



STOR 320 Data Visualization

Lecture 1

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Why are We Here?

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



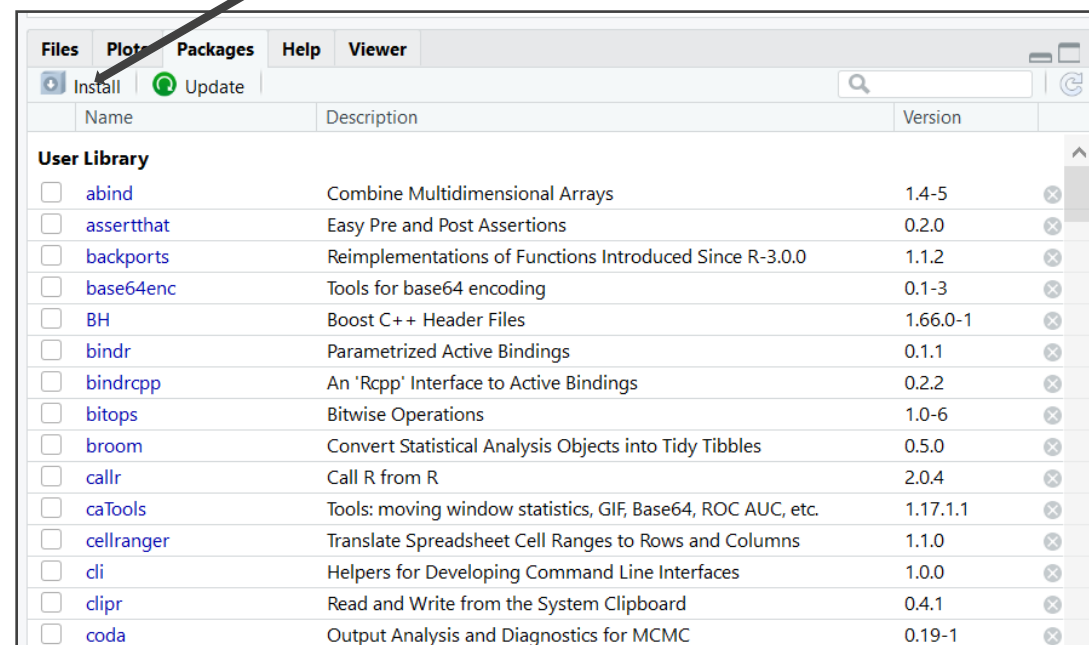
Initial Steps in RStudios

- Install Tidyverse Package

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

- Other Packages To Be Installed
 - RColorBrewer
 - Rmarkdown

Select Install and Search on CRAN



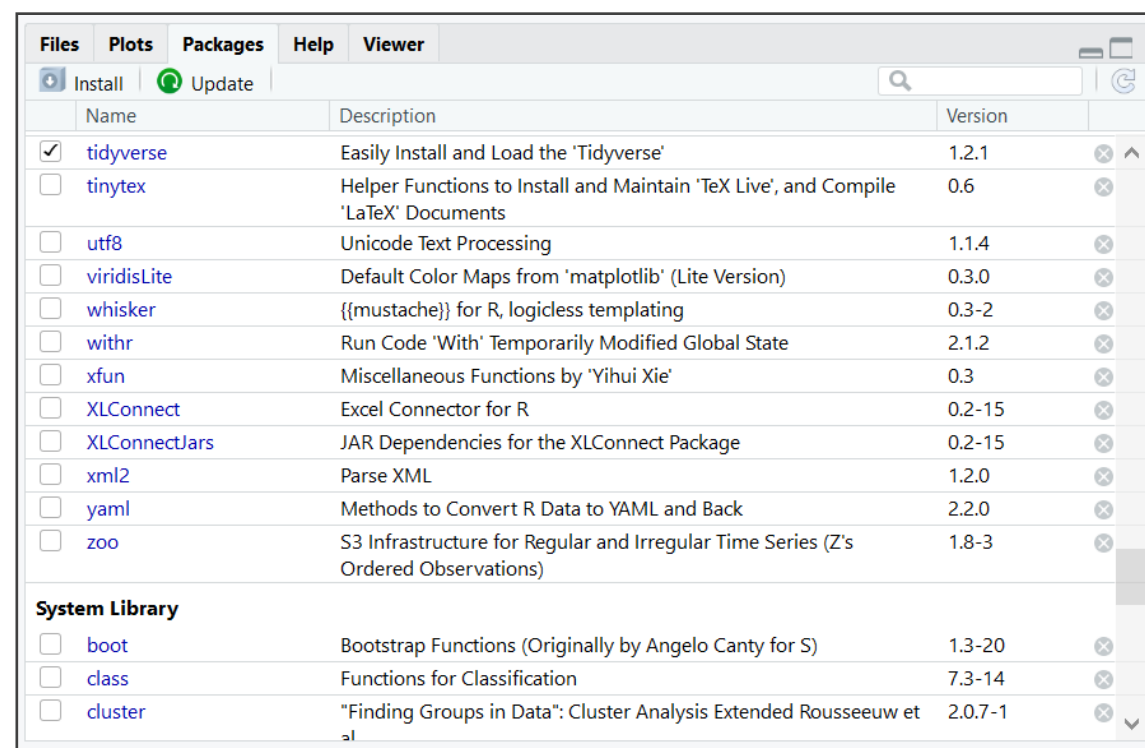


Initial Steps in RStudios

- To Use the Package
 - Code

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


- Check Box for Tidyverse



ggplot2



- 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.

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

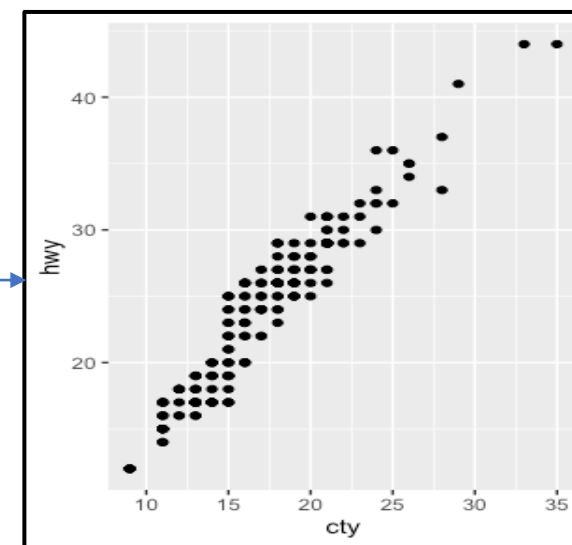
Fill in Blank With
Name of Data in R

```
> 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