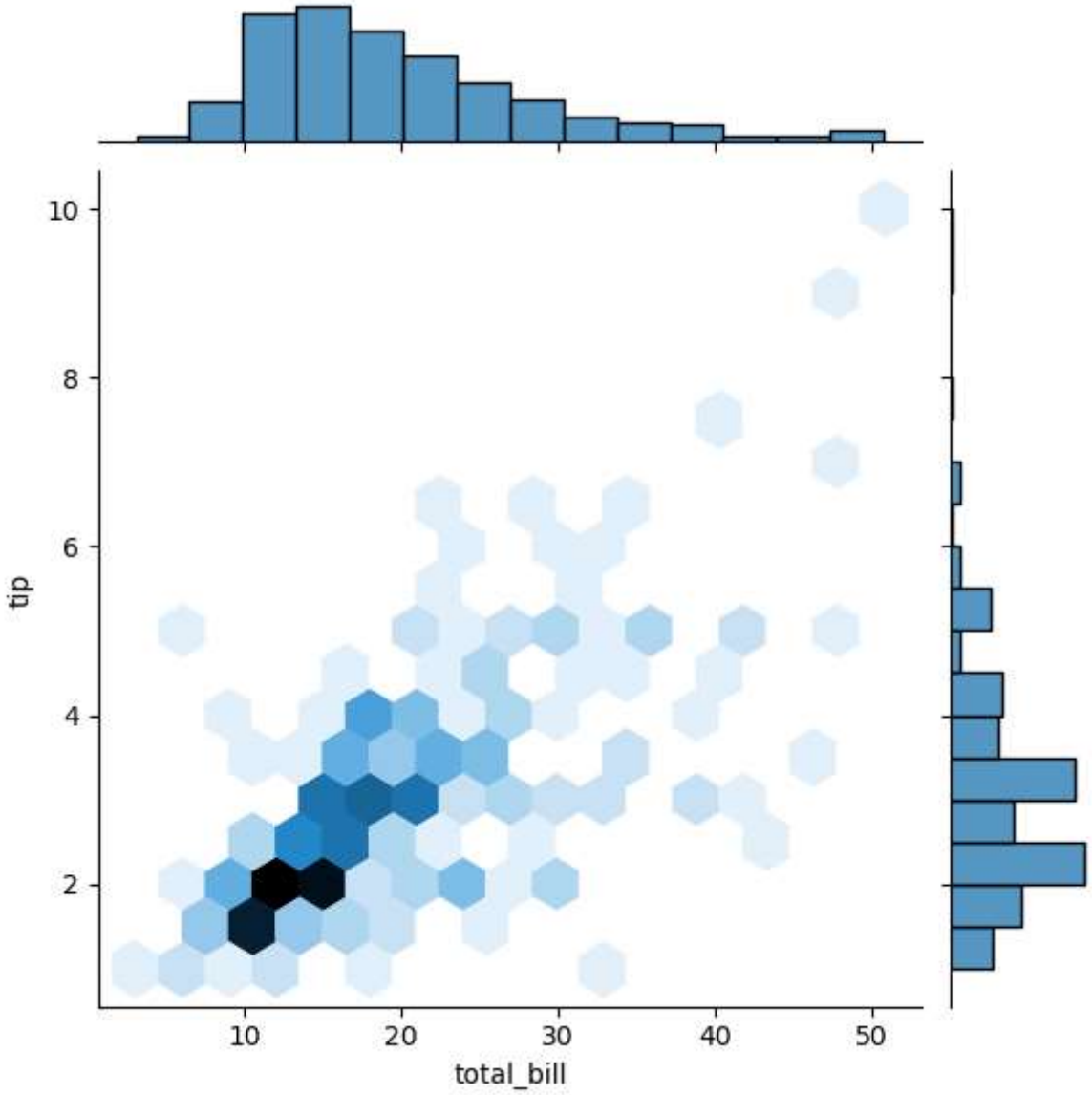
```
sns.jointplot(x='total_bill', y = 'tip', data=tips)
#kind plot will provide you different kind of scatter plot
#by default it is circles, hex provides hexagon
#kind = reg, provides regression values
```

Out[11]: <seaborn.axisgrid.JointGrid at 0x20506327f10>



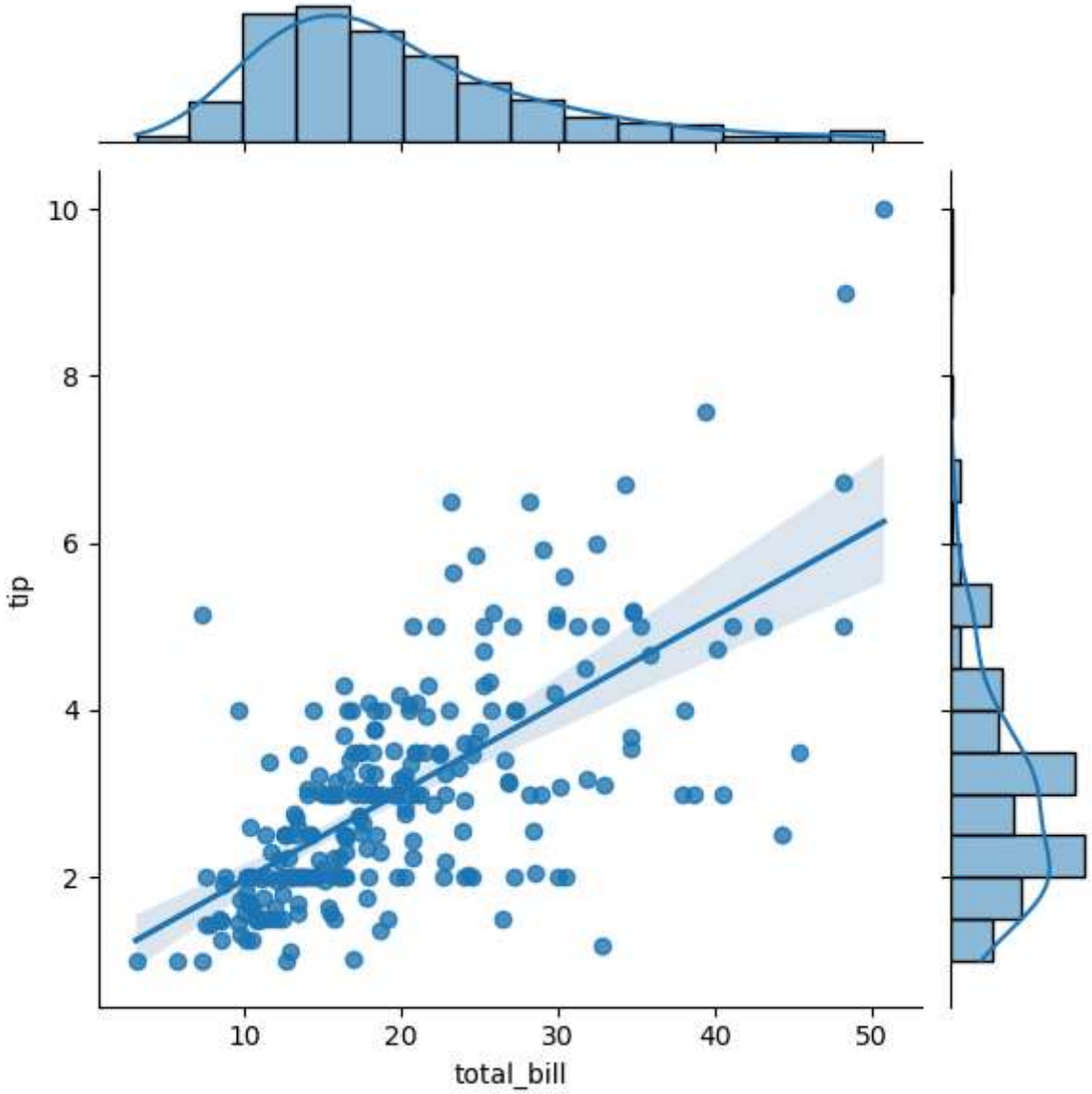
In [12]:
```
#additional parameter - what is happening in scatter
#hex=> hexagon distribution, darker and lighter
sns.jointplot(x='total_bill', y = 'tip', data=tips, kind='hex')
```

Out[12]:
```
<seaborn.axisgrid.JointGrid at 0x20507705c10>
```



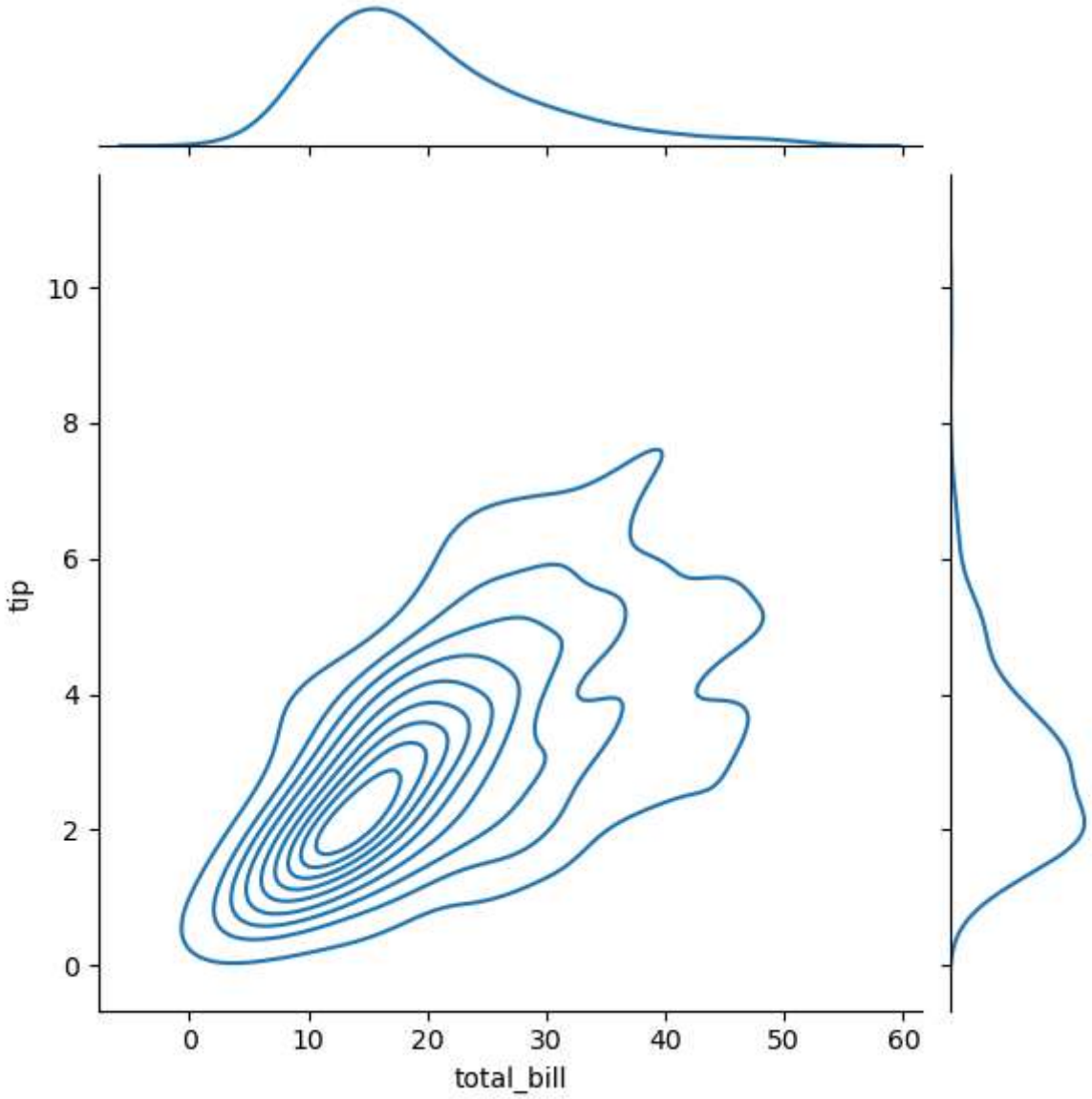
In [13]:
```
#kind =reg, which is regression

sns.jointplot(x='total_bill', y = 'tip', data=tips, kind='reg')
```

Out[13]:
```
<seaborn.axisgrid.JointGrid at 0x20507a7b290>
```



In [14]:
```
#kde provides 2 dimensional, where density matches the most
sns.jointplot(x='total_bill', y = 'tip', data=tips, kind='kde')
```

Out[14]:
```
<seaborn.axisgrid.JointGrid at 0x20507a17710>
```

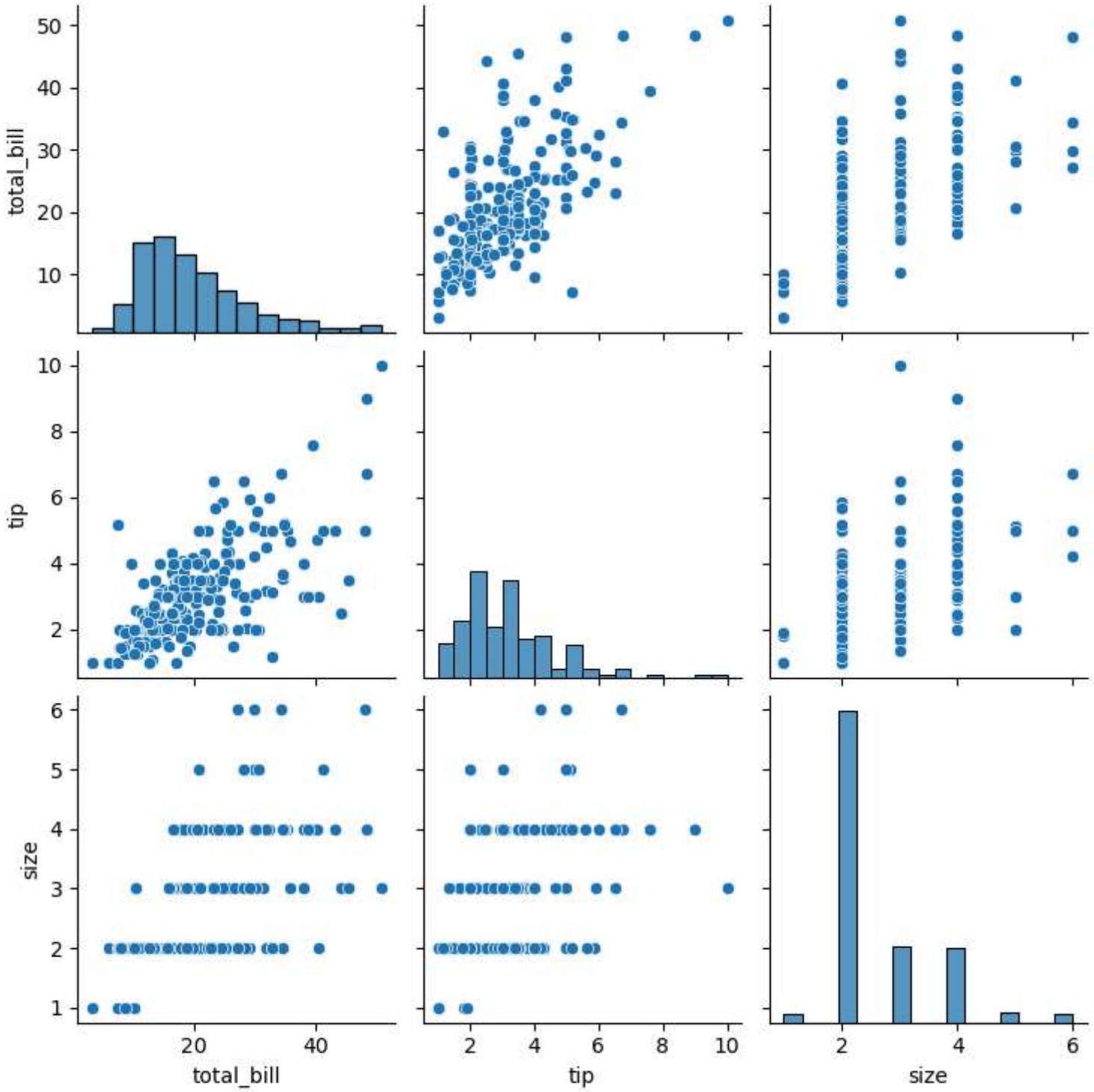


In [15]:
```
#pairwise relationship across all the numeric colums
#for every single possible combinations of numeric columns
```

```
#larger dataframe, longer the time it takes
#you can quickly visualize data
sns.pairplot(tips)
#next step you shall see the hue argument => catogorical
```

```
C:\ProgramData\anaconda3\Lib\site-packages\seaborn\axisgrid.py:118: UserWarning: The figure layout has changed to tight
  self._figure.tight_layout(*args, **kwargs)
```

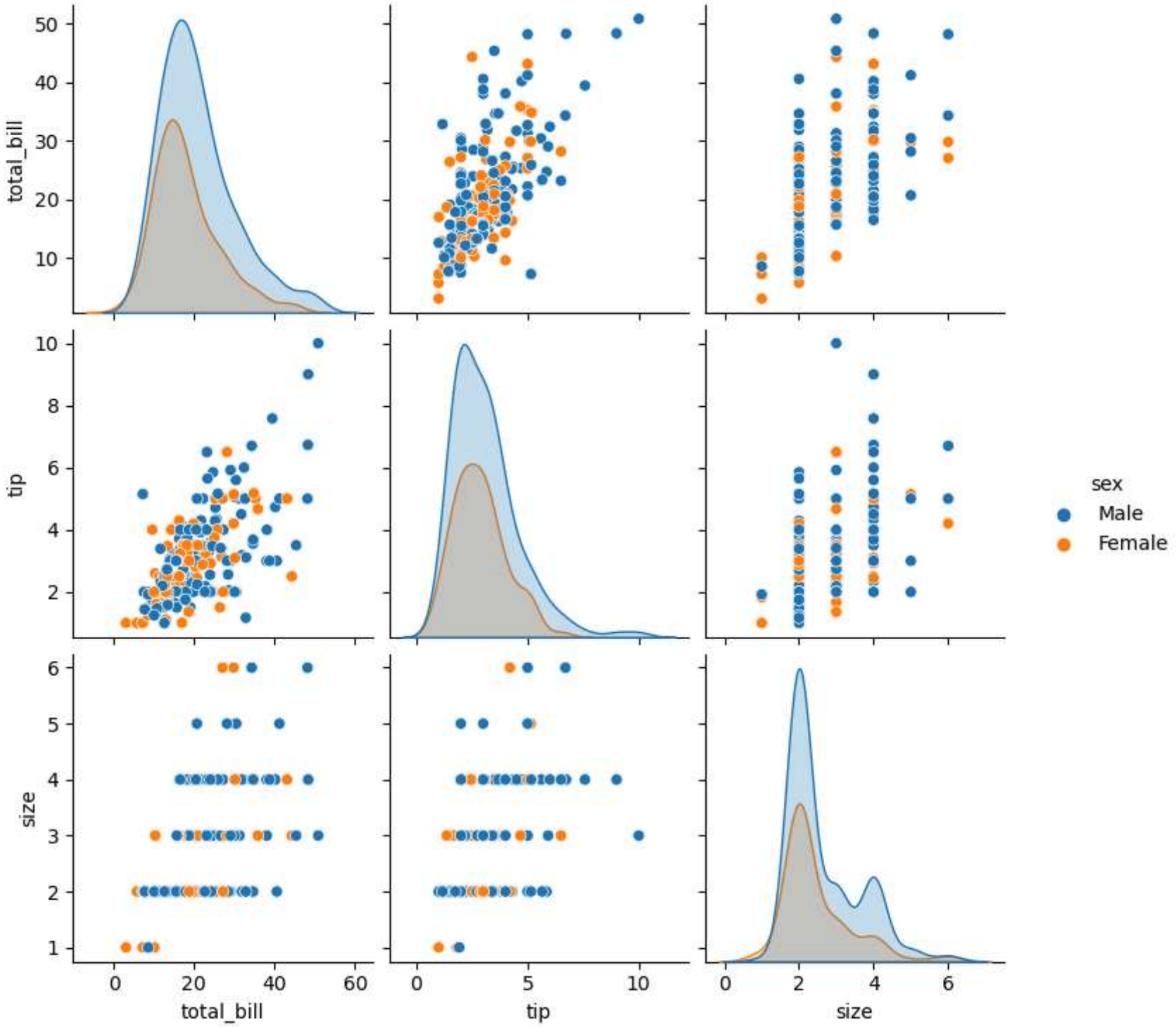
Out[15]: <seaborn.axisgrid.PairGrid at 0x2050833c950>


total_bill
tip
size
total_bill
tip
size

In [16]:
```
#sex is a catogorical colum
#it shall color based on sex
#green point => female
#ble point => male
sns.pairplot(tips, hue='sex')
```

```
C:\ProgramData\anaconda3\Lib\site-packages\seaborn\axisgrid.py:118: UserWarning: The figure layout has changed to tight
  self._figure.tight_layout(*args, **kwargs)
```

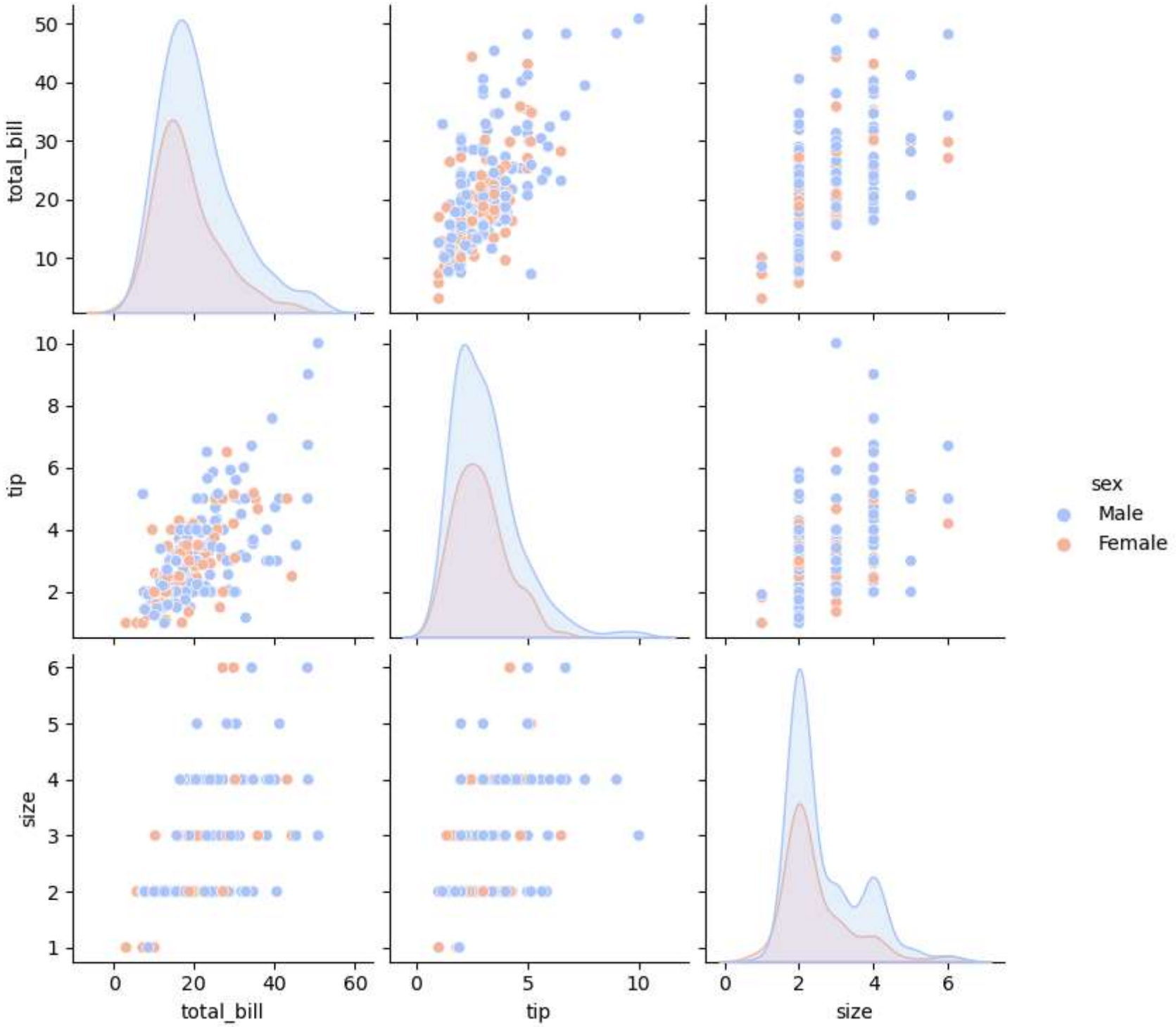
Out[16]:
```
<seaborn.axisgrid.PairGrid at 0x2050633bb90>
```


total_bill
tip
size
sex
Male
Female

In [17]:
```
#palette atrribute provides the color
sns.pairplot(tips, hue='sex', palette='coolwarm')
```

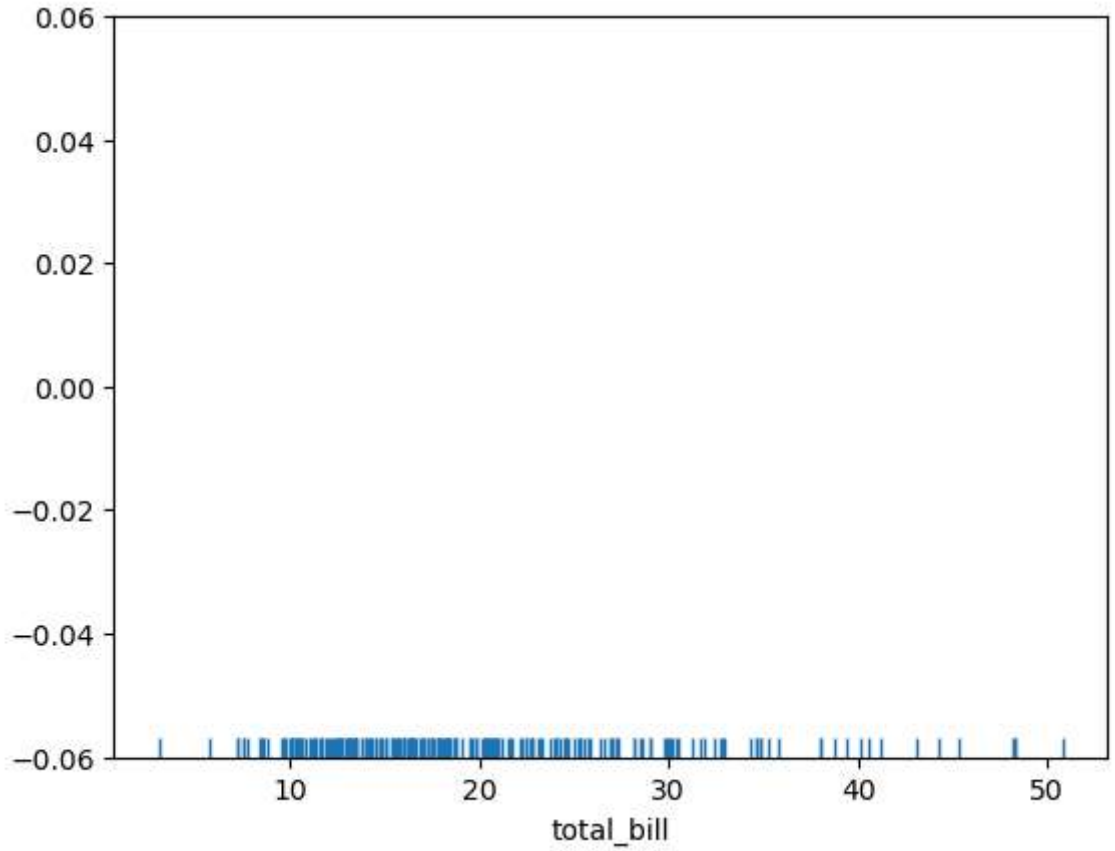
```
C:\ProgramData\anaconda3\Lib\site-packages\seaborn\axisgrid.py:118: UserWarning: The figure layout has changed to tight
  self._figure.tight_layout(*args, **kwargs)
```

Out[17]:
```
<seaborn.axisgrid.PairGrid at 0x2050aa5c9d0>
```


total_bill
tip
size
sex
Male
Female

In [18]:
```
sns.rugplot(tips['total_bill'])
#instead of histogram, that what you see down and rug plot
#10 to 11 , there is 45 dashes
#that is the relationship between, rugplot and histogram
```

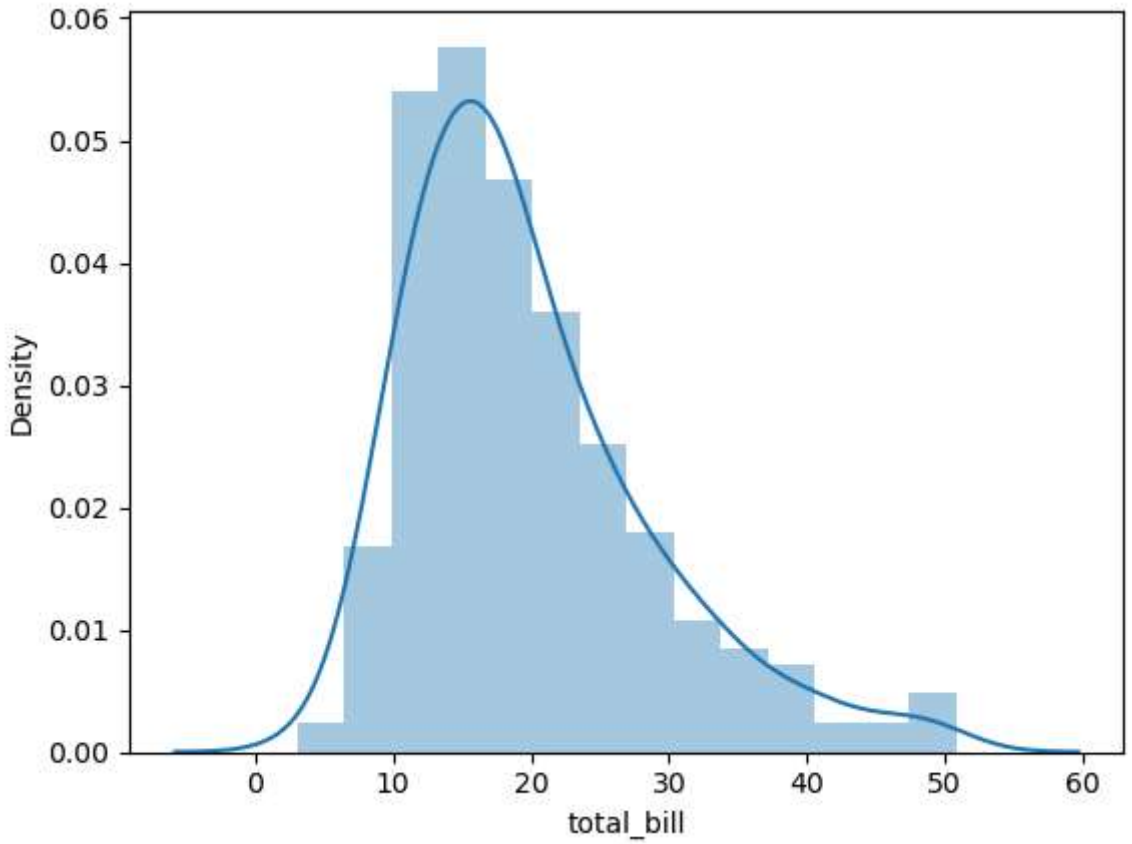
Out[18]:
```
<Axes: xlabel='total_bill'>
```



In [19]:
```
sns.distplot(tips['total_bill'])
#KDE => kERNEL Density estimation
#distribution of scores in test or age or height=> Realtime
```

```
C:\Users\UD SYSTEMS\AppData\Local\Temp\ipykernel_29484\1731844831.py:1: UserWarning:

`distplot` is a deprecated function and will be removed in seaborn v0.14.0.

Please adapt your code to use either `displot` (a figure-level function with
similar flexibility) or `histplot` (an axes-level function for histograms).

For a guide to updating your code to use the new functions, please see
https://gist.github.com/mwaskom/de44147ed2974457ad6372750bbe5751

  sns.distplot(tips['total_bill'])
```

Out[19]: <Axes: xlabel='total_bill', ylabel='Density'>



In [21]:
```
tips.to_excel("D:\\bizschoolpython\\tips.xlsx")
```

In [22]:
```
import pandas as pd
df=pd.read_excel("D:\\bizschoolpython\\tips.xlsx")
```

```
df
```

Out[22]:

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

244 rows × 8 columns

In [ ]: