

How can I reshape data between wide and long format in R?

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Reshaping data between wide and long format in R refers to the process of transforming data from a wide layout, where each variable has its own column, to a long layout, where multiple variables are stacked in a single column. This can be achieved using the "reshape" function in R, which allows for the restructuring of data frames based on specific variables. This technique is commonly used in data analysis and visualization to make data more manageable and suitable for various statistical models and plotting techniques. By reshaping data, it becomes easier to identify patterns and relationships between variables, leading to more accurate and insightful analysis.

Reshape Data Between Wide and Long Format in R

A data frame in R can be displayed in a .

Depending on your goal, you may want the data frame to be in one of these specific formats.

The easiest way to reshape data between these formats is to use the following two functions from the package in R:

pivot_longer(): Reshapes a data frame from wide to long format.
pivot_wider(): Reshapes a data frame from long to wide format.

The following examples show how to use each function in practice.

Example 1: Reshape Data from Wide to Long

Suppose we have the following data frame in R that is

currently in a wide format:

```
#create data frame
```

```
df <- data.frame(player=c('A', 'B', 'C', 'D'),  
year1=c(12, 15, 19, 19),  
year2=c(22, 29, 18, 12))
```

```
#view data frame
```

```
df
```

```
player year1 year2
```

```
1 A 12 22
```

```
2 B 15 29
```

```
3 C 19 18
```

```
4 D 19 12
```

We can use the `pivot_longer()` function to pivot this data frame into a long format:

```
library(tidyr)
```

```
#pivot the data frame into a long format
```

```
df %>% pivot_longer(cols=c('year1', 'year2'),  
names_to='year',  
values_to='points')
```

```
# A tibble: 8 x 3  
player year points
```

```
1 A year1 12  
2 A year2 22  
3 B year1 15  
4 B year2 29  
5 C year1 19  
6 C year2 18  
7 D year1 19  
8 D year2 12
```

Notice that the column names `year1` and `year2` are now used as values in a new column called "year" and the values from these original columns are placed into one new column called "points."

The final result is a long data frame.

Note: You can find the complete documentation for the `pivot_longer()` function .

Example 2: Reshape Data from Long to Wide

Suppose we have the following data frame in R that is currently in a long format:

```
#create data frame
```

```
df <- data.frame(player=rep(c('A', 'B'), each=4),  
year=rep(c(1, 1, 2, 2), times=2),  
stat=rep(c('points', 'assists'), times=4),  
amount=c(14, 6, 18, 7, 22, 9, 38, 4))
```

```
#view data frame
```

```
df
```

```
player year stat amount
```

```
1 A 1 points 14
```

```
2 A 1 assists 6
```

```
3 A 2 points 18
```

```
4 A 2 assists 7
```

```
5 B 1 points 22
```

```
6 B 1 assists 9
```

```
7 B 2 points 38
```

```
8 B 2 assists 4
```

We can use the `pivot_wider()` function to pivot this data frame into a wide format:

```
library(tidyr)
```

```
#pivot the data frame into a wide format
```

```
df %>% pivot_wider(names_from = stat, values_from = amount)
```

```
# A tibble: 4 x 4
```

```
player year points assists
```

```
1 A 1 14 6
```

```
2 A 2 18 7
```

```
3 B 1 22 9
```

```
4 B 2 38 4
```

Notice that the values from the stat column are now used as column names and the values from the amount column are used as cell values in these new columns.

The final result is a wide data frame.

Note: You can find the complete documentation for the `pivot_wider()` function .

Additional Resources

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