

- a. The interquartile range. Compare the two interquartile ranges.
- b. Any outliers in either set.

The five number summary for the day and night classes is

	Minimum	Q_1	Median	Q_3	Maximum
Day	32	56	74.5	82.5	99
Night	25.5	78	81	89	98

For Day,

$$\text{IQR} = Q_3 - Q_1 \Rightarrow 82.5 - 56 = 26.5$$

$$\begin{aligned}\text{Lesser Outlier range (LR)} &= Q_1 - 1.5 * \text{IQR} \\ &= 56 - 1.5 * 26.5 \\ &= 56 - 39.75\end{aligned}$$

$$\text{LR} = 16.25$$

$$\begin{aligned}\text{Greater Outlier Range (GR)} &= Q_3 + 1.5 * \text{IQR} \\ &= 82.5 + 39.75\end{aligned}$$

$$\text{GR} = 122.25$$

Since the Maximum value is lesser than the “GR” and Minimum value is greater than the “LR” there is no greater/lesser Outliers for ‘Day’

For Night,

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

$$\text{Lesser Outlier range (LR)} = Q1 - 1.5 * \text{IQR}$$

$$= 78 - 1.5 * 11$$

$$= 78 - 16.5$$

$$\text{LR} = 61.5$$

$$\text{Greater Outlier Range (GR)} = Q3 + 1.5 * \text{IQR}$$

$$= 89 + 16.5$$

$$\text{GR} = 105.5$$

Since the Maximum value is lesser than the “GR” and Minimum value is Lesser than the “LR” there is lesser Outliers for ‘Night’