

# How can I create a legend in ggplot2 with multiple rows?

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June 27, 2024

## RECOMMENDED CITATION

stats writer (2024). *How can I create a legend in ggplot2 with multiple rows?*.

PSYCHOLOGICAL SCALES. Retrieved from <https://scales.arabpsychology.com/?p=155045>

To create a legend with multiple rows in ggplot2, first specify the desired number of rows using the "nrow" argument in the "guide\_legend" function. Then, use the "guide\_legend" function in the "scale\_color\_manual" or "scale\_fill\_manual" to customize the legend labels and colors. Finally, add the "theme" function and use the "legend.position" argument to adjust the legend's position. This will allow for a neatly organized and visually appealing legend with multiple rows in ggplot2.

## Create a Legend in ggplot2 with Multiple Rows

You can use the following syntax to create a legend in ggplot2 with multiple rows:

```
ggplot(df, aes(x=x_var, y=y_var, color=group_var)) +  
geom_point() +  
guides(color=guide_legend(nrow=2, byrow=TRUE))
```

The value for the nrow argument specifies the number of rows to use in the legend.

The following example shows how to use this syntax in practice.

**Example: Create Legend in ggplot2 with Multiple Rows**

Suppose we have the following data frame in R that contains information about various basketball players:

```
#create data frame
```

```
df <- data.frame(team=c('Mavs', 'Heat', 'Nets', 'Lakers'),
```

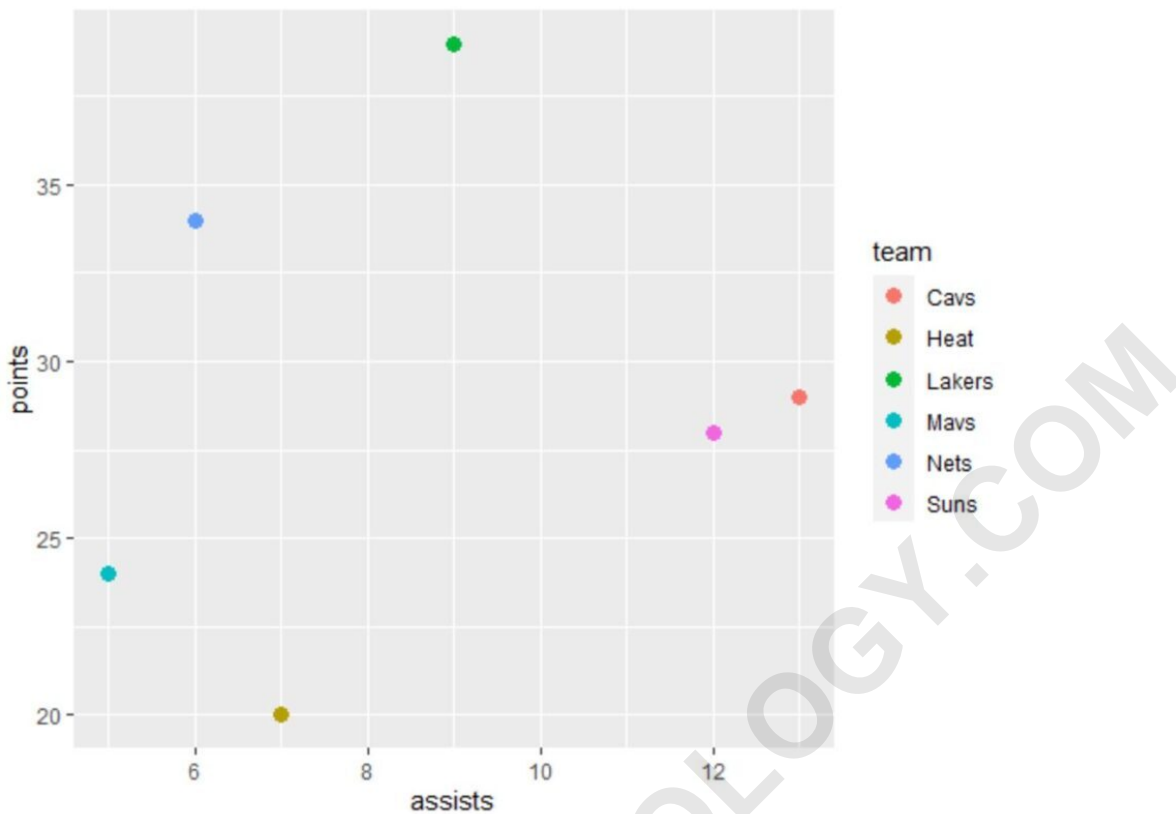
```
'Suns', 'Cavs'),  
points=c(24, 20, 34, 39, 28, 29),  
assists=c(5, 7, 6, 9, 12, 13))
```

```
#view data frame  
df
```

```
team points assists  
1 Mavs 24 5  
2 Heat 20 7  
3 Nets 34 6  
4 Lakers 39 9  
5 Suns 28 12  
6 Cavs 29 13
```

If we create a scatter plot in ggplot2 without specifying the number of rows to use in the legend, ggplot2 will place one label on each line by default:

```
library(ggplot2)  
  
#create default scatterplot  
ggplot(df, aes(x=assists, y=points, color=team)) +  
geom_point(size=3)
```



In order to create a legend with multiple rows, we must use the `guides()` function with the `nrow` argument:

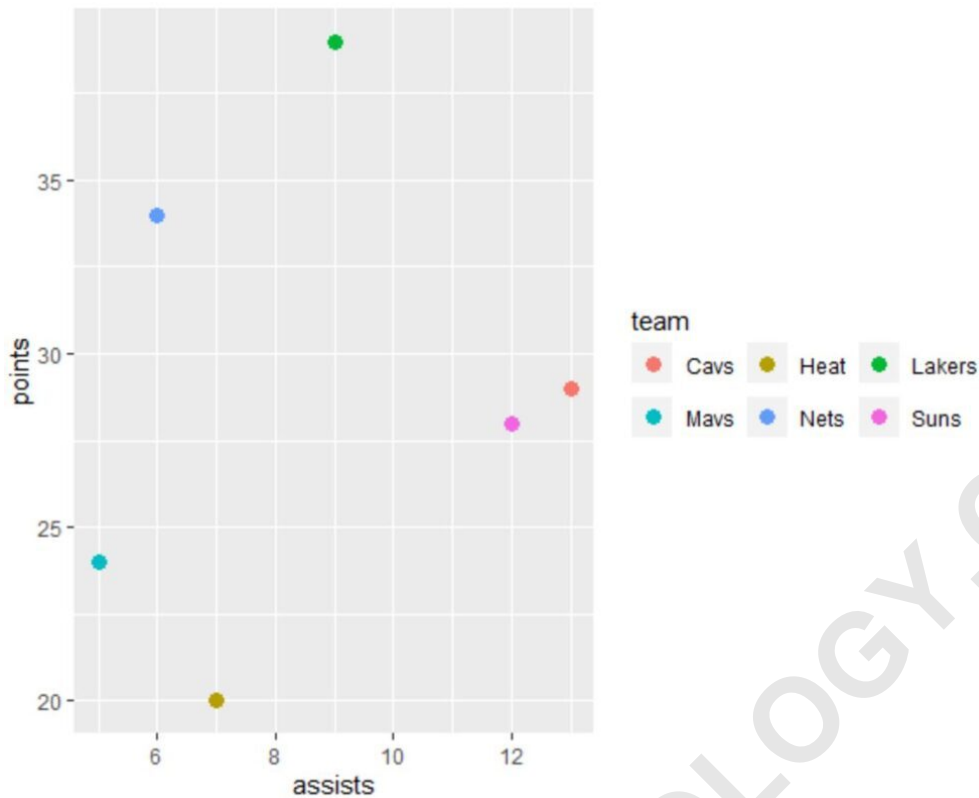
```
library(ggplot2)
```

```
#create scatterplot with two rows in legend
```

```
ggplot(df, aes(x=assists, y=points, color=team)) +
```

```
geom_point(size=3) +
```

```
guides(color=guide_legend(nrow=2, byrow=TRUE))
```



Notice that the legend now has two rows.

If we'd like to change the location of the legend as well, we can use the `theme()` function with the `legend.position` argument:

```
library(ggplot2)
```

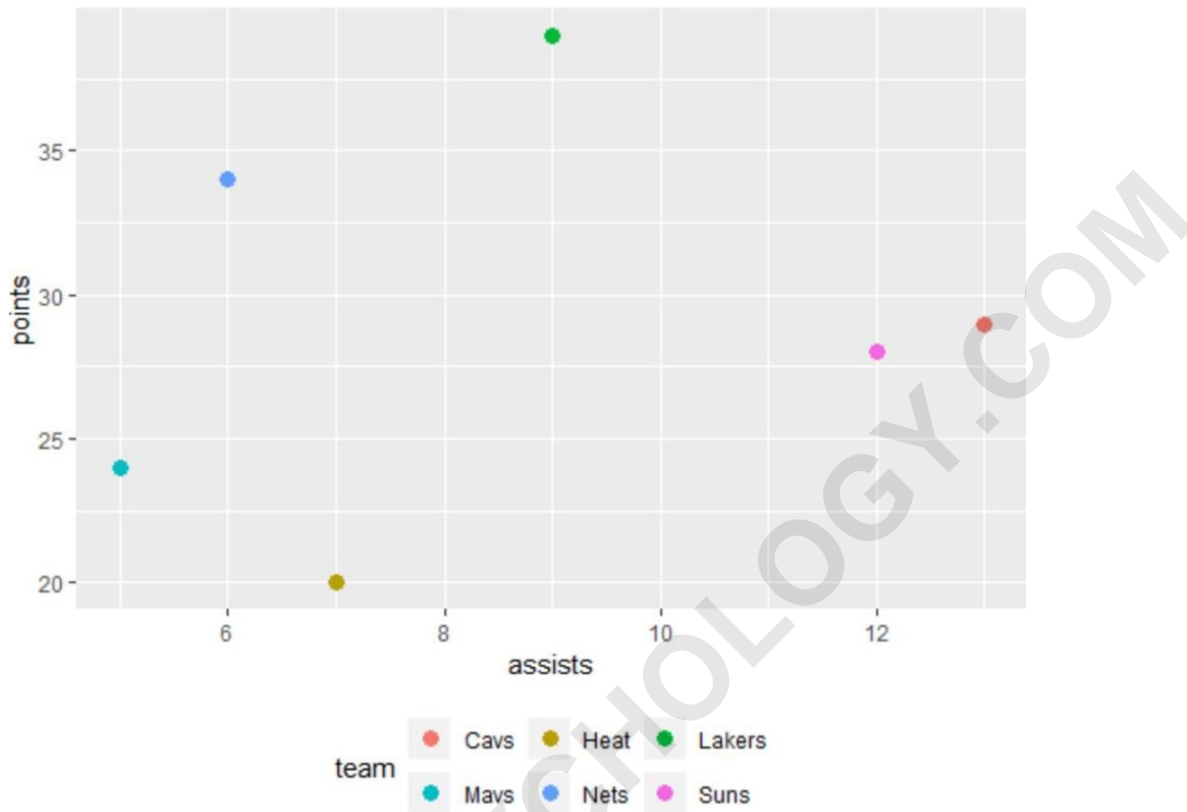
```
#create scatterplot with two rows in legend
```

```
ggplot(df, aes(x=assists, y=points, color=team)) +
```

```
geom_point(size=3) +
```

```
theme(legend.position='bottom') +
```

```
guides(color=guide_legend(nrow=2, byrow=TRUE))
```



The following tutorials explain how to perform other common operations in ggplot2: