How can I create a manual legend in ggplot2 with examples?

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Creating a manual legend in ggplot2 allows for the customization and organization of the legend in a graph. This can be useful when representing multiple variables or data points on a single plot. To create a manual legend in ggplot2, one must specify the labels and colors for each factor or variable in the legend using the "scale_color_manual" or "scale_fill_manual" functions. This allows for greater control over the appearance of the legend and can be particularly helpful when creating complex or customized plots. For example, if a scatter plot is created with multiple data points, a manual legend can be used to label each point by its color or shape. Overall, using a manual legend in ggplot2 can enhance the clarity and visual appeal of a graph.

Create a Manual Legend in ggplot2 (With Examples)

Often you may want to add a manual legend to a plot in ggplot2 with custom colors, labels, title, etc.

Fortunately this is simple to do using the scale_color_manual() function and the following example shows how to do so.

Example: Create Manual Legend in ggplot2

The following code shows how to plot three fitted regression lines in a plot in ggplot2 with a custom manual legend:

```
library(ggplot2)

#create data frame
df <- data.frame(x=c(1, 2, 2, 3, 5, 6, 8, 8, 9, 9, 10, 11, 12, 15, 15),
```

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```
y=c(2, 3, 3, 4, 5, 5, 6, 7, 8, 8, 9, 10, 16, 19, 28))

#create plot with three fitted regression models
ggplot(df, aes(x, y)) +
geom_point() +
geom_smooth(se=FALSE, aes(color='Linear')) +
geom_smooth(formula=y~poly(x, 2), se=FALSE,
aes(color='Quadratic')) +
geom_smooth(formula=y~poly(x, 3), se=FALSE,
aes(color='Cubic')) +
scale_color_manual(name='Regression Model',
breaks=c('Linear', 'Quadratic', 'Cubic'),
values=c('Cubic'='pink', 'Quadratic'='blue',
'Linear'='purple'))
```

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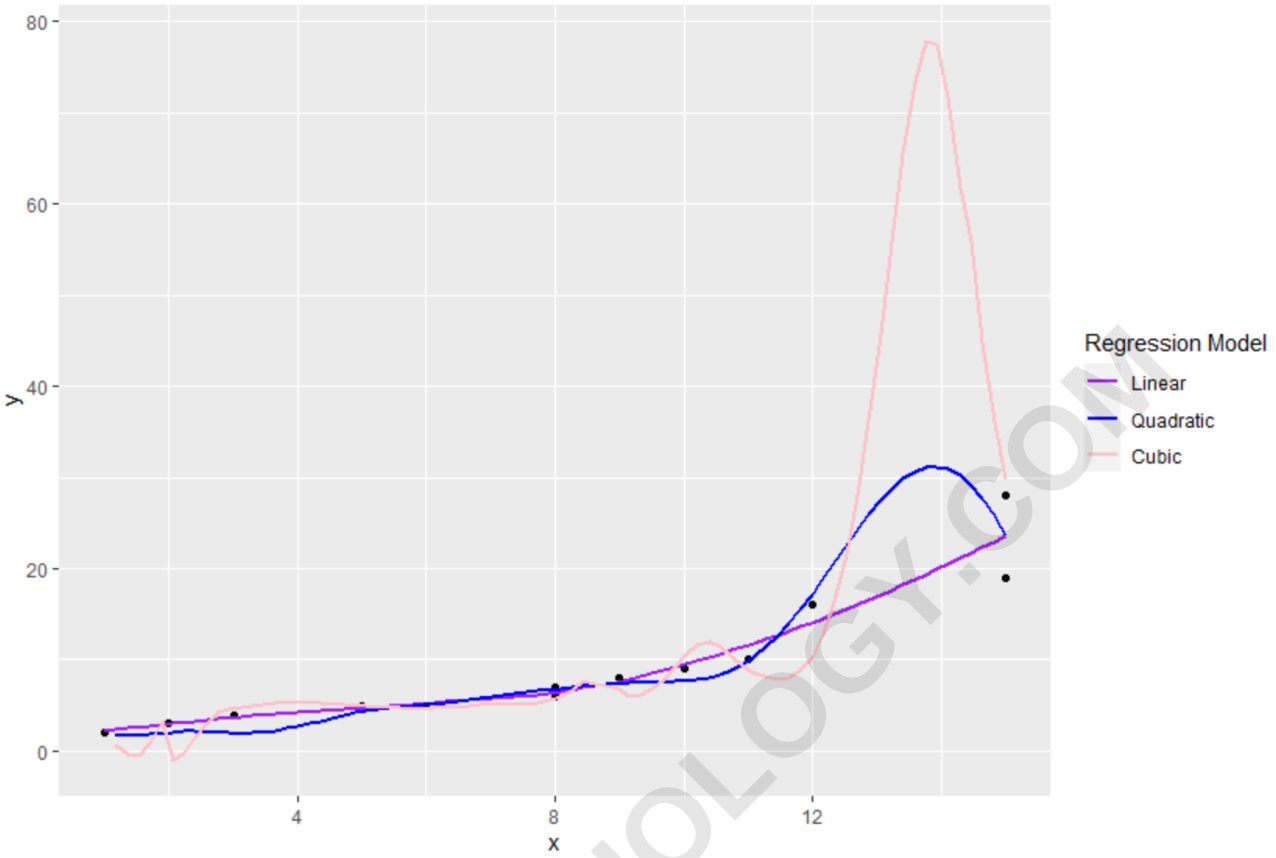

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Using the scale_color_manual() function, we were able to specify the following aspects of the legend:

name: The title of the legendbreaks: The labels in the legendvalues: The colors in the legend

Note that we can also use the theme() function to modify the font size of the elements in the legend:

library(ggplot2)

#create data frame

```
df <- data.frame(x=c(1, 2, 2, 3, 5, 6, 8, 8, 9, 9, 10, 11, 12, 15, 15),
y=c(2, 3, 3, 4, 5, 5, 6, 7, 8, 8, 9, 10, 16, 19, 28))

#create plot with three fitted regression models
ggplot(df, aes(x, y)) +
geom_point() +
geom_smooth(se=FALSE, aes(color='Linear')) +
geom_smooth(formula=y~poly(x, 2), se=FALSE, aes(color='Quadratic')) +
geom_smooth(formula=y~poly(x, 3), se=FALSE, aes(color='Cubic')) +
scale_color_manual(name='Regression Model',
breaks=c('Linear', 'Quadratic', 'Cubic'),
values=c('Cubic'='pink', 'Quadratic'='blue', 'Linear'='purple'))+
theme(legend.title=element_text(size=20),
legend.text=element_text(size=14))
```

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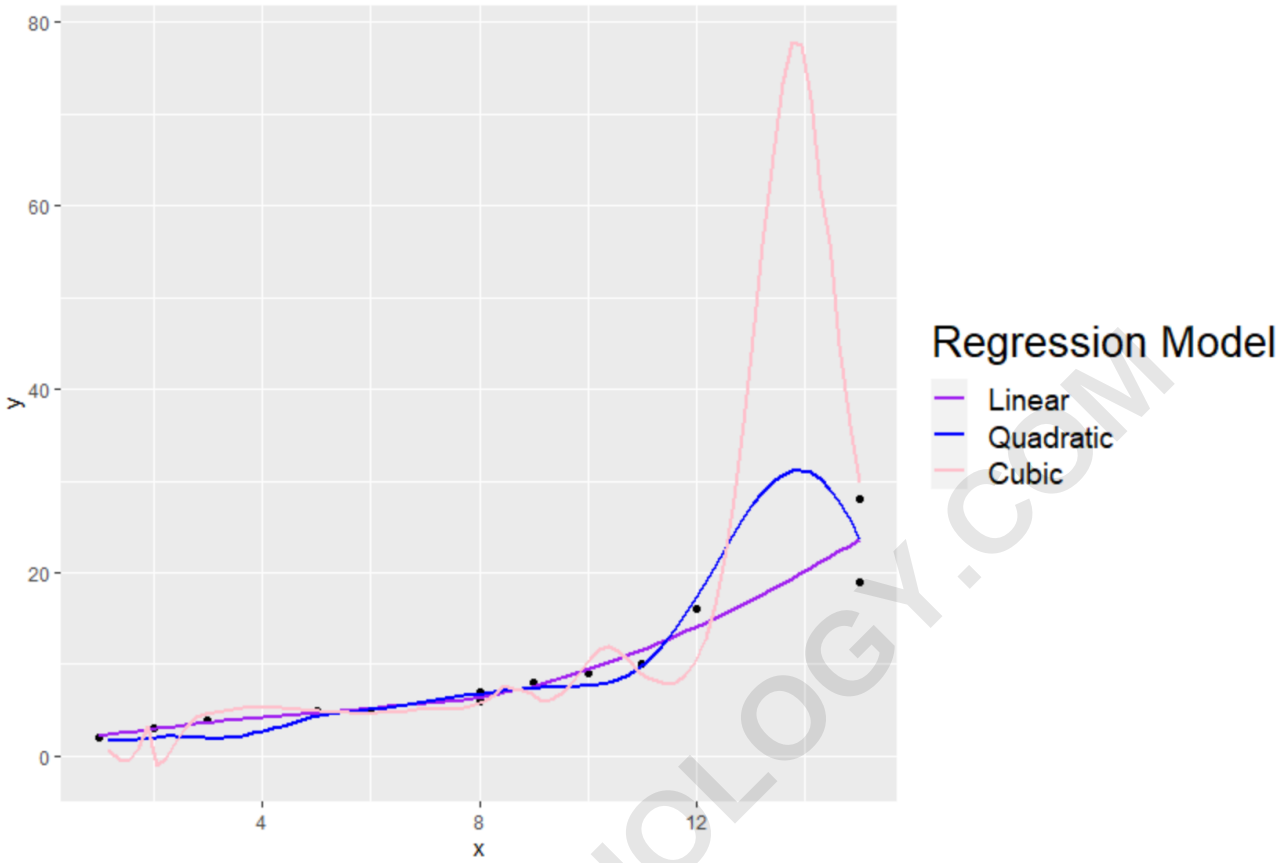

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Notice that the font size of both the title and the labels in the legend were increased.

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