

How can I create a bubble chart in R?

Authored by
stats writer

June 26, 2024

RECOMMENDED CITATION

stats writer (2024). *How can I create a bubble chart in R?*. PSYCHOLOGICAL SCALES.
Retrieved from <https://scales.arabpsychology.com/?p=154290>

A bubble chart is a type of data visualization that uses circles or bubbles to represent numerical data. It is a useful tool for displaying relationships between different sets of data. To create a bubble chart in R, you can use the ggplot2 package, which provides a simple and efficient way to generate high-quality plots. First, you will need to load the ggplot2 library into your R session. Then, you can use the geom_point() function to create the bubbles, specifying the data, the x and y coordinates, and the size of the bubbles. You can also customize the appearance of the bubbles by adding color, transparency, and labels. By following these steps, you can easily generate a bubble chart in R to effectively visualize your data.

Create a Bubble Chart in R

A bubble chart is a type of chart that allows you to visualize three variables in a dataset at once.

The first two variables are used as (x,y) coordinates on a scatterplot and the third variable is used to depict size.

You can use the following basic syntax to create a bubble chart in R:

```
library(ggplot2)
```

```
#create bubble chart
```

```
ggplot(df, aes(x=x_var, y=y_var, size=size_var)) +
```

```
geom_point(alpha=0.5) +
```

```
scale_size(range=c(2, 10), name='Legend Name')
```

The following example shows how to use this syntax to create a bubble chart in practice.

Note: The alpha argument specifies that the circles in the chart should be partially transparent. The range argument allows you to set the minimum and maximum radius values for the circles in the chart.

Example: Create a Bubble Chart in R

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

```
#create data frame
```

```
df <- data.frame(team=c('A', 'A', 'A', 'B', 'B', 'B', 'C', 'C', 'C'),
```

```
points=c(8, 11, 13, 13, 15, 18, 22, 27, 32),
```

```
assists=c(4, 3, 6, 5, 4, 7, 8, 11, 6),
```

```
minutes=c(9, 12, 15, 20, 36, 30, 31, 40, 43))
```

```
#view data frame
```

```
df
```

```
team points assists minutes
```

```
1 A 8 4 9
```

```
2 A 11 3 12
```

3 A 13 6 15

4 B 13 5 20

5 B 15 4 36

6 B 18 7 30

7 C 22 8 31

8 C 27 11 40

9 C 32 6 43

We can use the following syntax to create a bubble chart that displays assists on the x-axis, points on the y-axis, and uses minutes to determine the size of the circles:

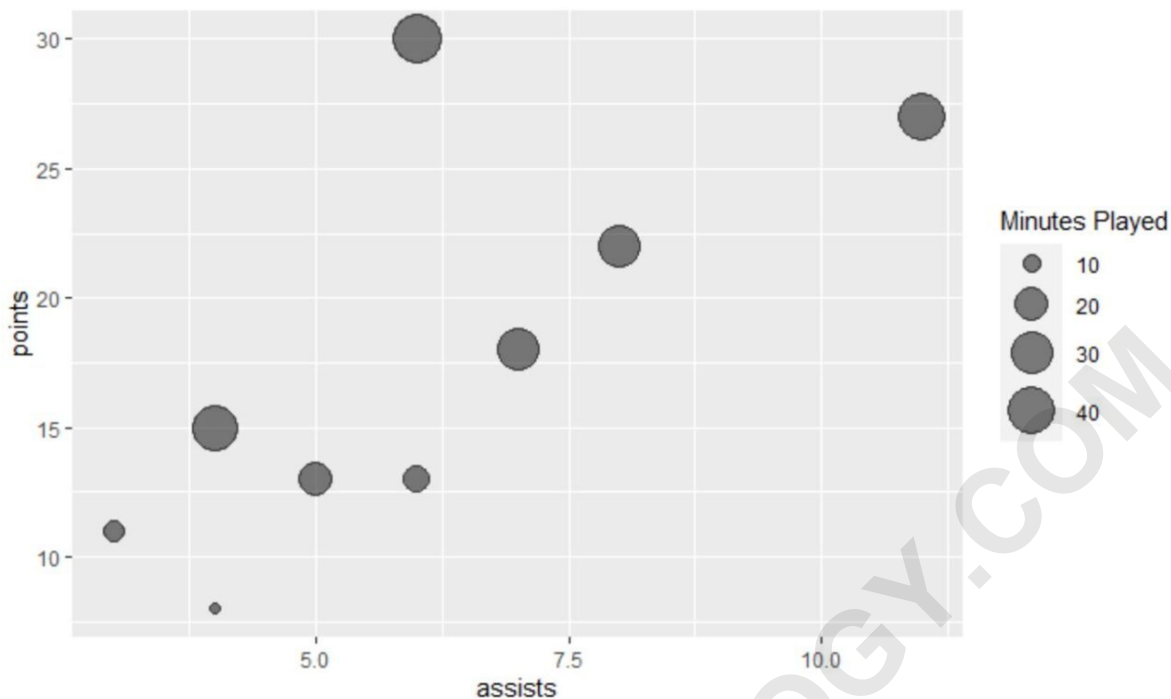
```
library(ggplot2)
```

```
#create bubble chart
```

```
ggplot(df, aes(x=assists, y=points, size=minutes)) +
```

```
geom_point(alpha=0.5) +
```

```
scale_size(range=c(2, 10), name='Minutes Played')
```

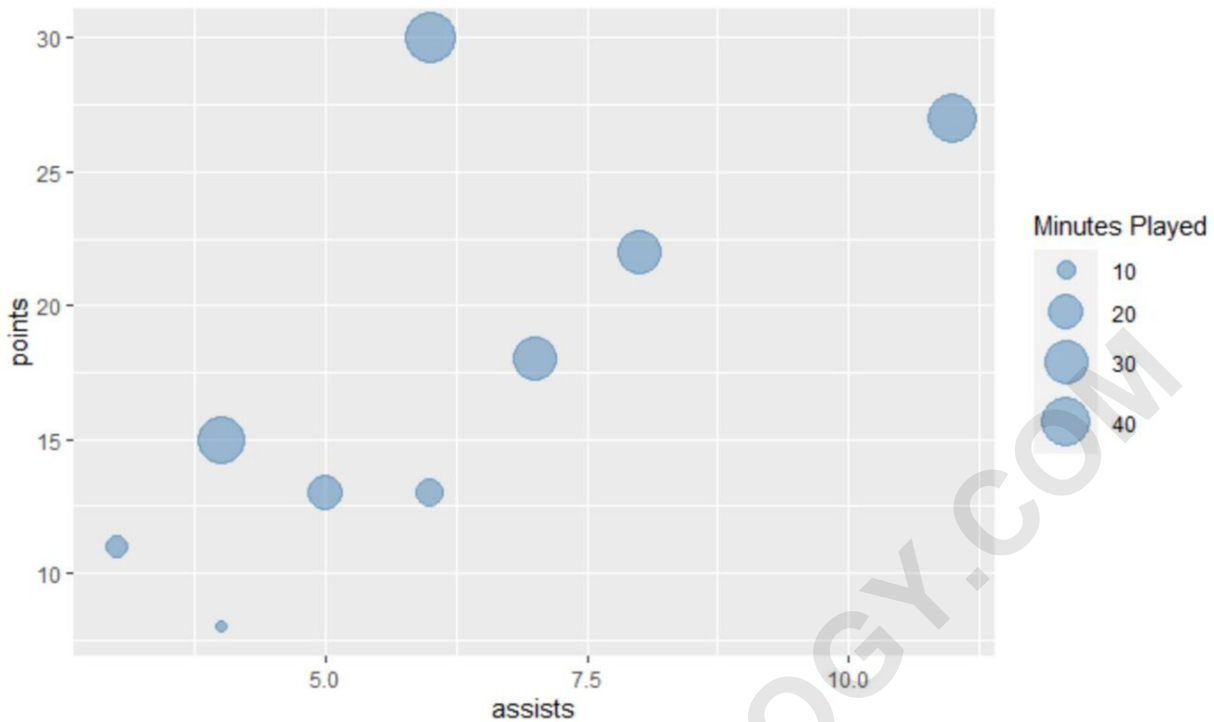


You can change the color of all of the circles by using the color argument within the `geom_point()` function:

```
library(ggplot2)
```

```
#create bubble chart with blue circles
```

```
ggplot(df, aes(x=assists, y=points, size=minutes)) +  
geom_point(alpha=0.5, color='steelblue') +  
scale_size(range=c(2, 10), name='Minutes Played')
```



Alternatively, you can use the color argument within `aes()` to make the color of each circle based on the value of another variable in the data frame:

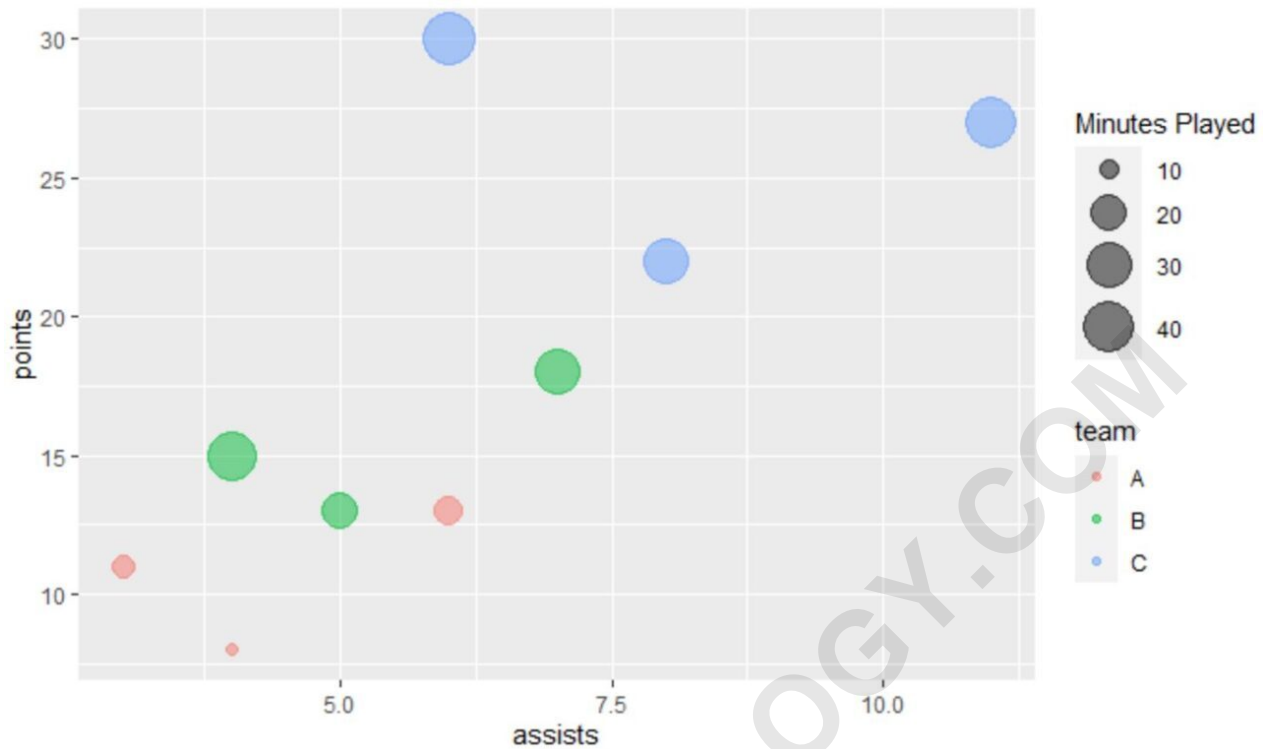
```
library(ggplot2)
```

```
#create bubble chart and color circles based on value of  
team variable
```

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

```
geom_point(alpha=0.5) +
```

```
scale_size(range=c(2, 10), name='Minutes Played')
```



The color of each circle in the plot is now dependent on the value for the team variable.

Note: Feel free to play around with the minimum and maximum values in the range argument to increase or decrease the size of the circles in the plot.

The following tutorials explain how to create other common charts in R: