

Assignment

Class	Minimum	Q1	Median	Q3	Maximum
Day	32	56	74.5	82.5	99
Night	25.5	78	81	89	98

Finding IQR:

Day:

$$\text{IQR} = Q3 - Q1 = 82.5 - 56 = 26.5$$

Night:

$$\text{IQR} = Q3 - Q1 = 89 - 78 = 11$$

Lesser Range of Outlier:

Day:

$$\begin{aligned}\text{Lesser Range} &= Q1 - (1.5 * \text{IQR}) \\ &= 56 - (1.5 * 26.5) \\ &= 56 - 39.75 = 16.25\end{aligned}$$

Night:

$$\begin{aligned}\text{Lesser Range} &= Q1 - (1.5 * \text{IQR}) \\ &= 78 - (1.5 * 11) \\ &= 78 - 16.5 = 61.5\end{aligned}$$

Greater Range of Outlier:

Day:

$$\begin{aligned}\text{Greater Range} &= Q3 + (1.5 * \text{IQR}) \\ &= 82.5 + (1.5 * 26.5) \\ &= 82.5 + 39.75 = 122.25\end{aligned}$$

Night:

$$\begin{aligned}\text{Greater Range} &= Q3 + (1.5 * \text{IQR}) \\ &= 89 + (1.5 * 11) \\ &= 89 + 16.5 = 105.5\end{aligned}$$

Summary:

Day Class: Outlier Range – Lesser = 16.5, Greater = 122.5

In given all data between 32 to 99 there is **No Outlier**.

Night Class: Outlier Range – Lesser = 61.5, Greater = 105.5

In given all data between 25.5 to 98, **Lesser outlier is detected (25.5)**