

Content

• Distribution plots

```
In [1]: import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

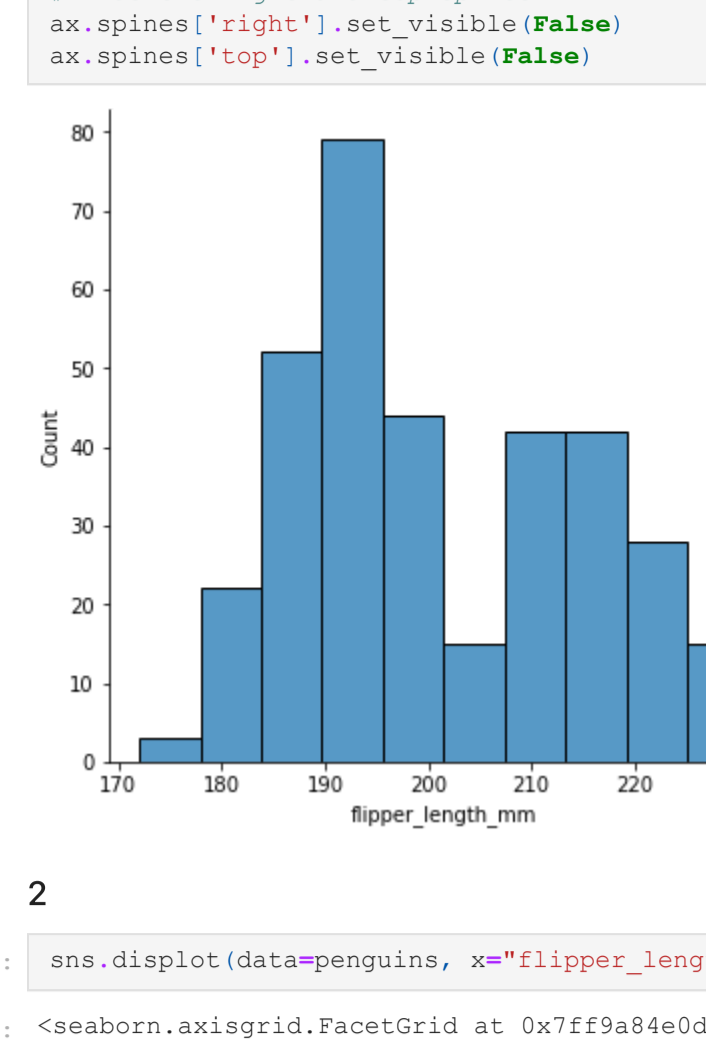
Distribution plots

<https://seaborn.pydata.org/api.html#distribution-api>

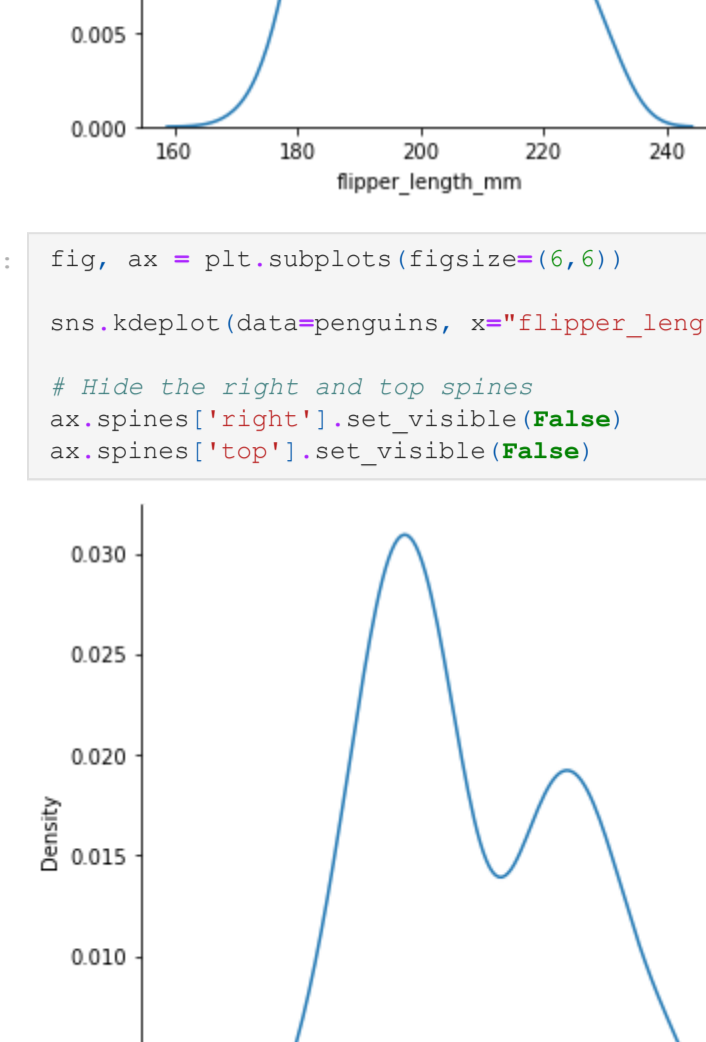
Replace `displot` with axes level plots

```
In [2]: penguins = sns.load_dataset("penguins")
sns.displot(data=penguins, x="flipper_length_mm")
```

Out[2]: <seaborn.axisgrid.FacetGrid at 0x7ff96a744c70>



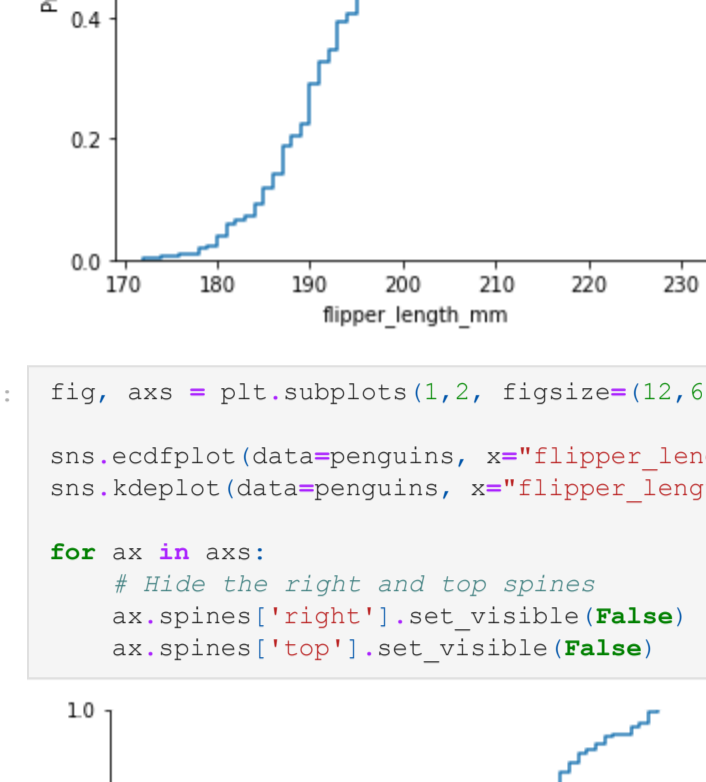
```
In [3]: fig, ax = plt.subplots(figsize=(6,6))
sns.histplot(data=penguins, x="flipper_length_mm")
# Hide the right and top spines
ax.spines['right'].set_visible(False)
ax.spines['top'].set_visible(False)
```



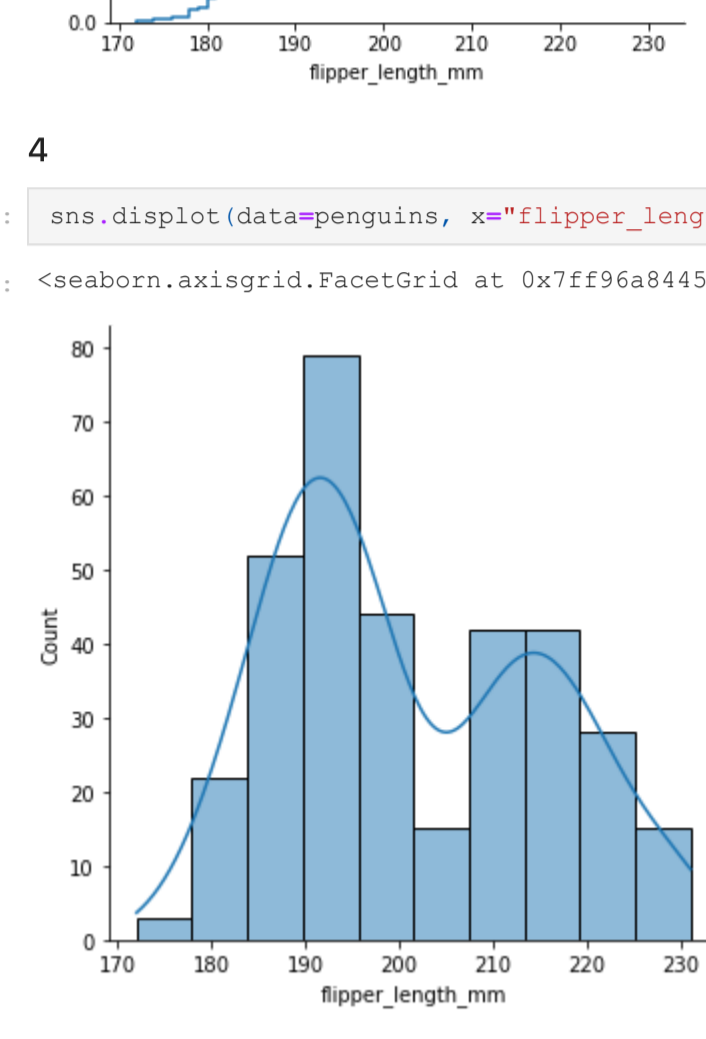
2

```
In [4]: sns.displot(data=penguins, x="flipper_length_mm", kind="kde")
```

Out[4]: <seaborn.axisgrid.FacetGrid at 0x7ff9a84e0dc0>



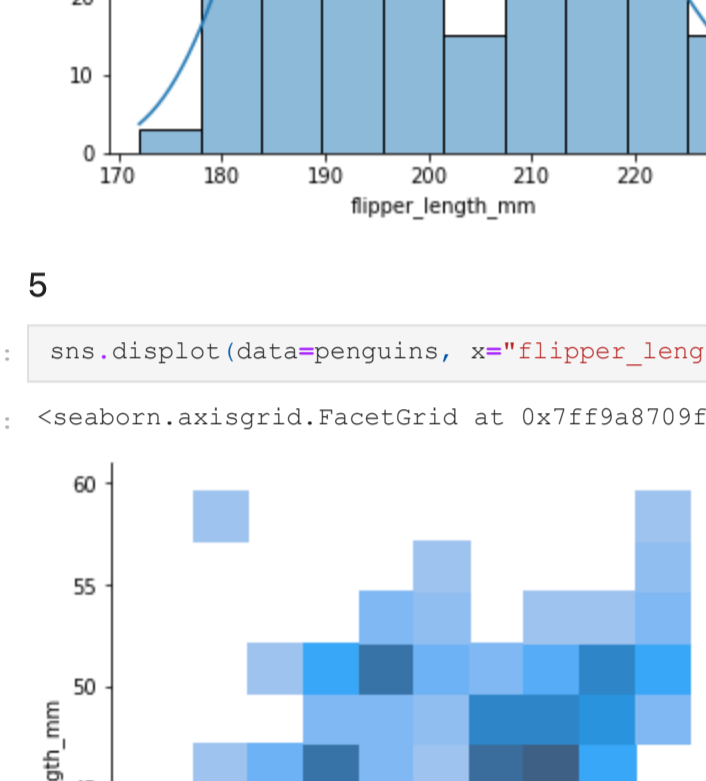
```
In [5]: fig, ax = plt.subplots(figsize=(6,6))
sns.kdeplot(data=penguins, x="flipper_length_mm")
# Hide the right and top spines
ax.spines['right'].set_visible(False)
ax.spines['top'].set_visible(False)
```



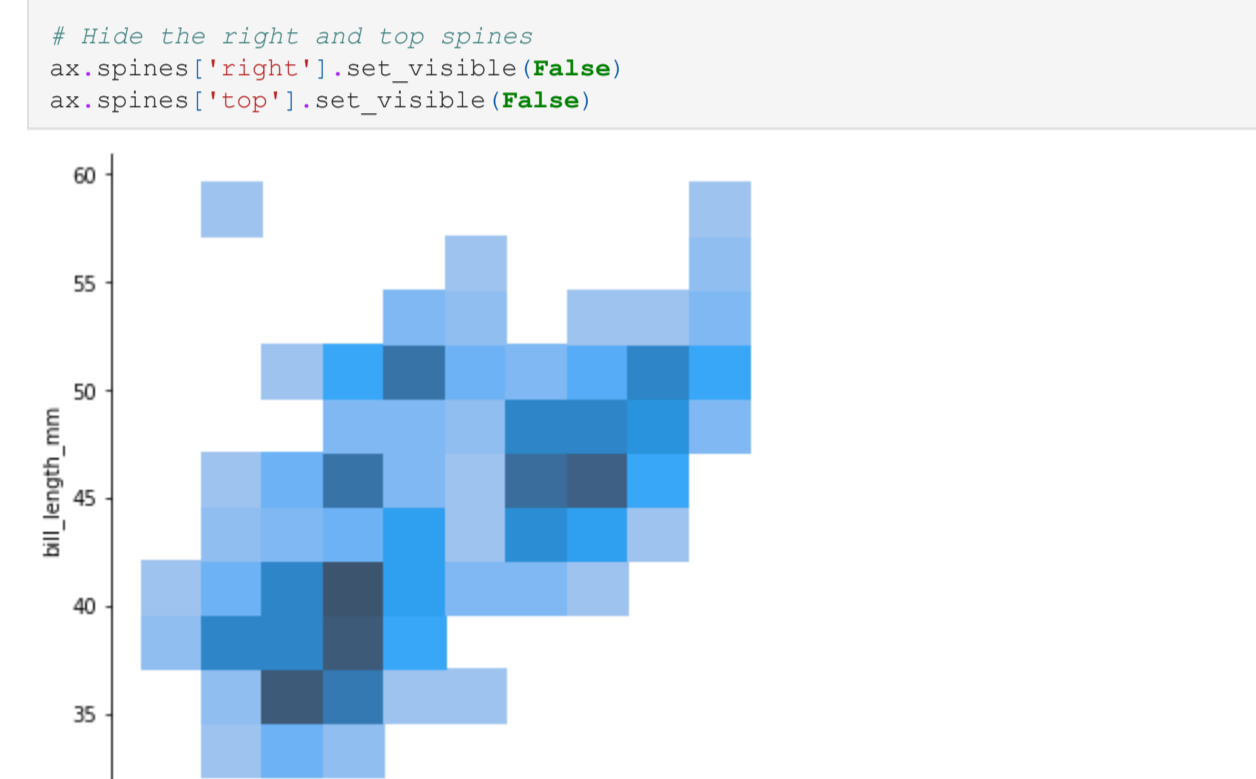
3

```
In [6]: sns.displot(data=penguins, x="flipper_length_mm", kind="ecdf")
```

Out[6]: <seaborn.axisgrid.FacetGrid at 0x7ff96a844610>



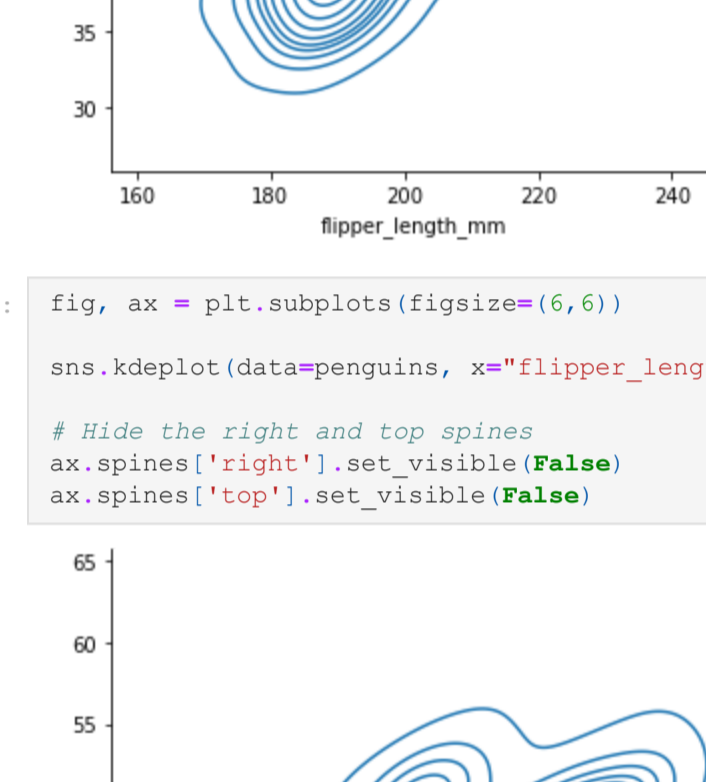
```
In [7]: fig, axes = plt.subplots(1,2, figsize=(12,6))
sns.ecdfplot(data=penguins, x="flipper_length_mm", ax=axes[0])
sns.kdeplot(data=penguins, x="flipper_length_mm", cumulative=True, ax=axes[1])
for ax in axes:
    # Hide the right and top spines
    ax.spines['right'].set_visible(False)
    ax.spines['top'].set_visible(False)
```



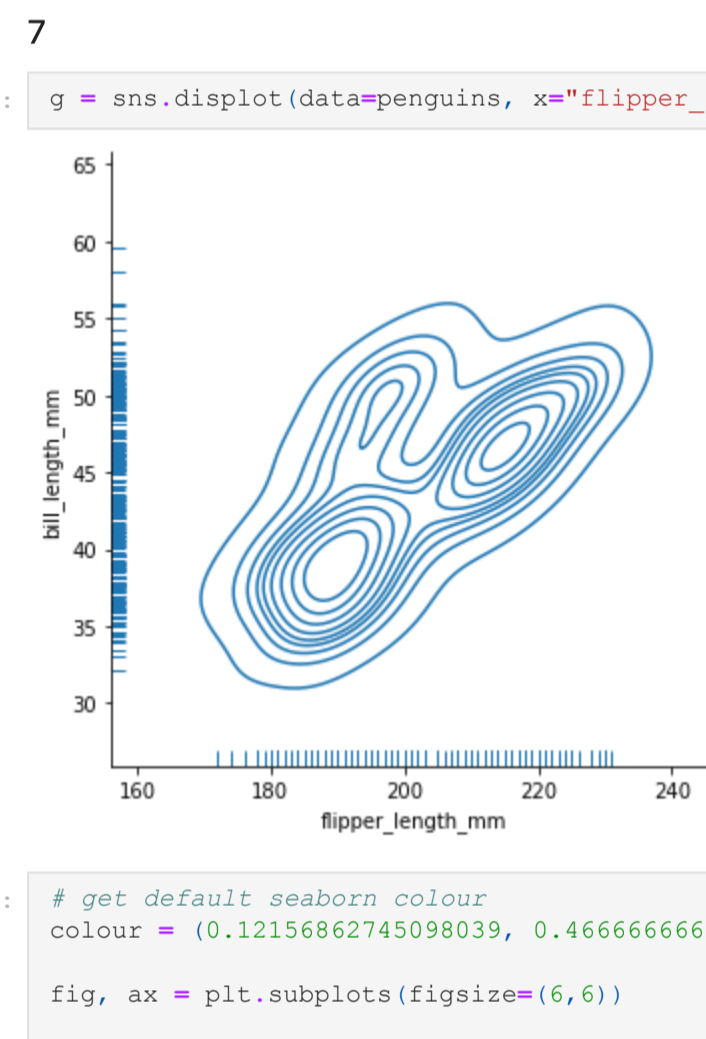
4

```
In [8]: sns.displot(data=penguins, x="flipper_length_mm", kind="True")
```

Out[8]: <seaborn.axisgrid.FacetGrid at 0x7ff9a845b0>



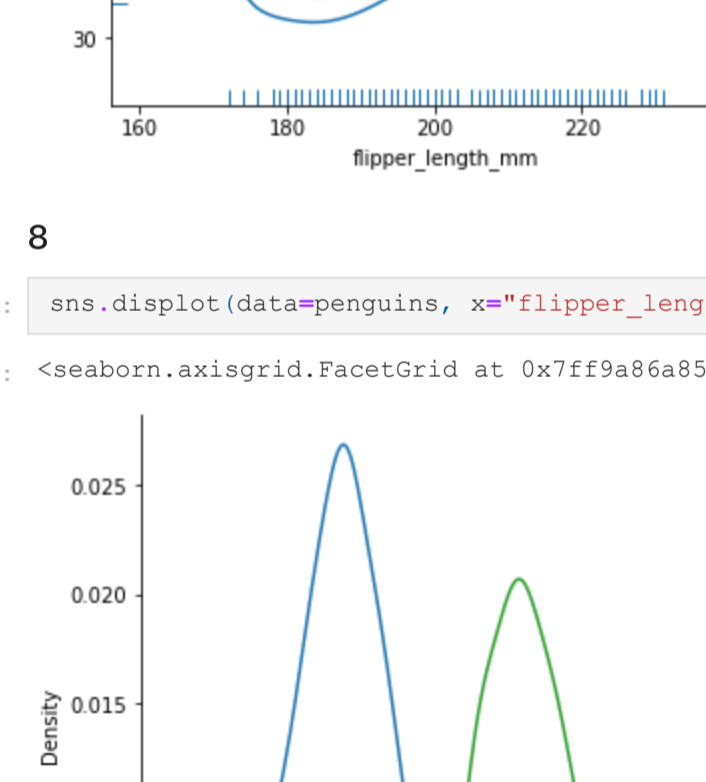
```
In [9]: fig, ax = plt.subplots(figsize=(6,6))
sns.histplot(data=penguins, x="flipper_length_mm", kde=True)
# Hide the right and top spines
ax.spines['right'].set_visible(False)
ax.spines['top'].set_visible(False)
```



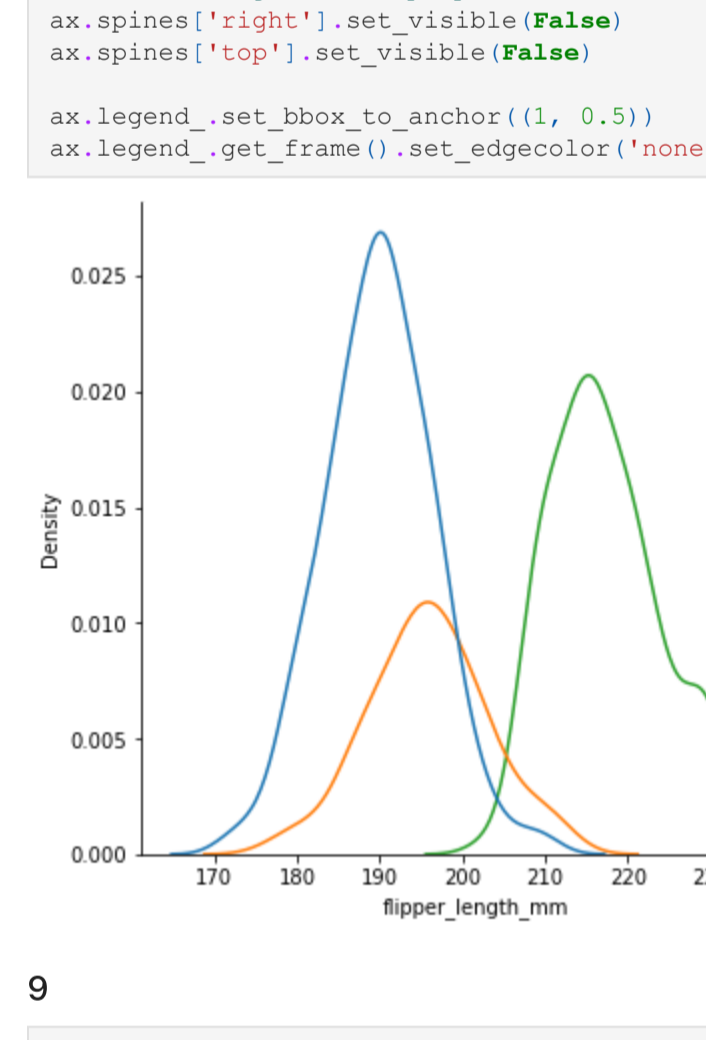
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```
In [10]: sns.displot(data=penguins, x="flipper_length_mm", y="bill_length_mm")
```

Out[10]: <seaborn.axisgrid.FacetGrid at 0x7ff9a8709fd0>



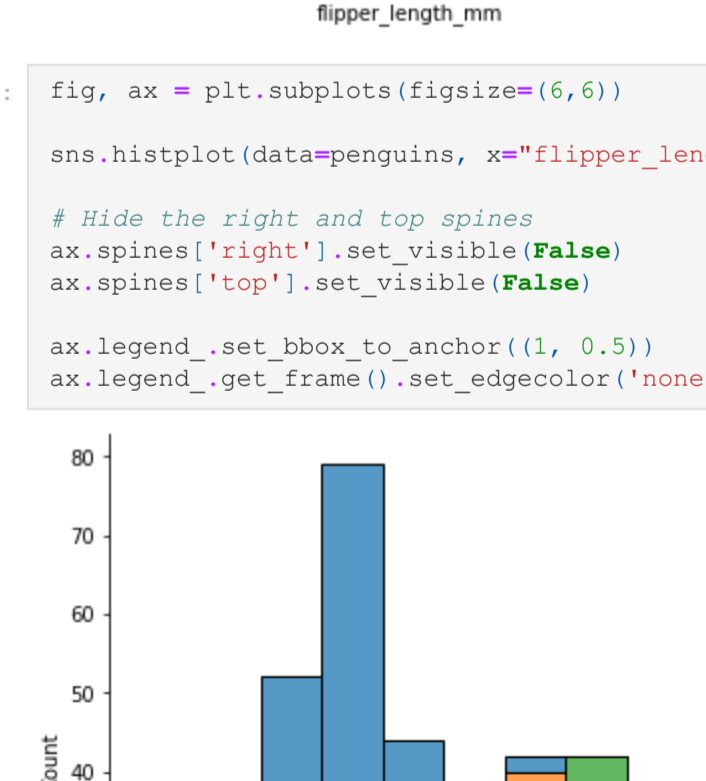
```
In [11]: fig, ax = plt.subplots(figsize=(6,6))
sns.histplot(penguins, x="flipper_length_mm", y="bill_length_mm")
# Hide the right and top spines
ax.spines['right'].set_visible(False)
ax.spines['top'].set_visible(False)
```



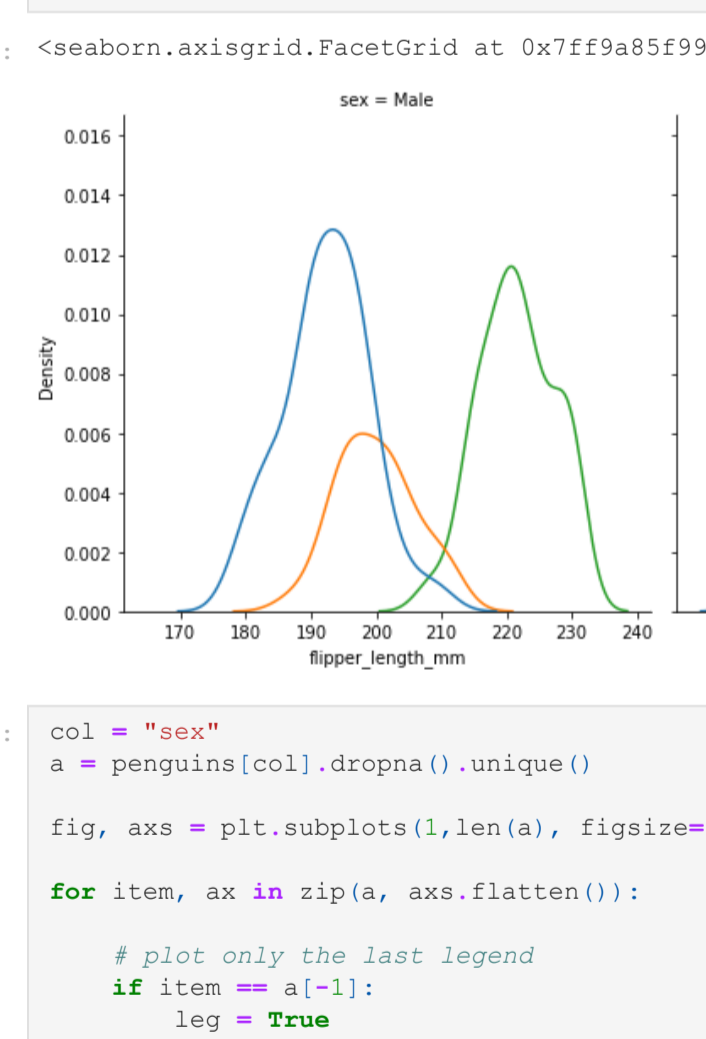
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```
In [12]: sns.displot(data=penguins, x="flipper_length_mm", y="bill_length_mm", kind="kde")
```

Out[12]: <seaborn.axisgrid.FacetGrid at 0x7ff998c6e520>



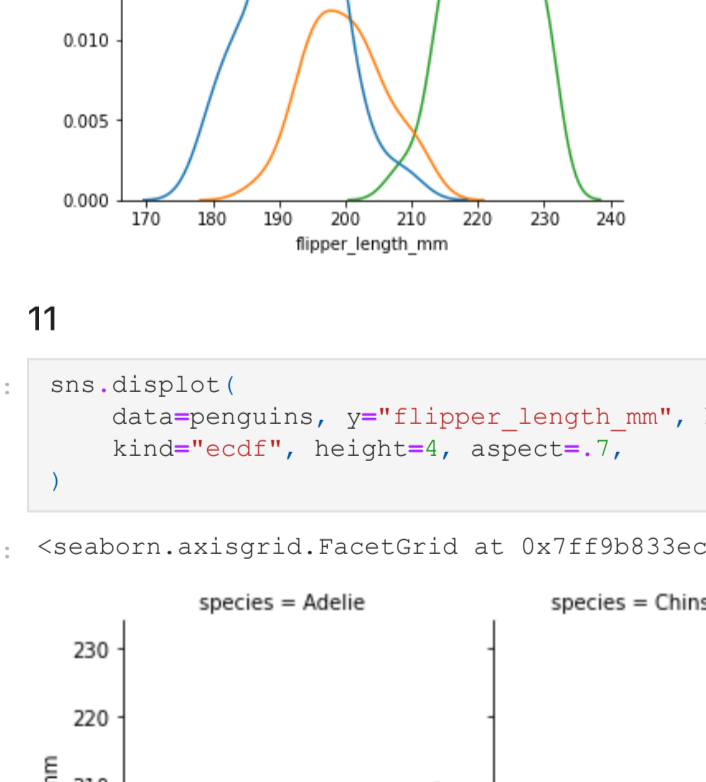
```
In [13]: fig, ax = plt.subplots(figsize=(6,6))
sns.kdeplot(data=penguins, x="flipper_length_mm", y="bill_length_mm")
# Hide the right and top spines
ax.spines['right'].set_visible(False)
ax.spines['top'].set_visible(False)
```



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```
In [14]: g = sns.displot(data=penguins, x="flipper_length_mm", y="bill_length_mm", kind="kde")
```

Out[14]: <seaborn.axisgrid.FacetGrid at 0x7ff998c6e520>



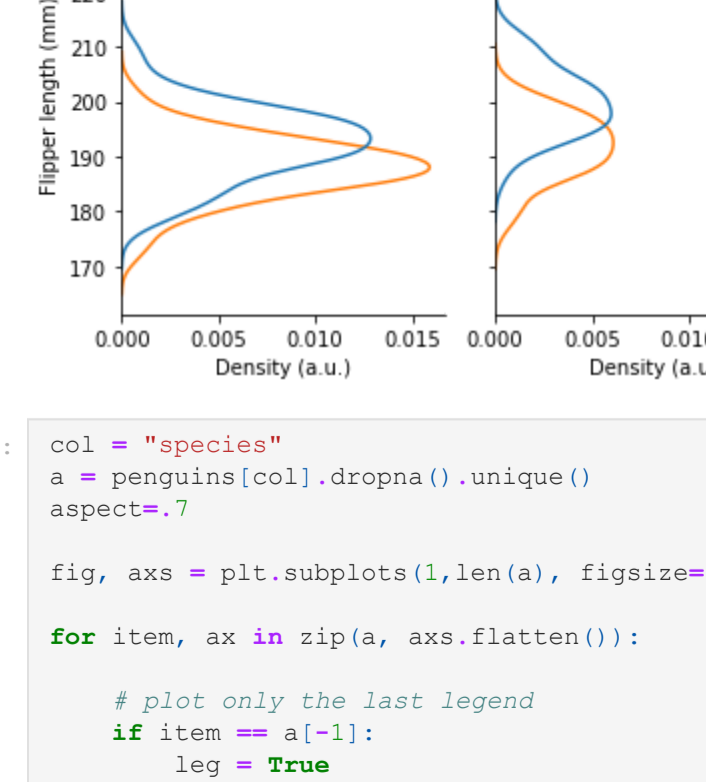
```
In [15]: # get default seaborn colour
colour = (0.1215682745098039, 0.466666666666667, 0.7058823529411765) # g._colors[0]
fig, axes = plt.subplots(figsize=(6,6))
sns.kdeplot(data=penguins, x="flipper_length_mm", y="bill_length_mm", color=colour)
sns.rugplot(data=penguins, x="flipper_length_mm", y="bill_length_mm", color=colour)
# Hide the right and top spines
ax.spines['right'].set_visible(False)
ax.spines['top'].set_visible(False)
```



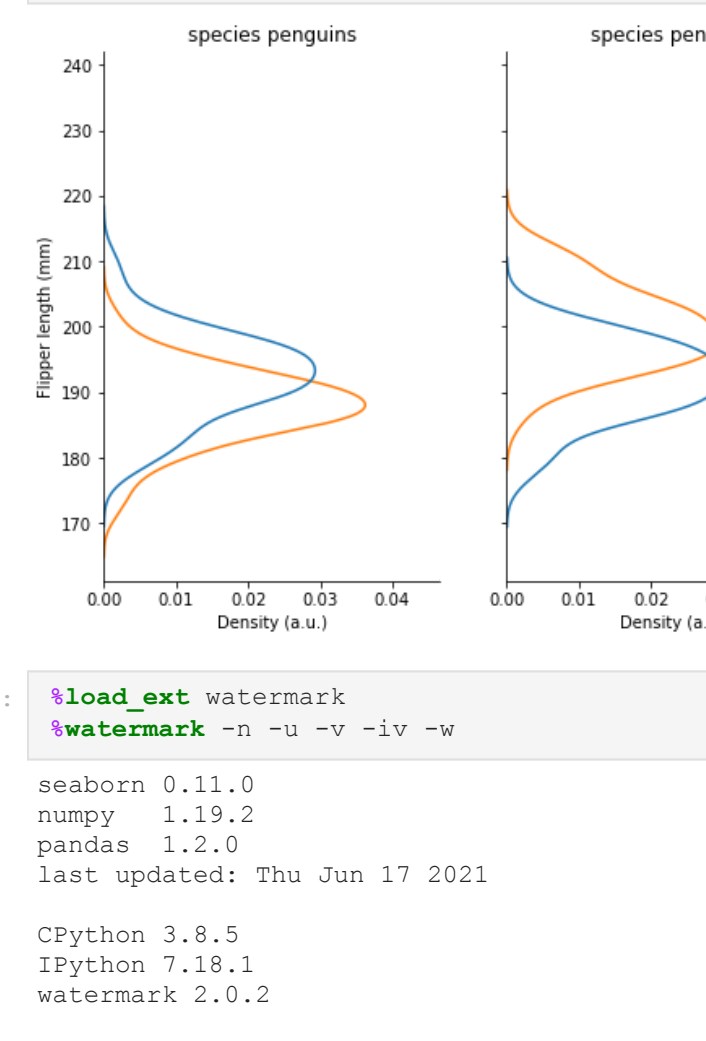
8

```
In [16]: sns.displot(data=penguins, x="flipper_length_mm", hue="species", kind="kde")
```

Out[16]: <seaborn.axisgrid.FacetGrid at 0x7ff9a86a8580>



```
In [17]: fig, ax = plt.subplots(figsize=(6,6))
sns.kdeplot(data=penguins, x="flipper_length_mm", hue="species", ax=ax)
# Hide the right and top spines
ax.spines['right'].set_visible(False)
ax.spines['top'].set_visible(False)
ax.legend_set_bbox_to_anchor((1, 0.5))
ax.legend_get_frame().set_edgecolor('none')
```



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```
In [18]: sns.displot(data=penguins, x="flipper_length_mm", hue="species", multiple="stack")
```

Out[18]: <seaborn.axisgrid.FacetGrid at 0x7ff9a85f99a0>


```
In [19]: fig, ax = plt.subplots(figsize=(6,6))
sns.histplot(data=penguins, x="flipper_length_mm", hue="species", multiple="stack")
# Hide the right and top spines
ax.spines['right'].set_visible(False)
ax.spines['top'].set_visible(False)
ax.legend_set_bbox_to_anchor((1, 0.5))
ax.legend_get_frame().set_edgecolor('none')
```


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```
In [20]: sns.displot(data=penguins, x="flipper_length_mm", hue="species", col="sex", kind="kde")
```

Out[20]: <seaborn.axisgrid.FacetGrid at 0x7ff9a85f99a0>


```
In [21]: col = "sex"
a = penguins[col].dropna().unique()
fig, axes = plt.subplots(1, len(a), figsize=(len(a)*6, 6), sharey=True)
for item, ax in zip(a, axes.flatten()):
    # plot only the last legend
    if item == a[-1]:
        leg = True
    else:
        leg = False
    sns.kdeplot(data=penguins[penguins[col]==item], x="flipper_length_mm", hue="species", ax=ax)
    # Hide the right and top spines
    ax.spines['right'].set_visible(False)
    ax.spines['top'].set_visible(False)
    ax.set_title(f'{col} = {item}')
ax.legend_set_bbox_to_anchor((1, 0.5))
ax.legend_get_frame().set_edgecolor('none')
```


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```
In [22]: sns.displot(
    data=penguins, y="flipper_length_mm", hue="sex", col="species",
    kind="ecdf", height=4, aspect=7,
```

Out[22]: <seaborn.axisgrid.FacetGrid at 0x7ff9b833ec40>


```
In [23]: col = "species"
a = penguins[col].dropna().unique()
a = penguins[col].dropna().unique()
fig, axes = plt.subplots(1, len(a), figsize=(len(a)*6*aspect, 6), sharey=True)
for item, ax in zip(a, axes.flatten()):
    # plot only the last legend
    if item == a[-1]:
        leg = True
    else:
        leg = False
    sns.ecdfplot(data=penguins[penguins[col]==item], x="flipper_length_mm", hue="sex", ax=ax)
    # Hide the right and top spines
    ax.spines['right'].set_visible(False)
    ax.spines['top'].set_visible(False)
    ax.set_title(f'{col} = {item}')
ax.legend_set_bbox_to_anchor((1, 0.5))
ax.legend_get_frame().set_edgecolor('none')
```


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```
In [24]: g = sns.displot(
    data=penguins, y="flipper_length_mm", hue="sex", col="species",
    kind="kde", height=4, aspect=7,
```

Out[24]: <seaborn.axisgrid.FacetGrid at 0x7ff98844c520>


```
In [25]: col = "species"
a = penguins[col].dropna().unique()
a = penguins[col].dropna().unique()
fig, axes = plt.subplots(1, len(a), figsize=(len(a)*6*aspect, 6), sharey=True, sharex=True)
for item, ax in zip(a, axes.flatten()):
    # plot only the last legend
    if item == a[-1]:
        leg = True
    else:
        leg = False
    sns.kdeplot(data=penguins[penguins[col]==item], y="flipper_length_mm", hue="sex", ax=ax)
    # Hide the right and top spines
    ax.spines['right'].set_visible(False)
    ax.spines['top'].set_visible(False)
    ax.set_title(f'{col} = {item}')
    ax.set_xlabel("Density (a.u.)")
    ax.set_ylabel("Flipper length (mm)")
ax.legend_set_bbox_to_anchor((1.4, 0.5))
ax.legend_get_frame().set_edgecolor('none')
```


13

```
In [26]: # load ext watermark
watermark -n -u -v -iv -w
```

seaborn 0.11.0
matplotlib 3.5.0
pandas 1.1.2
python 3.8.5
last updated: Thu Jun 17 2021

CPython 3.8.5
Python 7.18.1
watermark 2.0.2