# How can I calculate the percentile rank in R?

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Calculating the percentile rank in R is a statistical technique used to determine the position of a particular data point within a given dataset. This method is commonly used to compare the relative standing of a specific value to the rest of the data. To calculate the percentile rank in R, one needs to first arrange the data in ascending order and then assign a percentage to each data point based on its position in the dataset. This percentage represents the percentile rank, with a value of 100 indicating that the data point is at the highest position in the dataset. Using this technique, one can accurately interpret and compare the significance of a specific data point in relation to the rest of the data.

## Calculate Percentile Rank in R (2 Examples)

## The percentile rank of a value tells us the percentage of values in a dataset that rank equal to or below a given value.

## You can use the following methods to calculate percentile rank in R:

## Method 1: Calculate Percentile Rank for Entire Dataset

```
library(dplyr)

df %>%
mutate(percent_rank = rank(x)/length(x))
```

## Method 2: Calculate Percentile Rank by Group

```
library(dplyr)
```

```
df %>%
group_by(group_var) %>%
mutate(percent_rank = rank(x)/length(x))
```

**The following examples show how to use each method in practice with the following data frame:**

```
#create data frame
df <- data.frame(team=rep(c('A', 'B'), each=7),
points=c(2, 5, 5, 7, 9, 13, 15, 17, 22, 24, 30, 31, 38, 39))

#view data frame
df

team points
1 A 2
2 A 5
3 A 5
4 A 7
5 A 9
6 A 13
7 A 15
8 B 17
9 B 22
10 B 24
```

11 B 30
12 B 31
13 B 38
14 B 39

### Example 1: Calculate Percentile Rank for Entire Dataset

The following code shows how to use functions from the package in R to calculate the percentile rank of each value in the points column:

```
library(dplyr)

#calculate percentile rank of points values
df %>%
mutate(percent_rank = rank(points)/length(points))
```

team points percent_rank
1 A 2 0.07142857
2 A 5 0.17857143
3 A 5 0.17857143
4 A 7 0.28571429
5 A 9 0.35714286
6 A 13 0.42857143
7 A 15 0.50000000

8 B 17 0.57142857

9 B 22 0.64285714

10 B 24 0.71428571

11 B 30 0.78571429

12 B 31 0.85714286

13 B 38 0.92857143

14 B 39 1.00000000

Here's how to interpret the values in the percent_rank column:

7.14% of the points values are equal to or less than 2.17.86% of the points values are equal to or less than 5.28.57% of the points values are equal to or less than 7.

And so on.

### Example 2: Calculate Percentile Rank by Group

The following code shows how to use functions from the package in R to calculate the percentile rank of each value in the points column, grouped by team:

library(dplyr)

```
#calculate percentile rank of points values grouped by team
df %>%
group_by(team) %>%
mutate(percent_rank = rank(points)/length(points))

# A tibble: 14 x 3
# Groups: team
team points percent_rank

1 A 2 0.143
2 A 5 0.357
3 A 5 0.357
4 A 7 0.571
5 A 9 0.714
6 A 13 0.857
7 A 15 1
8 B 17 0.143
9 B 22 0.286
10 B 24 0.429
11 B 30 0.571
12 B 31 0.714
13 B 38 0.857
14 B 39 1
```

**14.3% of the points values for team A are equal to or less than 2.35.7% of the points values for team A are equal to or less than 5.57.1% of the points values for team A are equal to or less than 7.**

**And so on.**

### Additional Resources

**The following tutorials explain how to perform other common tasks in R:**