

What are the key elements and significance of the box plot percentages?

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A box plot, also known as a box and whisker plot, is a graphical representation of statistical data that displays the key elements of a dataset. The plot consists of a box with horizontal lines, called whiskers, on either side. The box represents the middle 50% of the data, with the median displayed as a horizontal line inside the box. The whiskers extend to the minimum and maximum values of the data, with any outliers shown as individual points.

The key significance of the box plot percentages lies in its ability to visually summarize the distribution of a dataset. By displaying the median, quartiles, and outliers, the box plot provides a quick and easy way to understand the spread and central tendency of the data. This information is especially useful when comparing multiple datasets or identifying any unusual values.

Additionally, the box plot is a useful tool for identifying any potential data abnormalities, such as extreme values or asymmetry. It also allows for a quick comparison of the variability between different groups or categories within a dataset.

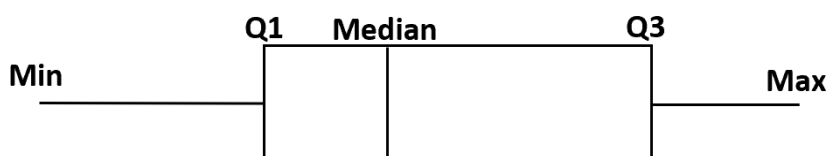
Overall, the box plot percentages are essential in providing a concise and informative summary of a dataset, making it a valuable tool in data analysis and decision making.

A Complete Guide to Box Plot Percentages

A box plot is a type of plot that displays the five number summary of a dataset, which includes:

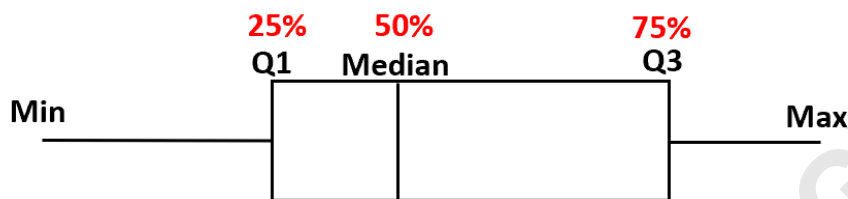
**The minimum value
The first quartile
The median value
The third quartile
The maximum value**

A typical box plot looks like this:

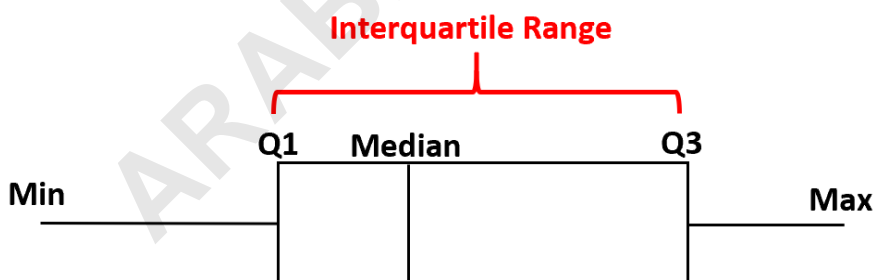


Within a box plot:

The first quartile represents the 25th percentile of all values in the dataset. The median represents the 50th percentile of all values in the dataset. The third quartile represents the 75th percentile of all values in the dataset.



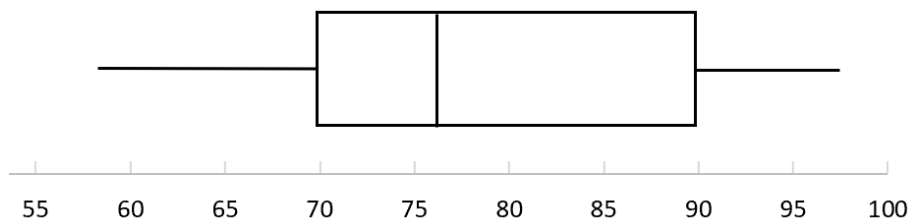
The interquartile range tells us the spread of the middle 50% of values in a dataset and can be calculated by subtracting the first quartile from the third quartile in a box plot:



The following example shows how to use a box plot to answer questions related to percentages.

Example: How to Interpret Box Plot Percentages

The following box plot shows the distribution of final exam scores for college students in a certain class:



Use the box plot to answer the following questions.

Question 1: What percentage of students scored below a 70?

From the box plot we can see that 70 lines up with the first quartile, which represents the 25th percentile.

Thus, 25% of students scored below a 70.

From the box plot we can see that 90 lines up with the third quartile, which represents the 75th percentile.

Thus, 25% of students scored above a 90.

Question 3: What percentage of students scored between a 70 and a 90?

From the box plot we can see that 70 and 90 represent the first and third quartiles of the dataset, which correspond with the 25th and 75th percentiles.

Thus, $75\% - 25\% = 50\%$ of students scored between a 70 and 90.

The following tutorials provide additional information about box plots:

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