

# Seaborn library

```
In [1]: pip install seaborn
```

```
Defaulting to user installation because normal site-packages is not writeable
Requirement already satisfied: seaborn in c:\programdata\anaconda3\lib\site-packages (0.12.2)
Requirement already satisfied: pandas>=0.25 in c:\programdata\anaconda3\lib\site-packages (from seaborn) (1.5.3)
Requirement already satisfied: numpy!=1.24.0,>=1.17 in c:\programdata\anaconda3\lib\site-packages (from seaborn) (1.23.5)
Requirement already satisfied: matplotlib!=3.6.1,>=3.1 in c:\programdata\anaconda3\lib\site-packages (from seaborn) (3.7.0)
Requirement already satisfied: cycler>=0.10 in c:\programdata\anaconda3\lib\site-packages (from matplotlib!=3.6.1,>=3.1->seaborn) (0.11.0)
Requirement already satisfied: packaging>=20.0 in c:\programdata\anaconda3\lib\site-packages (from matplotlib!=3.6.1,>=3.1->seaborn) (22.0)
Requirement already satisfied: pillow>=6.2.0 in c:\programdata\anaconda3\lib\site-packages (from matplotlib!=3.6.1,>=3.1->seaborn) (9.4.0)
Requirement already satisfied: fonttools>=4.22.0 in c:\programdata\anaconda3\lib\site-packages (from matplotlib!=3.6.1,>=3.1->seaborn) (4.25.0)
Requirement already satisfied: kiwisolver>=1.0.1 in c:\programdata\anaconda3\lib\site-packages (from matplotlib!=3.6.1,>=3.1->seaborn) (1.4.4)
Requirement already satisfied: pyparsing>=2.3.1 in c:\programdata\anaconda3\lib\site-packages (from matplotlib!=3.6.1,>=3.1->seaborn) (3.0.9)
Requirement already satisfied: contourpy>=1.0.1 in c:\programdata\anaconda3\lib\site-packages (from matplotlib!=3.6.1,>=3.1->seaborn) (1.0.5)
Requirement already satisfied: python-dateutil>=2.7 in c:\programdata\anaconda3\lib\site-packages (from matplotlib!=3.6.1,>=3.1->seaborn) (2.8.2)
Requirement already satisfied: pytz>=2020.1 in c:\programdata\anaconda3\lib\site-packages (from pandas>=0.25->seaborn) (2022.7)
Requirement already satisfied: six>=1.5 in c:\programdata\anaconda3\lib\site-packages (from python-dateutil>=2.7->matplotlib!=3.6.1,>=3.1->seaborn) (1.16.0)
Note: you may need to restart the kernel to use updated packages.
```

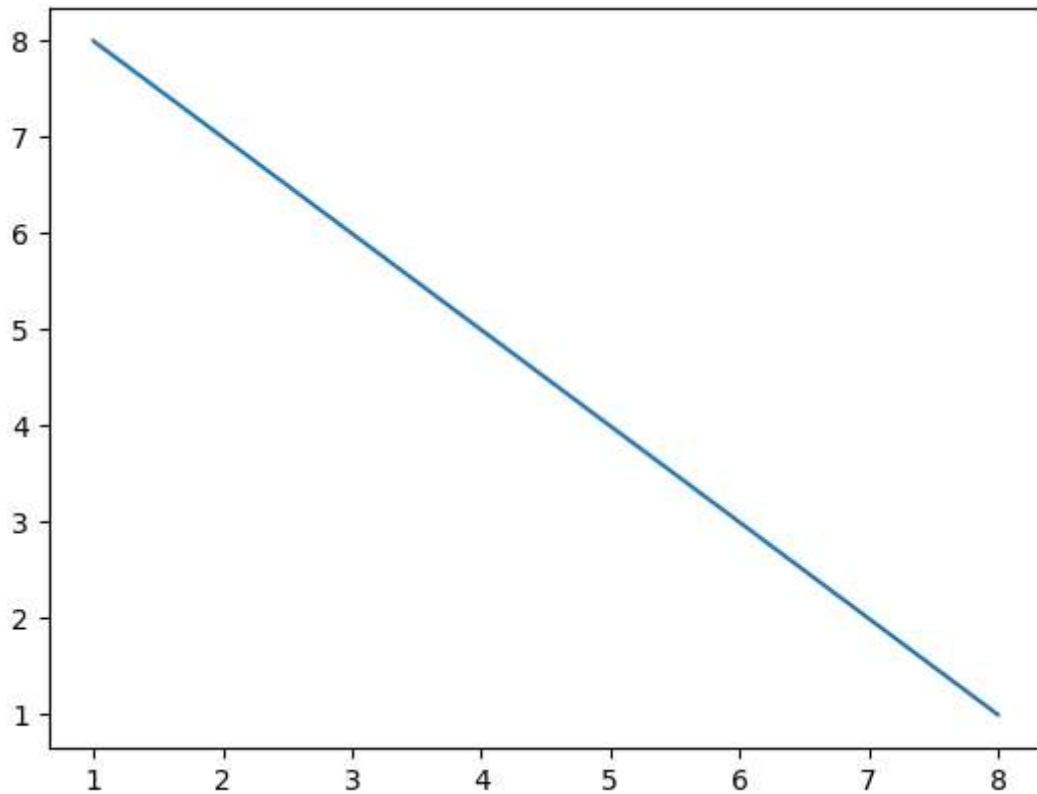
```
In [2]: import seaborn as sns
```

```
In [4]: import matplotlib.pyplot as plt
```

```
In [5]: var = [1,2,3,4,5,6,7,8]
var1 = [8,7,6,5,4,3,2,1]
```

## matplotlib

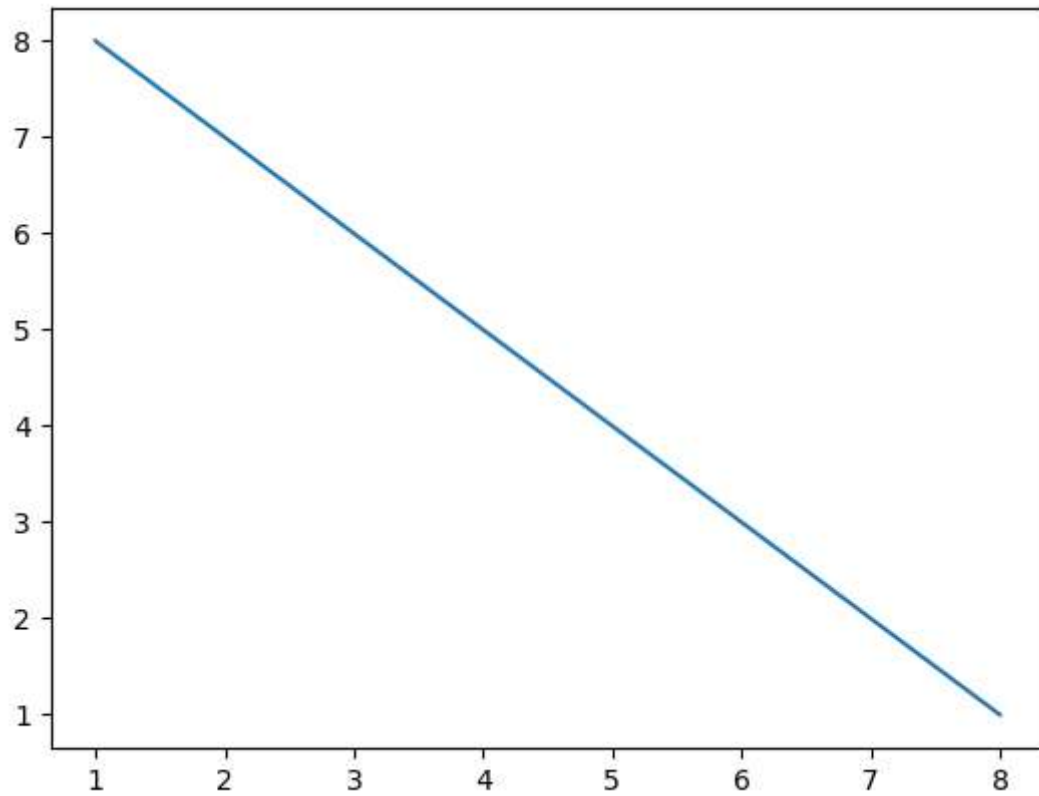
```
In [7]: plt.plot(var, var1)  
plt.show()
```



```
In [8]: var = [1,2,3,4,5,6,7,8]  
var1 = [8,7,6,5,4,3,2,1]
```

## Seaborn

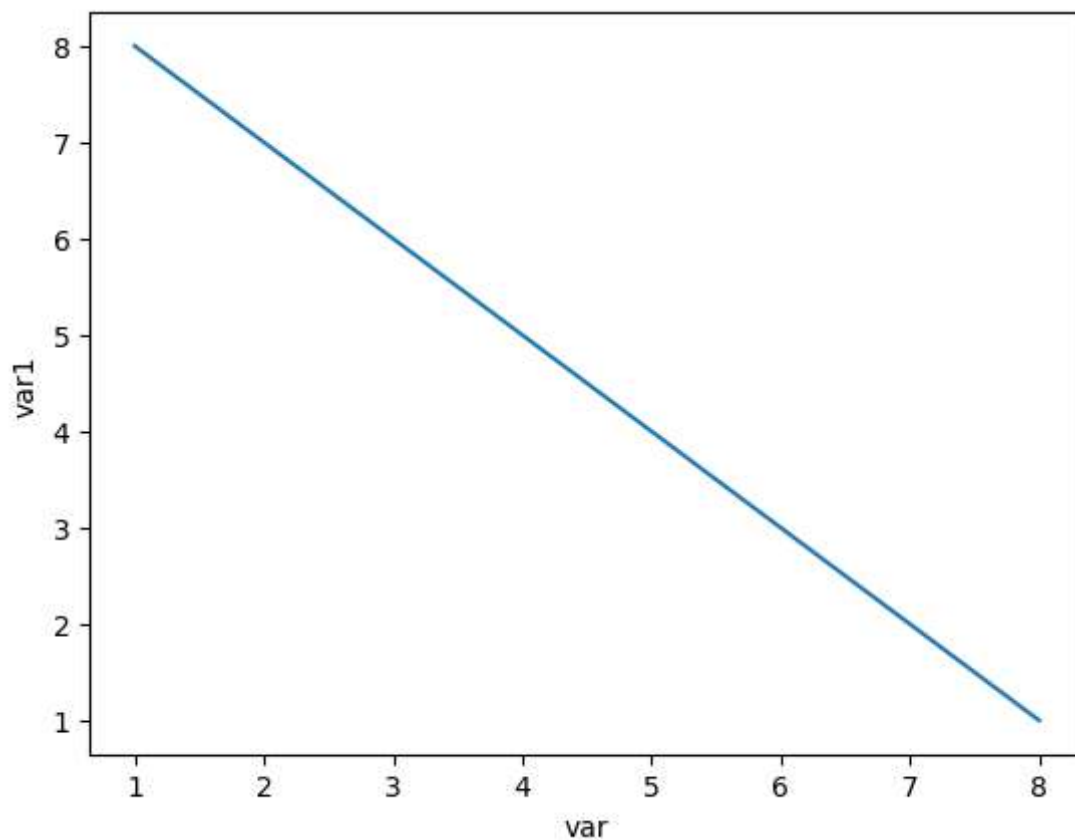
```
In [9]: sns.lineplot(x = var, y = var1)  
plt.show()
```



```
In [12]: var = [1,2,3,4,5,6,7,8]
var1 = [8,7,6,5,4,3,2,1]

import pandas as pd

df = pd.DataFrame({"var":var, 'var1':var1})
sns.lineplot(x = 'var', y = 'var1', data = df)
plt.show()
```



```
In [11]: df
```

```
Out[11]:
```

	var	var1
0	1	8
1	2	7
2	3	6
3	4	5
4	5	4
5	6	3
6	7	2
7	8	1

```
In [13]: df1 = sns.load_dataset("penguins")
```

```
In [14]: df1
```

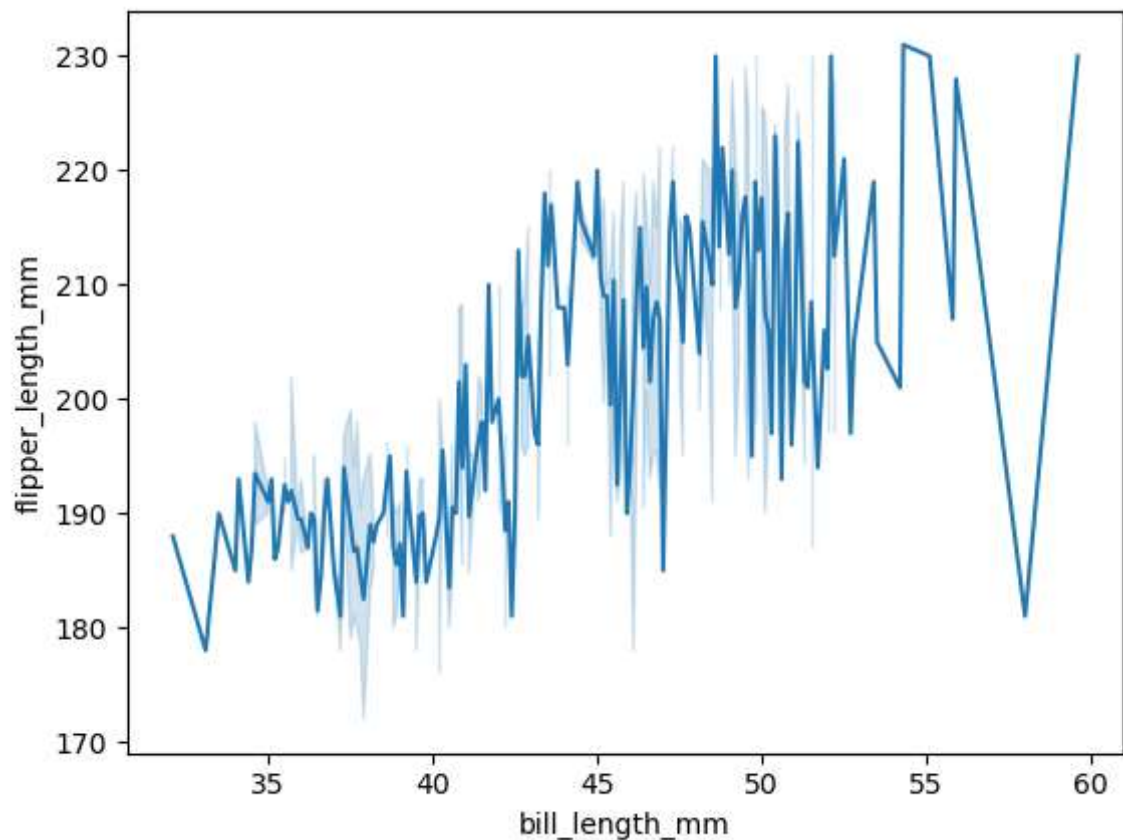
```
Out[14]:
```

	species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex
0	Adelie	Torgersen	39.1	18.7	181.0	3750.0	Male
1	Adelie	Torgersen	39.5	17.4	186.0	3800.0	Female
2	Adelie	Torgersen	40.3	18.0	195.0	3250.0	Female
3	Adelie	Torgersen	NaN	NaN	NaN	NaN	NaN
4	Adelie	Torgersen	36.7	19.3	193.0	3450.0	Female
...	...	...	...	...	...	...	...
339	Gentoo	Biscoe	NaN	NaN	NaN	NaN	NaN
340	Gentoo	Biscoe	46.8	14.3	215.0	4850.0	Female
341	Gentoo	Biscoe	50.4	15.7	222.0	5750.0	Male
342	Gentoo	Biscoe	45.2	14.8	212.0	5200.0	Female
343	Gentoo	Biscoe	49.9	16.1	213.0	5400.0	Male

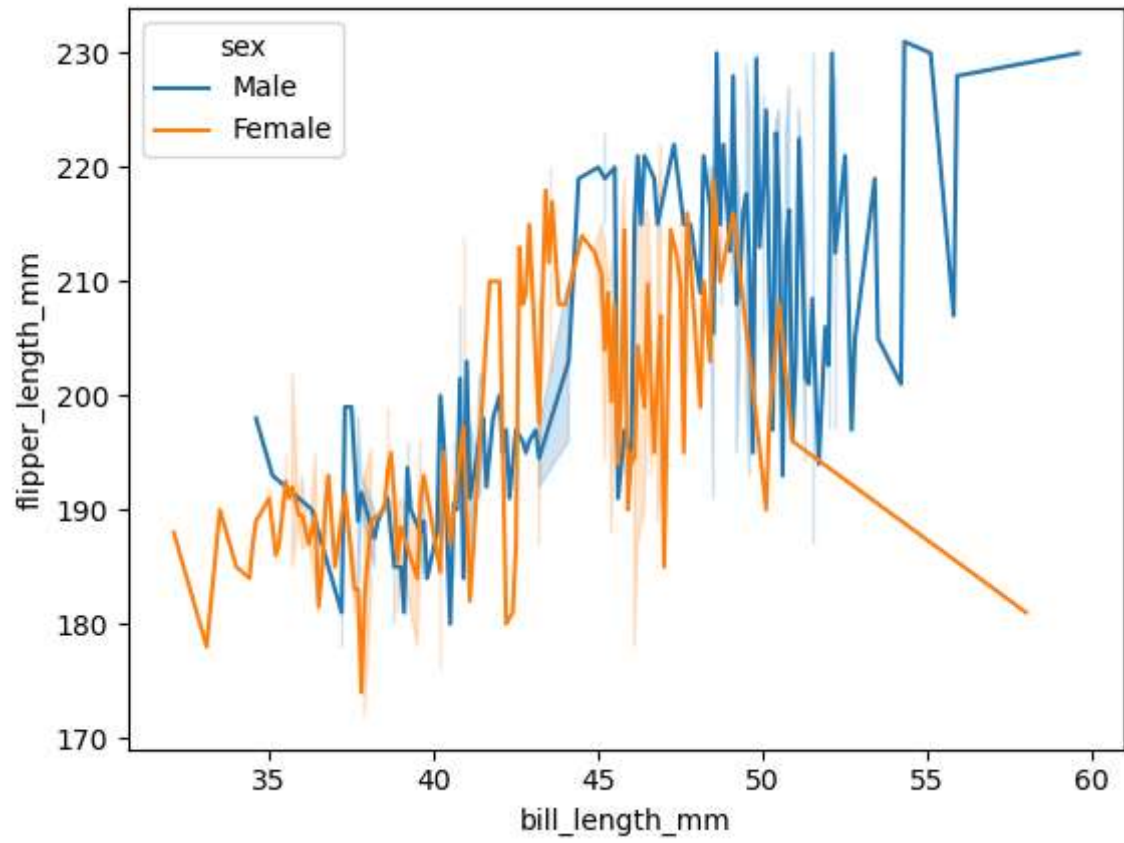
344 rows × 7 columns



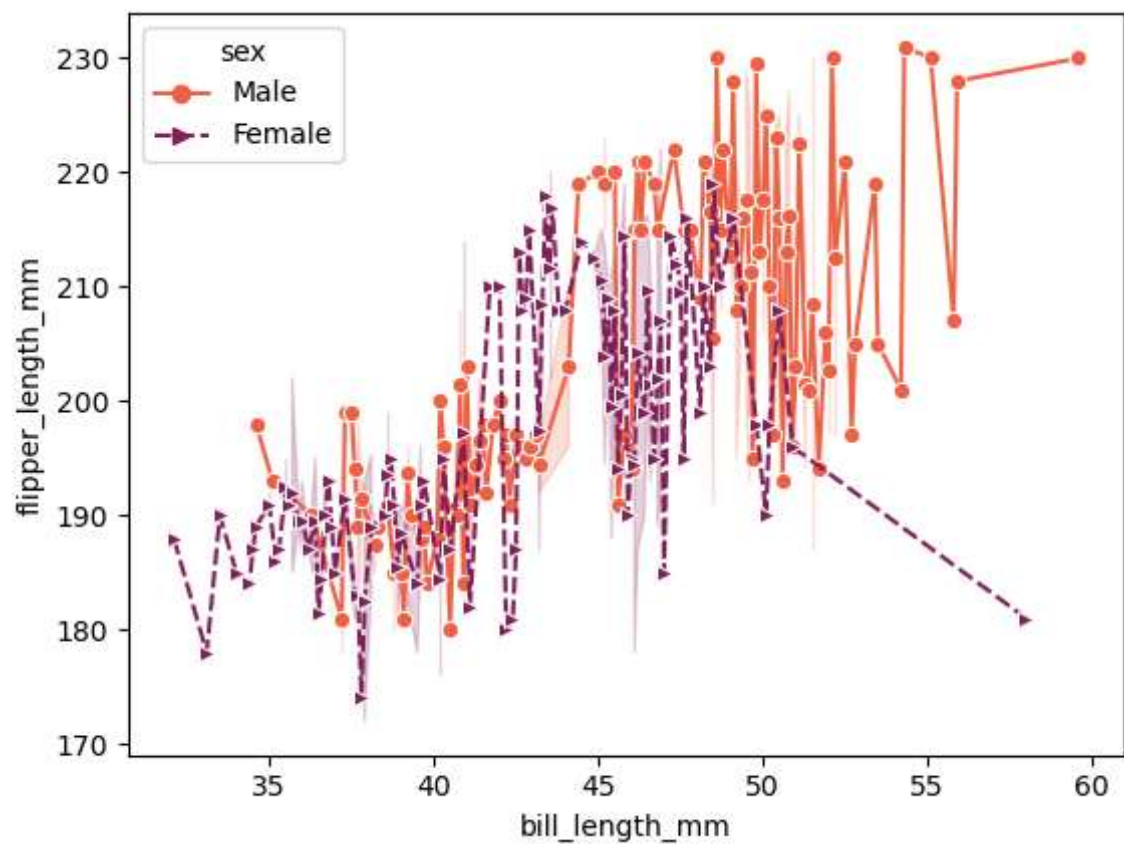
```
In [15]: sns.lineplot(x = "bill_length_mm", y = "flipper_length_mm", data = df1 )
plt.show()
```



```
In [16]: sns.lineplot(x = "bill_length_mm", y = "flipper_length_mm", data = df1, hue = 'sex',  
plt.show())
```



```
In [21]: sns.lineplot(x = "bill_length_mm", y = "flipper_length_mm", data = df1, hue = 'sex',  
                    palette = "rocket_r", markers = ["o", ">"])  
plt.show()
```



```
In [22]: df1 = sns.load_dataset("penguins").head(20)
```

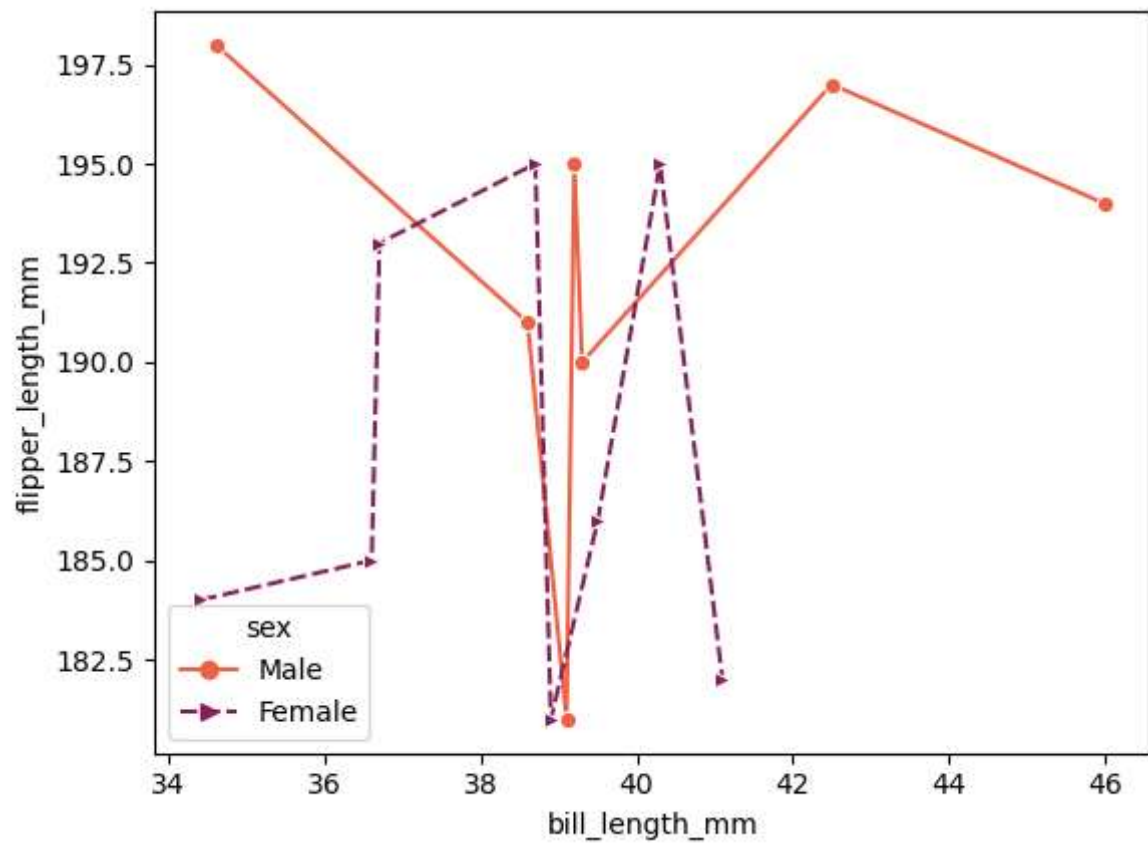
In [23]: df1

Out[23]:

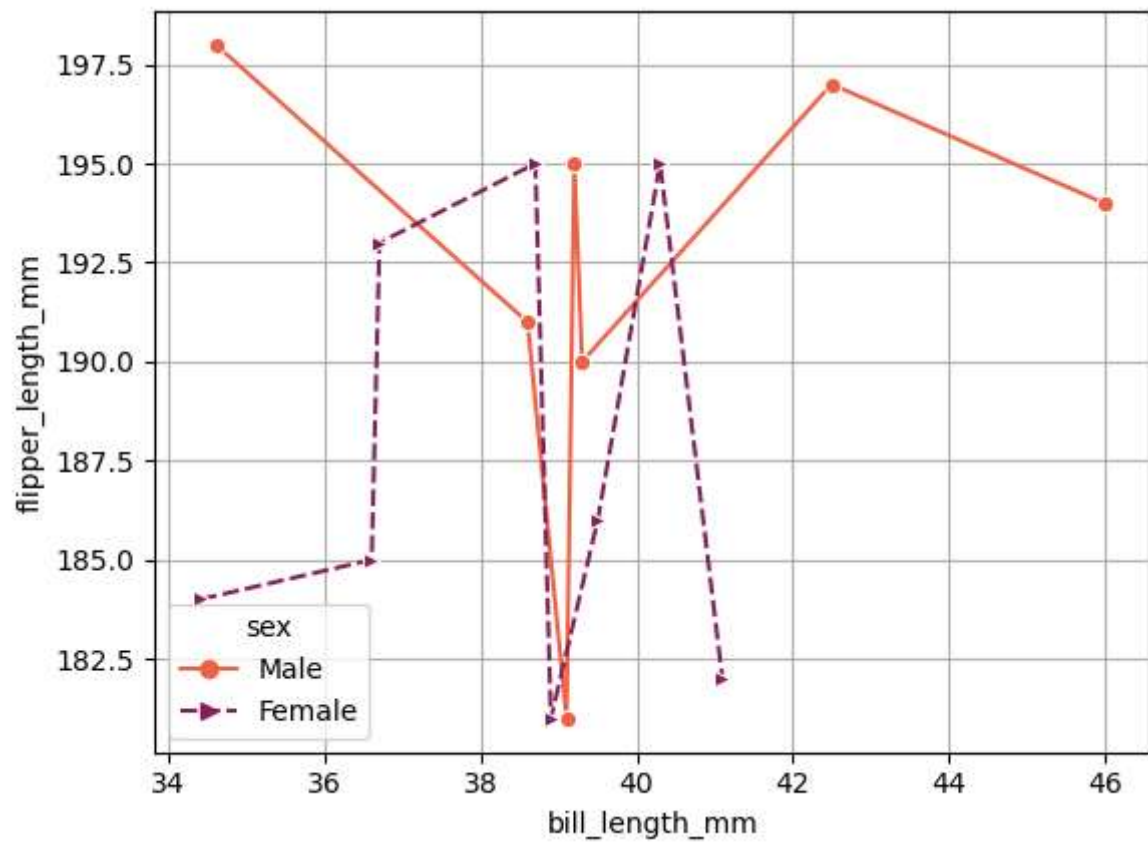
	species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex
0	Adelie	Torgersen	39.1	18.7	181.0	3750.0	Male
1	Adelie	Torgersen	39.5	17.4	186.0	3800.0	Female
2	Adelie	Torgersen	40.3	18.0	195.0	3250.0	Female
3	Adelie	Torgersen	NaN	NaN	NaN	NaN	NaN
4	Adelie	Torgersen	36.7	19.3	193.0	3450.0	Female
5	Adelie	Torgersen	39.3	20.6	190.0	3650.0	Male
6	Adelie	Torgersen	38.9	17.8	181.0	3625.0	Female
7	Adelie	Torgersen	39.2	19.6	195.0	4675.0	Male
8	Adelie	Torgersen	34.1	18.1	193.0	3475.0	NaN
9	Adelie	Torgersen	42.0	20.2	190.0	4250.0	NaN
10	Adelie	Torgersen	37.8	17.1	186.0	3300.0	NaN
11	Adelie	Torgersen	37.8	17.3	180.0	3700.0	NaN
12	Adelie	Torgersen	41.1	17.6	182.0	3200.0	Female
13	Adelie	Torgersen	38.6	21.2	191.0	3800.0	Male
14	Adelie	Torgersen	34.6	21.1	198.0	4400.0	Male
15	Adelie	Torgersen	36.6	17.8	185.0	3700.0	Female
16	Adelie	Torgersen	38.7	19.0	195.0	3450.0	Female
17	Adelie	Torgersen	42.5	20.7	197.0	4500.0	Male
18	Adelie	Torgersen	34.4	18.4	184.0	3325.0	Female
19	Adelie	Torgersen	46.0	21.5	194.0	4200.0	Male



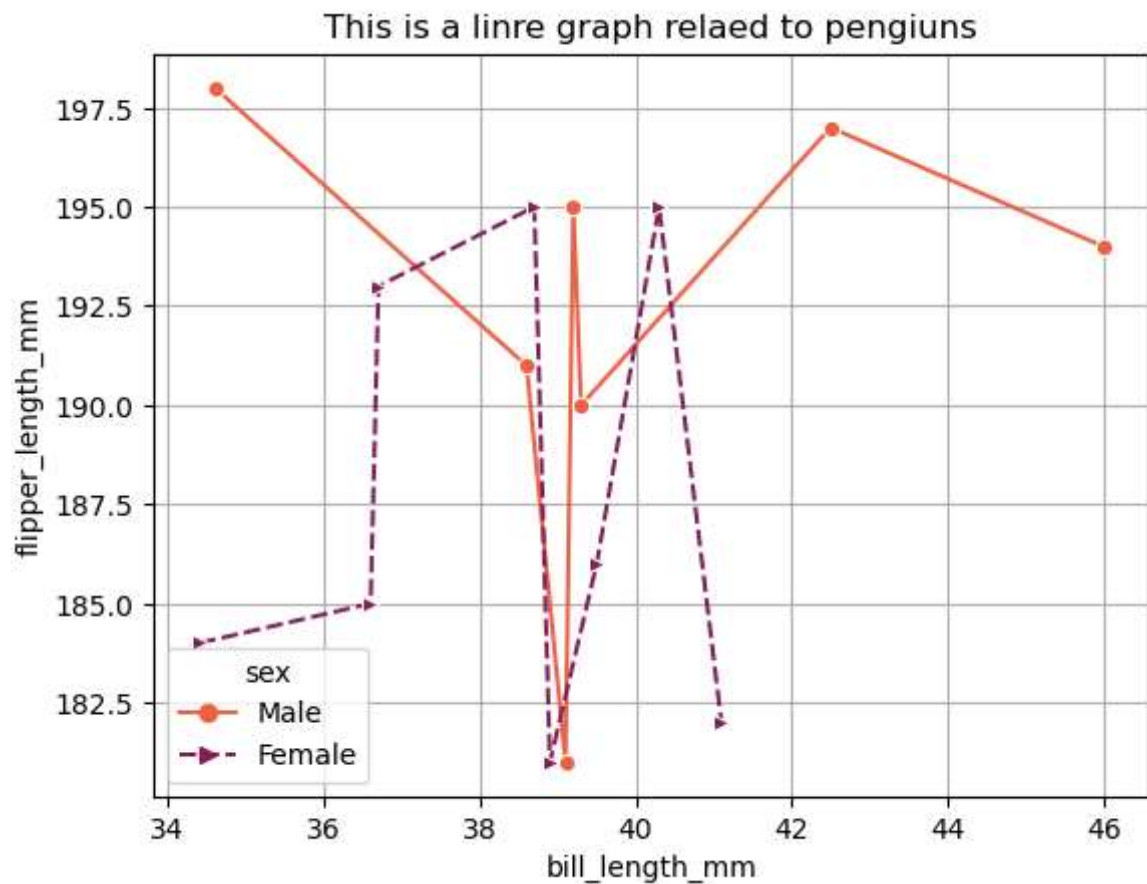
```
In [24]: sns.lineplot(x = "bill_length_mm", y = "flipper_length_mm", data = df1 , hue = 'sex',  
                    palette = "rocket_r", markers = ["o", ">"])  
plt.show()
```



```
In [25]: sns.lineplot(x = "bill_length_mm", y = "flipper_length_mm", data = df1 , hue = 'sex',  
                    palette = "rocket_r", markers = ["o", ">"])  
plt.grid()  
plt.show()
```



```
In [26]: sns.lineplot(x = "bill_length_mm", y = "flipper_length_mm", data = df1, hue = 'sex',
                    palette = "rocket_r", markers = ["o", ">"])
plt.grid()
plt.title("This is a linre graph relaed to pengiuns")
plt.show()
```



## Bar Plot in Seaborn Library

```
In [27]: import seaborn as sns
import matplotlib.pyplot as plt
import pandas as pd
```

```
In [30]: df1 = sns.load_dataset("penguins")
```

In [31]: df1

Out[31]:

	species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex
0	Adelie	Torgersen	39.1	18.7	181.0	3750.0	Male
1	Adelie	Torgersen	39.5	17.4	186.0	3800.0	Female
2	Adelie	Torgersen	40.3	18.0	195.0	3250.0	Female
3	Adelie	Torgersen	NaN	NaN	NaN	NaN	NaN
4	Adelie	Torgersen	36.7	19.3	193.0	3450.0	Female
...	...	...	...	...	...	...	...
339	Gentoo	Biscoe	NaN	NaN	NaN	NaN	NaN
340	Gentoo	Biscoe	46.8	14.3	215.0	4850.0	Female
341	Gentoo	Biscoe	50.4	15.7	222.0	5750.0	Male
342	Gentoo	Biscoe	45.2	14.8	212.0	5200.0	Female
343	Gentoo	Biscoe	49.9	16.1	213.0	5400.0	Male

344 rows × 7 columns



In [34]: df1["island"]

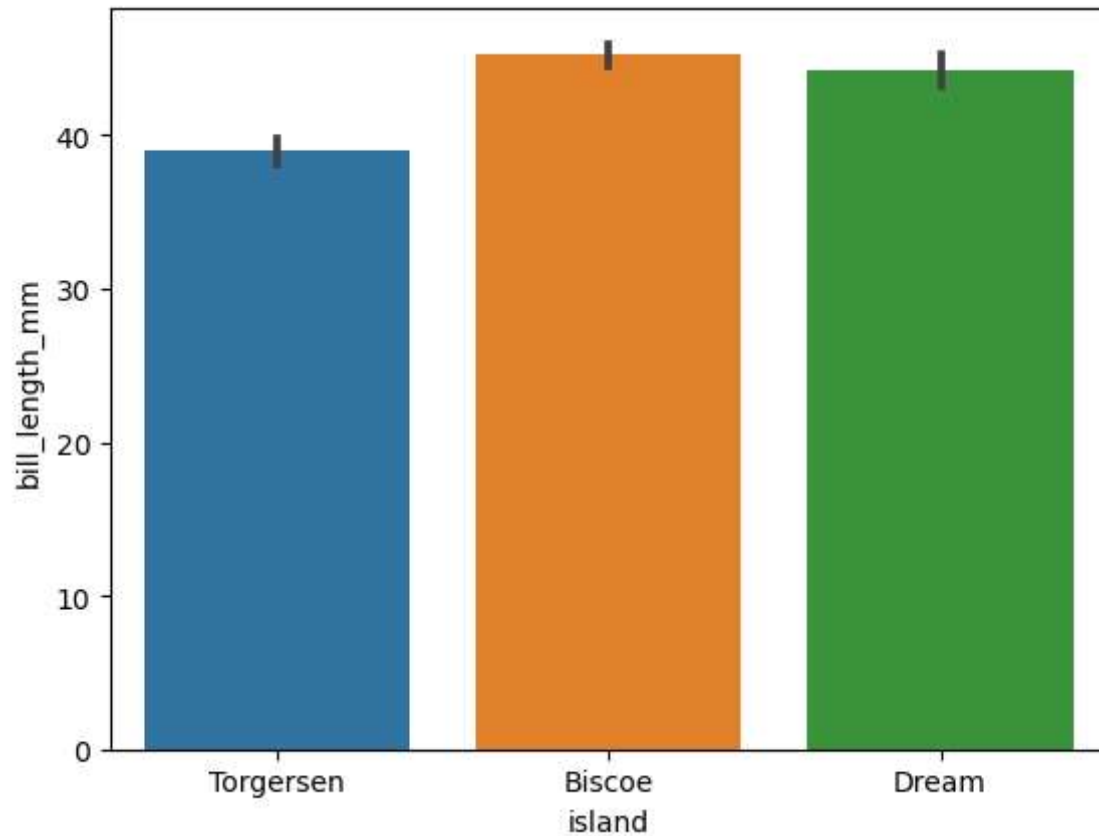
Out[34]:

```

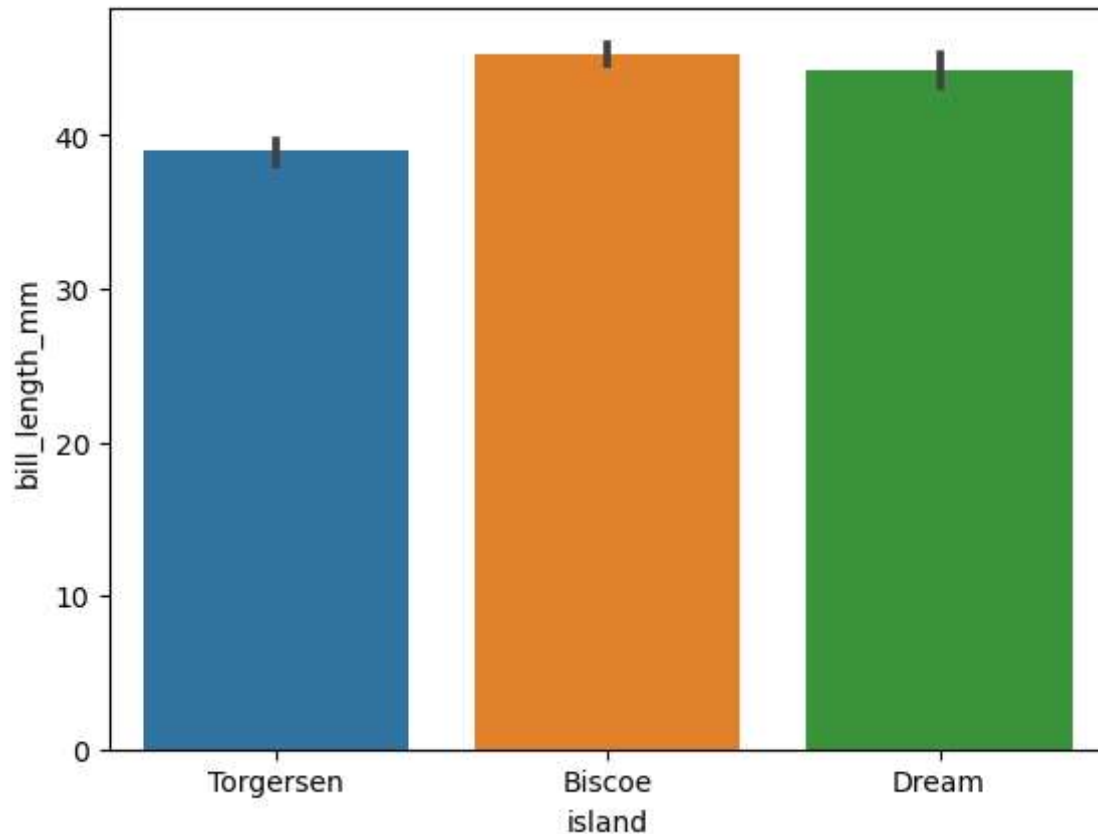
0      Torgersen
1      Torgersen
2      Torgersen
3      Torgersen
4      Torgersen
...
339     Biscoe
340     Biscoe
341     Biscoe
342     Biscoe
343     Biscoe
Name: island, Length: 344, dtype: object

```

```
In [35]: sns.barplot(x = df1.island, y = df1.bill_length_mm)  
plt.show()
```



```
In [36]: sns.barplot(x = "island", y = 'bill_length_mm', data = df1)
plt.show()
```



```
In [37]: df1
```

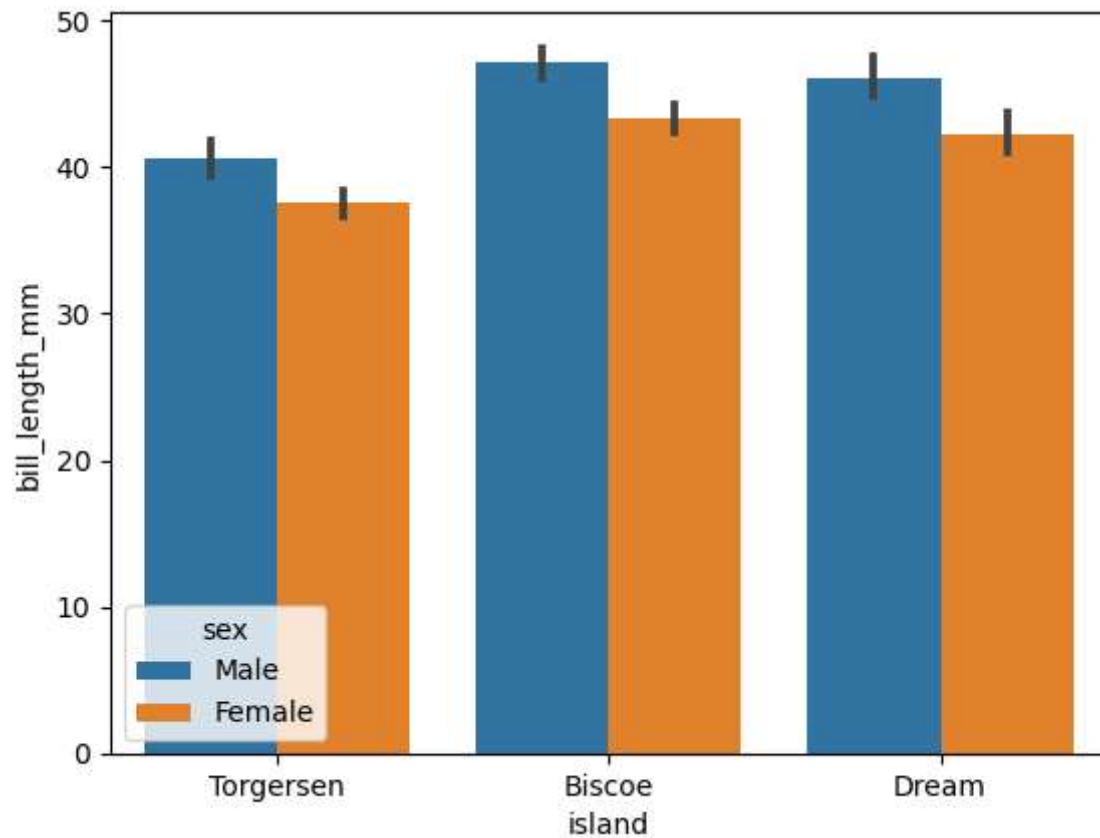
```
Out[37]:
```

	species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex
0	Adelie	Torgersen	39.1	18.7	181.0	3750.0	Male
1	Adelie	Torgersen	39.5	17.4	186.0	3800.0	Female
2	Adelie	Torgersen	40.3	18.0	195.0	3250.0	Female
3	Adelie	Torgersen	NaN	NaN	NaN	NaN	NaN
4	Adelie	Torgersen	36.7	19.3	193.0	3450.0	Female
...	...	...	...	...	...	...	...
339	Gentoo	Biscoe	NaN	NaN	NaN	NaN	NaN
340	Gentoo	Biscoe	46.8	14.3	215.0	4850.0	Female
341	Gentoo	Biscoe	50.4	15.7	222.0	5750.0	Male
342	Gentoo	Biscoe	45.2	14.8	212.0	5200.0	Female
343	Gentoo	Biscoe	49.9	16.1	213.0	5400.0	Male

344 rows × 7 columns

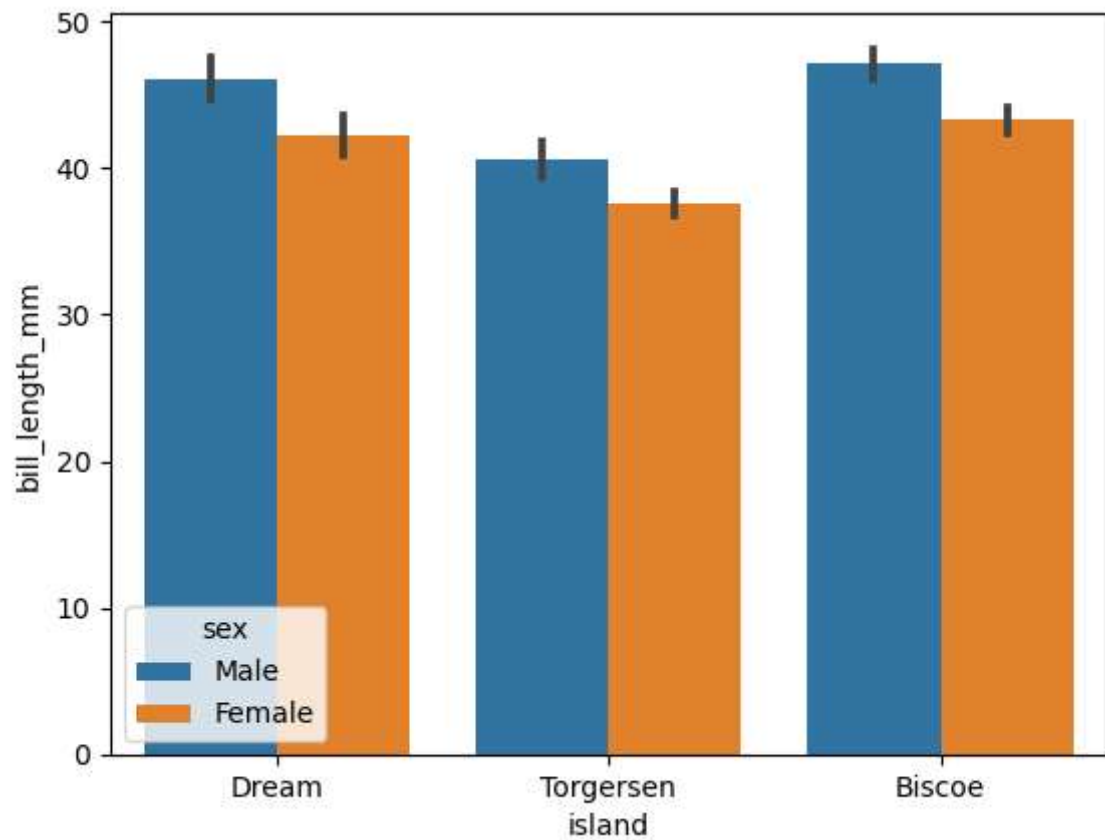


```
In [38]: sns.barplot(x = "island", y = 'bill_length_mm', data = df1, hue = "sex")  
plt.show()
```



## Order

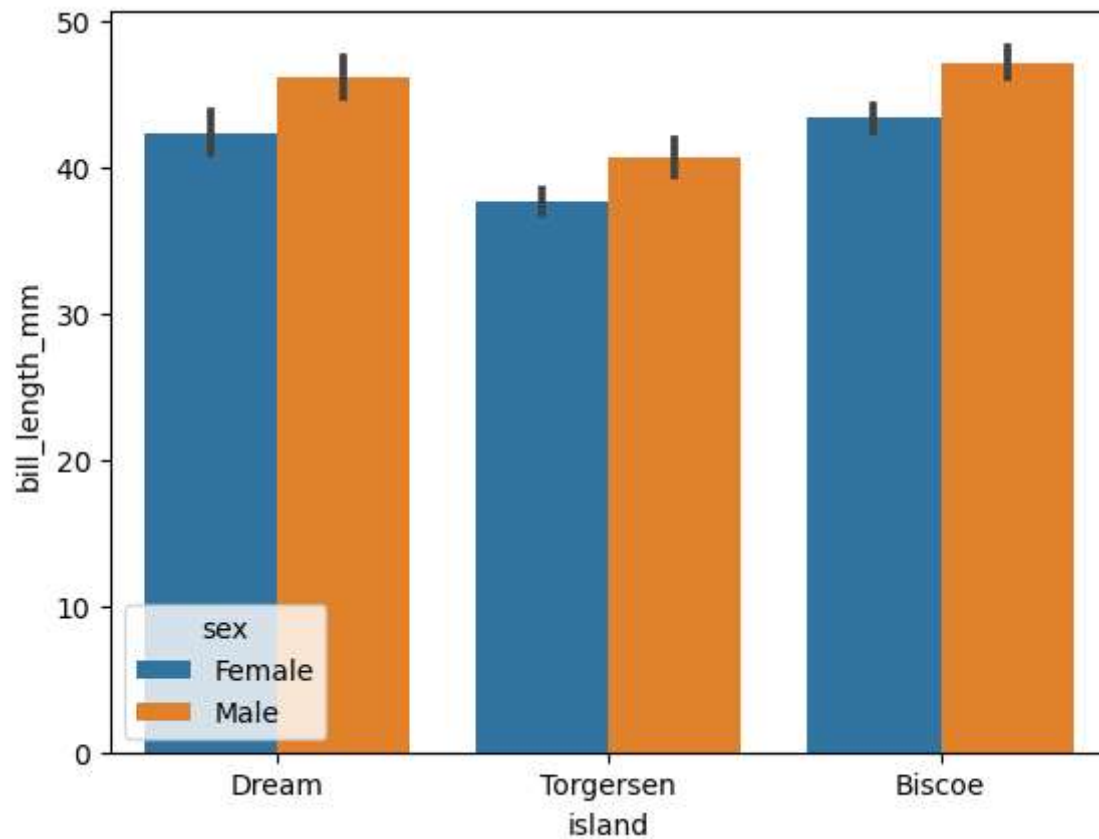
```
In [40]: order1 = ["Dream", "Torgersen", "Biscoe"]
sns.barplot(x = "island", y = "bill_length_mm", data = df1, hue = "sex", order =
plt.show())
```



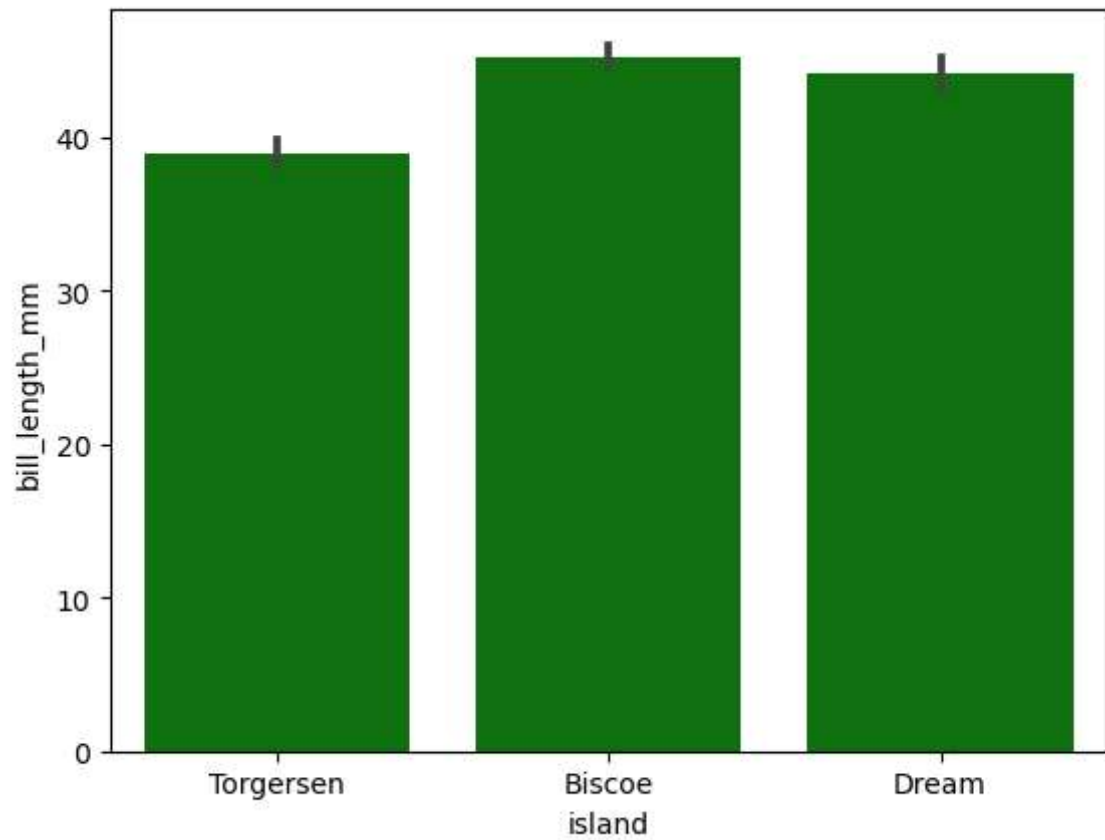
**hue\_order**



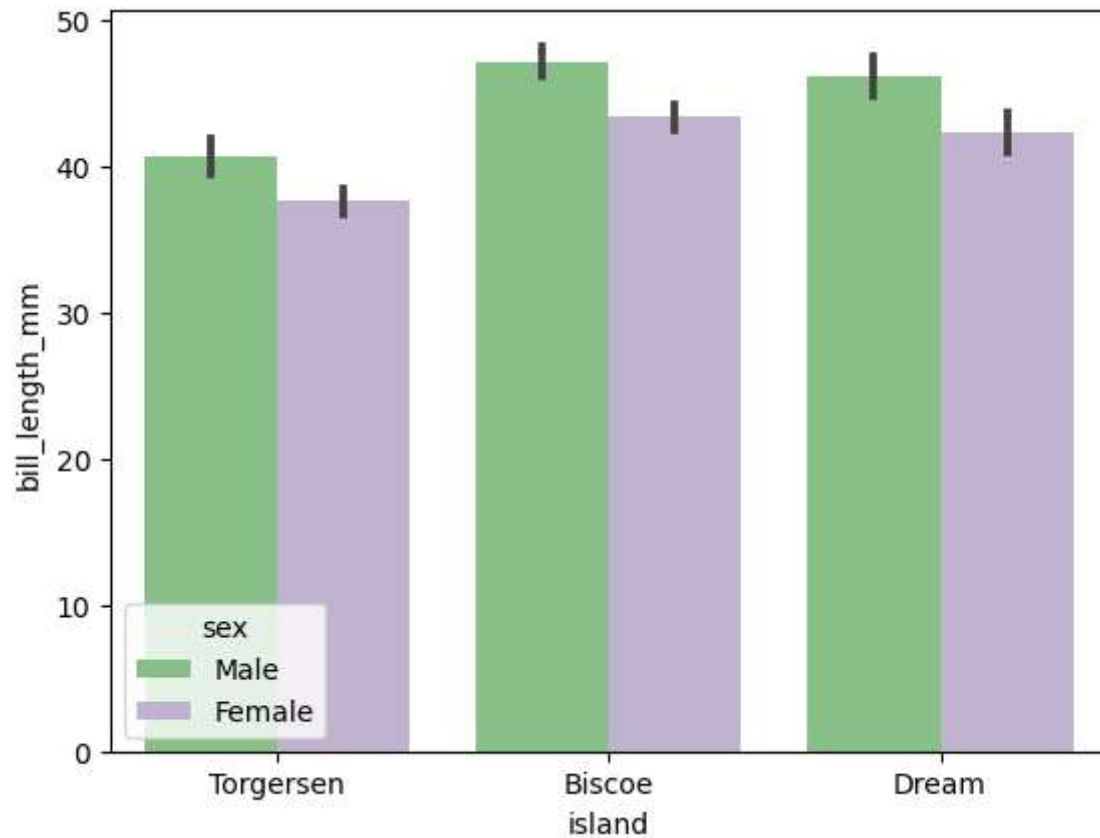
```
In [41]: order1 = ["Dream", "Torgersen", "Biscoe"]  
sns.barplot(x = "island", y = "bill_length_mm", data = df1, hue = "sex",  
            order = order1, hue_order = ['Female', 'Male'] )  
plt.show()
```



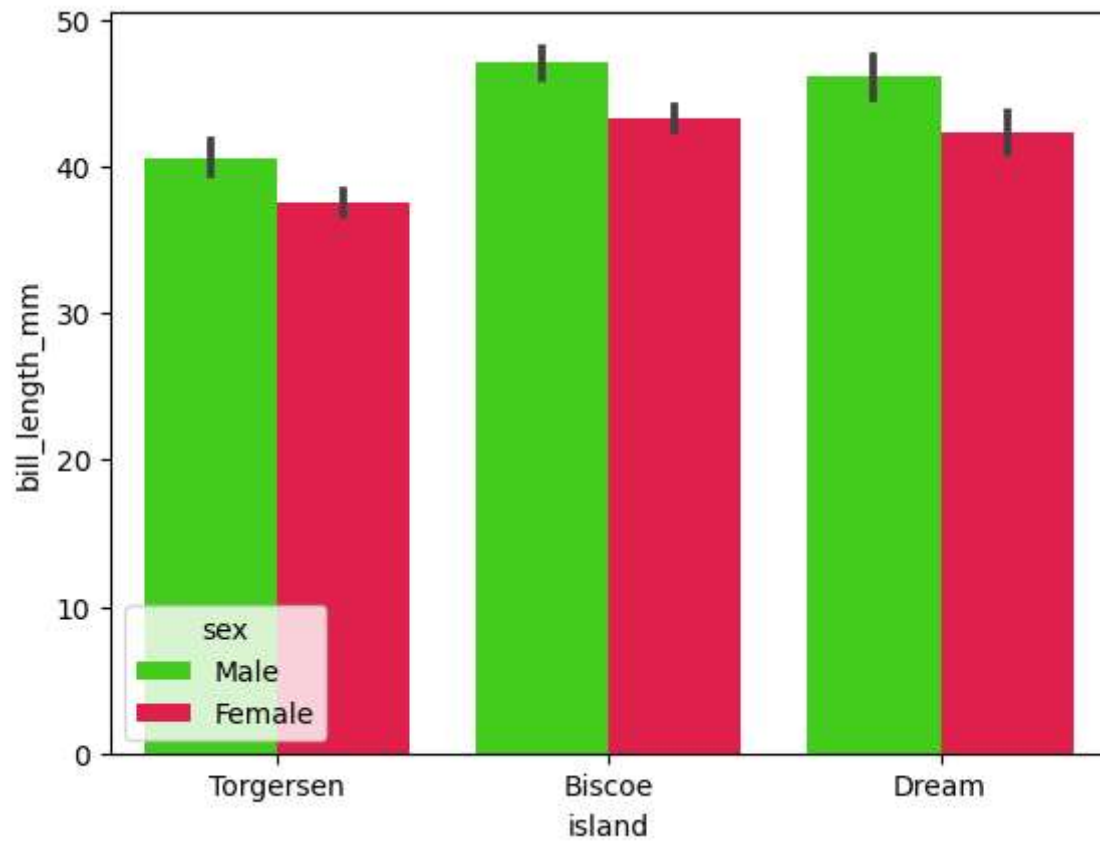
```
In [45]: order1 = ['Dream', "Torgersen", "Biscoe"]  
sns.barplot(x = 'island', y = 'bill_length_mm', data = df1, color = "green")  
plt.show()
```



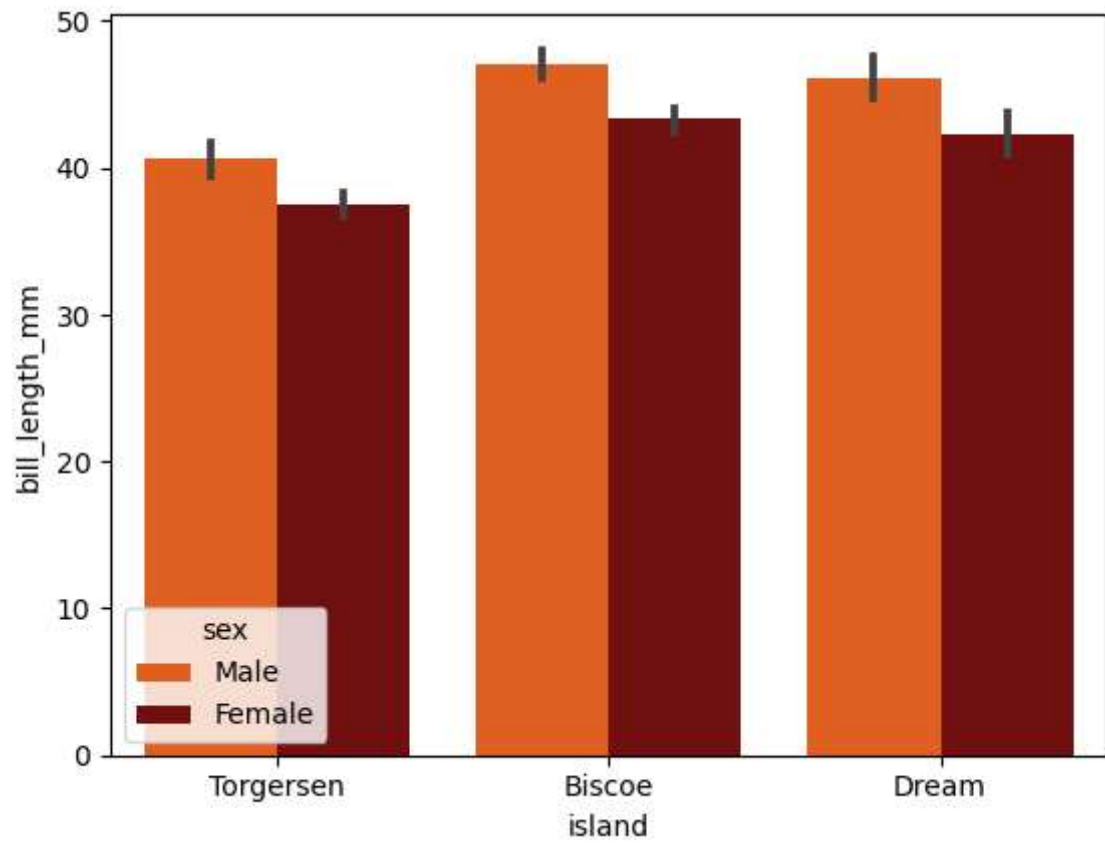
```
In [51]: sns.barplot(x = "island", y = "bill_length_mm", data = df1, hue = "sex", palette=
plt.show())
```



```
In [52]: sns.barplot(x = "island", y = "bill_length_mm", data = df1, hue = "sex", palette="magma",  
plt.show())
```

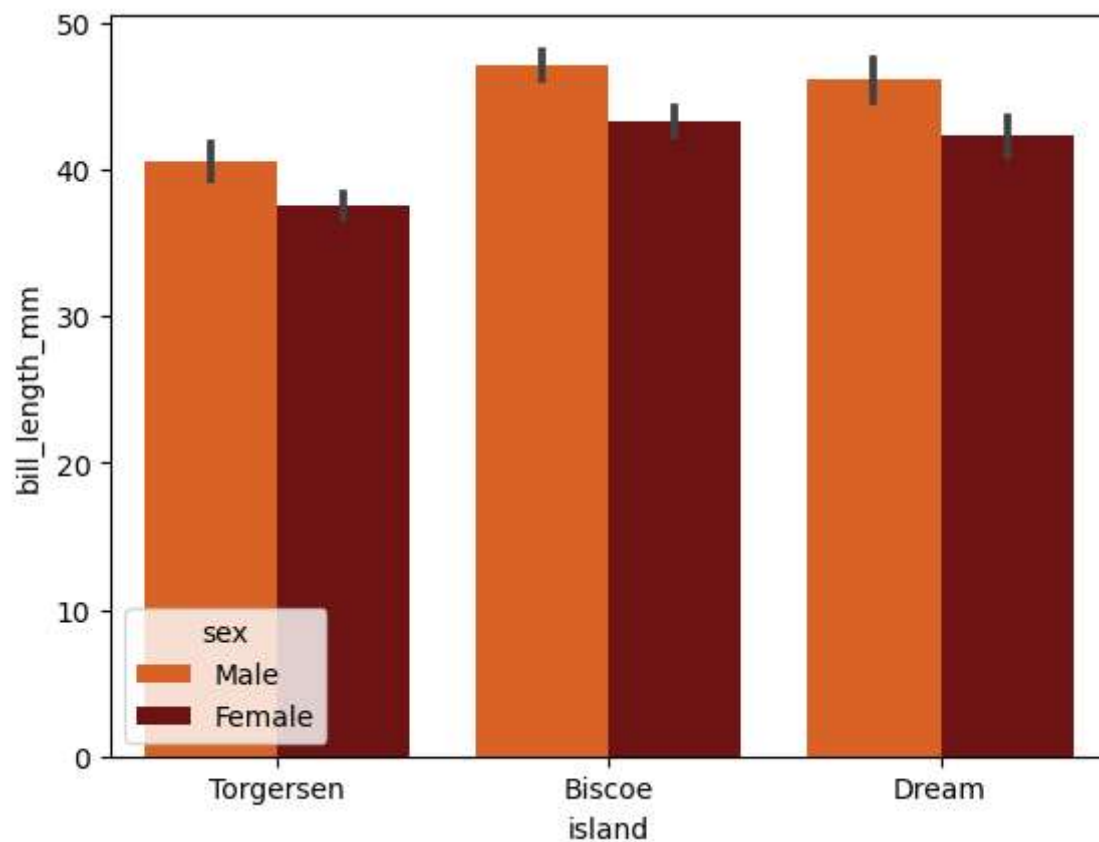


```
In [54]: sns.barplot(x = "island", y = "bill_length_mm", data = df1, hue = "sex", palette=
plt.show())
```



## Saturation

```
In [58]: sns.barplot(x = "island", y = "bill_length_mm", data = df1, hue = "sex",  
                    palette = "gist_heat_r", saturation = 0.7)  
plt.show()
```



## Histogram in Seaborn Library

```
In [59]: import seaborn as sns  
import matplotlib.pyplot as plt  
import pandas as pd
```

```
In [60]: df1
```

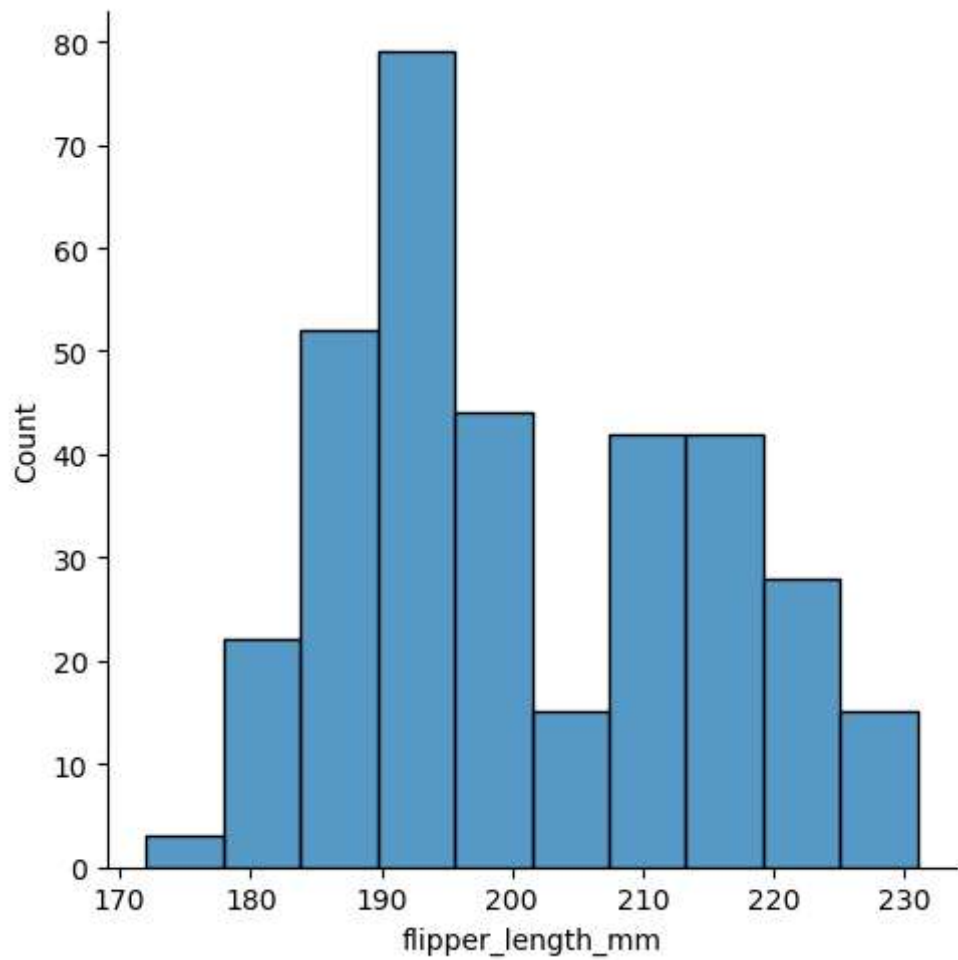
Out[60]:

	species	island	bill_length_mm	bill_depth_mm	flipper_length_mm	body_mass_g	sex
0	Adelie	Torgersen	39.1	18.7	181.0	3750.0	Male
1	Adelie	Torgersen	39.5	17.4	186.0	3800.0	Female
2	Adelie	Torgersen	40.3	18.0	195.0	3250.0	Female
3	Adelie	Torgersen	NaN	NaN	NaN	NaN	NaN
4	Adelie	Torgersen	36.7	19.3	193.0	3450.0	Female
...	...	...	...	...	...	...	...
339	Gentoo	Biscoe	NaN	NaN	NaN	NaN	NaN
340	Gentoo	Biscoe	46.8	14.3	215.0	4850.0	Female
341	Gentoo	Biscoe	50.4	15.7	222.0	5750.0	Male
342	Gentoo	Biscoe	45.2	14.8	212.0	5200.0	Female
343	Gentoo	Biscoe	49.9	16.1	213.0	5400.0	Male

344 rows × 7 columns



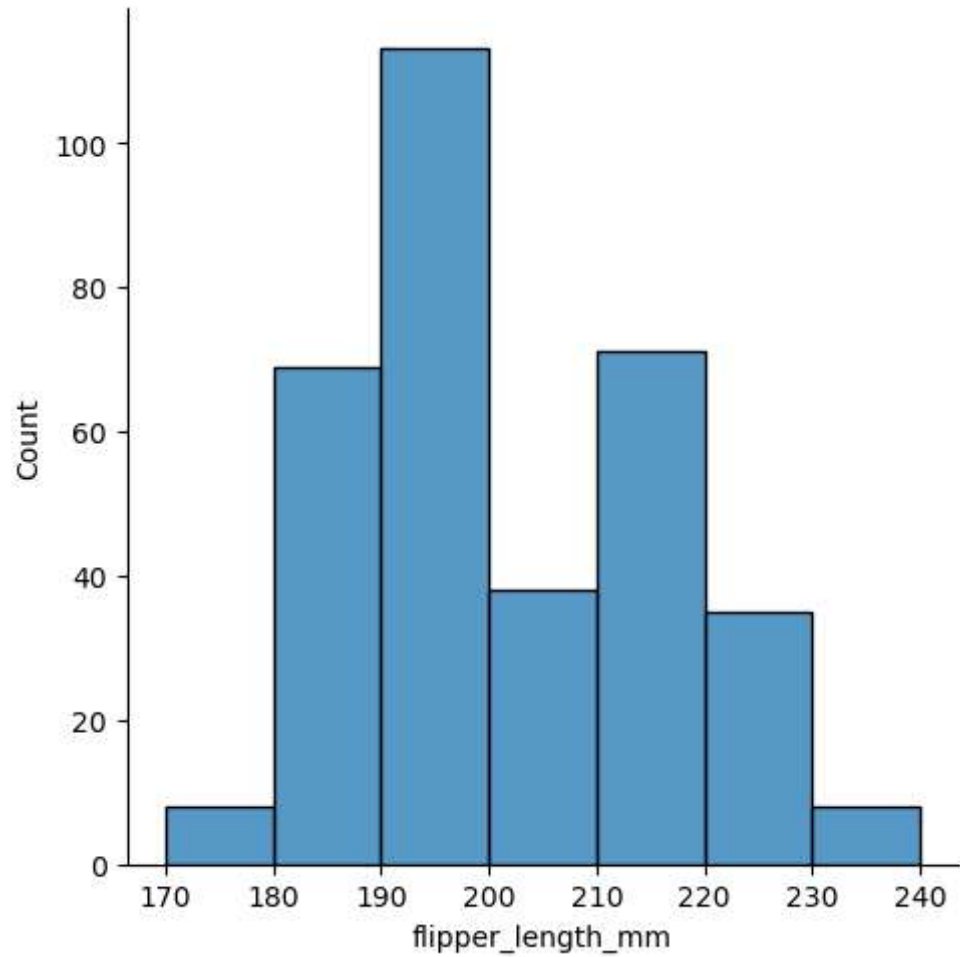
```
In [61]: sns.displot(df1["flipper_length_mm"])  
plt.show()
```



**bins**

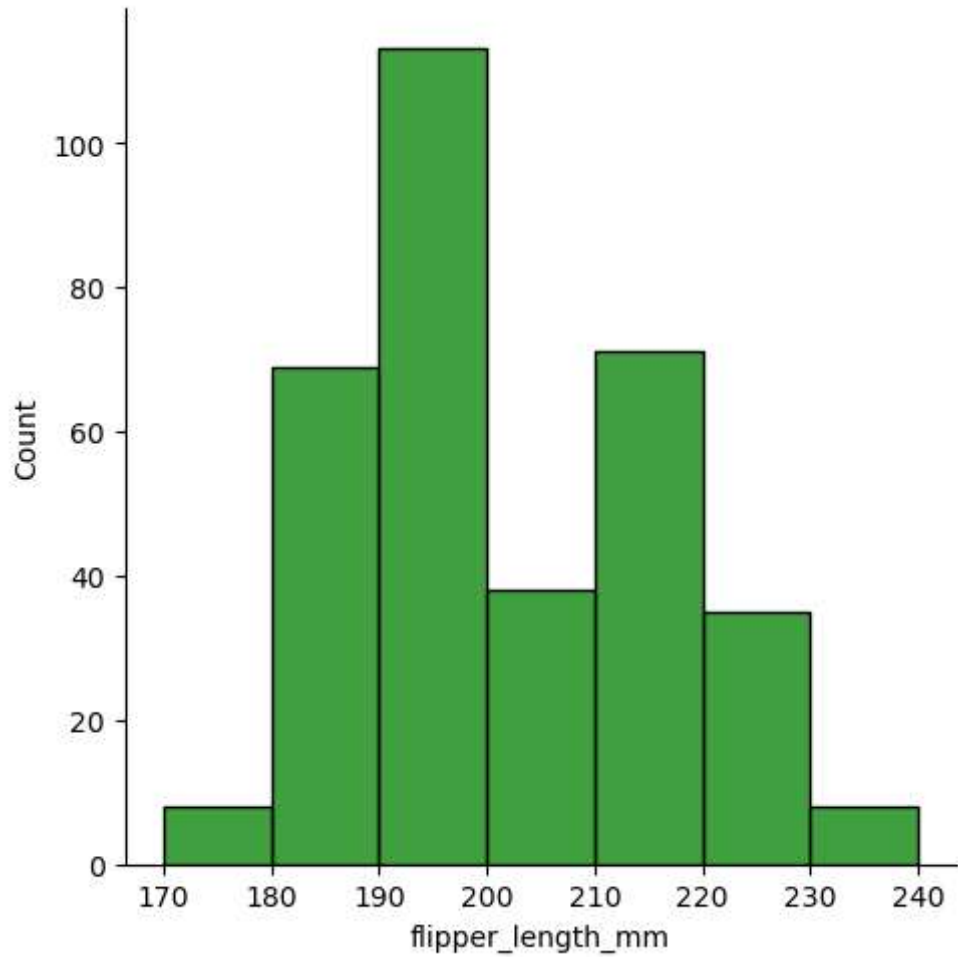


```
In [62]: sns.displot(df1['flipper_length_mm'], bins = [170,180,190,200,210,220,230,240])  
plt.show()
```

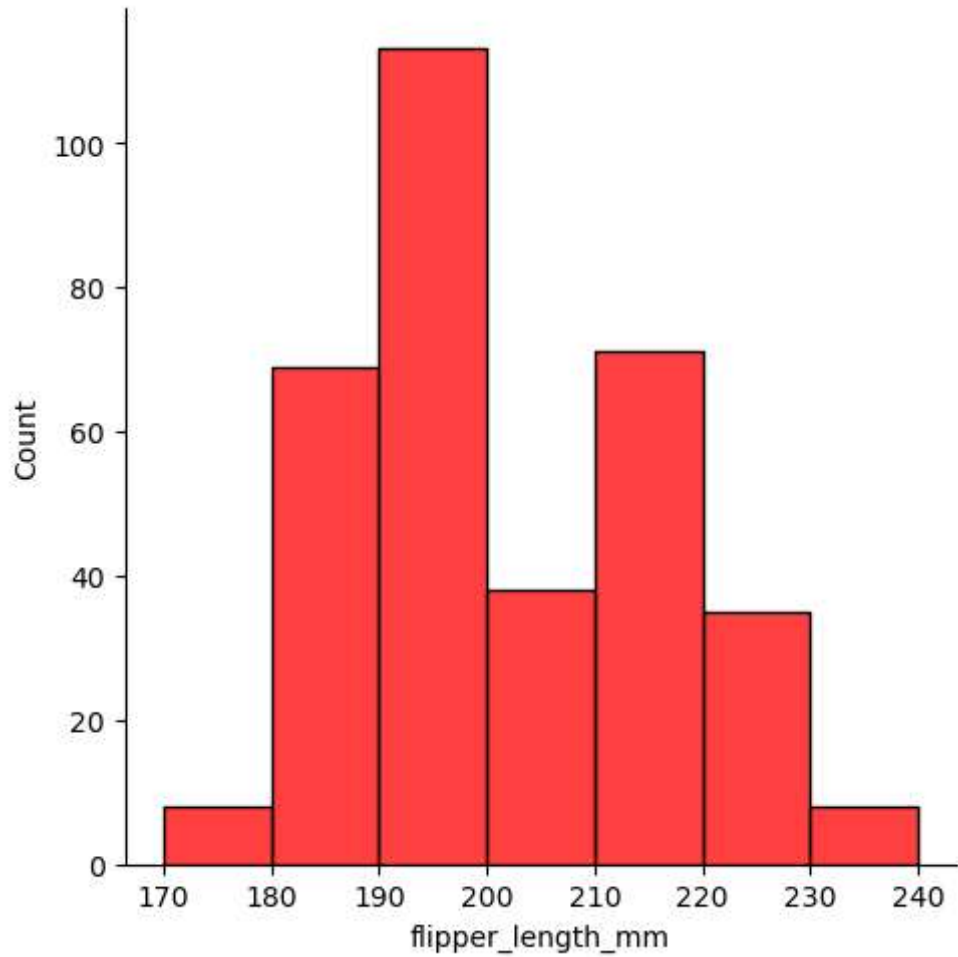


**color**

```
In [63]: sns.displot(df1['flipper_length_mm'], bins = [170,180,190,200,210,220,230,240],  
plt.show())
```

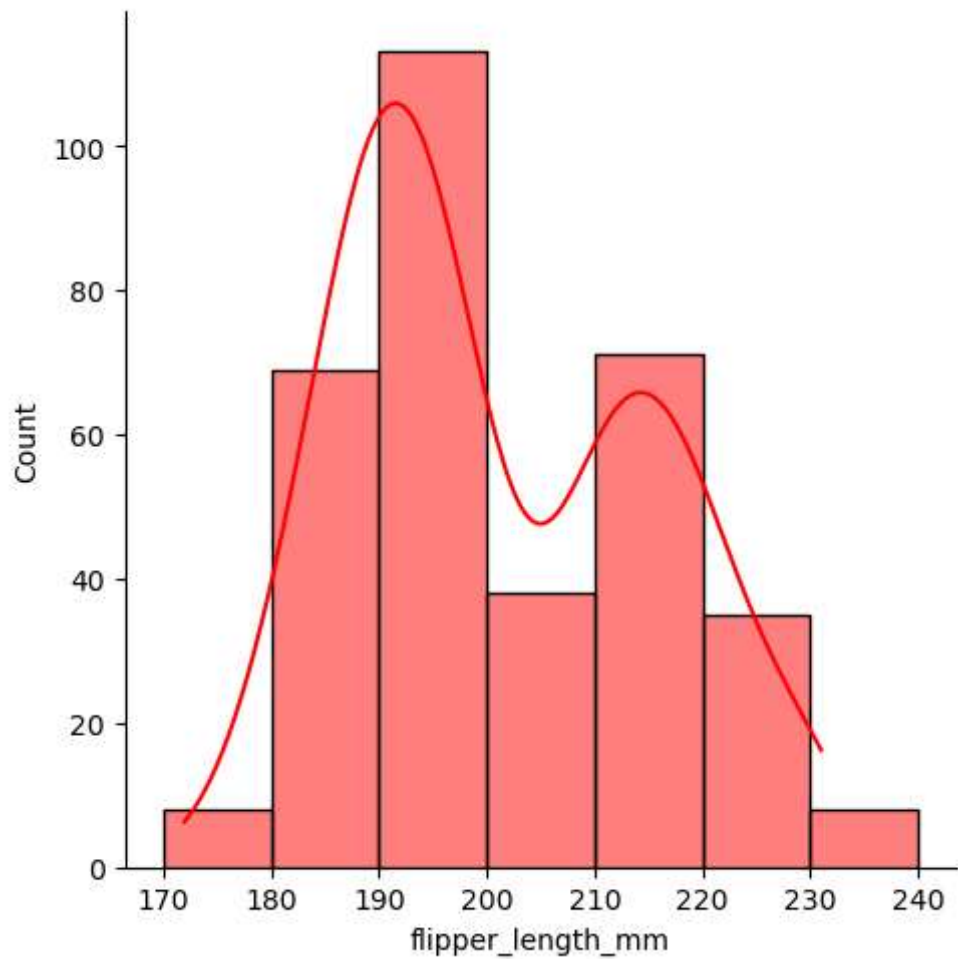


```
In [64]: sns.displot(df1['flipper_length_mm'], bins = [170,180,190,200,210,220,230,240],  
plt.show())
```



**kde**

```
In [68]: sns.displot(df1["flipper_length_mm"], bins = [170,180,190,200,210,220,230,240],  
                  color = "red")  
plt.show()
```



In [ ]: