A beginner's guide to Shiny

Warwick R User Group meeting

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19 January 2017

What is Shiny?

- A framework for creating interactive web applications
- Created by the people behind RStudio

Why use Shiny?

- Engage casual readers in your research
- You don't need new software
- Your reader doesn't need to install any software
- Don't need to learn (much) new coding

How to use Shiny?

- **ui.R** - Tells the web broswer how to present output and allows for user input
- **server.R** - Tells the server what to do with the user inputs from ui.R
- **global.R** - Can be used to declare functions which can be called within the other files

ui.R

```r
fluidPage(
  titlePanel("Shiny App"),
  sidebarLayout(
    sidebarPanel(
      sliderInput(inputId = "obs", label = "No. Observations",
                  min = 1, max = 1000, value = 500),
      checkboxInput("fr", "Frequency", value = FALSE),
      selectInput("colour", "Colour", choices = c("red", "black"), selected = "red")
    ),
    mainPanel(
      plotOutput(outputId = "main_plot")
    )
  )
)
```

server.R

```r
function(input, output) {
  output$main_plot <- renderPlot({
    hist(rnorm(input$obs),
         freq = input$fr,
         col = input$colour,
         main = paste("Histogram of", input$obs, "standard normal observation(s)"))
  })
}
```

Deploying Shiny apps

- Shiny Server
- ShinyApps.io
    - Free tier allows for up to 5 applications up to 25 active hours per month
    - Premium tiers allow for more apps/active hours but start at $100/year