Data_Visualization_10

February 18, 2026

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

[7]:
```
df = pd.read_csv('iris.csv')
```

[8]:
```
df
```

[8]:

	sepal_length	sepal_width	petal_length	petal_width	species
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
..	…	…	…	…	…
145	6.7	3.0	5.2	2.3	virginica
146	6.3	2.5	5.0	1.9	virginica
147	6.5	3.0	5.2	2.0	virginica
148	6.2	3.4	5.4	2.3	virginica
149	5.9	3.0	5.1	1.8	virginica

[150 rows x 5 columns]

[9]:
```
df.head()
```

[9]:

	sepal_length	sepal_width	petal_length	petal_width	species
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

[10]:
```
df.tail()
```

[10]:

	sepal_length	sepal_width	petal_length	petal_width	species
145	6.7	3.0	5.2	2.3	virginica

```
146          6.3          2.5           5.0          1.9  virginica
147          6.5          3.0           5.2          2.0  virginica
148          6.2          3.4           5.4          2.3  virginica
149          5.9          3.0           5.1          1.8  virginica
```

[11]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 150 entries, 0 to 149
Data columns (total 5 columns):
 #   Column        Non-Null Count  Dtype  
---  ------        --------------  -----  
 0   sepal_length  150 non-null    float64
 1   sepal_width   150 non-null    float64
 2   petal_length  150 non-null    float64
 3   petal_width   150 non-null    float64
 4   species       150 non-null    object 
dtypes: float64(4), object(1)
memory usage: 6.0+ KB
```

[12]:
```
df.describe()
```

[12]:

	sepal_length	sepal_width	petal_length	petal_width
count	150.000000	150.000000	150.000000	150.000000
mean	5.843333	3.054000	3.758667	1.198667
std	0.828066	0.433594	1.764420	0.763161
min	4.300000	2.000000	1.000000	0.100000
25%	5.100000	2.800000	1.600000	0.300000
50%	5.800000	3.000000	4.350000	1.300000
75%	6.400000	3.300000	5.100000	1.800000
max	7.900000	4.400000	6.900000	2.500000

[14]:
```
df.dtypes
```

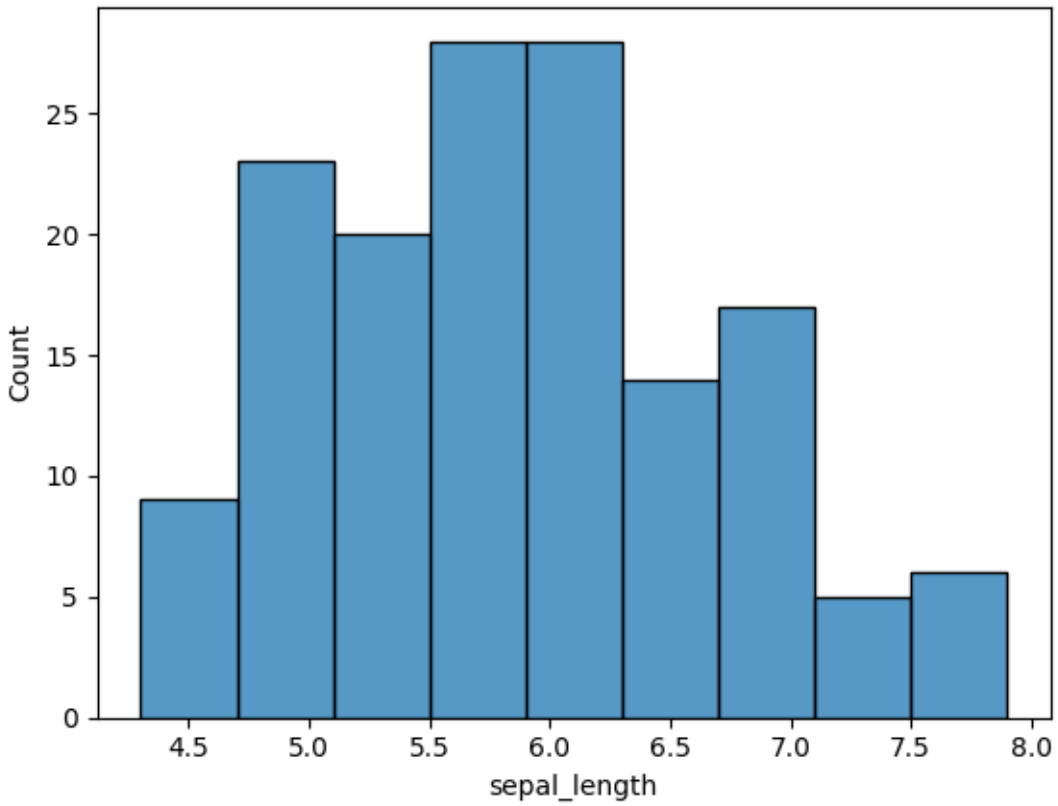
[14]:
```
sepal_length    float64
sepal_width     float64
petal_length    float64
petal_width     float64
species          object
dtype: object
```

[16]:
```
np.unique(df['species'])
```

[16]:
```
array(['setosa', 'versicolor', 'virginica'], dtype=object)
```

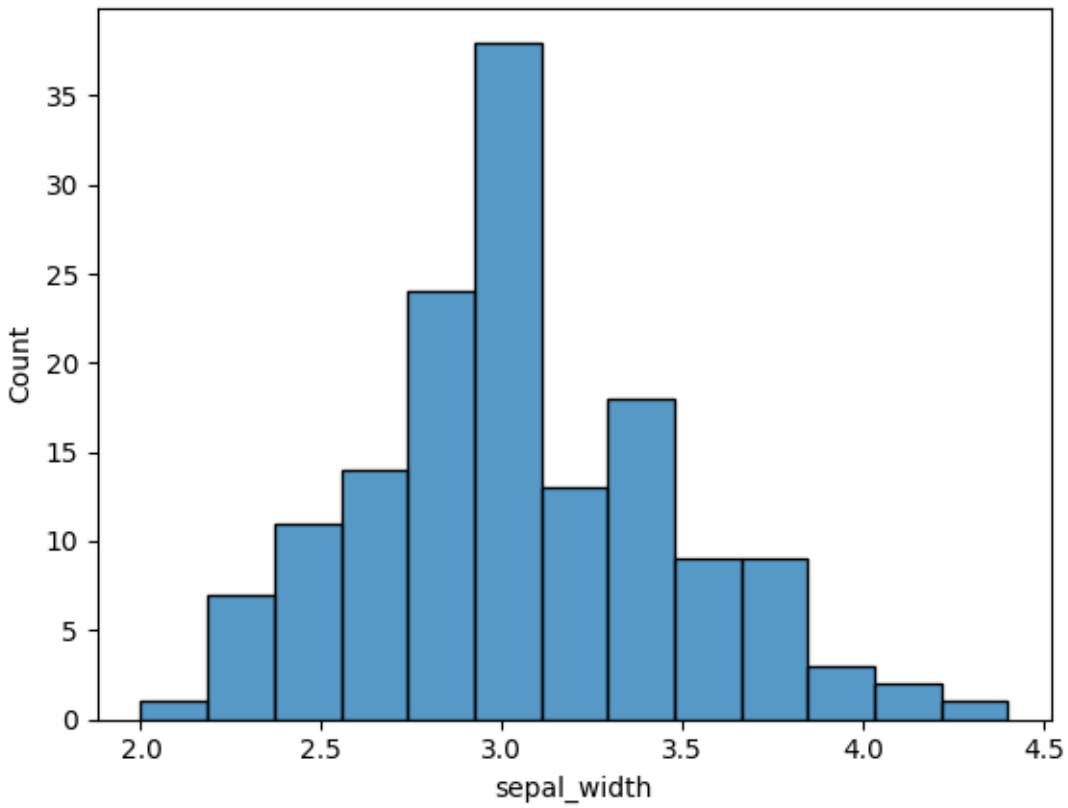
[21]:
```
sns.histplot(df['sepal_length'])
```

[21]: <Axes: xlabel='sepal_length', ylabel='Count'>



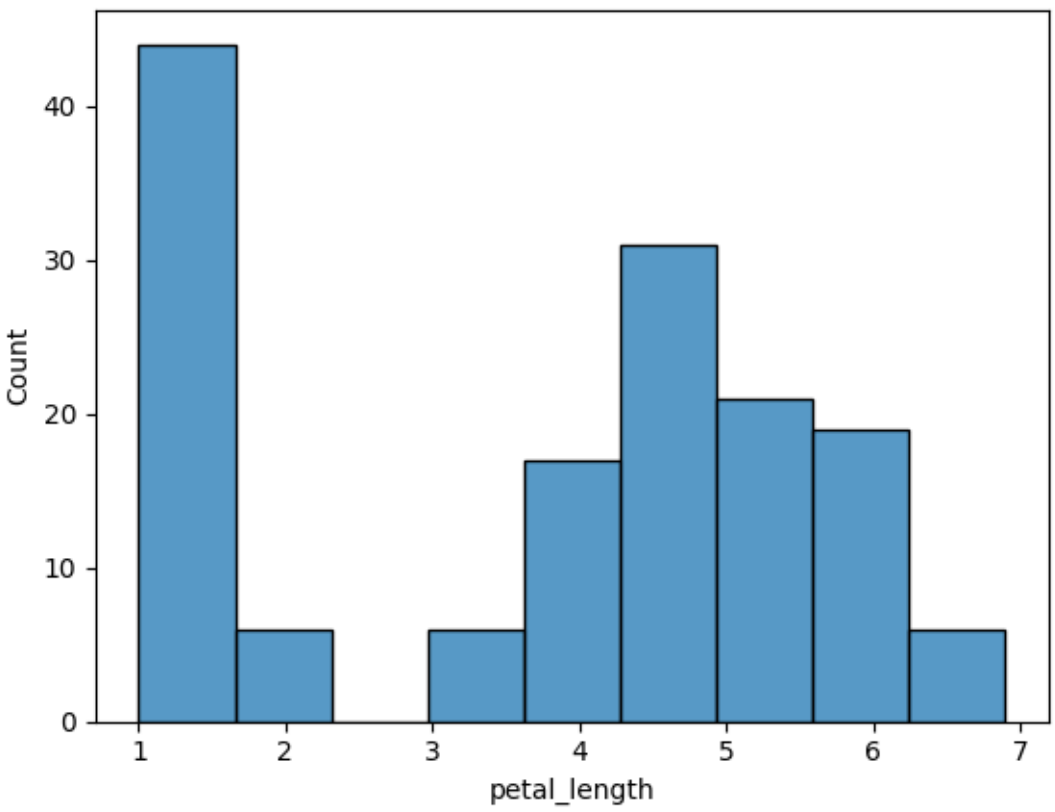
[22]:
```
sns.histplot(df['sepal_width'])
```

[22]: <Axes: xlabel='sepal_width', ylabel='Count'>



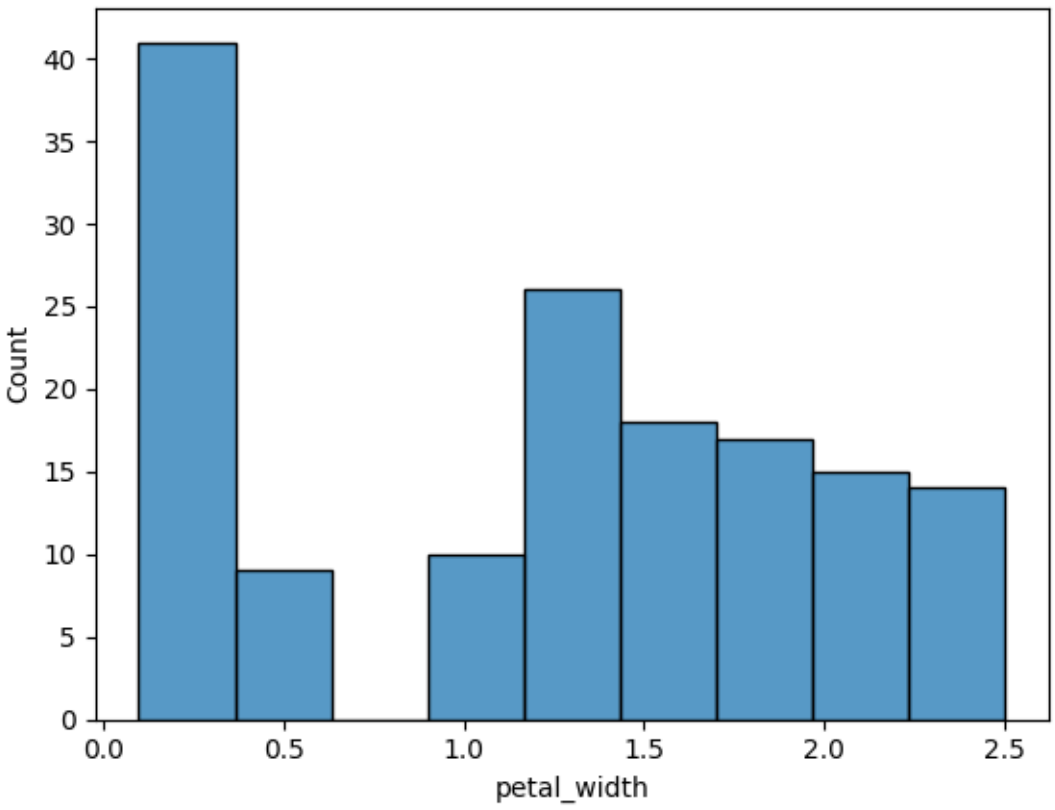
[23]:
```
sns.histplot(df['petal_length'])
```

[23]:
```
<Axes: xlabel='petal_length', ylabel='Count'>
```



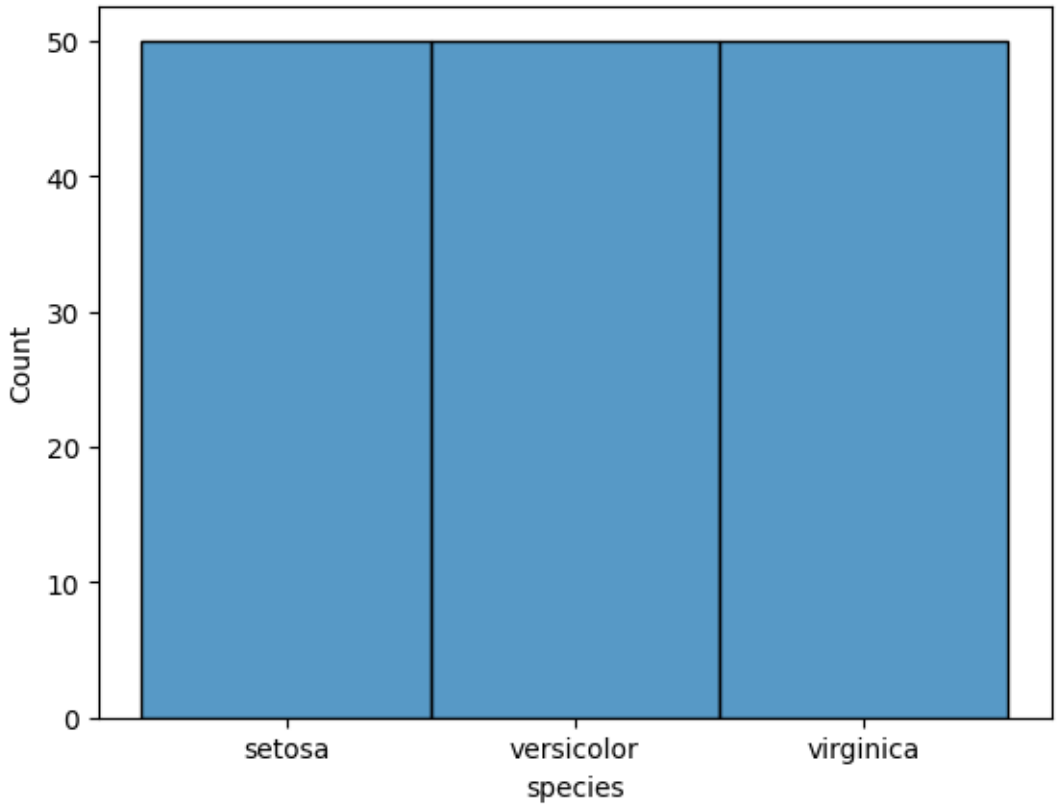
[24]:
```
sns.histplot(df['petal_width'])
```

[24]: <Axes: xlabel='petal_width', ylabel='Count'>



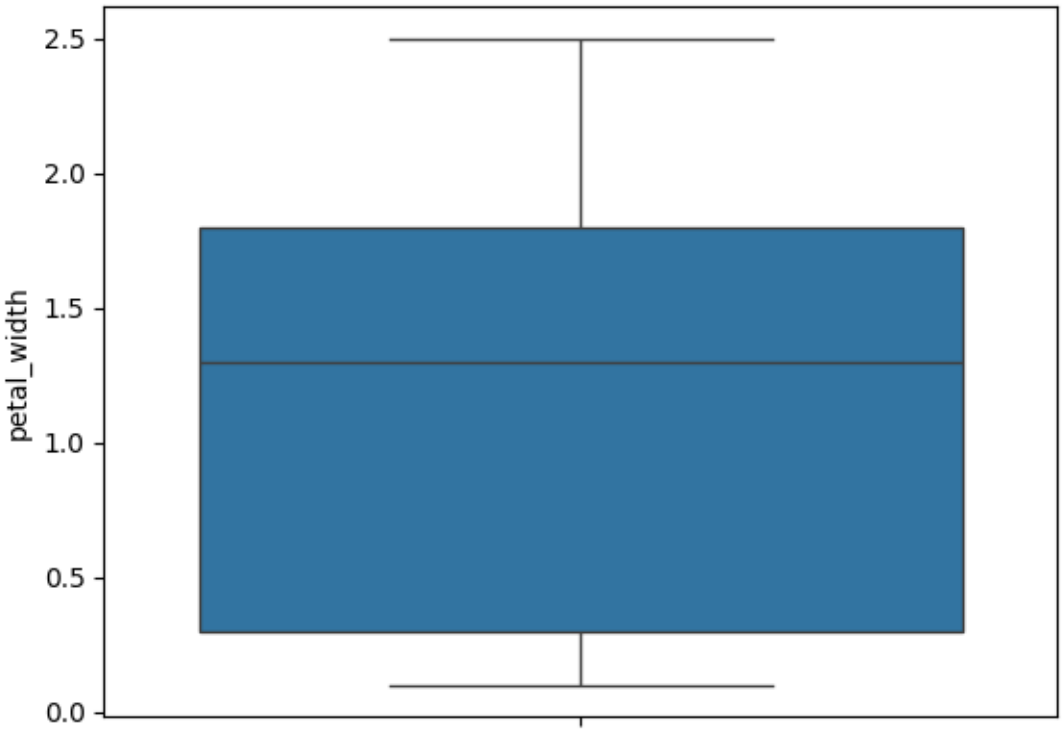
[25]:
```
sns.histplot(df['species'])
```

[25]:
```
<Axes: xlabel='species', ylabel='Count'>
```



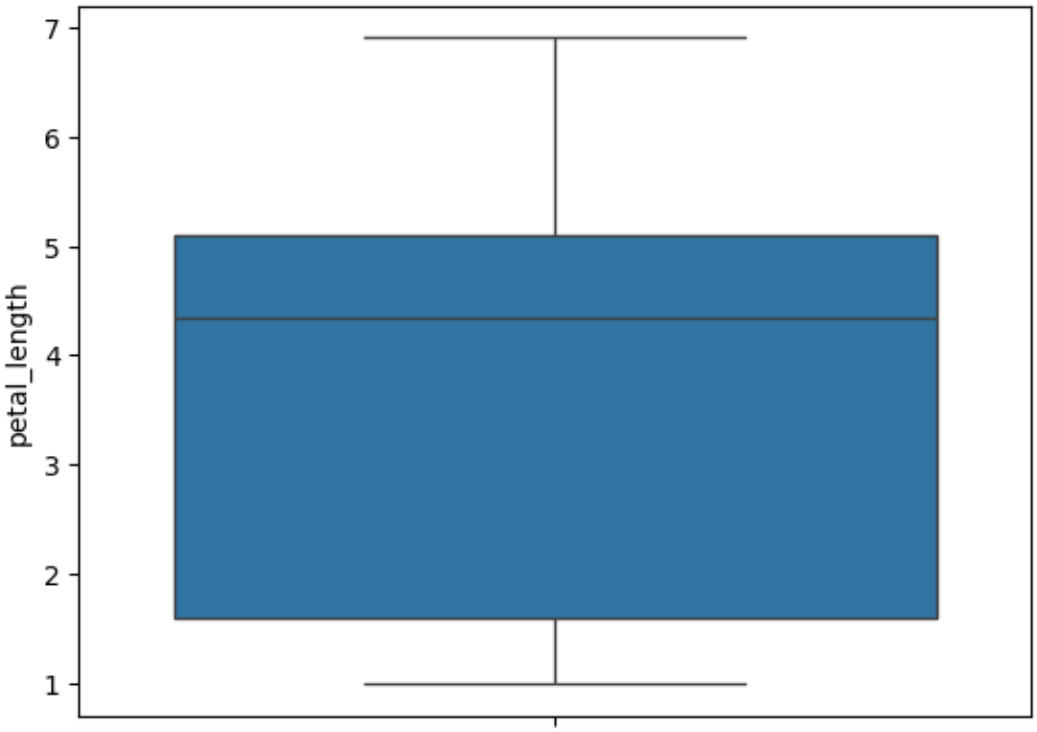
[27]:
```
sns.boxplot(df['petal_width'])
```

[27]:
```
<Axes: ylabel='petal_width'>
```



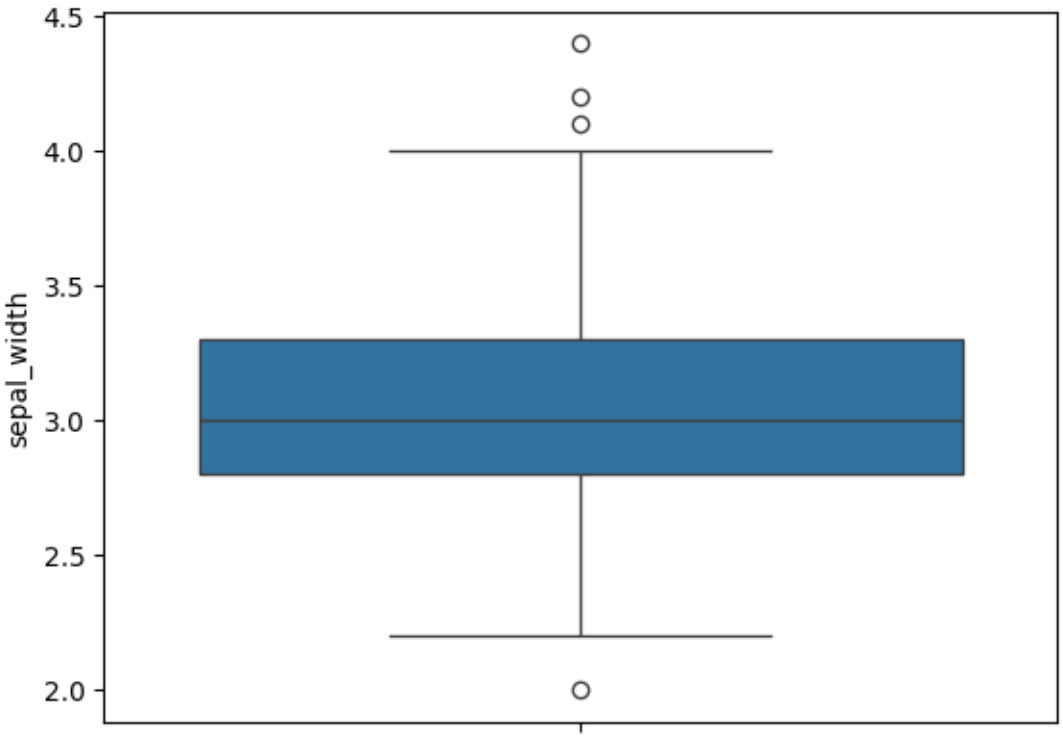
[29]:
```
sns.boxplot(df['petal_length'])
```

[29]: <Axes: ylabel='petal_length'>



[31]:
```
sns.boxplot(df['sepal_width'])
```

[31]: <Axes: ylabel='sepal_width'>

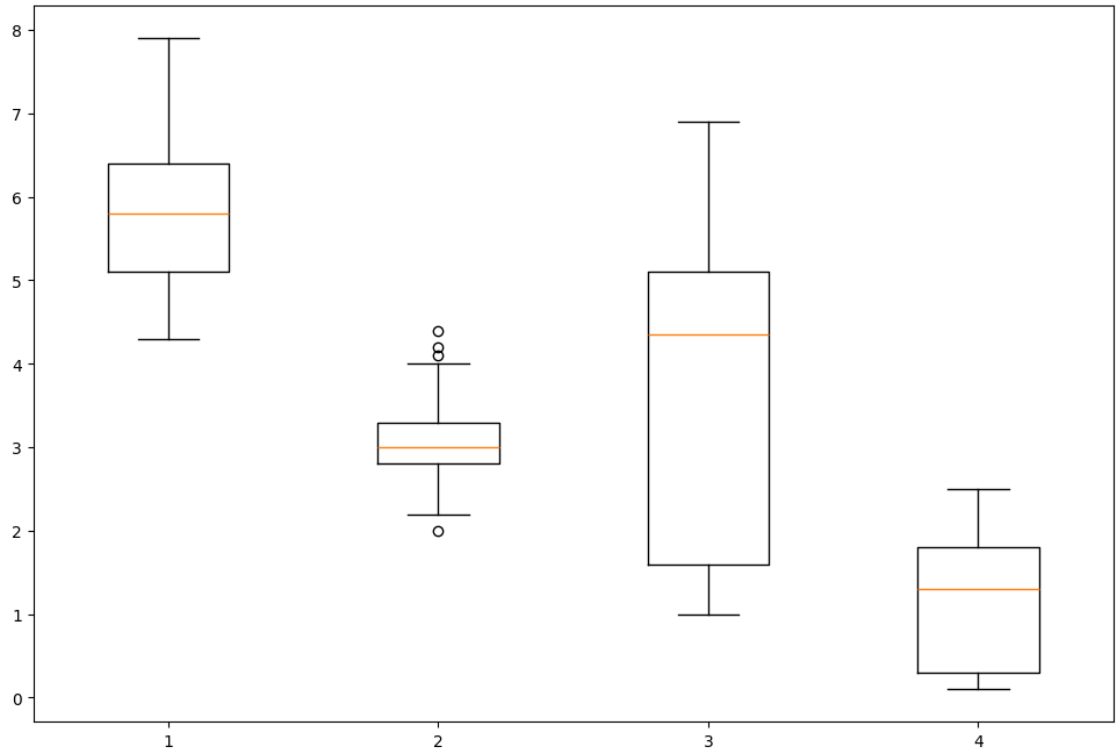


[33]:
```
data_to_plot = [df['sepal_length'], df['sepal_width'],␣
↪df['petal_length'],df['petal_width']]

fig = plt.figure(1, figsize = (12,8))

ax = fig.add_subplot(111)

bp = ax.boxplot(data_to_plot);
```


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

[ ]: