Tips for ggplot2

Plot creation steps

1. Set the data
2. Choose a shape layer
3. Map variables to aesthetics
4. Add non-variable adjustments

Basic ggplot2 syntax

data and aesthetics will carry through from main function to shape layers

Main function

```
ggplot(data = data_frame,
       mapping = aes(...))
```

+

Shape layer

```
geom_...(data = data_frame,
         mapping = aes(...),
         non-variable adjustments)
```

+

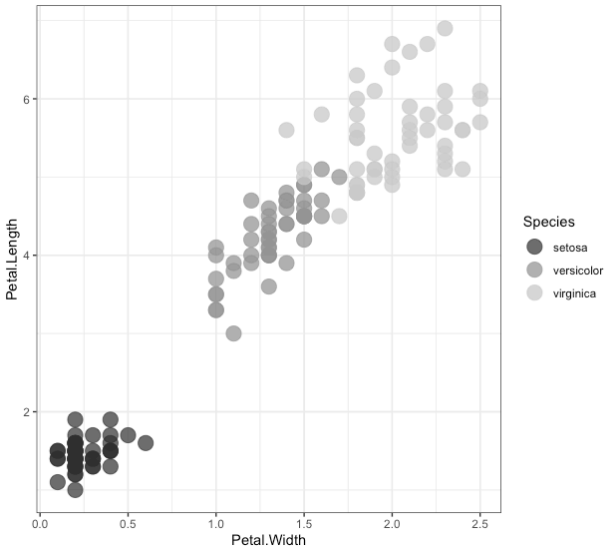
Shape layer

```
geom_...(data = data_frame,
         mapping = aes(...),
         non-variable adjustments)
```

Example with code

Petal.Width	Petal.Length	Species
0.3	1.4	setosa
1.3	4.0	versicolor
2.1	5.7	virginica

```
ggplot(data=iris) +
  geom_point(
    mapping=aes(
      x=Petal.Width,
      y=Petal.Length,
      color=Species),
    size=5, alpha=.75)
```



Other useful layers

`geom_hline(), geom_vline()`	Horizontal and vertical lines on chart
`geom_smooth(method="lm", se=F)`	Linear trend line based on the data
`geom_text()`	Text labels for individual datapoints
`annotate()`	Extra text and shapes, not related to data
`coord_flip()`	flip whatever has been mapped to x and y axes
`facet_wrap(~a), facet_grid(a~b)`	split plot into small multiples; use "." for blank
`labs(title=…, x=…, y=…)`	Add chart and axis titles
`theme_…()`	Use and/or customize a different theme
`base_size=…`	Increase or decrease size of most text elements
`scale_[aes]_[transform](…)`	Manipulate specific aes mappings
`scale_x_continuous()`	Edit a numerical x axis
`scale_x_log10()`	Apply a log transform to x axis
`scale_x_discrete()`	Edit a discrete x axis
`scale_fill_manual()`	Edit categorical fill values manually
`common options:`	
`limits=c(…)`	change minimum and maximum limits
`breaks=c(…)`	change where axis/legend breaks are
`labels=c(…)`	change labels on axes/legends
`values=c(…)`	set values for manual discrete color scale
`name=""`	change label for axis/legend