**Introduction to R Shiny**

Topics outline

**Class 1**

1. Introduction
2. Student introductions
3. Syllabus with basic topics, final project, participation
4. Materials for each class
5. Structure of an app
6. Go through example apps with runExample() (**handout 1**)
7. Make first app by copying "01\_hello": interactive coding
8. **In class activity:** students make minor changes to app code (change title, max slider #, plot line color)
9. Build a basic app
10. Start with minimal app template
11. Add reactive input, reactive function, reactive output (histogram example): interactive coding

**Class 2**

1. Continue basic app as needed
2. Reactive inputs (control widgets) (**handout 2**)
3. Start with minimal app template
4. Explore numericInput(), helpTextInput(), sliderInput(), selectInput(): interactive coding
5. Run app "all\_input\_functions" to see all input functions
6. **In class activity:** students recreate app shown in image “shiny\_class\_2\_recreate\_app.PNG”

**Class 3**

1. Render\*() functions and reactive outputs (**handout 3**)
2. Start with histogram app template we made in first week
3. Render functions (renderPlot(), renderPrint(), renderText(), renderTable() ): interactive coding
4. **In class activity:** students recreate app shown in image “shiny\_class\_3\_recreate\_app.PNG”
5. Reading data into app
6. Data within app folder: interactive coding

**Class 4**

1. Deploying app
2. Run code in R from online or GitHub
3. shinapps.io
4. Shiny server
5. Sidebar layout (titlePanel(), sidebarPanel() ): interactive coding
6. HTML tags to control user interface (**handout 4**)
7. Demonstrate tags (p(), em(), h1(), h2(), img() ): interactive coding
8. Run “html\_tags\_example” app to show more HTML tags
9. **In class activity:** students recreate app shown in image “shiny\_class\_4\_recreate\_app.PNG”
10. Grid layout (fluidRow(), column() ): interactive coding

**Class 5**

1. **In class activity:** students recreate app shown in image “shiny\_class\_5\_recreate\_app.PNG”
2. The reactive() function to build dataset for use in render\*() functions: interactive coding

**Class 6**

1. **In class activity:** fix errors in five example apps
2. Add interactivity to a scatterplot: interactive coding
3. Can put source code in app folder
4. Read in data from app folder
5. Add click/hover/brush to plotOutput()
6. Make tables in server(), add tableOutput() to UI
7. As time allows, show adding an “All” option to selectInput() and a conditional in reactive()

**Class 7**

1. **In class activity:** add second variable to app to recreate “shiny\_class\_7\_recreate\_app.PNG”
2. Action buttons to delay reaction: interactive coding
3. Replace reactive() with eventReactive()
4. Mention observeReactive() and reactiveValues()
5. More built-in panel layouts (**handout 5**)
6. Focus on tabs, show example "06\_tabsets"
7. Show navlistPanel example: <https://shiny.rstudio.com/gallery/navlistpanel-example.html>