```
#day 3


#sekhar reddy

import pandas as pd

import seaborn as sns

import numpy as np

import matplotlib as mpl

import matplotlib.pyplot as plt

%matplotlib inline

tips = sns.load_dataset('tips')
tips.head(5)
```

	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

```
tips = sns.load_dataset('tips')
tips.tail(10)
```

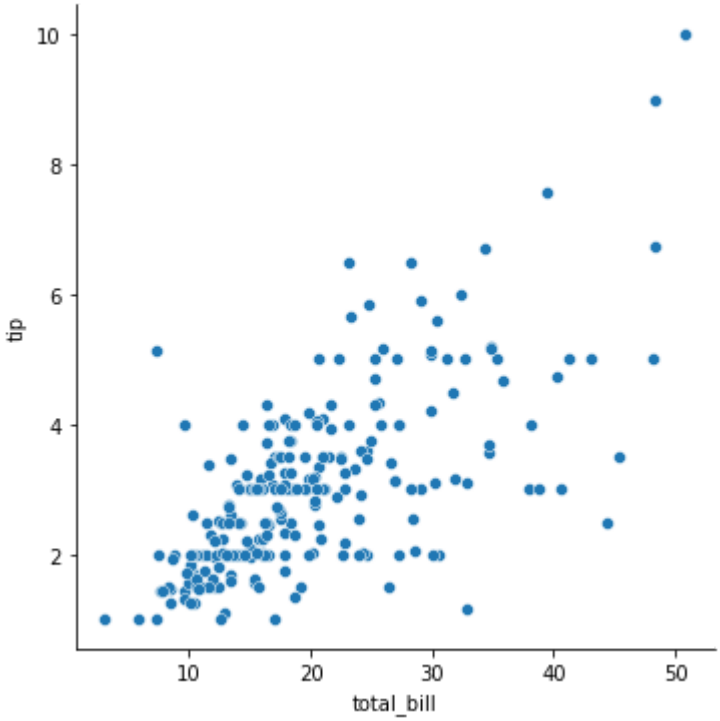
	total_bill	tip	sex	smoker	day	time	size
234	15.53	3.00	Male	Yes	Sat	Dinner	2

```
sns.get_dataset_names()
```

```
['anagrams',
 'anscombe',
 'attention',
 'brain_networks',
 'car_crashes',
 'diamonds',
 'dots',
 'exercise',
 'flights',
 'fmri',
 'gammas',
 'geyser',
 'iris',
 'mpg',
 'penguins',
 'planets',
 'tips',
 'titanic']
```

```
sns.relplot(x="total_bill",y="tip",data = tips)
```

```
<seaborn.axisgrid.FacetGrid at 0x7f4bea5f3250>
```




```
tips['day'].unique
```

```
<bound method Series.unique of 0       Sun
1       Sun
2       Sun
3       Sun
4       Sun
```

```
       ...
239     Sat
240     Sat
241     Sat
242     Sat
243    Thur
Name: day, Length: 244, dtype: category
Categories (4, object): ['Thur', 'Fri', 'Sat', 'Sun']>
```

```
tips['sex'].unique
```

```
<bound method Series.unique of 0      Female
1        Male
2        Male
3        Male
4      Female
        ...
239      Male
240    Female
241      Male
242      Male
243    Female
Name: sex, Length: 244, dtype: category
Categories (2, object): ['Male', 'Female']>
```

```
tips['size'].unique
```

```
<bound method Series.unique of 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>
```

```
tips.describe()
```

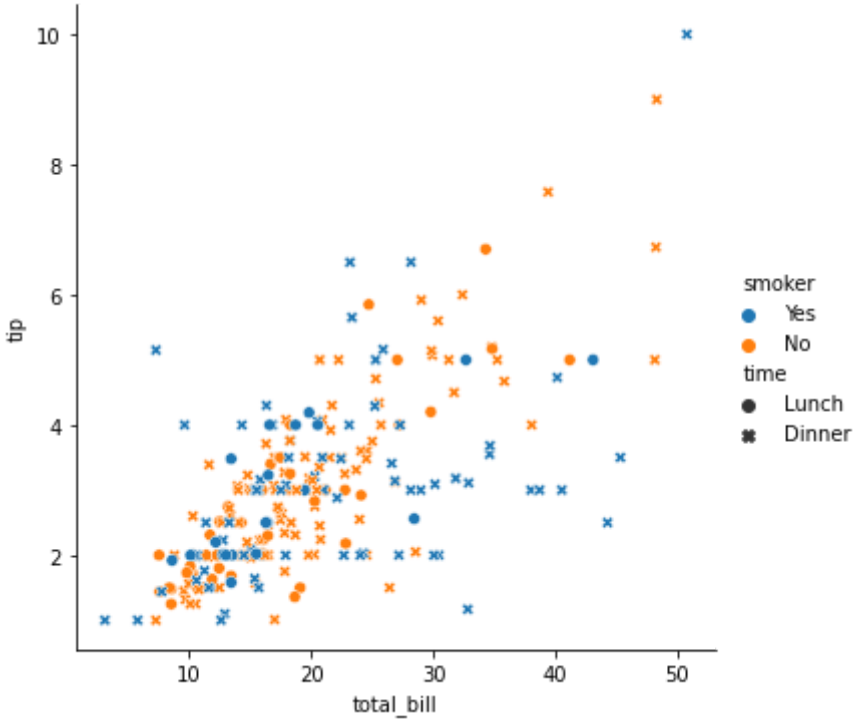
	total_bill	tip	size
count	244.000000	244.000000	244.000000
mean	19.785943	2.998279	2.569672
std	8.902412	1.383638	0.951100
min	3.070000	1.000000	1.000000
25%	13.347500	2.000000	2.000000
50%	17.795000	2.900000	2.000000
75%	24.127500	3.562500	3.000000
max	50.810000	10.000000	6.000000

```
tips['smoker'].value_counts()
```

```
No     151
Yes     93
Name: smoker, dtype: int64
```

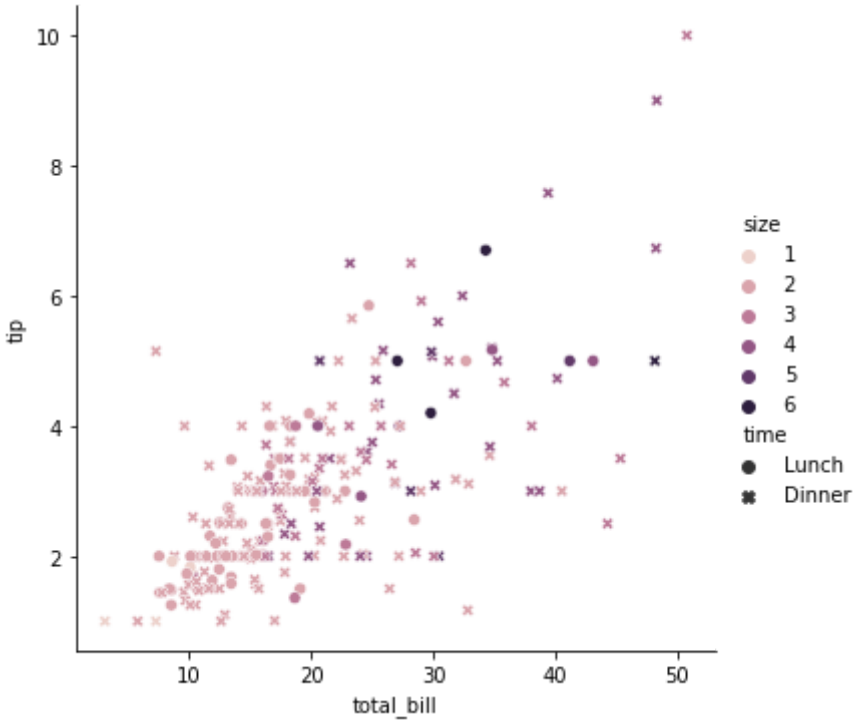
```
sns.relplot(x="total_bill",y="tip",data = tips, hue='smoker',style='time')
```

```
<seaborn.axisgrid.FacetGrid at 0x7f4be1289590>
```



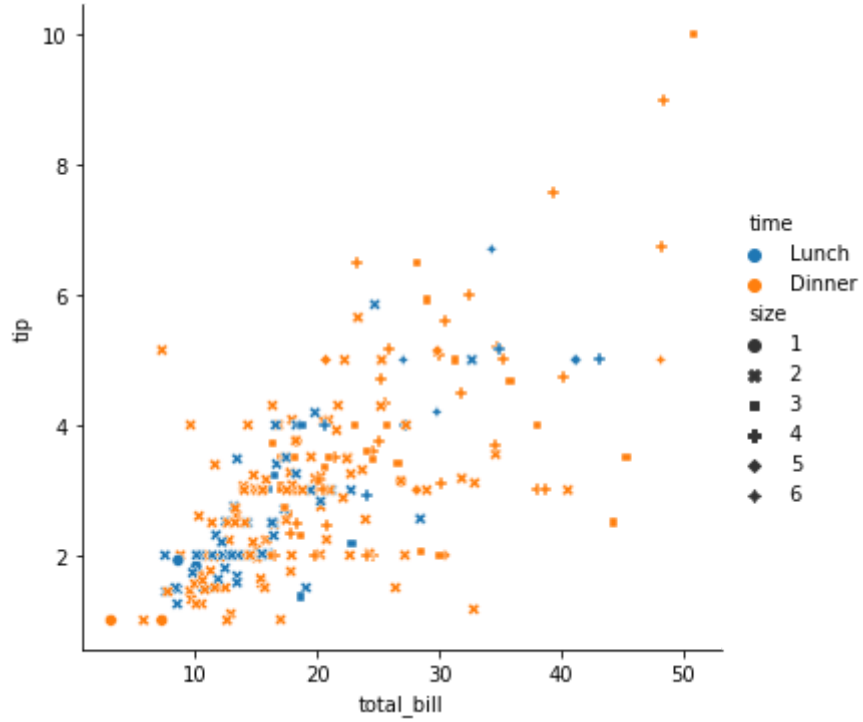

```
sns.relplot(x="total_bill",y="tip",data = tips, hue='size',style='time')
```

```
<seaborn.axisgrid.FacetGrid at 0x7f4be0c94e10>
```



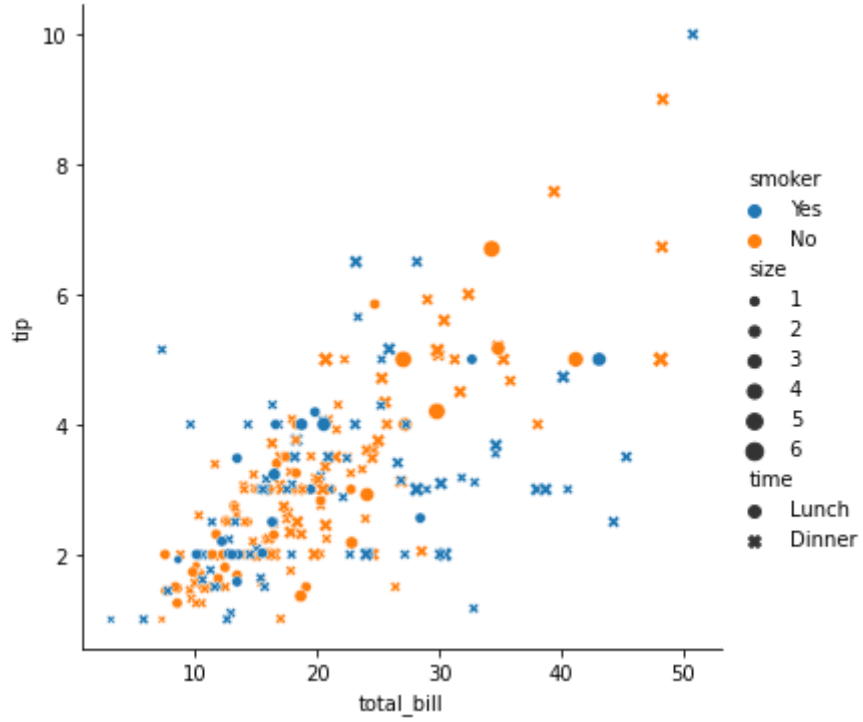
```
sns.relplot(x="total_bill",y="tip",data = tips, style='size',hue='time')
```

```
<seaborn.axisgrid.FacetGrid at 0x7f4be1290c50>
```




```
sns.relplot(x="total_bill",y="tip",data = tips, hue='smoker',style='time',size='size')
```

```
<seaborn.axisgrid.FacetGrid at 0x7f4be0bdb9d0>
```




```
from numpy.random import randn
```

```
df= pd.DataFrame(dict(time = np.arange(500), value = randn(500).cumsum()))
```

```
df.head()
```

	time	value
0	0	-0.209160
1	1	0.893373
2	2	1.244583
3	3	-0.663406
4	4	1.434414

```
df.tail()
```

	time	value
495	495	-7.355315
496	496	-7.403459
497	497	-5.932043
498	498	-4.643506
499	499	-4.742756

```
df.tail(10)
```

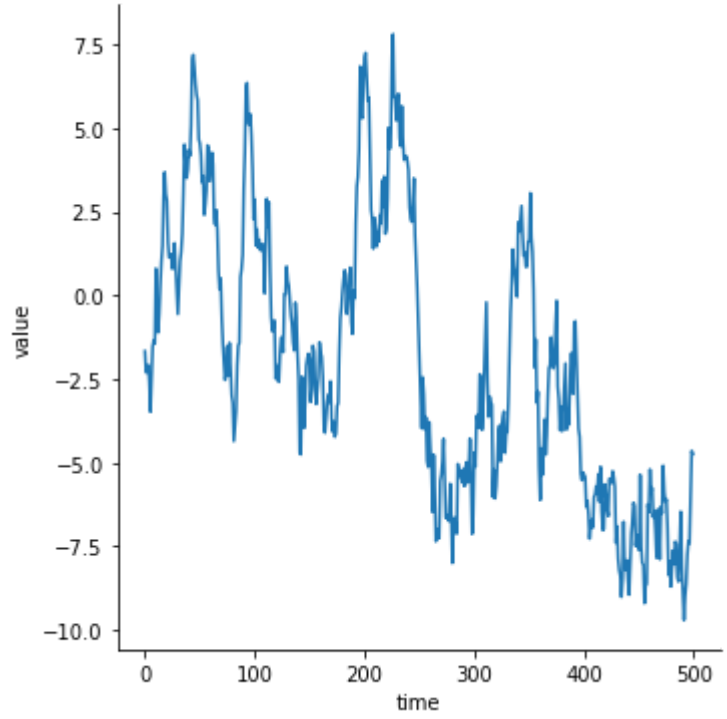
	time	value
490	490	-8.800637
491	491	-9.699639
492	492	-8.982889
493	493	-8.617590
494	494	-7.758742
495	495	-7.355315
496	496	-7.403459
497	497	-5.932043
498	498	-4.643506
499	499	-4.742756

```
df.head(10)
```

	time	value
0	0	-0.209160
1	1	0.893373
2	2	1.244583
3	3	-0.663406
4	4	1.434414
5	5	1.812002

```
sns.relplot(x="time",y='value',kind='line',data = df , sort = True)
```

```
<seaborn.axisgrid.FacetGrid at 0x7faac4b2b450>
```

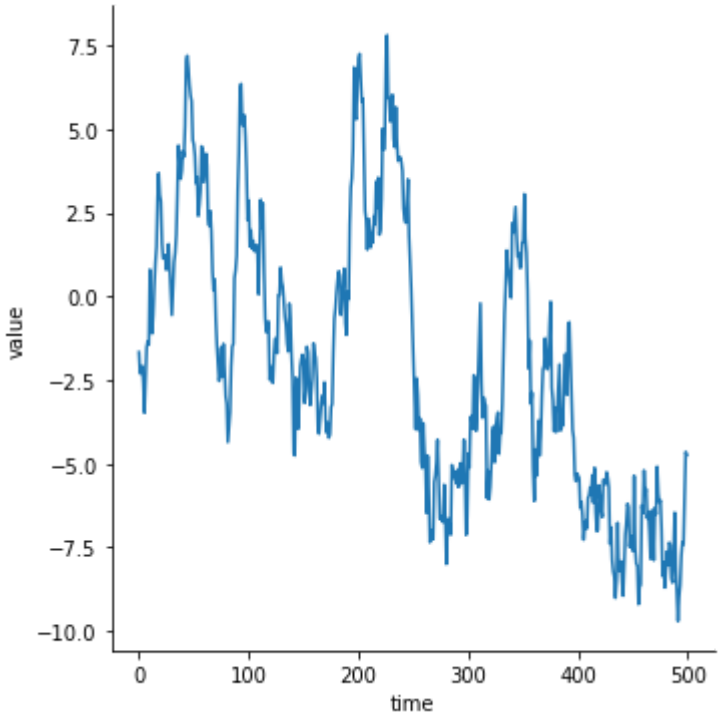



```
sns.relplot(x="time",y='value',kind='line',data = df , sort = True)
```

```
<seaborn.axisgrid.FacetGrid at 0x7faac4a7a7d0>
```


```
sns.relplot(x="time",y='value',kind='line',data = df , sort = False)
```

```
<seaborn.axisgrid.FacetGrid at 0x7faaba60f110>
```

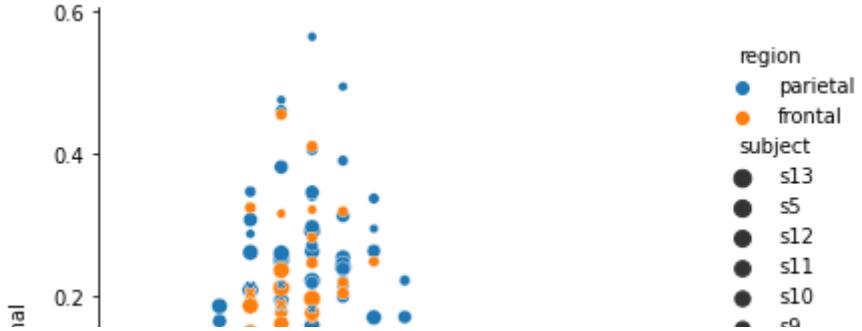



```
fmri=sns.load_dataset('fmri')
fmri.head()
```

	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

```
sns.relplot(x = 'timepoint', y = 'signal', data = fmri , hue = 'region', style = 'event',
```

```
<seaborn.axisgrid.FacetGrid at 0x7faaba5ee890>
```




```
fmri.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 1064 entries, 0 to 1063
Data columns (total 5 columns):
 #   Column     Non-Null Count  Dtype  
---  ------     --------------  -----  
 0   subject    1064 non-null   object 
 1   timepoint  1064 non-null   int64  
 2   event      1064 non-null   object 
 3   region     1064 non-null   object 
 4   signal     1064 non-null   float64
dtypes: float64(1), int64(1), object(3)
memory usage: 41.7+ KB
```

```
fmri.shape
```

```
(1064, 5)
```

```
fmri.describe
```

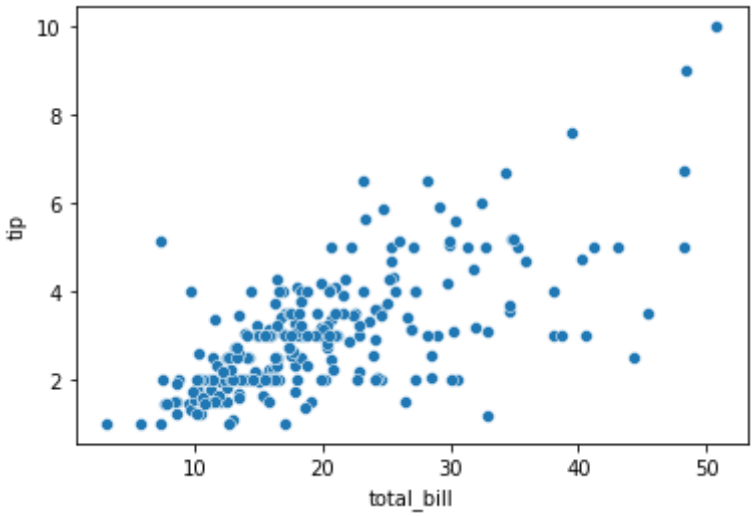
```
<bound method NDFrame.describe of      subject  timepoint event    region    signal
0        s13         18  stim  parietal -0.017552
1         s5         14  stim  parietal -0.080883
2        s12         18  stim  parietal -0.081033
3        s11         18  stim  parietal -0.046134
4        s10         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]>
```

```
fmri.describe()
```

	timepoint	signal
count	1064.000000	1064.000000
mean	9.000000	0.003540
std	5.479801	0.093930
min	0.000000	0.255486

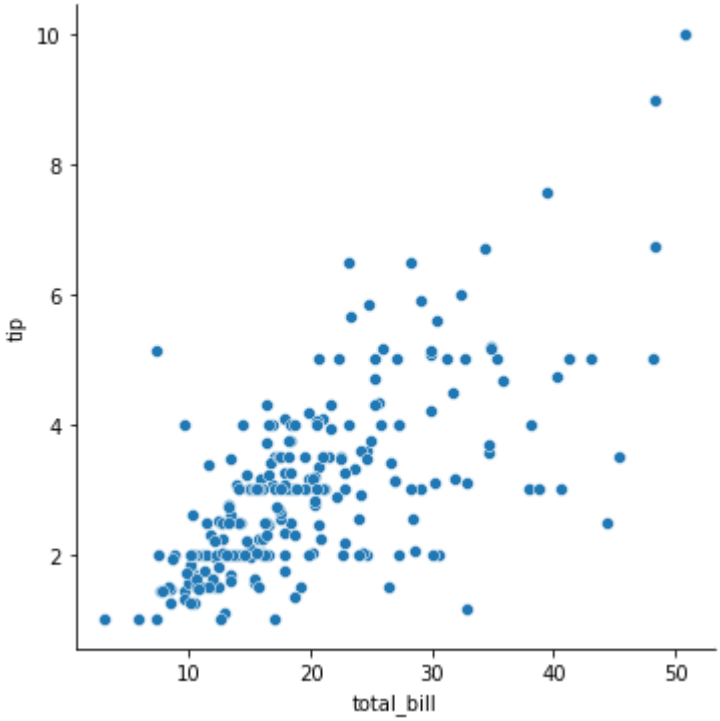
```
sns.scatterplot(x='total_bill',y='tip',data = tips)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7faac3e07ed0>
```



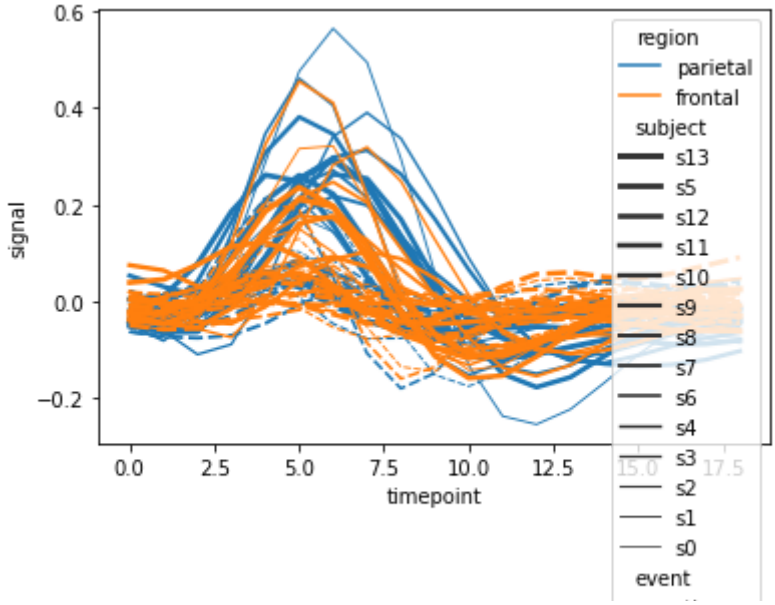

```
sns.relplot(x='total_bill',y='tip',data = tips)
```

```
<seaborn.axisgrid.FacetGrid at 0x7faad6050d90>
```



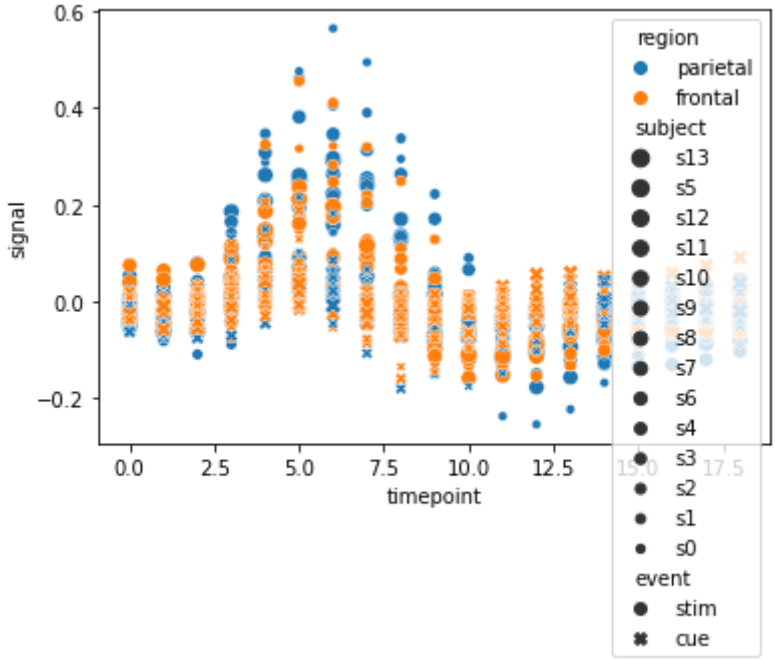

```
sns.lineplot(x = 'timepoint', y = 'signal', data = fmri , hue = 'region', style = 'event',
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7faab8baed90>
```




```
sns.scatterplot(x = 'timepoint', y = 'signal', data = fmri , hue = 'region', style = 'even
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7faab8c00750>
```



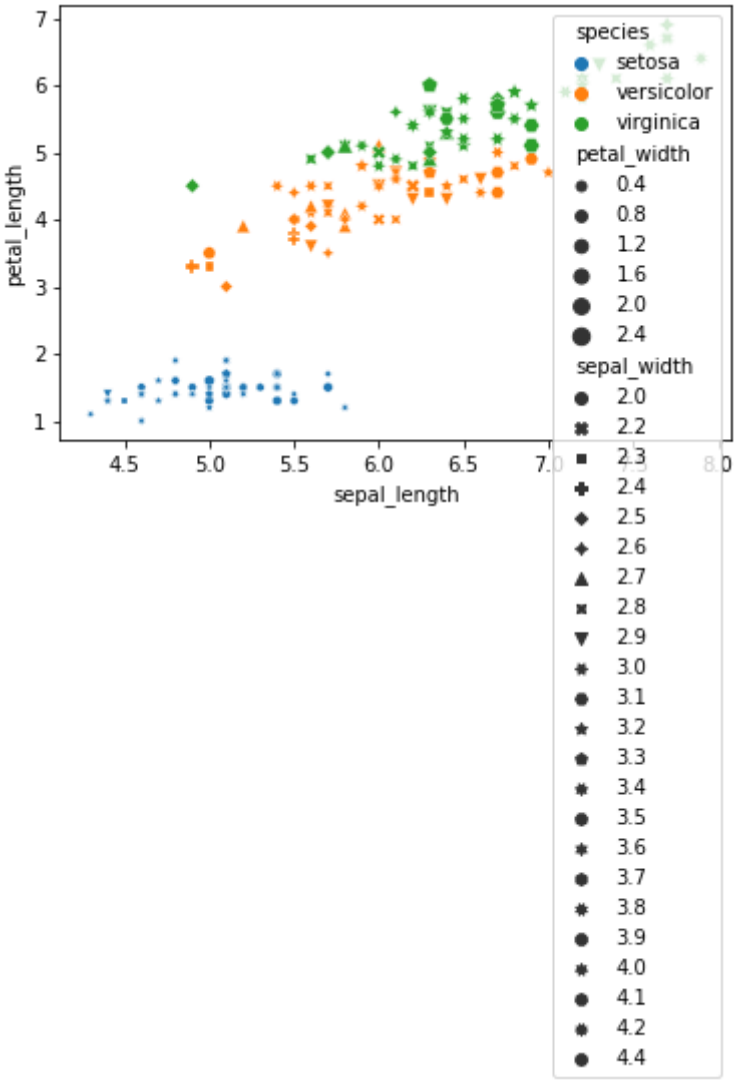

```
iris=sns.load_dataset('iris')
```

```
iris.head()
```

	sepal_length	sepal_width	petal_length	petal_width	species
0	5.1	3.5	1.4	0.2	setosa
1	4.9	3.0	1.4	0.2	setosa
2	4.7	3.2	1.3	0.2	setosa
3	4.6	3.1	1.5	0.2	setosa
4	5.0	3.6	1.4	0.2	setosa

```
sns.scatterplot (x='sepal_length',y='petal_length',hue='species',style='sepal_width',size=
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7faab889e090>
```




```
sns.scatterplot(x = 'timepoint', y = 'signal', data = fmri , hue = 'region', style = 'even
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7faab8882210>
```

```
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

```
sns.get_dataset_names()
```

```
['anagrams',
 'anscombe',
 'attention',
 'brain_networks',
 'car_crashes',
 'diamonds',
 'dots',
 'exercise',
 'flights',
 'fmri',
 'gammas',
 'geyser',
 'iris',
 'mpg',
 'penguins',
 'planets',
 'tips',
 'titanic']
```

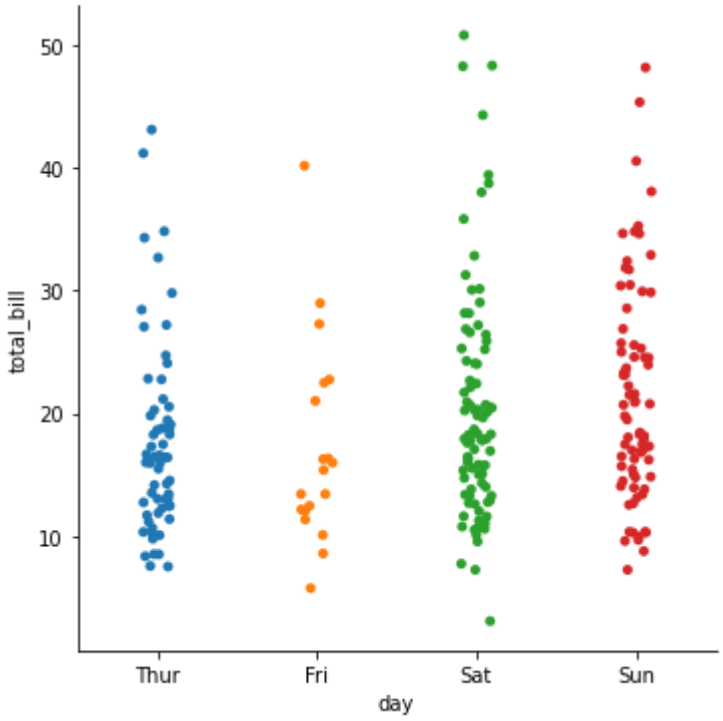
```
tips=sns.load_dataset('tips')
```

```
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

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

```
<seaborn.axisgrid.FacetGrid at 0x7fd9dde8cc50>
```




```
exercise = sns.load_dataset('exercise')
```

```
exercise.head()
```

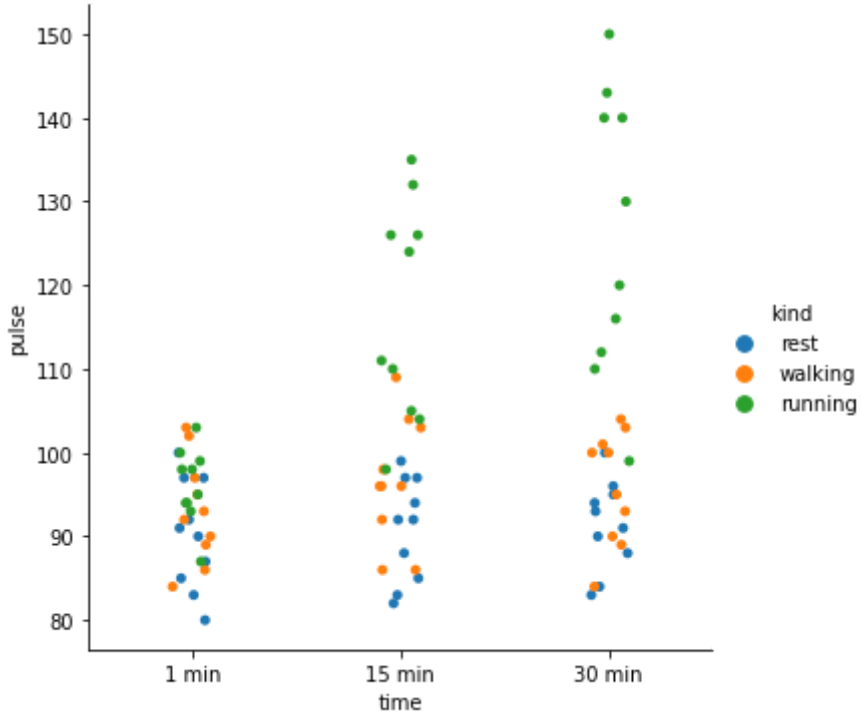
	Unnamed: 0	id	diet	pulse	time	kind
0	0	1	low fat	85	1 min	rest
1	1	1	low fat	85	15 min	rest
2	2	1	low fat	88	30 min	rest
3	3	2	low fat	90	1 min	rest
4	4	2	low fat	92	15 min	rest

```
sns.catplot(x='time',y='pulse',data =exercise)
```

```
<seaborn.axisgrid.FacetGrid at 0x7fd9ddd60e10>
```


```
sns.catplot(x='time',y='pulse',hue='kind',data =exercise)
```

```
<seaborn.axisgrid.FacetGrid at 0x7fd9d57af0d0>
```

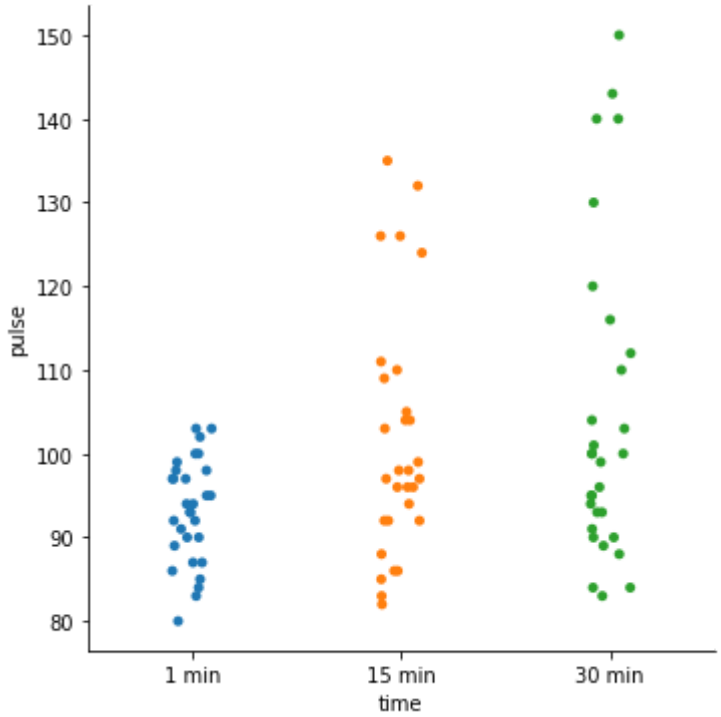



```
sns.catplot(x='time',y='pulse',data =exercise , kind ='swarm')
```

```
<seaborn.axisgrid.FacetGrid at 0x7fd9d5653390>
```

```
sns.catplot(x='time',y='pulse',data =exercise , kind ='strip')
```

```
<seaborn.axisgrid.FacetGrid at 0x7fd9d5606650>
```



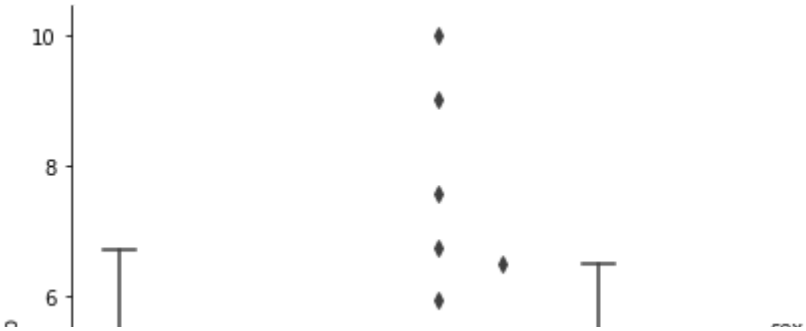

```
tips=sns.load_dataset('tips')
```

```
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

```
sns.catplot(x='day',y='tip',data=tips,kind ='box',hue='sex')
```

```
<seaborn.axisgrid.FacetGrid at 0x7fd9d4034610>
```



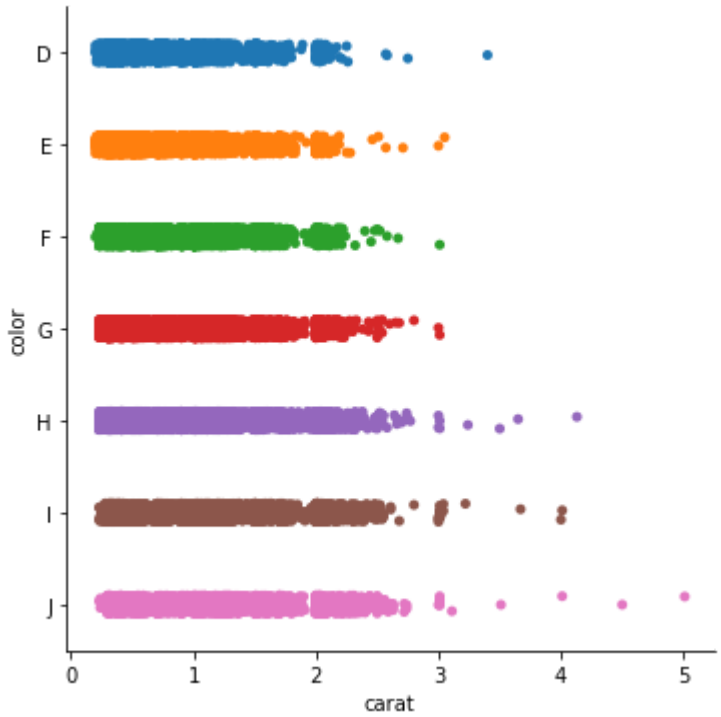

```
diamonds=sns.load_dataset('diamonds')
```

```
diamonds.head()
```

	carat	cut	color	clarity	depth	table	price	x	y	z
0	0.23	Ideal	E	SI2	61.5	55.0	326	3.95	3.98	2.43
1	0.21	Premium	E	SI1	59.8	61.0	326	3.89	3.84	2.31
2	0.23	Good	E	VS1	56.9	65.0	327	4.05	4.07	2.31
3	0.29	Premium	I	VS2	62.4	58.0	334	4.20	4.23	2.63
4	0.31	Good	J	SI2	63.3	58.0	335	4.34	4.35	2.75

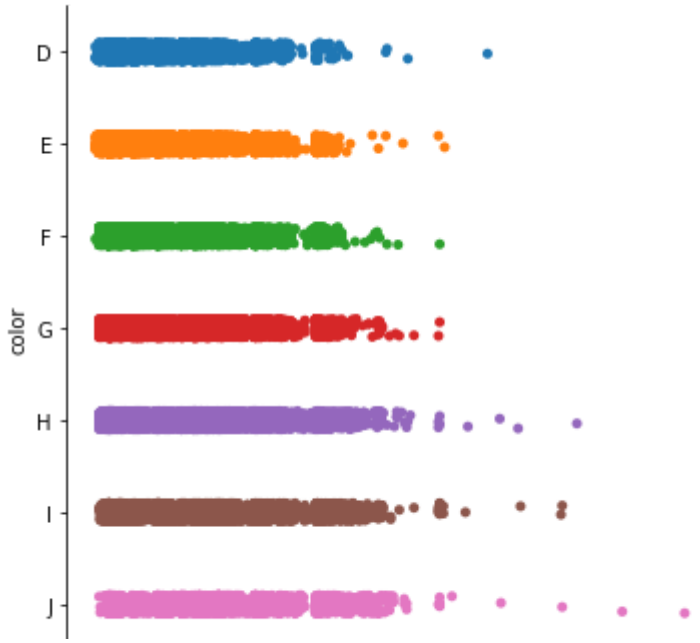
```
sns.catplot(x='carat',y='color',data=diamonds)
```

```
<seaborn.axisgrid.FacetGrid at 0x7fd9d5491ed0>
```



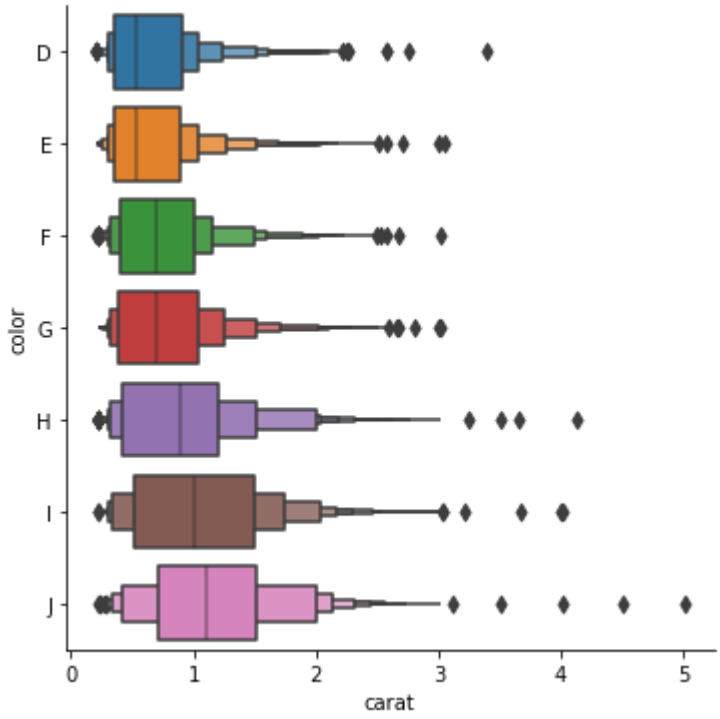

```
sns.catplot(x='carat',y='color',data=diamonds)
```

```
<seaborn.axisgrid.FacetGrid at 0x7fd9d22a11d0>
```



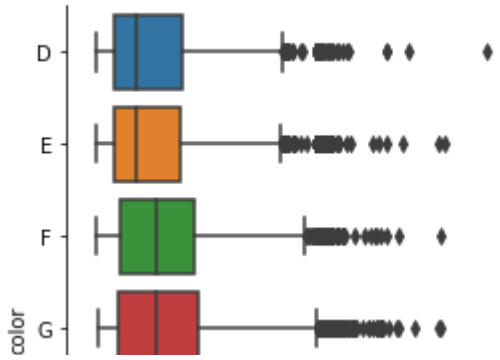

```
sns.catplot(x='carat',y='color',data=diamonds,kind='boxen')
```

```
<seaborn.axisgrid.FacetGrid at 0x7fd9d21c0cd0>
```



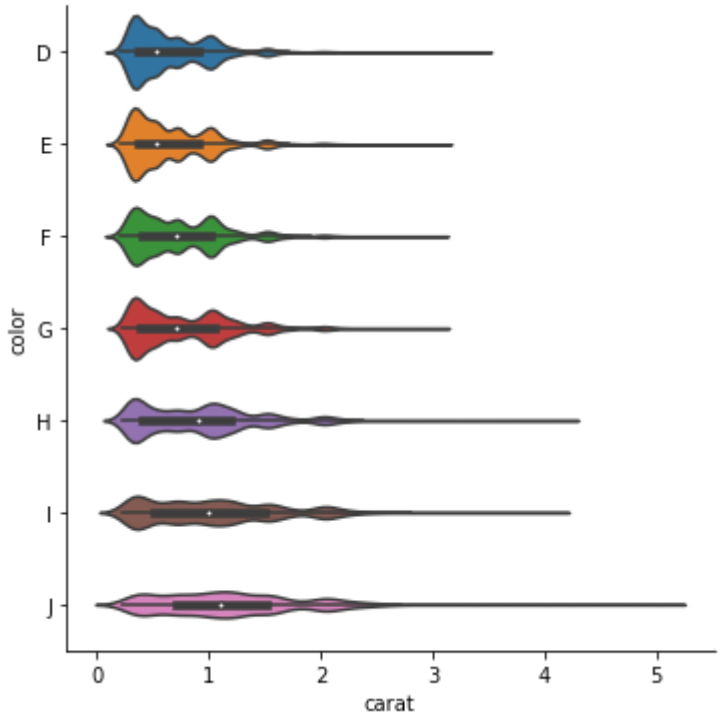

```
sns.catplot(x='carat',y='color',data=diamonds,kind='box')
```

```
<seaborn.axisgrid.FacetGrid at 0x7fd9d215df10>
```




```
sns.catplot(x='carat',y='color',data=diamonds,kind='violin')
```

```
<seaborn.axisgrid.FacetGrid at 0x7fd9d2068bd0>
```




0s
completed at 2:22 PM