Shiny

R for Data Science workshop

2019-05-01 (updated: 2019-05-15)

Shiny

Outline

- Overview
- Shiny app structure
- Reactivity
- File structure
- Publishing your app

Data science workflow

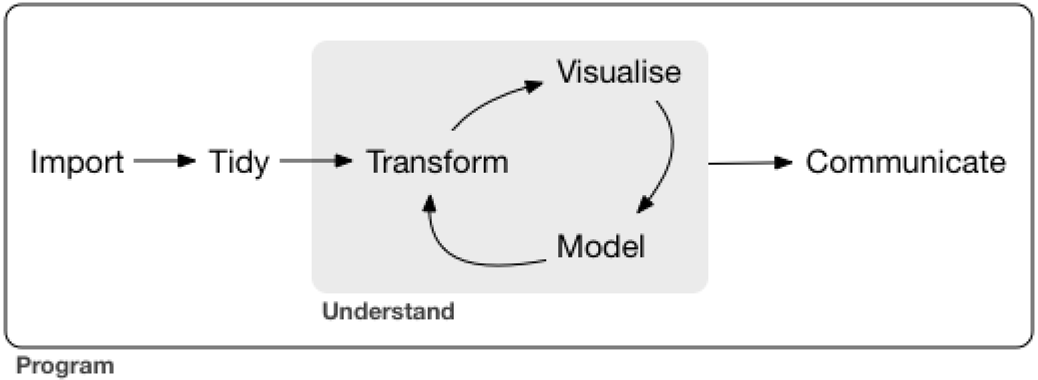
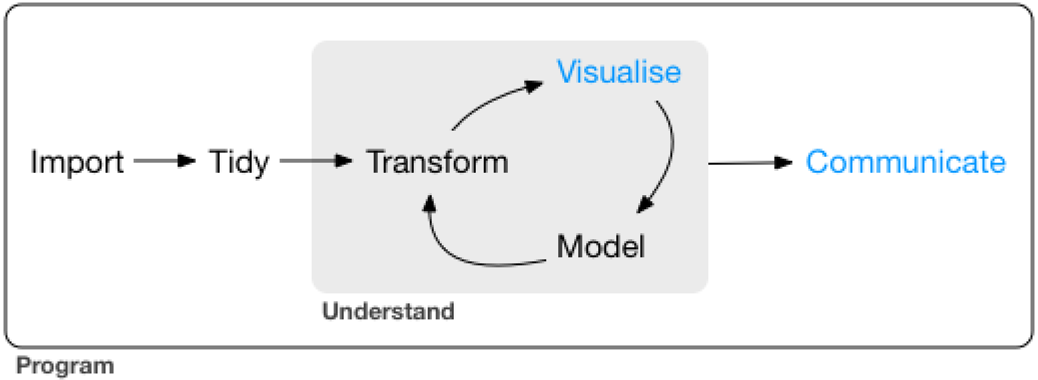


Image source: R for Data Science by Hadley Wickham & Garrett Grolemund.

Data science workflow



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Shiny

Overview

- Web apps written completely in R
- Shiny generates a web UI consisting of HTML, CSS, & JavaScript
- The web server executes R code
- The UI interacts with the R server using websockets
- You only have to write R code

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Shiny app structure

```r
library(shiny)

ui <- fluidPage()

server <- function(input, output) {}

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

Demo

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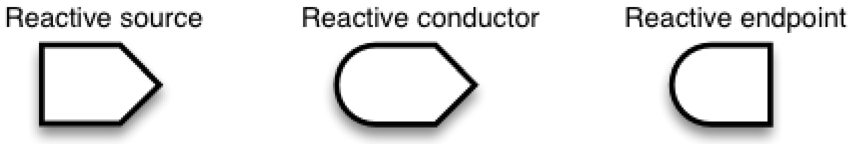
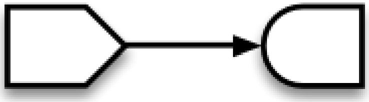
Reactivity

Shiny has three kinds of objects for reactive programming.



The simplest structure of a reactive program ivnolves just a source and an endpoint:



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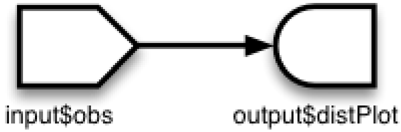
Reactivity example

```
server <- function(input, output) {
  output$distPlot <- renderPlot({
    hist(rnorm(input$obs))
  })
}
```



See it in action: https://gallery.shinyapps.io/01_hello/

Shiny

Movies app example

From the Intro to Shiny webinar from RStudio

https://resources.rstudio.com/webinars

Demo

Your turn

Shiny

Create a shiny web app!