

Shiny

INFO 201

Today's Objectives

Discuss separating code into multiple files

Introduce the Shiny web application framework

Build user-interface (UI) components

Connect a user-interface to an R session (server)

Multiple Files

Why break code into multiple files?

Clear organization

Facilitate collaboration

Make more modular code (i.e., usable across projects)

Necessary for building applications

```
# buildMap.R

BuildMap <- function(...) {
  # build a map using the data passed into this function

  # Return your map
}
```

```
# analysis.R file: using other file's function, build a map
```

```
# Make sure your directory is properly set
setwd(...)
```

```
# Use the source function to load your file
source('./scripts/buildMap.R')
```

```
# Pass data to your function that you can now use
df <- read.csv('some/csv/file')
buildMap(df)
```

module 14 exercise-1

Building Applications

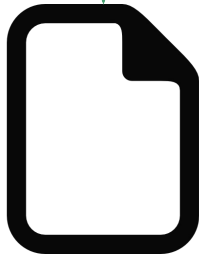
Software Applications

Systems with multiple connected components

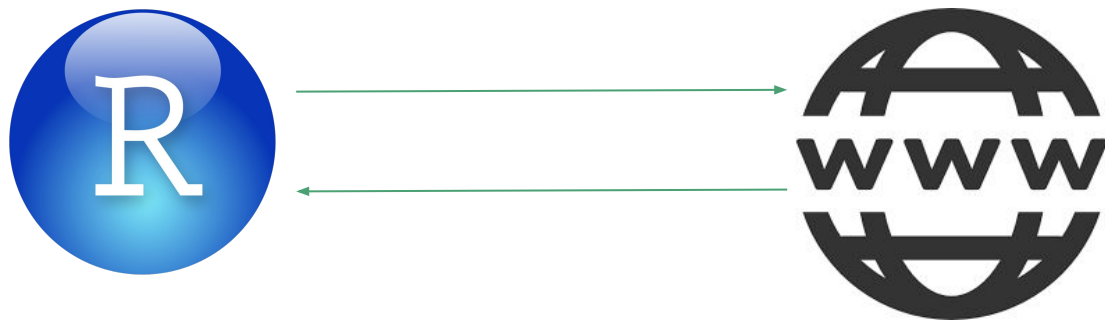
Often span different programming languages or environments

May be responsive to user inputs

Super fun to build



What we've been doing...

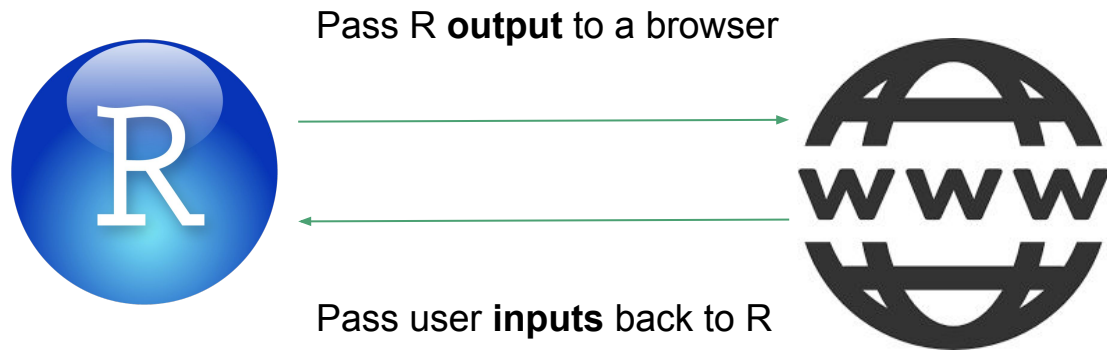


But what if...

Shiny

by RStudio

A web application framework for R



Shiny Structure

One file to describe the R session (server.R)

One file to describe the user interface (ui.R)

These files need to be in the **same directory**

One of many workflows

```
library(shiny)

# Define UI for an application that has a title
shinyUI(

  # Specify a fluidPage layout (most common)
  fluidPage(

    # Create a title in your fluidPage
    titlePanel("Hello Shiny!")
  )
)
```

```
# server.R
library(shiny)

shinyServer(function(input, output) {

  # Create a histogram property of the output
  output$histogram <- renderPlot({

    # Use shiny's renderPlot function to render a plot
    x <- rnorm(100)
    return(hist(x))
  })
})
```

module 14 demo-1

module 14 exercise-2

Publishing Shiny Apps

Can't just push to GitHub....

We need a service where there is an R session connected to a web host

Shinyapps.io

Upcoming...

By Tuesday: Be familiar with **module 14**

Due Tuesday, 11/15 (***before class***): [project proposal](#), [a7-collaboration](#)

No lab next week

No office hours today

[Data resources](#)