In [2]: ```python
#pip install --upgrade seaborn
```

# Graphs

In [64]: ```python
import warnings
warnings.filterwarnings("ignore", category=FutureWarning)
import seaborn as sns
```

In [65]: ```python
sns.get_dataset_names()
```

Out[65]: 
```
['anagrams',
 'anscombe',
 'attention',
 'brain_networks',
 'car_crashes',
 'diamonds',
 'dots',
 'dowjones',
 'exercise',
 'flights',
 'fmri',
 'geyser',
 'glue',
 'healthexp',
 'iris',
 'mpg',
 'penguins',
 'planets',
 'seaice',
 'taxis',
 'tips',
 'titanic']
```

In [66]: ```python
tips= sns.load_dataset("tips")
tips.head()
```

Out[66]:

	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 [67]: ```python
tips
```

Out[67]:

| | 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 [68]:
```python
sns.set_theme(style="darkgrid")
```

In [69]:
```python
tips.to_csv("tips_dataset.csv", index=False)
import pandas as pd
```

In [70]:
```python
import os
os.getcwd()
```

Out[70]: 'C:\\Users\\Dell'

In [71]:
```python
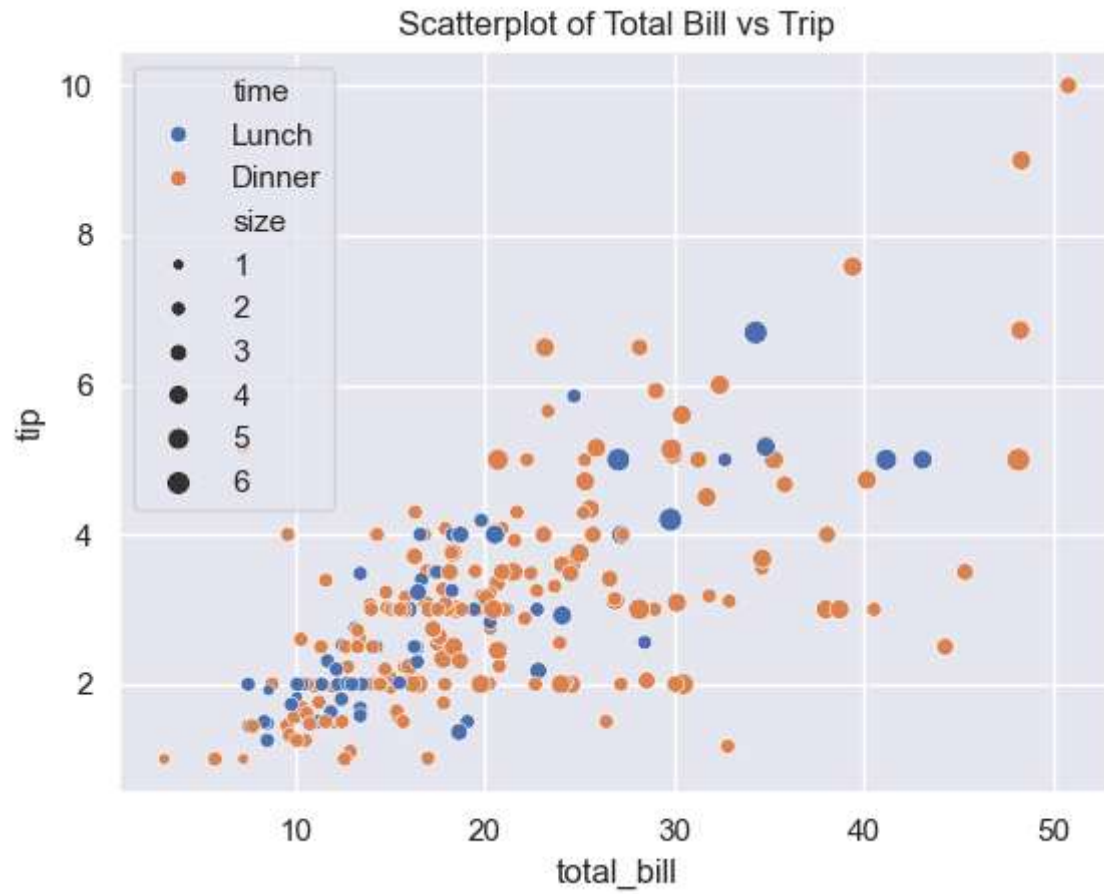import matplotlib.pyplot as plt
```

In [72]:
```python
plt.figure(figsize=(8,6))
```

Out[72]: <Figure size 800x600 with 0 Axes>

        <Figure size 800x600 with 0 Axes>

In [73]:
```python
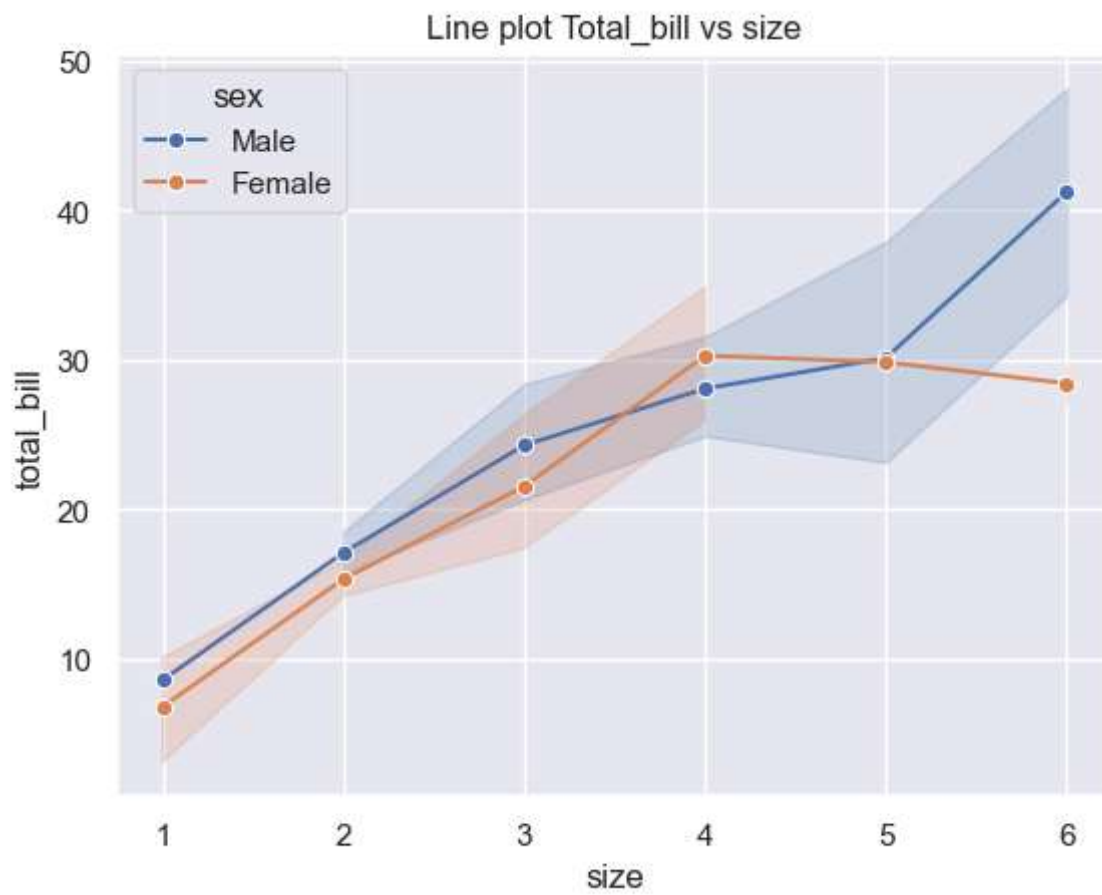# Scatter Plot
sns.scatterplot(data=tips, x="total_bill",y="tip",hue="time",size="size",palette="d
plt.title("Scatterplot of Total Bill vs Trip")
plt.show()
```

Scatterplot of Total Bill vs Trip

```
In [74]:  # Line plot
          sns.lineplot(data=tips, x='size',y='total_bill',hue='sex',marker='o')
          plt.title("Line plot Total_bill vs size")
          plt.show()
```

Line plot Total_bill vs size

```
In [75]: sns.lineplot(data=tips, x='size',y='total_bill',hue='sex', ci=None,marker='o')
         plt.title("Line plot Total_bill vs size")
         plt.show()
```

Line plot Total_bill vs size
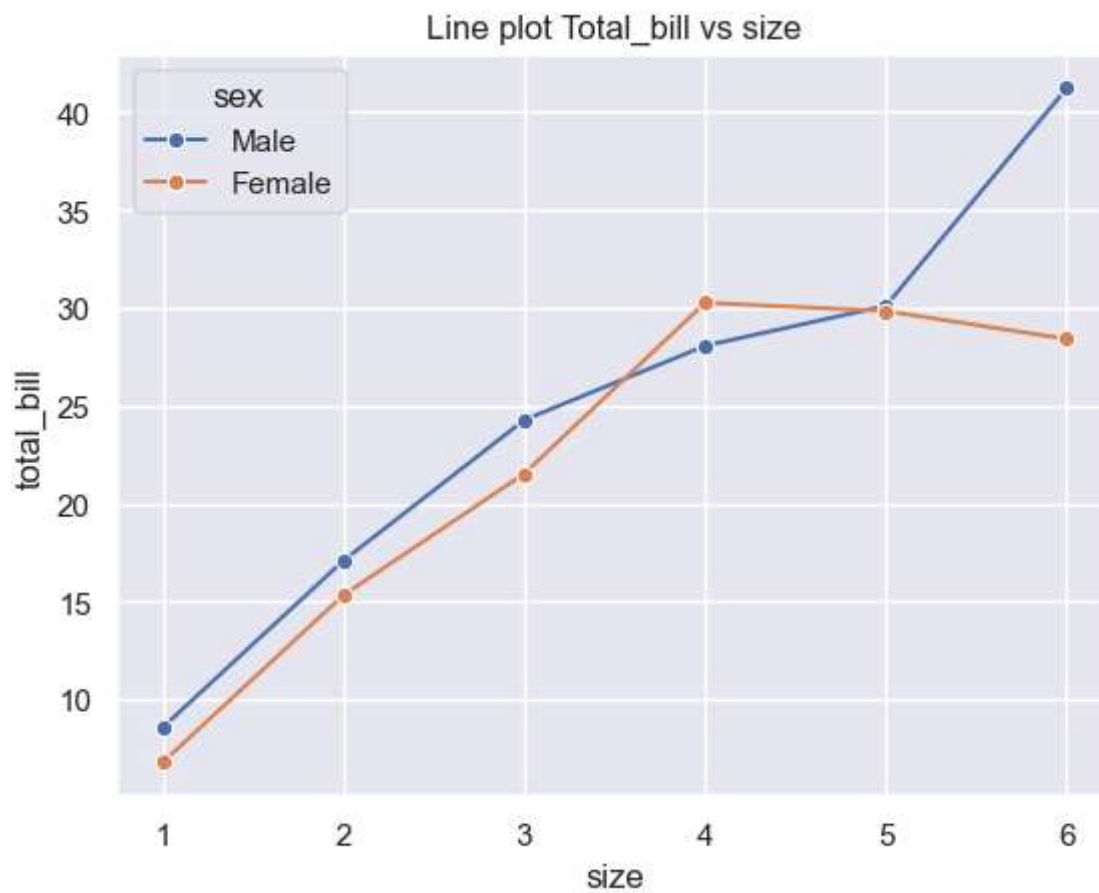

```
In [76]:  tips.columns
```

```
Out[76]:  Index(['total_bill', 'tip', 'sex', 'smoker', 'day', 'time', 'size'], dtype='objec
          t')
```

```
In [77]: # Bar plot
          sns.barplot(data=tips, x='day',y='total_bill',hue='sex',palette='muted',)
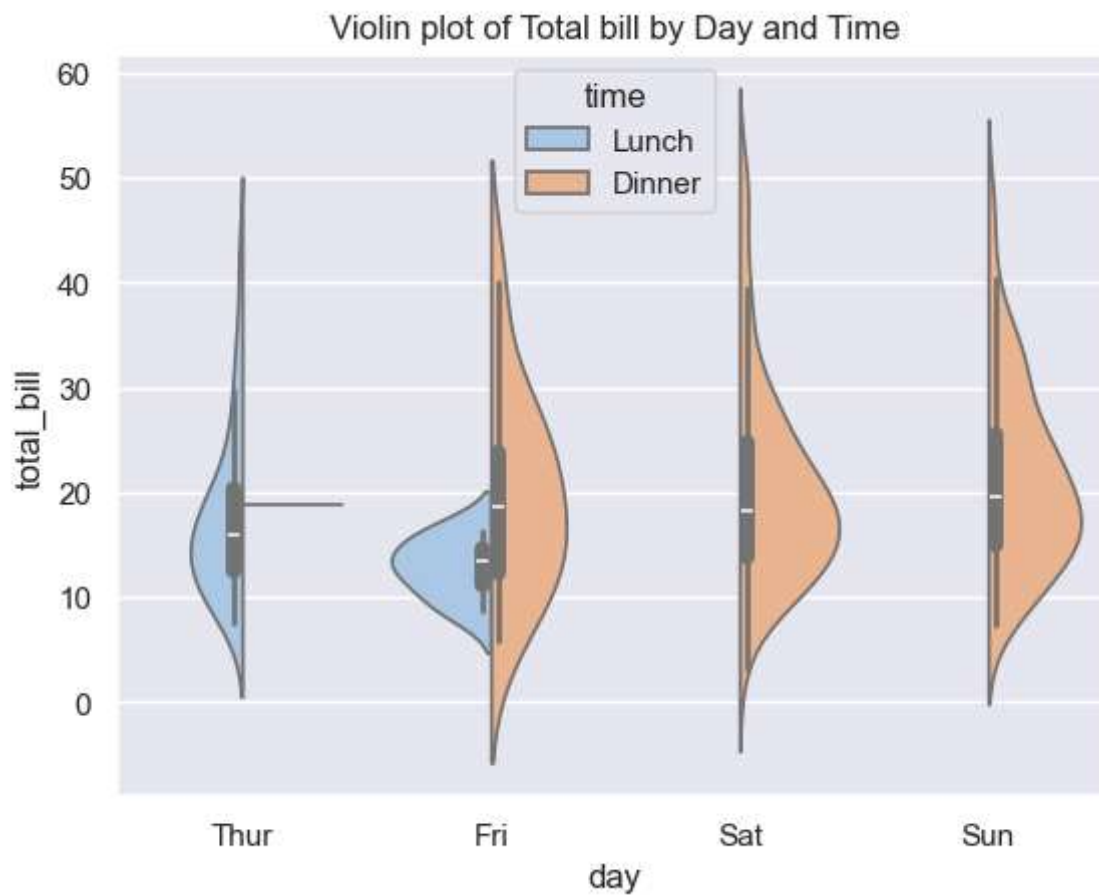   plt.title("Barplot of total-bill vs day")
          plt.show()
```

Barplot of total-bill vs day
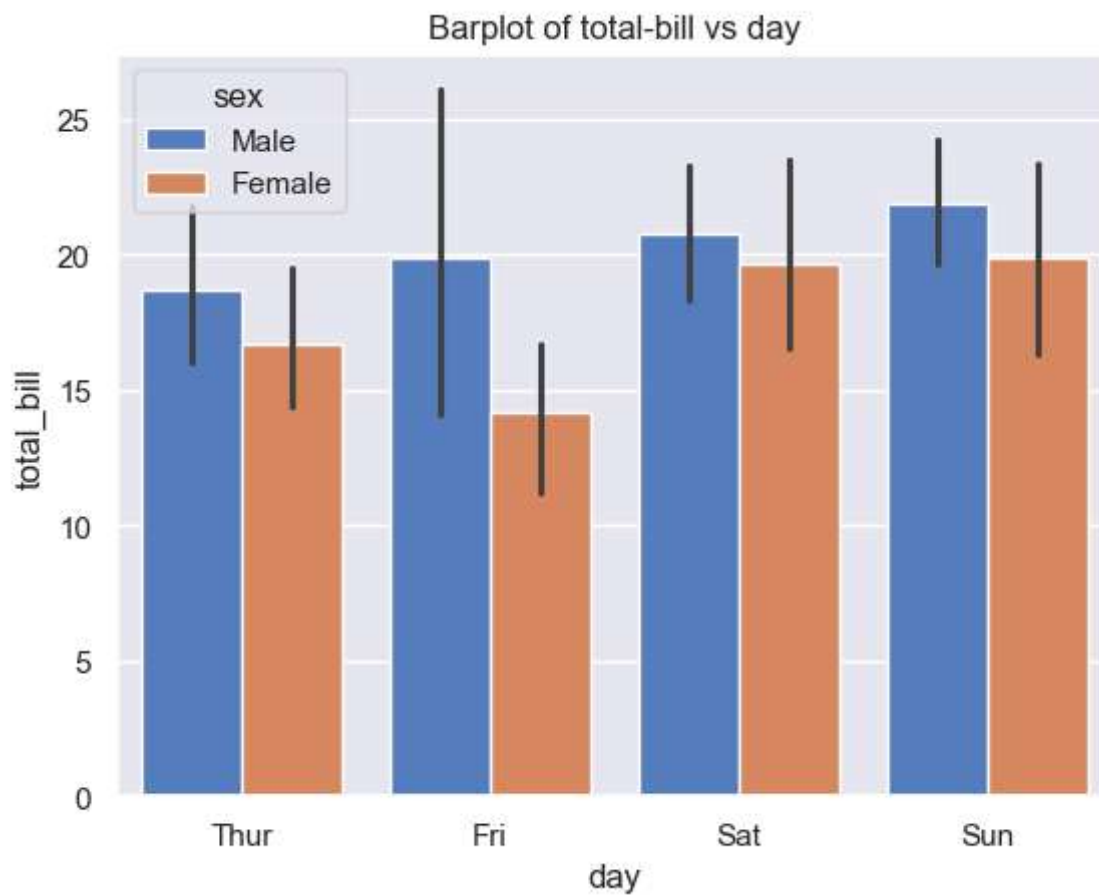

```
In [78]:   tips.columns

Out[78]:   Index(['total_bill', 'tip', 'sex', 'smoker', 'day', 'time', 'size'], dtype='objec
           t')

In [79]:   # Box plot
           sns.boxplot(data=tips, x='day', y='tip', hue='smoker', palette='Set2')
           plt.title('Boxplot of Tips by Day and Smoker Status')
           plt.show()
```

Boxplot of Tips by Day and Smoker Status
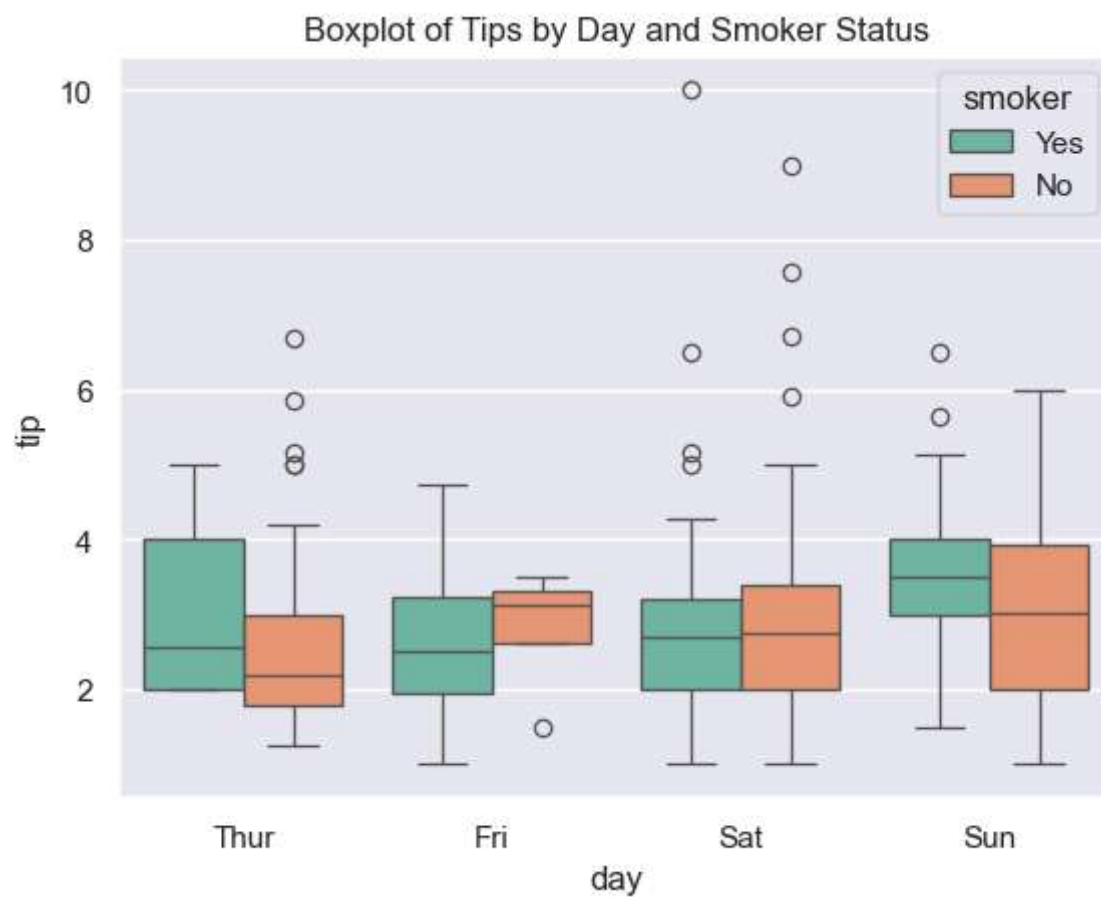

```
In [80]:  # s. violin plot
          sns.violinplot(data=tips, x='day', y='total_bill', hue='time', split=True, palette=
          plt.title('Violin plot of Total bill by Day and Time')
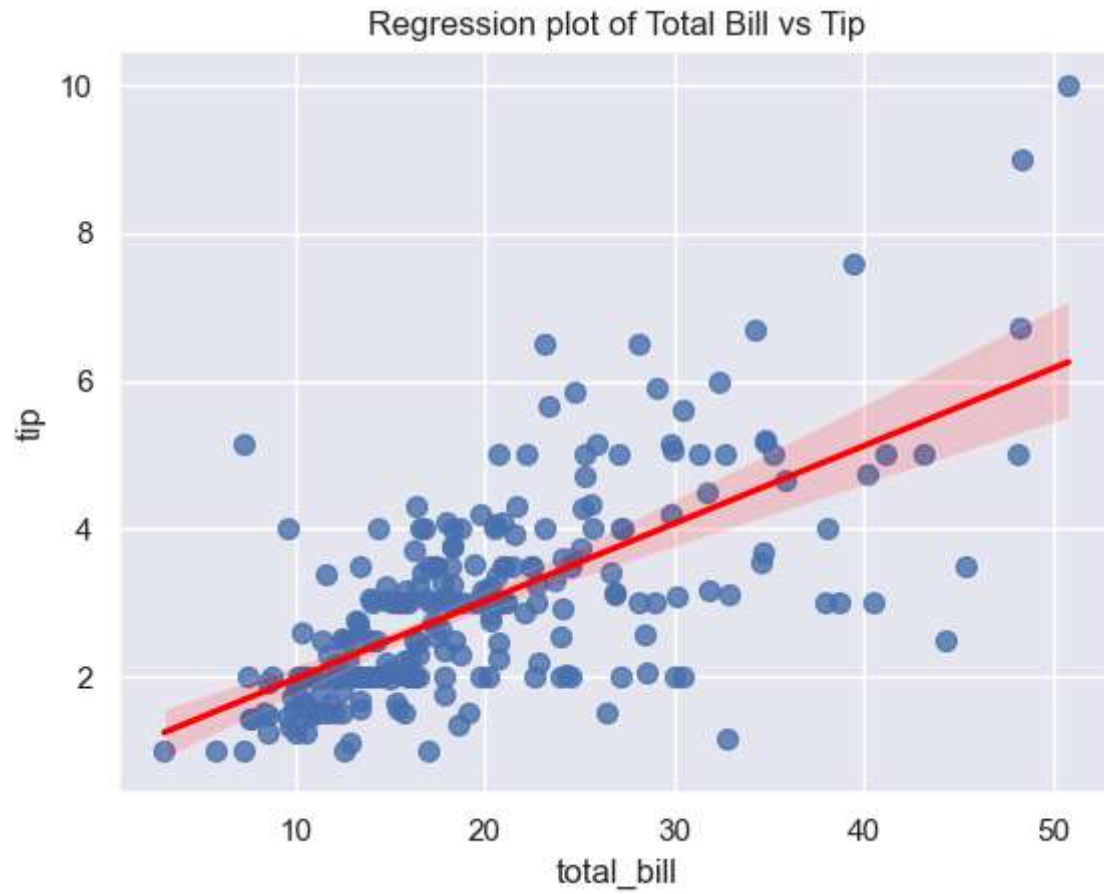          plt.show()
```

Violin plot of Total bill by Day and Time

In [81]: `tips.columns`

Out[81]: Index(['total_bill', 'tip', 'sex', 'smoker', 'day', 'time', 'size'], dtype='objec
t')

In [82]:
```python
# count plot
sns.countplot(data=tips, x='day', hue='smoker', palette='dark')
plt.title('Count plot of Day and Smoker Status')
plt.show()
```

Count plot of Day and Smoker Status
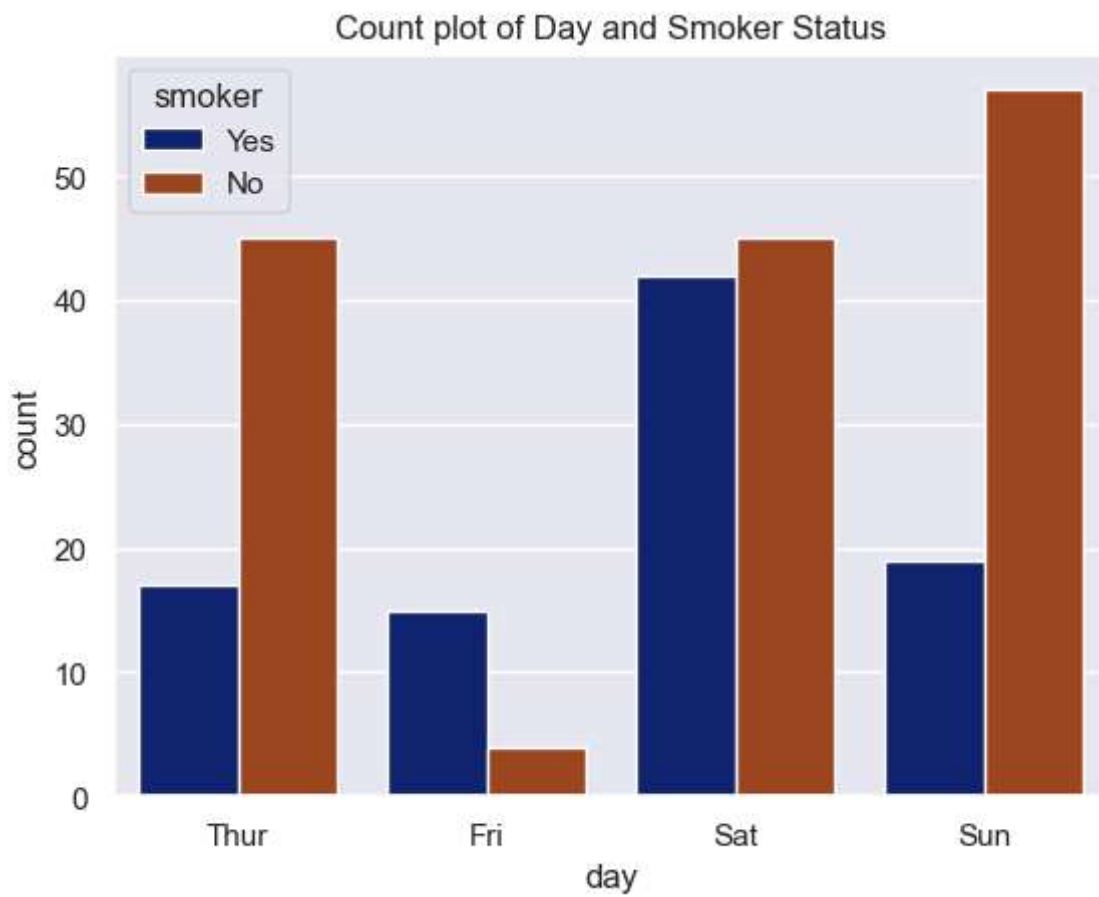
In [83]:
```python
# Regression plot
sns.regplot(data=tips, x='total_bill', y='tip', scatter_kws={'s':50}, line_kws={'co
plt.title('Regression plot of Total Bill vs Tip')
plt.show()
```

Regression plot of Total Bill vs Tip


```
In [84]:  #Histogram Plot
          sns.histplot(data=tips, x='total_bill', bins=20, kde=True, color='blue')
          plt.title('Histogram of Total Bill With KDE')
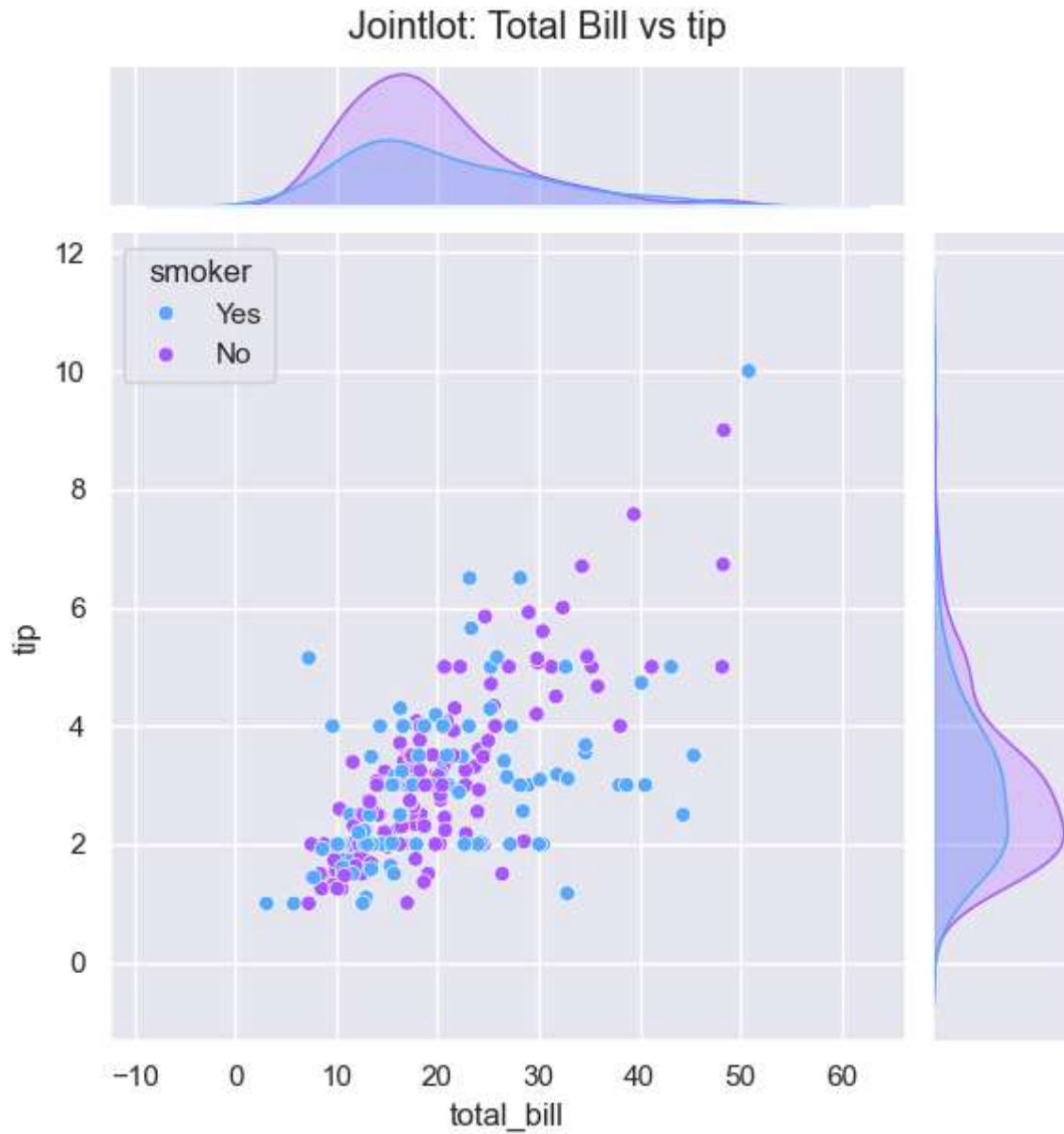          plt.show()
```

Histogram of Total Bill With KDE
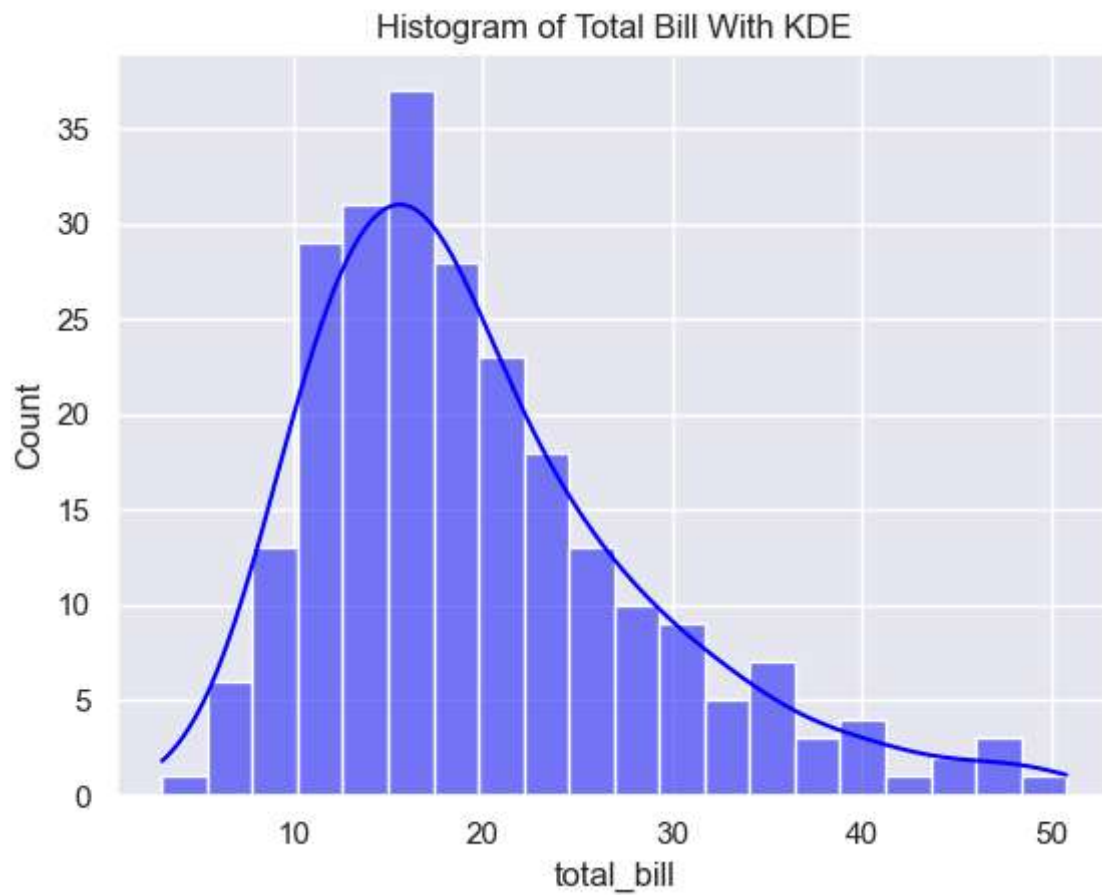

```
In [85]:  # Pair plot
          sns.pairplot(tips, hue='sex', vars=['total_bill','tip','size'], palette='Set2')
          plt.suptitle("pair plot: numberic variables by gender", y=1.02)
          plt.show()
```

pair plot: numberic variables by gender
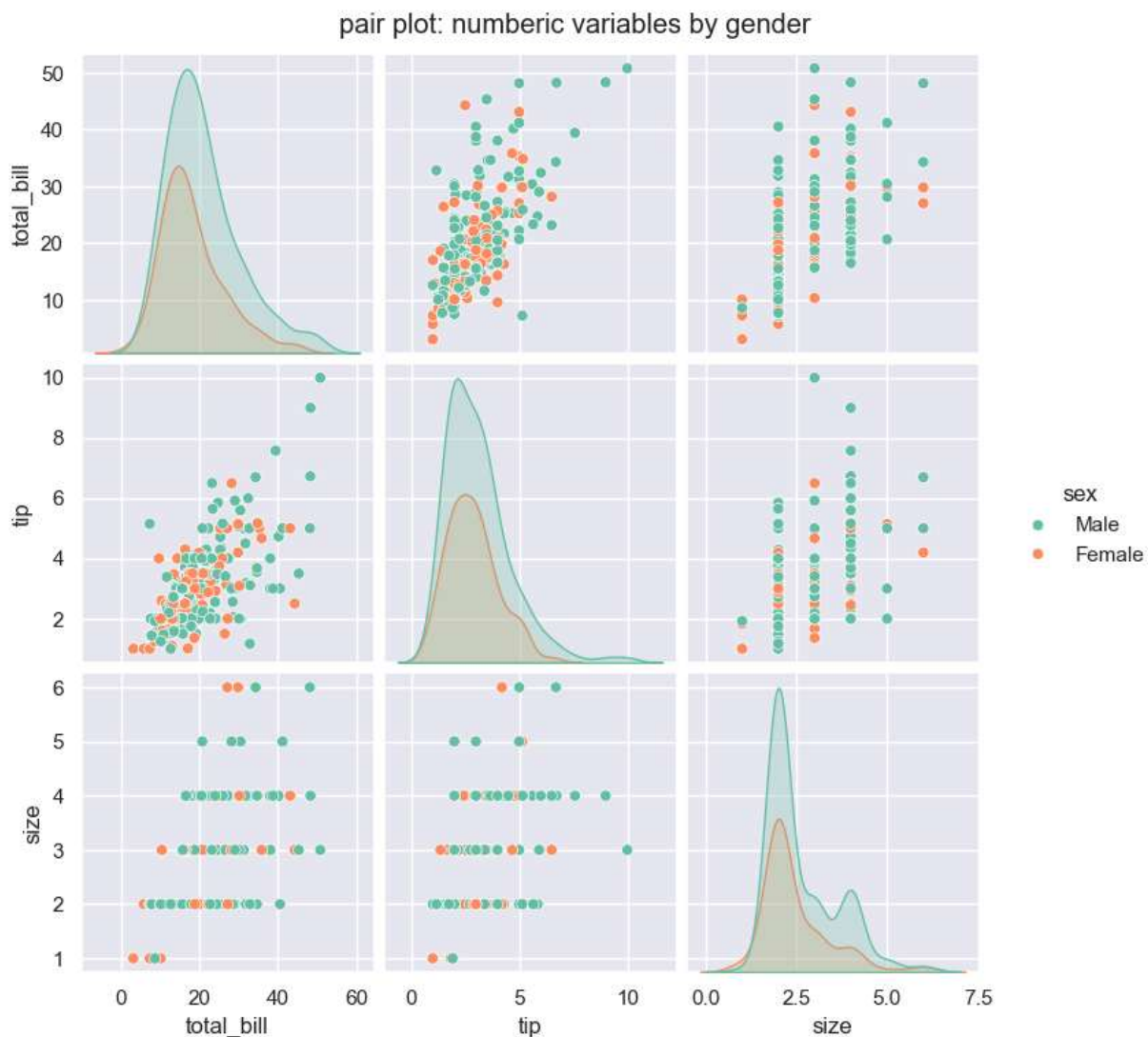

```
In [86]:  #cat plot
          sns.catplot(data=tips, x='day', y='tip', hue='sex', kind='point', palette='bright')
          plt.title("catplot(point): Tips by day and gender")
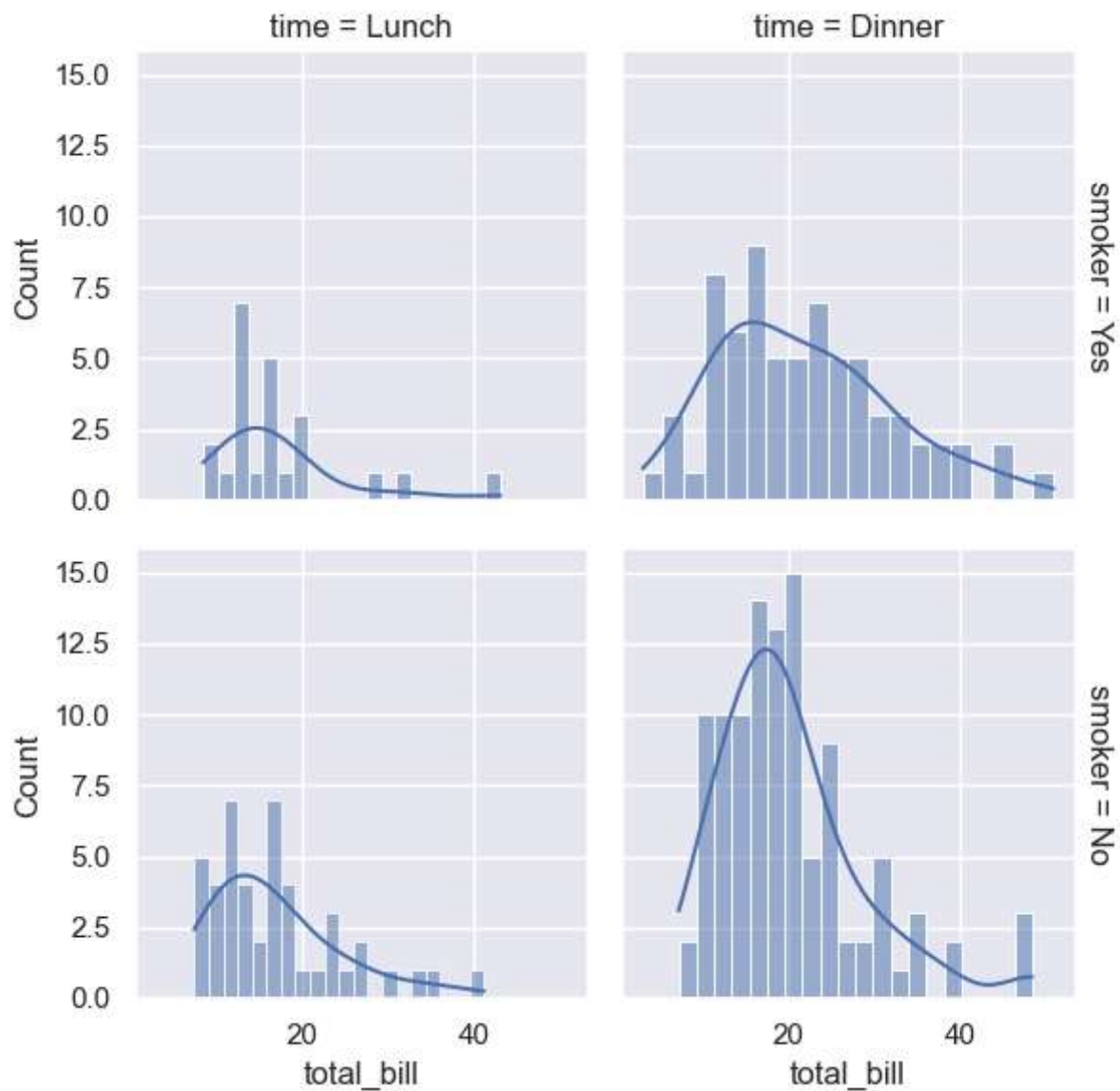          plt.show()
```

catplot(point): Tips by day and gender
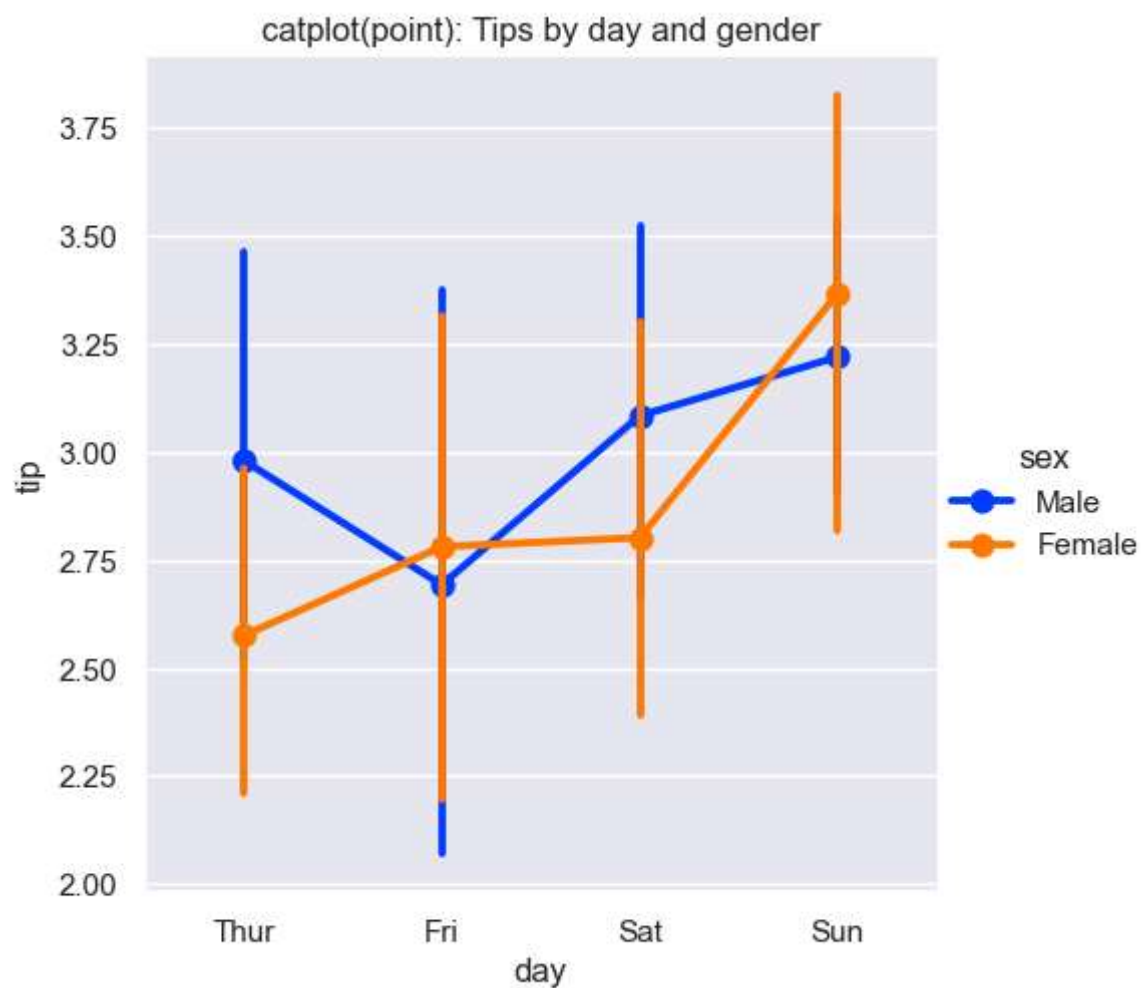

```
In [87]: # Jointplot
         sns.jointplot(data=tips, x='total_bill',y='tip',kind='scatter',hue='smoker', color=
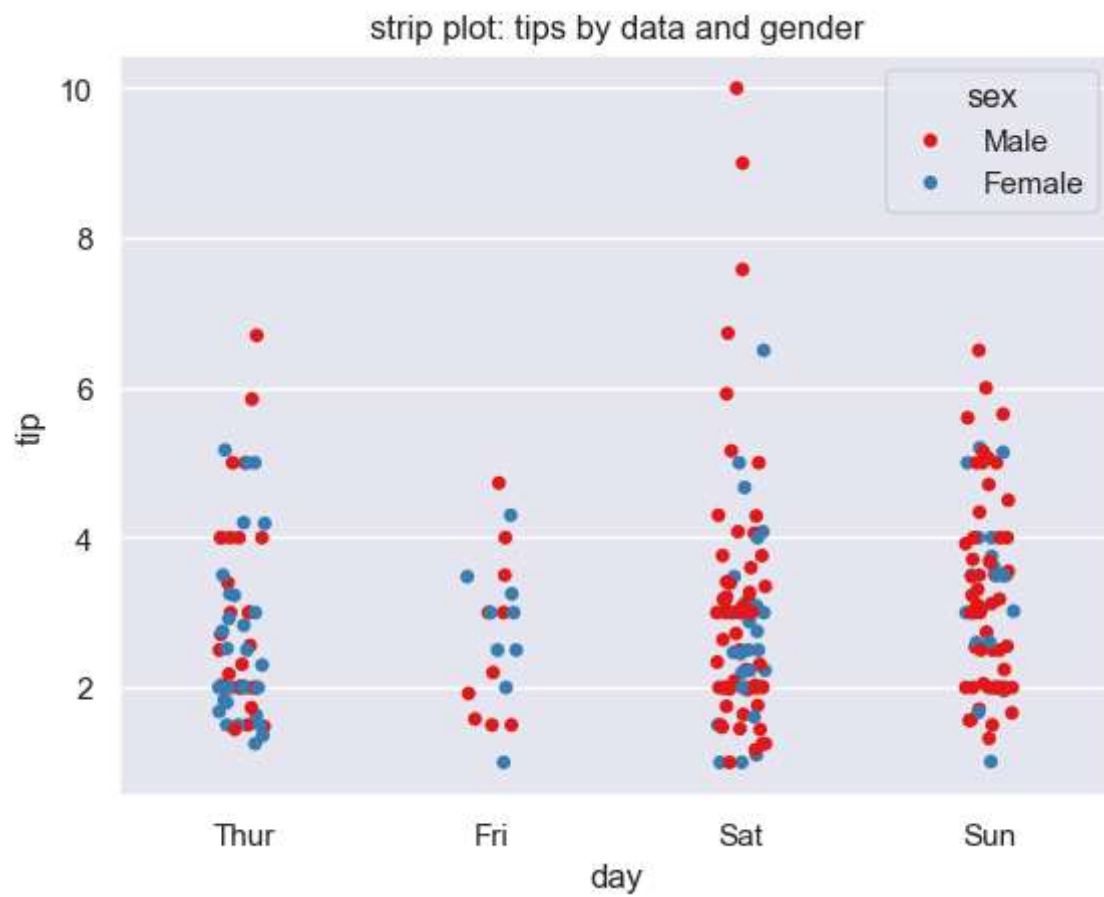         plt.suptitle("Jointlot: Total Bill vs tip", y=1.02)
         plt.show()
```

Jointlot: Total Bill vs tip


```
In [88]:  # Facetgrid
          g= sns.FacetGrid(tips, col='time', row='smoker', margin_titles=True).map(sns.histpl
          g
```

Out[88]: <seaborn.axisgrid.FacetGrid at 0x219bebf5100>

In [89]:
```python
#Strip plot
sns.stripplot(data=tips, x='day',y='tip',hue='sex',jitter=True, palette='Set1')
plt.title("strip plot: tips by data and gender")
plt.show()
```

strip plot: tips by data and gender

```
In [90]:  # KDE PLOT
          sns.kdeplot(data=tips, x='total_bill',hue='sex', fill=True, palette='tab10')
          plt.title("kde plot:Total bill density by gender")
          plt.show()
```

kde plot:Total bill density by gender