

Data Science 101 - Class Notes

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Concept 8

Basics I: How R Shiny works

Running Your First R Shiny Application (Web Application)

Web applications are used by programmers to display information to users.

1a. Install R shiny package

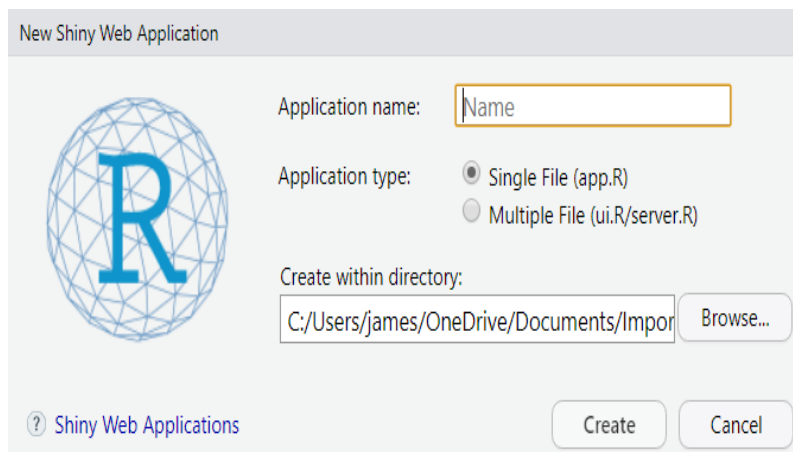
- Run `install.packages('shiny')`

1b. To open create an R Shiny file:

- Click the *green plus sign* right under the File tab in the far right
- Click on *Shiny Web App* ...

1c. Application Name & Directory

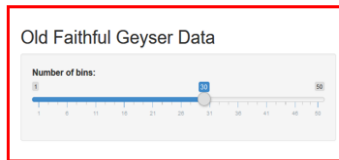
- Specify the name as 'test_1'
- Keep single file
- Click Browse to specify the directory. Use the folder for this class. Once in folder press Open.
- Click the create button



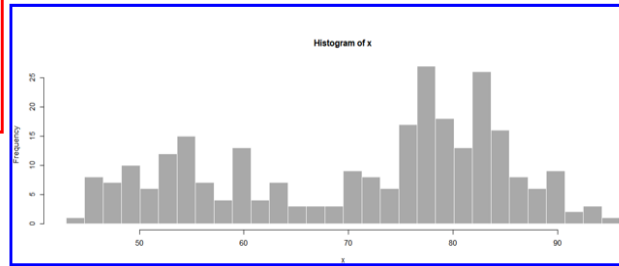
1d. Running the existing application

- Click *Run App* button
- Notice the Shiny pops up
- Click Open in Browser

What the user sees:



user input: ui



display: server

What the programmer codes:

```
library(shiny)
```

```
# Define UI for application that draws a histogram
ui <- fluidPage(

  # Application title
  titlePanel("Old Faithful Geyser Data"),

  # Sidebar with a slider input for number of bins
  sidebarLayout(
    sidebarPanel(
      sliderInput("bins",
        "Number of bins:",
        min = 1,
        max = 50,
        value = 30)
    ),

    # Show a plot of the generated distribution
    mainPanel(
      plotOutput("distPlot")
    )
  )
)
```

user input: ui

```
# Define server logic required to draw a histogram
server <- function(input, output) {

  output$distPlot <- renderPlot({
    # generate bins based on input$bins from ui.R
    x <- faithful[, 2]
    bins <- seq(min(x), max(x), length.out = input$bins + 1)

    # draw the histogram with the specified number of bins
    hist(x, breaks = bins, col = 'darkgray', border = 'white')
  })
}
```

display: server

```
# Run the application
shinyApp(ui = ui, server = server)
```

Brings everything together