```
library(dplyr)

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

How to use R with Excel

Alyssa Columbus

March 24, 2022

A simplified timeline of my career

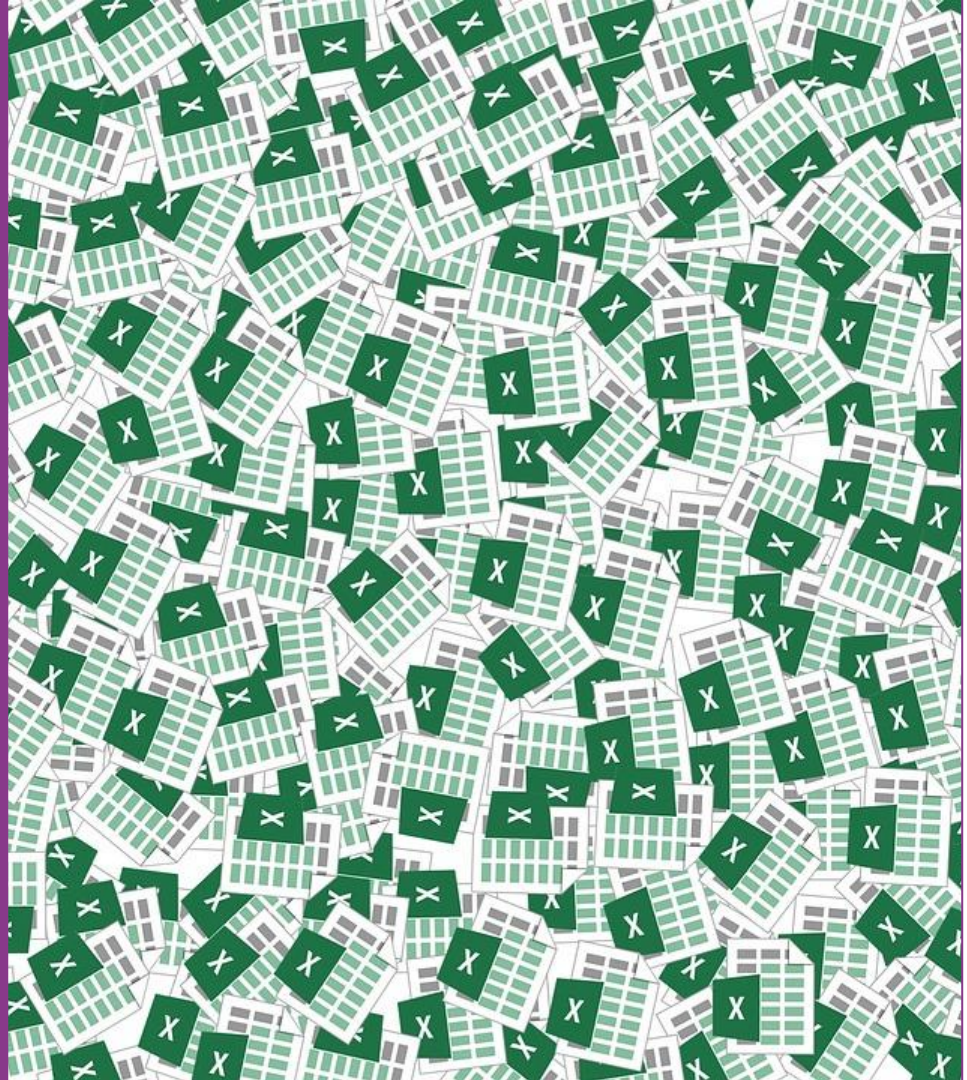
First Jobs

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

A simplified timeline of my career

First Jobs
Tool of Choice: Excel

Next Jobs
Tools of Choice: Python/R

Current Work

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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

A simplified timeline of my career

First Jobs
Tool of 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.

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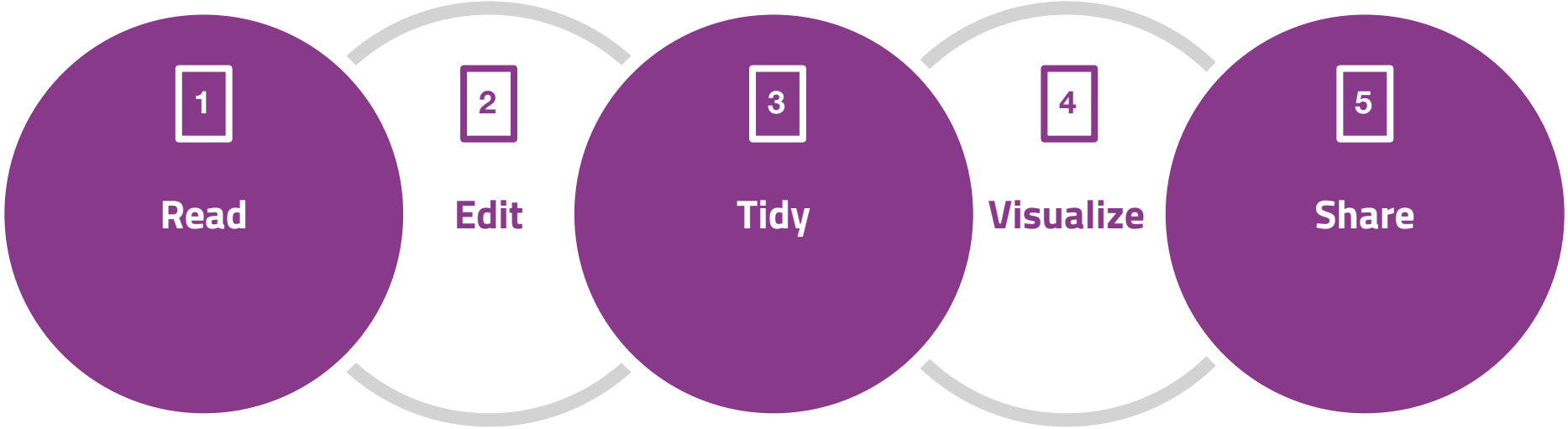
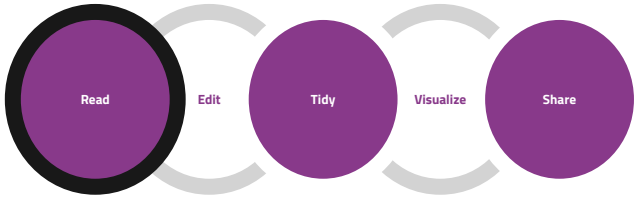
How can we use R with Excel?

How to use
R with Excel

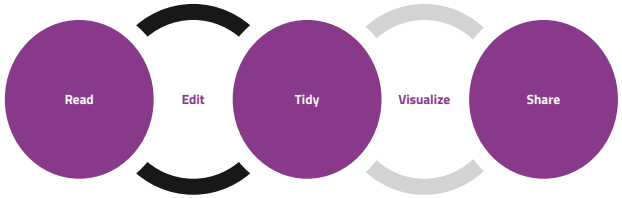




1. Read

sample Excel data into R.

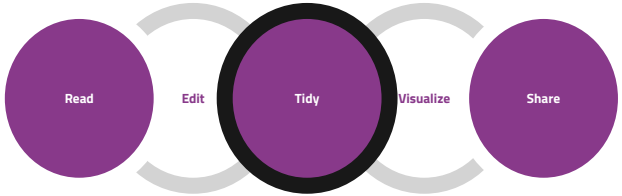
Let’s navigate to RStudio and open 01_read.R.



2. Edit

R data as in Excel.

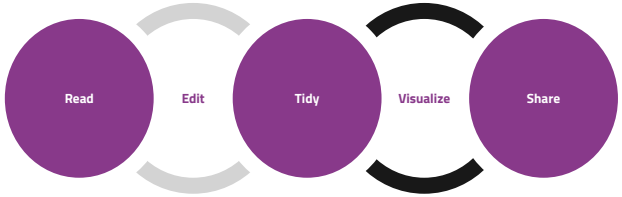
Let’s explore 02_edit.R.



3. Tidy

and format data for more streamlined analyses.

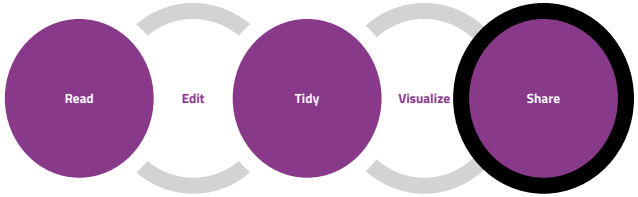
Let's run through 03_tidy.R.



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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