

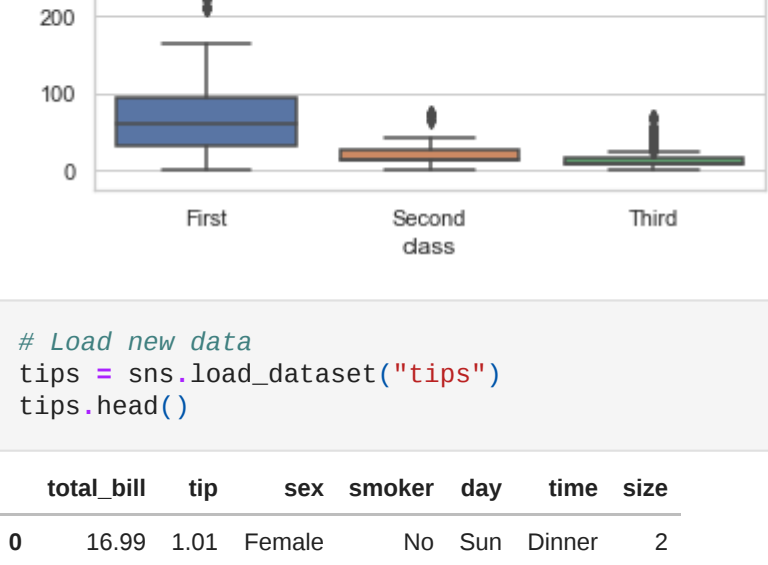
```
In [ ]: # Import libraries
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt

# Canvas (Baloon board)
sns.set(style="whitegrid")
```

```
In [ ]: # Load data
kashti = sns.load_dataset("titanic")
kashti.head()
```

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	who	adult_male	deck	embark_town	alive	alone
0	0	3	male	22.0	1	0	7.2500	S	Third	man	True	NaN	Southampton	no	False
1	1	1	female	38.0	1	0	71.2833	C	First	woman	False	C	Cherbourg	yes	False
2	1	3	female	26.0	0	0	7.9250	S	Third	woman	False	NaN	Southampton	yes	True
3	1	1	female	35.0	1	0	53.1000	S	First	woman	False	C	Southampton	yes	False
4	0	3	male	35.0	0	0	8.0500	S	Third	man	True	NaN	Southampton	no	True

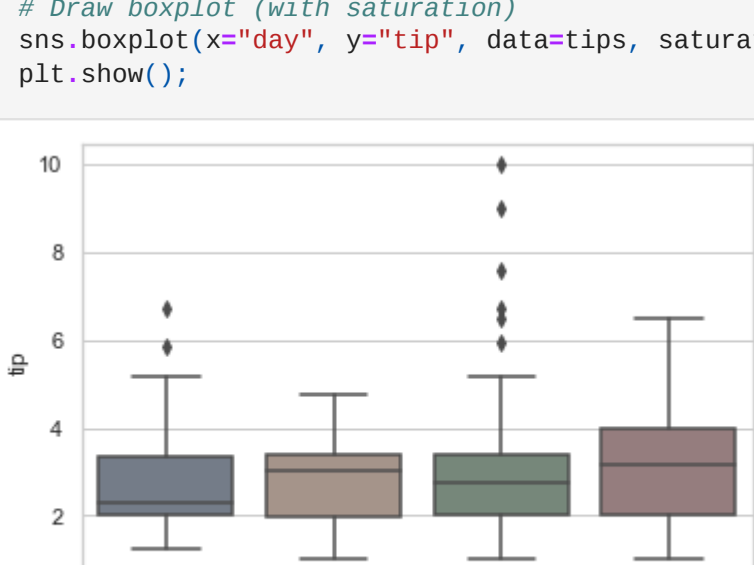
```
In [ ]: # Draw boxplot
sns.boxplot(x="class", y="fare", data=kashti)
plt.show();
```



```
In [ ]: # Load new data
tips = sns.load_dataset("tips")
tips.head()
```

	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 [ ]: # Draw boxplot
sns.boxplot(x="day", y="tip", data=tips)
plt.show();
```



```
In [ ]: # Draw boxplot (with saturation)
sns.boxplot(x="day", y="tip", data=tips, saturation=0.2)
plt.show();
```



```
In [ ]: # View tips dataframe
tips
```

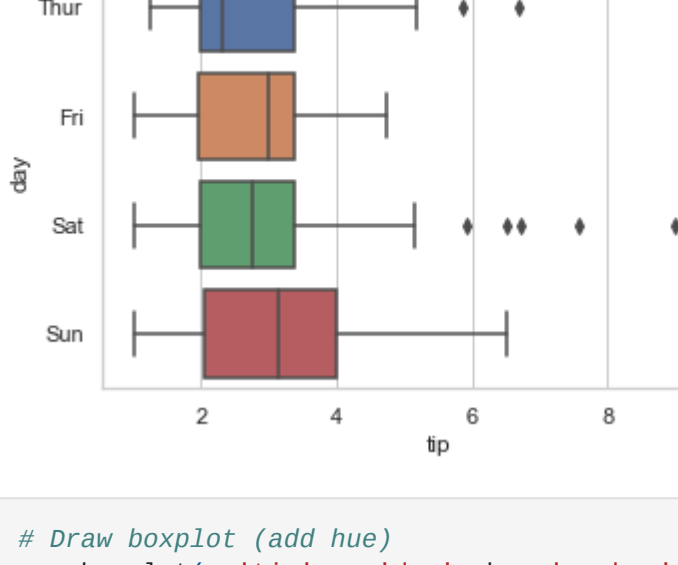
	total_bill	tip	sex	smoker	day	time	size
0	16.99	1.01	Female	No	Sun	Dinner	2
1	10.34	1.66	Male	No	Sun	Dinner	3
2	21.01	3.50	Male	No	Sun	Dinner	3
3	23.68	3.31	Male	No	Sun	Dinner	2
4	24.59	3.61	Female	No	Sun	Dinner	4

244 rows × 7 columns

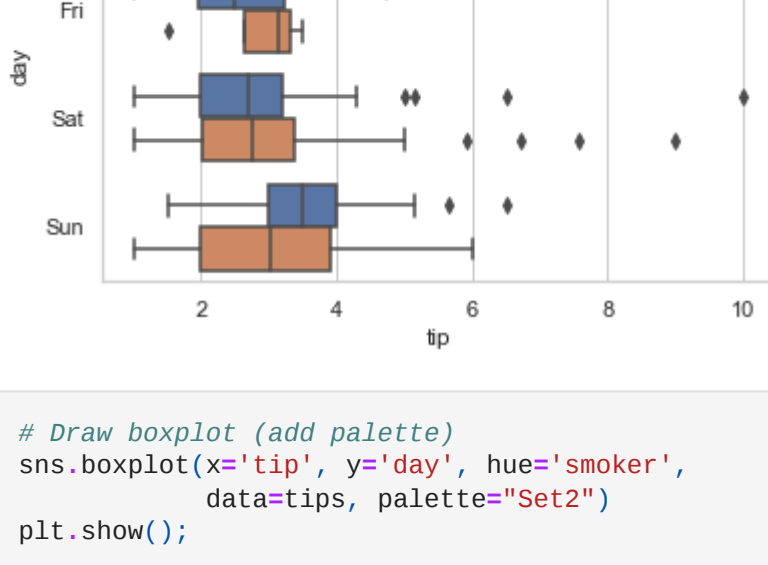
```
In [ ]: # Find statistical summary
tips.describe()
```

	total_bill	tip	size
count	244.000000	244.000000	244.000000
mean	19.785943	2.998279	2.569672
std	8.902412	1.383638	0.951100
min	3.070000	1.000000	1.000000
25%	13.347500	2.000000	2.000000
50%	17.795000	2.900000	2.000000
75%	24.127500	3.562500	3.000000
max	50.810000	10.000000	6.000000

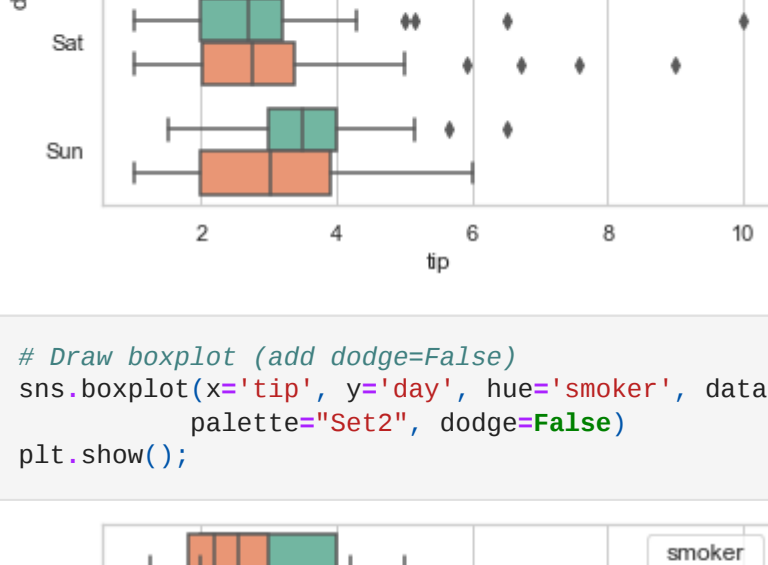
```
In [ ]: # Draw boxplot on one column
sns.boxplot(x=tips['total_bill'])
plt.show();
```



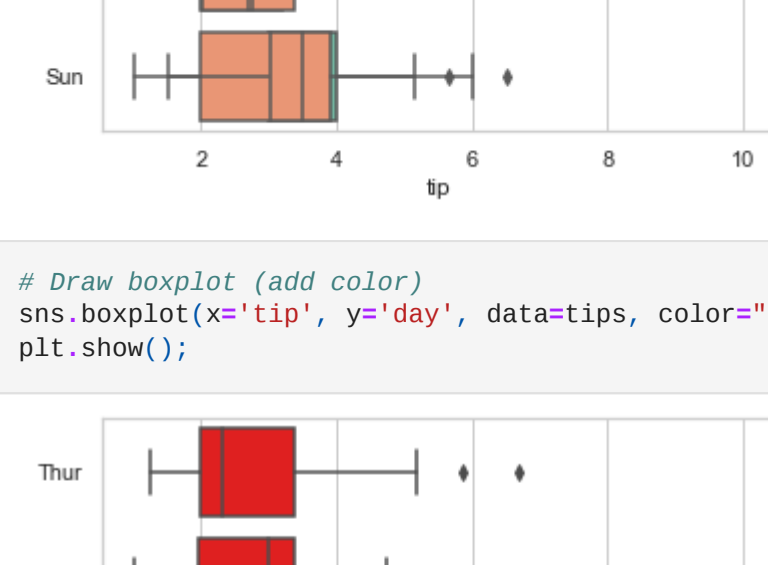
```
In [ ]: # Draw boxplot
sns.boxplot(x='tip', y='day', data=tips)
plt.show();
```



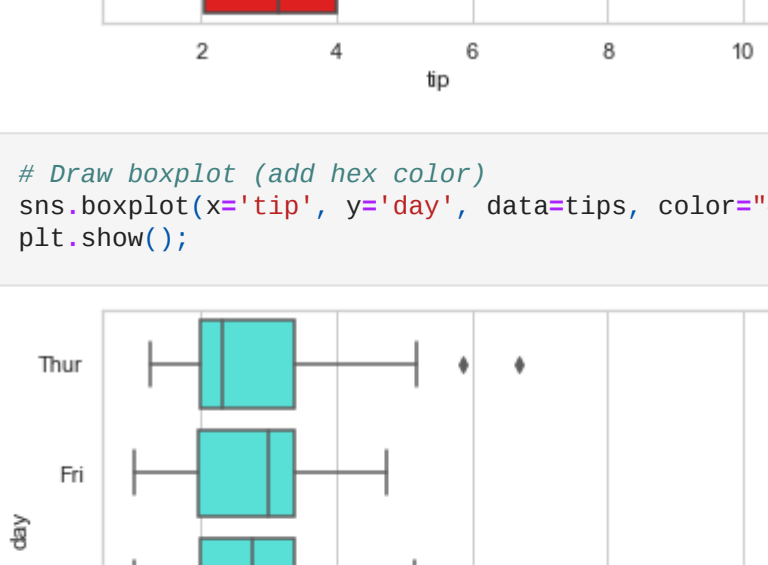
```
In [ ]: # Draw boxplot (add hue)
sns.boxplot(x='tip', y='day', hue='smoker', data=tips)
plt.show();
```



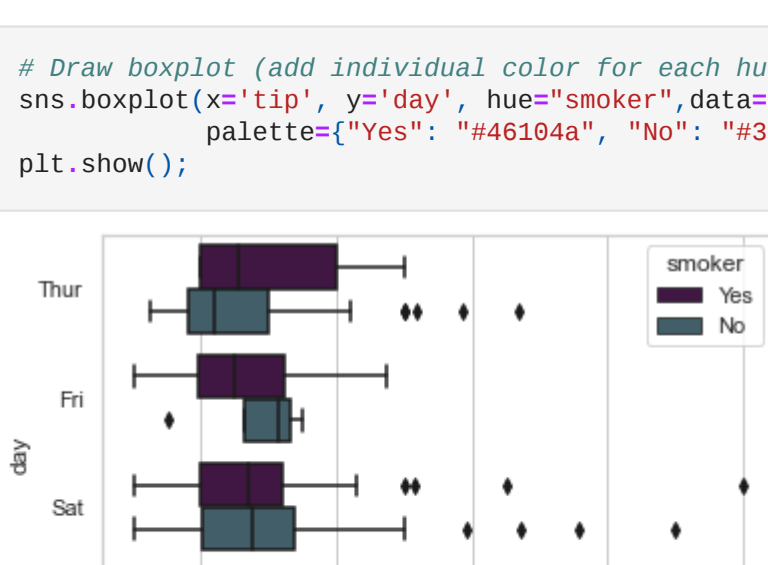
```
In [ ]: # Draw boxplot (add palette)
sns.boxplot(x='tip', y='day', hue='smoker', data=tips, palette="Set2")
plt.show();
```



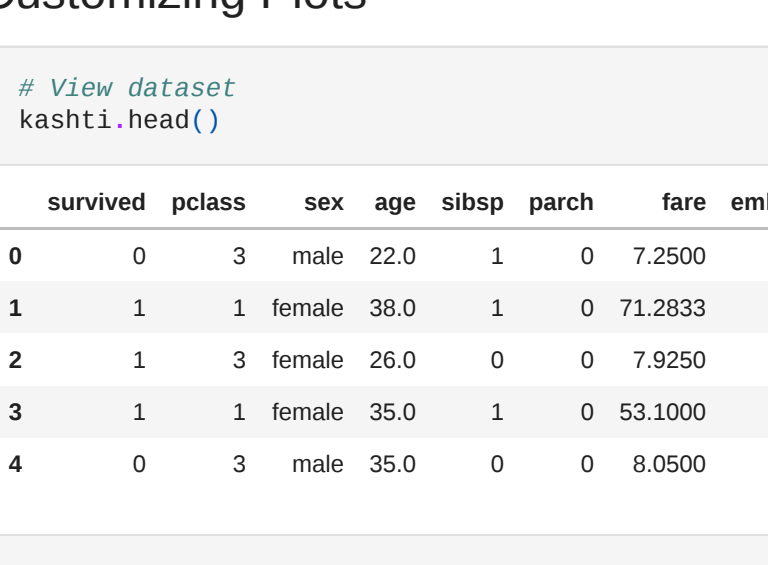
```
In [ ]: # Draw boxplot (add dodge=False)
sns.boxplot(x='tip', y='day', hue='smoker', data=tips, palette="Set2", dodge=False)
plt.show();
```



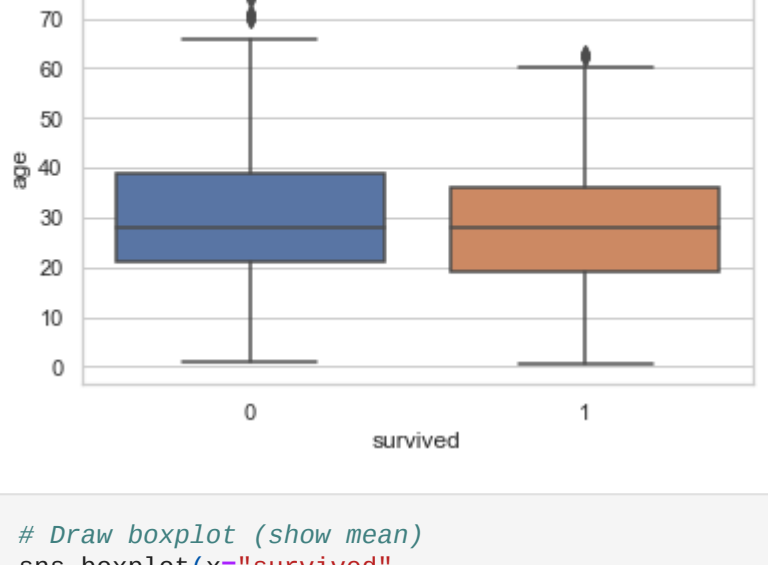
```
In [ ]: # Draw boxplot (add color)
sns.boxplot(x='tip', y='day', data=tips, color="red")
plt.show();
```



```
In [ ]: # Draw boxplot (add hex color)
sns.boxplot(x='tip', y='day', data=tips, color="#42f5e9")
plt.show();
```



```
In [ ]: # Draw boxplot (add individual color for each hue)
sns.boxplot(x='tip', y='day', hue='smoker', data=tips, palette={"Yes": "#46104a", "No": "#3c616e"})
plt.show();
```

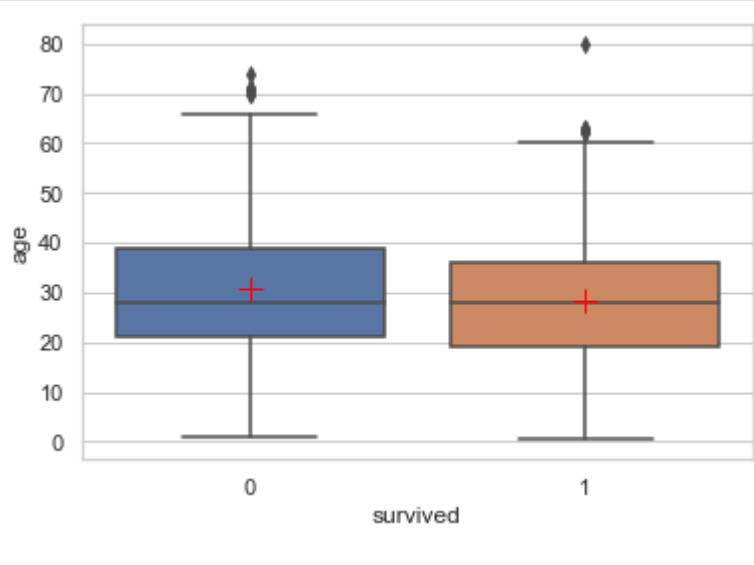


Customizing Plots

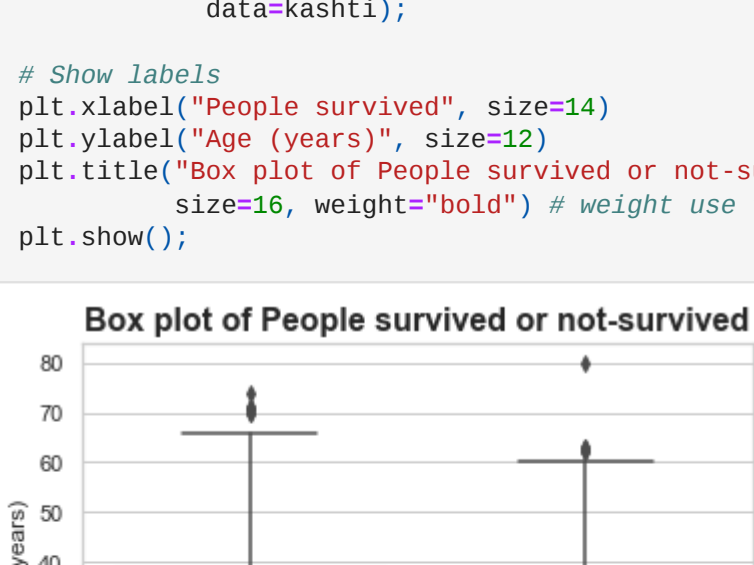
```
In [ ]: # View dataset
kashti.head()
```

	survived	pclass	sex	age	sibsp	parch	fare	embarked	class	who	adult_male	deck	embark_town	alive	alone
0	0	3	male	22.0	1	0	7.2500	S	Third	man	True	C	Cherbourg	no	False
1	1	1	female	38.0	1	0	71.2833	C	First	woman	False	C	Cherbourg	yes	False
2	1	3	female	26.0	0	0	7.9250	S	Third	woman	False	NaN	Southampton	yes	True
3	1	1	female	35.0	1	0	53.1000	S	First	woman	False	C	Southampton	yes	False
4	0	3	male	35.0	0	0	8.0500	S	Third	man	True	NaN	Southampton	no	True

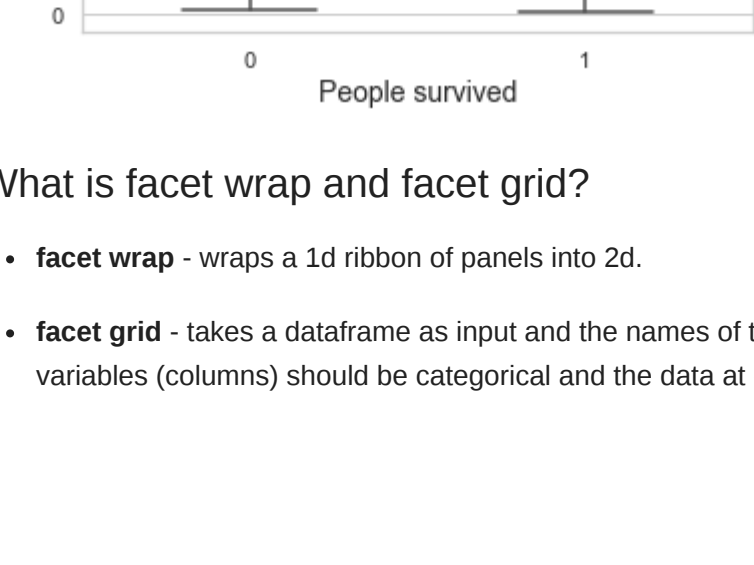
```
In [ ]: # Draw boxplot
sns.boxplot(x="survived", y="age", data=kashti)
plt.show();
```



```
In [ ]: # Draw boxplot (show mean)
sns.boxplot(x="survived", y="age", showmeans=True, data=kashti)
plt.show();
```



```
In [ ]: # Draw boxplot (show mean and custom properties for mean using dictionary)
sns.boxplot(x="survived", y="age", showmeans=True, meanprops={"marker": "+", "markersize": "12", "markeredgcolor": "red"}, data=kashti)
plt.show();
```



```
In [ ]: # Draw boxplot (show labels with different sizes, and font style)
sns.boxplot(x="survived", y="age", showmeans=True, meanprops={"marker": "+", "markersize": "12", "markeredgcolor": "red"}, data=kashti);

# Show labels
plt.xlabel("People survived", size=14)
plt.ylabel("Age (years)", size=12)
plt.title("Box plot of People survived or not-survived", size=16, weight="bold") # weight use for font
plt.show();
```



What is facet wrap and facet grid?

- **facet wrap** - wraps a 1d ribbon of panels into 2d.
- **facet grid** - takes a dataframe as input and the names of the variables that will form the row, column or hue dimensions of the grid. The variables (columns) should be categorical and the data at each level of the variable will be used for a facet along that axis.