

# Prototipado rápido con R:

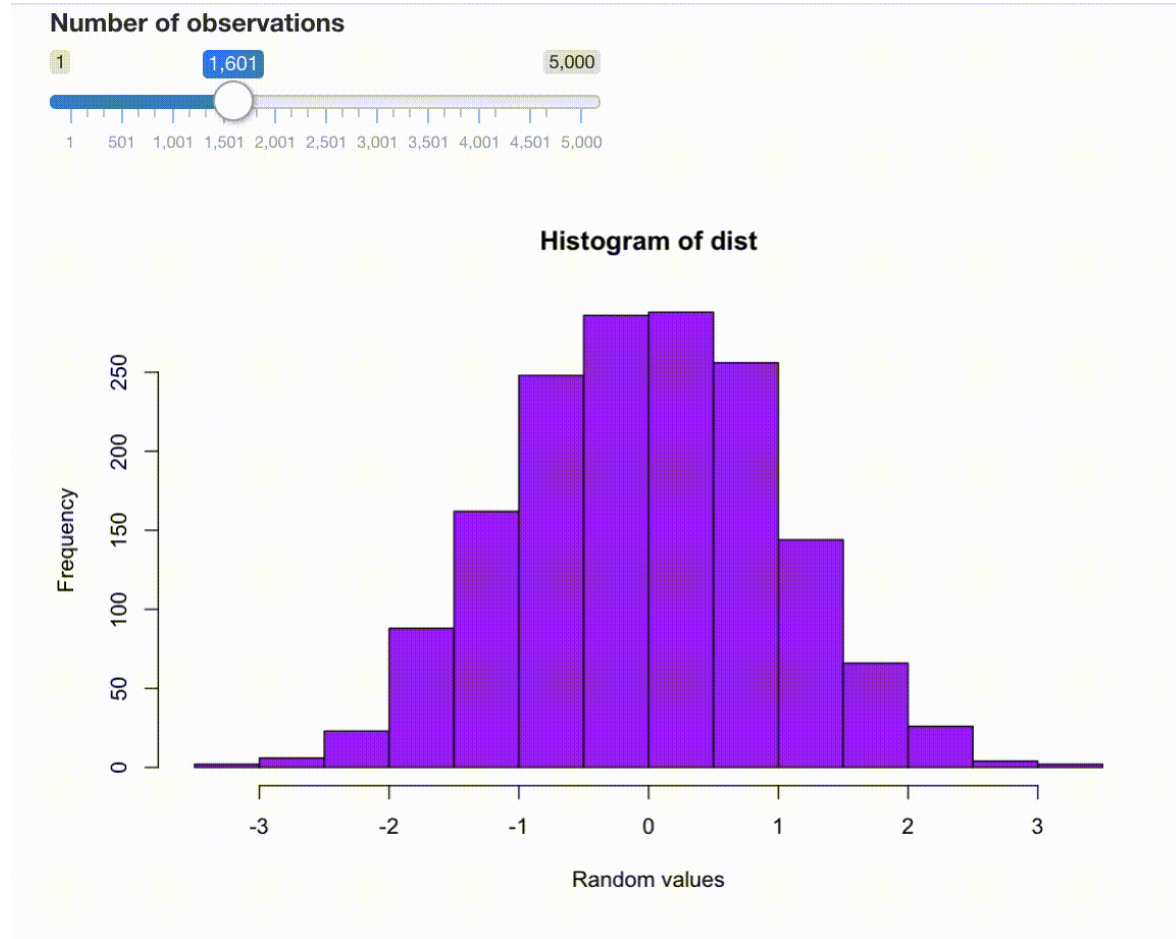
## RAD de aplicaciones Shiny y AEDA de datos

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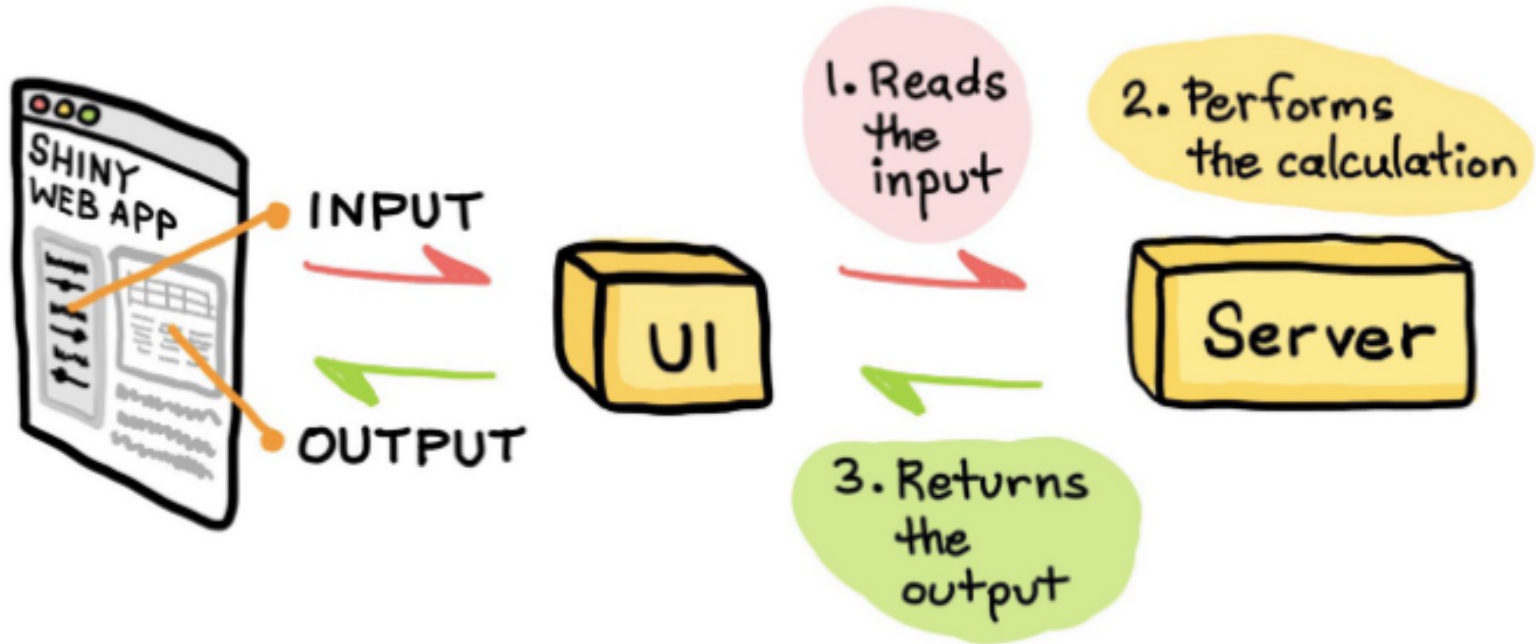
Parte I:

# Rapid Application Development (RAD) en Shiny

# R + Shiny = Visualización dinámica de datos



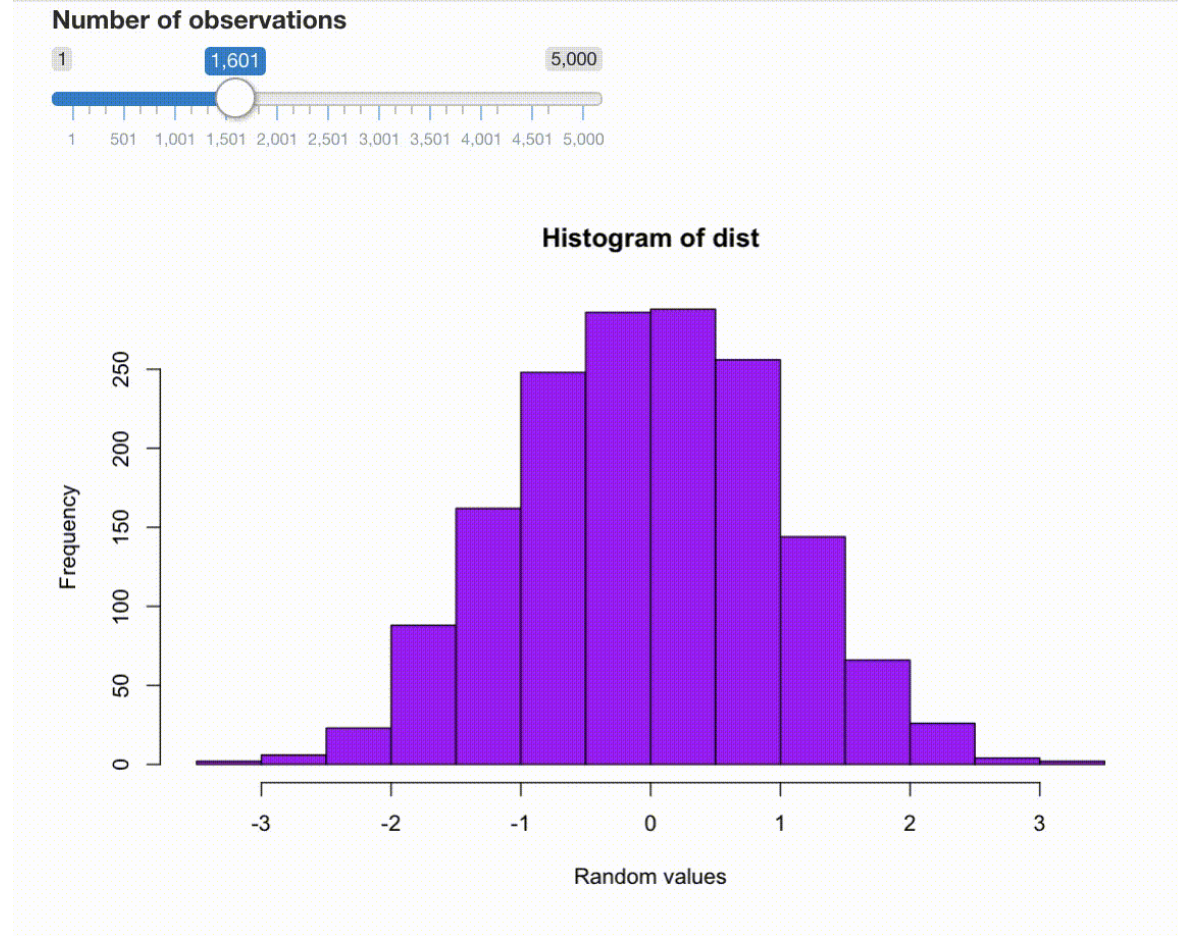
# Anatomía de una aplicación Shiny



Schematic illustration of how a Shiny web app works. (Drawn by Chanin Nantasenamat)

# ui.R (se encarga del GUI)

```
ui <- fluidPage(  
  mainPanel(  
    sliderInput("obs",  
      "Number of observations",  
      min = 1,  
      max = 5000,  
      value = 100),  
    plotOutput("distPlot")  
  )  
)
```



## Seleccione:

Tipo de cancro

Colon

Indicador

Taxa específica

Grupos de idade

00-04 | 05-09 | 10-14 | 15-19

Sexo

Homes | Mulleres | Total

Ámbito xeográfico de interese

Galicia | EOXI | Provincia

Anos

1980 | 1981 | 1982 | 1983 | 19

### Enderezo de contacto:

Servizo de Epidemioloxía  
Dirección Xeral de Saúde Pública  
Edificio administrativo San Lázaro s/n  
15703, Santiago de Compostela  
A Coruña, España  
e-mail: [Estatistica.SP@sergas.es](mailto:Estatistica.SP@sergas.es)

TÁBOA DE DATOS

GRÁFICO

DOCUMENTACIÓN

Representar no eixo das X

Grupos de idade

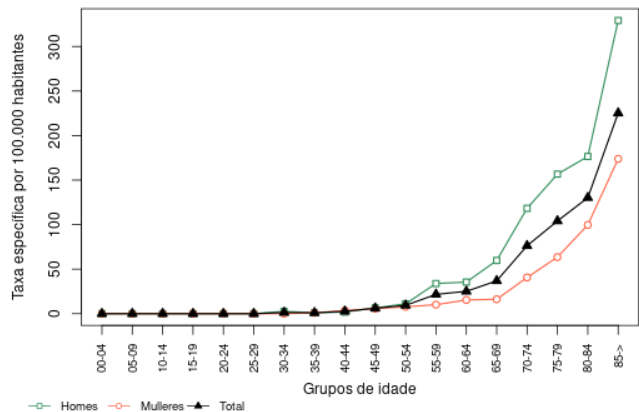
Seleccione o ano

2018

Visualizar gráfico

## Gráfico

### CANCRO DE COLON Galicia, 2018



Fonte: DXSP

## Selección

SIMCA: Sistema de Información sobre Mortalidade por Cáncer de Galicia

CANCRO: Colon

INDICADOR: Taxa específica por 100.000 habitantes

GRUPOS DE IDADE: 00-04 | 05-09 | 10-14 | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | 40-44 | 45-49 | 50-54 | 55-59 | 60-64 | 65-69 | 70-74 | 75-79 | 80-84 | 85->

SEXO: Homes | Mulleres | Total

ÁMBITO XEOGRÁFICO: Galicia

ANOS: 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018

## Descarga

JPEG

PNG

PDF

# Cómo agilizar el desarrollo del ui.R?

- {designer}
  - <https://cran.r-project.org/web/packages/designer/>
- {Shiny UI Editor}
  - <https://rstudio.github.io/shinyuieditor/>

# {designer}

- Está en CRAN
  - <https://cran.r-project.org/web/packages/designer/>
  - Vignette: <https://cran.r-project.org/web/packages/designer/vignettes/designer.html>
- `install.packages("designer", dependencies=TRUE)`
- `library(designer)`
- `designer::designApp()`



Header

Header Settings

HTML Tag <sup>?</sup>  
h1 ▾

Contents  
Header

Add Code Comment <sup>?</sup>  
Comment included in R script

🗑️ Drag Here to Delete Item

Shiny Application

Shiny UI Designer

127.0.0.1:6712

{designer} - Design your UI Help

Page Type ▾ Component ▾ Code ▾ Settings ▾

Selecciona intervalo de fechas

date input to date input

Date Settings

Label

Selecciona intervalo de fechas

Input ID ?

Optional

Date Range

Width ?

Optional

Notes:

- To position several inputs horizontally, they must be put within an input panel

Add Code Comment ?

Drag Here to Delete Item

PRUEBA

Label

0 5 10

0 1 2 3 4 5 6 7 8 9 10

Marcar esta casilla

Selecciona intervalo de fechas

date input to date input

RUN

Copy Save To ui.R

```
fluidPage(
  title = "Shiny Application",
  theme = bslib::bs_theme(4),
  h1(
    "PRUEBA"
  ),
  sliderInput(
    inputId = "slider_vp1iynbdpu",
    label = "Label",
    min = 0,
    max = 10,
    value = 5
  ),
  checkboxInput(
    inputId = "checkbox_90vvnnki04",
    label = " Marcar esta casilla"
  ),
  dateRangeInput(
    inputId = "date_s460v198e9",
    label = "Selecciona intervalo de
  ),
  actionButton(
    inputId = "button_fiobpglfon"{cla
    "RUN"
  )
)
```

# {Shiny UI Editor}

- Fase Beta. NO está en CRAN. Se necesita RStudio.
- `install.packages("remotes", dependencies=TRUE)`
- `remotes::install_github("rstudio/shinyuieditor")`
- `library(shinyuieditor)`
- `shinyuieditor::launch_editor(app_loc = "new-app/")`
  - `#> No app was found at location /Users/me/new_app.`
  - `#> Would you like to start a new app from a template?`
  - `#> 1: yes`
  - `#> 2: no`

# Shiny UI Editor (live demo)

shinyuieditor 0.31

Quick Start Live Demo Articles ▾ Reference Changelog



## Live Demo

<https://rstudio.github.io/shinyuieditor/articles/ui-editor-live-demo.html>

The following is the shinyuieditor interface running in its entirety.

There is no R backend hooked up so the app preview is non-functional but you can use this to play around and see what's possible to build with the editor.

The screenshot displays the Shiny UI Editor interface. The main window is titled "My App" and contains a live preview of a Shiny application. The application features a slider input with a value of 7, a numeric input with a value of 7, and a bar plot. The bar plot is titled "outputs\$plot" and shows a distribution of values. The interface includes a sidebar on the left with "Elements" and a sidebar on the right with "Properties".

**Elements**

- Tab Panel
- Tabset Panel
- Grid Container
- Plotly Plot
- Action Button
- Numeric Input
- Slider Input
- Text Input
- Checkbox Input
- Checkbox Group
- Select Input
- Radio Buttons

**Properties**

- Grid Page
- Grid Card
- Name of grid area: area2
- Panel title: Default
- Gap size between contents: Default

**My App**

Slider  
2 11  
input\$mySlider = 7

Numeric Input  
7

unknown ui output:  
myCoolCustomRFuncio...

outputs\$plot Plotly

Parte II:

Automated Exploratory Data Analysis  
(AEDA) de datos

# Análisis Exploratorio de Datos (AED)

- Realizar una investigación inicial sobre los datos resumiendo sus características.
- Paso inicial crítico en cualquier flujo de trabajo de Ciencia de Datos.
- "Cada maestrillo tiene su librillo".

# Análisis Exploratorio Automatizado de Datos (AEDA)

- Existen varios paquetes de R que facilitan/automatizan esta tarea inicial y proporcionan un apoyo sustancial en el manejo de datos, la visualización y la elaboración de informes.
- Veremos DOS de ellos:
  - DataExplorer
  - SmartEDA

# {DataExplorer}

- Está en CRAN
  - <https://cran.r-project.org/web/packages/DataExplorer/>
- `install.packages("DataExplorer", dependencies=TRUE)`
- `library(DataExplorer)`
- `create_report(misdatos)`

<https://cran.r-project.org/web/packages/DataExplorer/vignettes/dataexplorer-intro.html>



# {SmartEDA}

- Está en CRAN
  - <https://cran.r-project.org/web/packages/SmartEDA/>
- `install.packages("SmartEDA", dependencies=TRUE)`
- `library(SmartEDA)`
- `ExpReport(misdatos)`

<https://cran.r-project.org/web/packages/SmartEDA/vignettes/SmartEDA.html>

## Conclusión:

Es posible hacer prototipado rápido  
de interfaces para Shiny  
y de análisis exploratorios de datos.

GRACIAS!

@mianromu