KEY_Practice17B_LineGraphs

February 4, 2020

1 Line Graphs

Let's start out by loading the seaborn package

```
[18]: import seaborn as sns
      import numpy as np
```

In this practice we will be using the `dots` dataset. This is also a dataset that contains information about brain activations over time. Let's load and preview the data.

```
[19]: dots = sns.load_dataset("dots")
      dots.head()
```

```
[19]:   align choice  time  coherence  firing_rate
      0  dots     T1   -80        0.0    33.189967
      1  dots     T1   -80        3.2    31.691726
      2  dots     T1   -80        6.4    34.279840
      3  dots     T1   -80       12.8    32.631874
      4  dots     T1   -80       25.6    35.060487
```

This dataset is a little more complicated, and to be honest I am not even sure what each column means exactly. But, this is not important for using this data to practice plotting line graphs. All we need to know is that the `align` column contains two values: `dots` and `sacc`, and the `choice` column also contains two values: `T1` and `T2`.

First, let's just get a sense of our base data using a line plot of `firing_rate` vs. `time`. Think hard about which variable should go on which axis!

```
[20]: # plot time vs firing_rate
      sns.lineplot(x='time', y='firing_rate', data=dots)
```
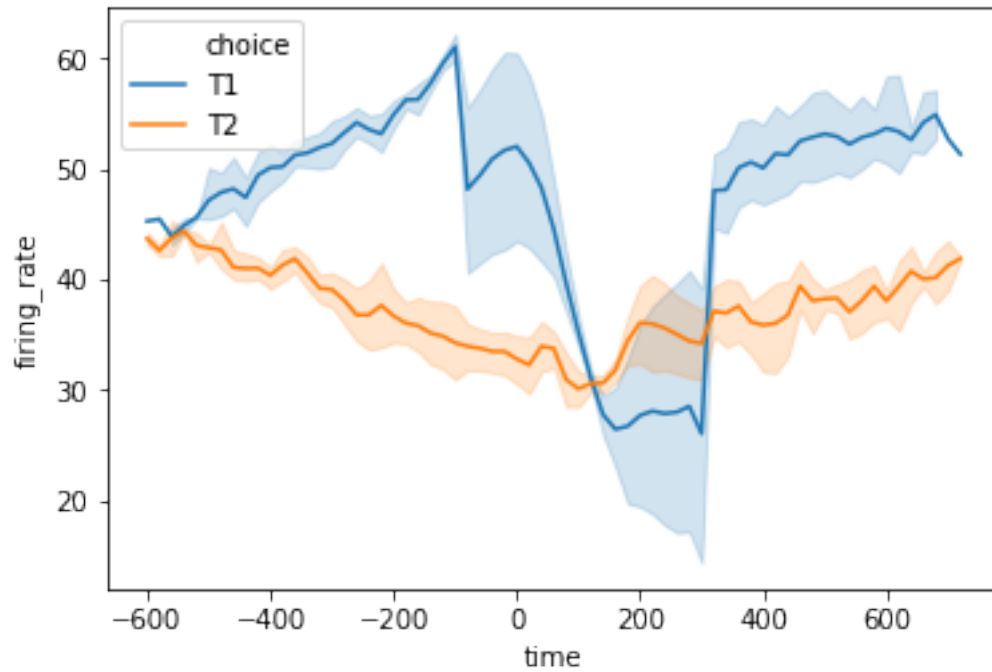
```
[20]: <matplotlib.axes._subplots.AxesSubplot at 0x1a1aba8198>
```
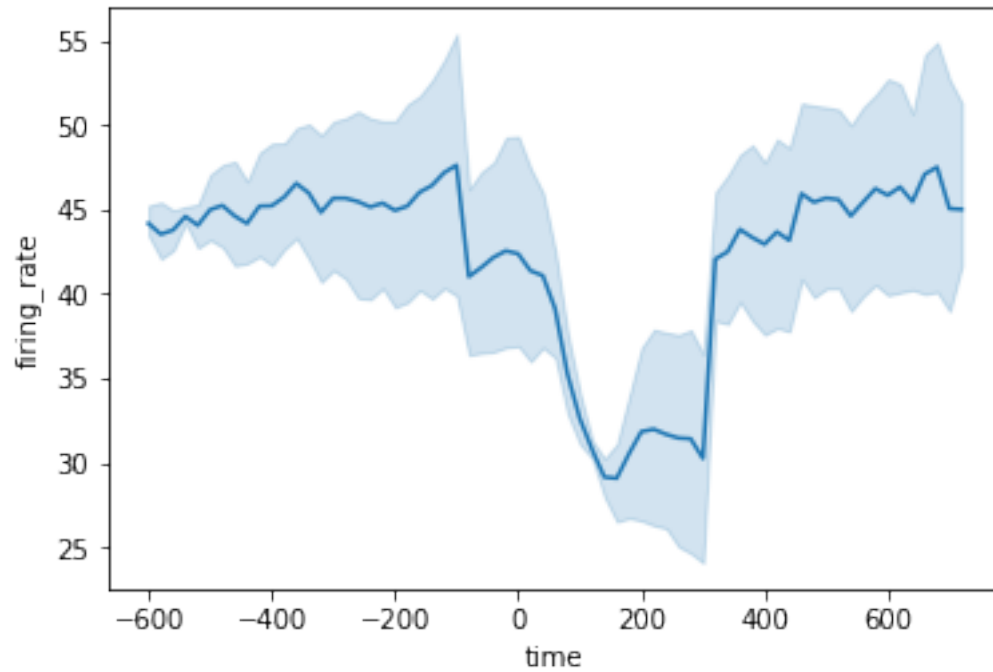
Now, separate your plot by the `choice` column using color.

```python
# plot time vs firing_rate separated by choice
sns.lineplot(x='time', y='firing_rate', hue = "choice", data=dots)
```
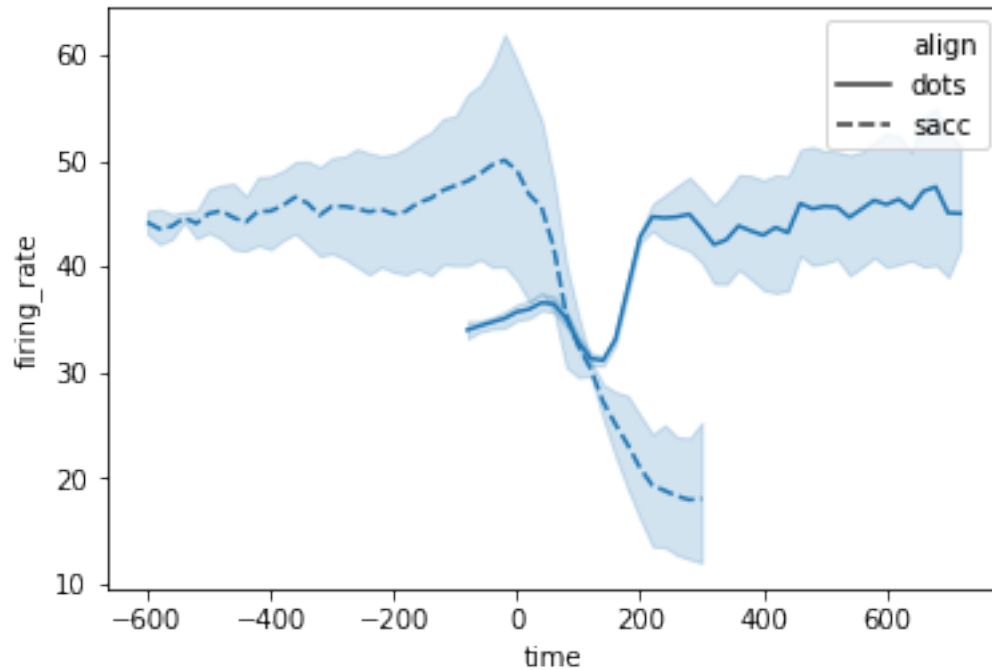
```
[21]: <matplotlib.axes._subplots.AxesSubplot at 0x1a1ad8c198>
```

Next, separate your plot by the `align` column using line style.

```
[24]: # plot time vs firing_rate separated by align
      sns.lineplot(x='time', y='firing_rate', style = "align" ,data=dots)
```
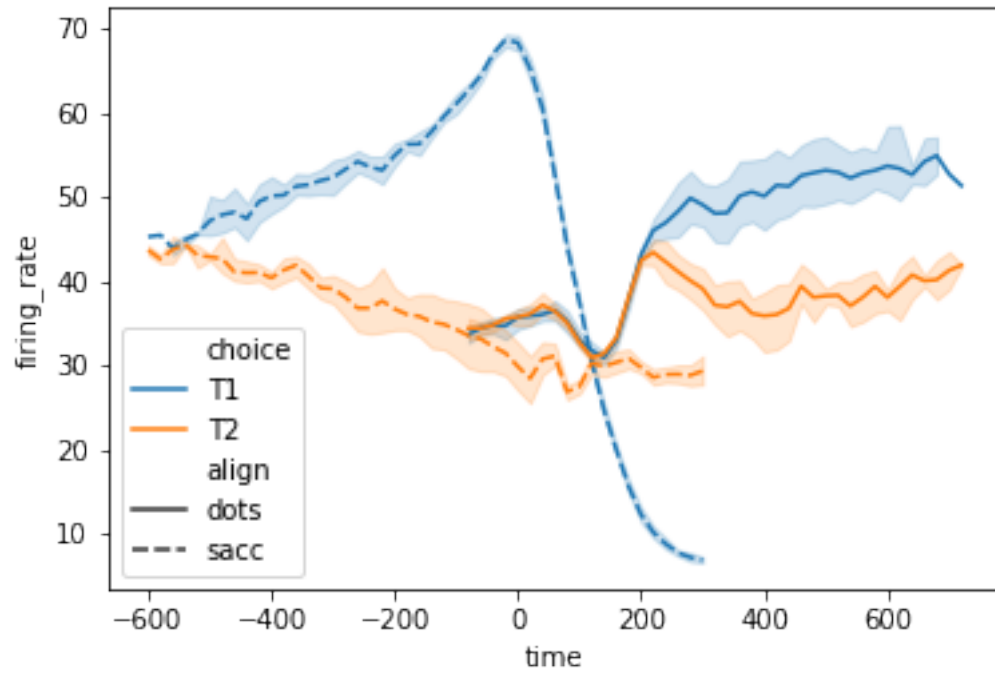
```
[24]: <matplotlib.axes._subplots.AxesSubplot at 0x1a1afe3390>
```

Lastly, combine these two factors to get a plot separated by both `choice` (color) and `align` (style). How many lines do you expect in the resulting graph?

```
[25]: # plot time vs firing_rate separated by choice and align
      sns.lineplot(x='time', y='firing_rate', hue = "choice", style = "align"␣
       ↪,data=dots)
```

```
[25]: <matplotlib.axes._subplots.AxesSubplot at 0x1a1b1826d8>
```

[ ]: