In [1]:
```
#General
import numpy as np

import pandas as pd

from pandas import Series,DataFrame

from numpy.random import randn

#Stats
from scipy import stats

import seaborn as sns

#Plots

import matplotlib as mpl

import matplotlib.pyplot as plt

%matplotlib inline
```

In [2]:
```
tips=sns.load_dataset('tips')#to load dataset in Seaborn
```

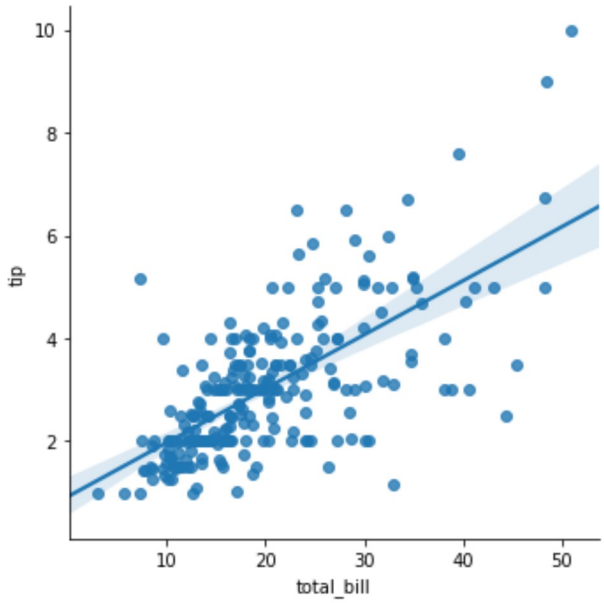
In [3]:
```
tips.head()
```

Out[3]:

	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

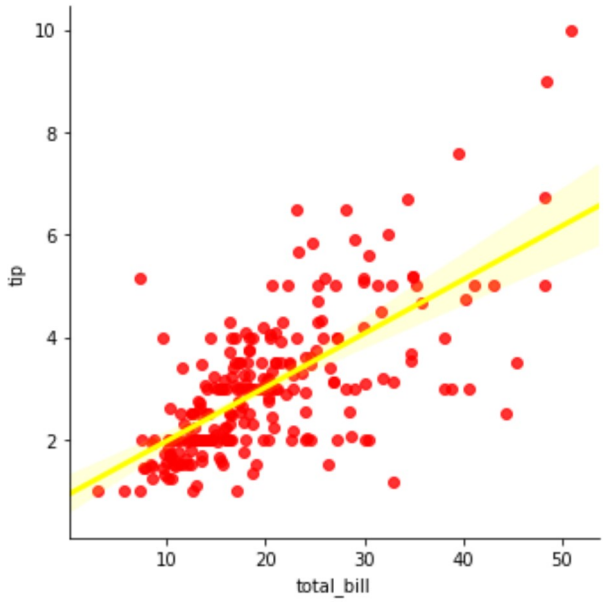
In [5]:
```
sns.lmplot('total_bill','tip',tips)#lmplot
```

Out[5]: <seaborn.axisgrid.FacetGrid at 0x26a46b12080>



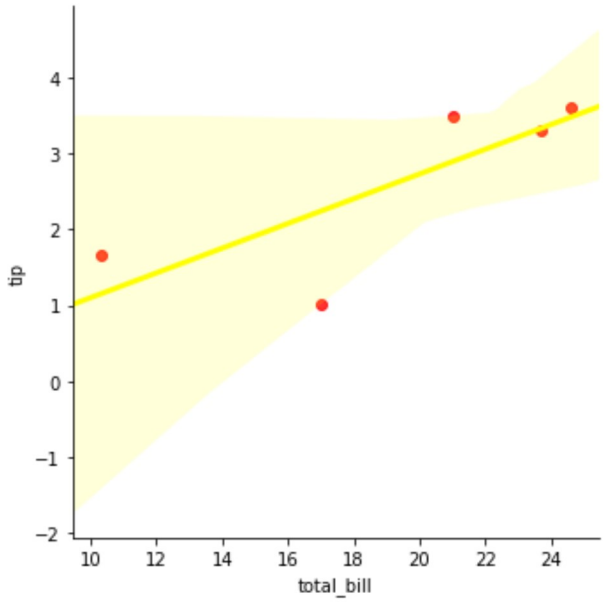
In [10]:
```
sns.lmplot('total_bill','tip',tips,
           scatter_kws={'marker':'*','color':'red'},
           line_kws={'linewidth':3,'color':'yellow'}
          )
#changing properties of individual graph within lmplot i.e. here scatter and line.
```

Out[10]: <seaborn.axisgrid.FacetGrid at 0x26a47f32a20>



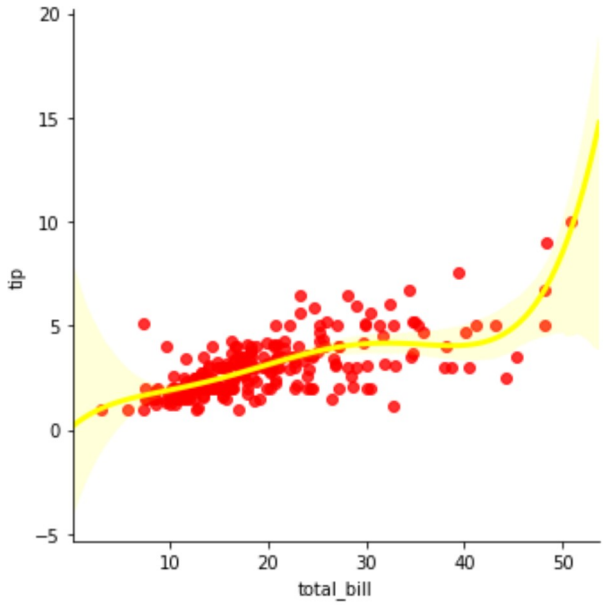
In [11]:
```
sns.lmplot('total_bill','tip',tips.head(),
           scatter_kws={'marker':'*','color':'red'},
           line_kws={'linewidth':3,'color':'yellow'}
          )
```

Out[11]: <seaborn.axisgrid.FacetGrid at 0x26a46be9898>



In [14]:
```
sns.lmplot('total_bill','tip',tips,order=5,
           scatter_kws={'marker':'*','color':'red'},
           line_kws={'linewidth':3,'color':'yellow'}
          )#Changing the order
```

Out[14]: <seaborn.axisgrid.FacetGrid at 0x26a480eccf8>



In [15]:
```
tips.head()
```

Out[15]:

	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 [17]:
```
tips['tip%']=100*(tips['tip']/tips['total_bill'])
```

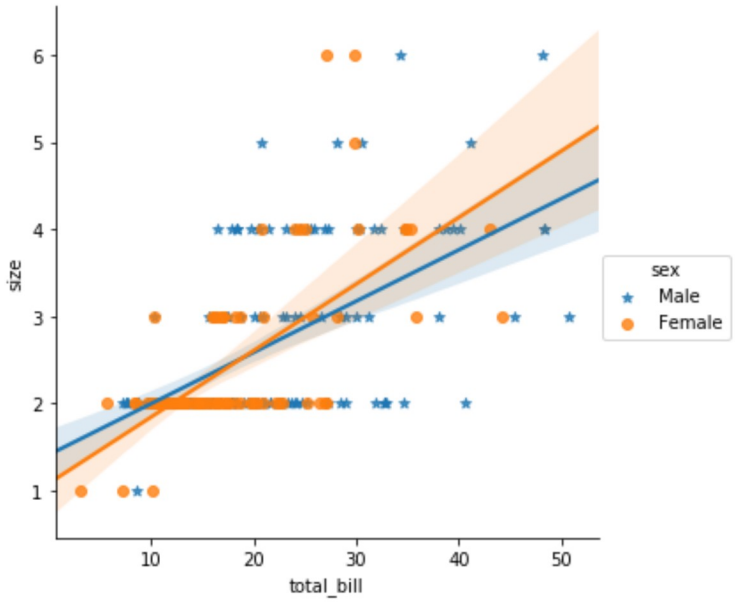
In [18]:
```
tips.head()
```

Out[18]:

	total_bill	tip	sex	smoker	day	time	size	tip%
0	16.99	1.01	Female	No	Sun	Dinner	2	5.944673
1	10.34	1.66	Male	No	Sun	Dinner	3	16.054159
2	21.01	3.50	Male	No	Sun	Dinner	3	16.658734
3	23.68	3.31	Male	No	Sun	Dinner	2	13.978041
4	24.59	3.61	Female	No	Sun	Dinner	4	14.680765

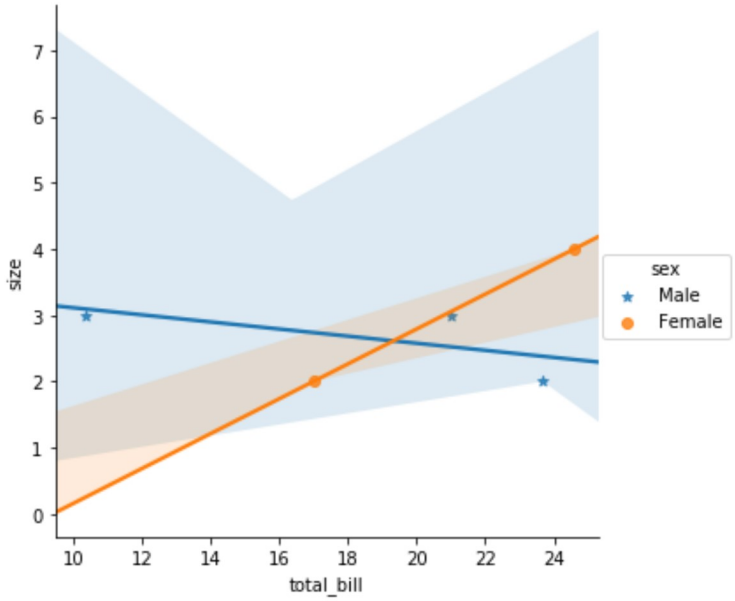
In [22]:
```
sns.lmplot('total_bill','size',tips,hue='sex',markers=['*','o'])
#hue works as plotting data "by" which here is column sex
```

Out[22]:
```
<seaborn.axisgrid.FacetGrid at 0x26a49407f28>
```



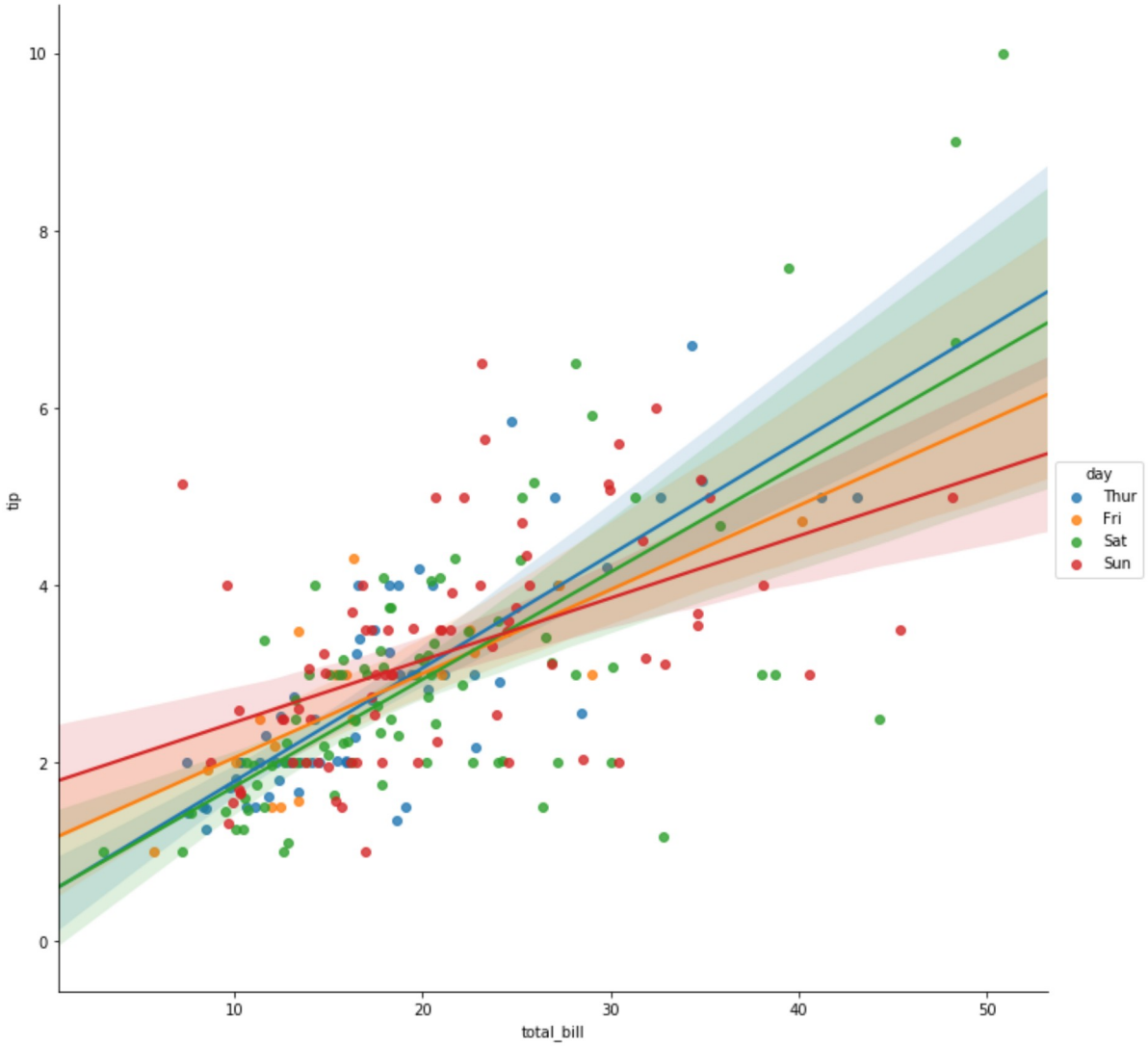
In [23]:
```
sns.lmplot('total_bill','size',tips.head(),hue='sex',markers=['*','o'])
#hue works as plotting data "by" which here is column sex
```

Out[23]: <seaborn.axisgrid.FacetGrid at 0x26a49480b70>



In [29]:
```
sns.lmplot('total_bill','tip',tips,hue='day',size=10,legend_out=True)
#expaning the graph using size parameter
```

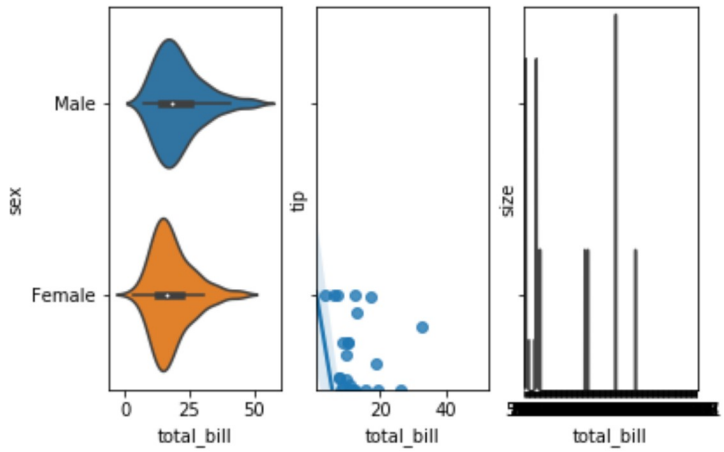
Out[29]: <seaborn.axisgrid.FacetGrid at 0x26a49658d30>



In [54]:
```
fig, (axis1,axis2,axis3) = plt.subplots(1,3,sharey=True)

sns.violinplot(tips['total_bill'],tips['sex'],ax=axis1)
sns.regplot('total_bill','tip',tips,ax=axis2)
sns.violinplot(tips['total_bill'],tips['size'],ax=axis3)
#Creating multiple graphs with the same frame.
#Here important point to note down is defining how many graphs along rows and colum
ns
#in this example 3 graphs along 1 line, hence 1,3 (1 rows,3 columns)
```

Out[54]: <matplotlib.axes._subplots.AxesSubplot at 0x26a4c605f28>

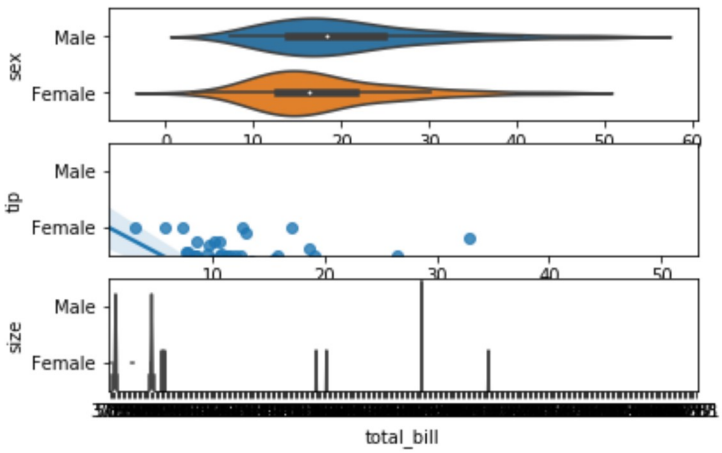


In [55]:
```
fig, (axis1,axis2,axis3) = plt.subplots(3,1,sharey=True)

sns.violinplot(tips['total_bill'],tips['sex'],ax=axis1)
sns.regplot('total_bill','tip',tips,ax=axis2)
sns.violinplot(tips['total_bill'],tips['size'],ax=axis3)

#Creating multiple graphs with the same frame.
#Here important point to note down is defining how many graphs along rows and colum
ns
#in this example 1 graphs along 3 line, hence 3,1 (3 rows,1 columns)
```

Out[55]: <matplotlib.axes._subplots.AxesSubplot at 0x26a4cbbb8d0>



In [46]:
```
tips.head()
```

Out[46]:

	total_bill	tip	sex	smoker	day	time	size	tip%
0	16.99	1.01	Female	No	Sun	Dinner	2	5.944673
1	10.34	1.66	Male	No	Sun	Dinner	3	16.054159
2	21.01	3.50	Male	No	Sun	Dinner	3	16.658734
3	23.68	3.31	Male	No	Sun	Dinner	2	13.978041
4	24.59	3.61	Female	No	Sun	Dinner	4	14.680765