WINSTON SAUNDERS

@PDXRLANG MEETUP DEC 2016

LET'S SHINY!

INTERACTIVE GRAPHICS. SO MUCH BETTER.

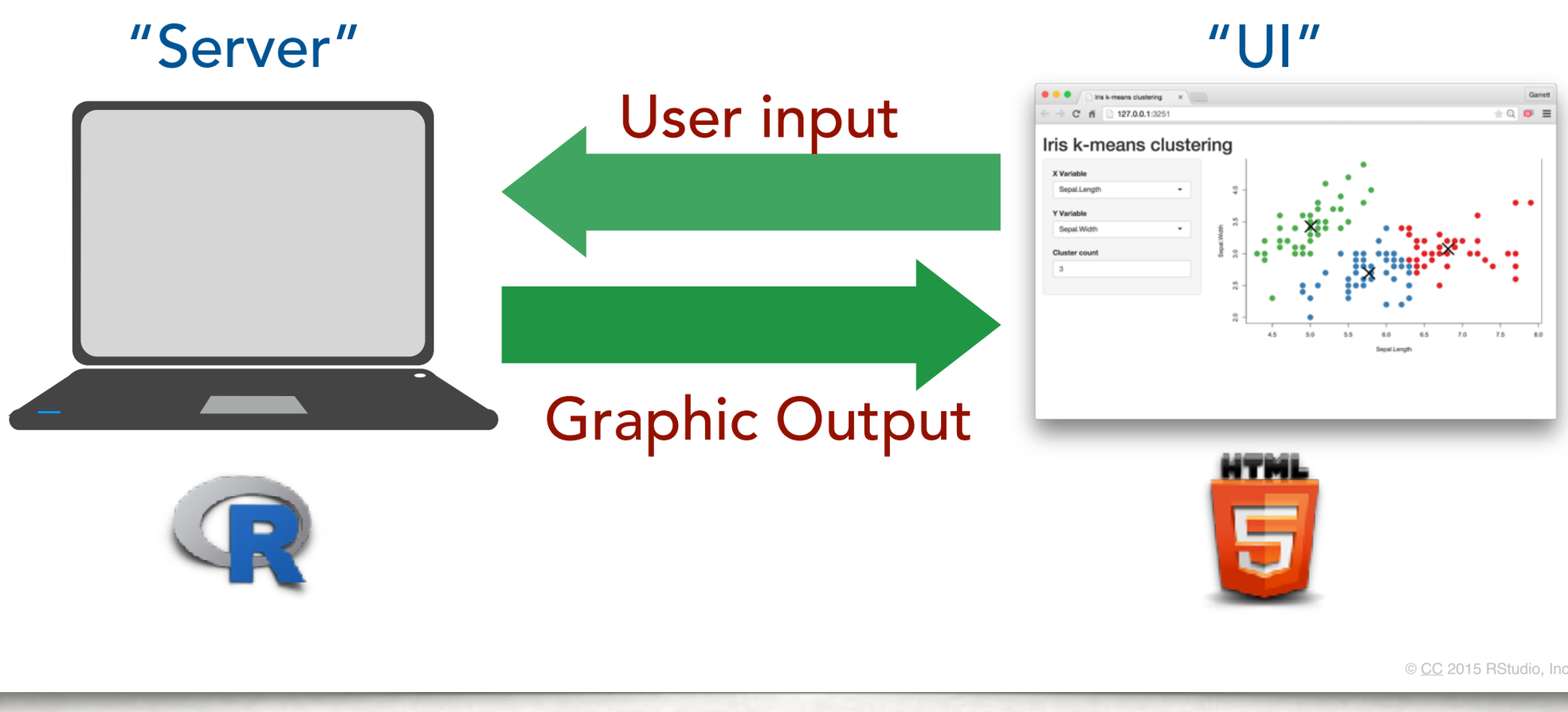
- Static:“pushes” information to the user.
- Interactive: user “pull” to explore and educate themselves

AGENDA

- Shiny Intro
- Hello World
- Widgets are Key
- Resources

http://shiny.rstudio.com/tutorial/

TWO PROGRAMS MAKE SHINY WORK



1. UI displays input/output
2. Server runs R code in the background

TO FOLLOW ALONG

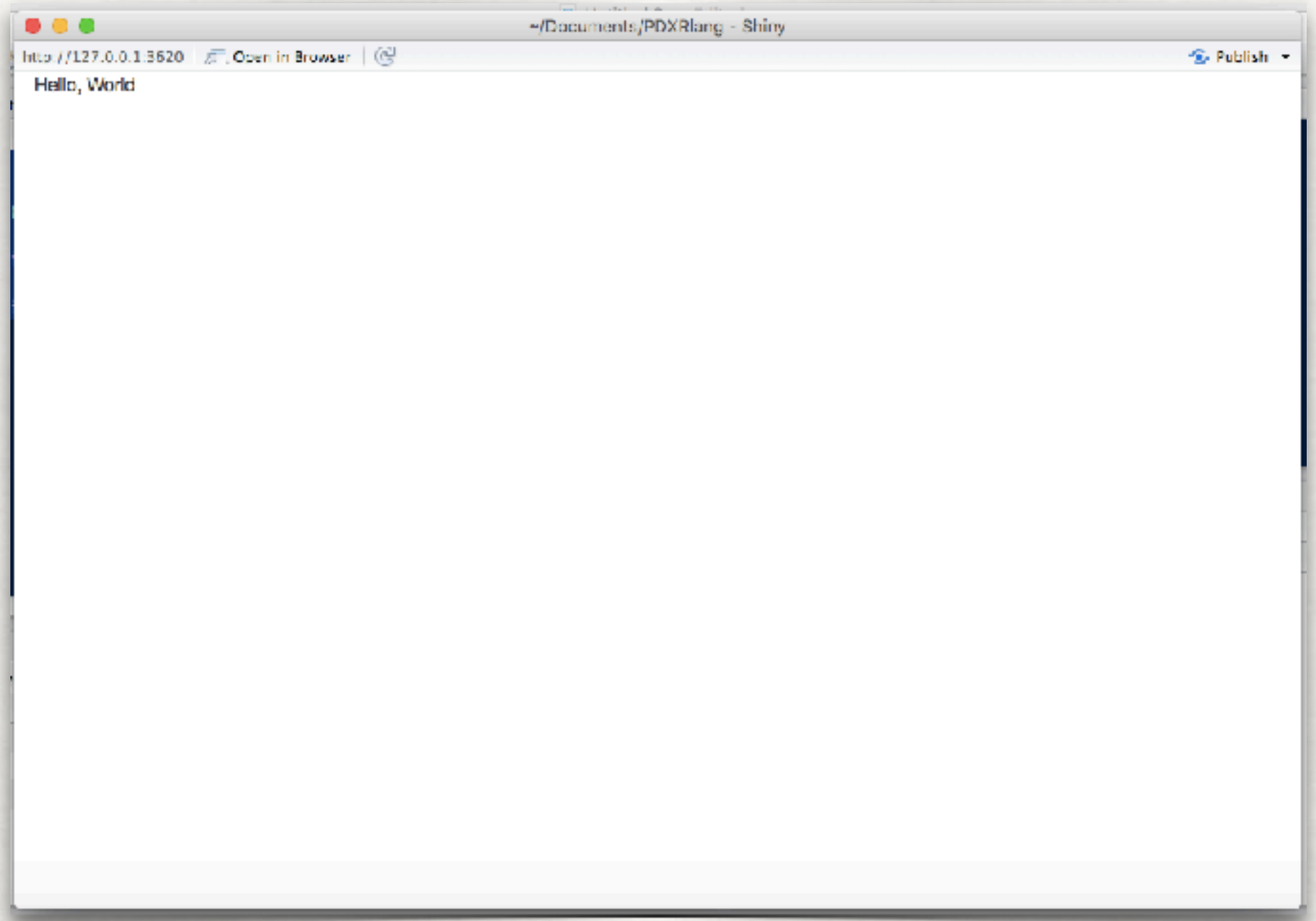
- browse to *bit.ly/pdxdata_shiny*
- open **`hello_world.R`**

IF YOU RUN THIS...

```
## Hello World Shiny App

library(shiny)

shinyApp(
  ui = fluidPage("Hello World"),
  server = function(input, output) {}
)
```

Pretty close to the shortest meaningful Shiny code

...YOU SHOULD SEE THIS



HELLO REAL WORLD

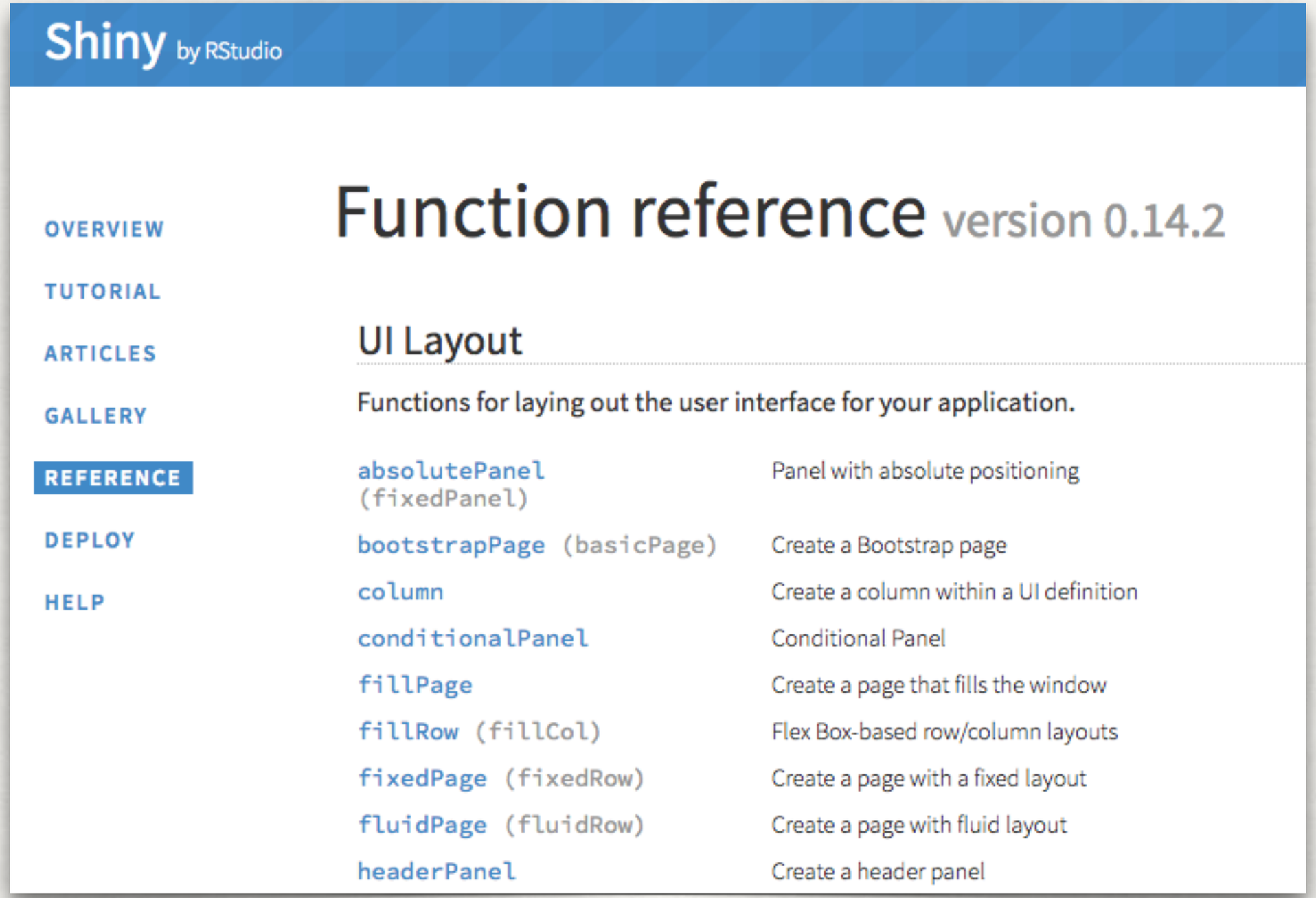
```
library(shiny)

shinyApp(
ui = fluidPage("Hello Markdown"),
server = function(input, output){}
)
```

UI WIDGETS HERE
SEPARATED BY COMMAS

SERVER R-CODE HERE
VARIABLES PASSED BY "$"

WIDGETS == KEY

http://shiny.rstudio.com/reference/shiny/latest/



TO FOLLOW ALONG

- browse to *bit.ly/pdxdata_shiny*
- open **`actual_demo.R`**

UI

```
library(shiny)
library(shinythemes)

ui <- fluidPage(
                theme = shinytheme("cerulean")
                , titlePanel("Central Limit and Sqrt(n)")
                , sidebarPanel(
                  radioButtons("stat", "Statistic:",
                               choices = c("Mean" = "mean",
                                 "Median" = "median"), width = 4)
                  , sliderInput("logpoints", “log10(points in each sample)”,
                                min = 1, max = 5, value = 1, step = .5)
                  , sliderInput("logsamples", “log10(samples)”, min = 1,
                                max = 4, value = 1.5, step = .5)
                )

                , mainPanel(
                  plotOutput("disthist")
                )
)
```

SERVER

```
server <- function(input, output) {

    output$disthist <- renderPlot({

        stat.compute <- function(x, type) {
            switch(type,
                   mean = mean(x),
                   median = median(x))
            }

            set.seed(8765309)
            sample.means <-
                replicate(as.integer(10^input$logsamples),
                          mean(
                              runif(as.integer(10^input$logpoints))
                              )
                          )
            hist(sample.means, xlim = c(0.2,0.8))
            abline(v = stat.compute(sample.means, input$stat), col = "red")
        })

    }

shinyApp(ui = ui, server = server)
```

~/Documents/pdxdata_shiny - Shiny

http://127.0.0.1:3973 | Open in Browser | Publish

Central Limit and Sqrt(n)

Statistic:

- (•) Mean
- ( ) Median

log10(points in each sample)

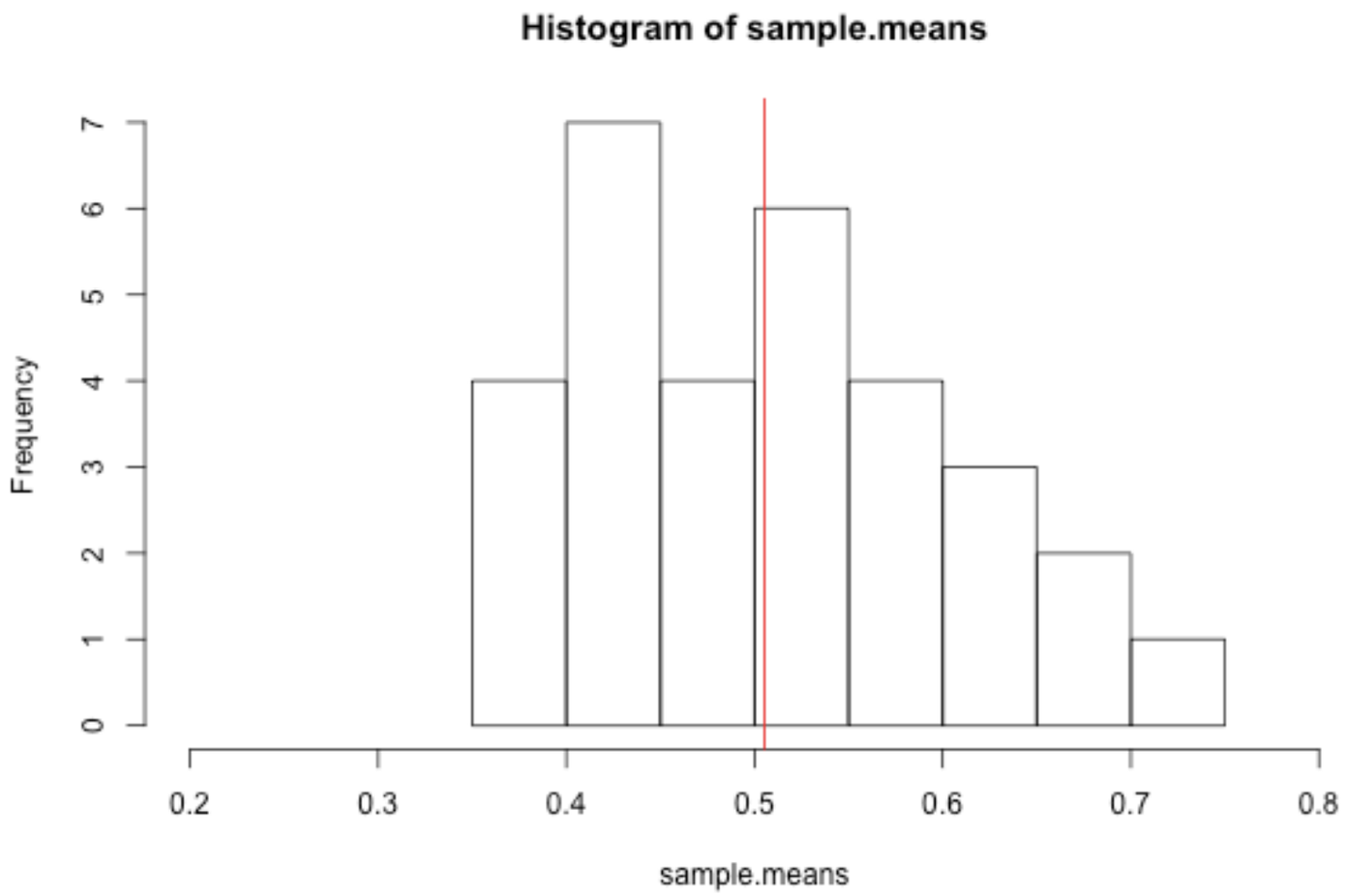
1 — 5

1 1.5 2 2.5 3 3.5 4 4.5 5

log10(samples)

1 — 1.5 — 4

1 1.5 2 2.5 3 3.5 4



BEYOND BASIC SHINY

- Excellent ~ 2 hr intro http://shiny.rstudio.com/tutorial/
- Shiny Devcon videos https://www.rstudio.com/resources/webinars/shiny-developer-conference/
- css formatting options https://shiny.rstudio.com/articles/css.html
- Javascript (c3.js) customizations https://blog.rstudio.org/2016/05/06/shiny-javascript-tutorials/
- Publish on shinyapps.io (cloud deployment)
- rstudio::conf2017 for developments and tutorials
- other web resources galore

HTTPS://SHINY.RSTUDIO.COM/GALLERY/

https://shiny.rstudio.com/gallery/

Apps | Bookmarks | Bradley Angle | wxloop mm5d1_pc... | SelectorGadget | Google Developers... | Run R, RStudio and... | is.R() | graphics - Most up...

Shiny by RStudio

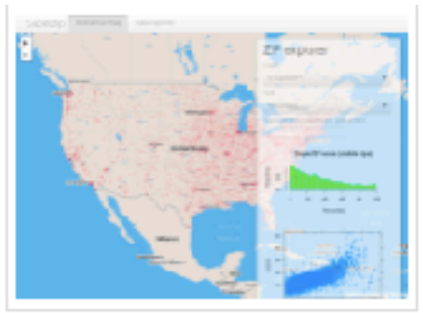
OVERVIEW
TUTORIAL
ARTICLES
GALLERY
REFERENCE
DEPLOY
HELP

Gallery

This gallery contains useful examples to learn from. Visit the Shiny User Showcase to see an inspiring set of sophisticated apps.

Interactive visualizations

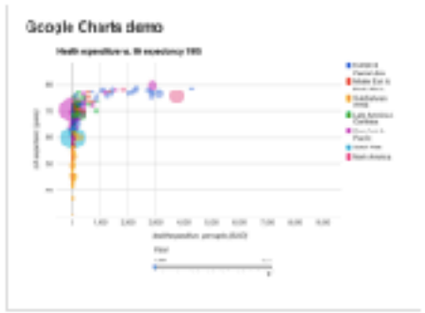
Shiny is designed for fully interactive visualization, using JavaScript libraries like d3, Leaflet, and Google Charts.



SuperZip example

Bus dashboard

Movie explorer

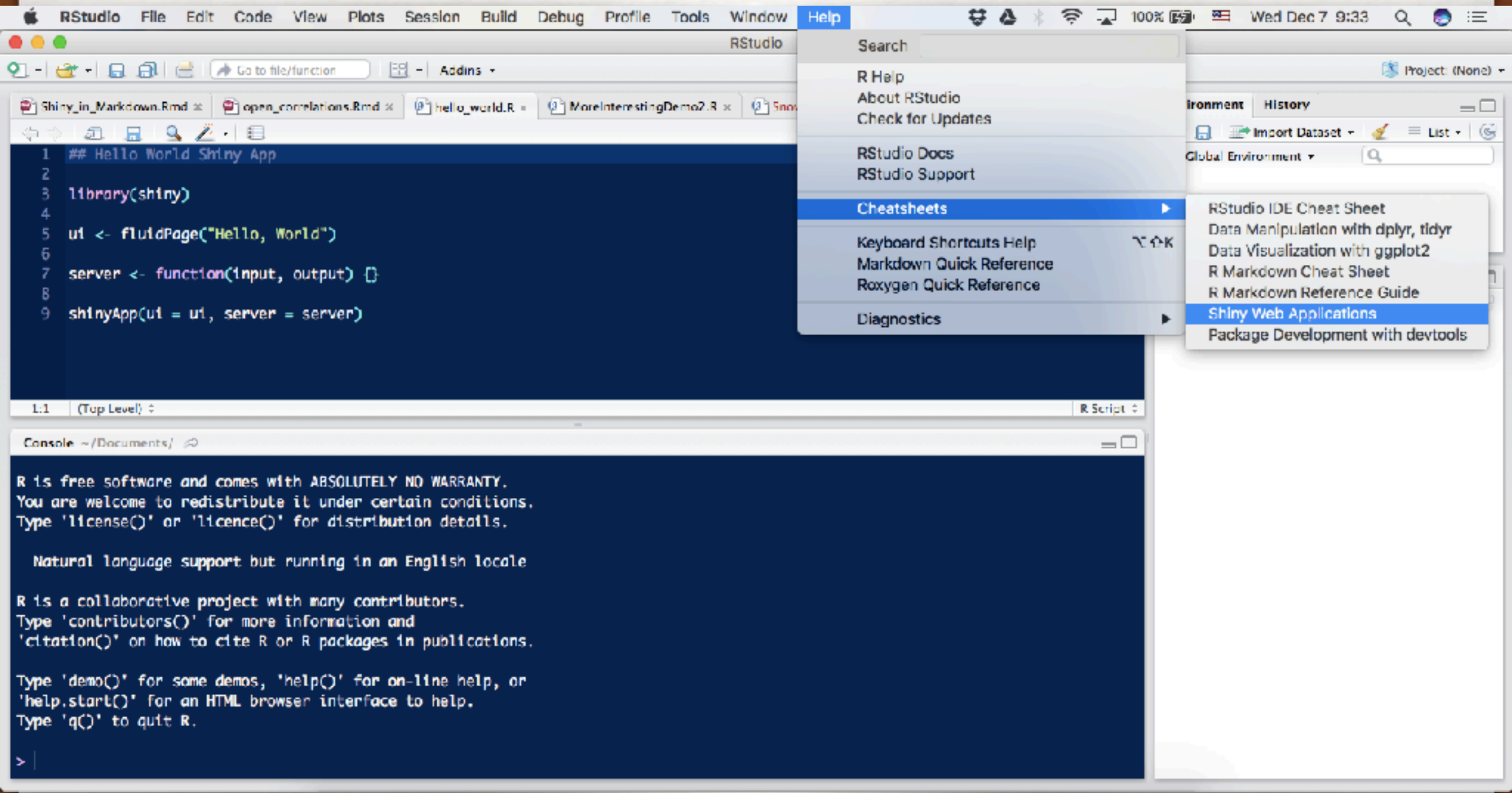


Google Charts

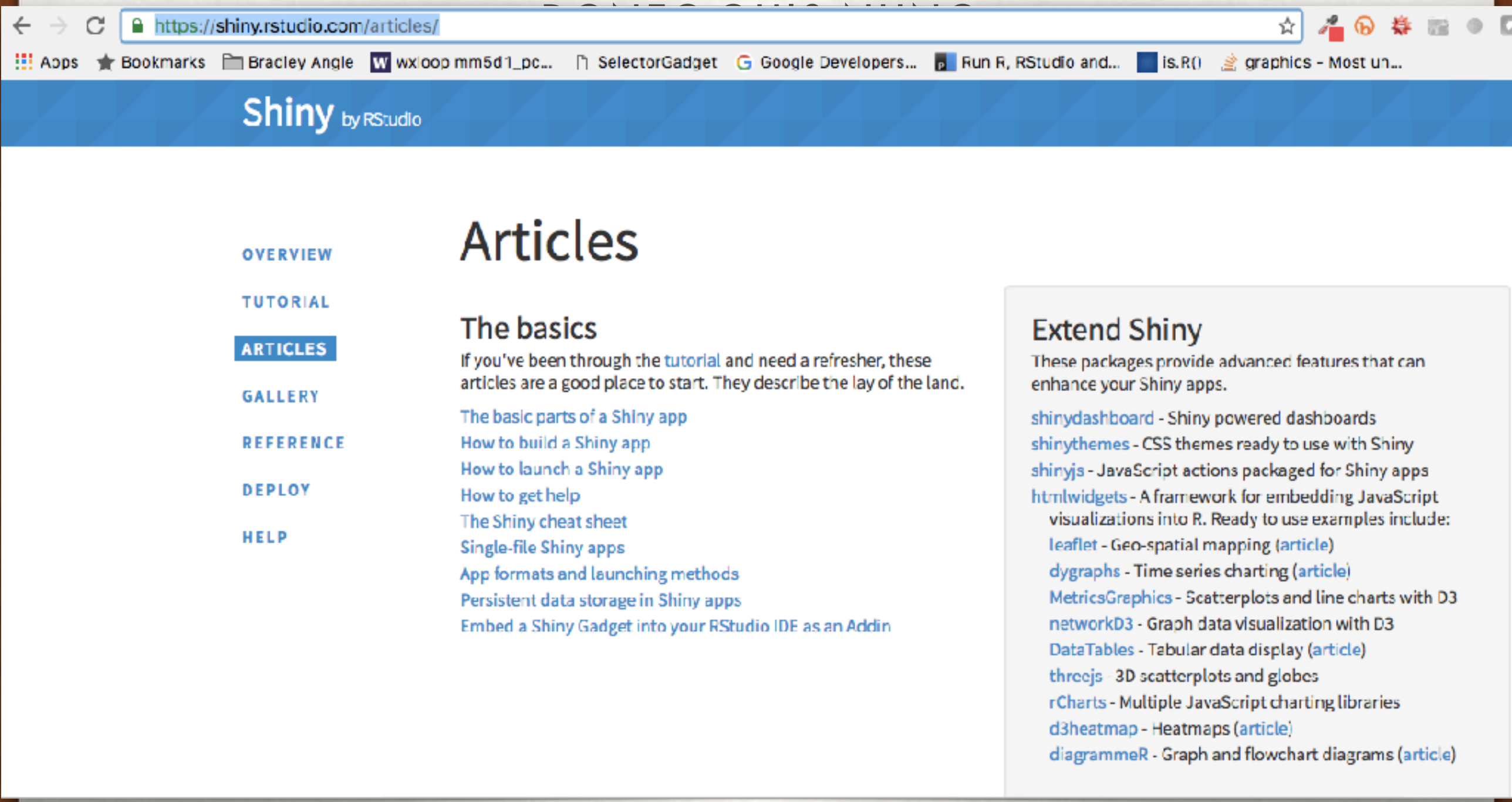
Start simple

If you're new to Shiny, these simple but complete applications are designed for you to study.

RSTUDIO CHEATSHEET



HTTPS://SHINY.RSTUDIO.COM/ARTICLES/



HTTPS://BLOG.RSTUDIO.ORG/?S=SHINY

https://blog.rstudio.org/?s=shiny

Apps Bookmarks Bradley Angle wxloop mm5d1_pc... SelectorGadget Google Developers... Run R, RStudio and... is.R() graphics - Most un...

RStudio Blog

Search results

SHINY SERVER (PRO) 1.5

November 4, 2016 in **Shiny** | Comments closed

Shiny Server 1.5.1.834 and Shiny Server Pro 1.5.1.760 are now available. The Shiny Server 1.5.x release family upgrades our underlying Node.js engine from 0.10.47 to 6.9.1. The impetus for this change was not stability or performance, but because the 0.10.x release family has reached the end of its life. We highly recommend that you test [...]

SHINY SERVER (PRO) 1.4.7

October 14, 2016 in **Security**, **Shiny** | Comments closed

Shiny Server 1.4.7.815 and Shiny Server Pro 1.4.7.736 are now available! This release includes new features to support Shiny 0.14. It also updates our Node.js to 0.10.47, which includes important security fixes for SSL/TLS. Connection robustness (a.k.a. grey-outs) Shiny's architecture is built on top of websockets, which are long-lived network connections between the browser and an R [...]

HTTPS://WWW.RSTUDIO.COM/PRODUCTS/SHINY-SERVER-PRO/