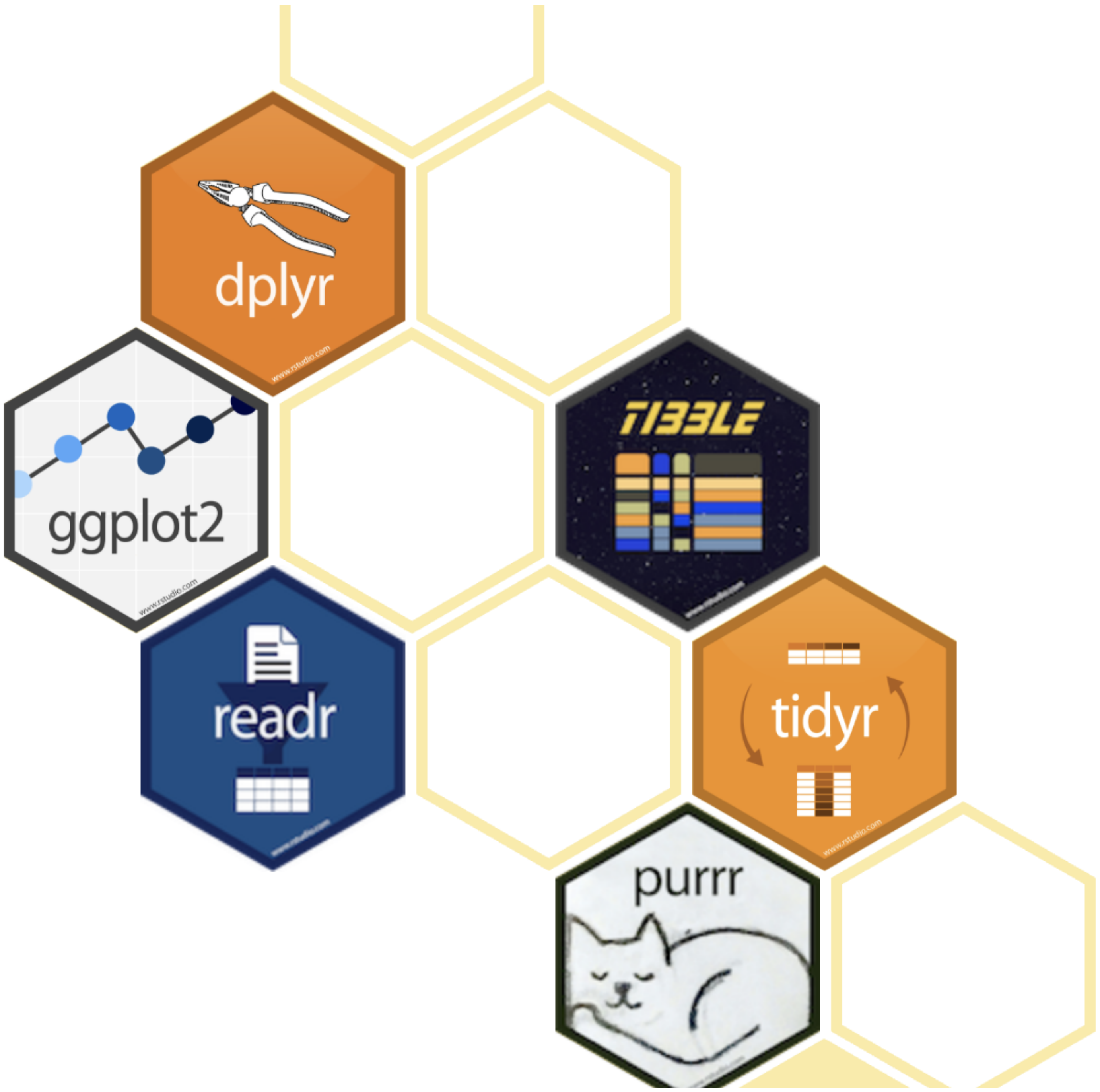
Introduction to the Tidyverse

Import, wrangle, model, and communicate data

2020-08-22


dplyr
ggplot2
TIBBLE
readr
tidyr
purrr

Working with data in R

the tidyverse is a collection of friendly and consistent tools for data analysis and visualization.

Working with data in R

the tidyverse is a collection of friendly and consistent tools for data analysis and visualization.

They live as, R packages, each of which does one thing well.

library(tidyverse) **will load**

the core packages:

ggplot2, for data visualisation.

dplyr, for data manipulation.

tidyr, for data tidying.

readr, for data import.

purrr, for functional programming.

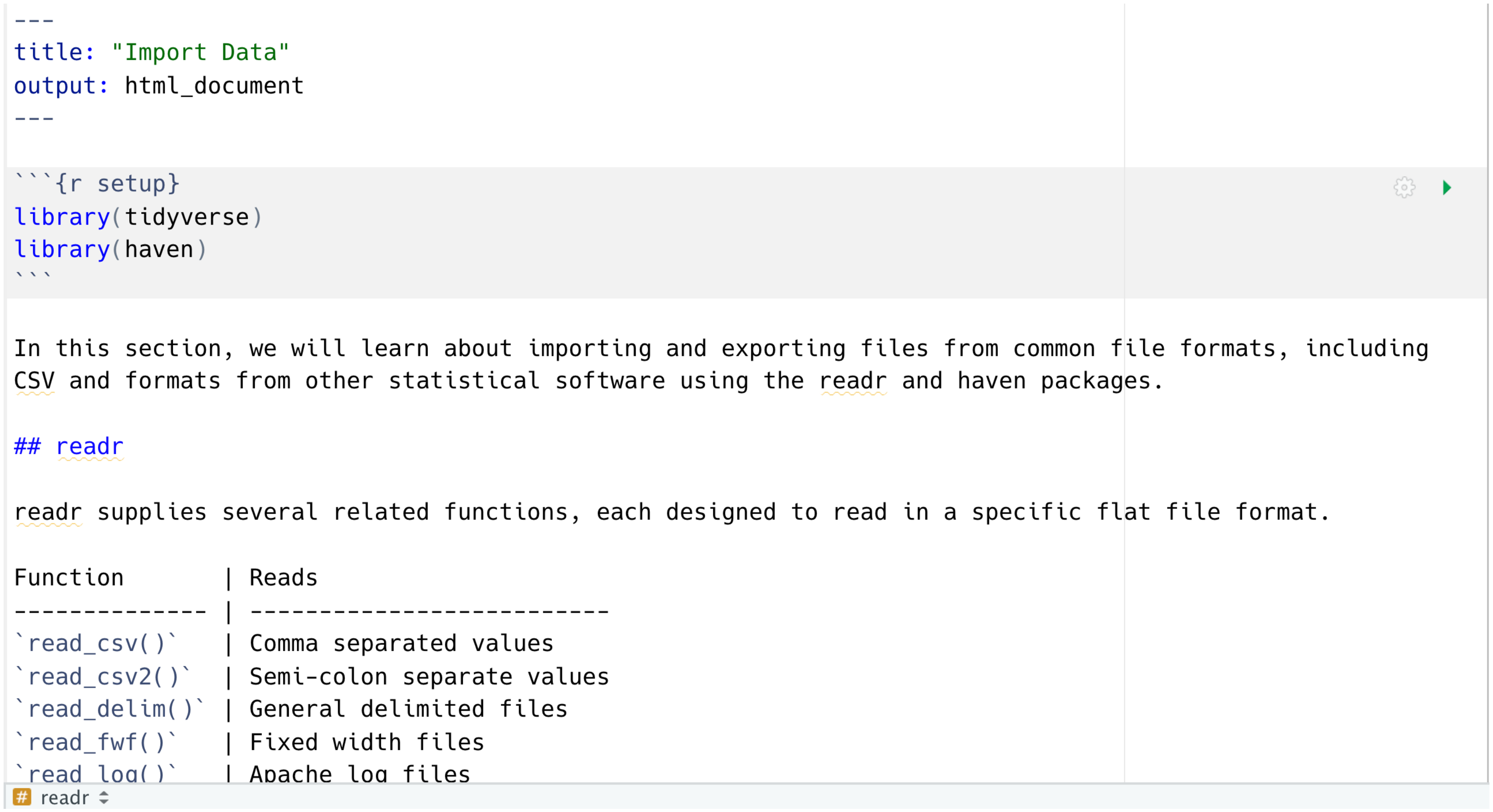
tibble, for tibbles, a modern re-imagining of data frames.

stringr, for strings.

forcats, for factors.

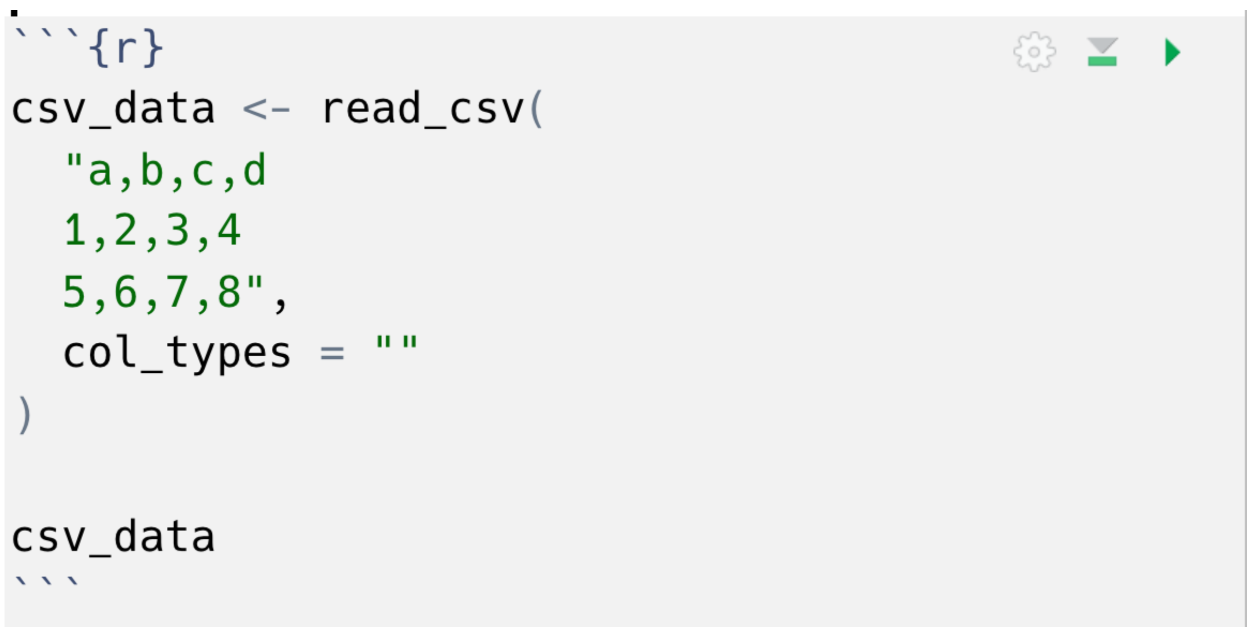
class: inverse, center, middle

exercises.Rmd



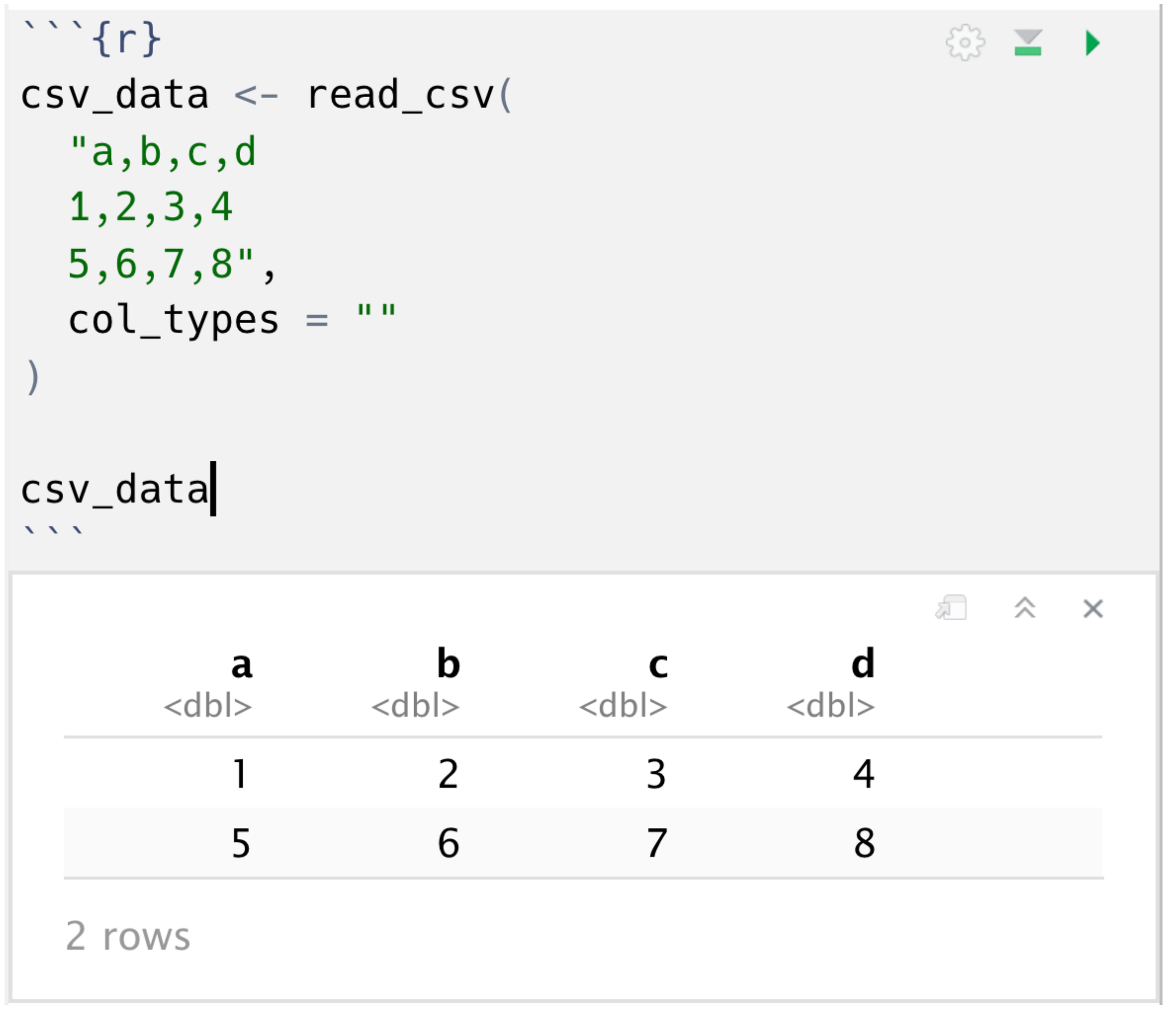
~~~
---
title: "Import Data"
output: html_document
---

```{r setup}
library(tidyverse)
library(haven)
```

In this section, we will learn about importing and exporting files from common file formats, including
CSV and formats from other statistical software using the readr and haven packages.

## readr

readr supplies several related functions, each designed to read in a specific flat file format.

Function        | Reads
--------------- | --------------------------
`read_csv()`    | Comma separated values
`read_csv2()`   | Semi-colon separate values
`read_delim()`  | General delimited files
`read_fwf()`    | Fixed width files
`read_log()`    | Apache log files
~~~

code chunks



~~~
```{r}
csv_data <- read_csv(
  "a,b,c,d
  1,2,3,4
  5,6,7,8",
  col_types = ""
)

csv_data
```
~~~

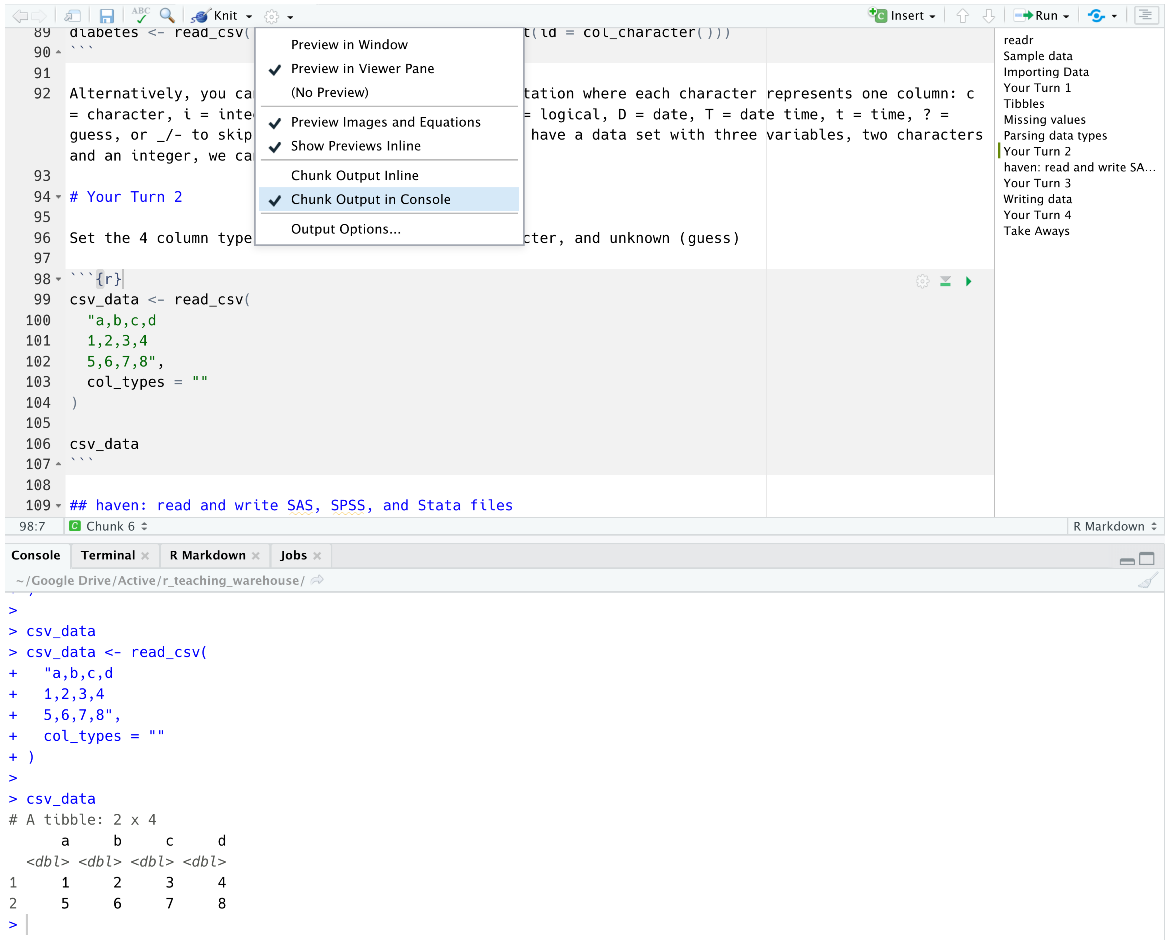
running code chunks



~~~
```{r}
csv_data <- read_csv(
  "a,b,c,d
  1,2,3,4
  5,6,7,8",
  col_types = ""
)

csv_data
```
~~~

```
    a      b      c      d
<dbl>  <dbl>  <dbl>  <dbl>
    1      2      3      4
    5      6      7      8

2 rows
```

outputting to the console



Preview in Window
✓ Preview in Viewer Pane
(No Preview)
✓ Preview Images and Equations
✓ Show Previews Inline
Chunk Output Inline
✓ Chunk Output in Console
Output Options...

```
diabetes <- read_csv(                                   t(id = col_character()))
```

Alternatively, you ca   tation where each character represents one column: c = character, i = inte   = logical, D = date, T = date time, t = time, ? = guess, or _/- to skip   have a data set with three variables, two characters and an integer, we ca

~~~
# Your Turn 2

Set the 4 column type                                    cter, and unknown (guess)

```{r}
csv_data <- read_csv(
  "a,b,c,d
  1,2,3,4
  5,6,7,8",
  col_types = ""
)

csv_data
```

## haven: read and write SAS, SPSS, and Stata files
~~~

readr
Sample data
Importing Data
Your Turn 1
Tibbles
Missing values
Parsing data types
Your Turn 2
haven: read and write SA...
Your Turn 3
Writing data
Your Turn 4
Take Aways

```
>
> csv_data
> csv_data <- read_csv(
+   "a,b,c,d
+   1,2,3,4
+   5,6,7,8",
+   col_types = ""
+ )
>
> csv_data
# A tibble: 2 x 4
      a     b     c     d
  <dbl> <dbl> <dbl> <dbl>
1     1     2     3     4
2     5     6     7     8
>
```

Project contents

```
├── 01-dplyr_5verbs
|   ├── cheatsheet_dplyr_5verbs.pdf
|   ├── diabetes.csv
|   ├── exercises.Rmd
|   ├── slides.pdf
```

Let's head to https://rstudio.cloud/