Percentile

* Quartiles are the values that divide a list of numerical data into three quarters
* First quartile 25% from smallest to largest of numbers. Second quartile between 25% and50%(till median) third quartile 75% (above the median)
* Fourth quartile 25% largest numbers
* The lower quartile or first quartile Q1 is the value under which 25%of data points are found when they are arranged in increased order.
* The upper quartile or third quartileQ3 is the value under which 75% of data points are found when arranged in increasing order.
* Lesser outlier = Q1-1.5\*IQR
* Greater outlier =Q3+1.5\*IQR
* The reason for multiplying the upper and lower quartile ranges by 1.5 is to detect outliers. An outlier is a value that is significantly different from the other values in a dataset.
* The IQR is a measure of the spread of a dataset and multiplying it by 1.5 we can identify values that fall outside of the normal range of values. Any value that is more than 1.5 times the IQR away from the first or third quartile is considered an outlier.

minimum Q1 Median Q3 Maximum

Day 32 56 74.5 82.5 99

Night 25.5 78 81 89 98

IQR formula is:

IQR=Q3-Q1

Q1 value is 56 , Q3 value is 82.5

IQR = 82.5 – 56

= 26.5

Greater quartile = Q3+1.5\*IQR

Lesser quartile = Q1 - 1.5\*IQR = 82.5 + (1.5)(26.5)

= 56-(1.5)(26.5) = 82.5 +39.75

=56 – 39.75 high range outlier = 122.25

Lower range outlier = 16.25

The minimum value lesser than the lower quartile value can be considered as lesser quartile value.

The lower range value is 16.25.

Minimum value is 32.

The minimum value can’t lower than the lesser quartile value.so don’t appear the lower quartile value.

The maximum value more than the higher quartile value can be considered as higher range outlier.

The higher value is 122.25.

Maximum value is 99.

The maximum value does not exceed the higher quartile so it will not appear as a higher quartile.

Find the night percentile:

IQR=Q3 – Q1

Q1 value is 78, Q3 value is 89

IQR= 89 – 78

= 11

Lower quartile= Q1 – 1.5\*IQR Greater quartile=Q3+1.5\*IQR

= 78-(1.5)(11) = 89+(1.5)(11)

= 78- 16.5 = 89+16.5

= 61.5 High range outlier = 105.5

The minimum value lesser than the lower quartile value can be considered as lesser quartile value.

The lower range value is 61.5.

Minimum value is 25.5.

It appears the minimum value is lower than the lesser quartile value.so the minimum value of 25.5 is lower quartile value.

The maximum value more than the higher quartile value can be considered as higher range outlier.

The higher value is 105.5.

Maximum value is 98.

The maximum value does not exceed the higher quartile so it will not appear as a higher quartile.