Python Seaborn Tutorial Part - 6 and Part - 7

How to draw Sebaorn Barplot / Bar Graph?

```python
# Import libraries
import seaborn as sns # for data visualization
import numpy as np # for numeric computing
import matplotlib.pyplot as plt

# load dataset from GitHub seaborn repository
tips_df = sns.load_dataset("tips")
tips_df
```

	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
5	25.29	4.71	Male	No	Sun	Dinner	4
6	8.77	2.00	Male	No	Sun	Dinner	2
7	26.88	3.12	Male	No	Sun	Dinner	4
8	15.04	1.96	Male	No	Sun	Dinner	2
9	14.78	3.23	Male	No	Sun	Dinner	2
10	10.27	1.71	Male	No	Sun	Dinner	2
11	35.26	5.00	Female	No	Sun	Dinner	4
12	15.42	1.57	Male	No	Sun	Dinner	2
13	18.43	3.00	Male	No	Sun	Dinner	4
14	14.83	3.02	Female	No	Sun	Dinner	2
15	21.58	3.92	Male	No	Sun	Dinner	2
16	10.33	1.67	Female	No	Sun	Dinner	3
17	16.29	3.71	Male	No	Sun	Dinner	3
18	16.97	3.50	Female	No	Sun	Dinner	3
19	20.65	3.35	Male	No	Sat	Dinner	3
20	17.92	4.08	Male	No	Sat	Dinner	2
21	20.29	2.75	Female	No	Sat	Dinner	2
22	15.77	2.23	Female	No	Sat	Dinner	2
23	39.42	7.58	Male	No	Sat	Dinner	4
24	19.82	3.18	Male	No	Sat	Dinner	2
25	17.81	2.34	Male	No	Sat	Dinner	4
26	13.37	2.00	Male	No	Sat	Dinner	2
27	12.69	2.00	Male	No	Sat	Dinner	2
28	21.70	4.30	Male	No	Sat	Dinner	2
29	19.65	3.00	Female	No	Sat	Dinner	2
..	...	...	...	...	...	...	...
214	28.17	6.50	Female	Yes	Sat	Dinner	3
215	12.90	1.10	Female	Yes	Sat	Dinner	2
216	28.15	3.00	Male	Yes	Sat	Dinner	5
217	11.59	1.50	Male	Yes	Sat	Dinner	2

```
218          7.74   1.44     Male    Yes   Sat   Dinner      2
219         30.14   3.09   Female    Yes   Sat   Dinner      4
220         12.16   2.20     Male    Yes   Fri    Lunch      2
221         13.42   3.48   Female    Yes   Fri    Lunch      2
222          8.58   1.92     Male    Yes   Fri    Lunch      1
223         15.98   3.00   Female     No   Fri    Lunch      3
224         13.42   1.58     Male    Yes   Fri    Lunch      2
225         16.27   2.50   Female    Yes   Fri    Lunch      2
226         10.09   2.00   Female    Yes   Fri    Lunch      2
227         20.45   3.00     Male     No   Sat   Dinner      4
228         13.28   2.72     Male     No   Sat   Dinner      2
229         22.12   2.88   Female    Yes   Sat   Dinner      2
230         24.01   2.00     Male    Yes   Sat   Dinner      4
231         15.69   3.00     Male    Yes   Sat   Dinner      3
232         11.61   3.39     Male     No   Sat   Dinner      2
233         10.77   1.47     Male     No   Sat   Dinner      2
234         15.53   3.00     Male    Yes   Sat   Dinner      2
235         10.07   1.25     Male     No   Sat   Dinner      2
236         12.60   1.00     Male    Yes   Sat   Dinner      2
237         32.83   1.17     Male    Yes   Sat   Dinner      2
238         35.83   4.67   Female     No   Sat   Dinner      3
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 x 7 columns]
```
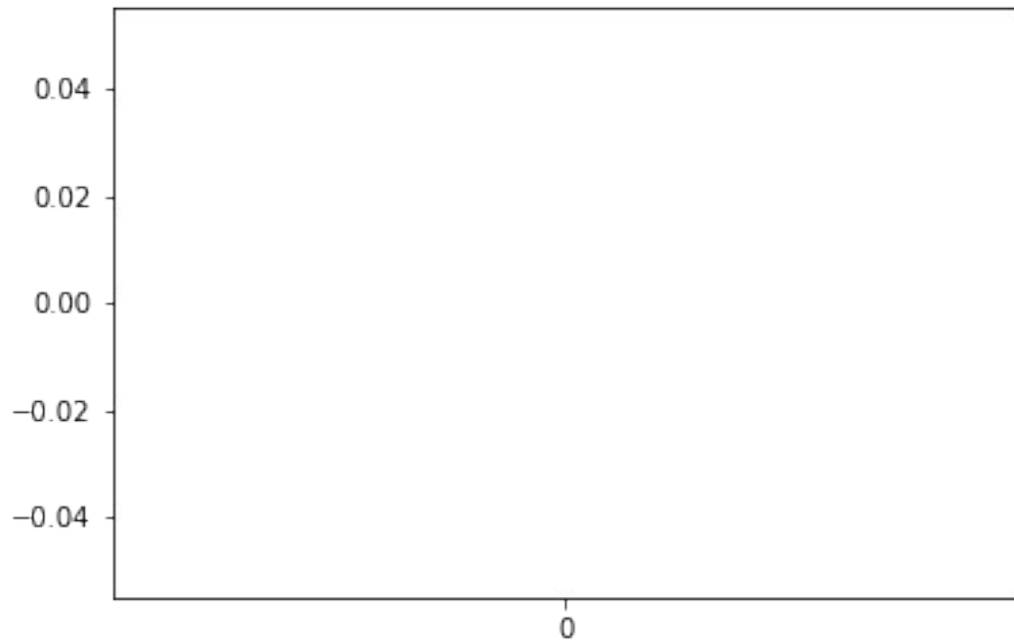
```python
# Plot barplot
sns.barplot()
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2cb0cf60>
```

```python
# Plot tips_df.total_bill barplot
sns.barplot(x = tips_df.total_bill)
```

<matplotlib.axes._subplots.AxesSubplot at 0x1ad2ddbf898>
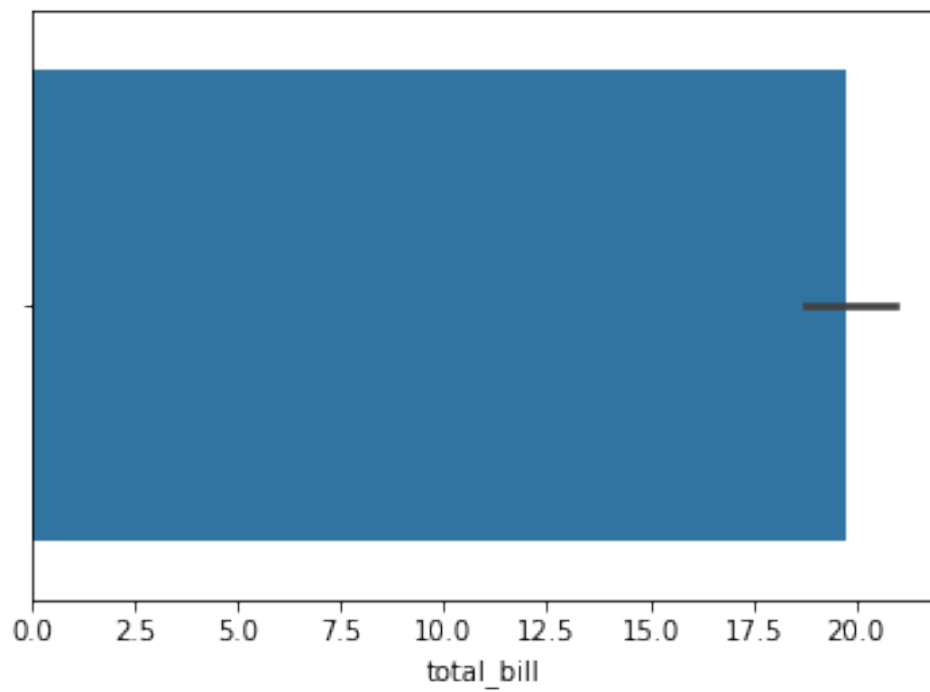

```python
# Plot tips_df.day & tips_df.total_bill barplot
sns.barplot(x = tips_df.day, y = tips_df.total_bill)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2de2fdd8>
```
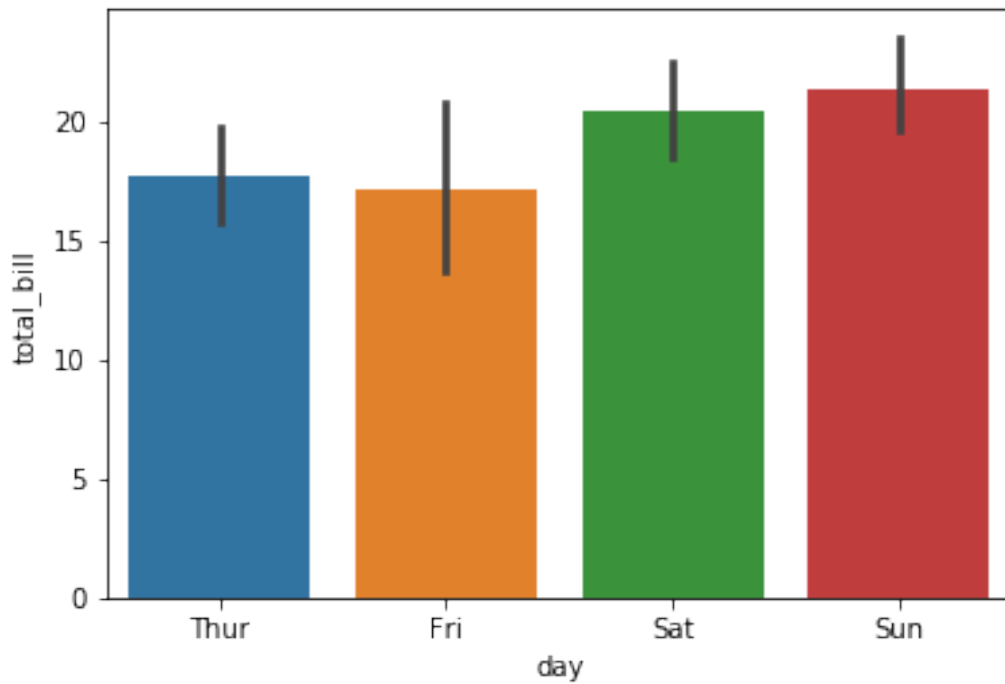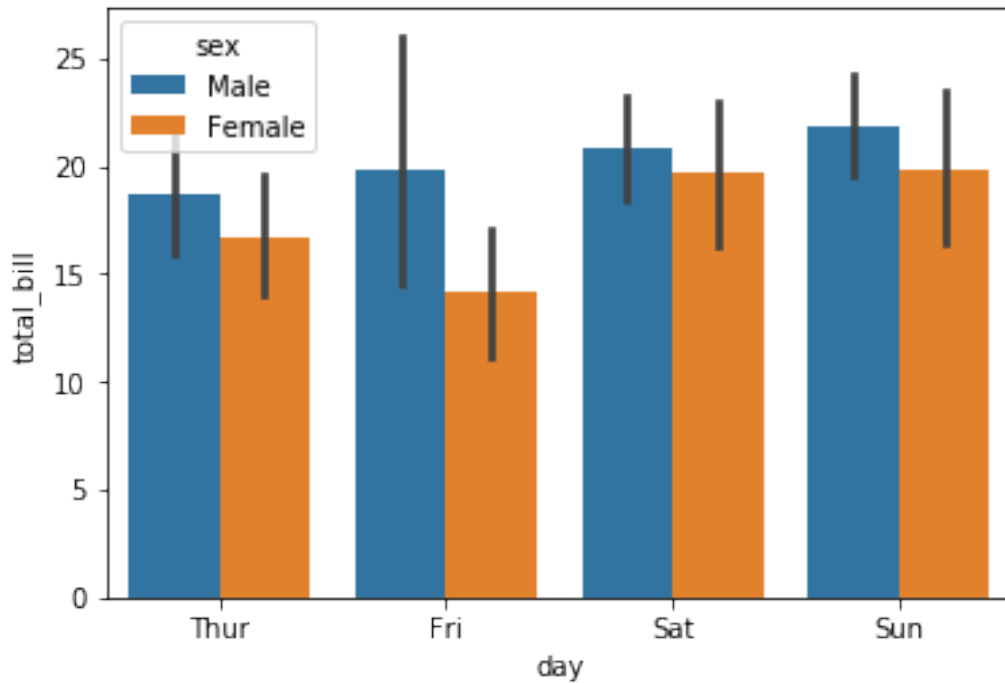


```
# Devide barplot using hue parameter
sns.barplot(x = tips_df.day, y = tips_df.total_bill, hue = 
tips_df.sex)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2de8e630>
```
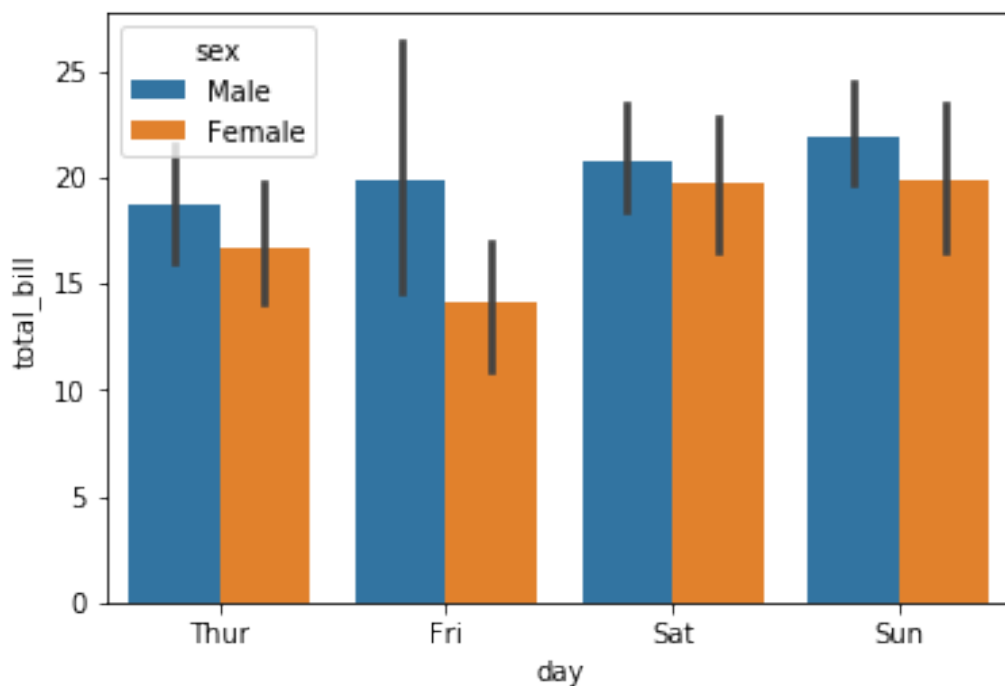
```python
# Pass dataset using data parameter
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
           data = tips_df)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2df2ac50>
```



```python
# modify the order of day
order = ['Sun', 'Thur', 'Fri', 'Sat']

sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
           data = tips_df, order = order)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2df8d630>
```
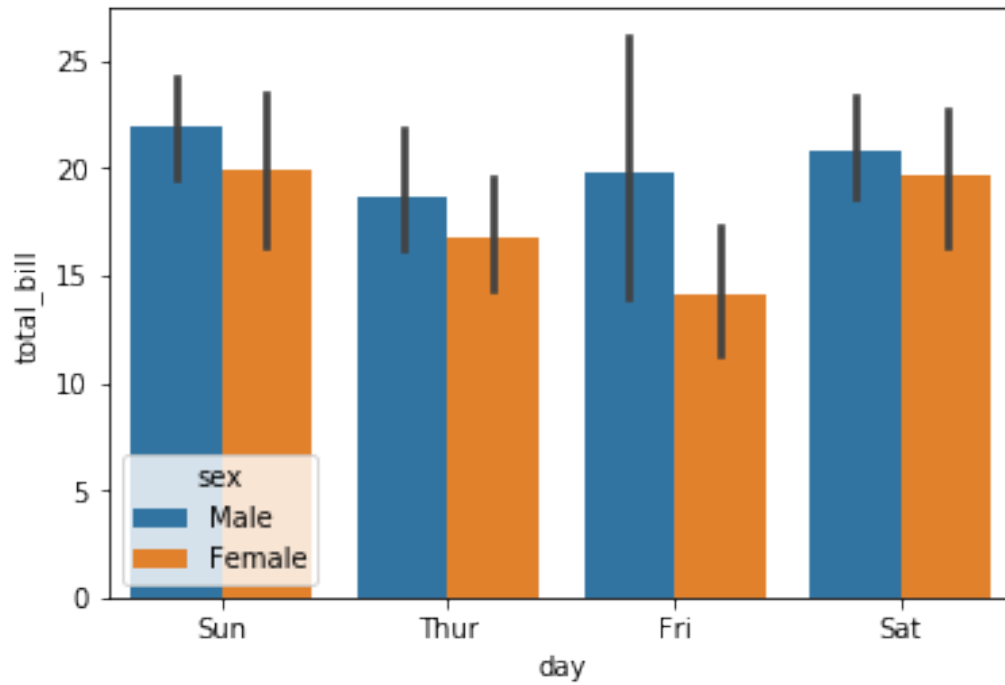
```
#Modify hue order
hue_order = ['Female', 'Male']


sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
            data = tips_df, hue_order = hue_order)
```
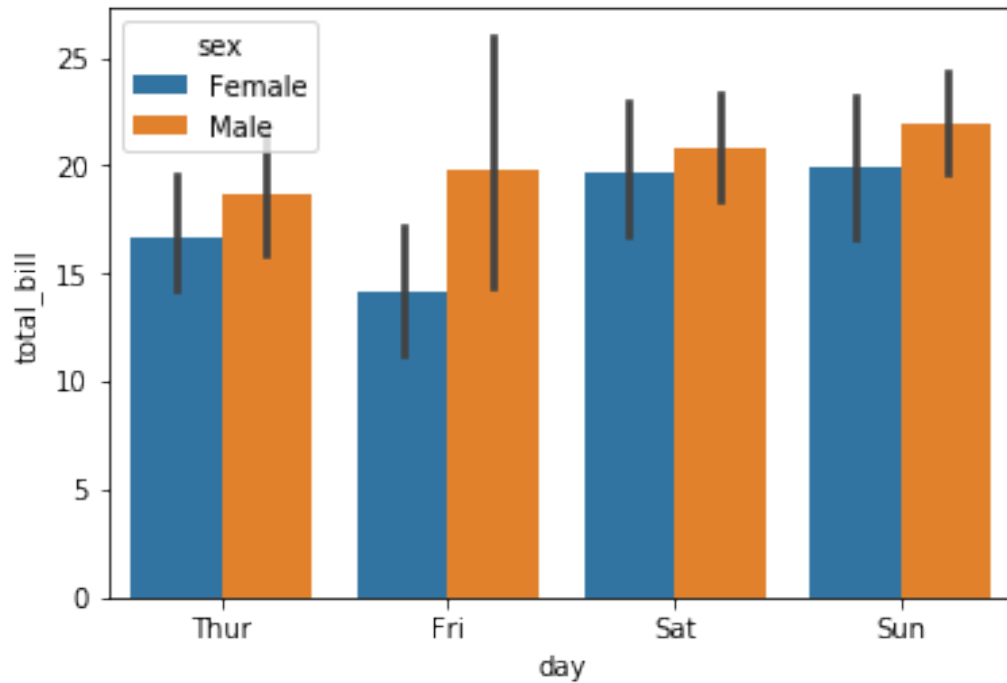
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e0016d8>

```
# estimate y variable value and then plot
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
           data = tips_df, estimator= np.mean)
```
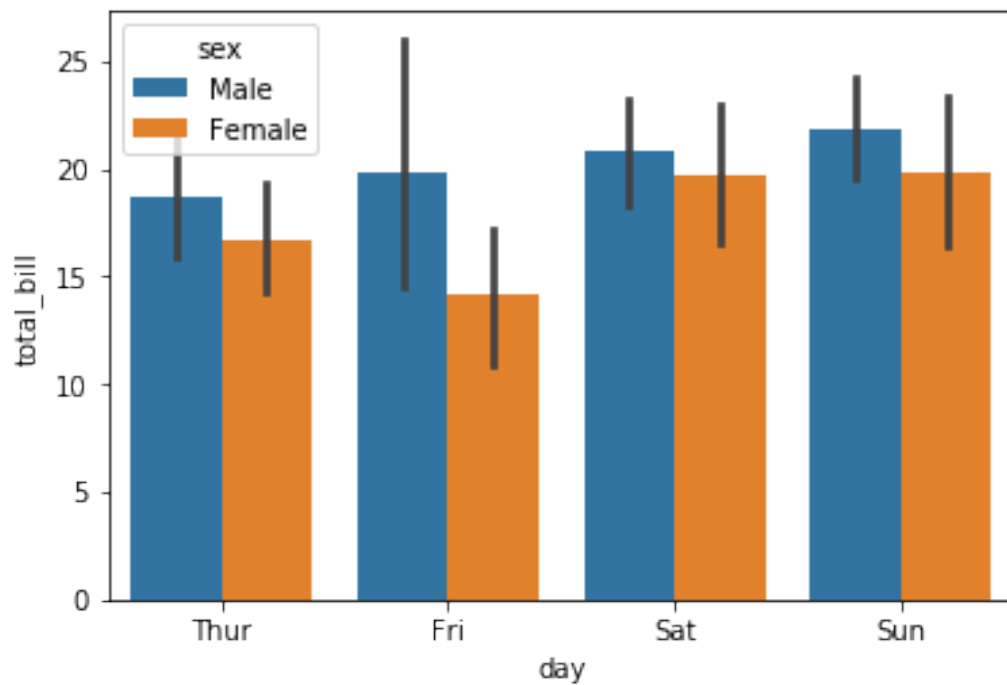
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e09f4a8>

```python
# estimate y variable value and then plot
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
            data = tips_df, estimator= np.max)
```

<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e120400>
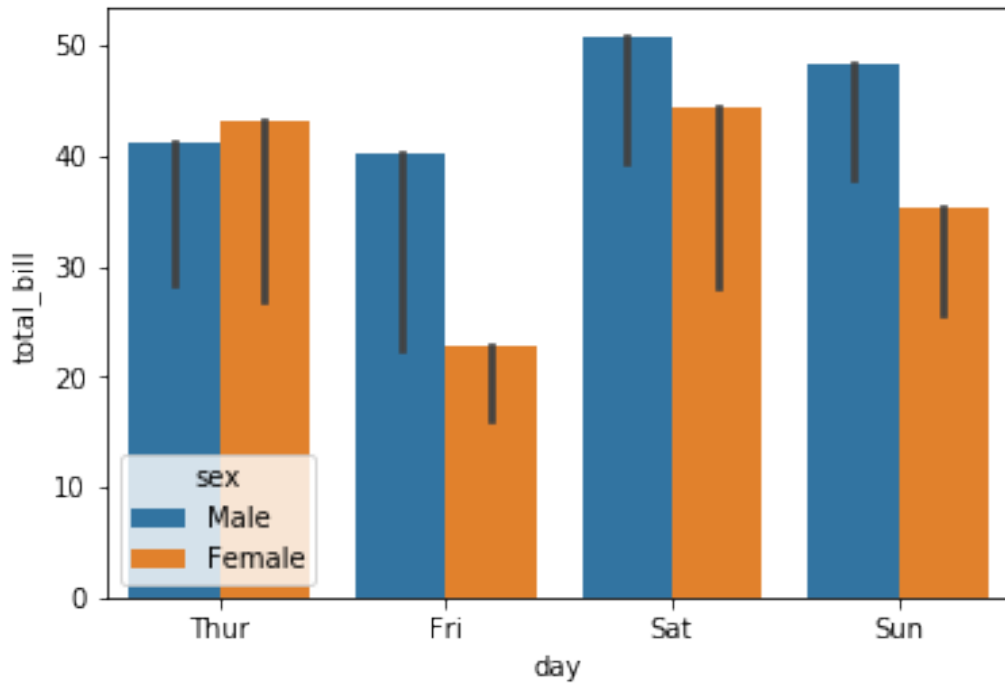

```python
# set error bar size
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
            data = tips_df, ci = 20)
```

<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e0fe400>
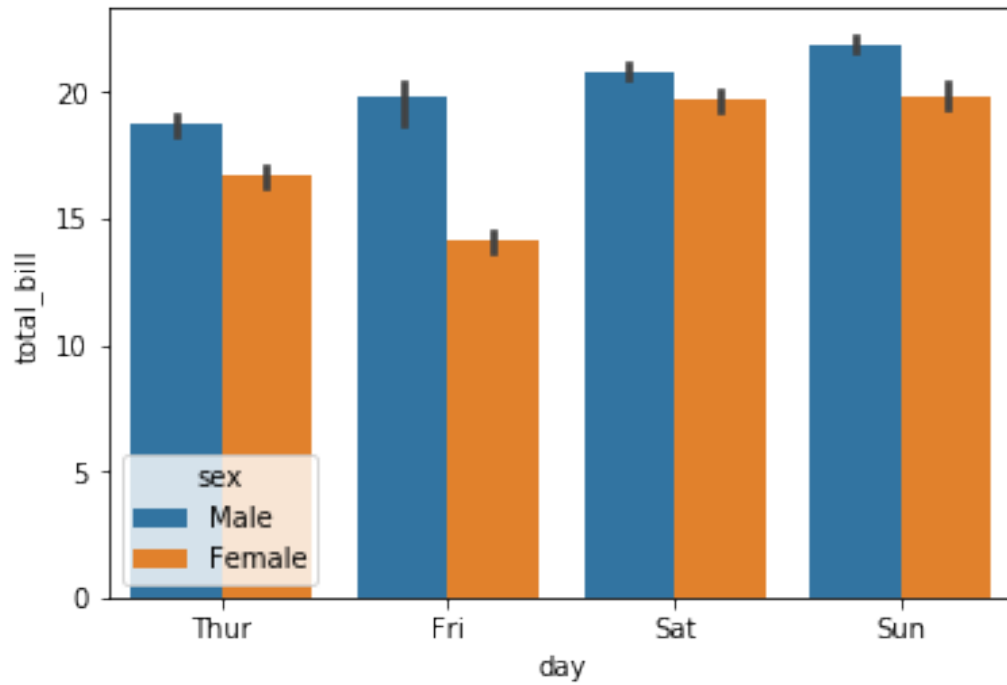
```
# set error bar
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
           data = tips_df,  n_boot=2)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e218668>
```
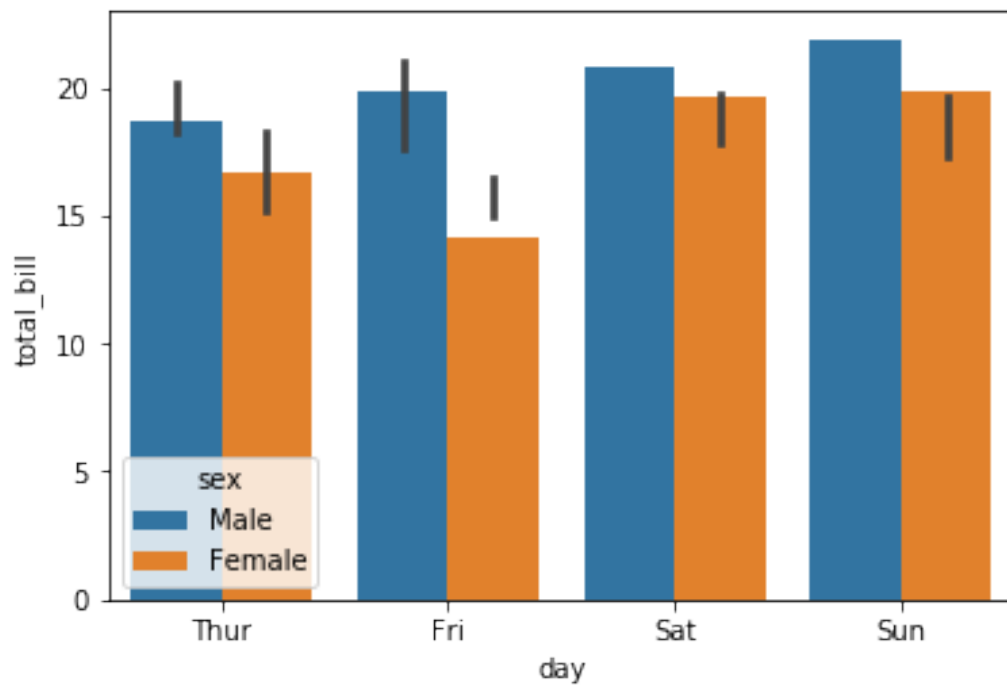
```
# Set barplot as vertical
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
            data = tips_df, orient='v')
```

<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e2914a8>
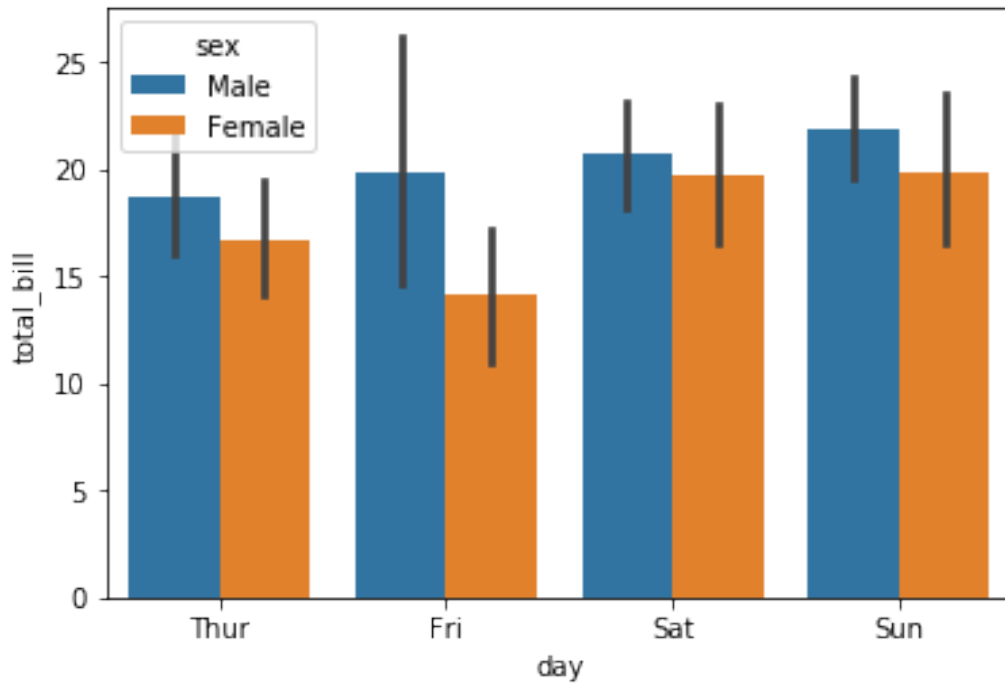

```
# set barplot as horizontal
sns.barplot(y = 'day', x = 'total_bill', hue = 'sex',
            data = tips_df,)
```
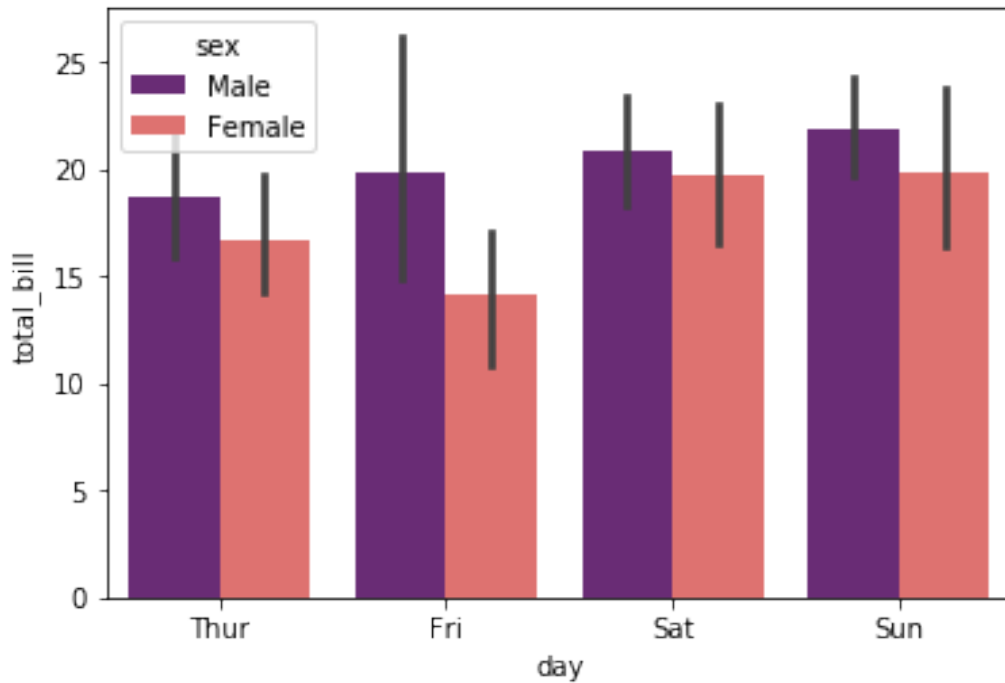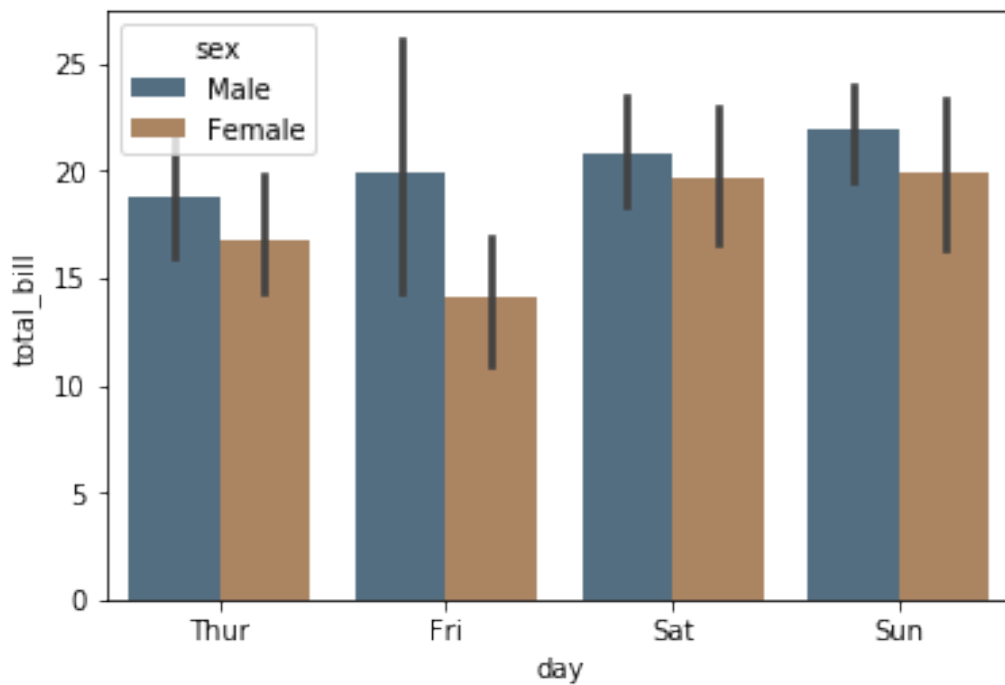
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e311630>
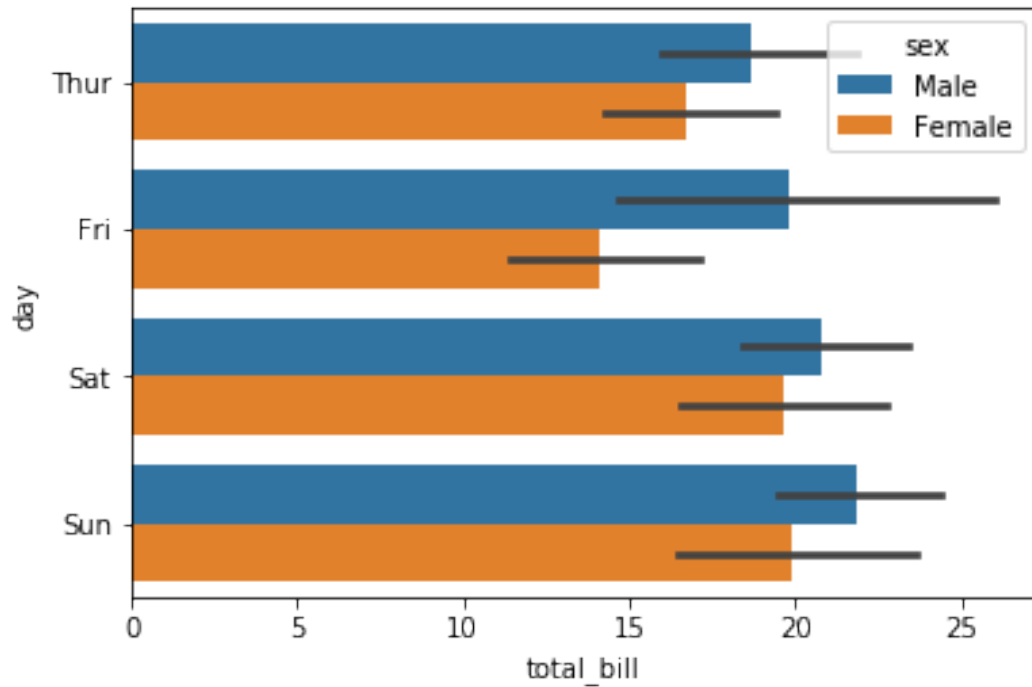
```
# set barplot as horizontal
sns.barplot(x ='total_bill', y = 'size', hue = 'sex', data = tips_df,
          orient='h')
```

<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e38dd68>
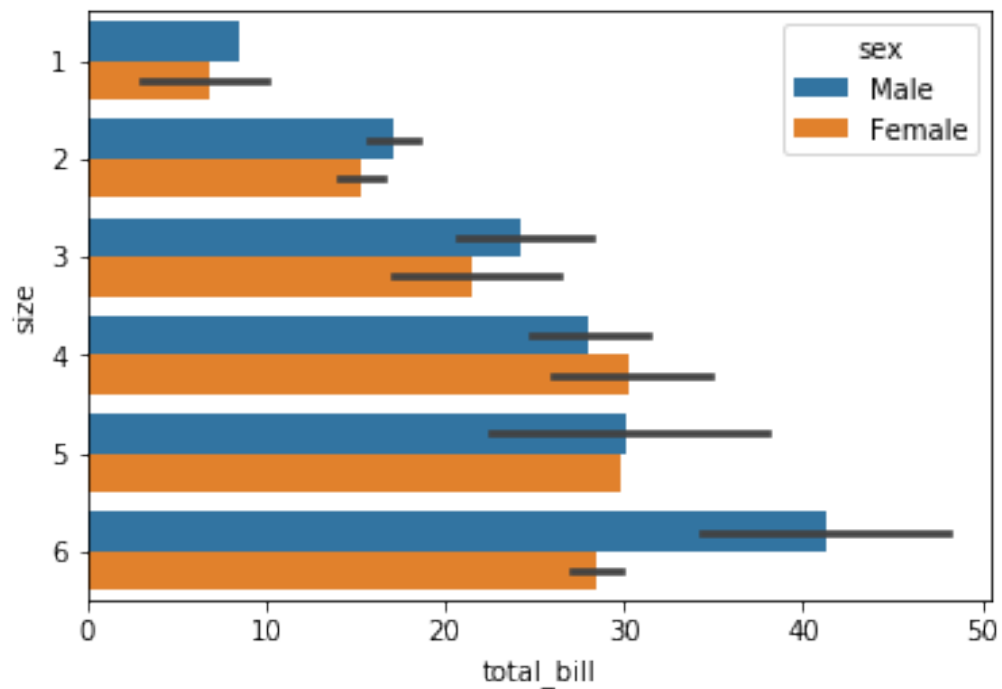
```
# set color
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
            data = tips_df, color="g")
```

<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e41f668>
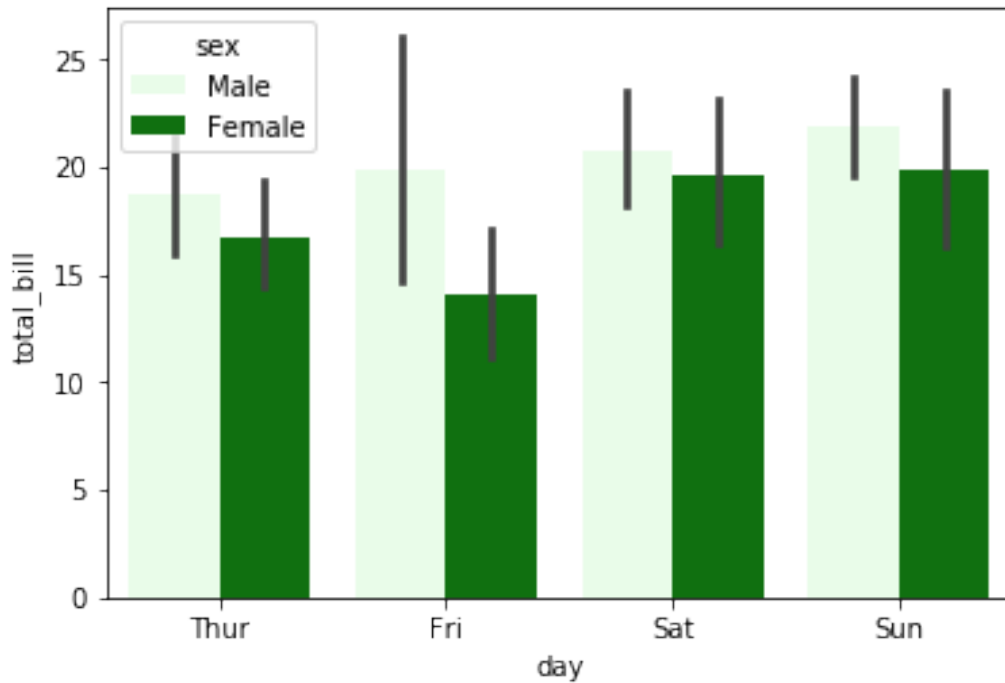

```
# set color map or palette
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
            data = tips_df, palette="magma")
```

<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e48e470>

```
# set saturation of barplot
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
          data = tips_df, saturation=.3)
```

<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e50c7b8>

```python
#set color of error bar
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
            data = tips_df, errcolor='0.5')
```
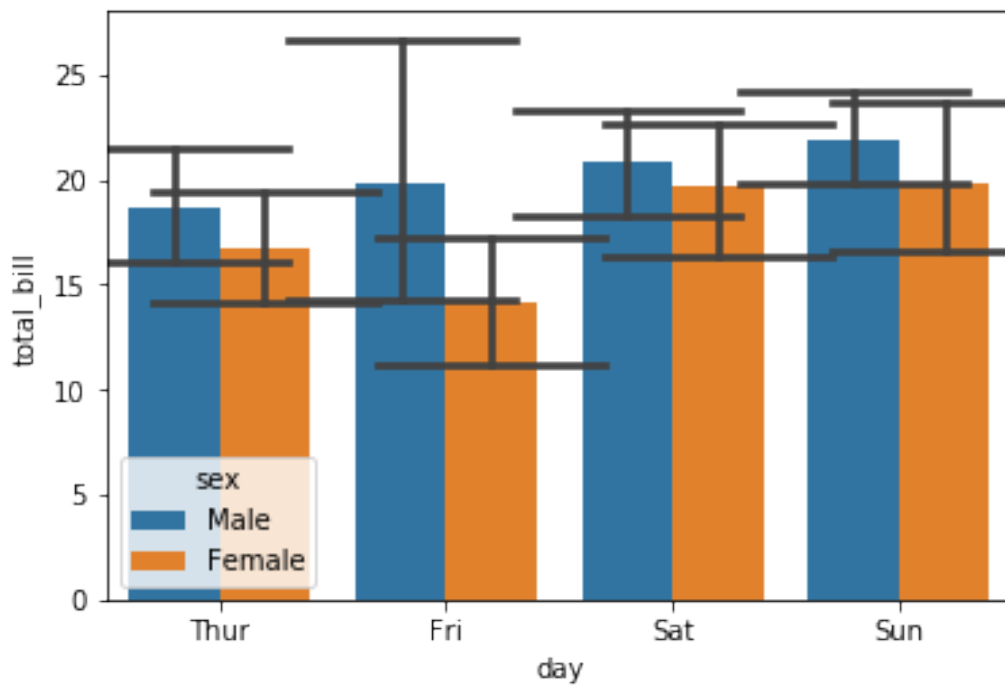
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e58dcf8>
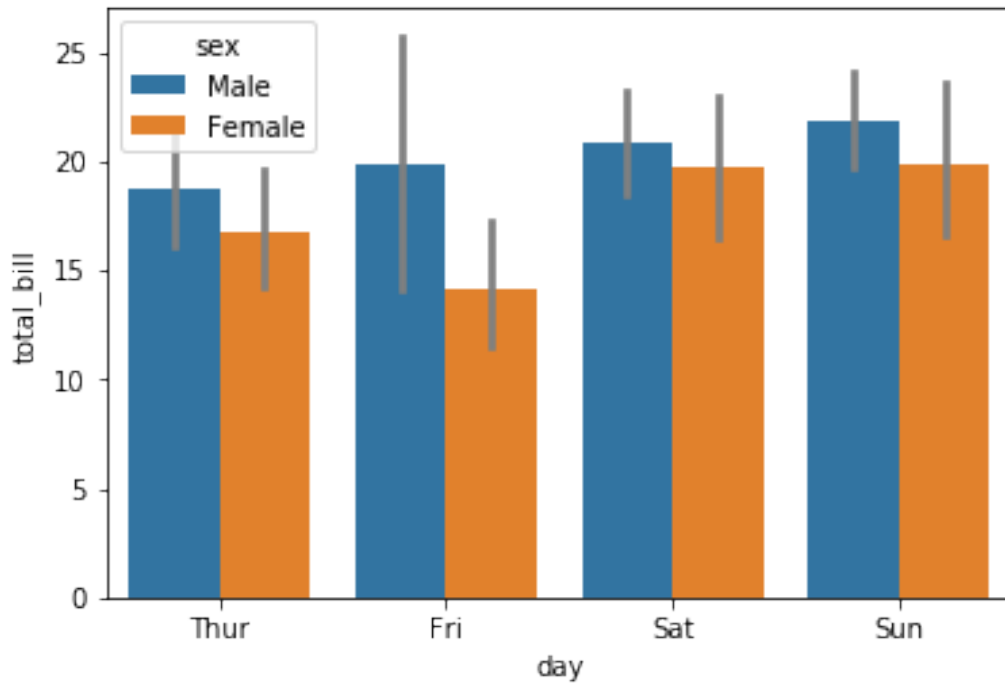

```python
# set width of error bar
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
            data = tips_df, errwidth= 12)
```
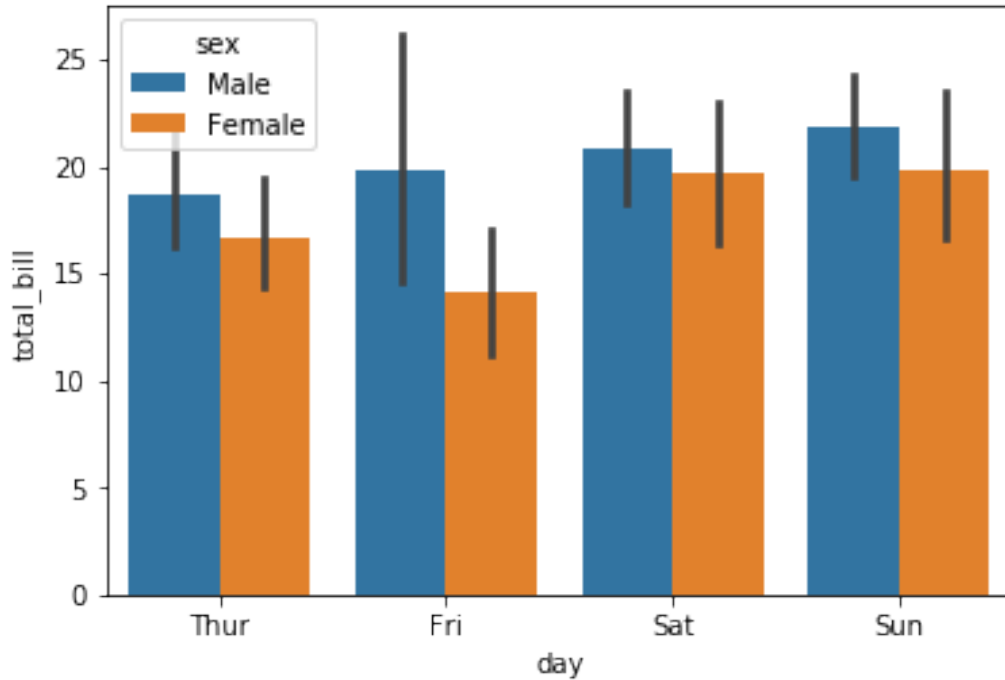
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e5fd2e8>
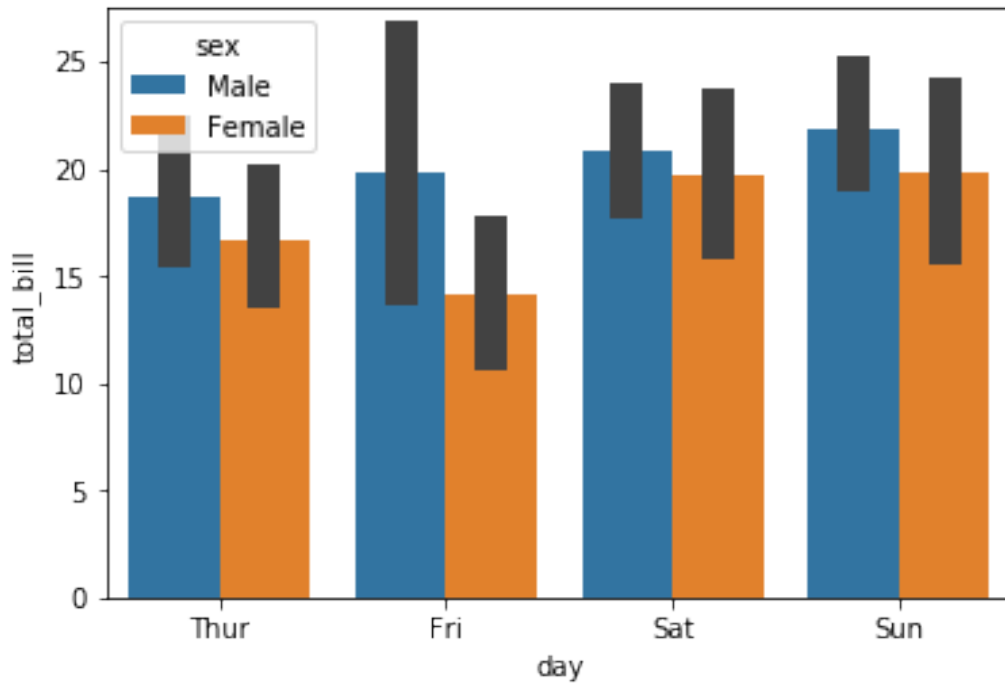
```
# set cap size of error bar
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
            data = tips_df, capsize=1)
```
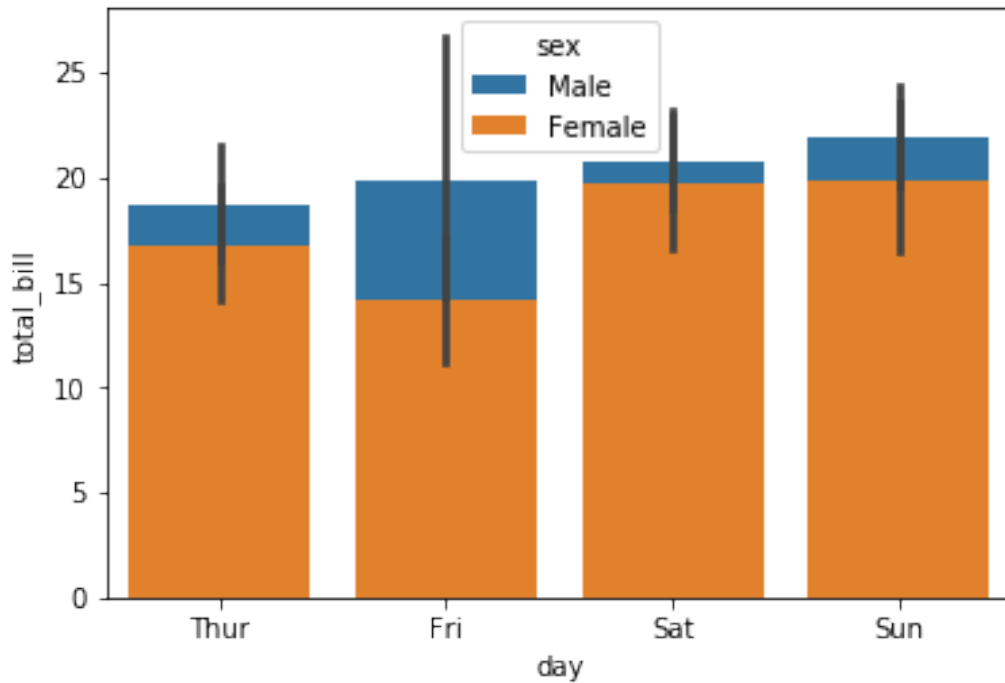
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e67b978>

```
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
            data = tips_df,)
```

<matplotlib.axes._subplots.AxesSubplot at 0x1ad2ded2208>


```
# shift hue categorical variable bar bar in one bar
sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
            data = tips_df, dodge= False)
```
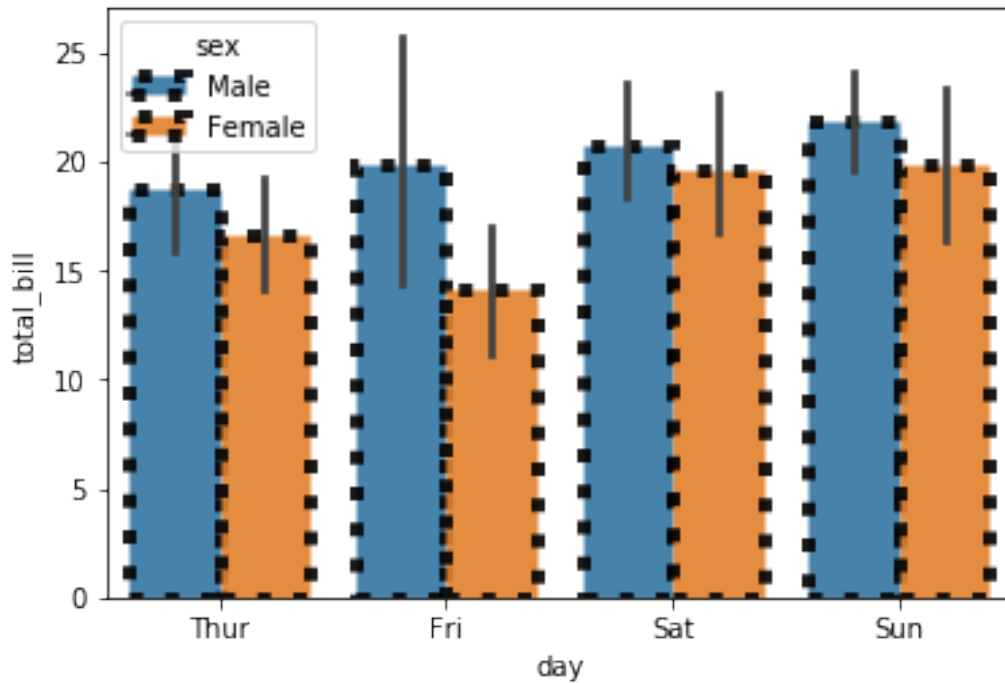
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2e78d780>

```
# Keyword Arguments parameter
kwargs = {'alpha':0.9, 'linestyle':':', 'linewidth':5,
'edgecolor':'k'}

sns.barplot(x = 'day', y = 'total_bill', hue = 'sex',
          data = tips_df,**kwargs)
```
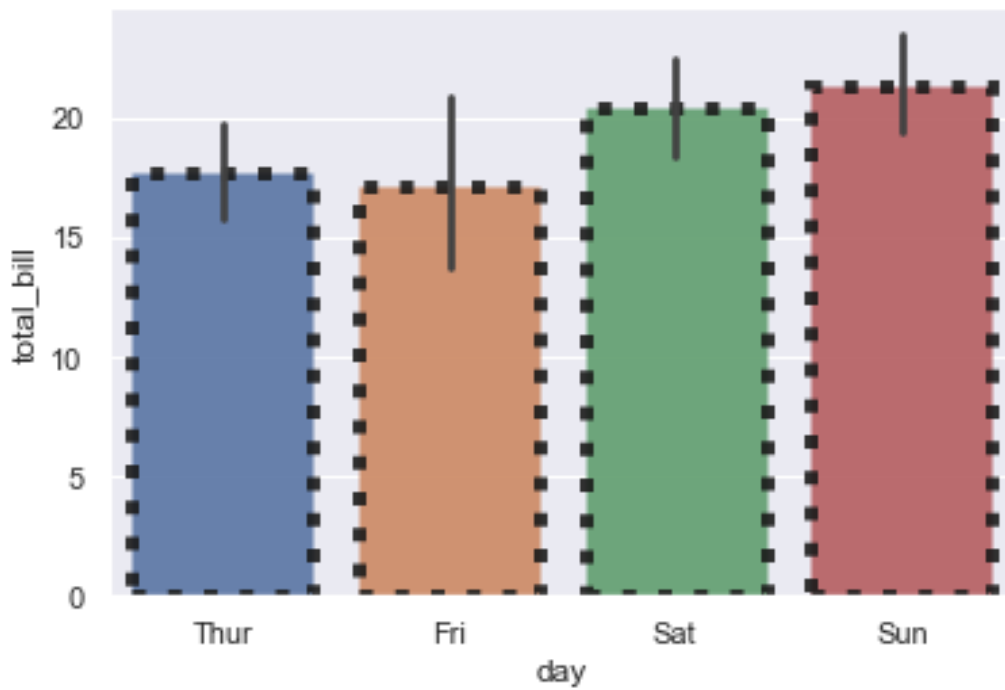
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2f7d26a0>

```
# set background style darkgrid
sns.set()
kwargs = {'alpha':0.9, 'linestyle':':', 'linewidth':5,
'edgecolor':'k'}

sns.barplot(x = 'day', y = 'total_bill',
            data = tips_df,**kwargs)
```
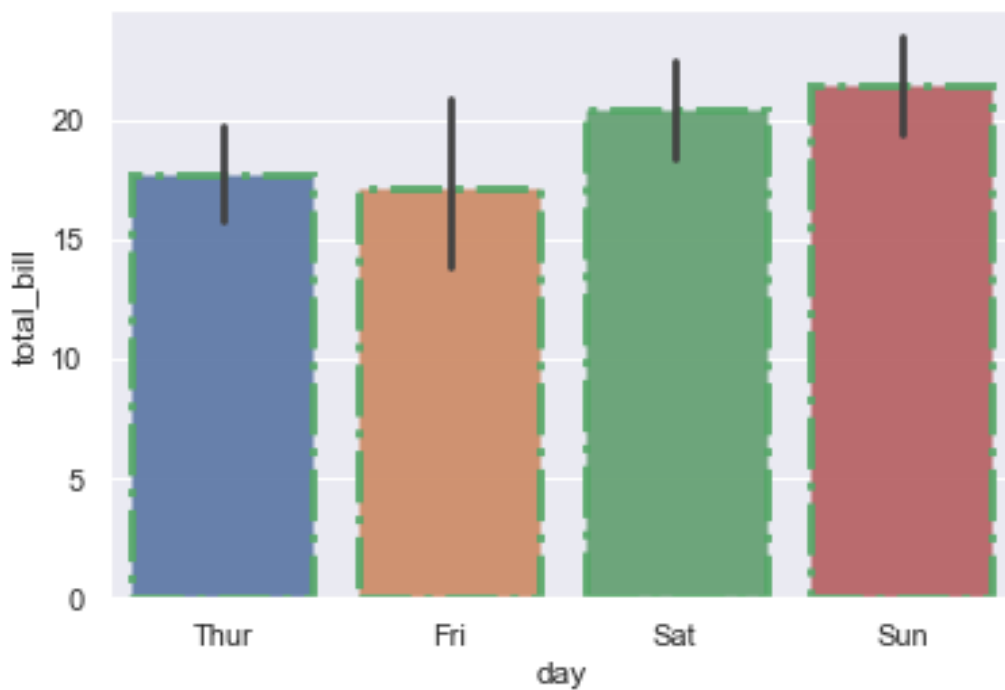
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2f85f668>

```
# Pass Keyword  argument as parameter
sns.barplot(x = 'day', y = 'total_bill',
        data = tips_df, alpha =.9, linestyle = "-.", linewidth = 3,
        edgecolor = "g")
```
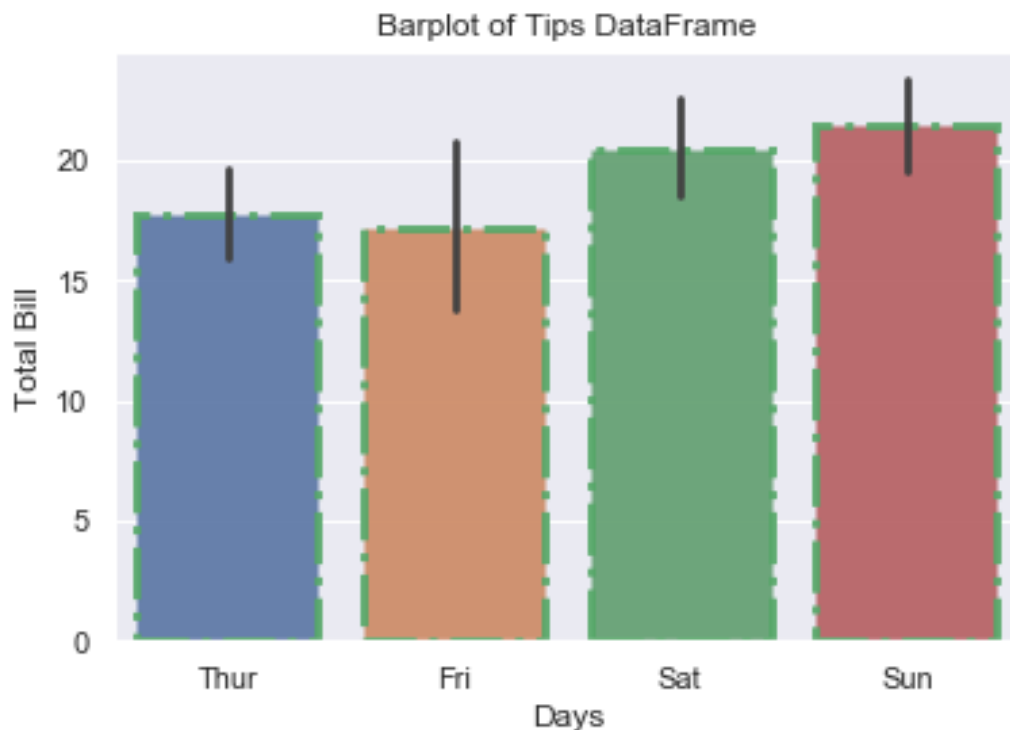
<matplotlib.axes._subplots.AxesSubplot at 0x1ad2f7e84e0>

```python
# Axes parameter
ax = sns.barplot(x = 'day', y = 'total_bill',
          data = tips_df, alpha =.9, linestyle = "-.", linewidth = 3,
          edgecolor = "g")

ax.set(title = "Barplot of Tips DataFrame",
      xlabel = "Days",
      ylabel = "Total Bill")

[Text(0, 0.5, 'Total Bill'),
 Text(0.5, 0, 'Days'),
 Text(0.5, 1.0, 'Barplot of Tips DataFrame')]
```
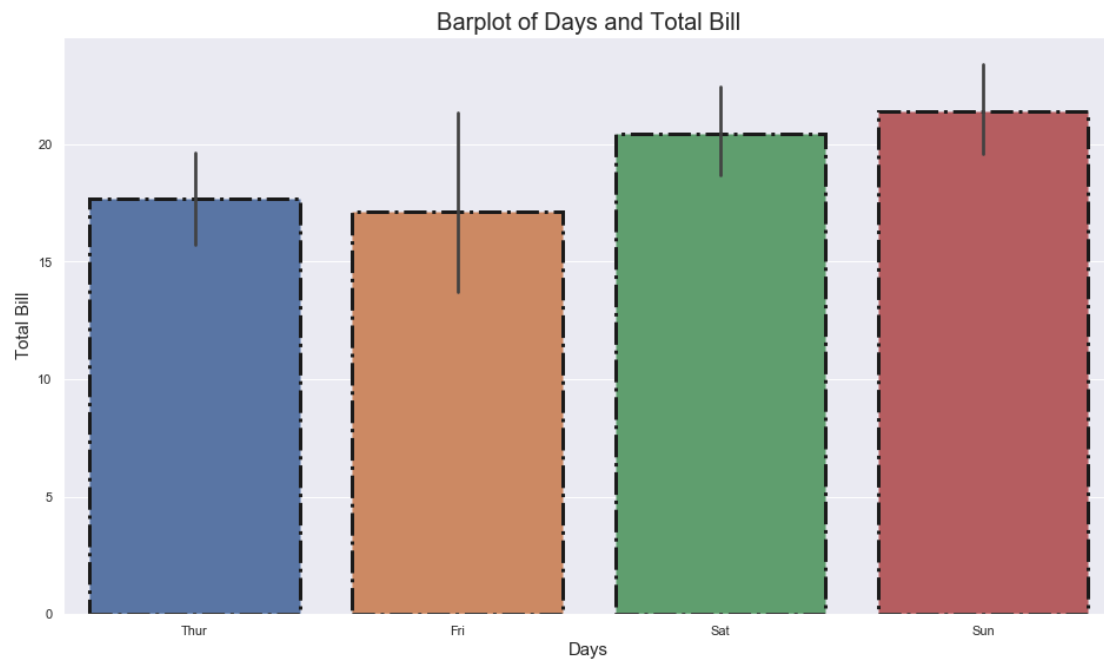


```python
# Example of Seaborn Barplot
plt.figure(figsize = (16,9))

sns.barplot(x = 'day', y = 'total_bill',
          data = tips_df, alpha =1, linestyle = "-.", linewidth = 3,
          edgecolor = "k")

plt.title("Barplot of Days and Total Bill", fontsize = 20)
plt.xlabel("Days", fontsize = 15)
plt.ylabel("Total Bill", fontsize = 15)

plt.savefig("Barplot of Days and Total Bill")
plt.show()
```

Barplot of Days and Total Bill

```python
print("Thank you  -:)")
```

Thank you -:)