



# STOR 320 Data Visualization

Lecture 1

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# Why are We Here?

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- To Install Some Key R Packages
  - Tidyverse
- To Practice Coding via R Scripts
- To Learn Elements of ggplot2
- Practice Making Visually Stunning Pictures



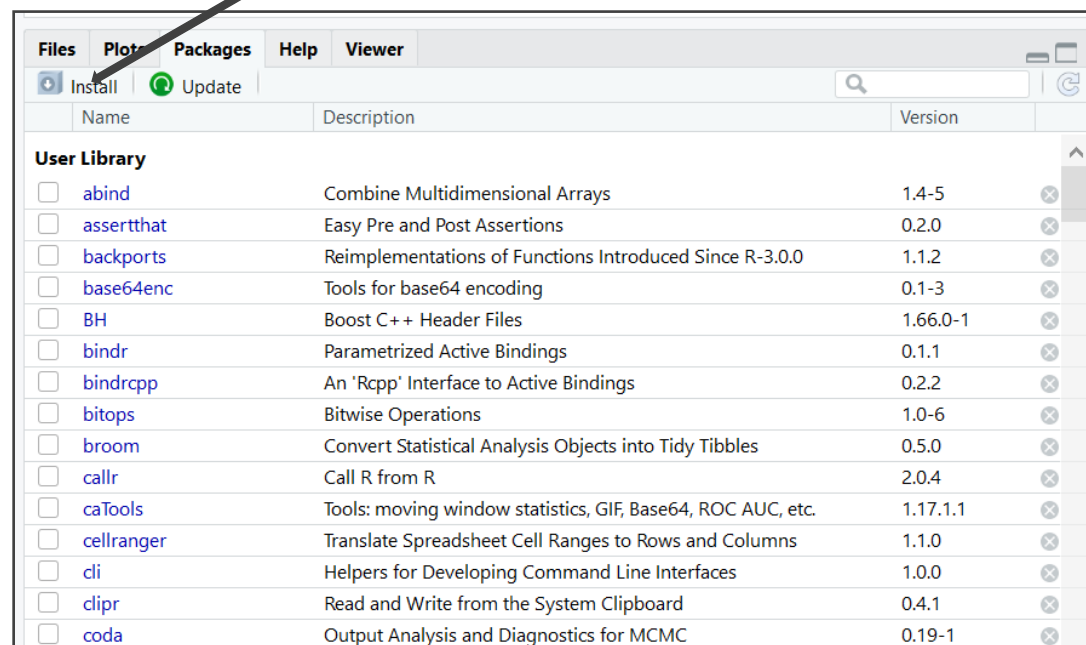
# Initial Steps in RStudios

- Install Tidyverse Package

```
> install.packages("tidyverse")
```

- Other Packages To Be Installed
  - RColorBrewer
  - Rmarkdown

Select Install and Search on CRAN



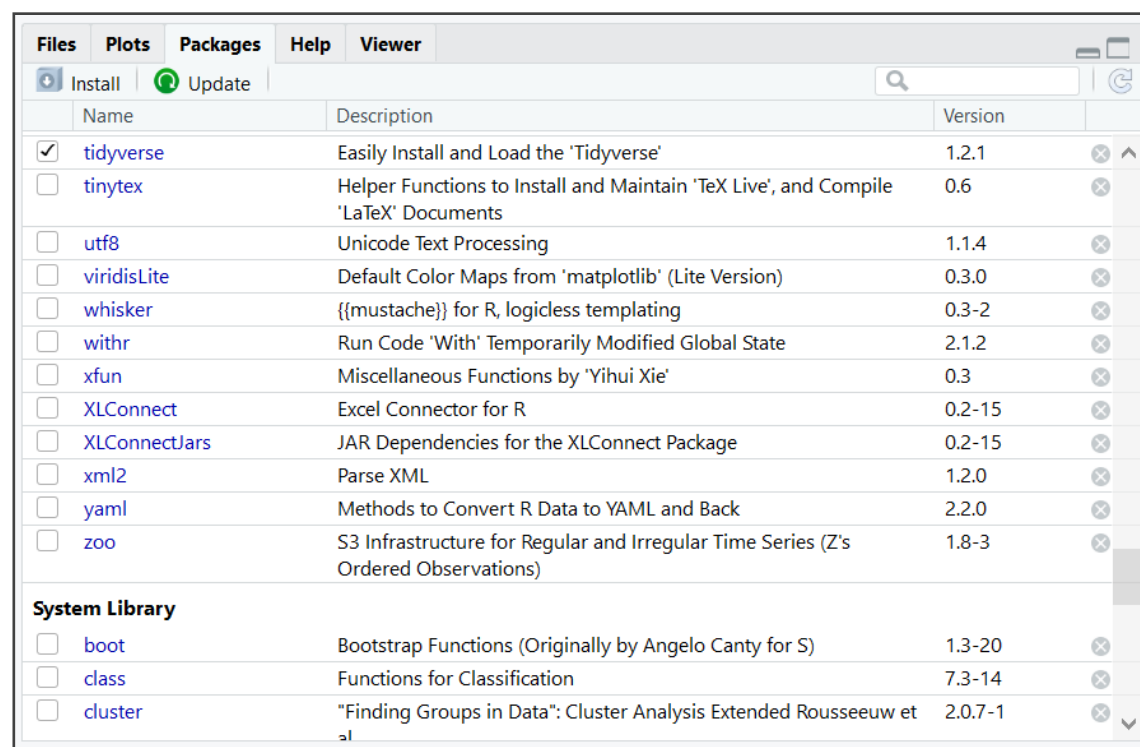


# Initial Steps in RStudios


- To Use the Package
  - Code

```
> library("tidyverse")
```

- Check Box for Tidyverse



- Help Page: [Link](#)
- Comes with Preloaded Datasets

 **ggplot2** part of the tidyverse

Reference

Data

ggplot2 comes with a selection of built-in datasets that are used in examples to illustrate various visualisation challenges.

<b>diamonds</b>	Prices of 50,000 round cut diamonds
<b>economics</b>	US economic time series
<b>faithfuld</b>	2d density estimate of Old Faithful data
<b>midwest</b>	Midwest demographics
<b>mpg</b>	Fuel economy data from 1999 and 2008 for 38 popular models of car
<b>msleep</b>	An updated and expanded version of the mammals sleep dataset
<b>presidential</b>	Terms of 11 presidents from Eisenhower to Obama
<b>seals</b>	Vector field of seal movements
<b>txhousing</b>	Housing sales in TX
<b>luv_colours</b>	<code>colors()</code> in Luv space



# ggplot2 Cheat Sheet

- Many Useful Plots and Charts Provided
  - See Cheat Sheet: [Link](#)  
(Also on Course Website)
  - Called Geoms (Geometric Objects)
  - The Geom you choose Must Comply with the Type of Variables You are Analyzing
- Organized by Type of Data
  - Univariate
  - Bivariate
  - Mixtures of Categorical and Numeric



# ggplot2 General Form

- ggplot2 General Form

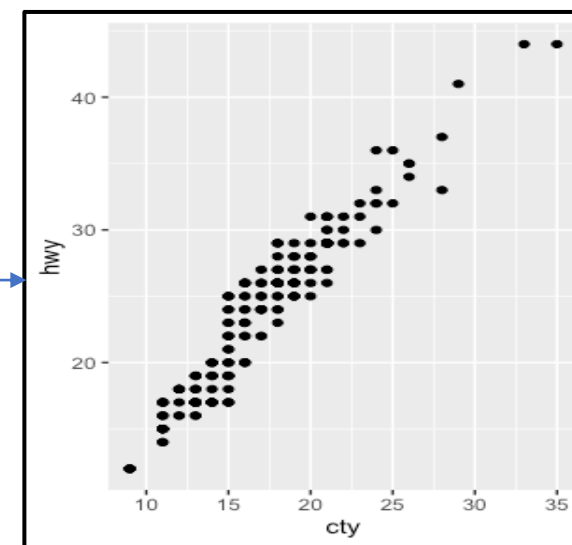
Fill in Blank With  
Name of Data in R

```
> ggplot(data=_____) +  
  geom_TYPE(mapping=aes(x=____,y=____, etc.))
```

- Example:

Fill in Blanks  
from Variables  
in Data

```
> ggplot(data=mpg) +  
  geom_point(mapping=aes(x=cty,y=hwy))
```



# Tutorial



- Locate Tutorial 1 on Course Website
- Download Rmd File
- Open Rmd File on Computer
- Knit the Rmd File to HTML format
- View Graphs with Me