

How do I shade an area in ggplot2? Can you provide some examples?

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Shading an area in ggplot2 refers to filling a specified region on a plot with a specific color or pattern. This can be achieved by using the "geom_area" function in ggplot2, which allows for the creation of a filled area plot. This function requires the specification of the x and y variables to define the boundaries of the shaded region. Examples of shading an area in ggplot2 can include creating a stacked area plot to show the distribution of a variable over time, or using a filled density plot to illustrate the distribution of a continuous variable. Overall, shading an area in ggplot2 provides a visually appealing way to display data and can be customized to suit the specific needs of the plot.

Shade an Area in ggplot2 (With Examples)

You can use the following basic syntax to shade a particular area in a plot in ggplot2:

```
ggplot(df, aes(x=x, y=y)) +  
geom_point() +  
annotate('rect', xmin=3, xmax=5, ymin=3, ymax=7,  
alpha=.2, fill='red')
```

This particular example shades the area between the x-values of 3 and 5 and the y-values of 3 and 7.

The fill argument controls the color of the shaded area and the alpha argument controls the transparency of the color.

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

Example: Shade an Area in ggplot2

Suppose we have the following data frame in R that contains information about the points scored and rebounds collected by various basketball players:

#create data frame

```
df <- data.frame(points=c(3, 3, 5, 6, 7, 8, 9, 9, 8, 5),  
rebounds=c(2, 6, 5, 5, 8, 5, 9, 9, 8, 6))
```

#view data frame

df

points rebounds

1 3 2

2 3 6

3 5 5

4 6 5

5 7 8

6 8 5

7 9 9

8 9 9

9 8 8

10 5 6

We can use the following code to create a scatter plot and shade the area between the x-values of 3 and 5 and the y-values of 3 and 7 with a light red rectangle:

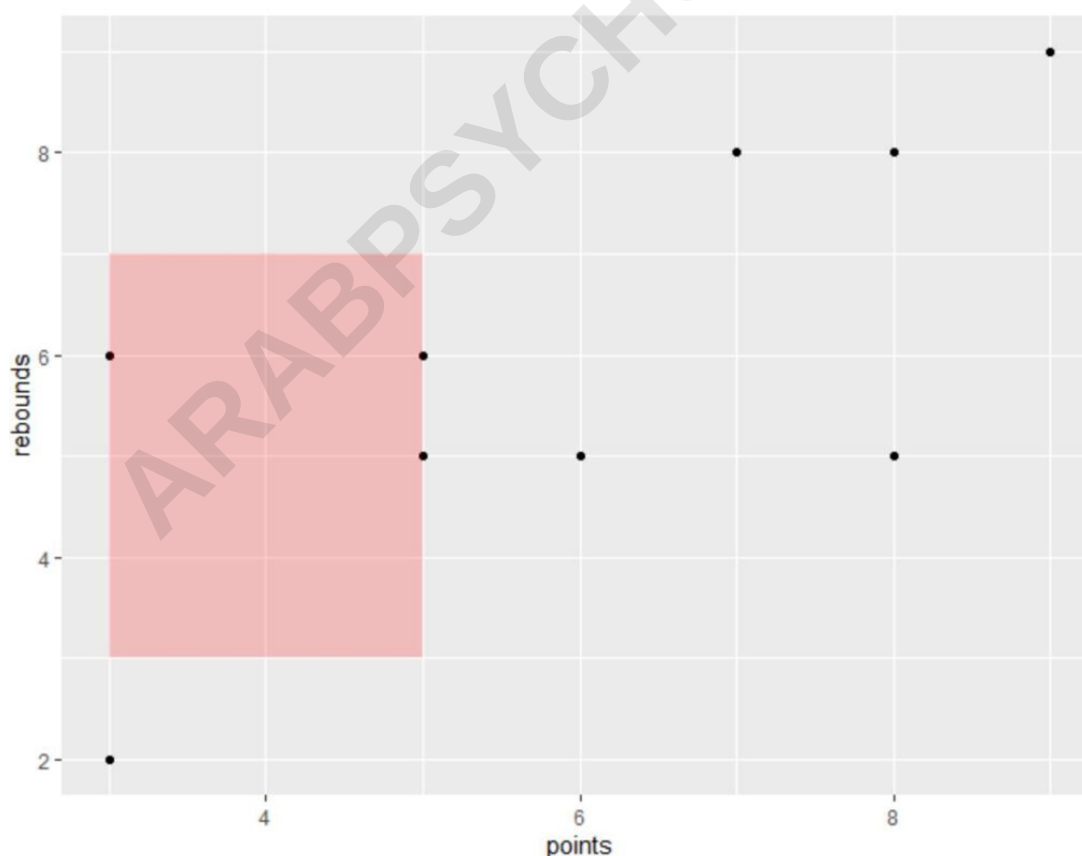
```
library(ggplot2)
```

```
#create scatter plot with shaded area
```

```
ggplot(df, aes(x=x, y=y)) +
```

```
geom_point() +
```

```
annotate('rect', xmin=3, xmax=5, ymin=3, ymax=7,  
alpha=.2, fill='red')
```



The area that we specified in the `annotate()` function is shaded with a light red rectangle.

Note that the value for the `alpha` argument ranges between 0 and 1 with lower values indicating greater transparency.

For example, if we change the value for `alpha` to 0.5, the color of the shaded area will be darker:

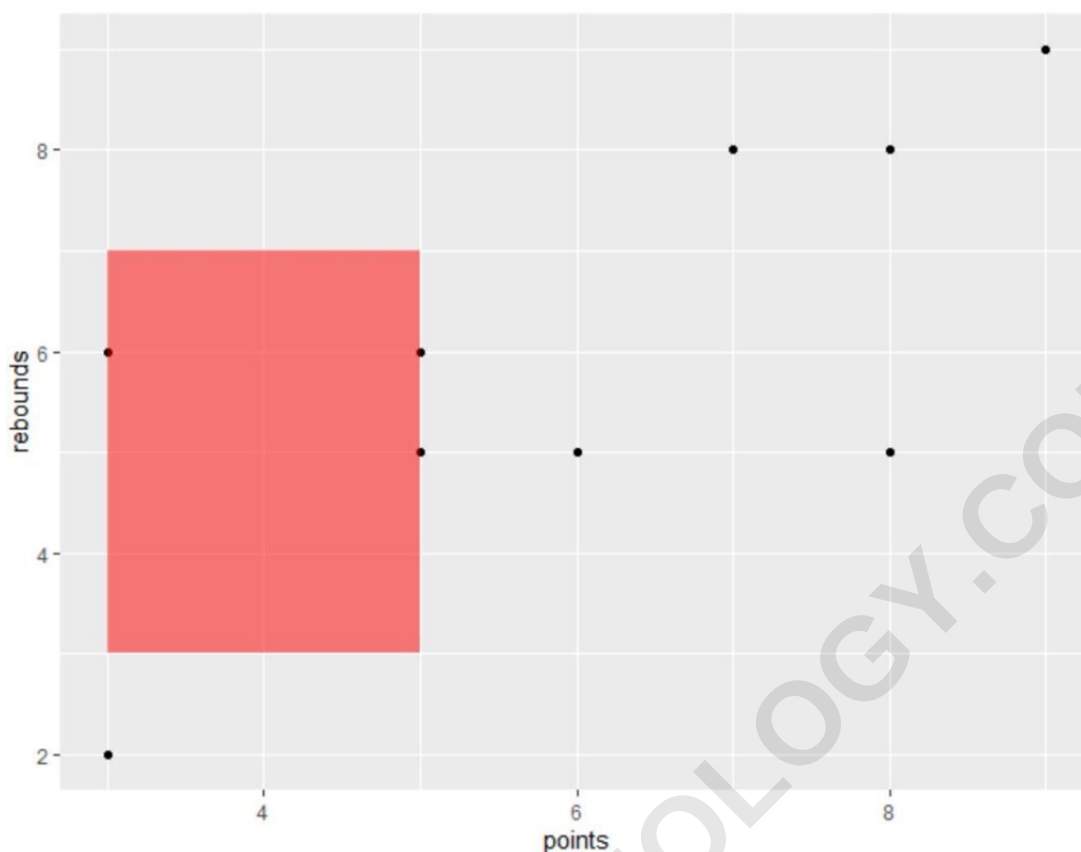
```
library(ggplot2)
```

```
#create scatter plot with shaded area
```

```
ggplot(df, aes(x=x, y=y)) +
```

```
geom_point() +
```

```
annotate('rect', xmin=3, xmax=5, ymin=3, ymax=7,  
alpha=.5, fill='red')
```



Also note that you can use the `annotate()` function multiple times to create multiple shaded areas in your plot:

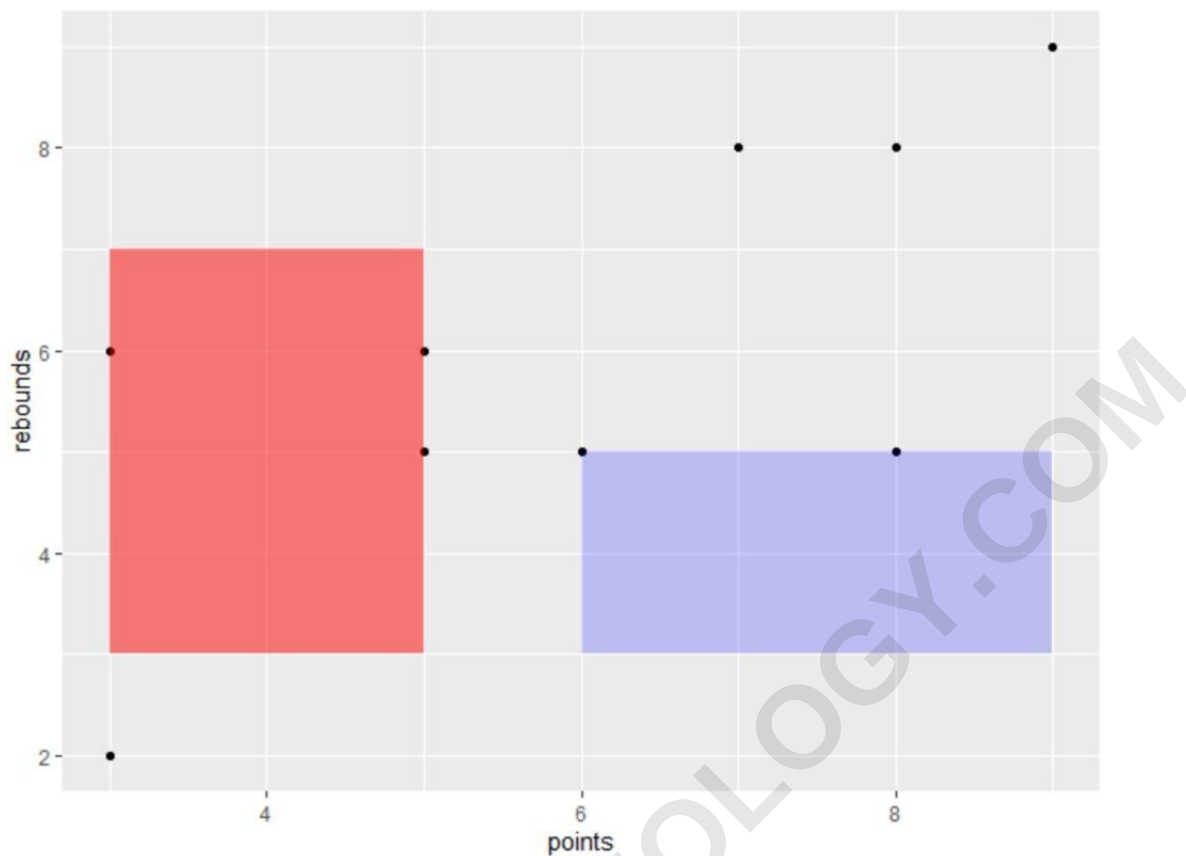
```
library(ggplot2)
```

```
#create scatter plot with two shaded areas
```

```
ggplot(df, aes(x=x, y=y)) +
```

```
geom_point() +
```

```
annotate('rect', xmin=3, xmax=5, ymin=3, ymax=7,  
alpha=.5, fill='red')
```



Feel free to play around with the arguments in the `annotate()` function to create the exact shading that you would like in your plot.