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How to plot 2 seaborn lmplots side-by-side?

Plotting 2 distplots or scatterplots in a subplot works great:

```python
import matplotlib.pyplot as plt
import numpy as np
import seaborn as sns
import pandas as pd
%matplotlib inline

# create df
x = np.linspace(0, 2 * np.pi, 400)
df = pd.DataFrame({'x': x, 'y': np.sin(x ** 2)})

# Two subplots
f, (ax1, ax2) = plt.subplots(1, 2, sharey=True)
ax1.plot(df.x, df.y)
ax1.set_title('Sharing Y axis')
ax2.scatter(df.x, df.y)

plt.show()
```
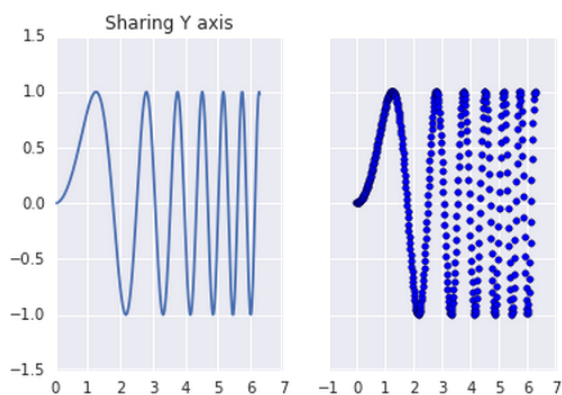

But when I do the same with an `lmplot` instead of either of the other types of charts I get an error:

> AttributeError: 'AxesSubplot' object has no attribute 'lmplot'

Is there any way to plot these chart types side by side?

python   matplotlib   ipython   seaborn

edited Oct 13 '15 at 21:20   asked Oct 10 '15 at 3:16

samthebrand ♦
368   8   21

BTW: your example doesn't run. The variable `x` is not defined in your dataframe's definition of the `"y"` column. – Paul H Oct 12 '15 at 23:08

Thanks for noticing @PaulH. Corrected. –   samthebrand ♦   Oct 13 '15 at 21:21

1 Answer

You get that error because matplotlib and its objects are completely unaware of seaborn functions.

Pass your axes objects (i.e., `ax1` and `ax2`) to `seaborn.regplot` or you can skip defining those and use the `col` kwarg of `seaborn.lmplot`

With your same imports, pre-defining your axes and using `regplot` looks like this:

```python
# create df
x = np.linspace(0, 2 * np.pi, 400)
df = pd.DataFrame({'x': x, 'y': np.sin(x ** 2)})
df.index.names = ['obs']
df.columns.names = ['vars']

idx = np.array(df.index.tolist(), dtype='float')  # make an array of x-values

# call regplot on each axes
fig, (ax1, ax2) = plt.subplots(ncols=2, sharey=True)
sns.regplot(x=idx, y=df['x'], ax=ax1)
sns.regplot(x=idx, y=df['y'], ax=ax2)
```
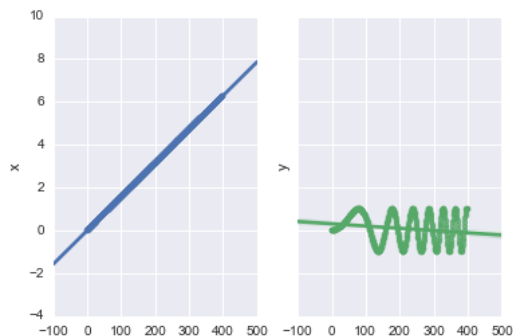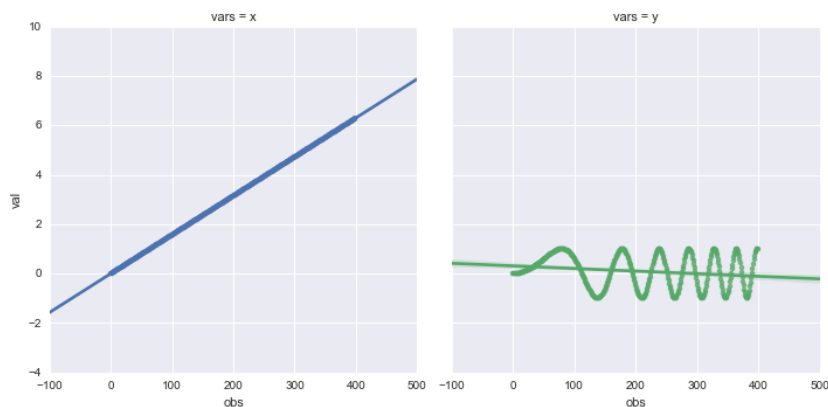

Using lmplot requires your dataframe to be tidy. Continuing from the code above:

```python
tidy = (
    df.stack() # pull the columns into row variables
      .to_frame() # convert the resulting Series to a DataFrame
      .reset_index() # pull the resulting MultiIndex into the columns
      .rename(columns={0: 'val'}) # rename the unnamed column
)
sns.lmplot(x='obs', y='val', col='vars', hue='vars', data=tidy)
```


edited Oct 12 '15 at 23:28   answered Oct 12 '15 at 23:14

Paul H
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