

How to Count Unique Values by Group in R (With Examples)

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In R, you can count the number of unique values in each group in a dataset using the `dplyr` package and the `distinct()` function. This allows you to easily group data by a certain variable, and count the number of unique values in each group, using the `group_by()` and `summarize()` functions. For example, you could count the number of unique values in each group of a dataset based on the color of a car. You could then use this information to compare the number of unique colors in each group.

You can use the following methods to count the number of unique values by group in R:

Method 1: Using Base R

```
results <- aggregate(data=df, values_var~group_var, function(x) length(unique(x)))
```

Method 2: Using dplyr

```
library(dplyr)
```

```
results <- df %>%  
  group_by(group_var) %>%  
  summarize(count = n_distinct(values_var))
```

Method 3: Using data.table

```
library(data.table)
```

```
df <- data.table(df)  
results <- df
```

Each method returns the exact same result, but the base R method tends to be significantly slower when working with large data frames.

The following examples show how to use each of these methods in practice with the following data frame:

```
#create data frame
```

```
df <- data.frame(team=c('A', 'A', 'A', 'A', 'B', 'B', 'C', 'C', 'C'),  
  points=c(10, 10, 14, 14, 18, 19, 20, 20, 20))
```

```
#view data frame
```

```
df
```

team points

1 A 10

2 A 10

3 A 14

4 A 14

5 B 18

6 B 19

7 C 20

8 C 20

9 C 20

Method 1: Count Unique Values by Group Using Base R

The following code shows how to count the number of distinct points values for each team using base R:

```
#count unique points values by team
```

```
results <- aggregate(data=df, points~team, function(x) length(unique(x)))
```

```
#view results
```

```
results
```

team points

1 A 2

2 B 2

3 C 1

From the output we can see:

There are **2** unique points values for team A.

There are **2** unique points values for team B.

There is **1** unique points value for team C.

Method 2: Count Unique Values by Group Using dplyr

The following code shows how to count the number of distinct points values for each team using dplyr:

```
library(dplyr)
```

```
#count unique points values by team
results <- df %>%
group_by(team) %>%
summarize(count = n_distinct(points))
```

```
#view results
results
```

```
# A tibble: 3 x 2
team count
1 A 2
2 B 2
3 C 1
```

Notice that these results match the ones from the base R method.

Method 3: Count Unique Values by Group Using data.table

The following code shows how to count the number of distinct points values for each team using data.table:

```
library(data.table)
```

```
#convert data frame to data table
df <- data.table(df)
```

```
#count unique points values by team
results <- df
```

```
#view results
results
```

```
team count
1: A 2
2: B 2
3: C 1
```

Notice that these results match the ones from the previous two methods.

The following tutorials explain how to perform other common operations using dplyr: