```
Practical No 10
Data Visualization III
Download the Iris flower dataset or any other dataset into a
DataFrame. (e.g.,
https://archive.ics.uci.edu/ml/datasets/Iris ). Scan the dataset and
give the inference as:
1. List down the features and their types (e.g., numeric, nominal)
available in the dataset.
2. Create a histogram for each feature in the dataset to illustrate
the feature distributions.
3. Create a boxplot for each feature in the dataset.
4. Compare distributions and identify outliers

import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

data =
pd.read_csv('https://gist.githubusercontent.com/curran/a08a1080b88344b
0c8a7/raw/0e7a9b0a5d22642a06d3d5b9bcbad9890c8ee534/iris.csv')
data
```

	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]

```
data.head()
```

	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

```
data.describe()
```

	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
```

```
data.describe(include = 'object')
```

```
        species
count       150
unique        3
top      setosa
freq         50
```

```
data.isnull().sum()
```

```
sepal_length    0
sepal_width     0
petal_length    0
petal_width     0
species         0
dtype: int64
```

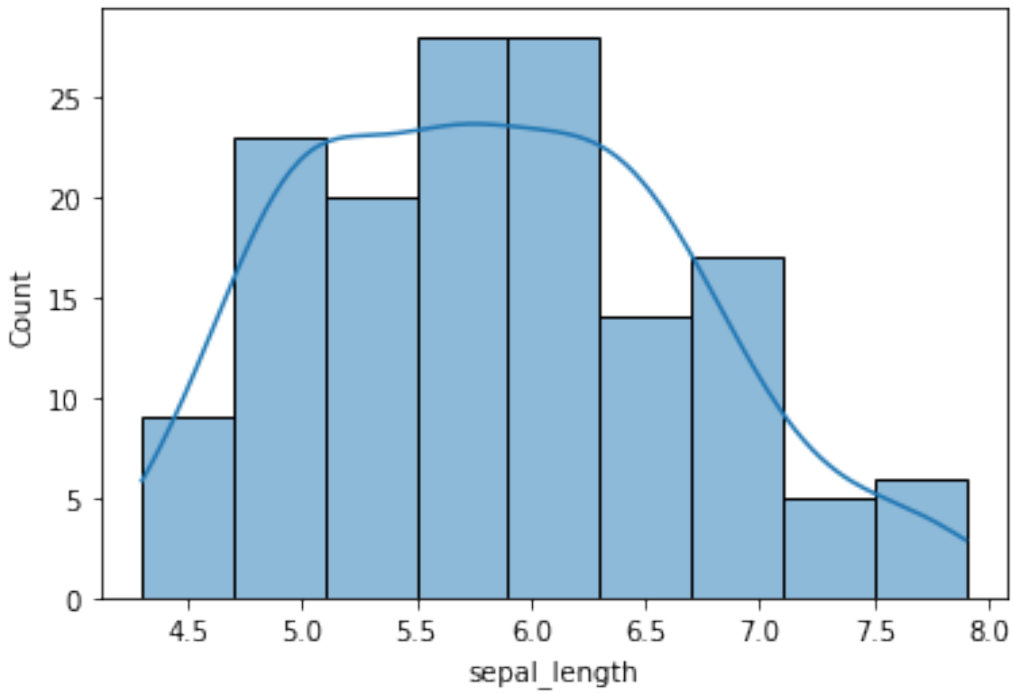
```
print("\n\nThe features in the dataset are as follows : ")
print("1. Sepal length : ", data['sepal_length'].dtype)
print("2. Sepal width : ", data['sepal_width'].dtype)
print("3. Petal length : ", data['petal_length'].dtype)
print("4. Petal width : ", data['petal_width'].dtype)
print("5. Species : ", data['species'].dtype)
```

```


The features in the dataset are as follows :
1. Sepal length :  float64
2. Sepal width :  float64
3. Petal length :  float64
4. Petal width :  float64
5. Species :  object
```

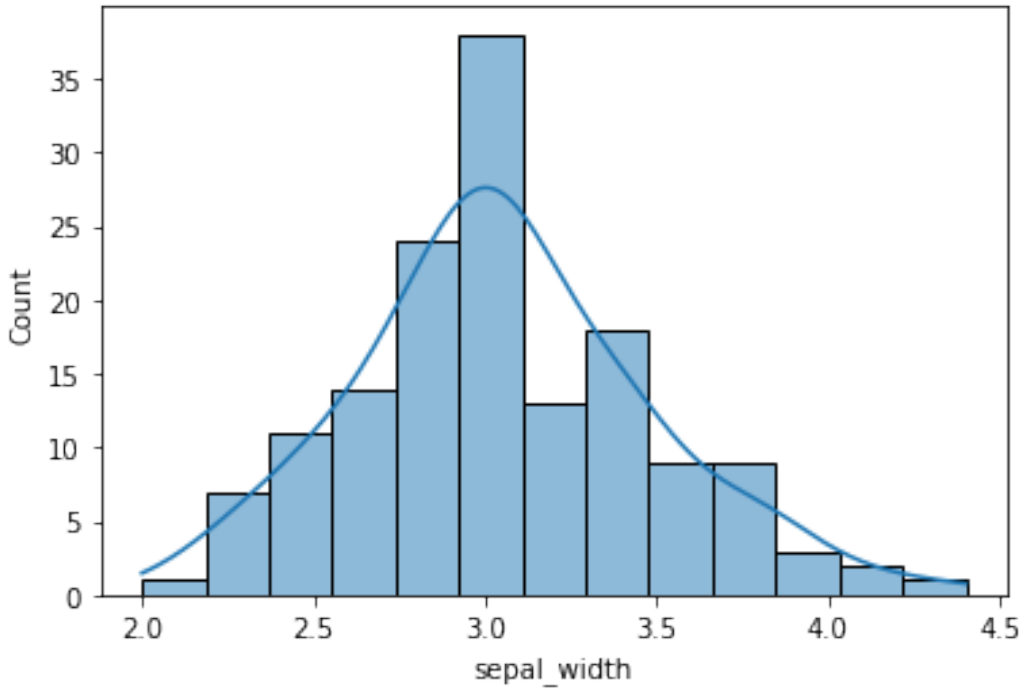
```
sns.histplot(x = data['sepal_length'], kde=True)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fe839f4d9d0>
```



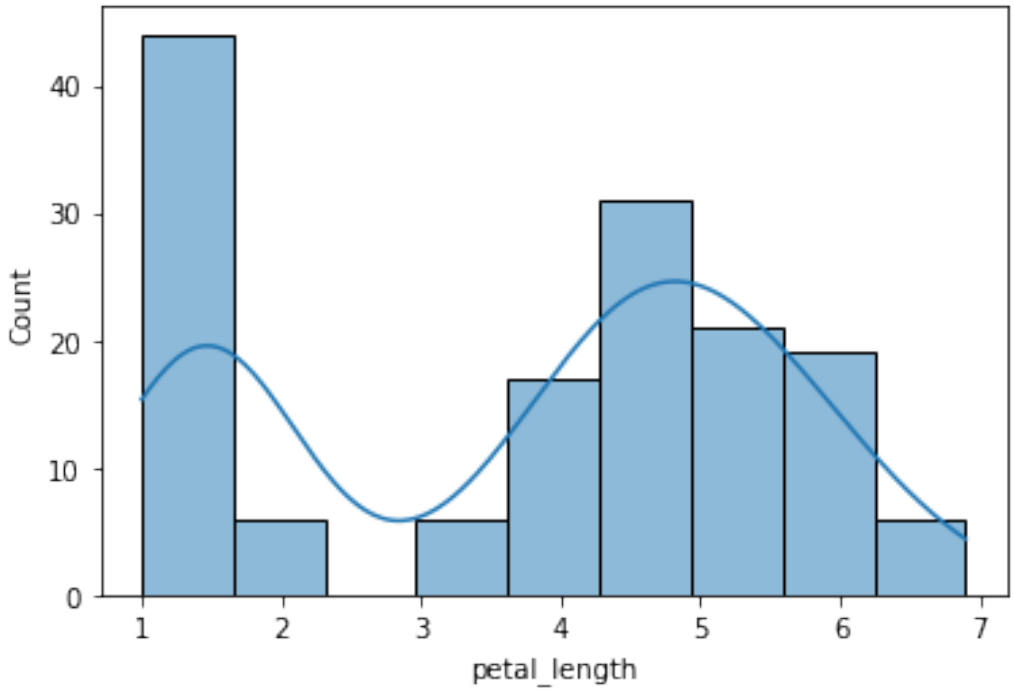

```
sns.histplot(x = data['sepal_width'], kde=True)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fe839343e90>
```




```
sns.histplot(x = data['petal_length'], kde=True)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fe836d341d0>
```

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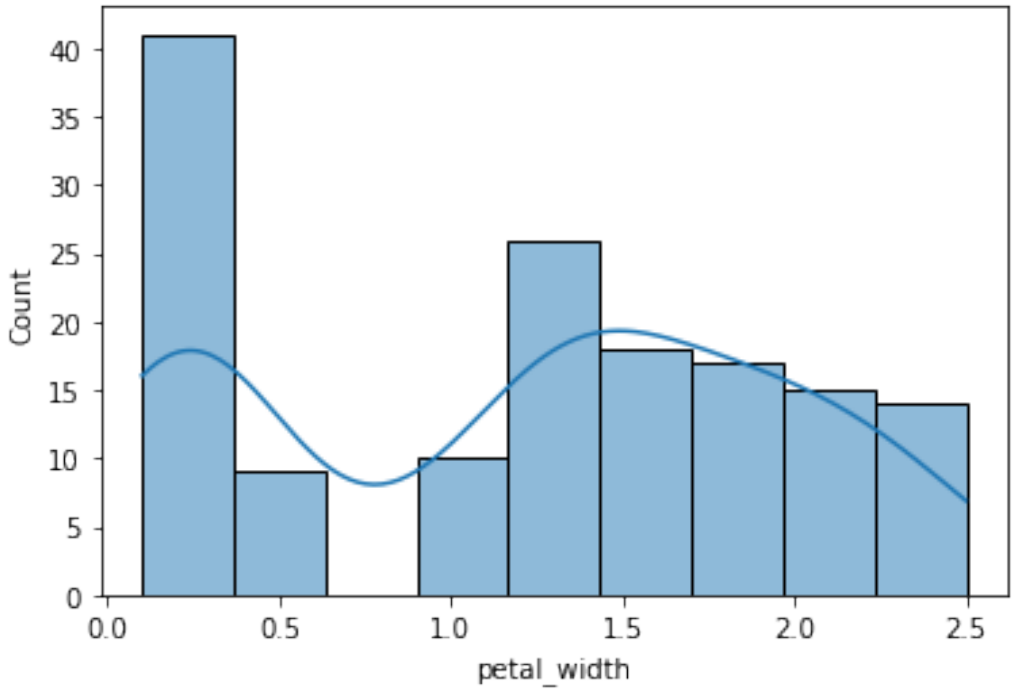
sns.histplot(x = data['petal_width'], kde=True)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fe836c64f50>
```



```
sns.boxplot(data['sepal_length'])
```

```
/usr/local/lib/python3.7/dist-packages/seaborn/_decorators.py:43:
FutureWarning: Pass the following variable as a keyword arg: x. From
version 0.12, the only valid positional argument will be `data`, and
passing other arguments without an explicit keyword will result in an
error or misinterpretation.
  FutureWarning
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fe836b8a8d0>
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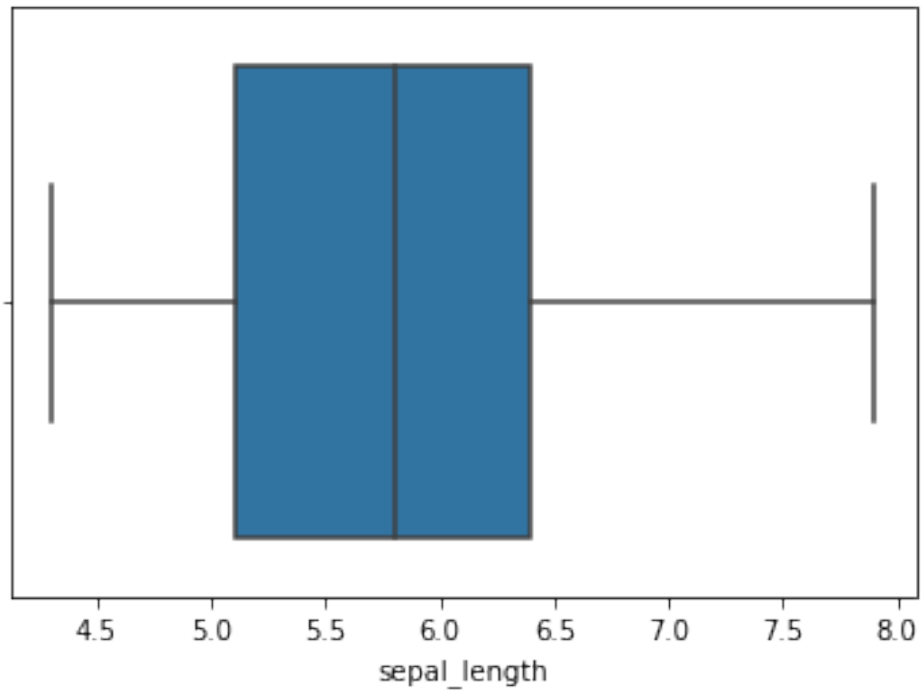


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<matplotlib.axes._subplots.AxesSubplot at 0x7fe836c79ed0>
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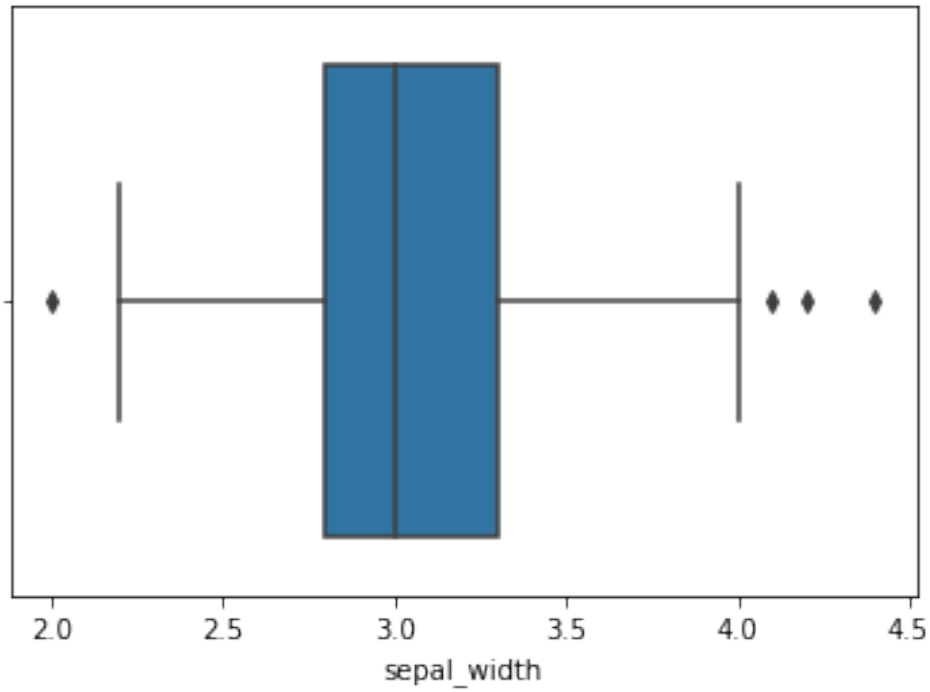


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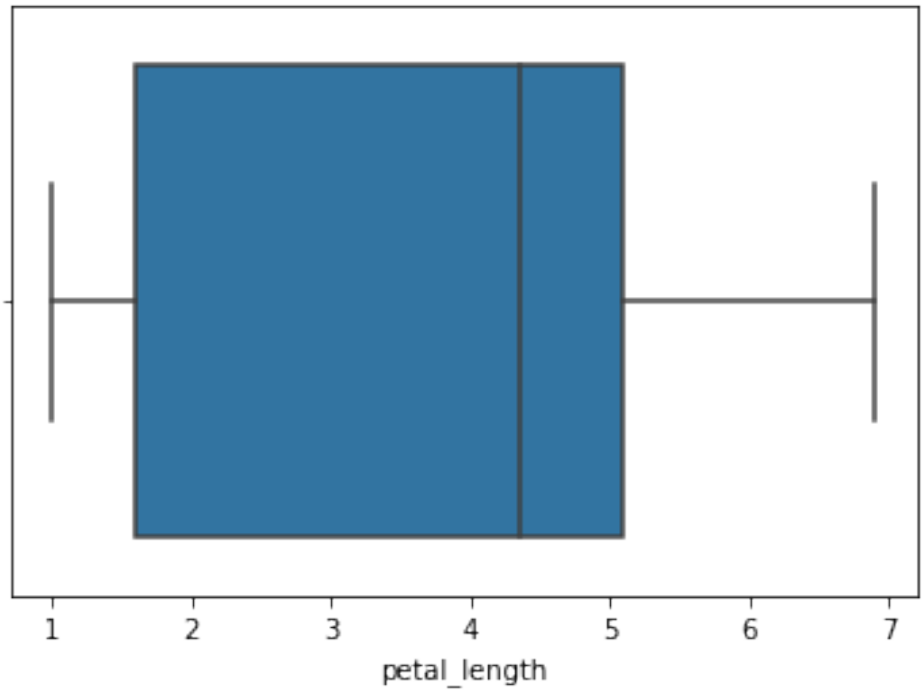
```
<matplotlib.axes._subplots.AxesSubplot at 0x7fe836bf8290>
```

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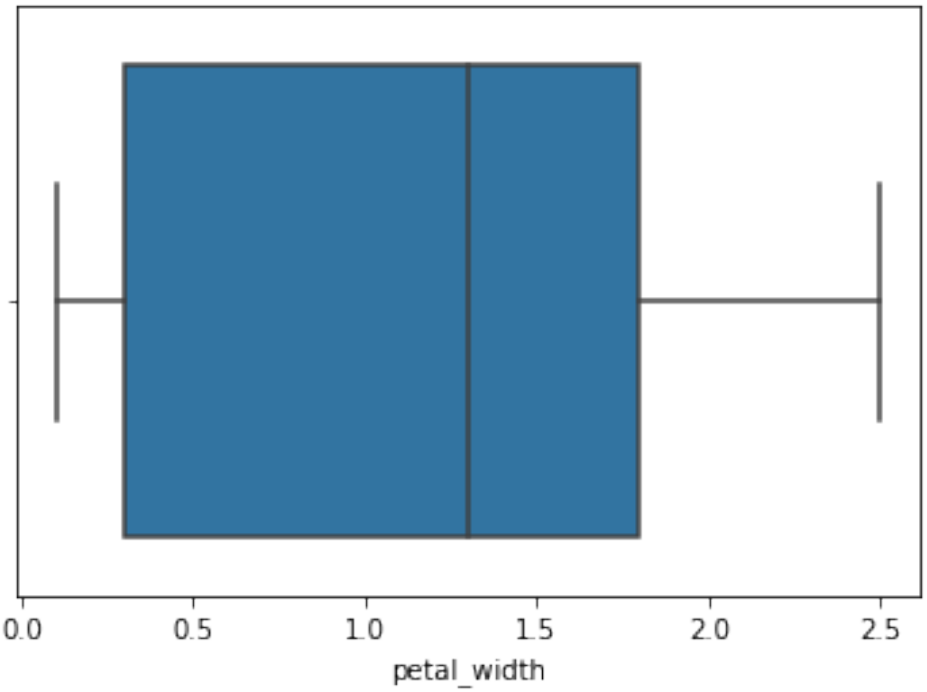
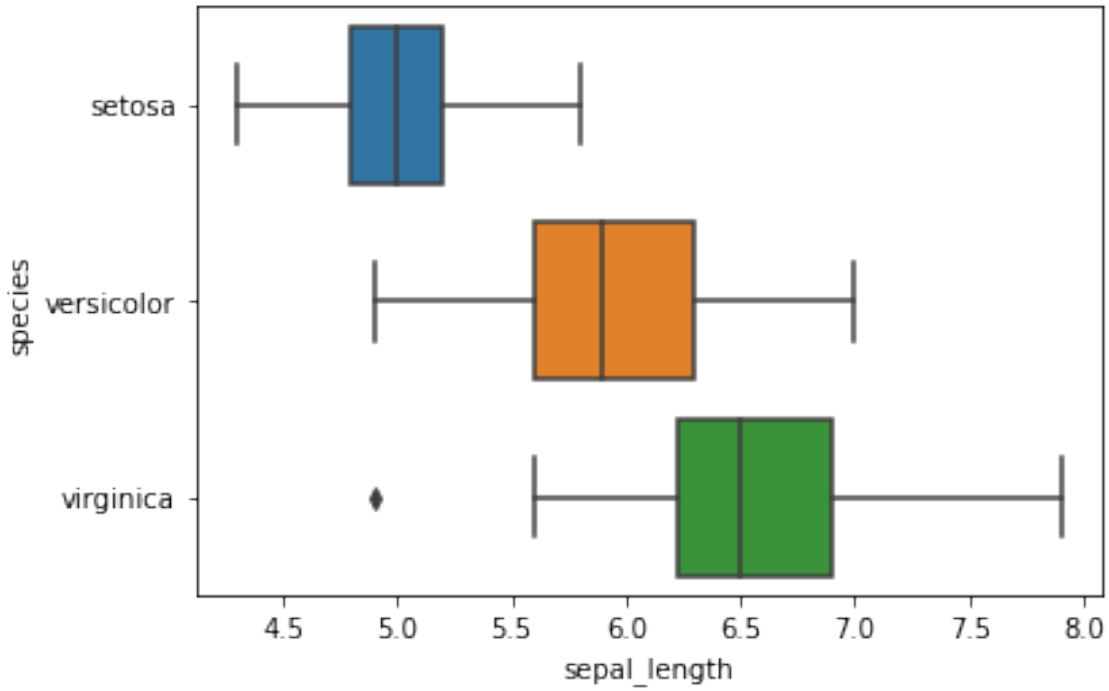
```
<matplotlib.axes._subplots.AxesSubplot at 0x7fe836a5f850>
```



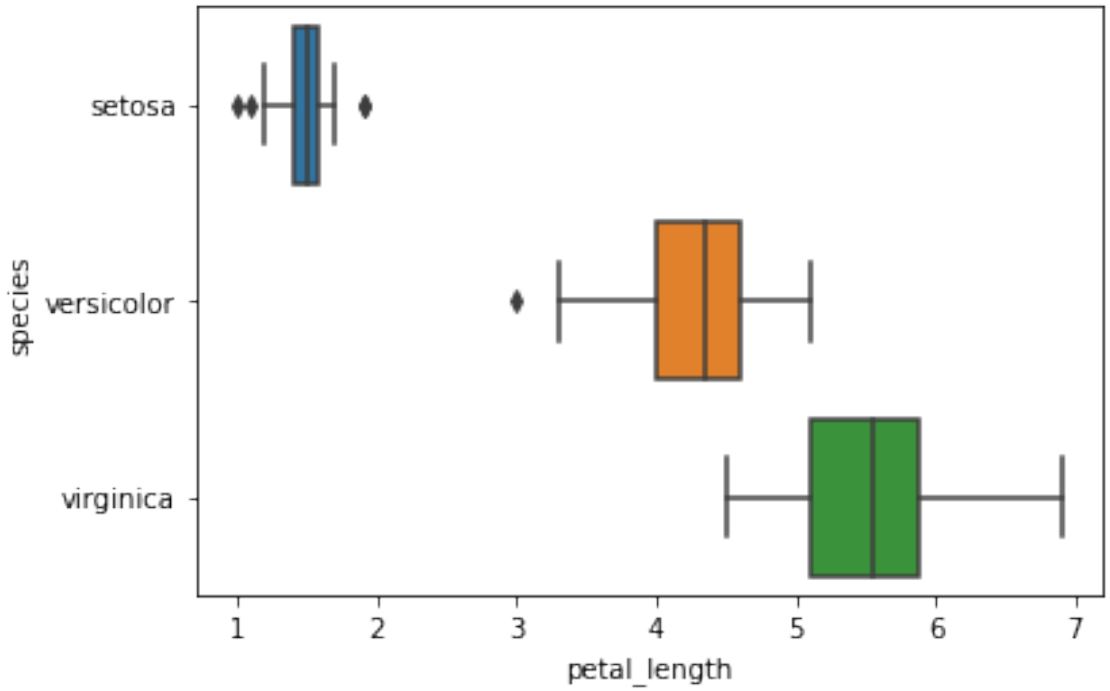

```
sns.boxplot(x='sepal_length',y='species',data=data)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fe836a3ca90>
```




```
sns.boxplot(x='petal_length',y='species',data=data)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fe83696b950>
```



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