KEY_Practice25_LineGraphs

January 11, 2020

1 Line Graphs

Let's start out by loading the seaborn package

```
[1]: # load seaborn pakcage
     import seaborn as sns
     # set up for inline plotting
     %matplotlib inline
```

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

```
[2]: # load data
     dots = sns.load_dataset("dots")
     # preview data
     dots.head()
```

```
[2]:   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!

```
[3]: # plot time vs firing_rate
     sns.lineplot(x='time', y='firing_rate', data=dots)
```

```
[3]: <matplotlib.axes._subplots.AxesSubplot at 0x110baa2b0>
```

Now, separate your plot by the `choice` column using color.

```
[4]:  # plot time vs firing_rate separated by choice
      sns.lineplot(x='time', y='firing_rate', hue = "choice", data=dots)
```
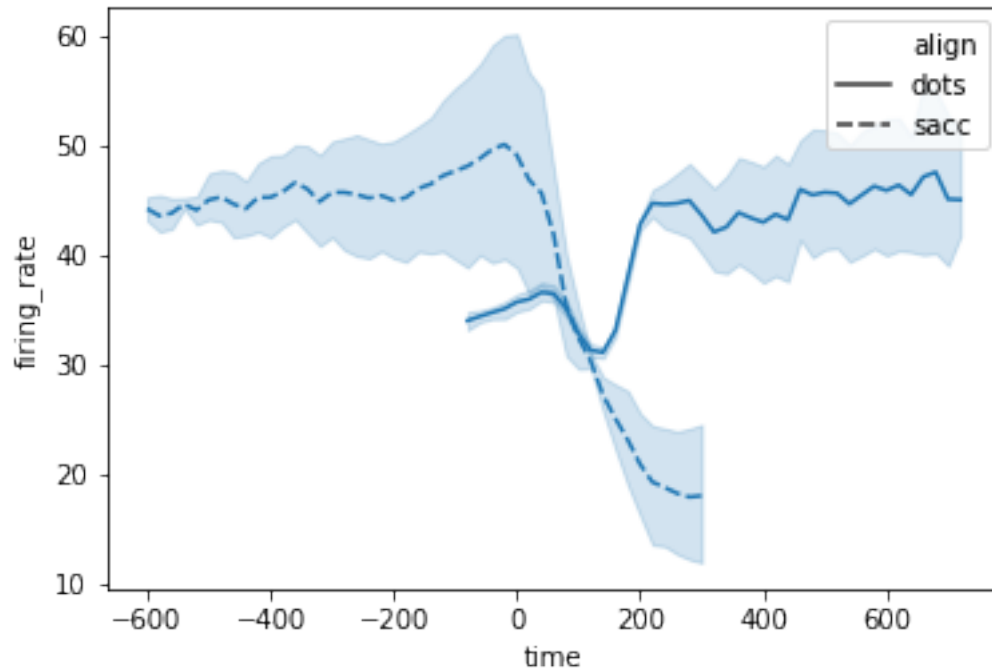
```
[4]:  <matplotlib.axes._subplots.AxesSubplot at 0x105af7e10>
```

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

```
[5]: # plot time vs firing_rate separated by align
     sns.lineplot(x='time', y='firing_rate', style = "align" ,data=dots)
```

```
[5]: <matplotlib.axes._subplots.AxesSubplot at 0x110f54f28>
```

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?

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

```
[6]: <matplotlib.axes._subplots.AxesSubplot at 0x110f60fd0>
```