

# Data Products and Interactivity with R

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**What happens once  
analysis is done?**

# Communicating Data

- Considerations for analysts
  - Where does your data come from?
  - What do you want end users to do with your data product?
- Considerations for end users
  - Can they read code?
  - Do they have R/RStudio installed?
  - Can they interpret output?

**Goal: empower end users to  
interact with your work and  
gather insight without your help!**

# Road Map

- Interactivity in R
- Parameterized R Markdown
- In Course Exercise #1
- html Widgets
- In Course Exercise #2
- Flexdashboard
- In Course Exercise #3
- Final thoughts

# Interactivity in R

- R Markdown
- Parameterized R Markdown
- html widgets
- Flexdashboard

# Data for today's exercises

- Today you will use example data from NUFORC to analyze UFO sightings
- There are 80,000 + sightings over the past 70 years within this dataset
- Found at: <https://github.com/rfordatascience/tidytuesday/tree/master/data/2019/2019-06-25>
- Solutions: [https://github.com/nmonhait/erhs\\_535](https://github.com/nmonhait/erhs_535)

# Interactivity in R

- R Markdown
- **Parameterized R Markdown - DEMO**
- html widgets
- Flexdashboard



# In Course Exercise #1

- Read in the data
- Create a new dataframe with only observations in the United States
- convert ``date_time`` and ``date_documented`` variables to the correct class
- generate a parameterized Rmd using the ``ufo_shape`` variable
- *All code posted on my GitHub in 'in\_class\_answers.R', try to do this without looking!*

# Interactivity in R

- R Markdown
- Parameterized R Markdown
- **html widgets- DEMO**
- Flexdashboard

# html Widgets

- Javascript libraries in R
- Can be embedded in Rmd or Shiny
- Today we will look at *plotly*, *leaflet*, and *DataTable*
- [\*https://www.htmlwidgets.org/\*](https://www.htmlwidgets.org/)

# In Course Exercise #2

- install plotly, leaflet, DT
- create an interactive bar chart that of UFO `shape` counts (choose 3)
- create a leaflet map of `encounter\_length`
- create an interactive data table

# Interactivity in R

- R Markdown
- Parameterized R Markdown
- html widgets
- **Flexdashboard- DEMO**

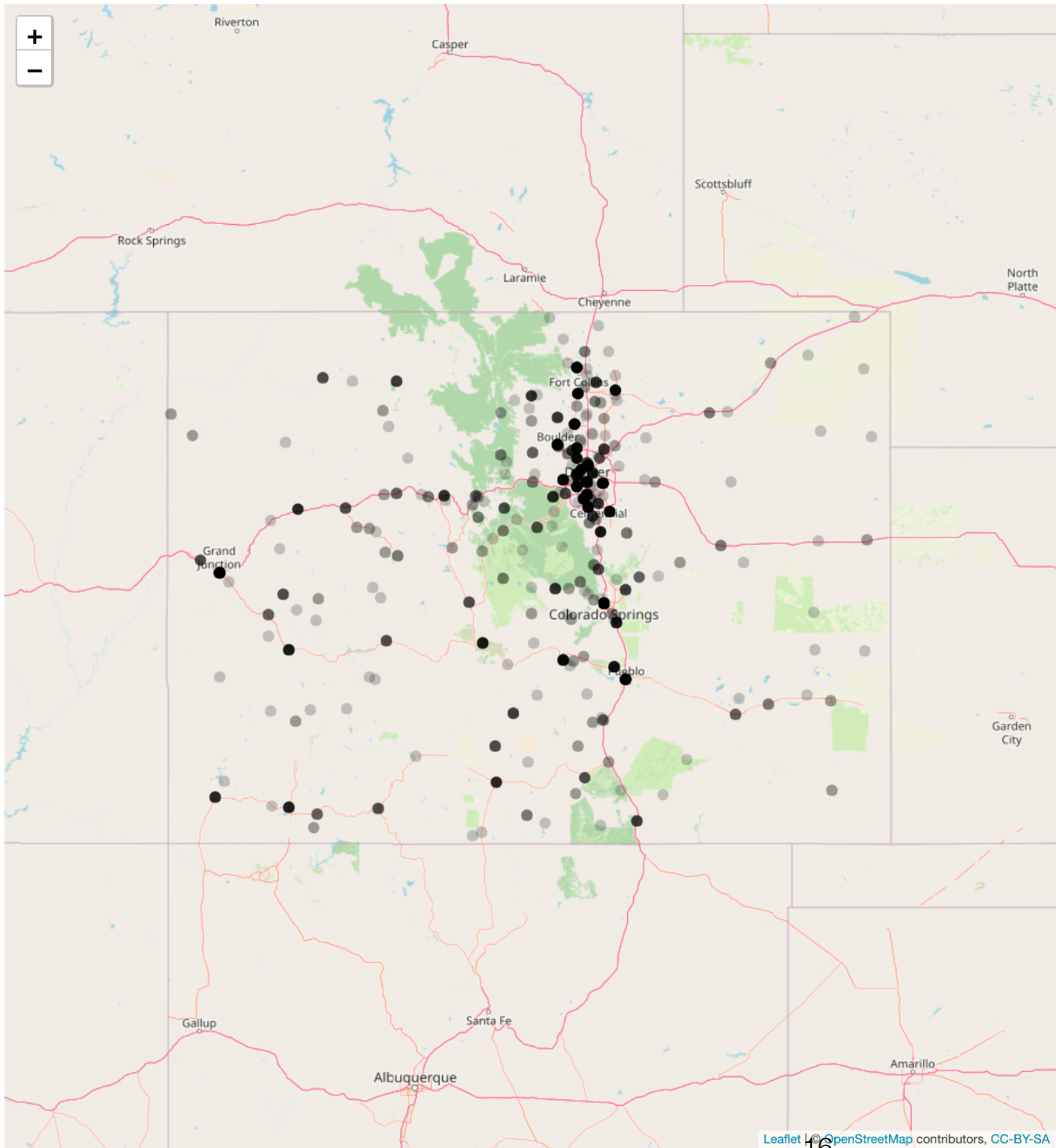
# Flexdashboard

- Versatile components (static or interactive)
- <https://rmarkdown.rstudio.com/flexdashboard/layouts.html>

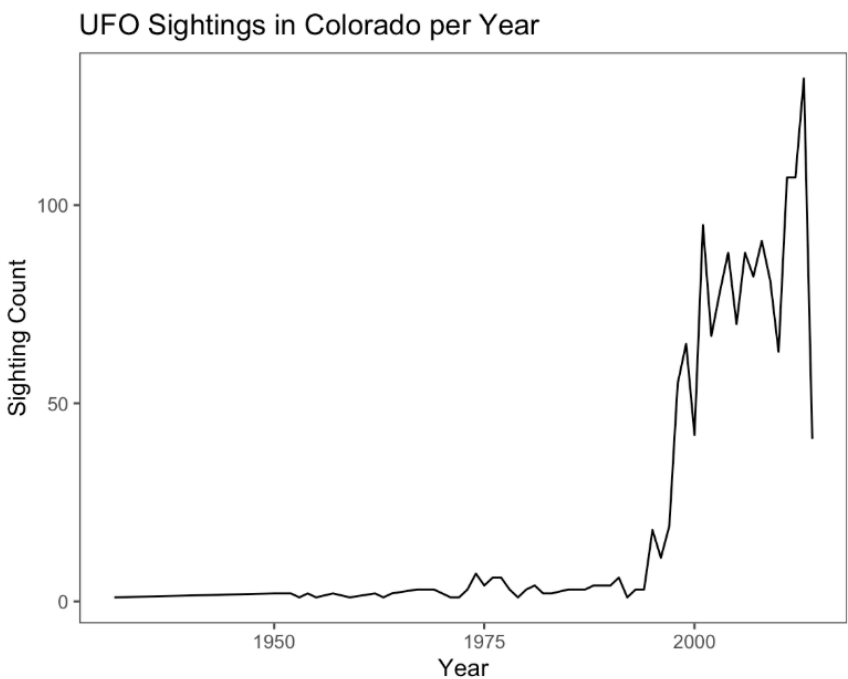
# In Course Exercise #3

- use the UFO data already in your environment to recreate the following dashboard

All sightings in Colorado



Sightings in Colorado by Year



Data

Search:

	Location	Year
1	security	1979
2	boulder	1988
3	denver	2007
4	fleming	2007
5	northglenn	2007
6	pueblo	2008
7	crested butte	2009
8	colorado springs	2012
9	denver	2001
10	frederick	2003
11	bayfield	1998
12	colorado springs	2000

Showing 1 to 12 of 1,505 entries



# Helpful Links

- <https://rmarkdown.rstudio.com/flexdashboard/>
- <https://www.htmlwidgets.org/index.html>
- <https://cran.r-project.org/web/packages/viridis/vignettes/intro-to-viridis.html>
- <https://rviews.rstudio.com/2019/09/19/intro-to-ggforce/>
- <https://rstudio.com/resources/cheatsheets/>

# Create a Portfolio!

- You can use Rmd to make a blog, book, or resume!
- [nichole@rstudio.com](mailto:nichole@rstudio.com)