

How can I incorporate alpha with geom_point() in ggplot2?

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RECOMMENDED CITATION

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The process of incorporating alpha with geom_point() in ggplot2 involves adjusting the transparency of data points in a graph. This can be achieved by using the alpha parameter in the geom_point() function, which allows for customization of the opacity of data points. By adjusting the alpha value, the user can control the level of transparency in the graph, thereby enhancing the visibility and interpretability of the data. This feature is particularly useful for creating visually appealing and informative plots in data analysis and visualization.

Use alpha with geom_point() in ggplot2

You can use the alpha argument within the geom_point() function in ggplot2 to modify the transparency of the points in a plot.

This argument uses the following basic syntax:

```
ggplot(df, aes(x=x, y=y)) +  
geom_point(alpha=1)
```

The value for alpha can range between 0 and 1 where:

0 is completely transparent 1 is completely solid

The default value for alpha is 1.

By setting alpha to a value less than 1 it becomes easier to view overlapping points in a plot, which is particularly useful when plotting the points of a large dataset.

The following examples shows how to use the alpha argument in practice with the following data frame that contains 5,000 rows:

```
#make this example reproducible  
set.seed(1)
```

```
#create data frame with 5000 rows  
df <- data.frame(x=runif(n=5000, min=1, max=100))
```

```
df$y = df$x*3 + runif(5000)*df$x^2
```

```
#view head of data frame  
head(df)
```

```
x y
```

```
1 27.28536 108.2851
```

```
2 37.84027 622.8478
```

```
3 57.71248 1002.0662
```

```
4 90.91257 7539.2476
```

```
5 20.96651 202.6813
```

```
6 89.94058 2867.4643
```

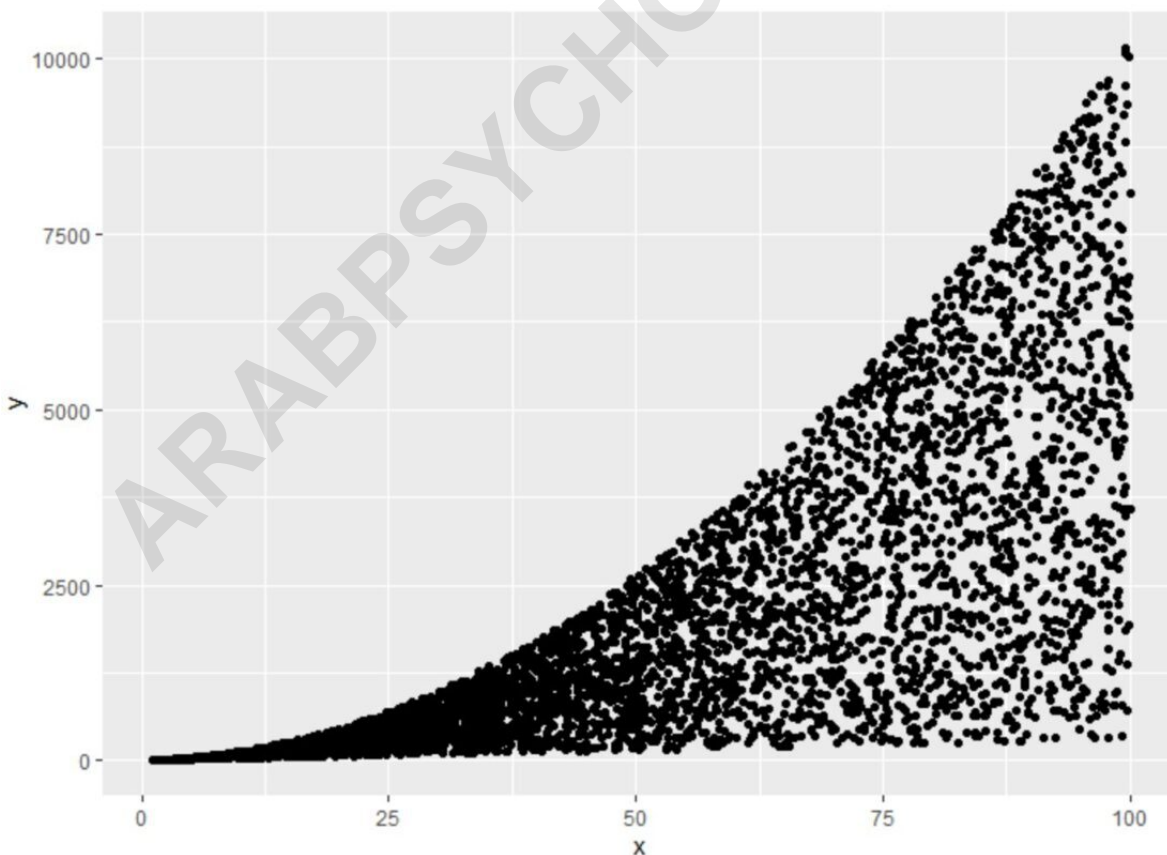
Related:

Example 1: Using alpha = 1 in geom_point()

The following code shows how to create a scatter plot in ggplot2 by using the default value of 1 for the alpha argument:

```
library(ggplot2)
```

```
#create scatter plot with default alpha value  
ggplot(df, aes(x=x, y=y)) +  
geom_point()
```



Notice that the points in the plot are completely solid, which corresponds to an alpha value of 1.

Example 2: Using alpha = 0 in geom_point()

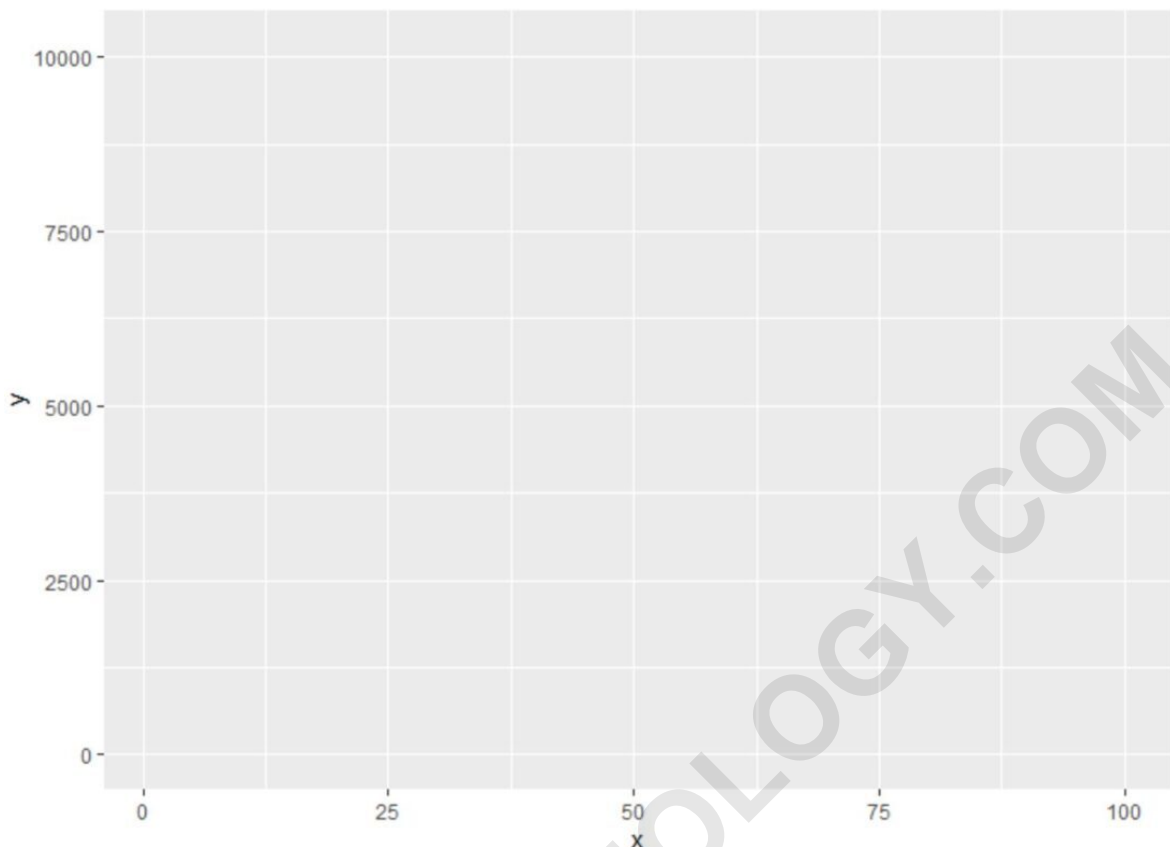
The following code shows how to create a scatter plot in ggplot2 by using a value of 0 for the alpha argument:

```
library(ggplot2)
```

```
#create scatter plot with alpha value of 0
```

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

```
geom_point(alpha=0)
```



All of the points in the plot are completely transparent, which corresponds to an alpha value of 0.

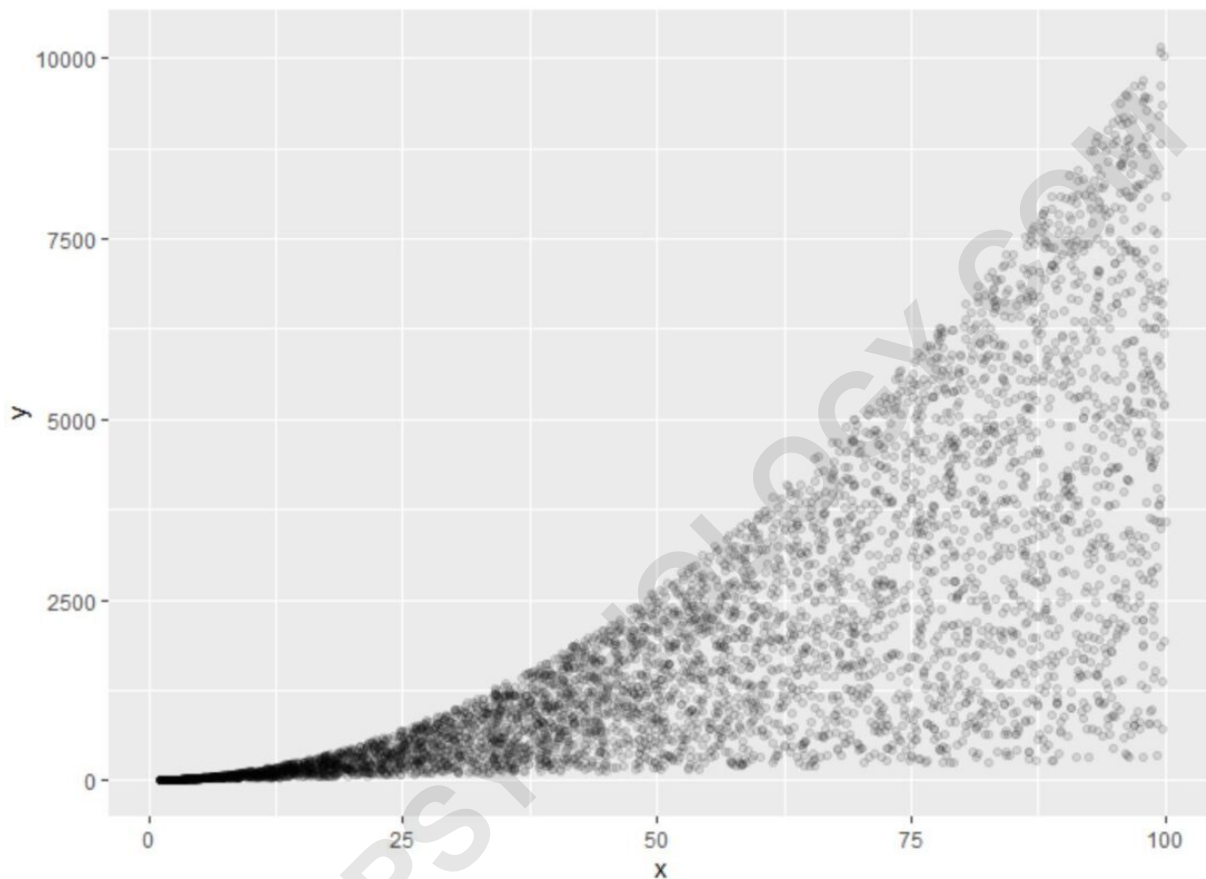
Example 3: Using alpha = 0.1 in geom_point()

The following code shows how to create a scatter plot in ggplot2 by using a value of 0.1 for the alpha argument:

```
library(ggplot2)
```

```
#create scatter plot with alpha value of 0.1
```

```
ggplot(df, aes(x=x, y=y)) +  
geom_point(alpha=0.1)
```



By setting alpha to 0.1, the points have a level of transparency that allows us to see where the points overlap the most on the plot.

Feel free to play around with the value of alpha within the `geom_point()` function to achieve a level of transparency that makes your plot the easiest to read.

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

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