Draw chart using 'Seaborn' library

In [1]:
```
import seaborn as sns
```

In [2]:
```
tips = sns.load_dataset('tips')
```

In [3]:
```
tips
```

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
...	...	...	...	...	...	...	...
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

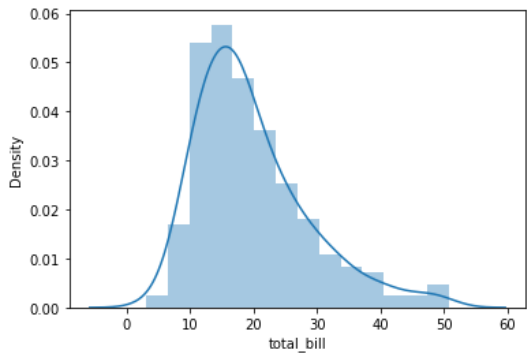
244 rows × 7 columns

distplot

In [4]:
```
sns.distplot(tips['total_bill'])
```

```
/Users/jakapongtosunpul/opt/anaconda3/lib/python3.9/site-packages/seaborn/distributions.py:2619: FutureWarning: `distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).
  warnings.warn(msg, FutureWarning)
```

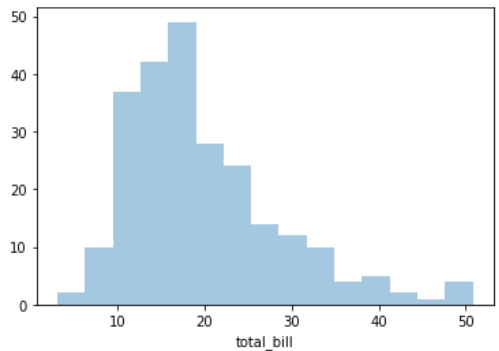
Out[4]:
```
<AxesSubplot:xlabel='total_bill', ylabel='Density'>
```



In [5]:
```
sns.distplot(tips['total_bill'],kde=False,bins=15)
```

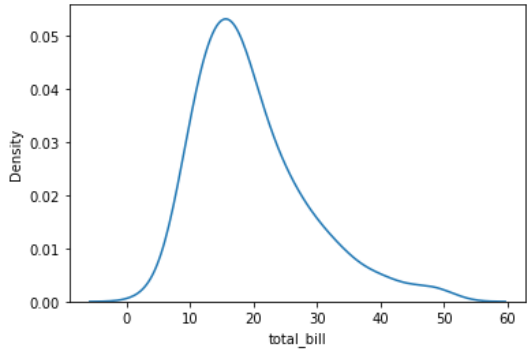
```
/Users/jakapongtosunpul/opt/anaconda3/lib/python3.9/site-packages/seaborn/distributions.py:2619: FutureWarning: `distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).
  warnings.warn(msg, FutureWarning)
```

Out[5]:
```
<AxesSubplot:xlabel='total_bill'>
```



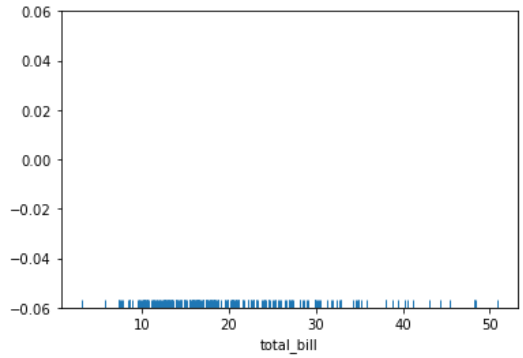
In [6]:
```
sns.kdeplot(tips['total_bill'])
```

Out[6]:
```
<AxesSubplot:xlabel='total_bill', ylabel='Density'>
```



In [7]:
```
sns.rugplot(tips['total_bill'])
```

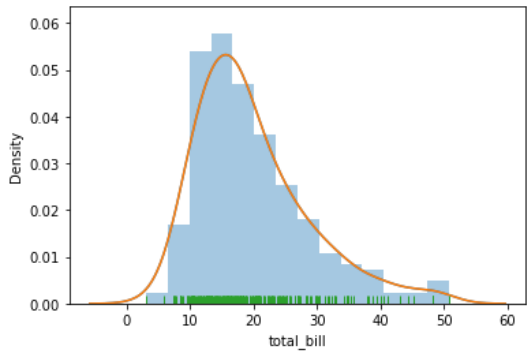
Out[7]:
```
<AxesSubplot:xlabel='total_bill'>
```



In [8]:
```
sns.distplot(tips['total_bill'])
sns.kdeplot(tips['total_bill'])
sns.rugplot(tips['total_bill'])
```

```
/Users/jakapongtosunpul/opt/anaconda3/lib/python3.9/site-packages/seaborn/distributions.py:2619: FutureWarning: `distpl
ot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a
figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).
  warnings.warn(msg, FutureWarning)
```

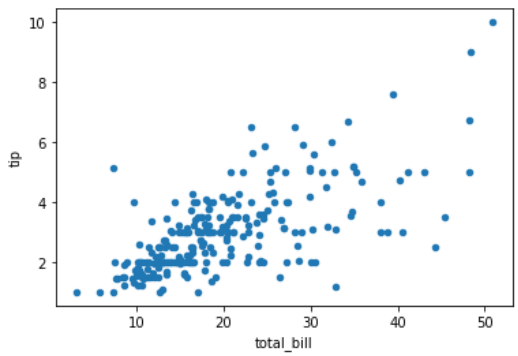
Out[8]:
```
<AxesSubplot:xlabel='total_bill', ylabel='Density'>
```



jointplot

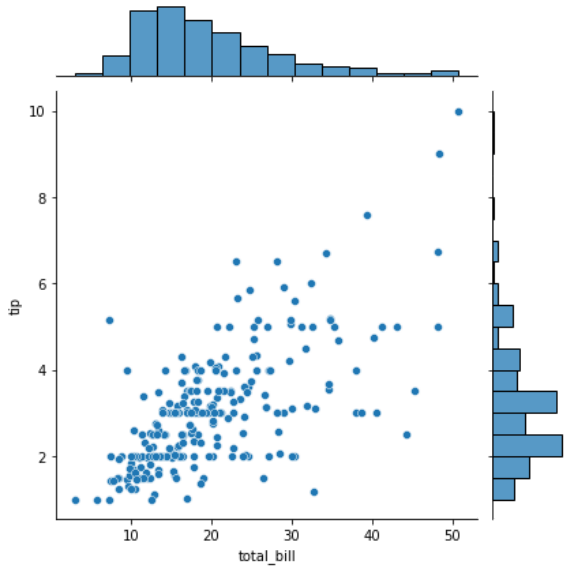
In [9]:
```
tips.plot.scatter(x='total_bill',y='tip')
```

Out[9]:
```
<AxesSubplot:xlabel='total_bill', ylabel='tip'>
```



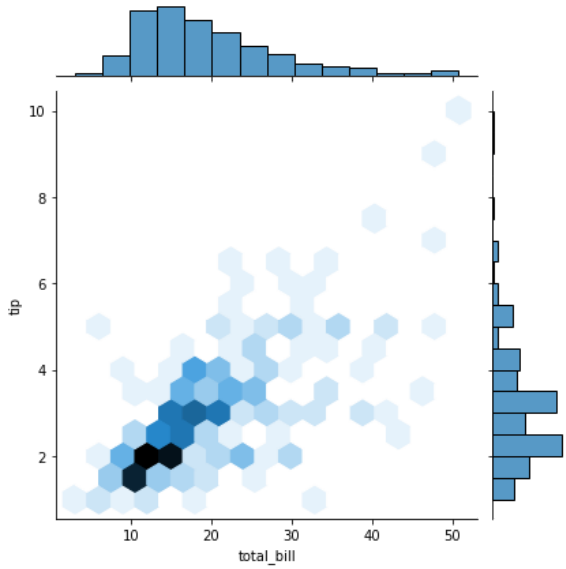
In [10]:
```
sns.jointplot(x='total_bill',y='tip',data=tips,kind='scatter')
```

Out[10]:
```
<seaborn.axisgrid.JointGrid at 0x7fecc06e24f0>
```



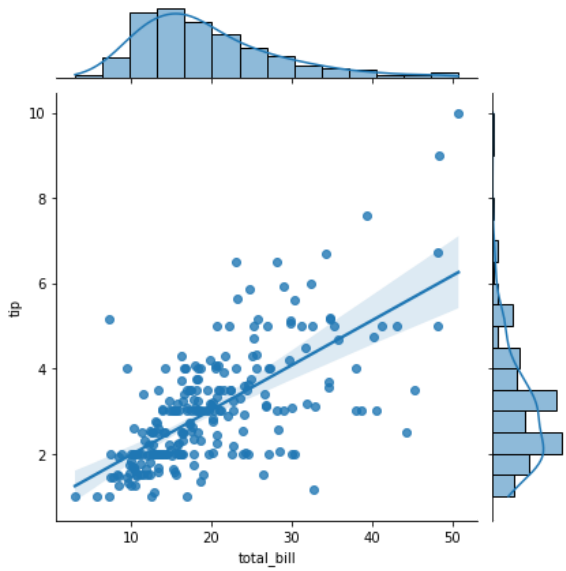
In [11]:
```
sns.jointplot(x='total_bill',y='tip',data=tips,kind='hex')
```

Out[11]:
```
<seaborn.axisgrid.JointGrid at 0x7fecc08868e0>
```



In [12]:
```
sns.jointplot(x='total_bill',y='tip',data=tips,kind='reg')
```

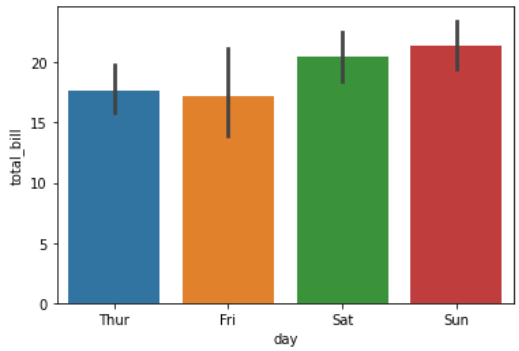
Out[12]:
```
<seaborn.axisgrid.JointGrid at 0x7fecc0b419a0>
```



barplot

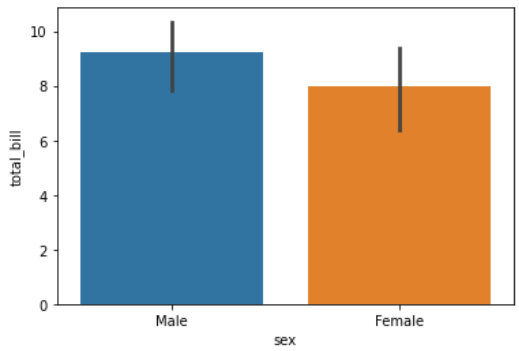
In [13]:
```
sns.barplot(x='day',y='total_bill',data=tips)
```

Out[13]: <AxesSubplot:xlabel='day', ylabel='total_bill'>



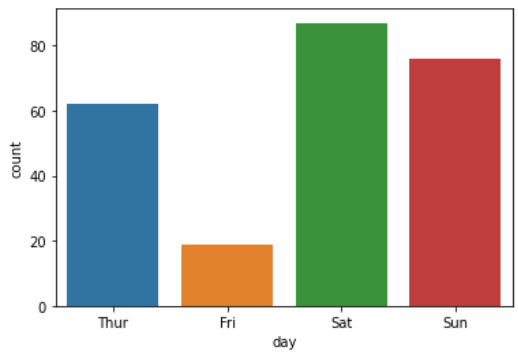
In [14]:
```
import numpy as np
sns.barplot(x='sex',y='total_bill',data=tips,estimator=np.std)
```

Out[14]: <AxesSubplot:xlabel='sex', ylabel='total_bill'>



In [15]:
```
sns.countplot(x='day',data=tips)
```

Out[15]: <AxesSubplot:xlabel='day', ylabel='count'>



pairplot

In [16]:
```
tips
```

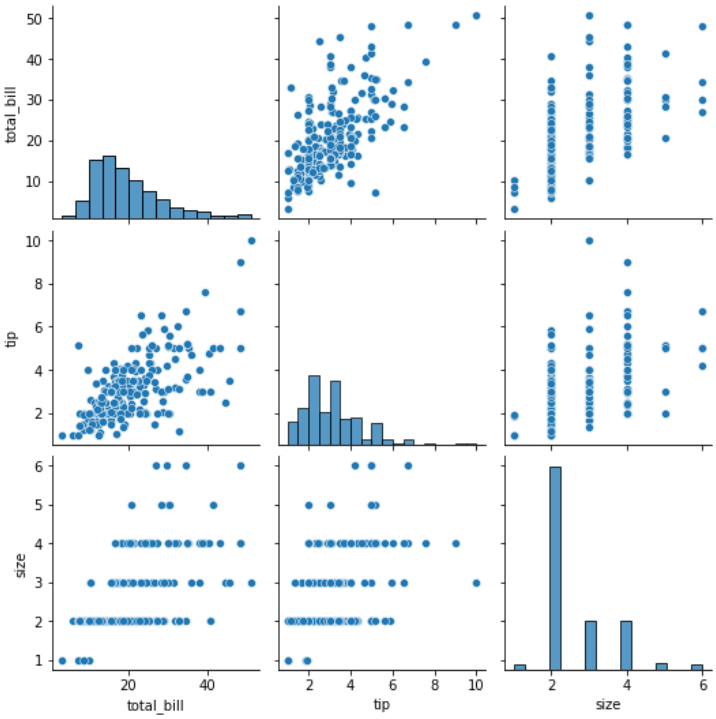
Out[16]:

	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 × 7 columns

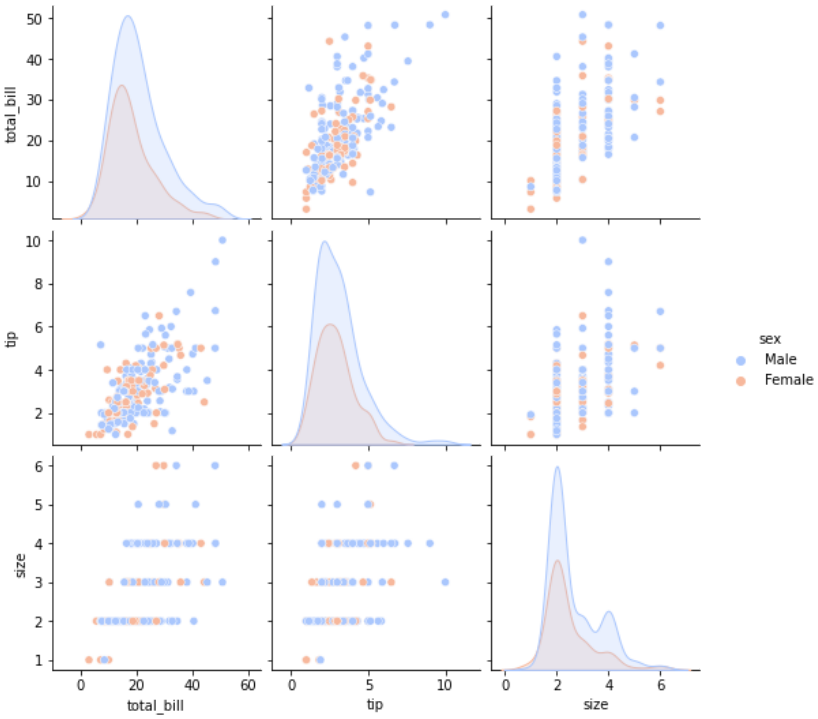
In [17]:
```
sns.pairplot(tips)
```

Out[17]: <seaborn.axisgrid.PairGrid at 0x7fecc1211700>



In [18]:
```
sns.pairplot(tips,hue='sex',palette='coolwarm')
```

Out[18]:
```
<seaborn.axisgrid.PairGrid at 0x7fecc177f1f0>
```



boxplot

In [19]:
```
tips
```

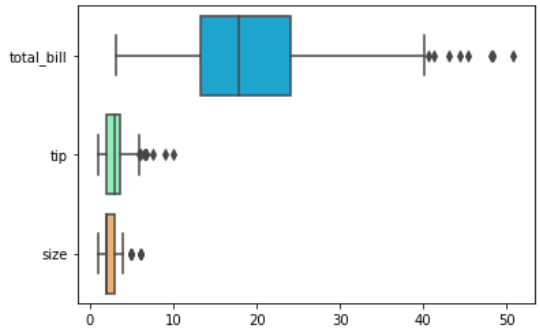
Out[19]:

	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 × 7 columns

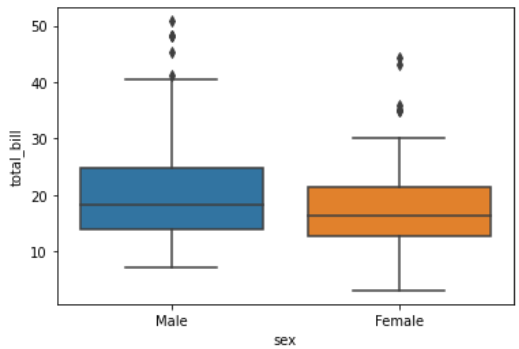
In [20]:
```
sns.boxplot(data=tips,palette='rainbow',orient='h')
```

Out[20]:
```
<AxesSubplot:>
```



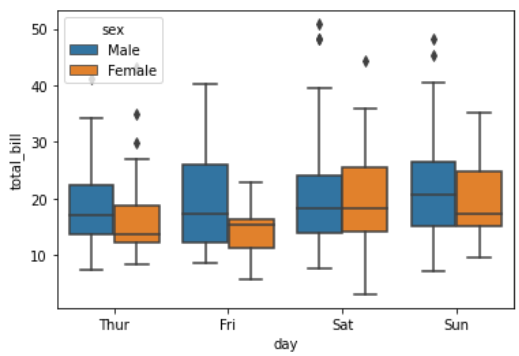
In [21]:
```
sns.boxplot(x="sex", y="total_bill", data=tips)
```

Out[21]:
```
<AxesSubplot:xlabel='sex', ylabel='total_bill'>
```



In [22]:
```
sns.boxplot(x="day", y="total_bill", hue="sex",data=tips)
```

Out[22]:
```
<AxesSubplot:xlabel='day', ylabel='total_bill'>
```



Heatmap

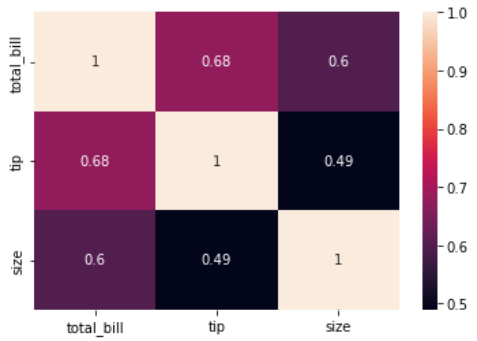
In [23]:
```
# calculate correlation
tips.corr()
```

Out[23]:

	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

In [24]:
```
sns.heatmap(tips.corr(),annot=True)
```

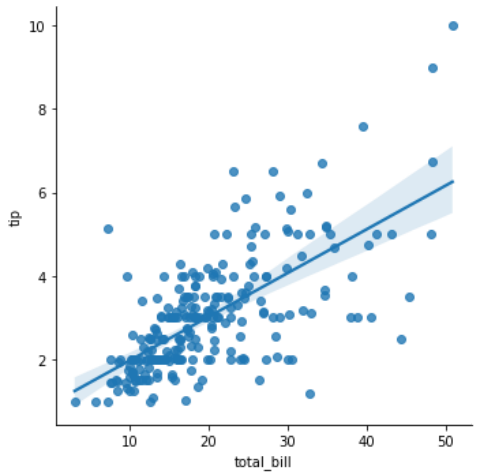
Out[24]:
```
<AxesSubplot:>
```



lmplot

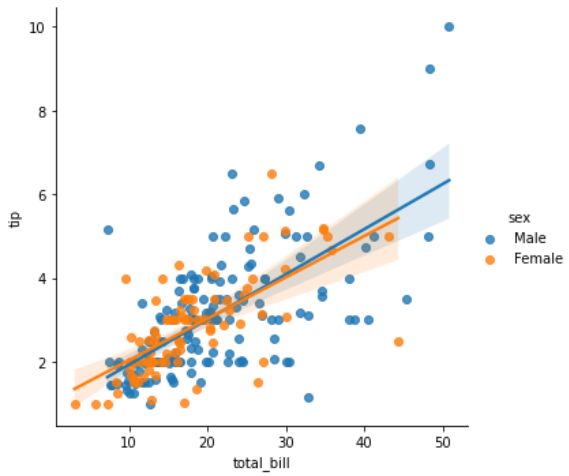
In [25]:
```
sns.lmplot(x='total_bill',y='tip',data=tips)
```

Out[25]:
```
<seaborn.axisgrid.FacetGrid at 0x7fecc2ec3970>
```



In [26]:
```
sns.lmplot(x='total_bill',y='tip',data=tips,hue='sex')
```

Out[26]:
```
<seaborn.axisgrid.FacetGrid at 0x7fecc2cce610>
```



flights data set

In [27]:
```
flights = sns.load_dataset('flights')
```

In [28]:
```
pvflights = flights.pivot_table(values='passengers',index='month',columns='year')
```

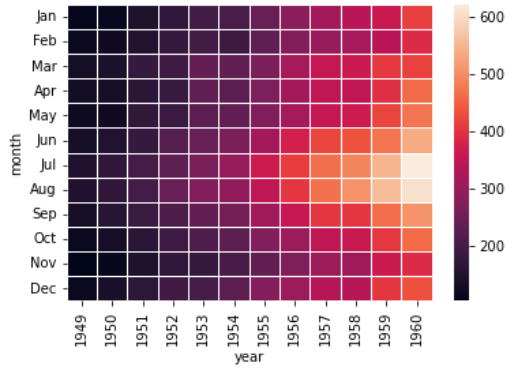
In [29]:
```
pvflights
```

Out[29]:

year	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
month												
Jan	112	115	145	171	196	204	242	284	315	340	360	417
Feb	118	126	150	180	196	188	233	277	301	318	342	391
Mar	132	141	178	193	236	235	267	317	356	362	406	419
Apr	129	135	163	181	235	227	269	313	348	348	396	461
May	121	125	172	183	229	234	270	318	355	363	420	472
Jun	135	149	178	218	243	264	315	374	422	435	472	535
Jul	148	170	199	230	264	302	364	413	465	491	548	622
Aug	148	170	199	242	272	293	347	405	467	505	559	606
Sep	136	158	184	209	237	259	312	355	404	404	463	508
Oct	119	133	162	191	211	229	274	306	347	359	407	461
Nov	104	114	146	172	180	203	237	271	305	310	362	390
Dec	118	140	166	194	201	229	278	306	336	337	405	432

In [30]:
```
sns.heatmap(pvflights,linecolor='white',linewidths=1)
```

Out[30]:
```
<AxesSubplot:xlabel='year', ylabel='month'>
```



In [ ]: