Five number summary

(i) Min (ii) Q_1 (iii) Median (iv) Q_3 (v) Max

We use to bind/remove outliers

$\{1, 2, 3, 4, \boxed{5, 6}, 7, 8, 9, 10\}$

How can we bind outliers?

Min = 1

$Q_1 = \frac{25}{100} \times 11 = 2.75 = 3$ *(index)*

Median = $\frac{5+6}{2} = \frac{11}{2} = 5.5$

$Q_3 = \frac{75}{100} \times 11 = 8.25 = 8$ *(index)*

Max = 10

By using IQR

$\{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 100\}$ ← outlier

outlier ← [lowerbene ----- Higherbene] → outlier

Whenever we want to bind out/remove outliers we need 2 things

(i) Lower bene ✓   (ii) Higher bene ✓

IQR
$= Q_3 - Q_1 = 8 - 3$
$= 5$

LF $= Q_1 - 1.5(IQR) = 3 - 1.5 \times 5 = -4.5$

HF $= Q_3 + 1.5(IQR) = 8 + 1.5 \times 5 = 15.5$

outlier

$\left(-4.5 \quad \text{to} \quad 15.5 \right)$ → element

→ outlier

$\{1, 2, 3, 4, 5, 6, 7, 8, 9, 10, \boxed{100}\}$ → × outlier

→ outlier

Box & Whiskers Plots