

# R: A Tool, Not A Chore

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# Who Am I?

- Brendan Herger:
  - MS Analytics
  - BS Physics
    - minors: Computer Science, Mathematics
- Stock me:
  - [Data Visualization](#)
  - [Code Examples](#)
  - [Blog](#)
  - [LinkedIn](#)
  - [Resume](#)



# Overview

- Motivations
- Basic Terminology
- Case Study
- Wrap Up



# Motivations



# Why use R

- Compute mean by hand?
- Complex operations in excel?
- Calculations repeatable?
- Pretty graphs?



# Basic Terminology



mean\_auc.R \* get\_wifi.R \*

Go to file/function

Source on Save

Run

Source

1 # mean\_auc.R

2 # (C) Brendan J. Herger

3 # Analytics Master's Candidate at University of San Francisco

4 # 13herger@gmail.com

5 #

6 # Available under MIT License

7 # http://opensource.org/licenses/MIT

8 #

9 #\*\*\*\*\*

10

11 print("hello world!")

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11:20 (Top Level) R Script

Environment History

Import Dataset Clear

Global Environment

Environment is empty

Variables

Files Plots Packages Help Viewer

New Folder Delete Rename More

Home

|  | Name          | Size | Modified              |
|--|---------------|------|-----------------------|
|  | .Rhistory     | 0 B  | Sep 12, 2014, 8:35 AM |
|  | Applications  |      |                       |
|  | Desktop       |      |                       |
|  | Developer     |      |                       |
|  | Documents     |      |                       |
|  | Downloads     |      |                       |
|  | Icon          | 0 B  | Sep 6, 2014, 8:35 PM  |
|  | Library       |      |                       |
|  | Movies        |      |                       |
|  | Music         |      |                       |
|  | pge_bill.indd | 1 KB | Sep 2, 2014, 2:43 PM  |
|  | Pictures      |      |                       |

Console ~/

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  
Type 'contributors()' for more  
'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.

> |



# Convenient Functions

- `typeof()`
- `print()`
- `?function.name`
- `c("one", "two")`
- `paste("first", "second", sep = "")`
- `for (i in campaigns) { ... do something ... }`
- `rbind()`
- `cbind()`
- `apply()`, `sapply()`, `lapply()`
- `read.csv()`



# Data types

- character
  - “hello world”
- factor
  - like character, restricted to set of options
  - ex: [“January”, “February” ...]
- numeric
  - 12, 12.5, 123456.7890
- logical
  - TRUE, FALSE
  - Must be all caps



# For Loop

- SEE: `r_loop()` in `example.R`
- `for (item in list){`
  - `print(item)`
- `}`



# Function

- SEE: `r_function()` in `example.R`



# Data Frame

- SEE: `r_dataframe()` in `example.R`
- Functions:
  - `data.frame()`, `names`, `lapply`, `as.numeric`,  
`as.character`



# Case Study



# Case Study

- I would like to:
  - Read in data
  - Look at data
  - Find some interesting trends
  - Make some interesting plots



Wrap Up



# Moving Forward

- Hopefully now you know all the answers you will ever need
  - or at least how to Google them!
- R is an amazing tool. It can also be an amazing pain.
  - “Penny wise, Pound foolish” - if you take shortcuts, they will ruin you.