

What is the mode in statistics?

Authored by
stats writer

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The mode in statistics refers to the most frequently occurring value in a set of data. It is a measure of central tendency that is useful in identifying the most common or popular value in a dataset. The mode can be used to describe the overall pattern of the data and can be particularly helpful when dealing with categorical or discrete data. In addition, the mode can be used to identify outliers or unusual data points that may affect the overall distribution of the data. Overall, the mode is an important statistical concept that helps to summarize and understand a dataset.

Statistics - Mode

The mode is a type of average value, which describes where most of the data is located.

Mode

The mode is the value(s) that are the most common in the data.

A dataset can have multiple values that are modes.

A distribution of values with only one mode is called **unimodal**.

A distribution of values with two modes is called **bimodal**. In general, a distribution with more than one mode is called **multimodal**.

Mode can be found for both categorical and numerical data.

Finding the Mode

Here is a **numerical** example:

4, 7, 3, 8, 11, 7, 10, 19, 6, 9, 12, 12

Both 7 and 12 appears two times each, and the other values only once. The modes of this data is 7 and 12.

Here is a **categorical** example with names:

Alice, John, Bob, Maria, John, Julia, Carol

John appears two times, and the other values only once. The mode of this data is John.

Finding the Mode with Programming

The mode can easily be found with many programming languages.

Using software and programming to calculate statistics is more common for bigger sets of data, as calculating manually becomes difficult.

Example

With Python use the statistics library `multimode()` method to find the modes of the values 4,7,3,8,11,7,10,19,6,9,12,12:

```
from statistics import multimode
```

```
values =
```

```
x = multimode(values)
```

```
print(x)
```

Example

Using R with a user-defined function to find the modes of the values 4,7,3,8,11,7,10,19,6,9,12,12:

```
mode <- function(x) {
```

```
  unique_values <- unique(x)
```

```
  table <- tabulate(match(x, unique_values))
```

```
  unique_values
```

```
}
```

```
values <- c(4,7,3,8,11,7,10,19,6,9,12,12)
```

```
mode(values)
```

Note: R has no built-in function to find the mode.

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