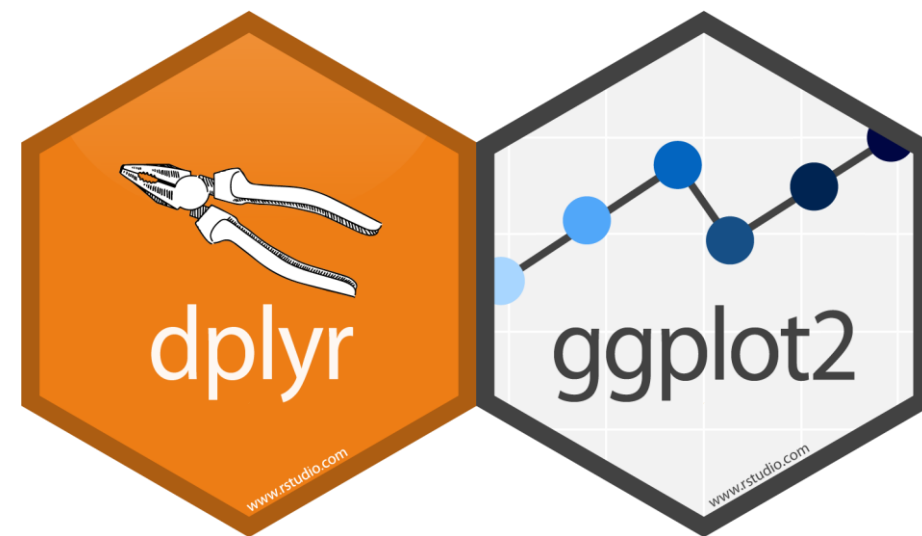


# Introduction to R - Day 3:

## Transform and Visualise with



James Morgan



@jmorgan



@mogranjm



jamesa.morgan@petermac.org

[Adapted from “Exploring the Tidyverse” CC by Hadley Wickham](#)

# Introduction

HELLO  
my name is

**James**

No sticky note: "I'm happily working on it"



**Green** sticky note: "I'm all done and ready to move on"



**Orange** sticky note: "I'm stuck, can someone help me?"

Alternatively, flag one of us down



Hopefully, color-blind friendly, let me know if not.

**This class is heavily based on**

R for Data Science

<http://r4ds.had.co.nz/>

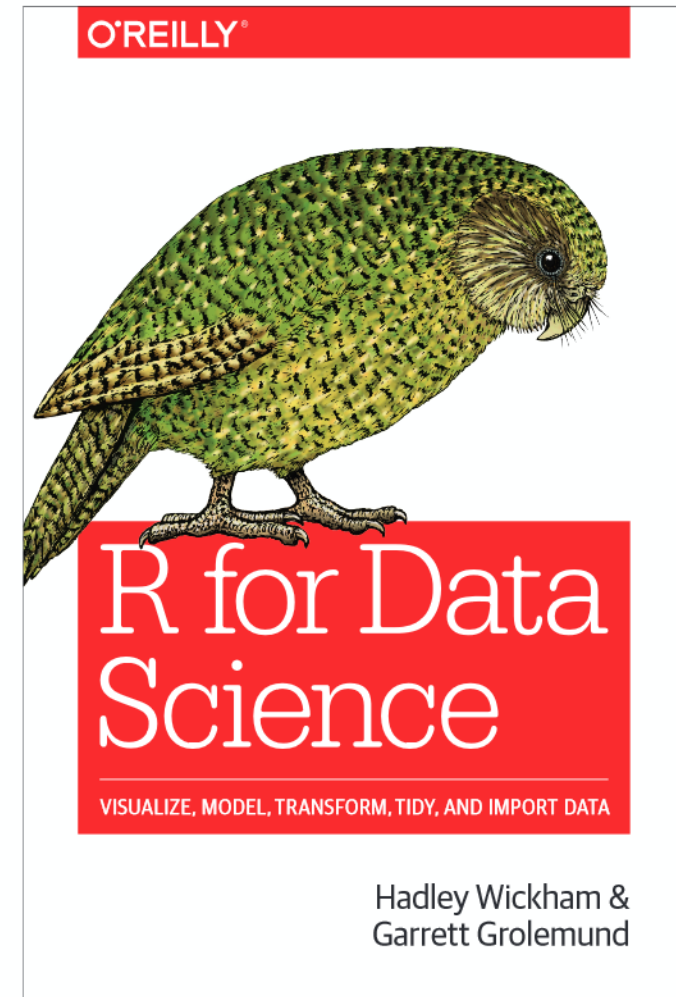
Chapter 3: Data Visualisation

Chapter 5: Data Transformation

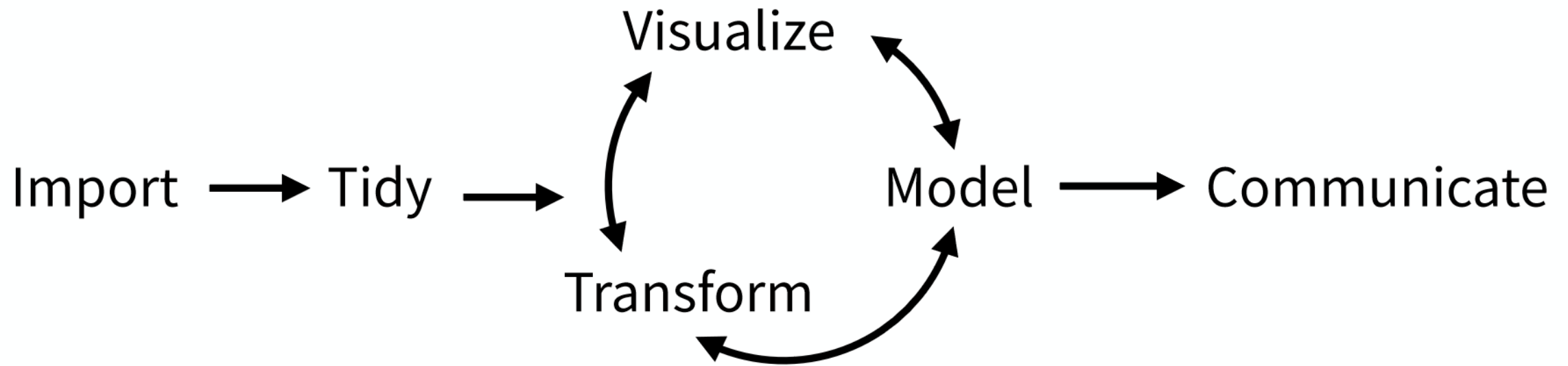
and

Exploring the Tidyverse

<https://github.com/hadley/data-science-in-tidyverse/>

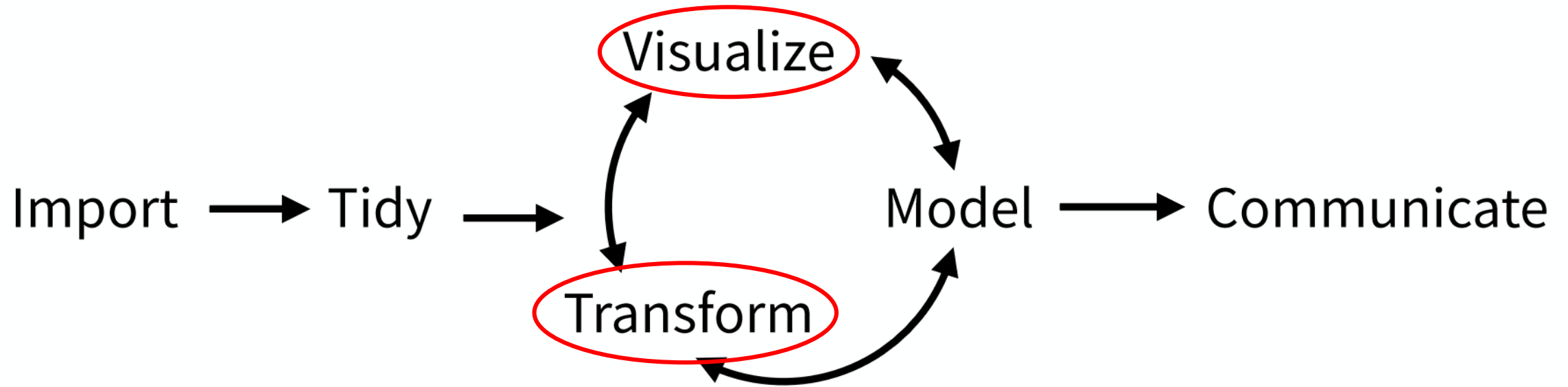


# (Applied) Data Science

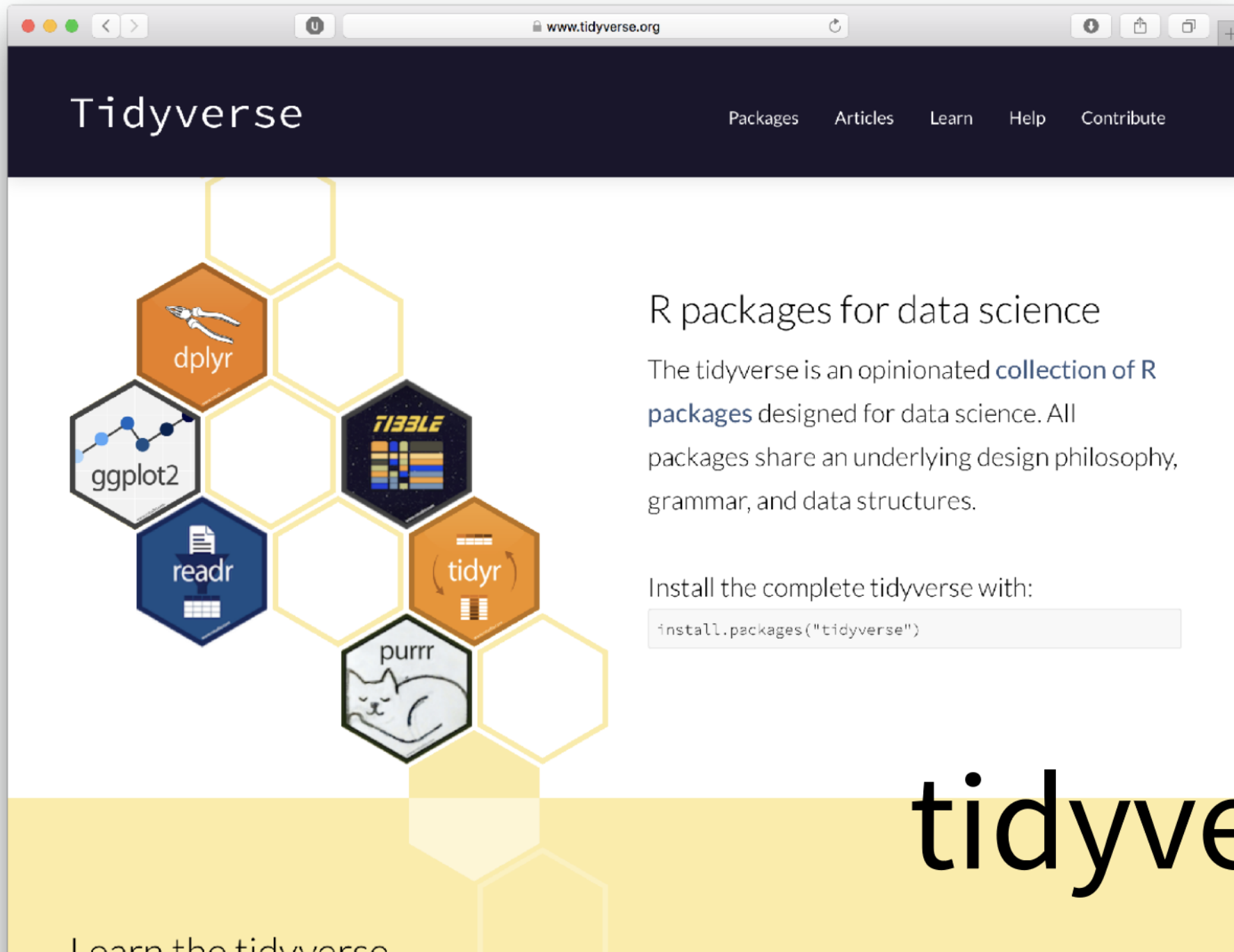


Program

# (Applied) Data Science



Program



tidyverse.org



# tidyverse



An R package that serves as a short cut for installing and loading the components of the tidyverse.

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

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

does the equivalent of

```
install.packages("ggplot2")  
install.packages("dplyr")  
install.packages("tidyr")  
install.packages("readr")  
install.packages("purrr")  
install.packages("tibble")  
install.packages("stringr")  
install.packages("forcats")  
install.packages("lubridate")  
install.packages("hms")  
install.packages("DBI")  
install.packages("haven")  
install.packages("httr")  
install.packages("jsonlite")  
install.packages("readxl")  
install.packages("rvest")  
install.packages("xml2")  
install.packages("modelr")  
install.packages("broom")
```

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

does the equivalent of

```
install.packages("ggplot2")
install.packages("dplyr")
install.packages("tidyr")
install.packages("readr")
install.packages("purrr")
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install.packages("readxl")
install.packages("rvest")
install.packages("xml2")
install.packages("modelr")
install.packages("broom")
```

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

does the equivalent of

```
library("ggplot2")
library("dplyr")
library("tidyr")
library("readr")
library("purrr")
library("tibble")
library("stringr")
library("forcats")
```

# Tidy Data: Structuring datasets for analysis

Rectangular tables:  
*rows x columns*

country	year	cases	population
Afghanistan	1999	745	19987071
Afghanistan	2000	2666	20595360
Brazil	1999	37737	172006362
Brazil	2000	80488	174504898
China	1999	212258	1272915272
China	2000	213766	1280428583

table1

Columns == Variables

country	year	cases	population
Afghanistan	1999	745	19987071
Afghanistan	2000	2666	20595360
Brazil	1999	37737	172006362
Brazil	2000	80488	174504898
China	1999	212258	1272915272
China	2000	213766	1280428583

variables

Rows == Observations

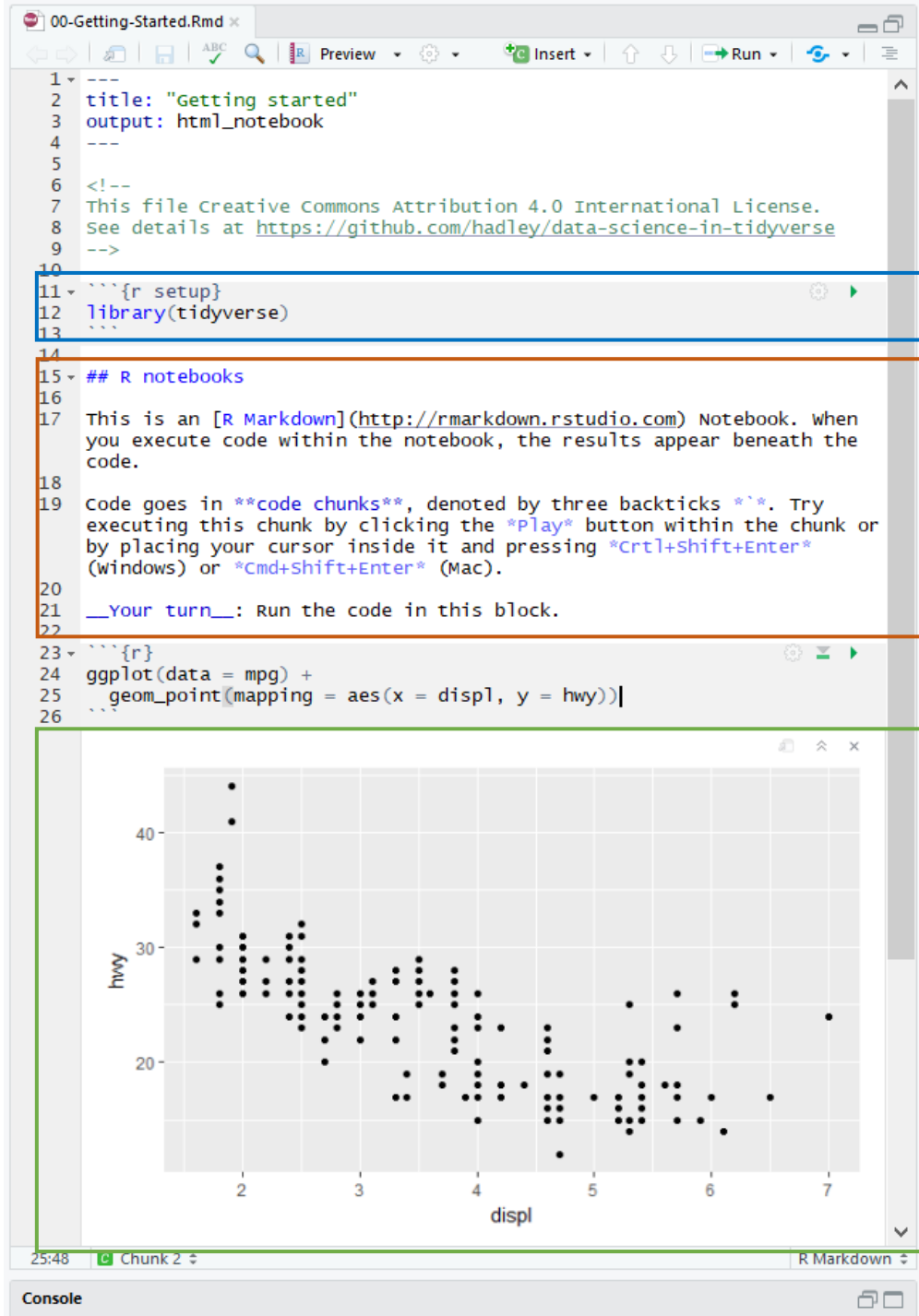
country	year	cases	population
Afghanistan	1999	745	19987071
Afghanistan	2000	2666	20595360
Brazil	1999	37737	172006362
Brazil	2000	80488	174504898
China	1999	212258	1272915272
China	2000	213766	1280428583

observations

Wickham, H. (2014). Tidy Data. *Journal of Statistical Software*, 59(10), 1 - 23.

doi: <http://dx.doi.org/10.18637/jss.v059.i10>

# Getting Started



# R Notebooks

Authoring format for Data Science

00-Getting-Started.Rmd is an R Notebook

It contains:

- Code
- Text
- Output

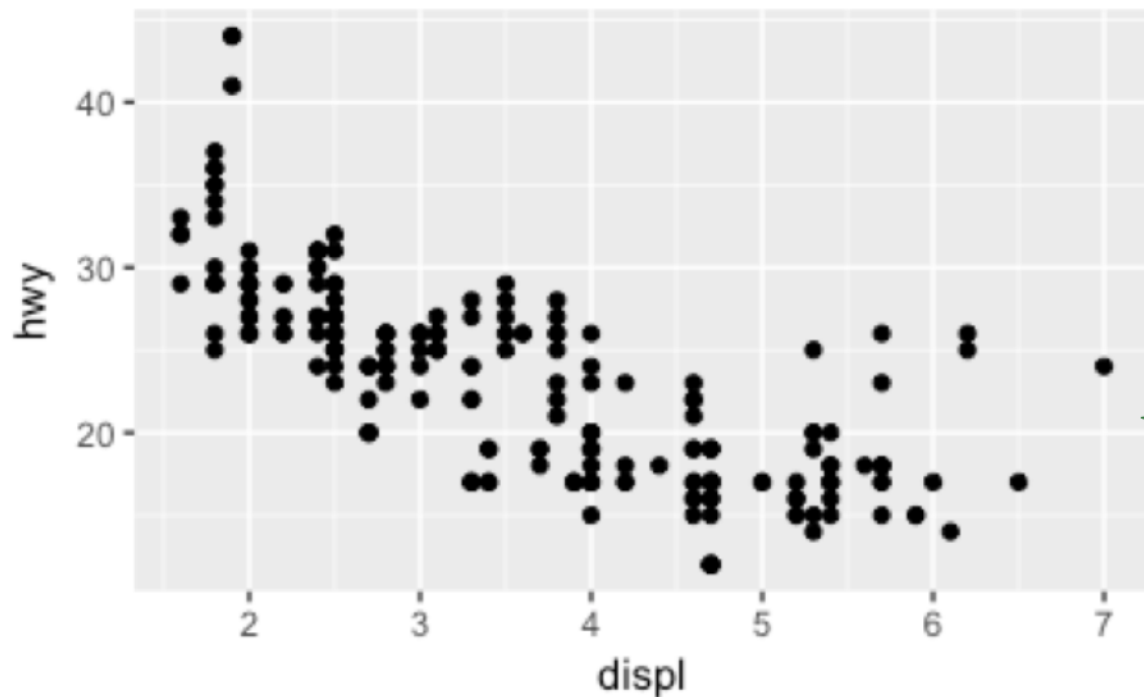
```
```{r}
ggplot(data = mpg) +
  geom_point(aes(x = displ, y = hwy))
```
```



Click to run code  
in chunk



Click to run all  
code chunks  
above



Code result

# Your Turn

In your file explorer, open r-intro/Day-3.Rproj

In your console, run the following code:

```
> file.edit("00-Getting-started.Rmd")
```

Follow the instructions.

Remember your sticky notes!