

# User interfaces in shiny

2019-08-29

# What's going on under the hood?

```
fluidPage(  
  headerPanel("Title"),  
  sidebarLayout(  
    sidebarPanel(  
      # Inputs  
    ),  
    mainPanel(  
      # Outputs  
    )  
  )  
)
```

```
fluidPage(  
  headerPanel("Title"),  
  sidebarLayout(  
    sidebarPanel(  
      # Inputs  
    ),  
    mainPanel(  
      # Outputs  
    )  
  )  
)
```

```
### <div class="container-fluid">  
###   <div class="col-sm-12">  
###     <h1>Title</h1>  
###   </div>  
###   <div class="row">  
###     <div class="col-sm-4">  
###       <form class="well"></form>  
###     </div>  
###     <div class="col-sm-8"></div>  
###   </div>  
### </div>
```

# Writing HTML in shiny

## names(tags)

###	[1]	"a"	"abbr"	"address"	"area"	"article"
###	[6]	"aside"	"audio"	"b"	"base"	"bdi"
###	[11]	"bdo"	"blockquote"	"body"	"br"	"button"
###	[16]	"canvas"	"caption"	"cite"	"code"	"col"
###	[21]	"colgroup"	"command"	"data"	"datalist"	"dd"
###	[26]	"del"	"details"	"dfn"	"div"	"dl"
###	[31]	"dt"	"em"	"embed"	"eventsource"	"fieldset"
###	[36]	"figcaption"	"figure"	"footer"	"form"	"h1"
###	[41]	"h2"	"h3"	"h4"	"h5"	"h6"
###	[46]	"head"	"header"	"hgroup"	"hr"	"html"
###	[51]	"i"	"iframe"	"img"	"input"	"ins"
###	[56]	"kbd"	"keygen"	"label"	"legend"	"li"
###	[61]	"link"	"mark"	"map"	"menu"	"meta"
###	[66]	"meter"	"nav"	"noscript"	"object"	"ol"
###	[71]	"optgroup"	"option"	"output"	"p"	"param"
###	[76]	"pre"	"progress"	"q"	"ruby"	"rp"
###	[81]	"rt"	"s"	"samp"	"script"	"section"
###	[86]	"select"	"small"	"source"	"span"	"strong"
###	[91]	"style"	"sub"	"summary"	"sup"	"table"
###	[96]	"tbody"	"td"	"textarea"	"tfoot"	"th"
###	[101]	"thead"	"time"	"title"	"tr"	"track"
###	[106]	"u"	"ul"	"var"	"video"	"wbr"

# Using HTML tags

```
tags$b("This is my first app")
```

```
## <b>This is my first app</b>
```

**This is my first app**

# Header tags

```
tags$h1("First level heading")  
tags$h2("Second level heading")  
tags$h3("Third level heading")
```

## First level heading

### Second level heading

### Third level heading

# Header tags

```
ui <- fluidPage(  
  tags$h1("First level heading"),  
  tags$h2("Second level heading"),  
  tags$h3("Third level heading")  
)  
  
server <- function(input, output) {}  
  
shinyApp(ui = ui, server = server)
```



# Linked text

```
tags$h1("Awesome title")
tags$br() # line break
tags$a(
  "This app is built with Shiny.",
  href = "http://shiny.rstudio.com"
)
```

## Awesome title

This app is built with Shiny.

# Common tags are available without tags

With tags	Without tags
tags\$p	p
tags\$h1	h1
tags\$h2	h2
tags\$h3	h3
tags\$h4	h4
tags\$h5	h5
tags\$h6	h6
tags\$a	a

With tags	Without tags
tags\$br	br
tags\$div	div
tags\$span	span
tags\$pre	pre
tags\$code	code
tags\$img	img
tags\$strong	strong
tags\$em	em
tags\$hr	hr

# Common tags are available without tags

```
h1("First level header")  
br()  
code("Monospace text")
```

## First level header

Monospace text

# Write HTML directly with HTML()

```
HTML("<h2>Hello world, <br/> and then a line break.</h2>")
```

Hello world,  
and then a line break.

# Put images, CSS, JS, etc in www

```
| --name_of_app  
  |-- app.R  
  |-- www  
    |-- image.png  
    |-- theme.css  
    |-- script.js
```

# Your Turn 1

**Start with `movies_11.R`**

**Add some helper text to the app using tags that let your users know how to navigate the app**

# organizing material with tabs

# tabsetPanel() + tabPanel()

```
mainPanel(  
  tabsetPanel(  
    tabPanel("Plot", plotOutput("plot")),  
    tabPanel("Data", DT::dataTableOutput("data"))  
  )  
)
```



# tabsetPanel() + tabPanel()

```
mainPanel(  
  tabsetPanel(  
    tabPanel("Plot", plotOutput("plot")),  
    tabPanel("Data", DT::dataTableOutput("data"))  
  )  
)
```

## Your Turn 2

**Continue working on** `movies_11.R`.

**Split the app into two tabs: one for plot and the other for data table.**

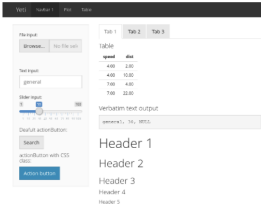
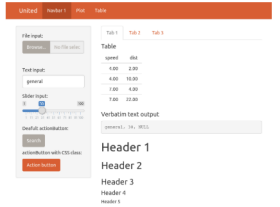
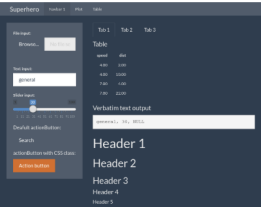
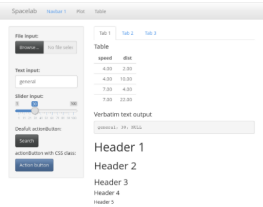
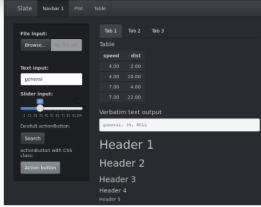
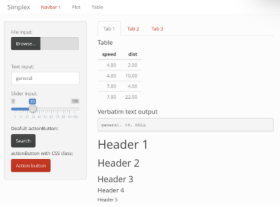
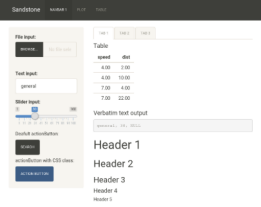
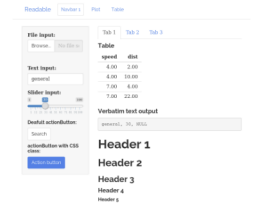
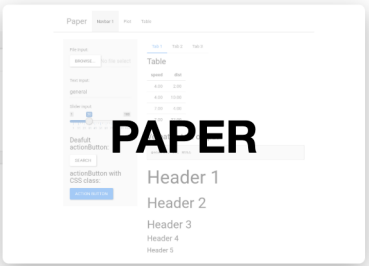
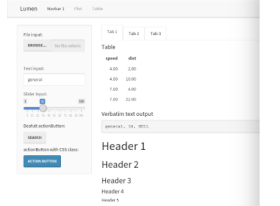
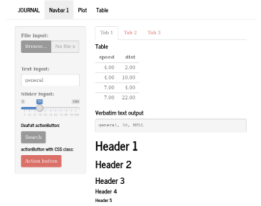
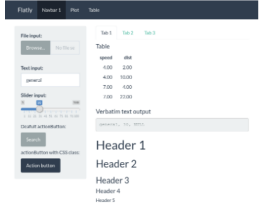
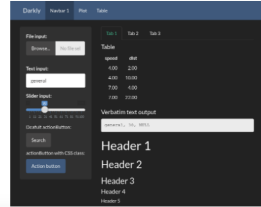
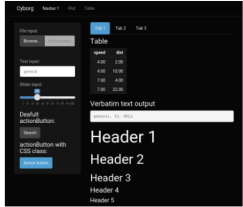
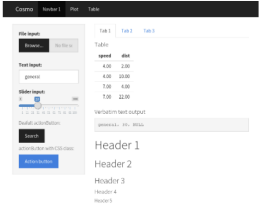
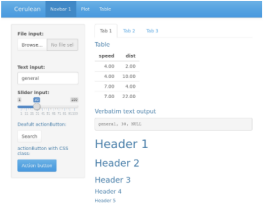
**If you finish early: Add another tab that shows a table of summary statistics. Use `skimr::skim(movies) %>% skimr::kable()` in the server code**

# Your Turn 2

```
mainPanel(  
  tabsetPanel(  
    tabPanel("Plot", plotOutput("scatterplot")),  
    tabPanel("Data", DT::dataTableOutput("moviestable"))  
  )  
)
```

# setting a theme with shinythemes

# shinythemes



# Selecting a shinytheme

```
library(shinythemes)
ui <- fluidPage(
  themeSelector(),
  ...
)
```

# Selecting a shinytheme

```
library(shinythemes)
ui <- fluidPage(
  theme = shinytheme("sandstone"),
  ...
)
```

# Your Turn 3

**Continue working on** `movies_11.R`

**Add the theme selector, browse various themes, and pick a theme and apply it. Don't forget to remove the selector once you're done picking a theme**



# Using your own CSS theme

```
myapp
|-- app.R
|-- www/
    |-- mytheme.css
```

```
fluidPage(
  theme = "mytheme.css",
  ...
)
```

# Resources

**Shiny Website:** A collection of articles  
on Shiny

**Mastering Shiny:** A Work-in-progress  
book from Hadley Wickham