

Lab-4

Seaborn Exercises

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Import Numpy, Panda and Matplotlib library

```
In [2]: import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
```

```
In [16]:
```

Import Dataset

```
In [3]: fp = 'iris.csv'
df = pd.read_csv(fp)
```

```
In [ ]: # print top 5 row of the dataset
```

```
In [133... df.head()
```

	sepal.length	sepal.width	petal.length	petal.width	variety
0	5.1	3.5	1.4	0.2	Setosa
1	4.9	3.0	1.4	0.2	Setosa
2	4.7	3.2	1.3	0.2	Setosa
3	4.6	3.1	1.5	0.2	Setosa
4	5.0	3.6	1.4	0.2	Setosa

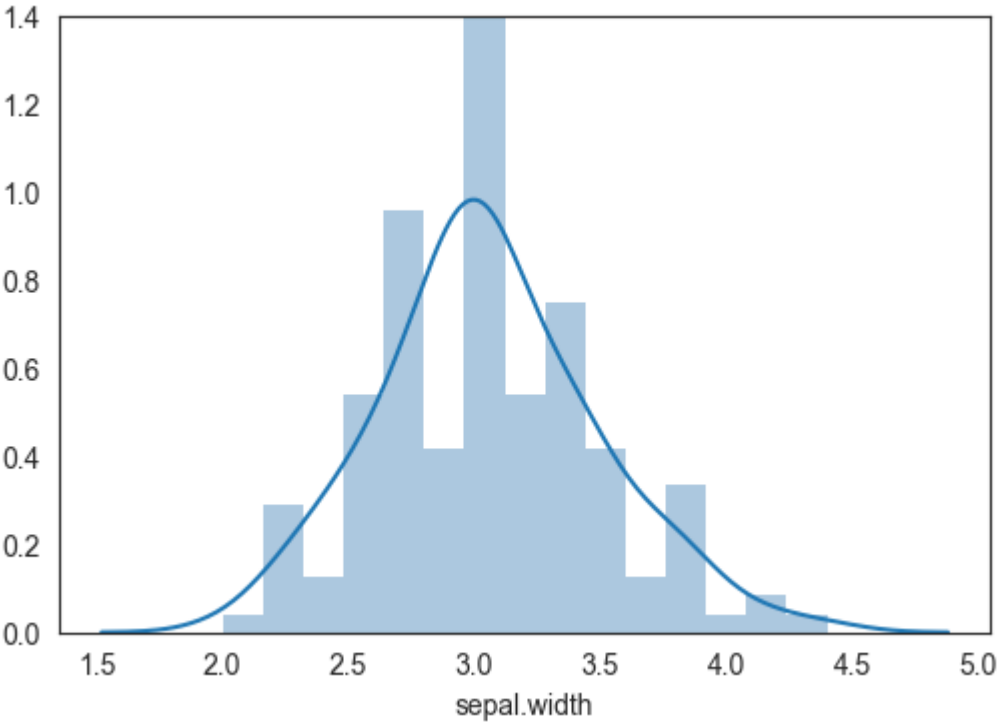
Exercises 1

```
In [109... # Write the code to show the graph below.
```

```
default_color = sns.color_palette()[0]

plt.figure(figsize=(6,4))
# Draw histogram with contiguous bars
plt.hist(df['sepal.width'], bins=15, density=True, rwidth=1, edgecolor='none', color=(172/255, 200/255, 223/255))

# Overlay the KDE
sns.kdeplot(df['sepal.width'], bw_adjust=1, color=default_color)
plt.ylabel('')
plt.ylim(0, 1.4)
plt.show()
```



Exercises 2

```
In [120... # Write the code to show the graph below.
```

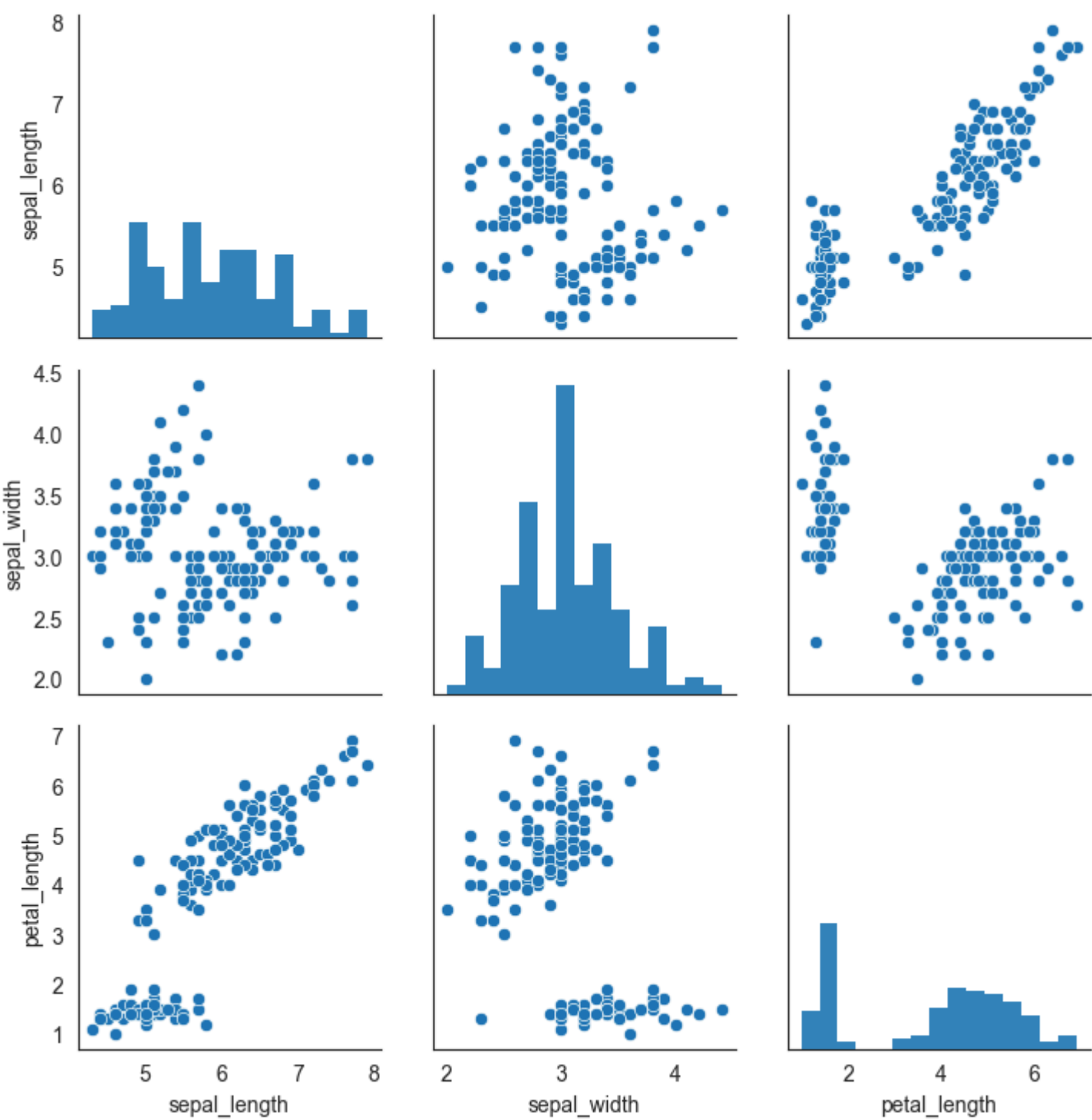
```
df = sns.load_dataset("iris")[["sepal_length", "sepal_width", "petal_length"]]

default_color = sns.color_palette()[0]
g = sns.PairGrid(df)

g.map_upper(sns.scatterplot, color=default_color)
g.map_lower(sns.scatterplot, color=default_color)

g.map_diag(plt.hist, bins=15, density=True, rwidth=1, color=default_color, alpha=0.9, edgecolor='none')

plt.show()
```



Exercises 3

```
In [153... # Write the code to show the graph below.
'''
plt.figure(figsize=(8, 4))
sns.boxplot(data=df, orient='h', palette="pastel")

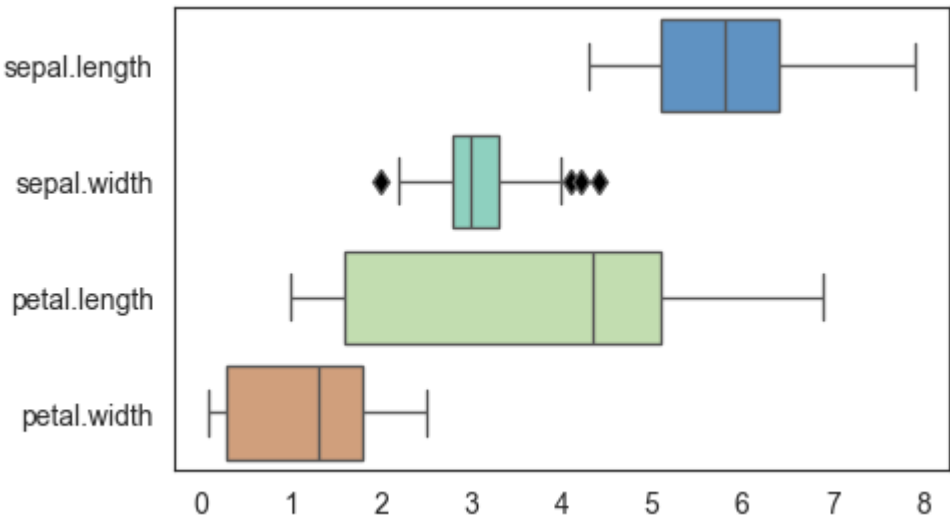
plt.show()

'''
num_cols = ['sepal.length', 'sepal.width', 'petal.length', 'petal.width']

custom_colors = ["#4F92D2", "#83DBC4", "#C1E5A8", "#DE9D6E"]

flierprops = dict(marker='d', color='black', markersize=6, markerfacecolor = 'black')

df_temp = df[num_cols]
num_cols = df_temp.select_dtypes(include=['number']).columns
plt.figure(figsize=(5, 3))
sns.boxplot(data=df_temp[num_cols], orient='h', palette=custom_colors, flierprops=flierprops)
plt.show()
```

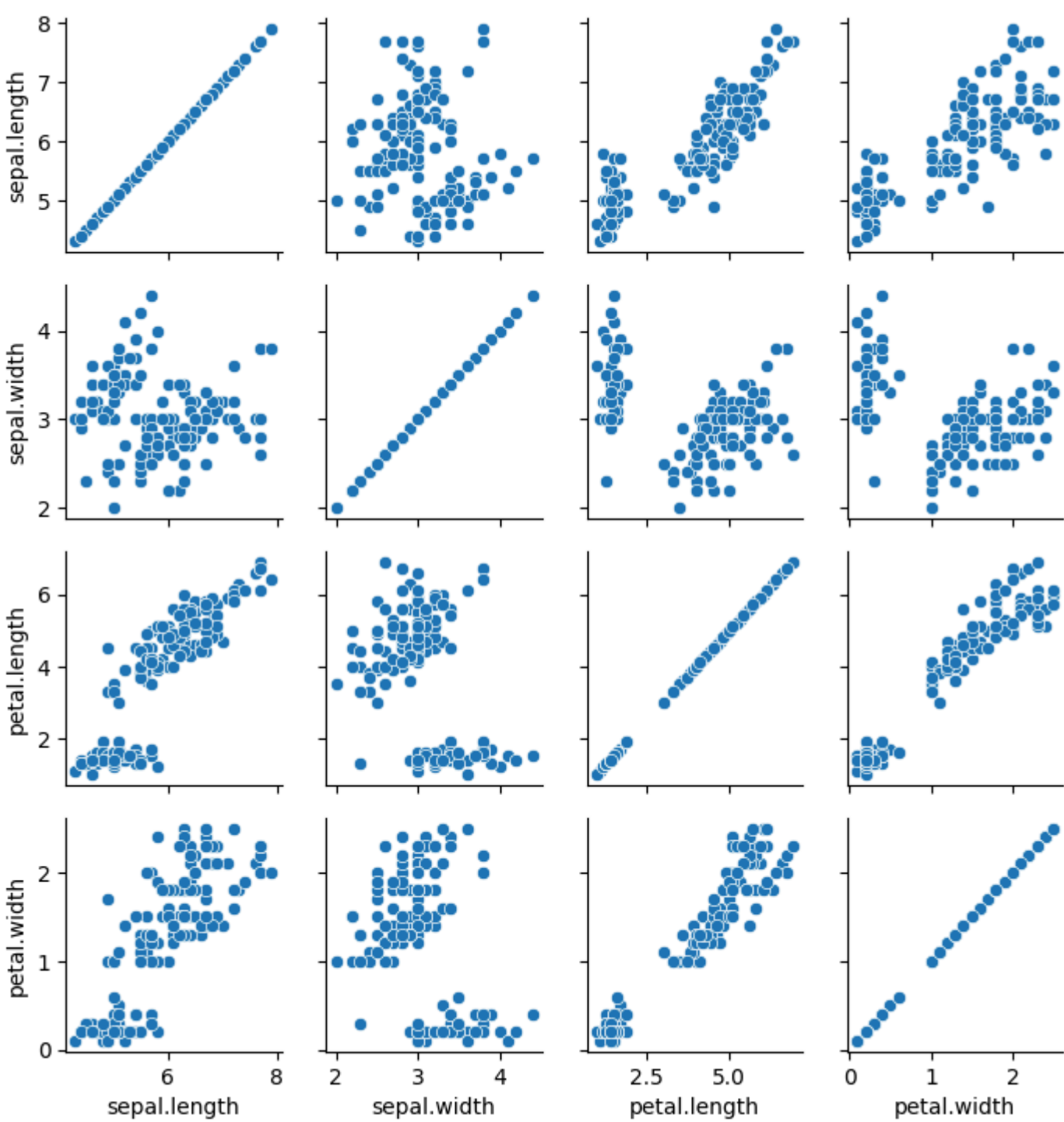


Exercises 4

```
In [24]: # Write the code to show the graph below.
#sns.pairplot(df.drop(columns=["variety"]), kind="scatter", height=1.85)
g = sns.PairGrid(df.drop(columns=["variety"]), height=1.85)

g.map(sns.scatterplot)

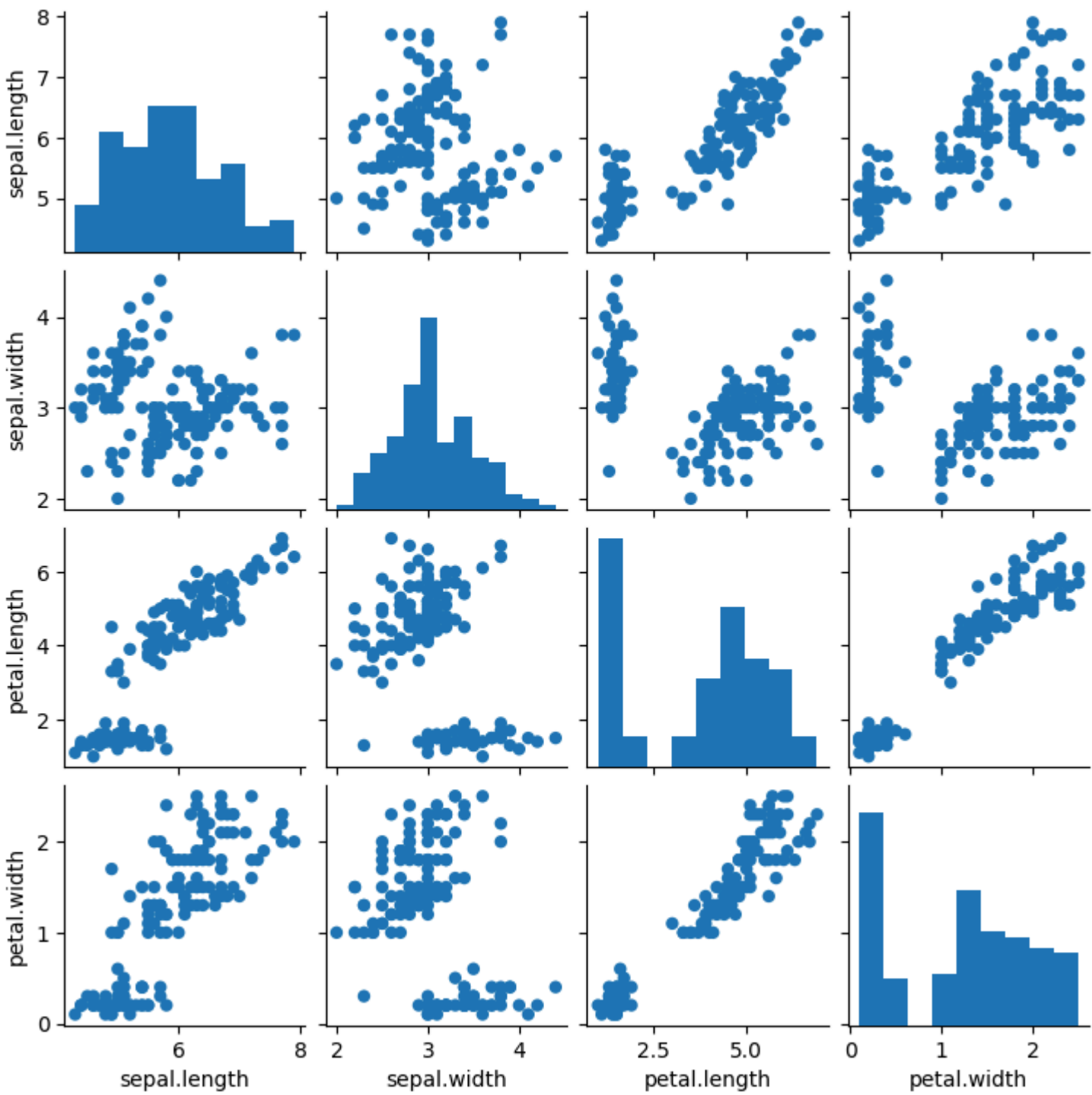
plt.show()
```



In []:

Exercises 5

```
In [42]: # Write the code to show the graph below.
default_color = sns.color_palette()[0]
sns.pairplot(df.drop(columns=["variety"]), height=1.85, plot_kws={"color": default_color, "edgecolor": "none"}, diag_kws={"color": default_color, "edgecolor": "none", "fill": True, "alpha": 0.5})
plt.show()
```



Exercises 6

Create a Categorical Plot for the column Sex of the Titanic dataset.

```
In [49]: fp = 'Titanic_1.csv'
df = pd.read_csv(fp)

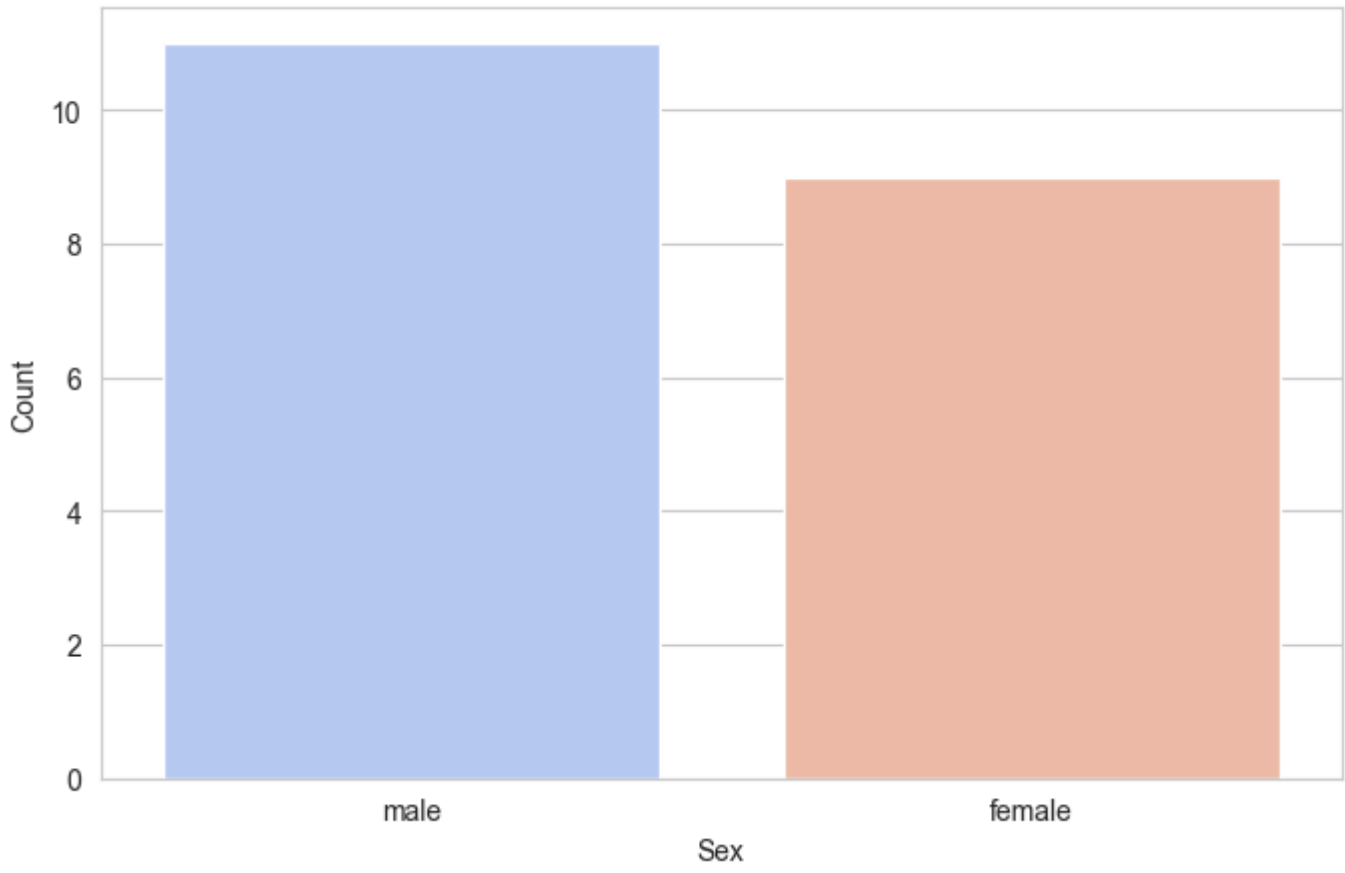
df.head()
sns.set_style("whitegrid")

plt.figure(figsize=(8, 5))
sns.countplot(x="Sex", data=df, hue="Sex", palette="coolwarm", legend=False)

plt.xlabel("Sex")
plt.ylabel("Count")
plt.title("Distribution of Passengers by Sex")

plt.show()
```

Distribution of Passengers by Sex



Please save as Pdf and submit in Blackboard Lab4.

In []: