

# Inter Quartile Range

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

## According to Day data

$$\text{IQR} = q_3 - q_1$$

$$= 82.5 - 74.5$$

$$= 8$$

$$1.5 * \text{IQR} = 1.5 * 8$$

$$= 12$$

## Lesser Range

$$Q_1 - 1.5 * \text{IQR} = 56 - 12$$

$$= 34$$

## Greater range

$$Q_3 + 1.5 * \text{IQR} = 82.5 + 12$$

$$= 94.5$$

## According to Night data

$$\text{IQR} = q_3 - q_1$$

$$= 89 - 78$$

$$= 11$$

$$1.5 * \text{IQR} = 1.5 * 11$$

$$= 16.5$$

## Lesser Range

$$\begin{aligned} Q1 - 1.5 * IQR &= 78 - 16.5 \\ &= 61.5 \end{aligned}$$

## Greater range

$$\begin{aligned} Q3 + 1.5 * IQR &= 89 + 16.5 \\ &= 105.5 \end{aligned}$$

Hence we conclude that data lesser than 34 in day and 61.5 in night will be outliers, which is 32 and 99 are outliers

Same way, data higher than 94.5 in day and 105.5 in night will be outliers that is 25.5 is outlier.