

Matplotlib 10_ Belajar Box Plot

June 7, 2022

1 Box Plot / Box Chart

Dalam sesi ini kita akan mempelajari cara membuat box plot dengan Matplotlib.

1.1 1. Import Modules

```
[1]: %matplotlib inline
```

```
[2]: import matplotlib
import matplotlib.pyplot as plt
import numpy as np

print(matplotlib.__version__)
print(np.__version__)
```

3.3.4

1.20.1

1.2 2. Sample Dataset

```
[3]: np.random.seed(2)
data = np.random.normal(loc=100, scale=10, size=200)
data
```

```
[3]: array([ 95.83242153,  99.43733173,  78.63803904, 116.40270808,
            82.06564415,  91.58252634, 105.02881417,  87.54711913,
            89.42047781,  90.90992385, 105.51454045, 122.92208013,
           100.41539393,  88.82074555, 105.39058321,  94.038403 ,
            99.80869503, 111.7500122 ,  92.52129051, 100.09025251,
            91.21892107,  98.4356583 , 102.56570452,  90.11220951,
            96.61178034,  97.63815969,  93.62344988,  88.12387714,
            85.78782773,  98.46504804,  97.3094304 , 122.31366789,
            75.65232423, 101.12726505, 103.70444537, 113.59633863,
           105.01857207,  91.55786296, 100.00009761, 105.42352572,
            96.86491803, 107.71011738,  81.31909345, 117.31184666,
           114.67678011,  96.64322661, 106.1134078 , 100.47970592,
            91.70864711, 100.87710218, 110.00365887,  96.18907482,
            96.24330577,  99.25529237, 104.3349633 , 112.7837923 ,
```

```

93.65320695, 105.08396243, 102.16116006, 81.41387614,
95.80683518, 98.67671102, 99.6042976 , 103.26003433,
79.59676951, 100.46255523, 93.22324423, 85.60560973,
105.2429643 , 107.35279576, 93.46749732, 108.42456282,
96.18483518, 100.66489009, 89.01261053, 115.84487056,
73.40550544, 99.08547377, 106.95119605, 79.66533454,
98.10530735, 99.22781335, 108.24703005, 112.48212921,
95.96107731, 86.15481333, 113.67235424, 112.17885633,
95.37994652, 103.50888494, 103.81866234, 105.66275441,
102.04207979, 114.06696242, 82.62040496, 110.40823953,
103.8047197 , 97.82864731, 111.73531498, 76.56396809,
111.61521491, 103.86078048, 88.66866726, 104.33092555,
96.95913561, 125.85294868, 118.35332723, 104.40689872,
92.80746159, 94.16585405, 96.74950372, 94.39765494,
90.97753932, 94.09027725, 97.23820508, 94.83116106,
93.0141005 , 90.71108075, 125.50438236, 85.26826752,
89.78585269, 104.32395701, 96.7641993 , 104.23824708,
107.99179995, 112.62613663, 107.51964849, 90.06239017,
111.09143281, 82.35082272, 98.85578703, 95.01825806,
89.39200964, 105.91666521, 98.16743426, 110.19854729,
85.17534522, 108.46311892, 104.97940148, 101.26504175,
85.81189449, 97.48225882, 84.53325389, 79.17348064,
132.79745401, 109.7086132 , 117.92592852, 95.70986681,
106.9619798 , 106.97416272, 106.01515814, 100.03659491,
97.71752442, 79.30387737, 106.10144086, 104.234969 ,
111.17886733, 97.25757911, 117.41812188, 95.52499124,
87.44572782, 109.38163671, 95.3165374 , 87.45279693,
101.24823646, 107.56502143, 102.41439629, 104.97425649,
141.08692624, 108.21120877, 115.31760316, 80.14154226,
103.65053516, 107.74082033, 96.35520908, 91.24020522,
103.96520159, 96.85382564, 94.06244417, 111.49500568,
113.35566168, 103.02629336, 95.45772145, 105.14370717,
108.29458431, 106.30621967, 85.4663565 , 96.61982223,
103.59133332, 106.22220414, 109.60781945, 107.58370347,
88.65681517, 92.92579112, 87.78570835, 118.04476642,
101.80409807, 105.53164274, 110.33029066, 96.70997565])

```

1.3 3. Simple Box Plot

```

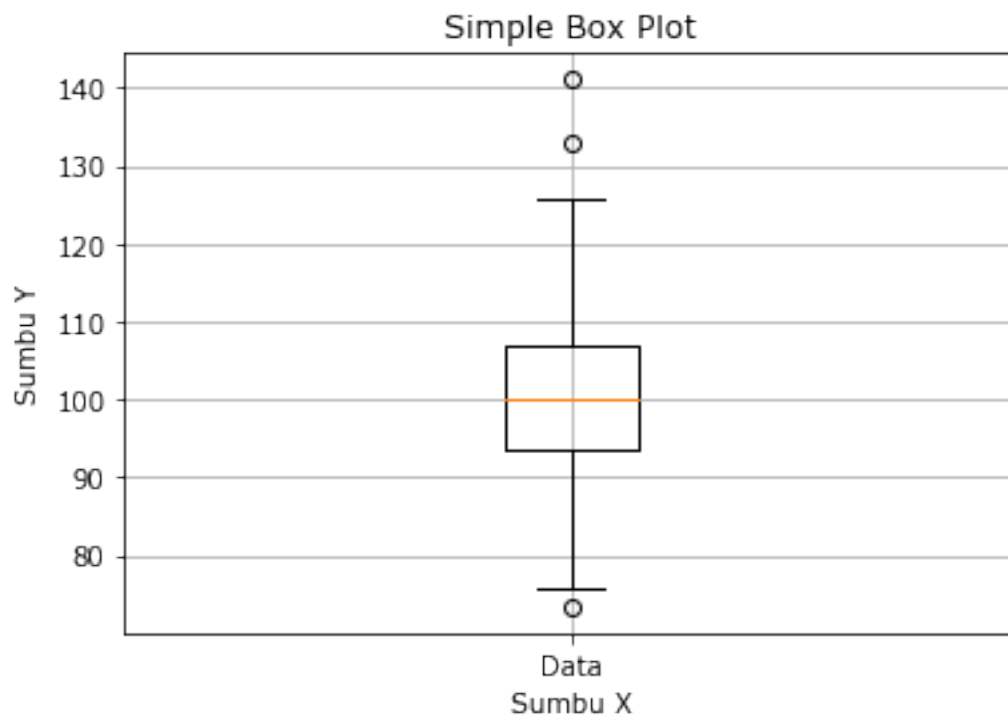
[4]: plt.boxplot(data, labels=['Data'])

plt.title('Simple Box Plot')
plt.xlabel('Sumbu X')
plt.ylabel('Sumbu Y')

plt.grid()

```

```
plt.show()
```



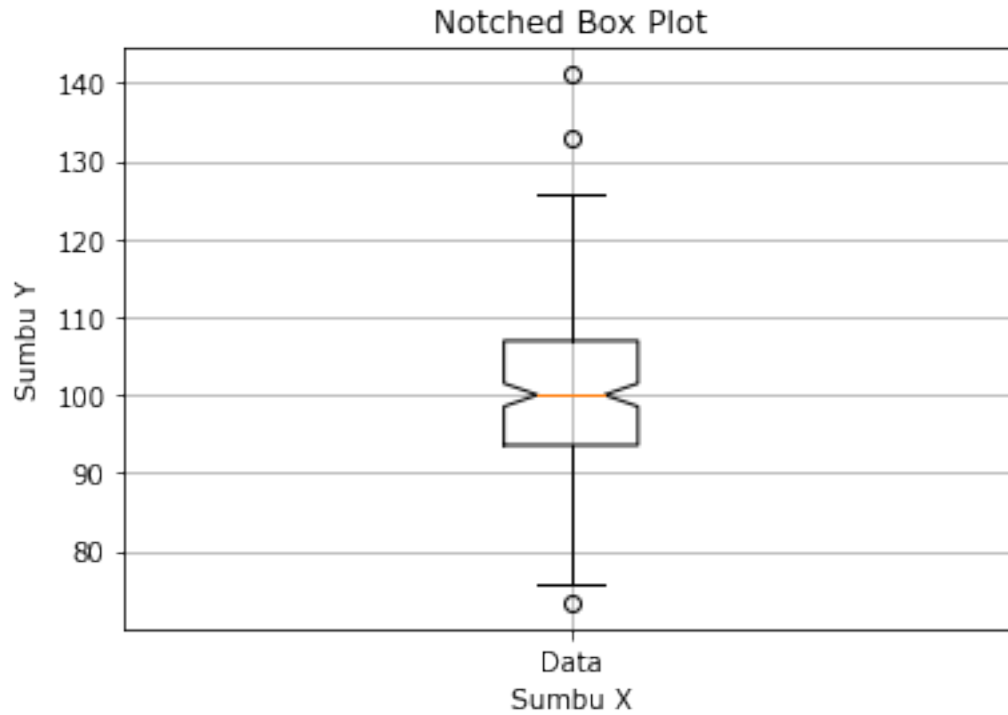
1.4 4. Notched Box Plot

```
[5]: plt.boxplot(data, labels=['Data'], notch=True)

plt.title('Notched Box Plot')
plt.ylabel('Sumbu Y')
plt.xlabel('Sumbu X')

plt.grid()

plt.show()
```



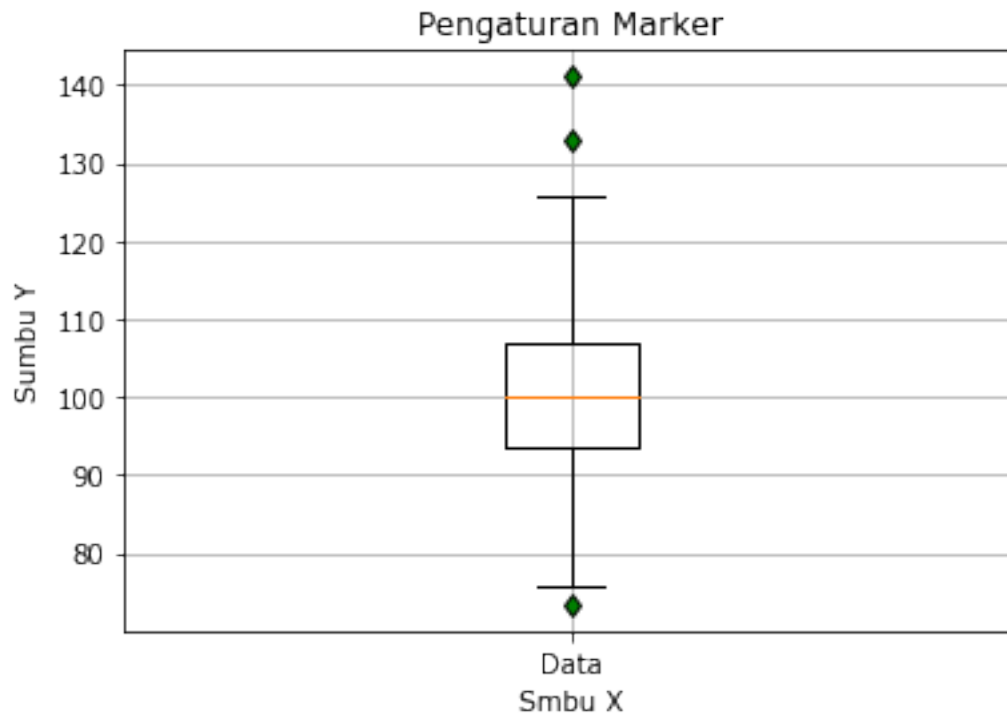
1.5 5. Pengaturan marker dan outlier

```
[6]: plt.boxplot(data,
        labels=['Data'],
        showfliers=True,
        flierprops={'markerfacecolor':'g', 'marker':'d'})

plt.title('Pengaturan Marker')
plt.ylabel('Sumbu Y')
plt.xlabel('Sumbu X')

plt.grid()

plt.show()
```

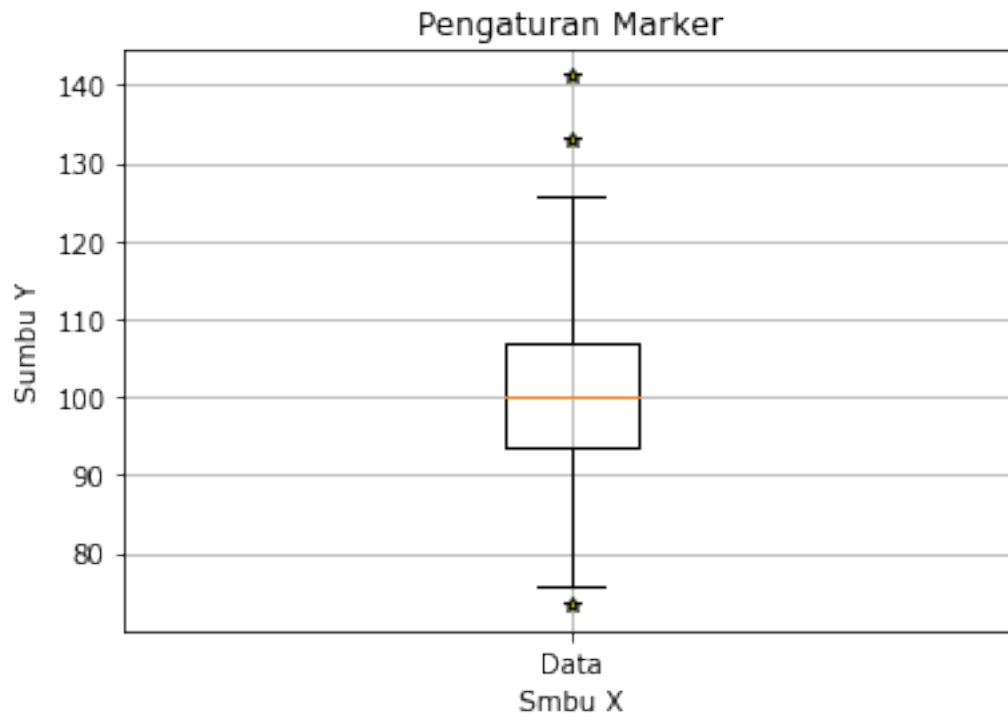


```
[7]: plt.boxplot(data,
                labels=['Data'],
                showfliers=True,
                flierprops={'markerfacecolor':'y', 'marker':'*'})

plt.title('Pengaturan Marker')
plt.ylabel('Sumbu Y')
plt.xlabel('Sumbu X')

plt.grid()

plt.show()
```

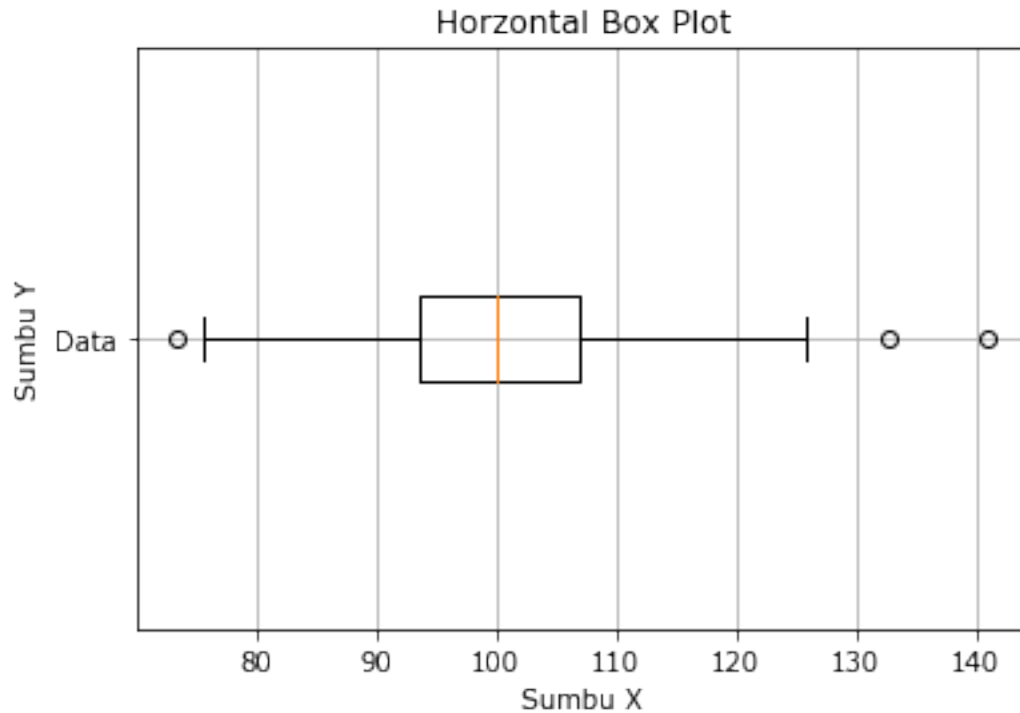


```
[8]: plt.boxplot(data, labels=['Data'], vert=False)

plt.title('Horizontal Box Plot')
plt.ylabel('Sumbu Y')
plt.xlabel('Sumbu X')

plt.grid()

plt.show()
```



1.6 6. Multiple Box Plot

```
[9]: np.random.seed(10)
data1 = np.random.normal(100, 10, 200)
data2 = np.random.normal(80, 30, 200)
data3 = np.random.normal(90, 20, 200)
data4 = np.random.normal(70, 25, 200)

data = [data1, data2, data3, data4]
labels = ['Data 1', 'Data 2', 'Data 3', 'Data 4']
```

```
[10]: plt.boxplot(data, labels=labels)

plt.title('Multiple Box Plot')
plt.xlabel('Sumbu X')
plt.ylabel('Sumbu Y')

plt.show()
```

