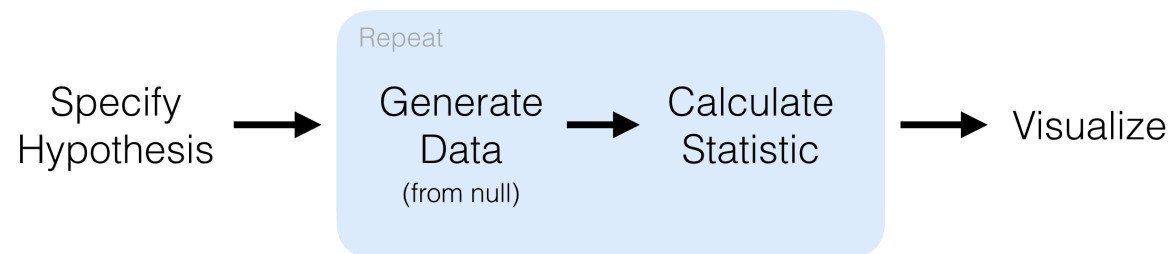


infer::CHEAT_SHEET

The infer workflow



The infer verbs

- `specify()` specify your response variable, or relationship between variables, that you're interested in.
- `hypothesize()` declare the null hypothesis.
- `generate()` generate data reflecting the null hypothesis. By using one of "bootstrap", "draw", or "permute" as the generation method.
- `calculate()` calculate a distribution of statistics from the generated data to form the null distribution.

Visualise Results

- `visualise()` view the generated null distribution
- `shade_pvalue()` visualise the observed statistic
- `shade_ci()` visualise the confidence intervals

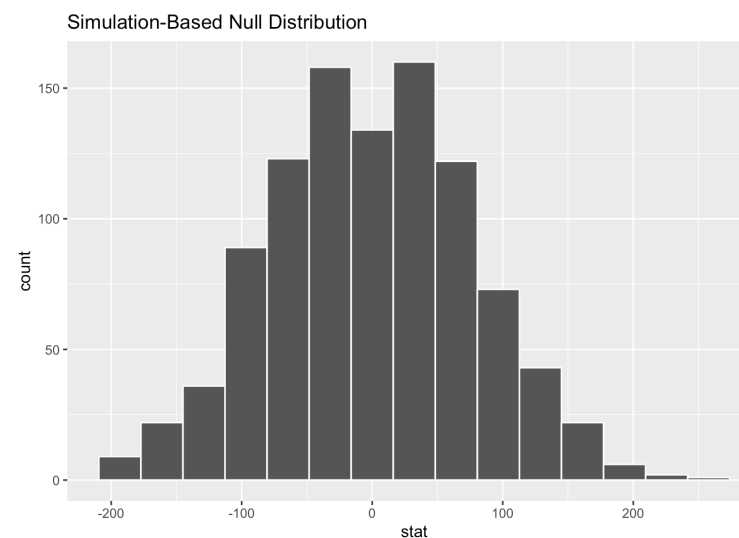
Infer in Practice

1. Define Hypothesis Test
2. Generate Null Distribution

```
# two sample (independent) example from w6d4 3_two_sample_test
null_distribution <- apart_prices %>%
  specify(price ~ location) %>%
  hypothesize(null = "independence") %>%
  generate(reps = 1000, type = "permute") %>%
  calculate(stat = "diff in means", order = c("algarve", "nice"))
```

3. Visualise Null Distribution

```
null_distribution %>%
  visualise()
```



A tibble: 1,000 × 2

replicate <int>	stat <dbl>
1	20.77500000
2	103.85833333
3	25.85833333
4	-90.55833333
5	64.94166667
6	57.23333333
7	42.23333333
8	12.27500000
9	-185.39166667
10	62.27500000
11	17.15000000
12	-149.10000000

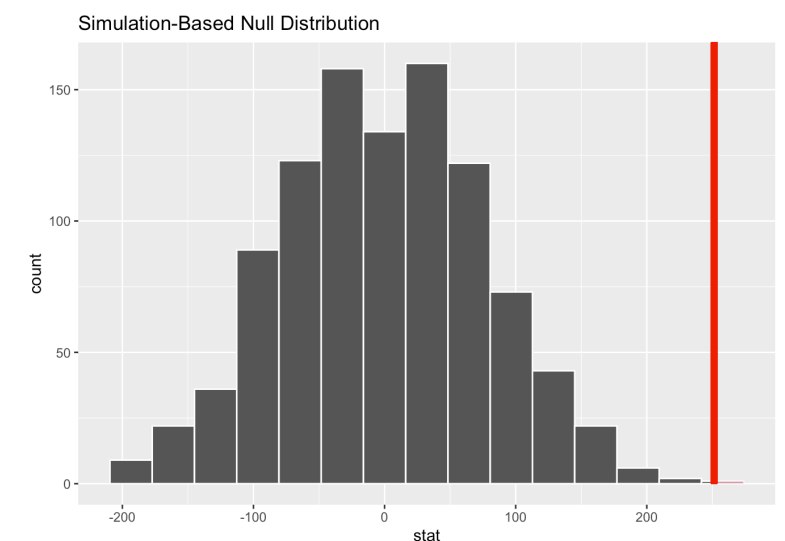
1-12 of 1,000 rows

4. Calculate Observed Statistic
5. ...Visualise on Null Distribution

```
observed_stat <- apart_prices %>%
  specify(price ~ location) %>%
  calculate(stat = "diff in means",
            order = c("algarve", "nice"))
```

```
## [1] 251.4
```

```
null_distribution %>%
  visualise() +
  shade_p_value(obs_stat = observed_stat,
                direction = "right")
```



6. Interpret Results

“The visualisation shows that the **observed statistic** lies at the very edge of the **null distribution**. So there would be a very very small **probability** of getting a more extreme value than the statistic observed under the null hypothesis.”

Three Column Layout: : CHEAT SHEET



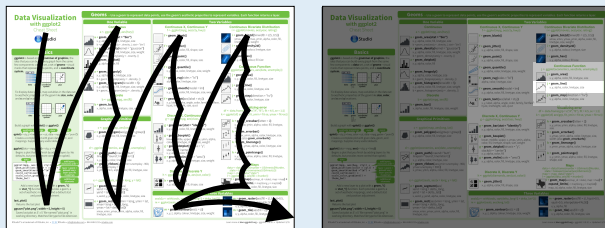
Basics

Thank you for making a new cheatsheet for R! These cheatsheets have an important job:

Cheatsheets make it easy for R users

Remember that the best cheatsheets are **visual**—not written—documents. Whenever possible use visual elements to make it easier for readers to find the information they need.

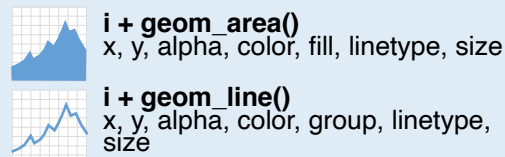
1. Use a **layout** that flows and makes it easy to zero in on specific topics.



2. Use **visualizations** to explain concepts quickly and concisely.

summary function →

3. Use visual elements to make the sheet **scannable**.



4. Use visual **emphasis** (like color, size, and font weight) to make important information easy to find.

dplyr::lag() - Offset elements by 1
dplyr::lead() - Offset elements by -1

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To license the sheet as creative commons, put CC'd by <your name> in the small print at the bottom of each page and link it to <http://creativecommons.org/licenses/by/4.0/>

YOUR LOGO
(optional)

Layout Suggestions

Use headers, colors, and/or backgrounds to **separate or group together sections**.

Section 1

Section 2

Section 3

Create a visual hierarchy. Help users navigate the page with titles, subtitles, and subsubtitles

Title

SUBTITLE

SUBSUBTITLE

Manipulate Variables

Quickly identify content with a **package hexsticker** (if available)

Fit sections to content. Try several different layouts.

Use numbers or arrows to link sections if the order/**flow** is confusing.

Logistics

FONTS

This template uses several fonts: **Helvetica Neue**, **Menlo**, **Source Sans pro**, which you can acquire for free here, www.fontsquirrel.com/fonts/source-sans-pro, and **Font Awesome**, which you can acquire here, fontawesome.github.io/Font-Awesome/get-started/

To use a **font awesome** icon, copy and paste one from here fontawesome.github.io/Font-Awesome/cheatsheet/. Then set the text font to font awesome.

KEYNOTE

I make my cheatsheets in **Apple Keynote**, and not latex or R Markdown, because presentation software makes it much easier to tweak the visual appearance of a document

KEYNOTE TIPS

- **Select multiple elements** by holding down shift and then selecting each. Click on a selected element before letting go of shift to unselect it.
- To **group elements together**. Select them all, then click Arrange > Group
- To **evenly space multiple objects**, select them all then Right Click > Align objects or Right Click > Distribute objects
- Click on a table, then visit Format > Table > Row and Column Size to make **even width rows/columns**.

Useful Elements

CODE

Where possible, use **code that works** when run.

```
ggplot(mpg, aes(hwy, cty)) +  
  geom_point(aes(color = cyl)) +  
  geom_smooth(method = "lm")
```

Word balloons

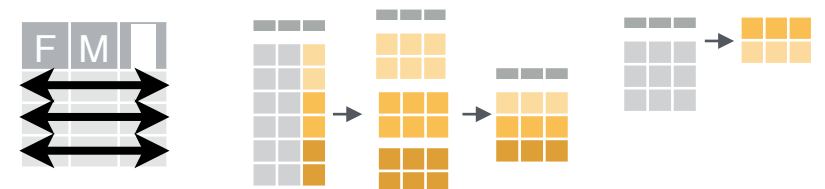
can help explain code

ICONS

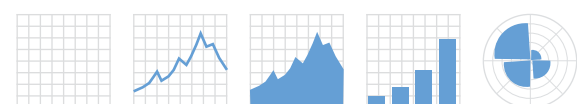


These are just font awesome characters

MOCK TABLES



MOCK GRAPHS



TABLES

sub-option	description
citation_package	The LaTeX package to process
code_folding	Let readers to toggle the display of
colortheme	Beamer color theme to use