

```
In [1]: import pandas as pd
```

```
In [2]: import numpy as nm
```

```
In [3]: import seaborn as sns
```

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

```
In [5]: df=pd.read_csv('Iris.csv')
```

```
In [6]: df.dtypes
```

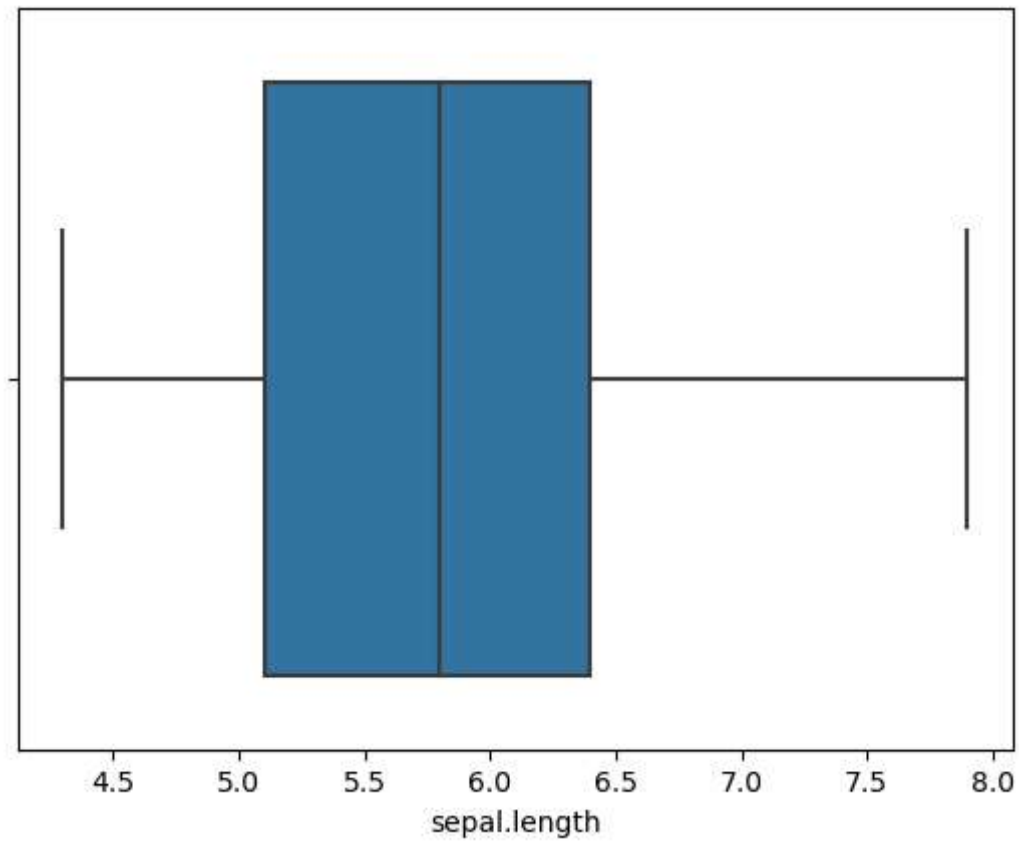
```
Out[6]: sepal.length    float64  
        sepal.width     float64  
        petal.length     float64  
        petal.width      float64  
        variety          object  
        dtype: object
```

```
In [7]: df.isnull().sum()
```

```
Out[7]: sepal.length    0  
        sepal.width     0  
        petal.length     0  
        petal.width      0  
        variety          0  
        dtype: int64
```

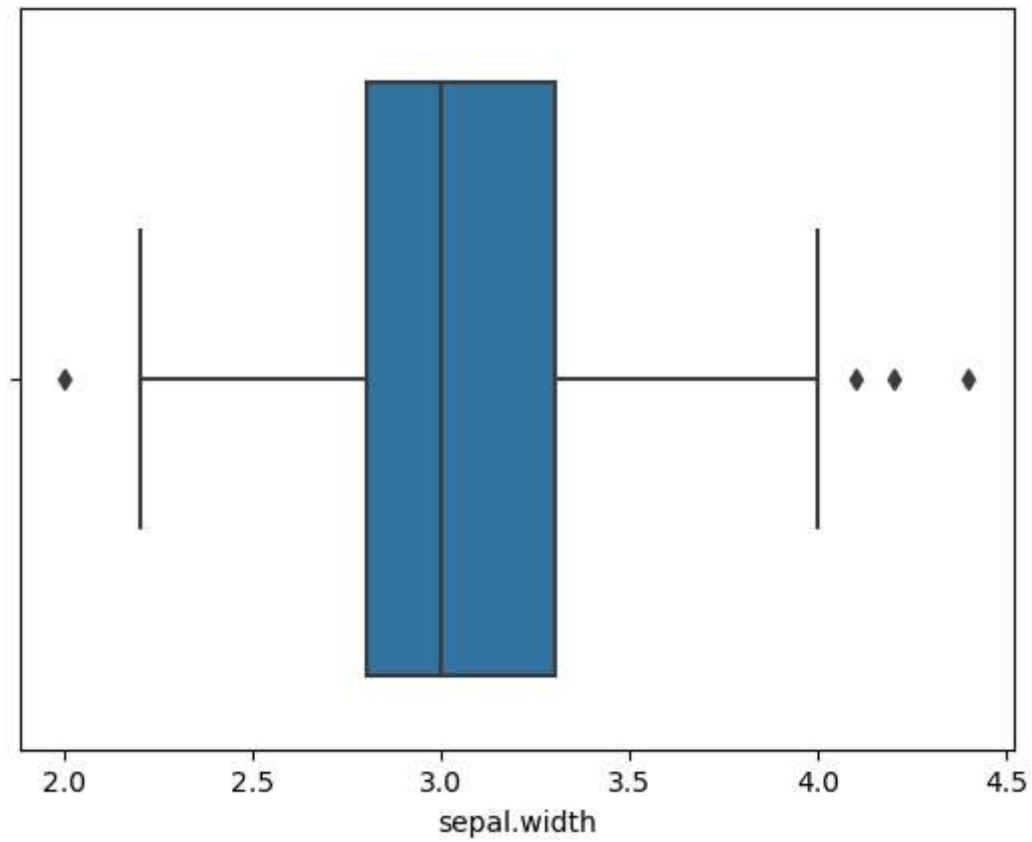
```
In [8]: sns.boxplot(x='sepal.length', data=df)
```

```
Out[8]: <Axes: xlabel='sepal.length'>
```



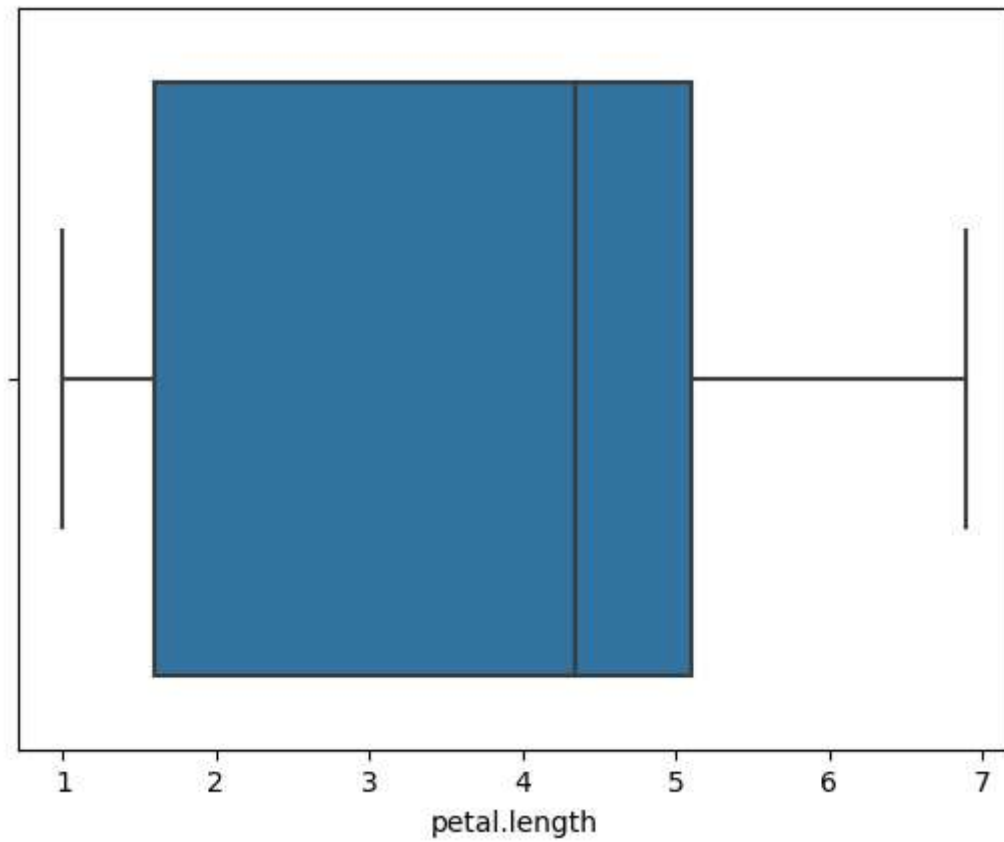
```
In [9]: sns.boxplot(x='sepal.width', data=df)
```

```
Out[9]: <Axes: xlabel='sepal.width'>
```



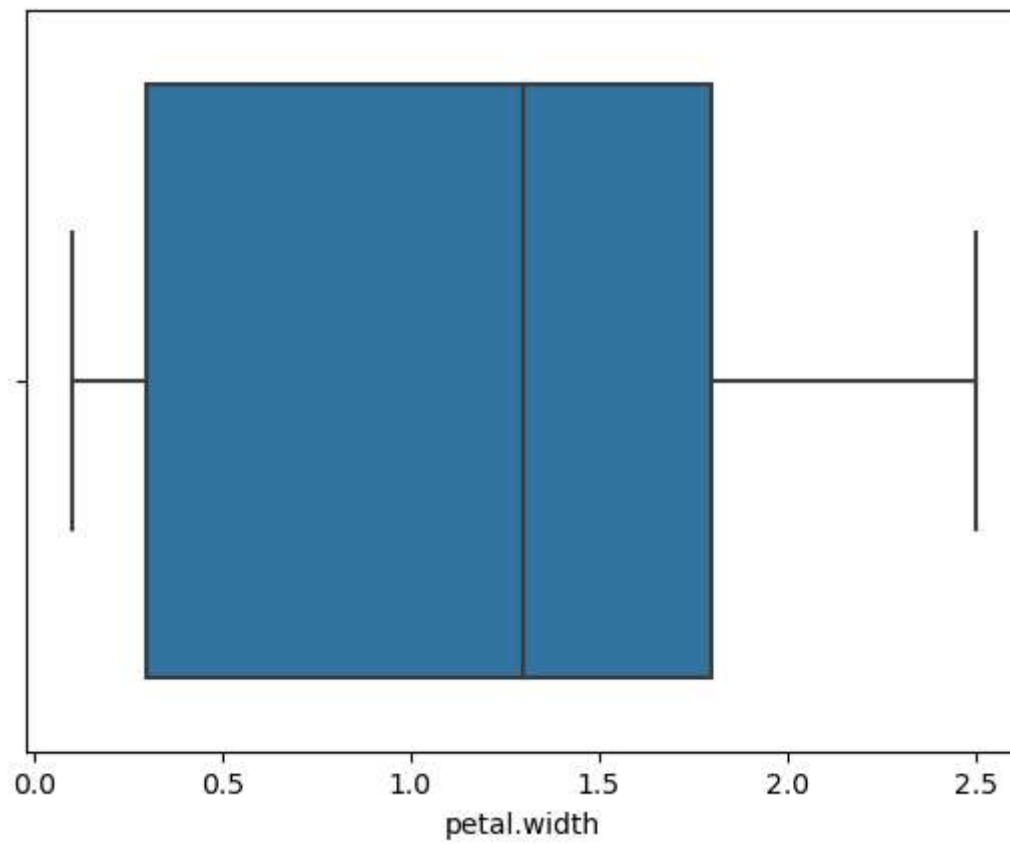
```
In [10]: sns.boxplot(x='petal.length', data=df)
```

```
Out[10]: <Axes: xlabel='petal.length'>
```



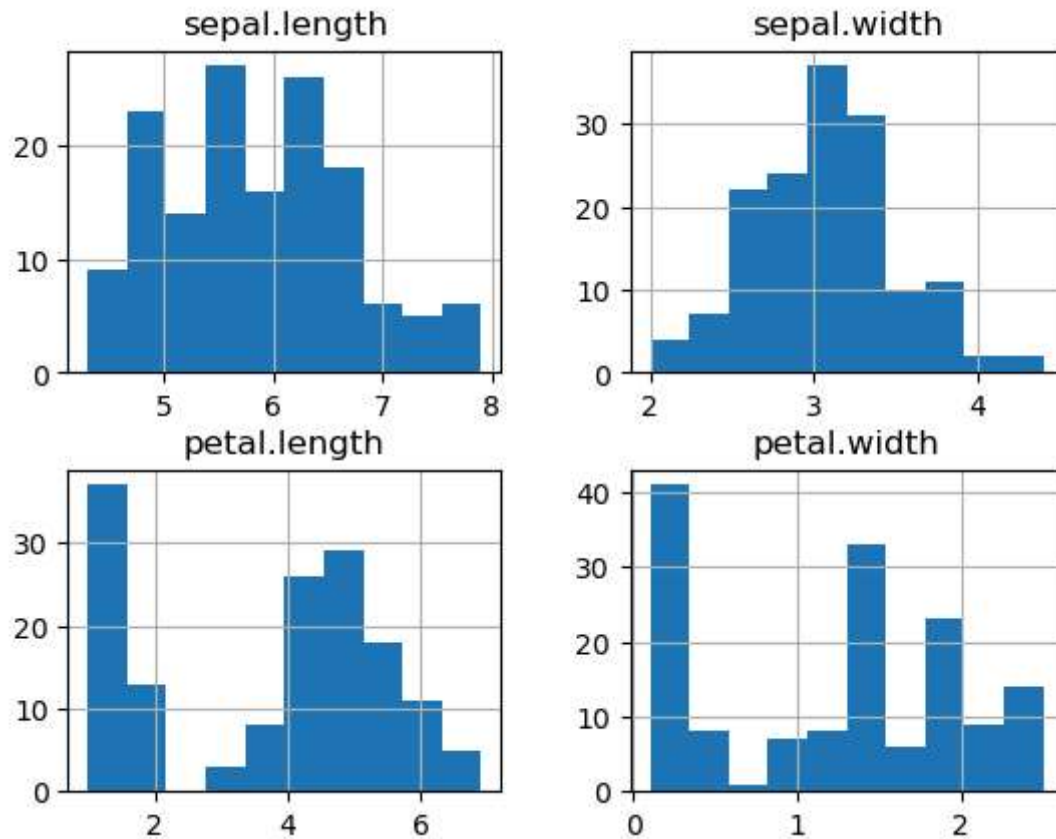
```
In [11]: sns.boxplot(x='petal.width', data=df)
```

```
Out[11]: <Axes: xlabel='petal.width'>
```



```
In [12]: df.hist()
```

```
Out[12]: array([[<Axes: title={'center': 'sepal.length'}>,  
  <Axes: title={'center': 'sepal.width'}>],  
  [<Axes: title={'center': 'petal.length'}>,  
  <Axes: title={'center': 'petal.width'}>]], dtype=object)
```



```
In [13]: def graph(y):
          sns.boxplot(x='variety',y=y,data=df)

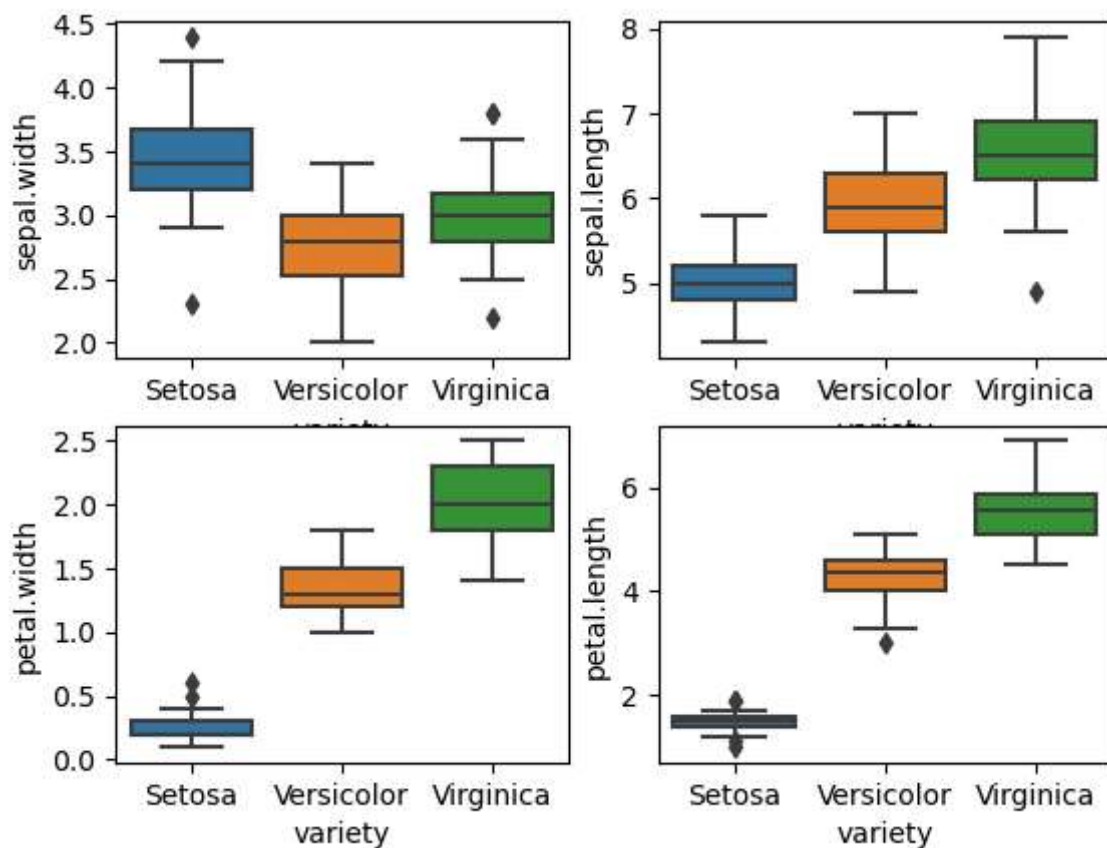
plt.subplot(221)
graph('sepal.width')

plt.subplot(222)
graph('sepal.length')

plt.subplot(223)
graph('petal.width')

plt.subplot(224)
graph('petal.length')

plt.show()
```



```
In [14]: Q1=nm.percentile(df['sepal.width'],25,interpolation='midpoint')
```

C:\Users\Vishw\AppData\Local\Temp\ipykernel_17200\4098085838.py:1: DeprecationWarning: the `interpolation=` argument to percentile was renamed to `method=`, which has additional options.

Users of the modes 'nearest', 'lower', 'higher', or 'midpoint' are encouraged to review the method they used. (Deprecated NumPy 1.22)

```
Q1=nm.percentile(df['sepal.width'],25,interpolation='midpoint')
```

```
In [15]: print(Q1)
```

2.8

```
In [16]: Q3=nm.percentile(df['sepal.width'],75,interpolation='midpoint')
```

C:\Users\Vishw\AppData\Local\Temp\ipykernel_17200\3128568182.py:1: DeprecationWarning: the `interpolation=` argument to percentile was renamed to `method=`, which has additional options.

Users of the modes 'nearest', 'lower', 'higher', or 'midpoint' are encouraged to review the method they used. (Deprecated NumPy 1.22)

```
Q3=nm.percentile(df['sepal.width'],75,interpolation='midpoint')
```

```
In [17]: IQR=Q3-Q1
```

```
In [18]: df.shape
```

```
Out[18]: (150, 5)
```

```
In [19]: upper=nm.where(df['sepal.width']>=(Q3+1.5*IQR))
```

```
In [20]: lower=nm.where(df['sepal.width']<=(Q1-1.5*IQR))
```

```
In [21]: df.drop(upper[0],inplace=True)
```

```
In [22]: df.drop(lower[0],inplace=True)
```

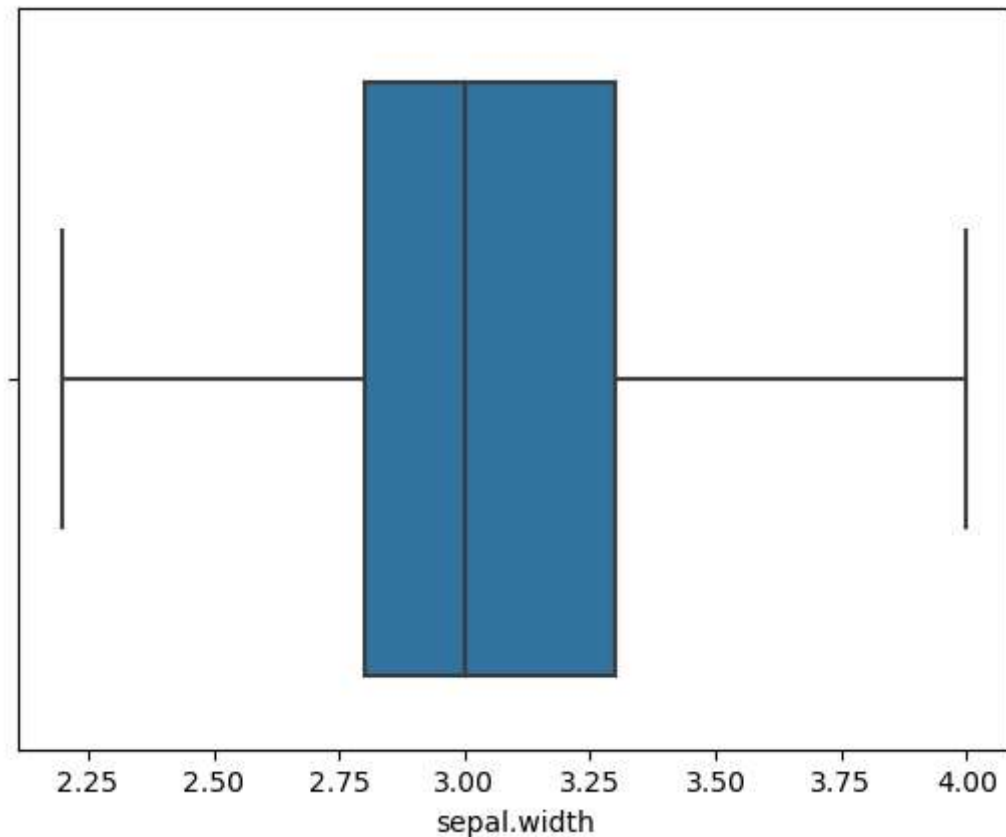
```
In [23]: df.shape
```

```
Out[23]: (146, 5)
```



```
In [24]: sns.boxplot(x='sepal.width', data=df)
```

```
Out[24]: <Axes: xlabel='sepal.width'>
```



```
In [25]: Q1=nm.percentile(df['sepal.length'],25,interpolation='midpoint')
```

C:\Users\Vishw\AppData\Local\Temp\ipykernel_17200\1561316001.py:1: DeprecationWarning: the `interpolation=` argument to percentile was renamed to `method=`, which has additional options.
Users of the modes 'nearest', 'lower', 'higher', or 'midpoint' are encouraged to review the method they used. (Deprecated NumPy 1.22)
Q1=nm.percentile(df['sepal.length'],25,interpolation='midpoint')

```
In [26]: Q3=nm.percentile(df['sepal.length'],75,interpolation='midpoint')
```

C:\Users\Vishw\AppData\Local\Temp\ipykernel_17200\600275424.py:1: DeprecationWarning: the `interpolation=` argument to percentile was renamed to `method=`, which has additional options.
Users of the modes 'nearest', 'lower', 'higher', or 'midpoint' are encouraged to review the method they used. (Deprecated NumPy 1.22)
Q3=nm.percentile(df['sepal.length'],75,interpolation='midpoint')

```
In [27]: IQR=Q3-Q1
```

```
In [28]: df.shape
```

```
Out[28]: (146, 5)
```

```
In [32]: upper=nm.where(df['sepal.length']>=(Q3+1.5*IQR))
```

```
In [33]: lower=nm.where(df['sepal.length']<=(Q1-1.5*IQR))
```

```
In [34]: df.drop(upper[0],inplace=True)
```

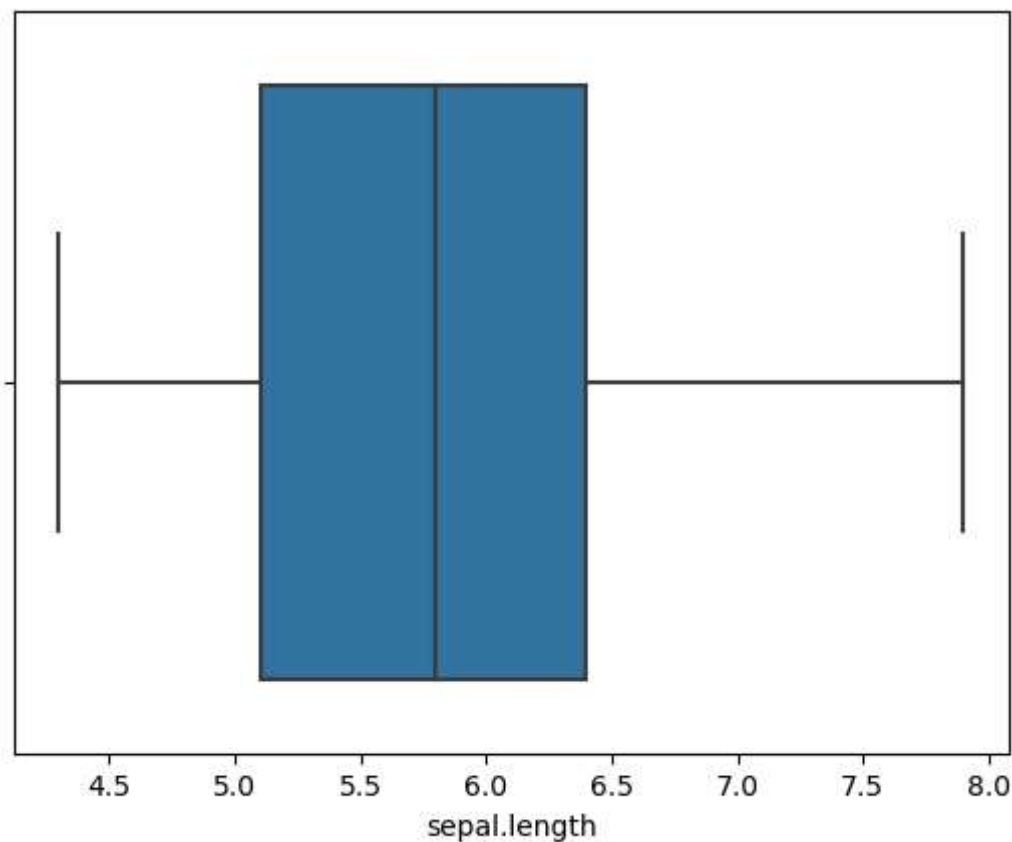
```
In [ ]: df.drop(lower[0],inplace=True)
```

```
In [35]: df.shape
```

```
Out[35]: (146, 5)
```

```
In [36]: sns.boxplot(x='sepal.length', data=df)
```

```
Out[36]: <Axes: xlabel='sepal.length'>
```



```
In [37]: Q1=nm.percentile(df['petal.width'],25,interpolation='midpoint')
```

C:\Users\Vishw\AppData\Local\Temp\ipykernel_17200\1389207644.py:1: DeprecationWarning: the `interpolation=` argument to percentile was renamed to `method=`, which has additional options.

Users of the modes 'nearest', 'lower', 'higher', or 'midpoint' are encouraged to review the method they used. (Deprecated NumPy 1.22)

```
Q1=nm.percentile(df['petal.width'],25,interpolation='midpoint')
```

```
In [38]: print(Q1)
```

```
0.3
```

```
In [39]: Q3=nm.percentile(df['petal.width'],75,interpolation='midpoint')
```

C:\Users\Vishw\AppData\Local\Temp\ipykernel_17200\3600934928.py:1: DeprecationWarning: the `interpolation=` argument to percentile was renamed to `method=`, which has additional options.

Users of the modes 'nearest', 'lower', 'higher', or 'midpoint' are encouraged to review the method they used. (Deprecated NumPy 1.22)

```
Q3=nm.percentile(df['petal.width'],75,interpolation='midpoint')
```

```
In [40]: print(Q3)
```

```
1.8
```

```
In [41]: IQR=Q3-Q1
```

```
In [42]: df.shape
```

```
Out[42]: (146, 5)
```

```
In [43]: upper=nm.where(df['petal.width']>=(Q3+1.5*IQR))
```

```
In [44]: lower=nm.where(df['petal.width']<=(Q1-1.5*IQR))
```

```
In [45]: df.drop(upper[0],inplace=True)
```

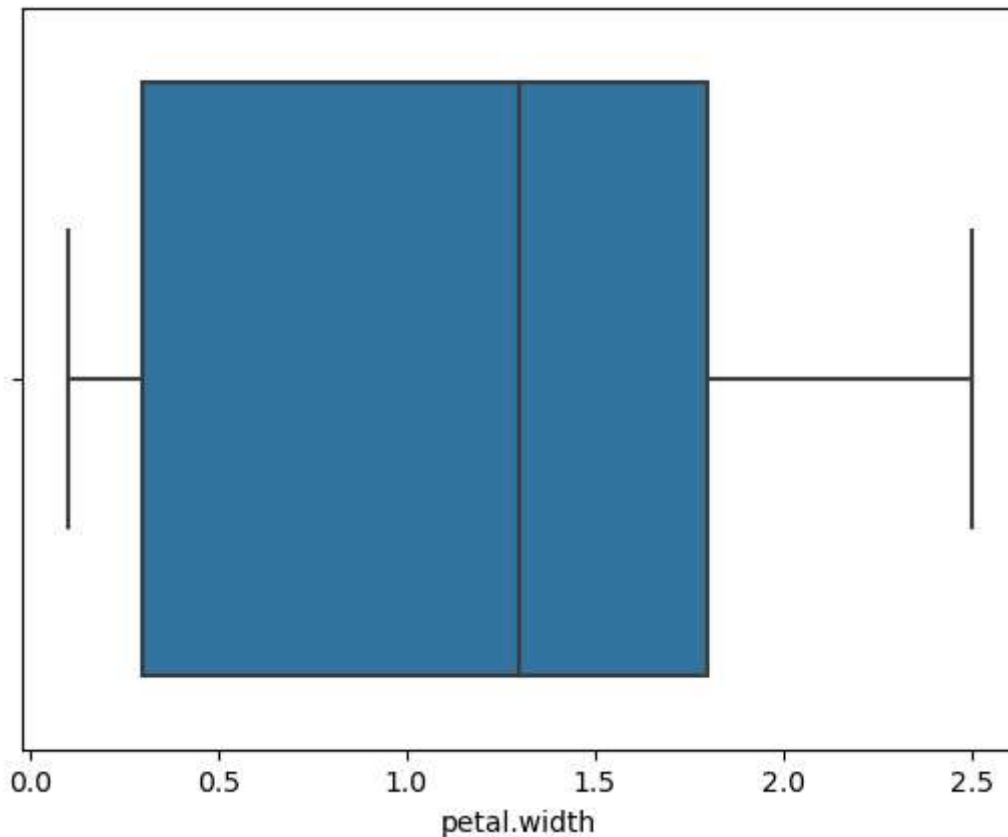
```
In [46]: df.drop(lower[0],inplace=True)
```

```
In [47]: df.shape
```

```
Out[47]: (146, 5)
```

```
In [48]: sns.boxplot(x='petal.width', data=df)
```

```
Out[48]: <Axes: xlabel='petal.width'>
```



```
In [49]: Q1=nm.percentile(df['petal.length'],25,interpolation='midpoint')
```

C:\Users\Vishw\AppData\Local\Temp\ipykernel_17200\1354557120.py:1: DeprecationWarning: the `interpolation=` argument to percentile was renamed to `method=`, which has additional options.

Users of the modes 'nearest', 'lower', 'higher', or 'midpoint' are encouraged to review the method they used. (Deprecated NumPy 1.22)

```
Q1=nm.percentile(df['petal.length'],25,interpolation='midpoint')
```

```
In [50]: print(Q1)
```

```
1.6
```

```
In [51]: Q3=nm.percentile(df['petal.length'],75,interpolation='midpoint')
```

C:\Users\Vishw\AppData\Local\Temp\ipykernel_17200\3193574515.py:1: DeprecationWarning: the `interpolation=` argument to percentile was renamed to `method=`, which has additional options.

Users of the modes 'nearest', 'lower', 'higher', or 'midpoint' are encouraged to review the method they used. (Deprecated NumPy 1.22)

```
Q3=nm.percentile(df['petal.length'],75,interpolation='midpoint')
```

```
In [52]: print(Q3)
```

5.1

```
In [53]: IQR=Q3-Q1
```

```
In [54]: df.shape
```

```
Out[54]: (146, 5)
```

```
In [55]: upper=nm.where(df['petal.length']>=(Q3+1.5*IQR))
```

```
In [56]: lower=nm.where(df['petal.length']<=(Q1-1.5*IQR))
```

```
In [57]: df.drop(upper[0],inplace=True)
```

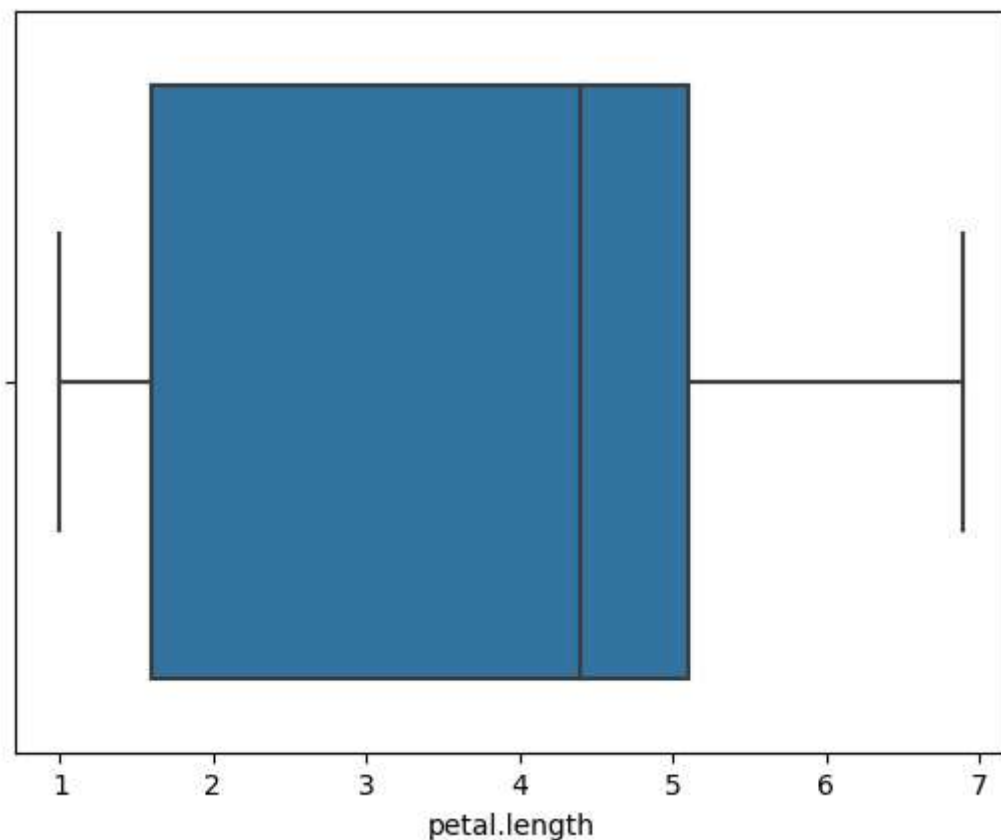
```
In [58]: df.drop(lower[0],inplace=True)
```

```
In [59]: df.shape
```

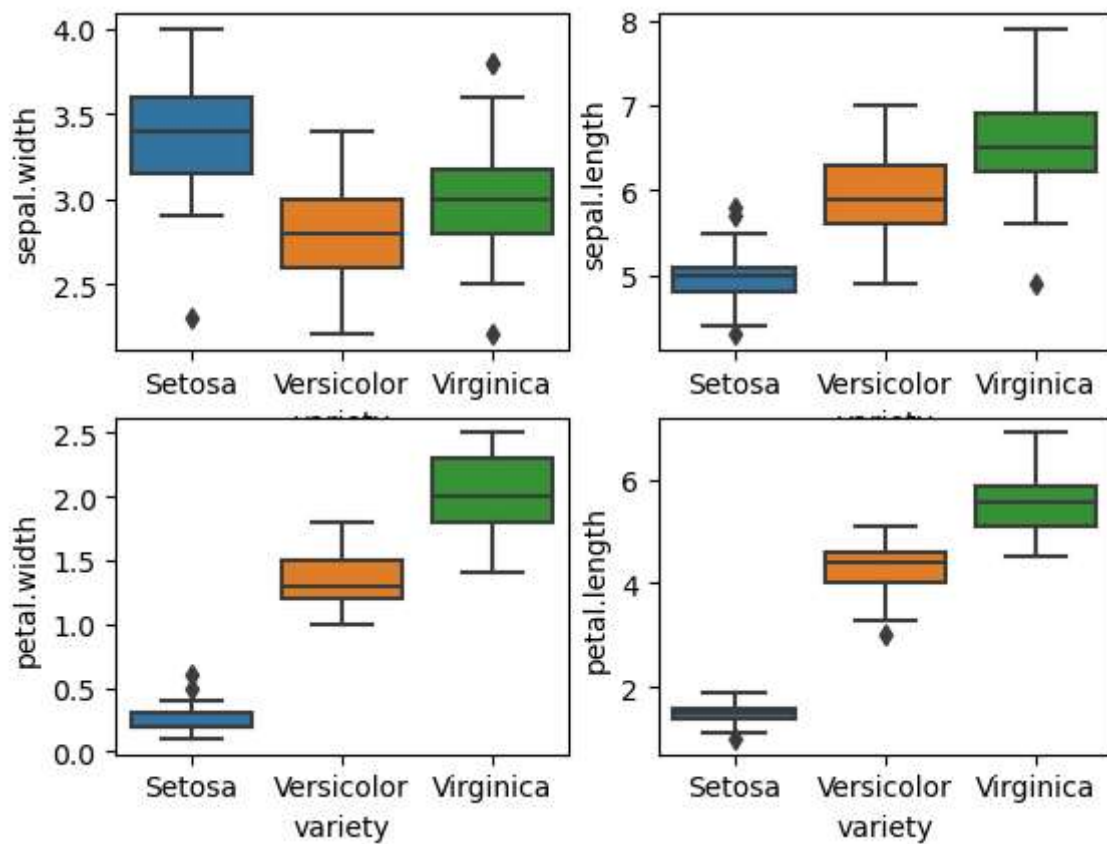
```
Out[59]: (146, 5)
```

```
In [60]: sns.boxplot(x='petal.length', data=df)
```

```
Out[60]: <Axes: xlabel='petal.length'>
```



```
In [61]: def graph(y):  
          sns.boxplot(x='variety',y=y,data=df)  
  
          plt.subplot(221)  
          graph('sepal.width')  
  
          plt.subplot(222)  
          graph('sepal.length')  
  
          plt.subplot(223)  
          graph('petal.width')  
  
          plt.subplot(224)  
          graph('petal.length')  
  
          plt.show()
```



```
In [ ]:
```