Using Seaborn Styles

INTERMEDIATE DATA VISUALIZATION WITH SEABORN



Chris Moffitt
Instructor

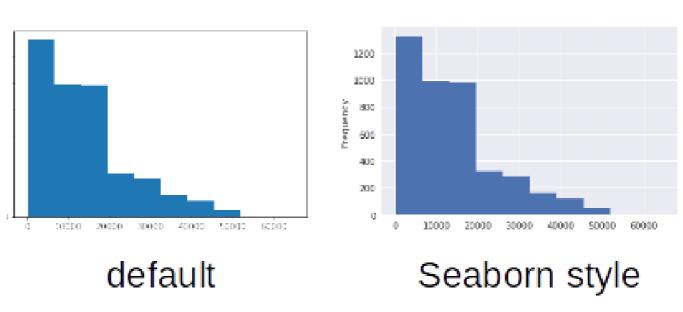


Setting Styles

- Seaborn has default configurations that can be applied with sns.set()
- These styles can override matplotlib and pandas plots as well

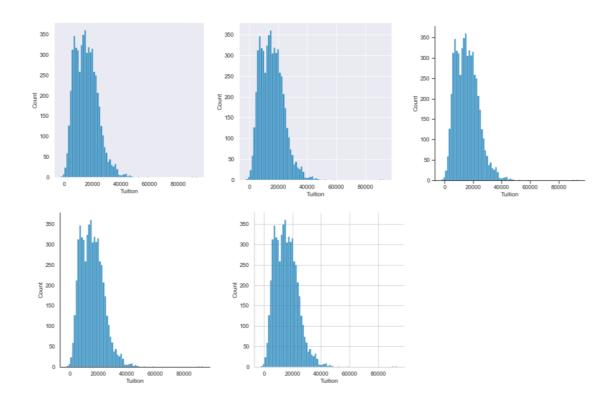
```
sns.set()
df['Tuition'].plot.hist()
```

Pandas histogram



Theme examples with sns.set_style()

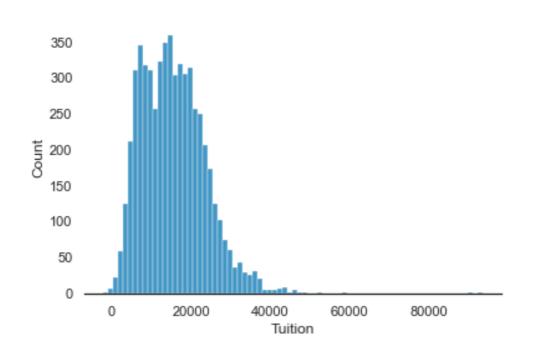
```
for style in ['white','dark','whitegrid','darkgrid','ticks']:
    sns.set_style(style)
    sns.displot(df['Tuition'])
    plt.show()
```



Removing axes with despine()

- Sometimes plots are improved by removing elements
- Seaborn contains a shortcut for removing the spines of a plot

```
sns.set_style('white')
sns.displot(df['Tuition'])
sns.despine(left=True)
```





Let's practice!

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Colors in Seaborn

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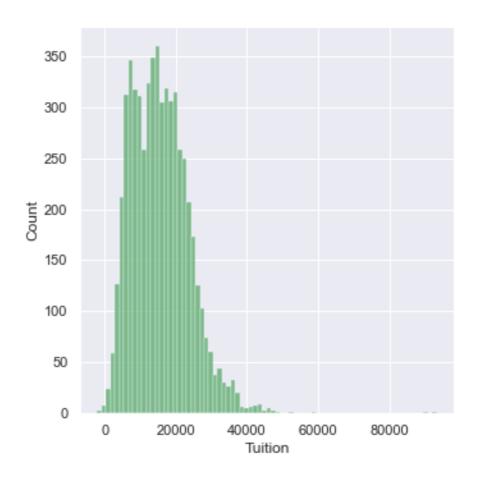
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Defining a color for a plot

• Seaborn supports assigning colors to plots using matplotlib color codes

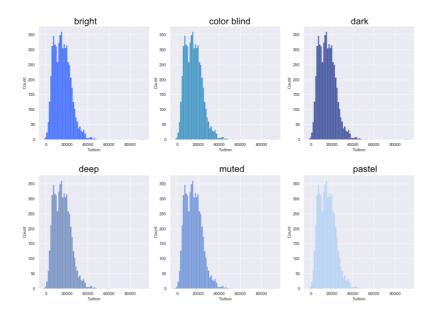
```
sns.set(color_codes=True)
sns.displot(df['Tuition'], color='g')
```



Palettes

• Seaborn uses the set_palette() function to define a palette

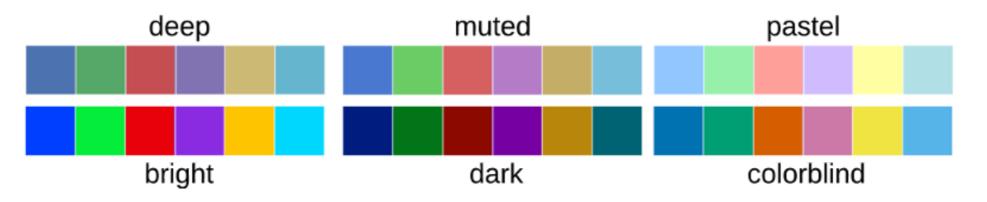
```
palettes = ['deep', 'muted', 'pastel', 'bright', 'dark','colorblind']
for p in palettes:
    sns.set_palette(p)
    sns.displot(df['Tuition'])
```



Displaying Palettes

- sns.palplot() function displays a palette
- sns.color_palette() returns the current palette

```
palettes = ['deep', 'muted', 'pastel', 'bright', 'dark', 'colorblind']
for p in palettes:
    sns.set_palette(p)
    sns.palplot(sns.color_palette())
    plt.show()
```



Defining Custom Palettes

 Circular colors = when the data is not ordered

```
sns.palplot(sns.color_palette("Paired", 12))
```

 Sequential colors = when the data has a consistent range from high to low

```
sns.palplot(sns.color_palette("Blues", 12))
```

 Diverging colors = when both the low and high values are interesting

```
sns.palplot(sns.color_palette("BrBG", 12))
```



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Customizing with matplotlib

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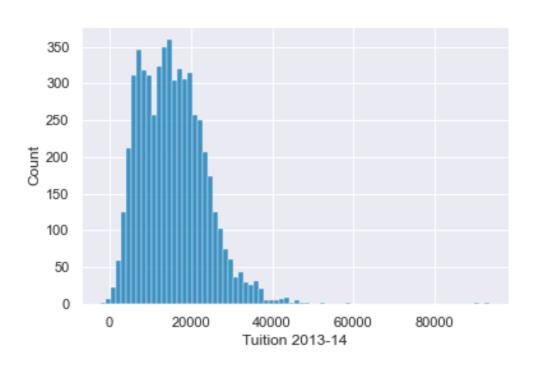
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Matplotlib Axes

- Most customization available through matplotlib Axes objects
- Axes can be passed to seaborn functions

```
fig, ax = plt.subplots()
sns.histplot(df['Tuition'], ax=ax)
ax.set(xlabel='Tuition 2013-14')
```

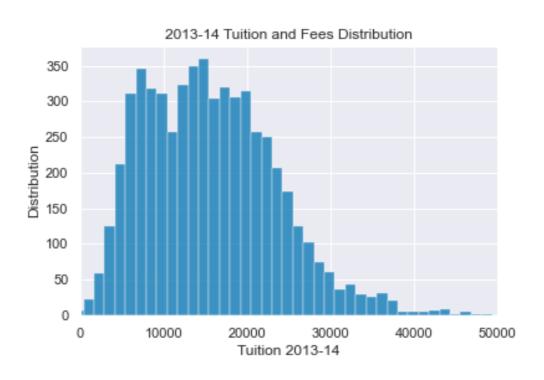




Further Customizations

• The axes object supports many common customizations

```
fig, ax = plt.subplots()
sns.histplot(df['Tuition'], ax=ax)
ax.set(xlabel="Tuition 2013-14",
        ylabel="Distribution", xlim=(0, 50000),
title="2013-14 Tuition and Fees Distribution")
```

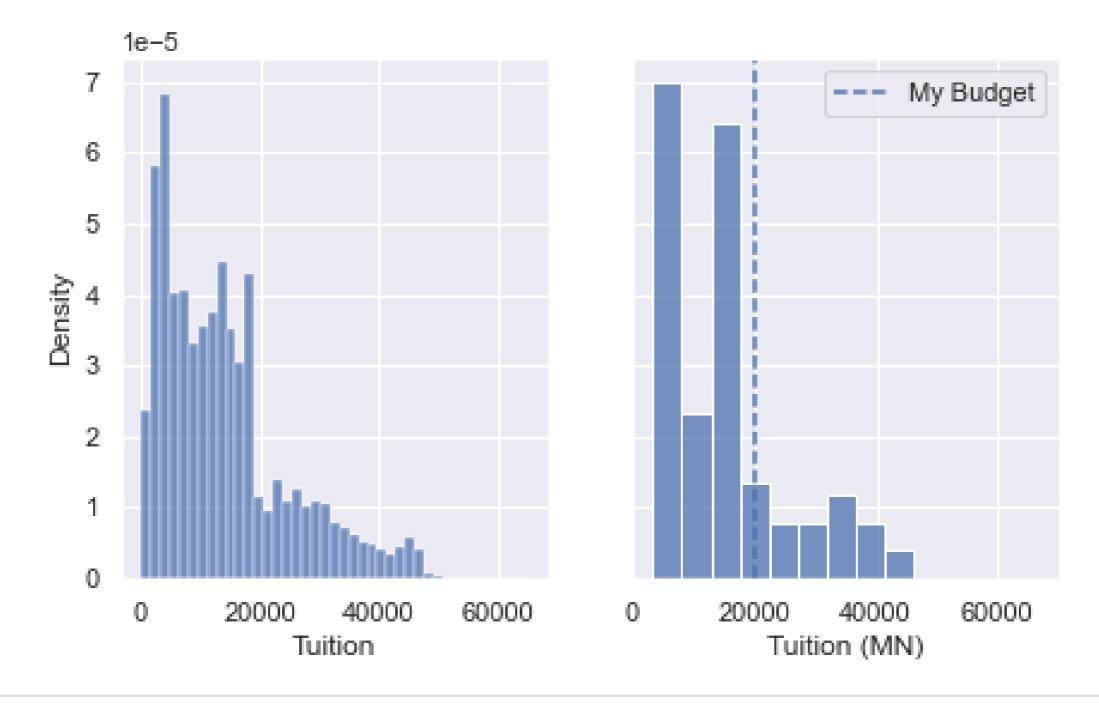


Combining Plots

• It is possible to combine and configure multiple plots

```
fig, (ax0, ax1) = plt.subplots(nrows=1, ncols=2,
                               sharey=True, fiqsize=(7,4))
sns.histplot(df['Tuition'], stat='density', ax=ax0)
sns.histplot(df.query('State == "MN"')['Tuition'], stat='density', ax=ax1)
ax1.set(xlabel='Tuition (MN)', xlim=(0, 70000))
ax1.axvline(x=20000, label='My Budget', linestyle='--')
ax1.legend()
```

Combining Plots





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