Introduction to R

(& Rstudio)

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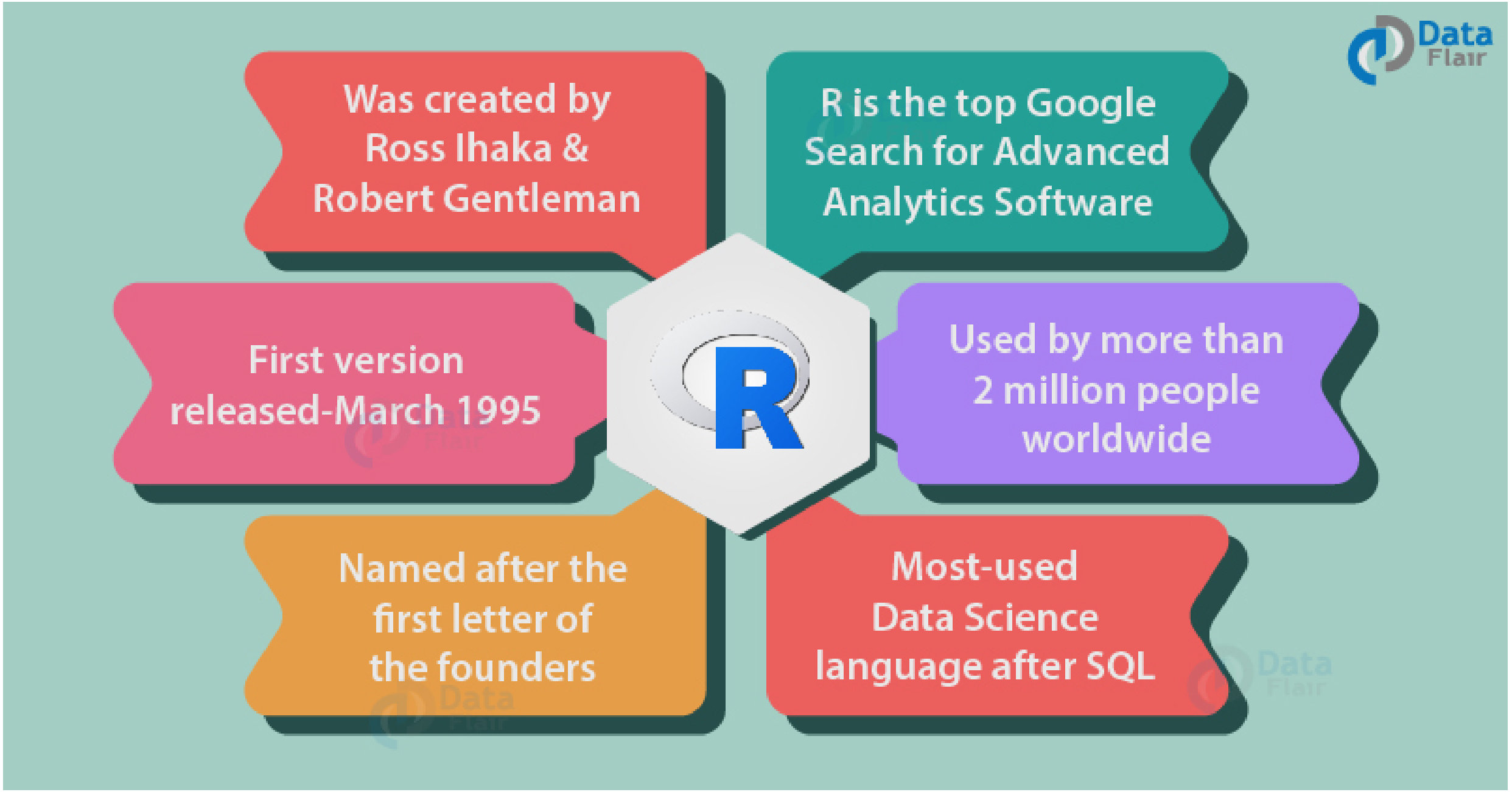

Was created by Ross Ihaka & Robert Gentleman
R is the top Google Search for Advanced Analytics Software
First version released-March 1995
R
Used by more than 2 million people worldwide
Named after the first letter of the founders
Most-used Data Science language after SQL
Data Flair

Applications of R Programming

- R is widely used for quantitative analysis.
- It helps in data importing and cleaning.
- It helps data analysts and research programmers by solving their statistical problems.
- Can be used with multiple operating systems.

Advantages of R Programming language

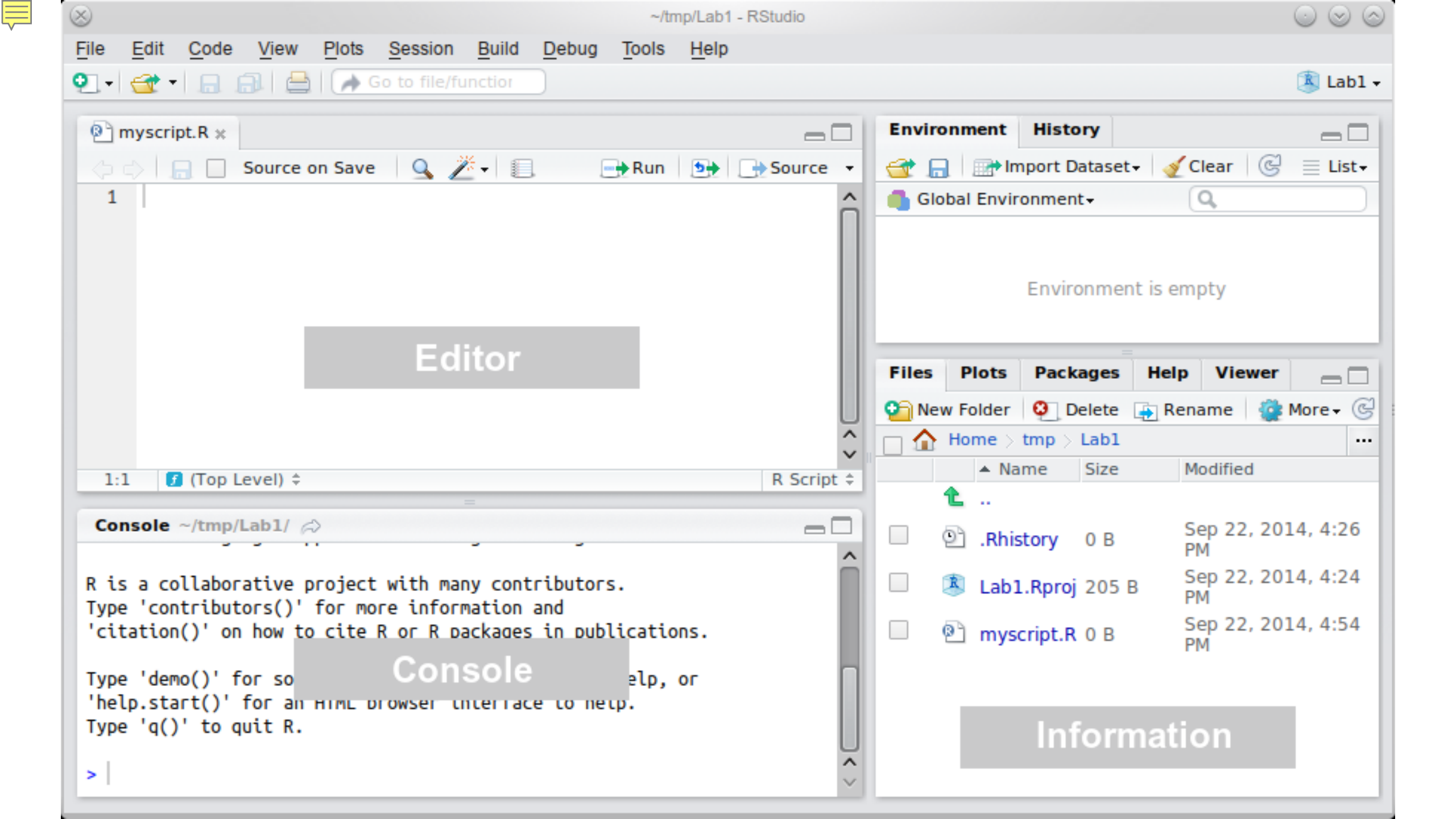
- The R programming language is open-source software. Therefore, anyone can use and change it.
  - Due to its open-source nature, anyone can fix the bugs
  - Enhance the code
  - New packages.
    - The R Journal: https://journal.r-project.org
    - Journal of Statistical Software: https://www.jstatsoft.org/index

R Console

~

Help Search

```
R version 3.1.1 (2014-07-10) -- "Sock it to Me"
Copyright (C) 2014 The R Foundation for Statistical Computing
Platform: x86_64-apple-darwin13.1.0 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

  Natural language support but running in an English locale

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

[R.app GUI 1.65 (6784) x86_64-apple-darwin13.1.0]

[Workspace restored from /Users/Nathaniel/.RData]
[History restored from /Users/Nathaniel/.Rapp.history]

> 
```


~/tmp/Lab1 - RStudio
File Edit Code View Plots Session Build Debug Tools Help
Go to file/functior
Lab1
myscript.R
Source on Save
Run
Source
1
Editor
1:1
(Top Level)
R Script
Console ~/tmp/Lab1/
R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.
Type 'demo()' for so
elp, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.
>
Console
Environment History
Import Dataset
Clear
List
Global Environment
Environment is empty
Files Plots Packages Help Viewer
New Folder
Delete
Rename
More
Home tmp Lab1
Name Size Modified
..
.Rhistory 0 B Sep 22, 2014, 4:26 PM
Lab1.Rproj 205 B Sep 22, 2014, 4:24 PM
myscript.R 0 B Sep 22, 2014, 4:54 PM
Information

Basic Principles of R Programming

Importing Data

Packages

- What is a package?
  - All functions in R, except the ones you write yourself or copy from online forums, come in packages.
- You only ever need to install a package once.
- Packages have to be loaded every session.
  - Two ways of “calling” for packages.

Activity

- Play with R built in datasets
  - Type in data() to find a dataset
  - Select a dataset data(“nameOfDataset”)
  - Play with head(), tail(), names(), dim()

- Research Design & Data Analysis Lab: https://www.uttyler.edu/research/ors-research-design-data-analysis-lab/
- Schedule a consultant appointment with me: https://www.uttyler.edu/research/ors-research-design-data-analysis-lab/ors-research-design-data-analysis-lab-consultants/
- Check out Lab Resources (including recording of this webinar): https://www.uttyler.edu/research/ors-research-design-data-analysis-lab/resources/