In [1]:
```
import seaborn as sns
import numpy as np
import pandas as pd


import matplotlib as mpl
import matplotlib.pyplot as plt
%matplotlib inline
```

In [2]:
```
sns.set(style='darkgrid')
```

In [5]:
```
tips=sns.load_dataset('tips')
```

In [6]:
```
tips.head(5)
```

Out[6]:

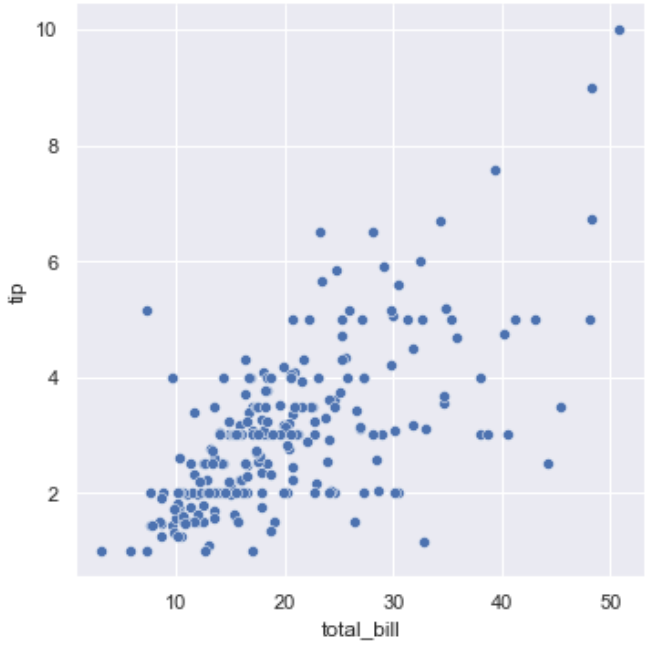
	total_bill	tip	sex	smoker	day	time	size
0	16.99	1.01	Female	No	Sun	Dinner	2
1	10.34	1.66	Male	No	Sun	Dinner	3
2	21.01	3.50	Male	No	Sun	Dinner	3
3	23.68	3.31	Male	No	Sun	Dinner	2
4	24.59	3.61	Female	No	Sun	Dinner	4

In [8]:
```
tips['size']
```

Out[8]:
```
0      2
1      3
2      3
3      2
4      4
      ..
239    3
240    2
241    2
242    2
243    2
Name: size, Length: 244, dtype: int64
```

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

Out[10]:
```
<seaborn.axisgrid.FacetGrid at 0x267c6d165e0>
```



In [12]:
```
tips.shape
```

Out[12]:
```
(244, 7)
```

In [13]:
```
tips.info
```

Out[13]:
```
<bound method DataFrame.info of      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 x 7 columns]>
```

In [14]:
```
tips.describe
```

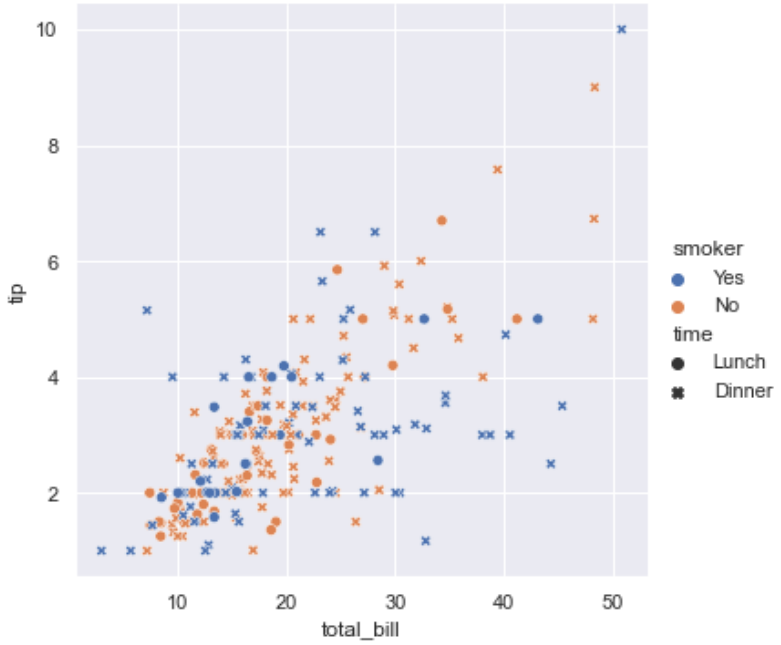
Out[14]:
```
<bound method NDFrame.describe of      total_bill   tip     sex smoker   day    time  size
0         16.99  1.01  Female     No   Sun  Dinner     2
1         10.34  1.66    Male     No   Sun  Dinner     3
2         21.01  3.50    Male     No   Sun  Dinner     3
3         23.68  3.31    Male     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 x 7 columns]>
```

In [15]:
```
tips['smoker'].value_counts()
```

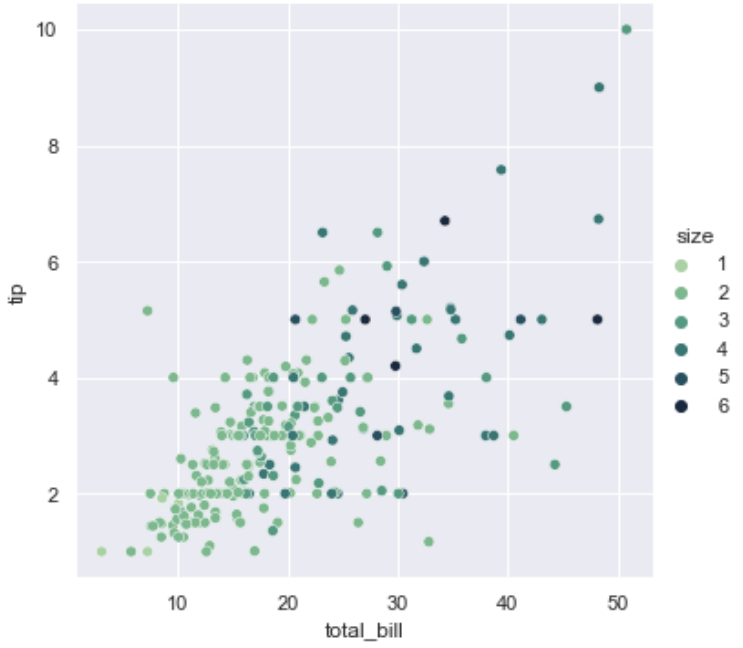
Out[15]:
```
No     151
Yes     93
Name: smoker, dtype: int64
```

In [17]:
```
sns.relplot(x='total_bill',y='tip',data=tips,hue='smoker',style='time')
```

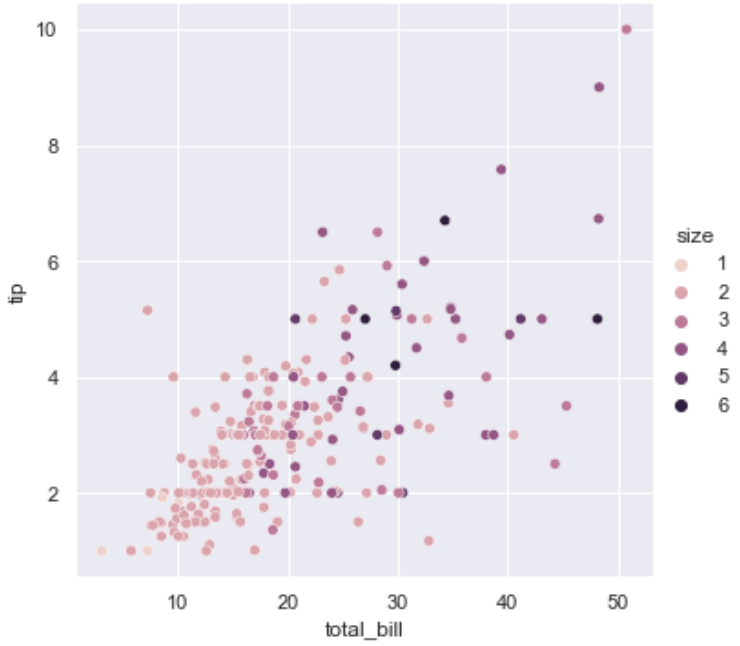
Out[17]:
```
<seaborn.axisgrid.FacetGrid at 0x267cbd89190>
```



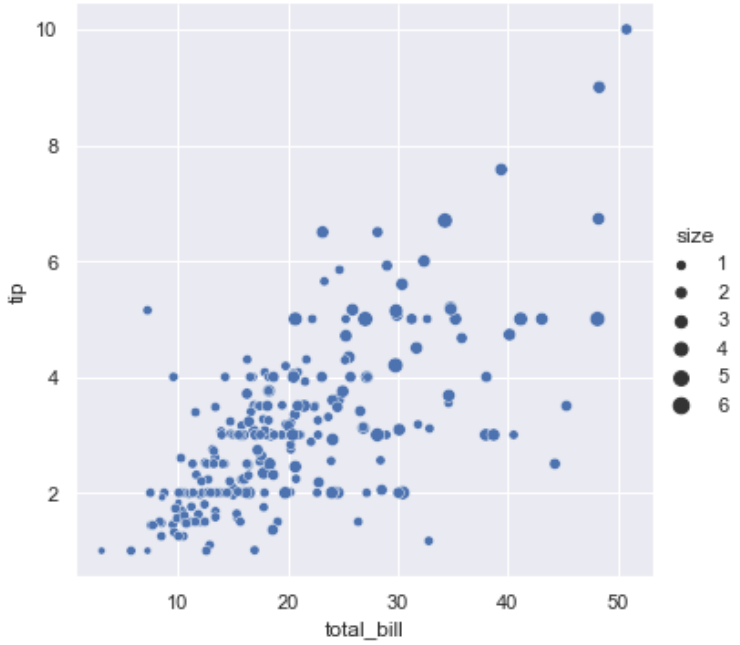
In [19]:
```
sns.relplot(x="total_bill", y="tip", hue="size", palette="ch:r=-.5,l=.75", data=tips);
```



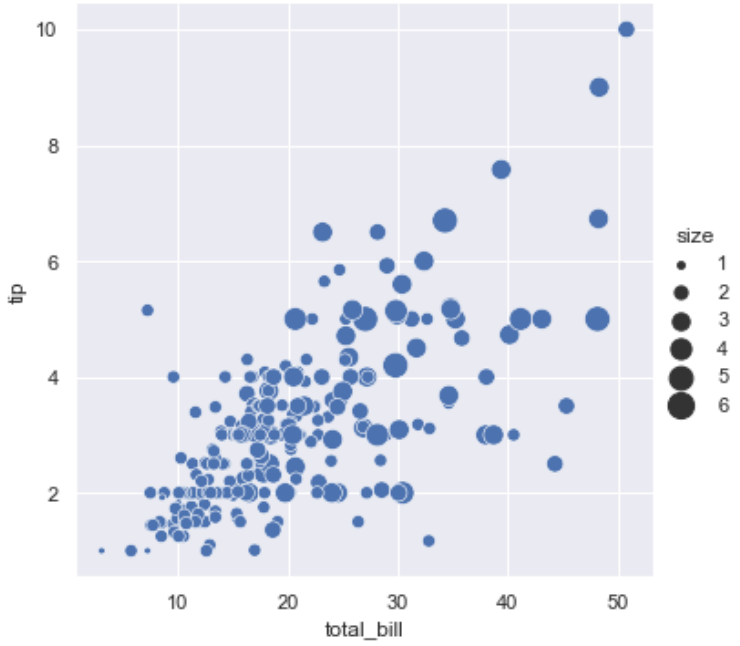
In [20]:
```
sns.relplot(x="total_bill", y="tip", hue="size", data=tips);
```



In [21]:
```
sns.relplot(x="total_bill", y="tip", size="size", data=tips);
```



In [22]:
```
sns.relplot(x="total_bill", y="tip", size="size", sizes=(15, 200), data=tips);
```



In [23]:
```
from numpy.random import randn
```

In [26]:
```
df=pd.DataFrame(dict(time=np.arange(500),value=randn(500).cumsum()))
```

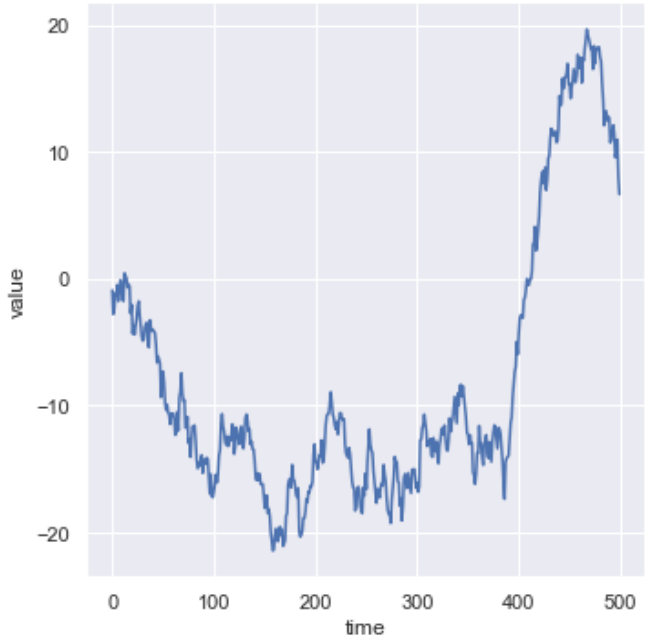
In [27]:
```
df.head()
```

Out[27]:

	time	value
0	0	-0.908959
1	1	-2.792106
2	2	-2.405760
3	3	-1.150236
4	4	-1.285373

In [32]:
```
sns.relplot(x='time',y='value',kind='line',data=df,sort=True)
```

Out[32]:
```
<seaborn.axisgrid.FacetGrid at 0x267cc062250>
```



In [33]:
```
fmri=sns.load_dataset('fmri')
```

In [34]:
```
fmri.head(5)
```

Out[34]:

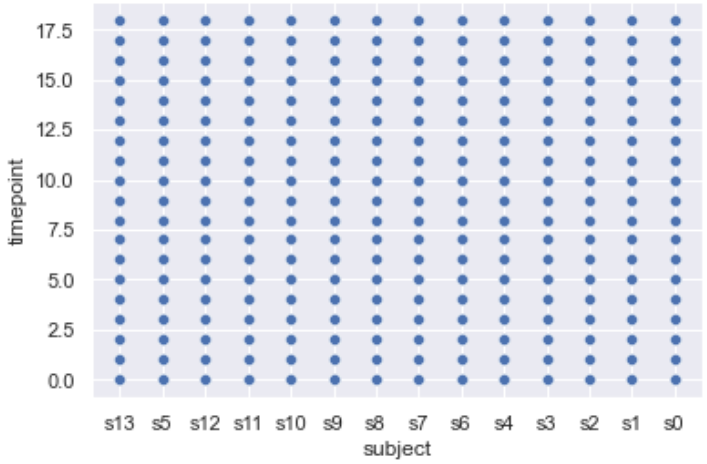
	subject	timepoint	event	region	signal
0	s13	18	stim	parietal	-0.017552
1	s5	14	stim	parietal	-0.080883
2	s12	18	stim	parietal	-0.081033
3	s11	18	stim	parietal	-0.046134
4	s10	18	stim	parietal	-0.037970

In [35]:
```
fmri.info
```

Out[35]:
```
<bound method DataFrame.info of      subject  timepoint event    region    signal
0        s13         18  stim  parietal -0.017552
1         s5         14  stim  parietal -0.080883
2        s12         18  stim  parietal -0.081033
3        s11         18  stim  parietal -0.046134
4        s10         18  stim  parietal -0.037970
...      ...        ...   ...       ...       ...
1059      s0          8   cue   frontal  0.018165
1060     s13          7   cue   frontal -0.029130
1061     s12          7   cue   frontal -0.004939
1062     s11          7   cue   frontal -0.025367
1063      s0          0   cue  parietal -0.006899

[1064 rows x 5 columns]>
```

In [42]:
```
## Scatter plot
sns.scatterplot(x='subject',y='timepoint',data=fmri)
```

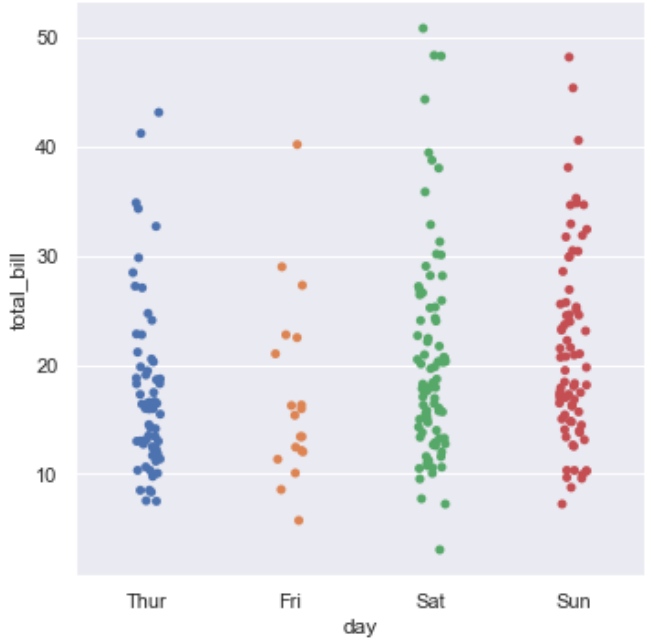
Out[42]:
```
<AxesSubplot:xlabel='subject', ylabel='timepoint'>
```



In [39]:
```
tips=sns.load_dataset('tips')
```

In [41]:
```
#catplot

sns.catplot(x='day',y='total_bill',data=tips)
```

Out[41]: <seaborn.axisgrid.FacetGrid at 0x267cbfe6d00>



In [46]:
```
exercise=sns.load_dataset('exercise')
exercise.head(15)
```

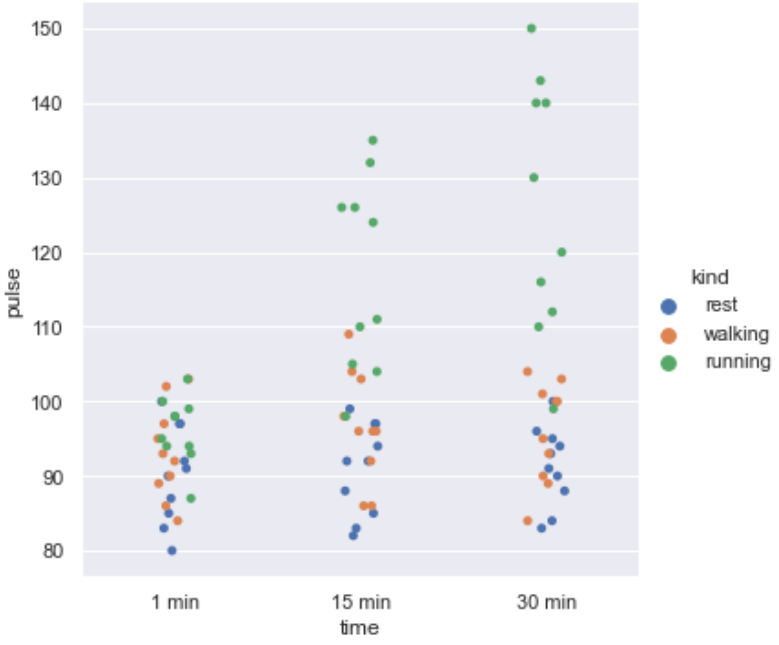
Out[46]:

	Unnamed: 0	id	diet	pulse	time	kind
0	0	1	low fat	85	1 min	rest
1	1	1	low fat	85	15 min	rest
2	2	1	low fat	88	30 min	rest
3	3	2	low fat	90	1 min	rest
4	4	2	low fat	92	15 min	rest
5	5	2	low fat	93	30 min	rest
6	6	3	low fat	97	1 min	rest

	Unnamed: 0	id	diet	pulse	time	kind
7	7	3	low fat	97	15 min	rest
8	8	3	low fat	94	30 min	rest
9	9	4	low fat	80	1 min	rest
10	10	4	low fat	82	15 min	rest
11	11	4	low fat	83	30 min	rest
12	12	5	low fat	91	1 min	rest
13	13	5	low fat	92	15 min	rest
14	14	5	low fat	91	30 min	rest

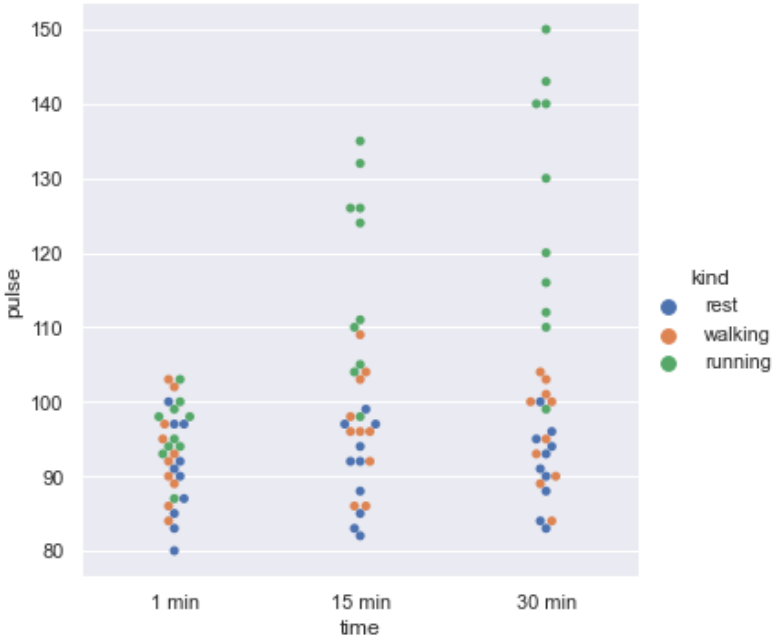
In [47]:
```
sns.catplot(x='time',y='pulse',hue='kind',data=exercise)
```

Out[47]: <seaborn.axisgrid.FacetGrid at 0x267cd176430>



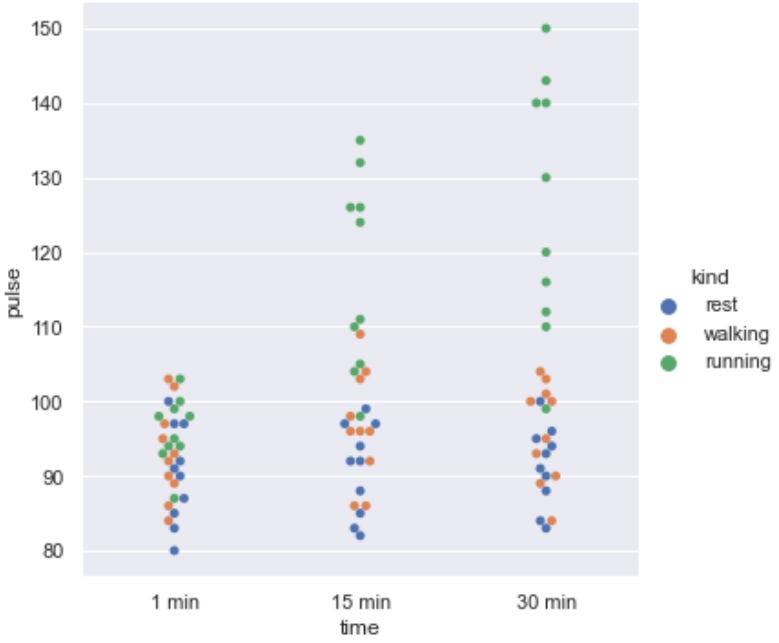
In [48]:
```
sns.catplot(x='time',y='pulse',hue='kind',kind='swarm',data=exercise)
```

Out[48]: <seaborn.axisgrid.FacetGrid at 0x267cd1b4220>



In [49]:
```
sns.catplot(x='time',y='pulse',hue='kind',kind='swarm',data=exercise)
```

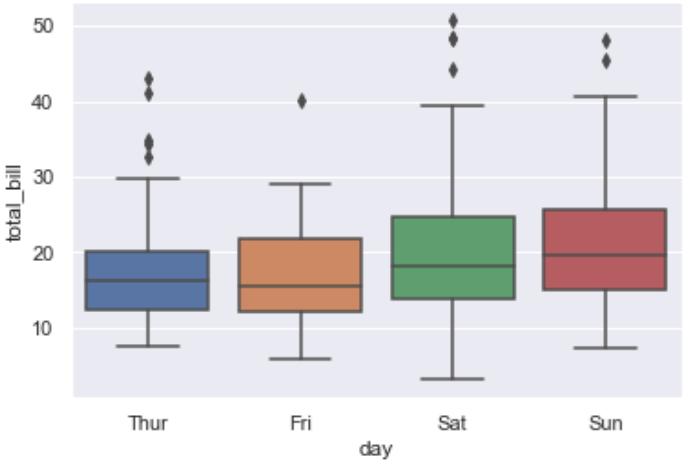
Out[49]:
```
<seaborn.axisgrid.FacetGrid at 0x267cd176220>
```



In [50]:
```
tips = sns.load_dataset("tips")
```

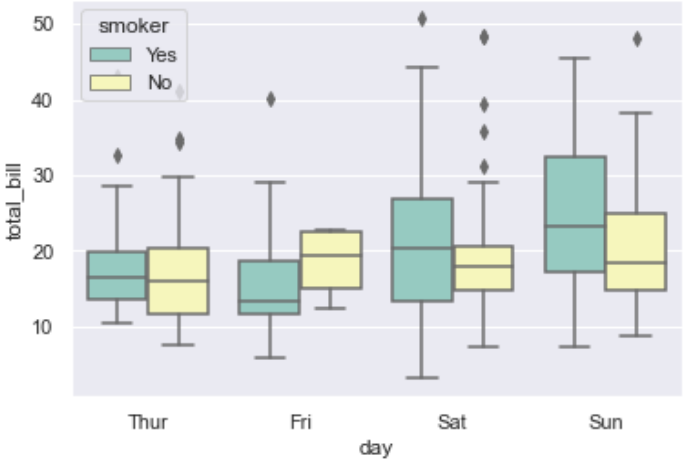
In [51]:
```
sns.boxplot(x="day", y="total_bill", data=tips)
```

Out[51]:
```
<AxesSubplot:xlabel='day', ylabel='total_bill'>
```



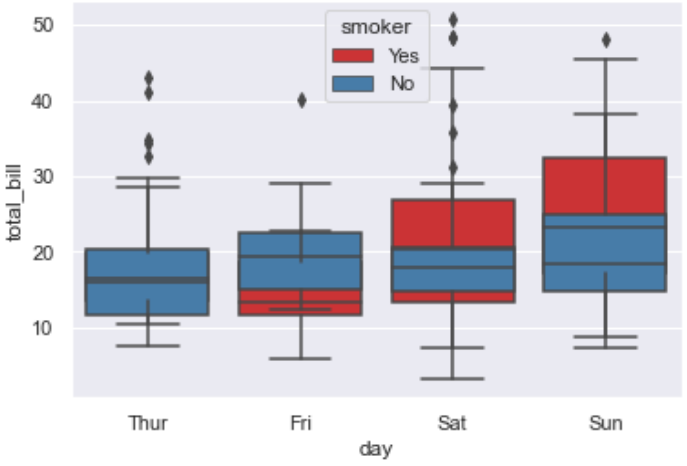
In [52]:
```
sns.boxplot(x="day", y="total_bill", hue="smoker",
                 data=tips, palette="Set3")
```

Out[52]: <AxesSubplot:xlabel='day', ylabel='total_bill'>



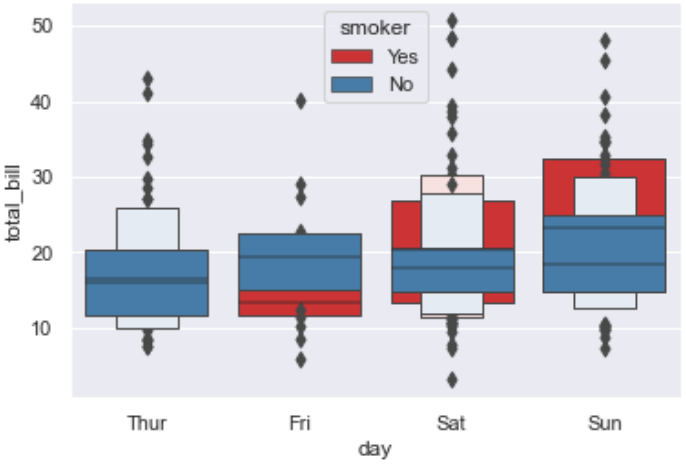
In [55]:
```
sns.boxplot(x="day", y="total_bill", hue="smoker",
                 data=tips, palette="Set1",dodge=False)
```

Out[55]: <AxesSubplot:xlabel='day', ylabel='total_bill'>



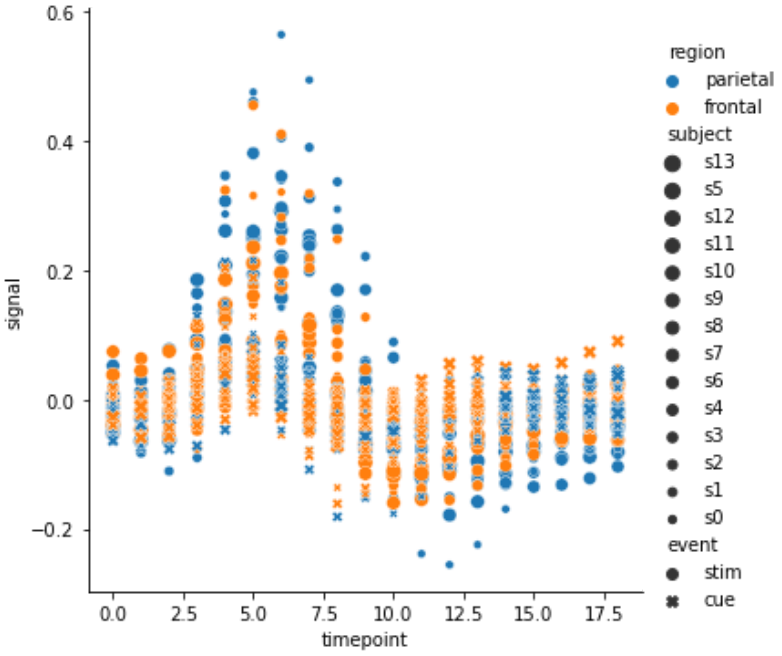
In [56]:
```
sns.boxenplot(x="day", y="total_bill", hue="smoker",
                 data=tips, palette="Set1",dodge=False)
```

Out[56]: <AxesSubplot:xlabel='day', ylabel='total_bill'>



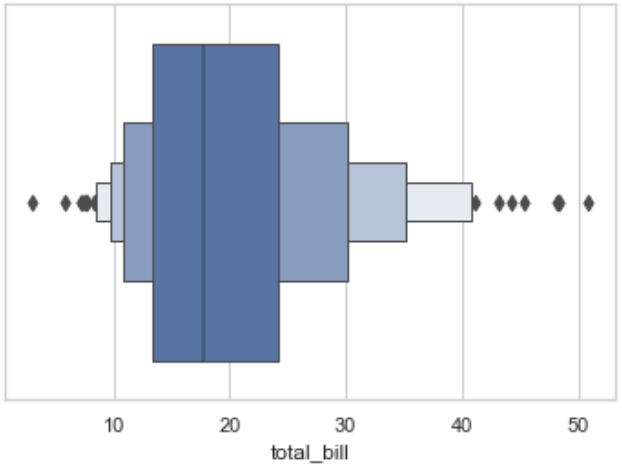
In [3]:
```
##Assignment Question
fmri = sns.load_dataset("fmri")
sns.relplot(x = "timepoint", y = "signal", data = fmri, hue = "region", style = "event", size = "
```

Out[3]: <seaborn.axisgrid.FacetGrid at 0x17e954f64c0>



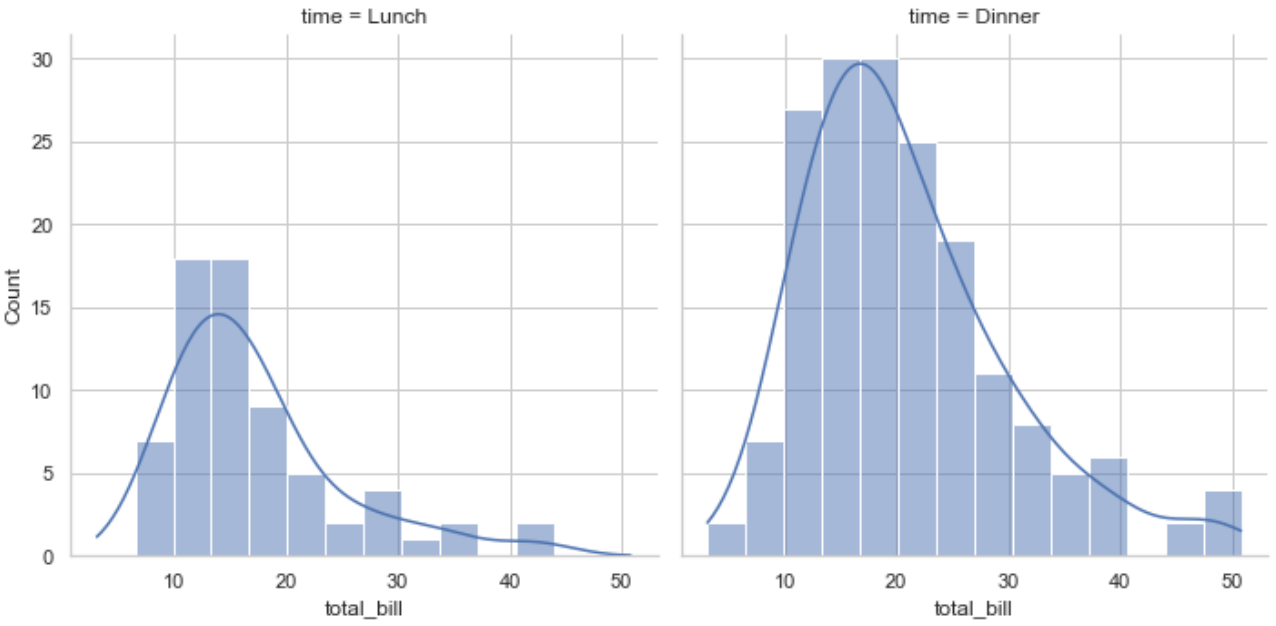
In [2]:
```
import matplotlib.pyplot as plt
import pandas as pd
import numpy as np
# %matplotlib inline
import seaborn as sns
from numpy.random import randn
```

In [4]:
```
sns.set_theme(style="whitegrid")
tips = sns.load_dataset("tips")
ax = sns.boxenplot(x=tips["total_bill"])
```



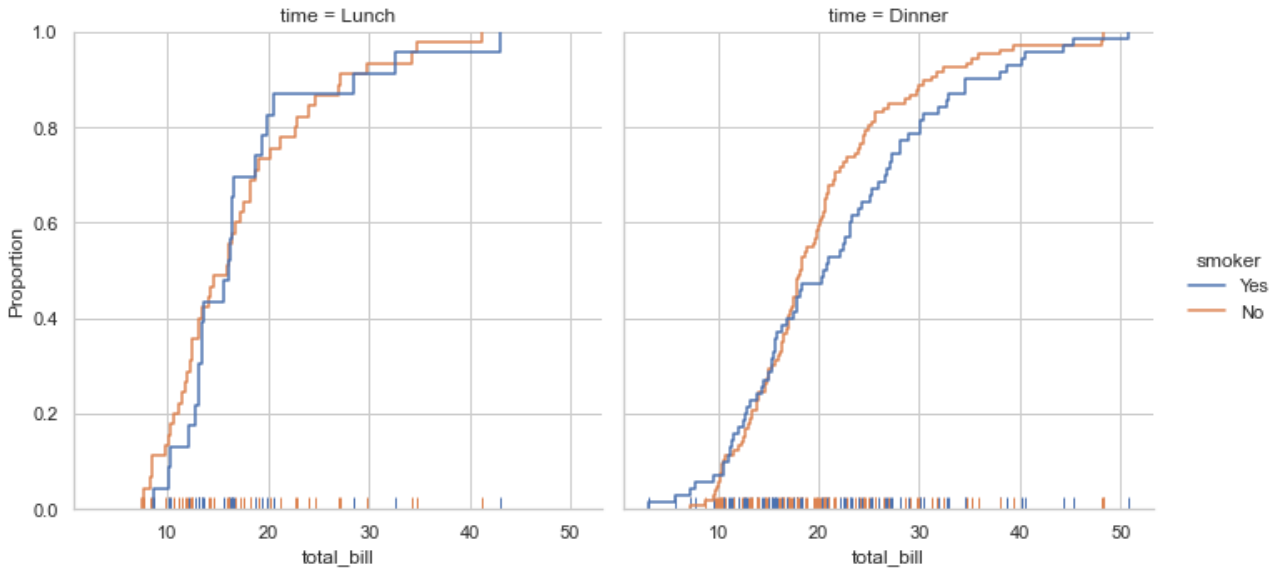
In [6]:
```
sns.displot(data=tips, x="total_bill", col="time", kde=True)
```

Out[6]: <seaborn.axisgrid.FacetGrid at 0x17e9a50de20>



In [7]:
```
sns.displot(data=tips, kind="ecdf", x="total_bill", col="time", hue="smoker", rug=True)
```

Out[7]: <seaborn.axisgrid.FacetGrid at 0x17e9a49df70>


time = Lunch
time = Dinner
Proportion
1.0
0.8
0.6
0.4
0.2
0.0
10
20
30
40
50
total_bill
smoker
Yes
No

In [ ]: