Shiny - Build a data science application in 20 mins

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What Inside!

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Tools to improve productivity

Examples


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LIGHTYEAR
DASHBOARDS EVERYWHERE

Who could use shiny?

Business Analyst

They are experts in their domain and try to narrow the gap between business and IT Shiny can help them prototype ideas for proper communication.

Data Analyst

They are generalists, some call them junior data scientists. They usually acquire data, process it and summarize it. Excel is not enough for that anymore.

Statistician

They collect, organize, present, analyze, and interpret data to reach valid conclusions and make correct decisions. Presenting it sometimes becomes a challenge.

Data Scientist

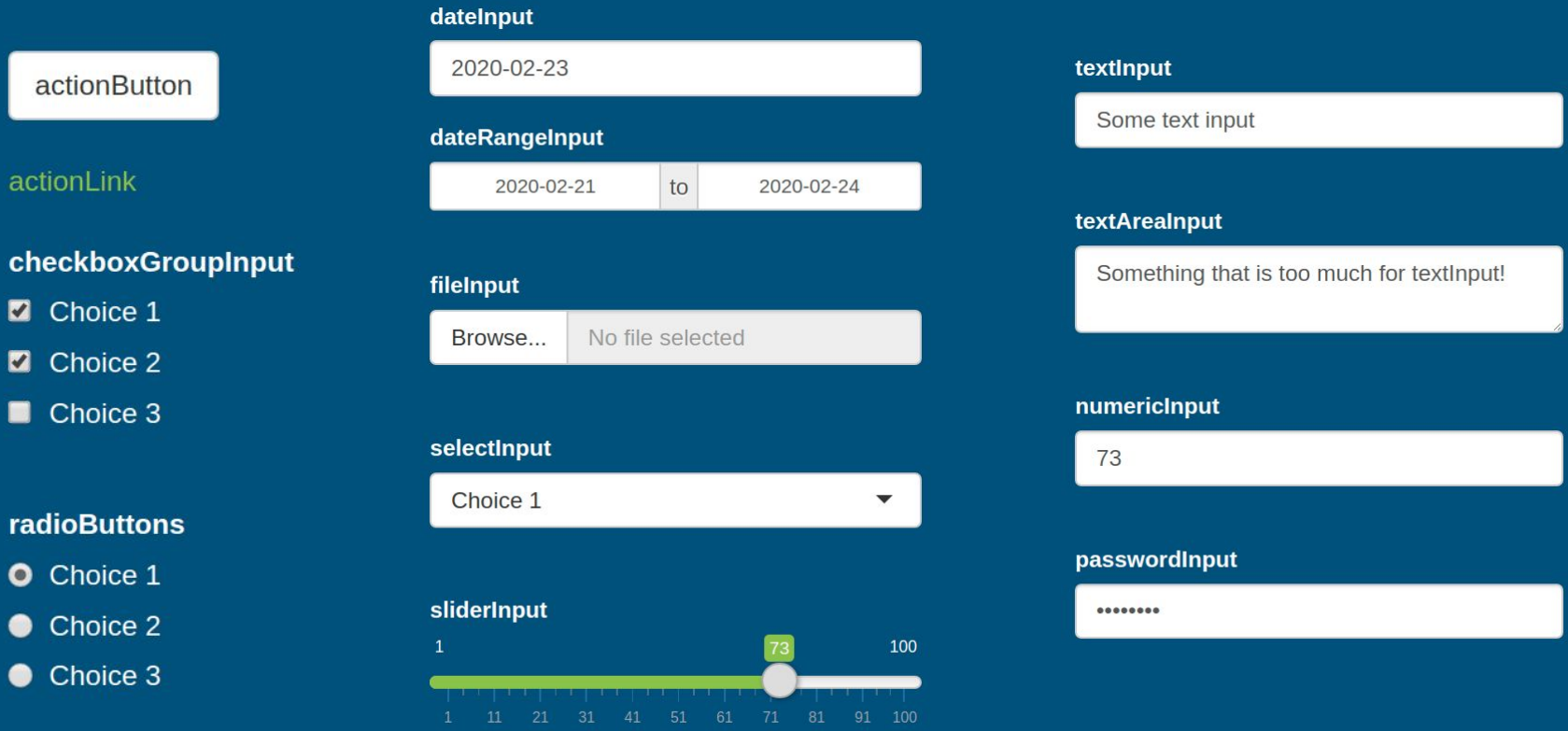
They are experts in statistics and mathematics and are proficient in Big Data technologies and analytical tools. Shiny can sometimes be a bridge for them to communicate

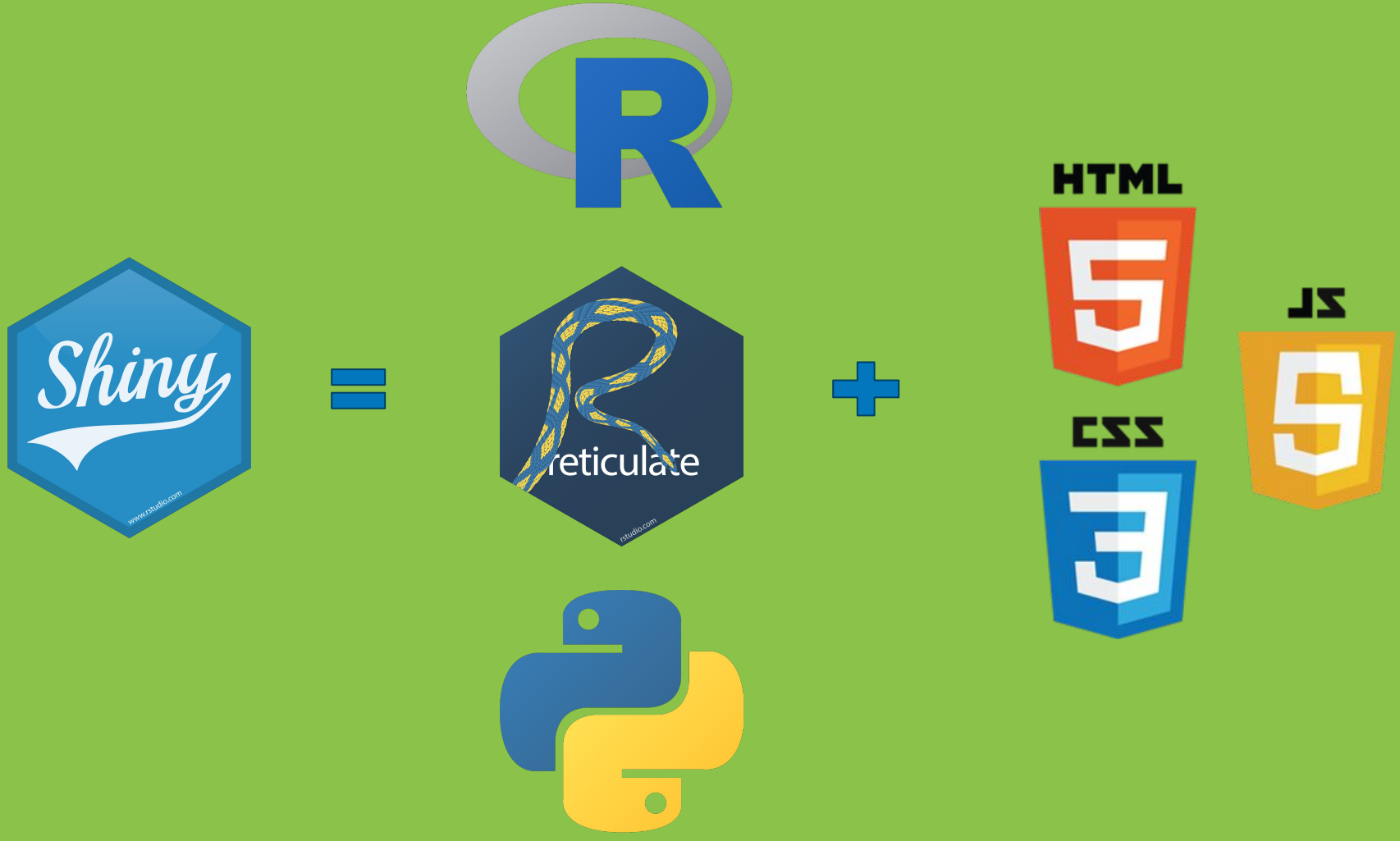
All you need to run a shiny app is R and an installed package called shiny.

These 4 lines run a shiny application in your browser!

```
library(shiny)
ui <- fluidPage(“Hello world!”)
server <- function(input, output, session) {}
shinyApp(ui, server)
```

The base shiny provides these inputs for you to play around with!

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Data Viz

Why shiny is perfect here

- Data visualization requires a lot of data preparation before it could be summarised a visualized.
- R has it's inbuilt ggplot and plotly libraries for data viz
- Shiny can make use of tidyverse to tidy and summarize the data followed by the plot packages to display graphs in a web page.

Scalable

- Not everyone needs to learn data wrangling and visualization, Once a shiny app is build everyone can use it.
- Building new shiny apps using shiny-server is as easy as copy pasting the code in the server's directory.

Getting your own server!

- You can easily get your server from digital ocean, aws or google cloud platform.
- We will use google cloud platform for this demo.
- Once you have created a VM (Virtual Machine) instance, you can ssh into it.

Installing R-Studio server

- Before installing R-Studio server you will need a server like apache or nginx setup.
- Let’s go with nginx. Then we install R, just like your own computer.
- Then we install R-Studio server.
- R-Studio server runs in port 8787 by default.

Help link

Installing shiny-server

- Before installing shiny-server make sure that you have installed the shiny package. (Note that the best way to install a package is to install it as a root user so it will be available for all users)
- Now install shiny-server, It runs in the port 3737 by default.

Help link

Things to learn for end to end deployment

You will need to learn R since it's the base of all shiny application. Shiny because learning reactivity and connection between the app and code is done using shiny. Linux is good to know since shiny-server would be hosted in a linux server. If you would like to have python code in your app you must learn about reticulate. Finally other packages that you need specific to the application you're building.

Text editor

- R-Studio IDE is better for a lot of things but building a large shiny app is not one of them.
- In many cases you would need to transition into multiple files for your project and it becomes tedious.
- Using a text editor and terminal is lightweight.

Chrome extensions

- Sometimes even if the dashboard is insightful but not attractive, people are not attentive to it. Design is what attracts the users and proper color combination is key to it.
- The position of the UI elements must be perfect, page ruler will help in ensuring it.
- If you’re web-scraping, SelectorGadget will help select the proper element seamlessly.

Git

- Managing the code locally is one thing but managing the code in multiple places and with multiple people is tricky.
- You want to easily update code in multiple places securely.
- You want to revert back to old versions of code if needed.
- You might want to track your progress periodically.

Learning materials

- R-Studio cheat sheets are the best way to learn about a package.
- This list of commands are a good point to start learning linux.
- Code for ggplot and plotly basic graphs.
- Code for sample explore data app.
- Installing R-Studio server and shiny-server in a Cloud instance

Questions & Answers

About me

- A data science enthusiast especially interested in R
- Working in the data science team of ZoomRx
- Love to make informative materials on R

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