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

Q1 = K/100 * (n+1) => 25/100 * (5+1) => 25/100 * 6 => 1.5

Q1 => 32 +56 /2 => 44

Q3 = K/100 * (n+1) => 75/100 * (5+1) => 4.5

Q3 => 82.5 + 99 /2 => 90.5

IQR = Q3 – Q1 => 90.5 – 44 => 46.5

Lowest Outlier => Q1 – 1.5 * IQR => 44 – (1.5 * 46.5) => -25.75 -> outlier range

Hence Outlier range for **Lowest Fencing** value cannot go beyond -25.75 and if it goes we can replace the value with -25.75

Highest Outlier => Q3 + (1.5 * 46.5) => 90.5 (1.5 * 46.5) => 160.5 outlier range

Hence Outlier range for Highest Fencing value cannot go beyond 160.5 and if it goes, we can replace the value with 160.5

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

Q1 = K/100 * (n+1) => 25/100 * (5+1) => 25/100 * 6 => 1.5

Q1 => 25.5 +78 /2 => 51.7

Q3 = K/100 * (n+1) => 75/100 * (5+1) => 4.5

Q3 => 89 + 98 /2 => 93.5

IQR = Q3 – Q1 => 93.5 – 51.7 => 41.8

Lowest Outlier => Q1 – 1.5 * IQR => 51.7 – (1.5 * 41.8) => -11 -> outlier range

Hence Outlier range for **Lowest Fencing** value cannot go beyond -11 and if it goes we can replace the value with -11

Highest Outlier => Q3 + (1.5 * 46.5) => 93.5 + (1.5 * 41.8) => 156.2 outlier range

Hence Outlier range for Highest Fencing value cannot go beyond **156.2** and if it goes, we can replace the value with **156.2**