```r
library(dplyr)

rladies_global %>%
  filter(city == 'Irvine')
```

Using R with Excel

Alyssa Columbus   **July 19, 2022**

A simplified timeline
of my career

First Jobs
Tool of Choice: Excel

Next Jobs

Current Work

Time and Experience

Limitations
of using only Excel

- Importing and manipulating data

- Automating/reproducing complex tasks

- Working with large file size(s)

- Debugging and fixing errors

- Analyzing data with advanced statistics and ML techniques

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First Jobs
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Python/R

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Limitations
of using only R

- Learning the core toolset (at first)

- Entering data manually

- Preserving specific Excel formatting

- Deciphering the graphical user interface

- Scanning spreadsheets quickly

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First Jobs
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Choice: Excel

Next Jobs
Tools of
Choice:
Python/R

Current Work
Tools of
Choice: Both
Excel and
Python/R

Time and Experience

Using R with Excel
gives data scientists the best of both worlds.

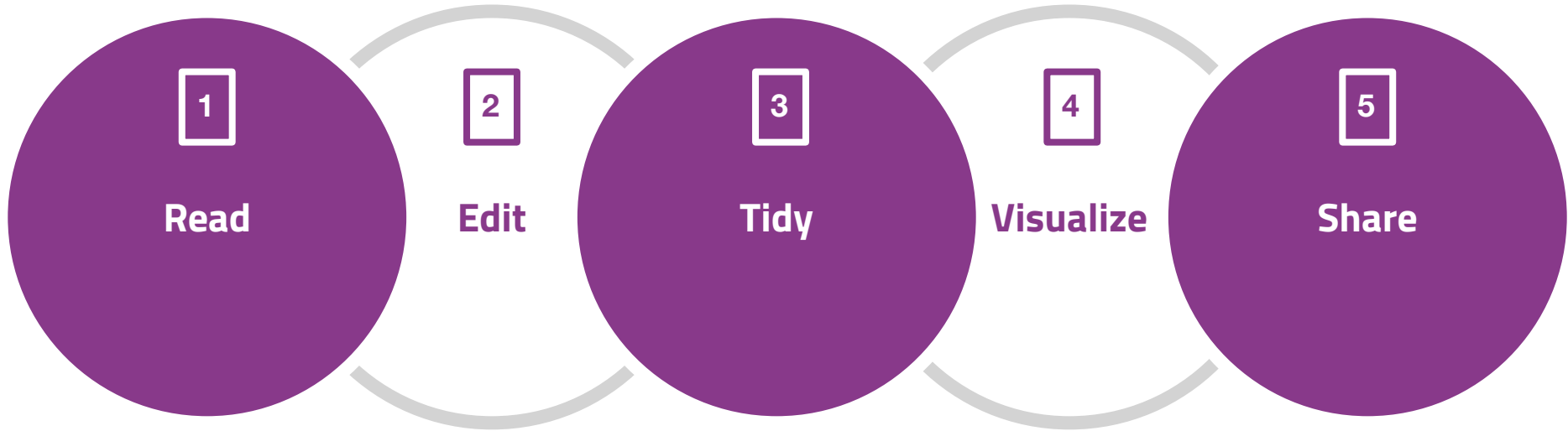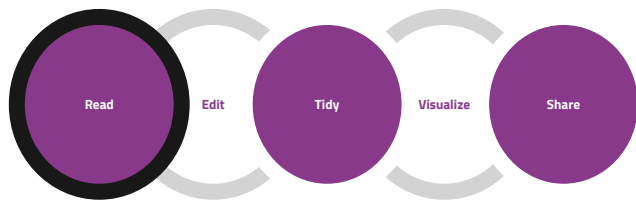|	
+	**−**
• Learning the core toolset (at first) • Entering data manually • Preserving specific Excel formatting • Deciphering the graphical user interface • Scanning spreadsheets quickly	• Importing and manipulating data • Automating/reproducing complex tasks • Working with large file size(s) • Debugging and fixing errors • Analyzing data with advanced statistics and ML techniques
−	**+**
• Learning the core toolset (at first) • Entering data manually • Preserving specific Excel formatting • Deciphering the graphical user interface • Scanning spreadsheets quickly	• Importing and manipulating data • Automating/reproducing complex tasks • Working with large file size(s) • Debugging and fixing errors • Analyzing data with advanced statistics and ML techniques

How can we use R with Excel?

How to use
R with Excel

1 **Read**

2 **Edit**
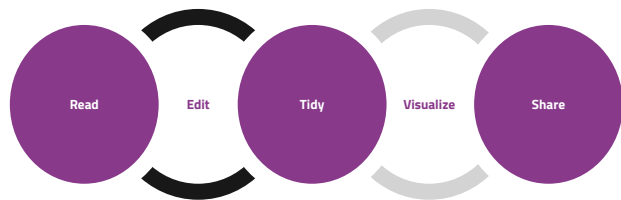
3 **Tidy**

4 **Visualize**

5 **Share**

1. Read

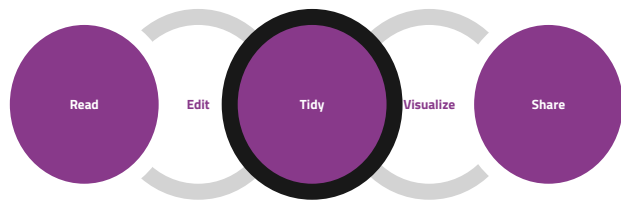## sample Excel data into R.

Let's navigate to RStudio and open 01_read.R.
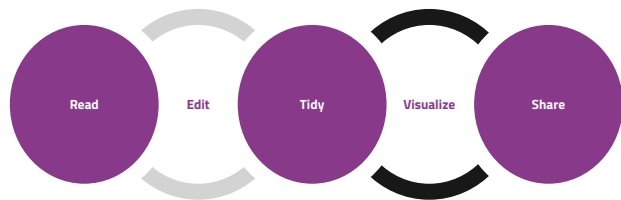
2. Edit

R data as in Excel.

Let's explore 02_edit.R.

3. Tidy

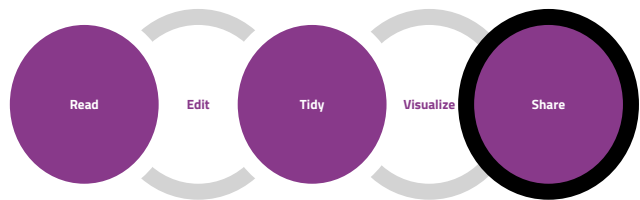and format data for more streamlined analyses.

Let's run through 03_tidy.R.

4. Visualize

data in R analogously to Excel.

Let's have fun with 04_visualize.R.

5. Share

public data and results.

Let's look through 05_share.R.

Summary of R packages
and their interactions with Excel

	readxl	xlsx	XLConnect	openxlsx	writexl
Read	✔	✔	✔	✔	
Edit		✔	✔	✔	
Tidy		✔	✔	✔	
Visualize		✔	✔	✔	
Share		✔	✔	✔	✔

Bonus: Run R functions within Excel with BERT (Basic Excel R Toolkit)

- Free, open source Excel add-in to run R functions from Excel spreadsheet cells

- Can write a function in R, then call it from an Excel spreadsheet

- A more effective mathematical alternative to VBA

- One way to generate R's powerful visualizations in Excel

- More information and documentation: https://bert-toolkit.com/

Additional references

- [How to Use R with Excel](#) by Alyssa Columbus

- [R for Excel Users](#) by Dr. Julia Stewart Lowndes and Dr. Allison Horst

- [Excel to R, Parts 1-3](#) by Matt Dancho

Thank you!

Presentation Summary

- Limitations of Using Excel and R Individually

- How and Why Excel and R Complement Each Other

- 5 Simple Ways to Use R with Excel

  - Read, Edit, Tidy, Visualize, Share

- Additional References

Stay In Touch

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