



Data Visualization

Who are you?



I Still Don't Know

Fill-out : Form

Why are We Here?



- To Develop a Personal and Intimate Hate/Love Relationship With R
- To Install Some Key R Packages
 - Tidyverse
 - Rmarkdown
- To Practice Coding via R Scripts
- To Learn Elements of ggplot2
- To Practice Making Visually Stunning Pictures that Change Lives

Initial Steps in RStudio

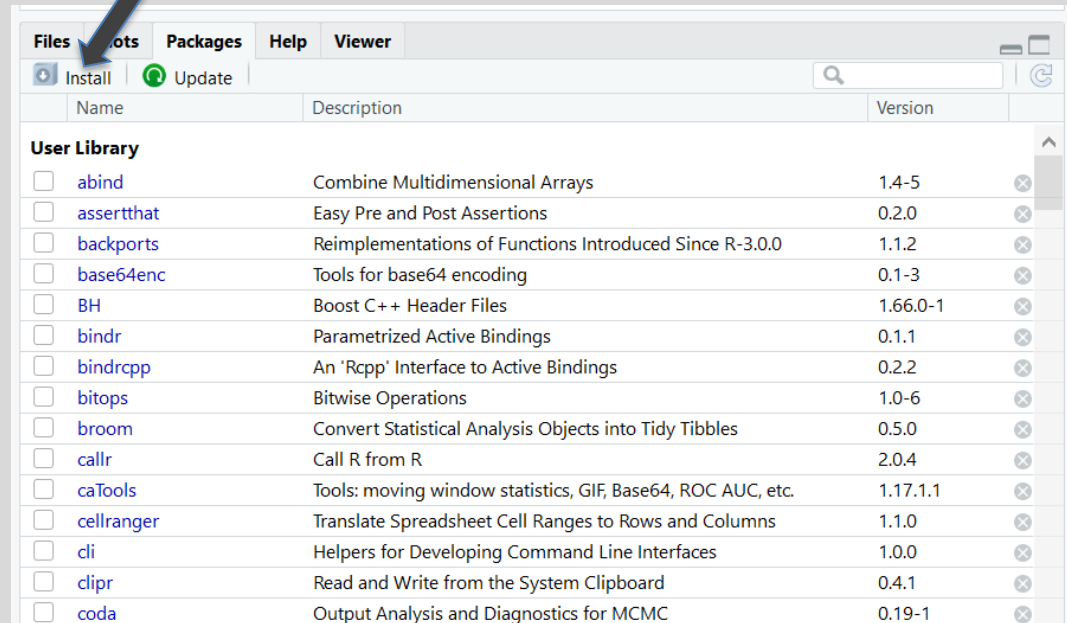


- Install Tidyverse Package

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

- Other Packages To Be Installed
 - RColorBrewer
 - RMarkdown

Select Install and Search on CRAN



Initial Steps in RStudio

- To Use the Package

- Code

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

- Check Box for Tidyverse



Files	Plots	Packages	Help	Viewer
<input checked="" type="checkbox"/> Install <input checked="" type="checkbox"/> Update				
Name		Description	Version	
<input checked="" type="checkbox"/>	tidyverse	Easily Install and Load the 'Tidyverse'	1.2.1	<input checked="" type="checkbox"/>
<input type="checkbox"/>	tinytex	Helper Functions to Install and Maintain 'TeX Live', and Compile 'LaTeX' Documents	0.6	<input checked="" type="checkbox"/>
<input type="checkbox"/>	utf8	Unicode Text Processing	1.1.4	<input checked="" type="checkbox"/>
<input type="checkbox"/>	viridisLite	Default Color Maps from 'matplotlib' (Lite Version)	0.3.0	<input checked="" type="checkbox"/>
<input type="checkbox"/>	whisker	{{mustache}} for R, logicless templating	0.3-2	<input checked="" type="checkbox"/>
<input type="checkbox"/>	withr	Run Code 'With' Temporarily Modified Global State	2.1.2	<input checked="" type="checkbox"/>
<input type="checkbox"/>	xfun	Miscellaneous Functions by 'Yihui Xie'	0.3	<input checked="" type="checkbox"/>
<input type="checkbox"/>	XLConnect	Excel Connector for R	0.2-15	<input checked="" type="checkbox"/>
<input type="checkbox"/>	XLConnectJars	JAR Dependencies for the XLConnect Package	0.2-15	<input checked="" type="checkbox"/>
<input type="checkbox"/>	xml2	Parse XML	1.2.0	<input checked="" type="checkbox"/>
<input type="checkbox"/>	yaml	Methods to Convert R Data to YAML and Back	2.2.0	<input checked="" type="checkbox"/>
<input type="checkbox"/>	zoo	S3 Infrastructure for Regular and Irregular Time Series (Z's Ordered Observations)	1.8-3	<input checked="" type="checkbox"/>
System Library				
<input type="checkbox"/>	boot	Bootstrap Functions (Originally by Angelo Canty for S)	1.3-20	<input checked="" type="checkbox"/>
<input type="checkbox"/>	class	Functions for Classification	7.3-14	<input checked="" type="checkbox"/>
<input type="checkbox"/>	cluster	"Finding Groups in Data": Cluster Analysis Extended Rousseeuw et al	2.0.7-1	<input checked="" type="checkbox"/>

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.

diamonds

Prices of 50,000 round cut diamonds

economics

US economic time series

faithful

2d density estimate of Old Faithful data

midwest

Midwest demographics

mpg

Fuel economy data from 1999 and 2008 for 38 popular models of car

msleep

An updated and expanded version of the mammals sleep dataset

presidential

Terms of 11 presidents from Eisenhower to Obama

seals

Vector field of seal movements

txhousing

Housing sales in TX

luv_colours

`colors()` in Luv space

ggplot2



- Many Useful Plots and Charts Provided
 - See Cheat Sheet: [Link](#)
(Also on Course Website)
 - Identified as Geoms (Geometric Objects)
- Organized by Type of Data
 - Univariate
 - Bivariate
 - Mixtures of Categorical and Numeric
- ggplot2 General Form
 - The geom you choose has to comply with the type of variables you are analyzing

```
> ggplot(data=DATA) +  
  geom_TYPE(mapping=aes(x=XVAR,y=YVAR, etc.))
```

- Fill in blanks from dataset

ggplot2



Now, let us

PRACTICE

Start by downloading
Tutorial2.Rmd to Your Computer
from the Course Website and
open the file in RStudio

Closing?



Disperse
and Make
Reasonable
Decisions