Labels | Graphics for Communication with ggplot2

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Document Setup

Metadata Setup

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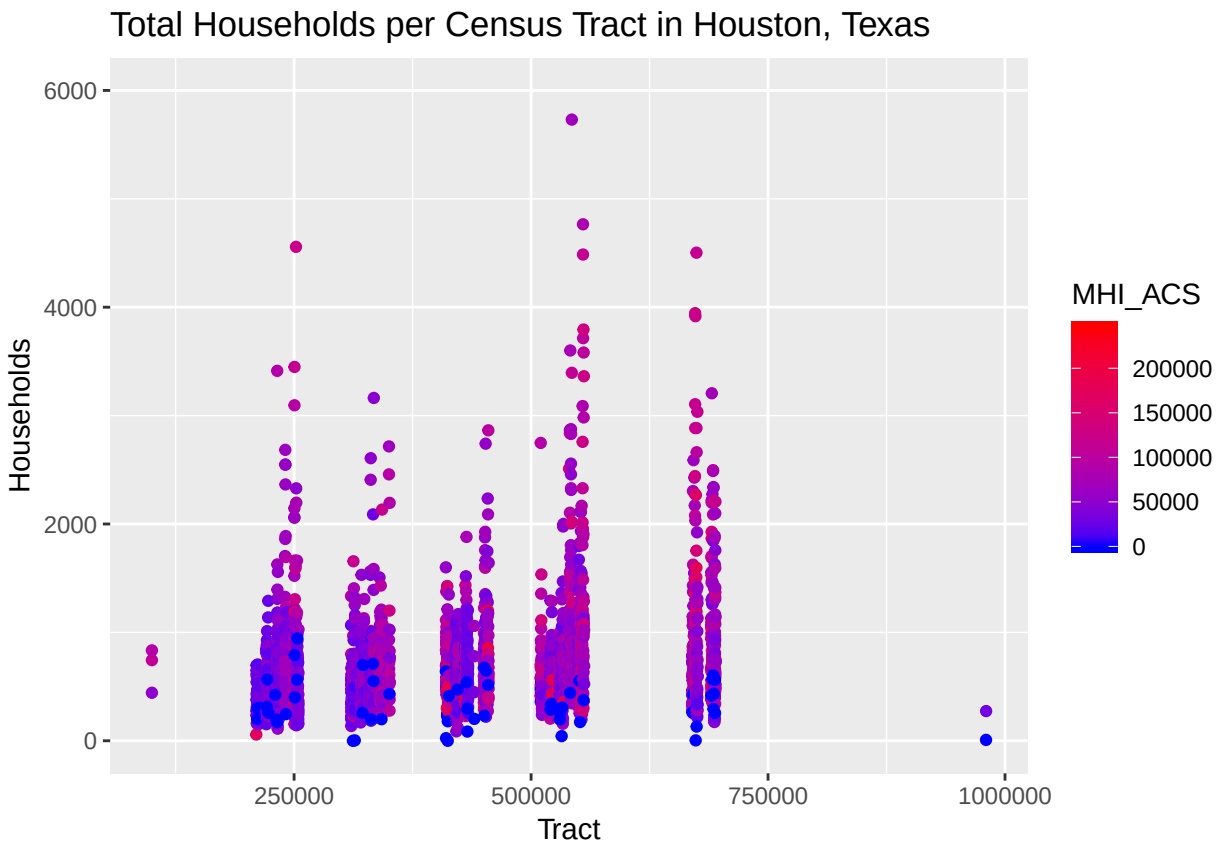
Initial Code Setup

```
knitr::opts_chunk$set(message = FALSE, warning = FALSE)
library(dplyr)
library(ggplot2)
houston = read.csv("Harvey_BG.csv")
```

Add a Plot Title

The first label we will add to our plot is a title label. To add a label to ggplot2, we will be using the `labs()` function. The purpose of your plot title is to summarize your findings. Good titles avoid just describing what the plot is. For example, "A scatterplot of engine displacement vs. fuel economy."

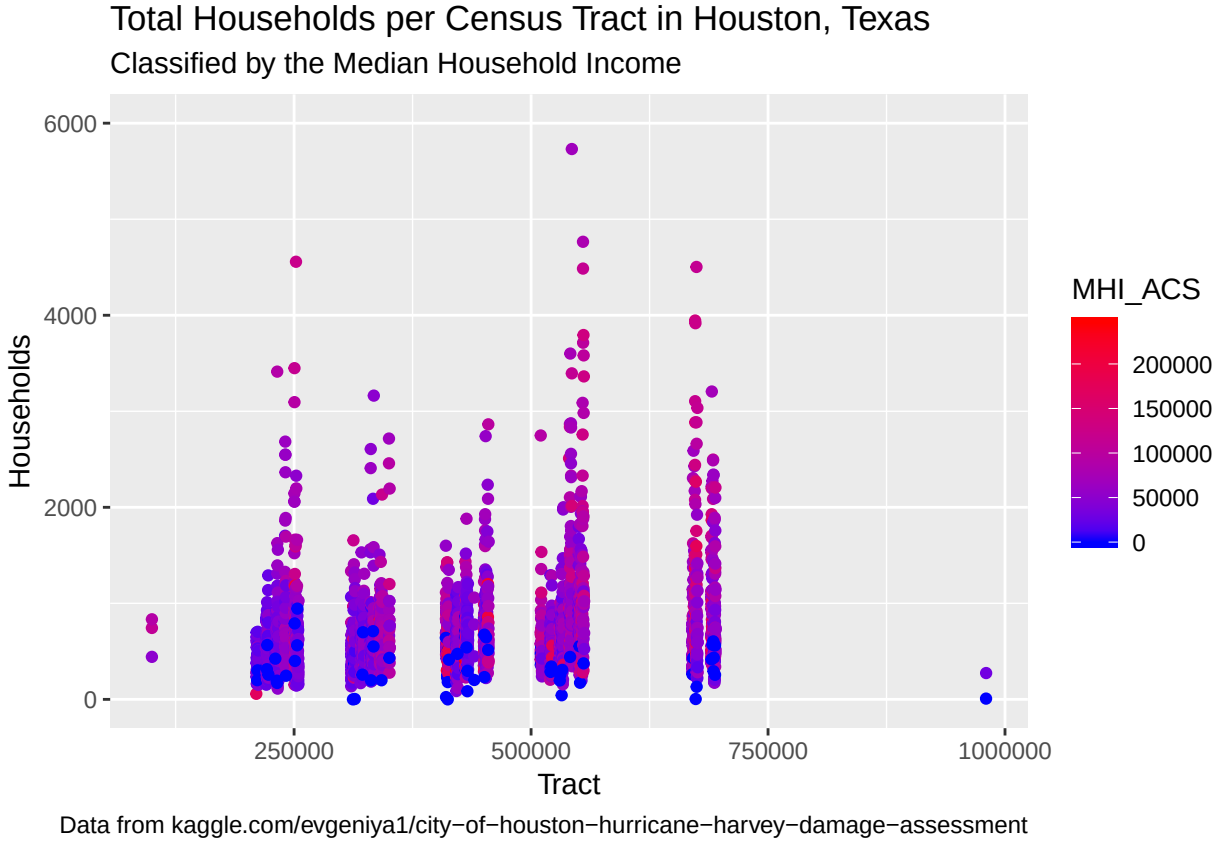
```
ggplot(houston, aes(Tract, Households)) +
  geom_point(aes(color = MHI_ACS)) + scale_color_gradient(low="blue", high="red") + ylim(0, 6000) +
  labs(
    title = paste( "Total Households per Census Tract in Houston, Texas" )
  )
```



Subtitle & Caption

If you need to add more text without making the main title too long, you can add a subtitle and caption. A **subtitle** adds additional details in right below the title in smaller text. A **caption** adds text at the bottom right of the plot, which is often used to describe the source of the data.

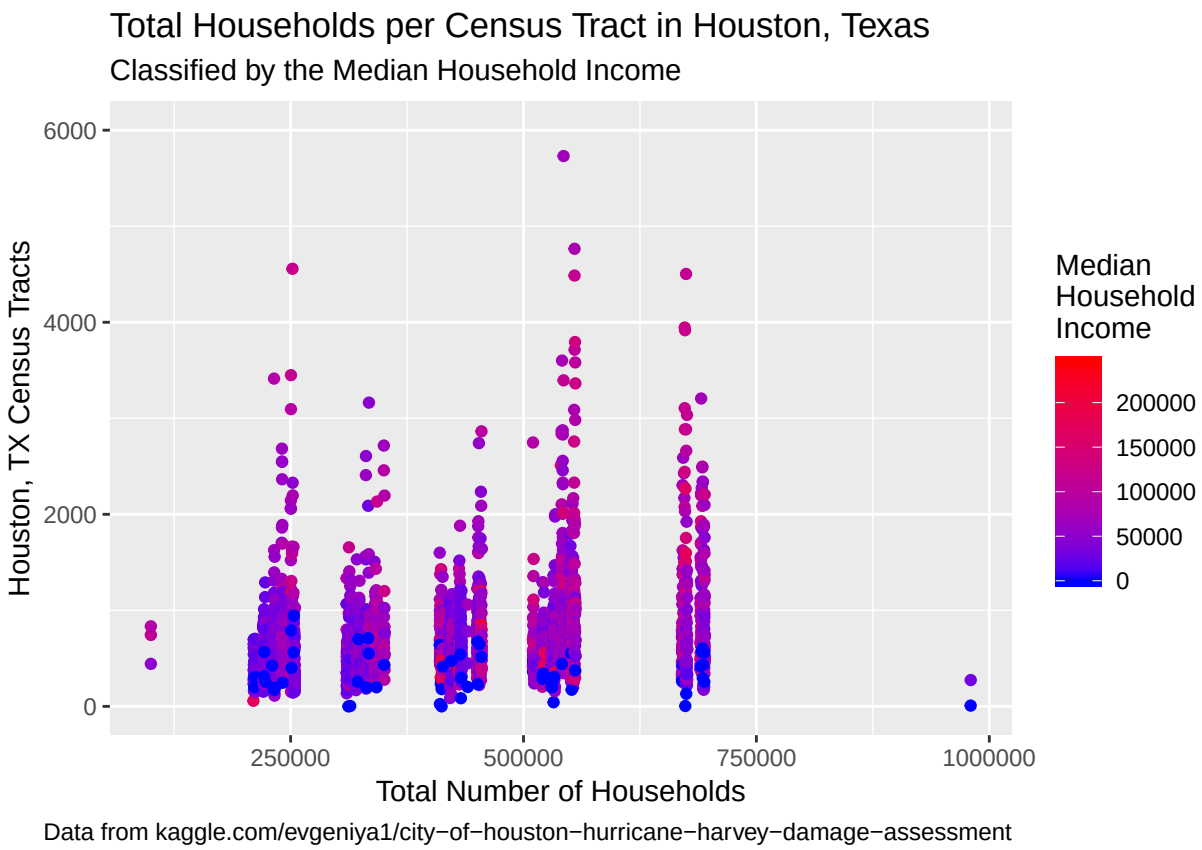
```
ggplot(houston, aes(Tract, Households)) +
  geom_point(aes(color = MHI_ACS)) + scale_color_gradient(low="blue", high="red") + ylim(0, 6000) +
  labs(
    title = paste( "Total Households per Census Tract in Houston, Texas" ),
    subtitle = paste( "Classified by the Median Household Income" ),
    caption = "Data from kaggle.com/evgeniya1/city-of-houston-hurricane-harvey-damage-assessment"
  )
```



Axis & Legend Titles

You can also use `labs()` to replace the axis and legend titles.

```
ggplot(houston, aes(Tract, Households)) +
  geom_point(aes(color = MHI_ACS)) + scale_color_gradient(low="blue", high="red") + ylim(0, 6000) +
  labs(
    title = paste( "Total Households per Census Tract in Houston, Texas" ),
    subtitle = paste( "Classified by the Median Household Income" ),
    caption = "Data from kaggle.com/evgeniya1/city-of-houston-hurricane-harvey-damage-assessment",
    x = "Total Number of Households", y = "Houston, TX Census Tracts", color = "Median \nHousehold  \nIncome"
  )
```



Mathematical Equations

It's possible to use mathematical equations instead of text strings. Just switch "" out for `quote()` and read about the available options in `?plotmath:`. The following example is from the textbook *R for Data Science*

```
df <- tibble(
  x = runif(30), y = runif(30)
)
ggplot(df, aes(x,y)) +
  geom_point() +
  labs(
    x = quote(sum(x[i]^2, i== 1, n)), y = quote(alpha + beta + frac(delta, theta))
  )
```