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Life Changing Education

Chapter 11. Box Plot의 기초

Box Plot

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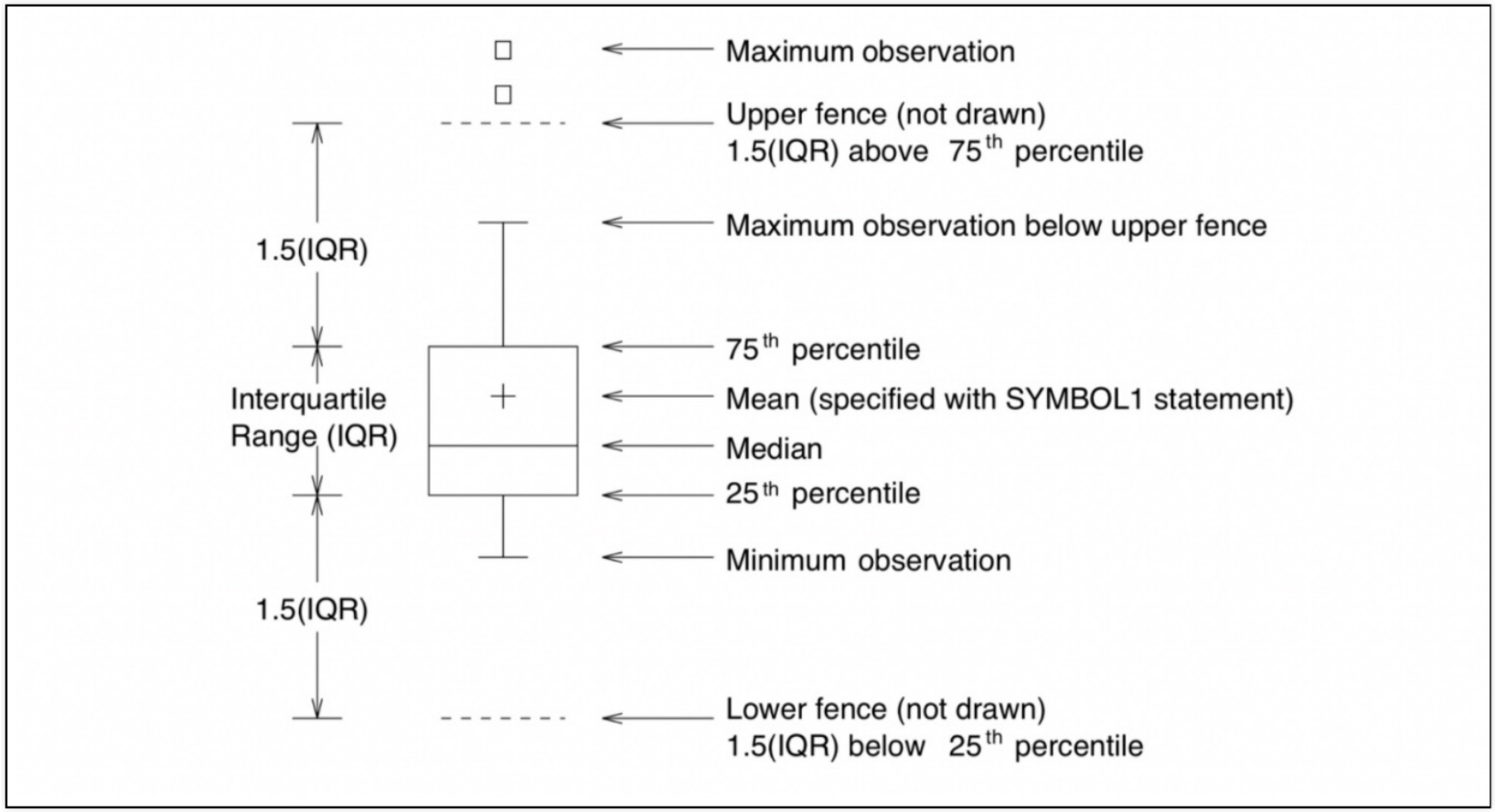
Box plot



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간단한 데이터

```
samples = [1, 7, 9, 16, 36, 39, 45, 45, 46, 48, 51, 100, 101]
tmp_y = [1]*len(samples)
```

```
tmp_y
```

```
[1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1]
```

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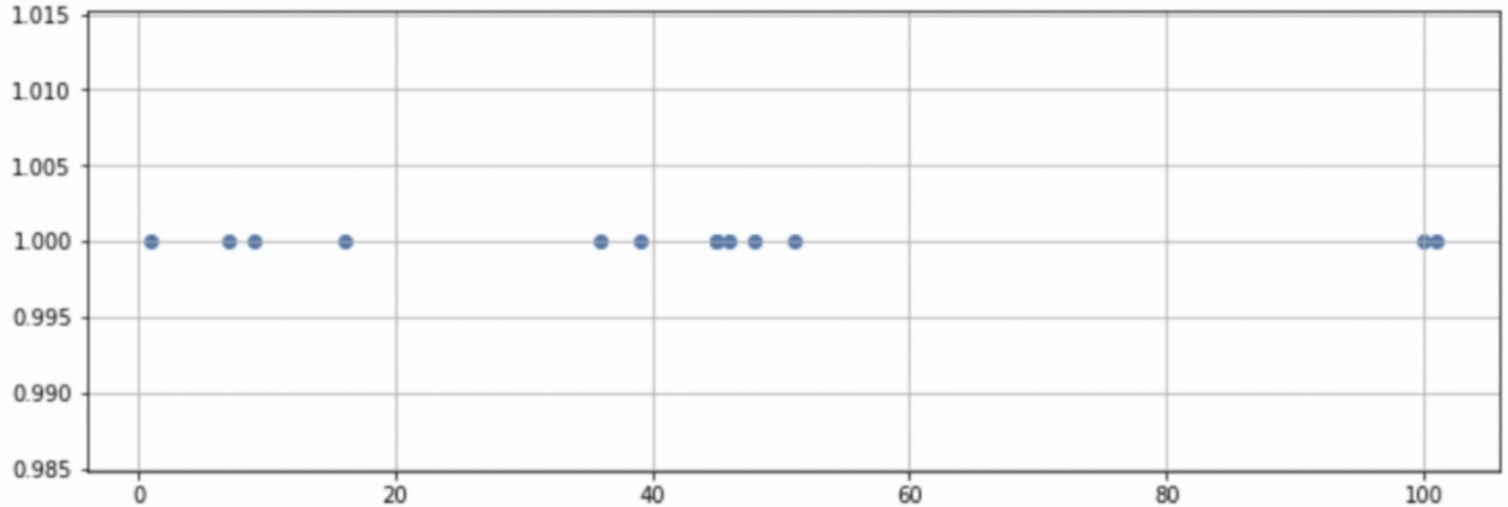
plot

```
plt.figure(figsize=(12,4))
plt.scatter(samples, tmp_y)
plt.grid()
plt.show()
```



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몇몇 지표를 찾는 법

```
np.median(samples)
```

```
45.0
```

```
np.percentile(samples, 25)
```

```
16.0
```

```
np.percentile(samples, 75)
```

```
48.0
```

```
np.percentile(samples, 75) - np.percentile(samples, 25)
```

```
32.0
```

```
iqr = np.percentile(samples, 75) - np.percentile(samples, 25)
iqr*1.5
```

```
48.0
```

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그리기

```
q1 = np.percentile(samples, 25)
q2 = np.median(samples)
q3 = np.percentile(samples, 75)
upper_fence = q3 + iqr*1.5
lower_fence = q1 - iqr*1.5
```

```
plt.figure(figsize=(12,4))
plt.scatter(samples, tmp_y)
plt.axvline(x=q1, color='black')
plt.axvline(x=q2, color='red')
plt.axvline(x=q3, color='black')
plt.axvline(x=upper_fence, color='black', ls='dashed')
plt.axvline(x=lower_fence, color='black', ls='dashed')
plt.grid()
plt.show()
```

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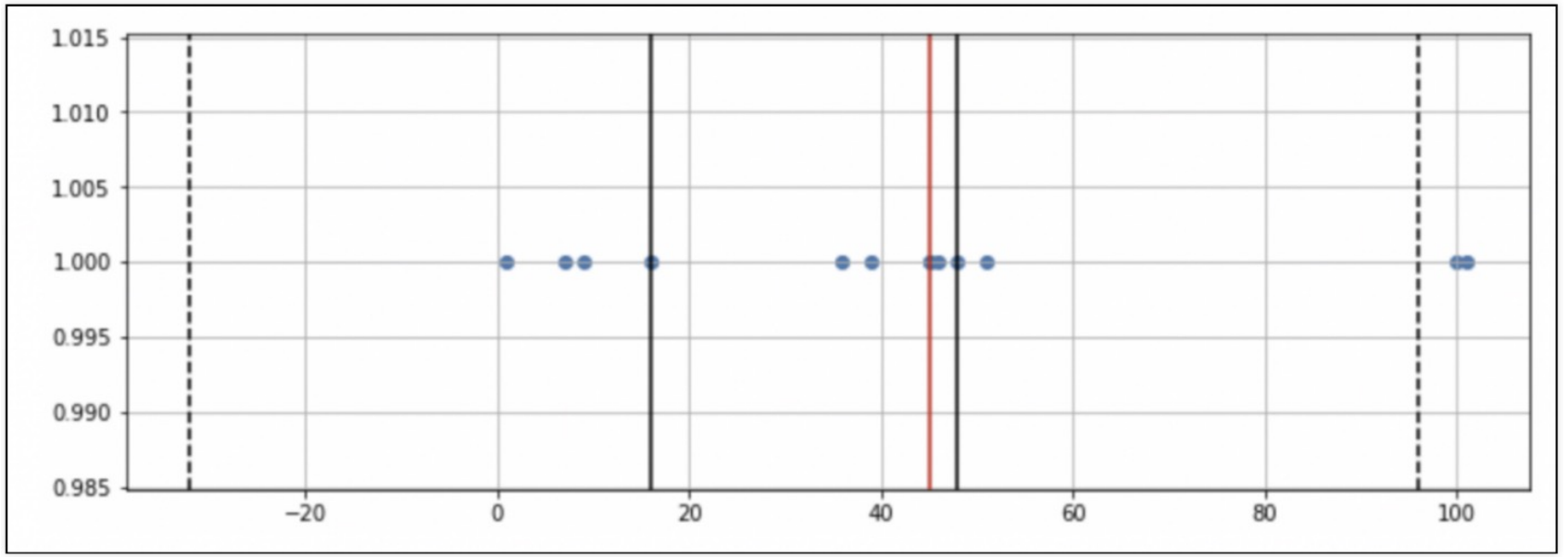
Box Plot



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물론 좋은 Framework이 필요한 이유~

```
import seaborn as sns
plt.figure(figsize=(12,4))
sns.boxplot(samples)
plt.grid()
plt.show()
```