Five Number Summary

{Removing the outliers}

1. Minimum
2. First Quartile (Q1)
3. Median
4. Third Quartile
5. Maximum

Box plot

{Remove an outlier}

1. Dataset

1, 2, 2, 2, 3, 3, 4, 5, 5, 5, 6, 6, 6, 6, 7, 8, 8, 9, 27 [-3 ↔ 13]

[Lower Fence (-3) ⟷ Higher Fence (13)]

Q1 = 25%

Q3 = 75%

Lower Fence : Q1 − 1.5 (IQR)

Higher Fence = Q3 + 1.5 (IQR)

IQR = Q3 − Q1 = 7 − 3 = 4

$$Q1\ (25\%) = \frac{\text{Percentile}}{100} \times (n+1) = \frac{25}{100} \times (19+1)$$

$$= 5^{th} \text{ Index} = 3$$

$$Q3\ (75\%) = \frac{75}{100} \times (20) = 15^{th} \text{ Index} = 7$$

Lower Fence $= Q1 - 1.5(IQR)$

$= 3 - 1.5(4) = 3 - 6 = -3$

Higher Fence $= Q3 + 1.5(IQR)$

$= 7 + 1.5(4) = 13$

27 is an outlier

1, 2, 2, 2, 3, 3, 3, 4, 5, 5, 5, 6, 6, 6, 6, 7, 8, 8, 9

① Minimum = 1

② Q1 = 3

③ Median = 5

④ Q3 = 7

⑤ Maximum = 9

Box plot