

```
In [11]: ▶ import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

```
In [12]: ▶ from numpy.random import randn
import random
np.random.seed(10)
```

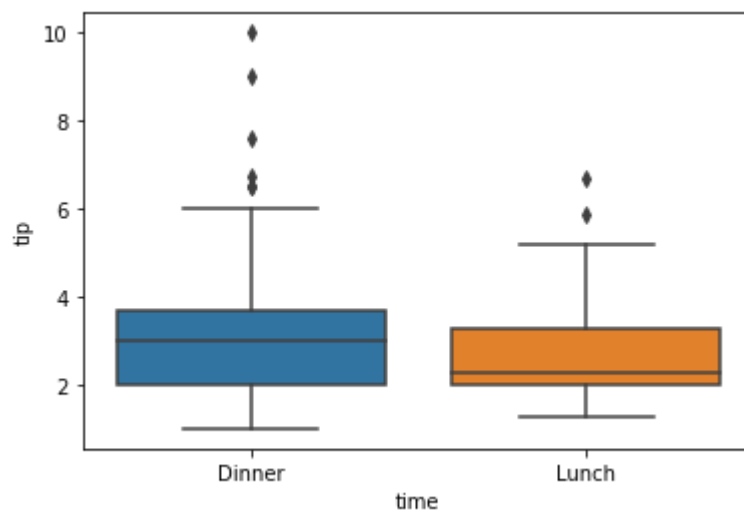
```
In [13]: ▶ dftips = pd.read_csv('data/tips.csv')
dftips
```

Out[13]:

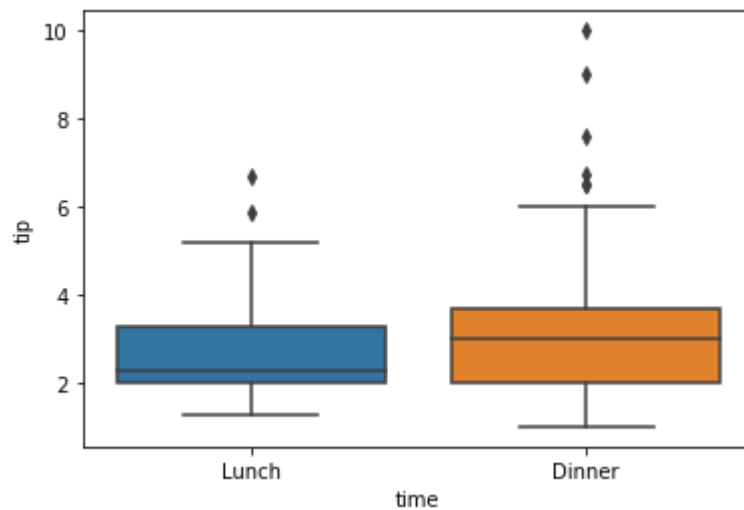
	total_bill	tip	smoker	day	time	size
0	16.99	1.01	No	Sun	Dinner	2
1	10.34	1.66	No	Sun	Dinner	3
2	21.01	3.50	No	Sun	Dinner	3
3	23.68	3.31	No	Sun	Dinner	2
4	24.59	3.61	No	Sun	Dinner	4
...
239	29.03	5.92	No	Sat	Dinner	3
240	27.18	2.00	Yes	Sat	Dinner	2
241	22.67	2.00	Yes	Sat	Dinner	2
242	17.82	1.75	No	Sat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

244 rows × 6 columns

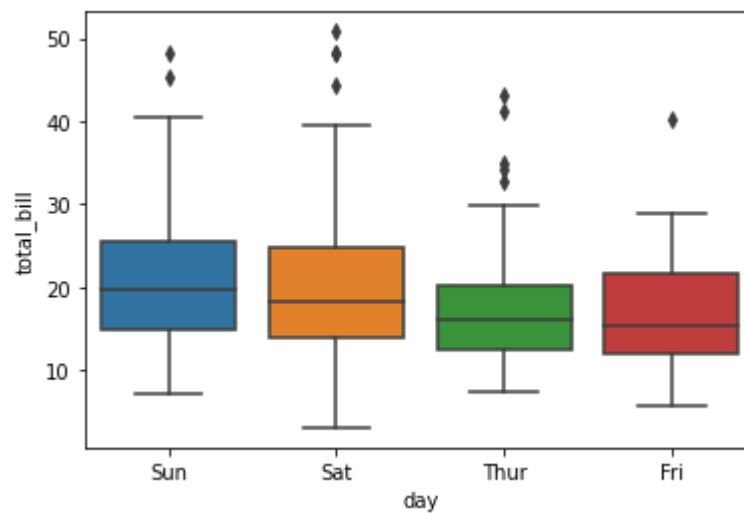
```
In [14]: ▶ sns.boxplot(x="time", y="tip", data=dftips);
```



```
In [15]: sns.boxplot(x="time", y="tip", data=dftips, order=["Lunch", "Dinner"]);
```



```
In [16]: sns.boxplot(x="day", y="total_bill", data=dftips);
```



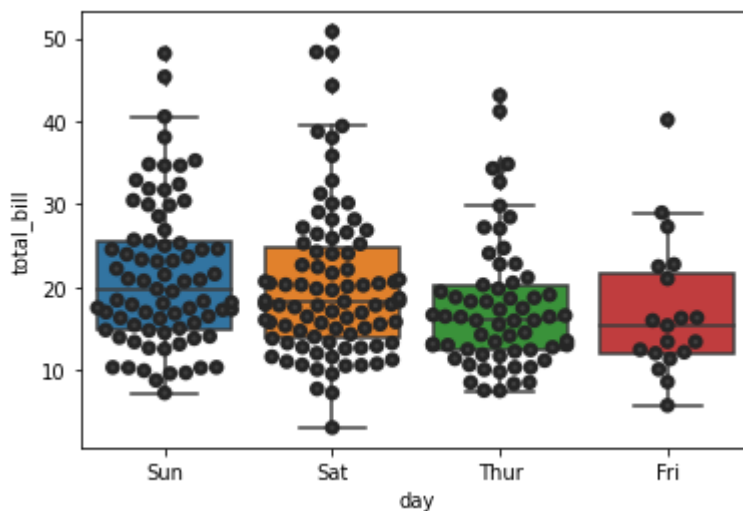
```
In [17]: sns.boxplot(x="day", y="total_bill", data=dftips);
sns.swarmplot(x="day", y="total_bill", data=dftips, color=".25", linewidth=2.
```

C:\Users\aming\anaconda3\lib\site-packages\seaborn\categorical.py:1296: Use
rWarning: 8.0% of the points cannot be placed; you may want to decrease the
size of the markers or use stripplot.

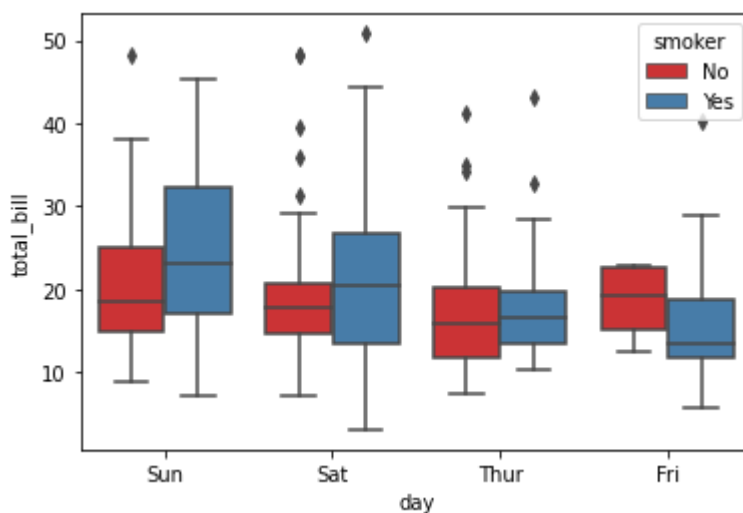
warnings.warn(msg, UserWarning)

C:\Users\aming\anaconda3\lib\site-packages\seaborn\categorical.py:1296: Use
rWarning: 8.1% of the points cannot be placed; you may want to decrease the
size of the markers or use stripplot.

warnings.warn(msg, UserWarning)



```
In [18]: sns.boxplot(x="day", y="total_bill", hue="smoker", data=dftips, palette="Set1
```



برنامه نویسی پیشرفته با پایتون
امین گلزاری اسکویی
۱۴۰۰-۱۴۰۱

[Codes and Projects \(click here\) \(https://github.com/Amin-Golzari-Oskouei/Python-Programming-Course-Advanced-2021\)](https://github.com/Amin-Golzari-Oskouei/Python-Programming-Course-Advanced-2021) [slides and videos \(click here\) \(https://drive.google.com/drive/folders/1Dx3v7fD1QBWL-MNP2hd7ilxaRbeALkkA\)](https://drive.google.com/drive/folders/1Dx3v7fD1QBWL-MNP2hd7ilxaRbeALkkA)