# Comparison of two interquartile ranges and identify any outliers in either set

**The five number summary for the day and night classes is**

| | Min | Q1 | Median | Q3 | Max |
|---|---|---|---|---|---|
| **Day** | **32** | **56** | **74.5** | **82.5** | **99** |
| **Night** | **25.5** | **78** | **81** | **89** | **98** |

**Finding the IQR for Day data**

| | | | | | |
|---|---|---|---|---|---|
| **Day** | **32** | **56** | **74.5** | **82.5** | **99** |

**IQR = Q3 – Q1 => 26.5**

**Lowest Outlier => Q1 – 1.5 * IQR => 56 – (1.5 * 26.6) => 16.1 -> outlier range**

Hence Outlier range for **Lowest Fencing** value cannot go beyond **16.1** and if it goes we can replace the value with **16.1**

**Highest Outlier => Q3 + (1.5 * 26.6) => 82.5 +(1.5 * 26.6) => 122.4 outlier range**

Hence Outlier range for Highest Fencing value cannot go beyond **122.4**and if it goes, we can replace the value with **122.4**

**Now let's find the do we have outlier in the Day data first**

| | | | | | |
|---|---|---|---|---|---|
| **Day** | **32** | **56** | **74.5** | **82.5** | **99** |

**As per the Lowest and highest fencing calculation for Day data we don't find outliers for Left Fencing nor Highest Fencing.**

**Now Lets calculate the IQR and its Lowest and highest fencing for the Night Data**

| | | | | | |
|---|---|---|---|---|---|
| **Night** | **25.5** | **78** | **81** | **89** | **98** |

**IQR = Q3 – Q1 => 89 – 78 => 10**

**Lowest Outlier => Q1 – 1.5 * IQR => 78 – (1.5 * 10) => 63 -> outlier range**

Hence Outlier range for **Lowest Fencing** value cannot go beyond 63 and if it goes we can replace the value with 63

**Highest Outlier => Q3 + (1.5 * 10) => 93.5 + (1.5 * 10) => 108.5 outlier range**

Hence Outlier range for Highest Fencing value cannot go beyond **108.5** and if it goes, we can replace the value with **108.5**