Widgets in Shiny

Control Widgets

Control widgets are dynamic elements a user can interact with. Each stores a **value**, which ***automatically*** updates as user interacts with the widget.

```
# creates a text box
textInput('text.key', label = "Enter Text")




# creates a slider
sliderInput('slide.key', label = "Pick a number",
            min = 1, max = 20, value = 12)
```

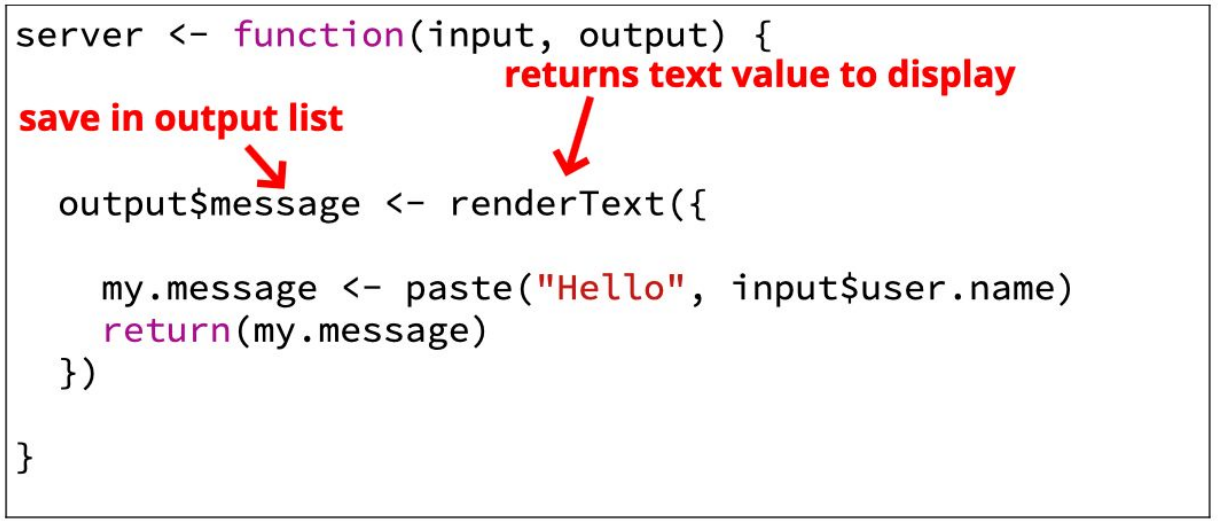
The Server

The **server** is a function that manipulates input and output lists. The "value" from a widget is available in the input list.

```
ui <- fluidPage(
    textInput('user.name', label = "Enter Name")
)


server <- function(input, output) {

  # use input$user.name ← value in input list

}
```

Server: Render Functions

Assign the results of **render functions** to the output list. These functions take a **reactive expression** (an un-named function) as an argument.



UI: Reactive Outputs

Show the values from the *server's* output list by using **reactive output** functions in the UI.

```
ui <- fluidPage(
   textOutput('message')
)


server <- function(input, output) {

   output$message <- renderText({

     # ... determine message here
     return(my.message)
   })
}
```

Reactivity

Changes to **control widgets** update the value in input, which ***notifies*** the **reactive expression** to update the value in output, which is displayed by **reactive outputs**.

```
ui <- fluidPage(
    textInput('user.name'),

    textOutput('message')
)


server <- function(input, output) {

    output$message <- renderText({

      my.message <- input$user.name
      return(my.message)
    })
}
```