



BUILDING DASHBOARDS WITH SHINYDASHBOARD

Reactive expression refresher

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Inputs

- `actionButton()`
- `checkboxInput()`
- `dateInput()`
- `numericInput()`
- `radioButtons()`
- `selectInput()`
- `sliderInput()`
- `textInput()`



Inputs

selectInput()

- inputId
- label
- choices

```
selectInput(  
  inputId = "favorite_character",  
  label = "Favorite Character",  
  choices = c("Leia", "Luke", "Han")  
)
```



Render functions

- `renderPrint()`
- `renderText()`
- `renderTable()`
- `renderDataTable()`
- `renderPlot()`
- `renderImage()`
- `renderUI()`



Render Functions

```
server <- function(input, output) {  
  output$printed_object <- renderPrint({  
    "print me"  
  })  
}
```



Output Functions

- `renderPrint()` -- `verbatimTextOutput()`, `textOutput()`
- `renderText()` -- `textOutput()`
- `renderTable()` -- `tableOutput()`
- `renderDataTable()` -- `dataTableOutput()`
- `renderPlot()` -- `plotOutput()`
- `renderImage()` -- `imageOutput()`
- `renderUI()` -- `uiOutput()`



Output Functions

- `renderPrint()` -- `verbatimTextOutput()`, `textOutput()`
- `renderText()` -- `textOutput()`
- `renderTable()` -- `tableOutput()`
- `renderDataTable()` -- `dataTableOutput()`
- `renderPlot()` -- `plotOutput()`
- `renderImage()` -- `imageOutput()`
- `renderUI()` -- `uiOutput()`



Output Functions

textOutput()

- outputId

```
textOutput("printed_object")
```




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Let's practice!



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Server-side dynamic how-to

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Read in real time data

```
server <- function(input, output, session) {  
  reactive_data <- reactiveFileReader(  
    intervalMillis = 1000,  
    session = session,  
    filePath = "file.csv",  
    readFunc = read.csv  
  )  
}
```





Read in real time data

reactiveFileReader()

- intervalMillis
- session
- filePath
- readFunc

```
server <- function(input, output, session) {  
  reactive_data <- reactiveFileReader(  
    intervalMillis = 1000,  
    session = session,  
    filePath = "file.csv",  
    readFunc = read.csv  
  )  
}
```



Read in real time data

```
server <- function(input, output, session) {  
  ...  
  output$printed_data <- renderPrint({  
    reactive_data()  
  })  
}
```



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**Let's build a dynamic
dashboard!**



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Optimizing performance

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Outside the server function

```
load("starwars.Rda")  
server <- function(input, output) {  
}
```





Inside the server function

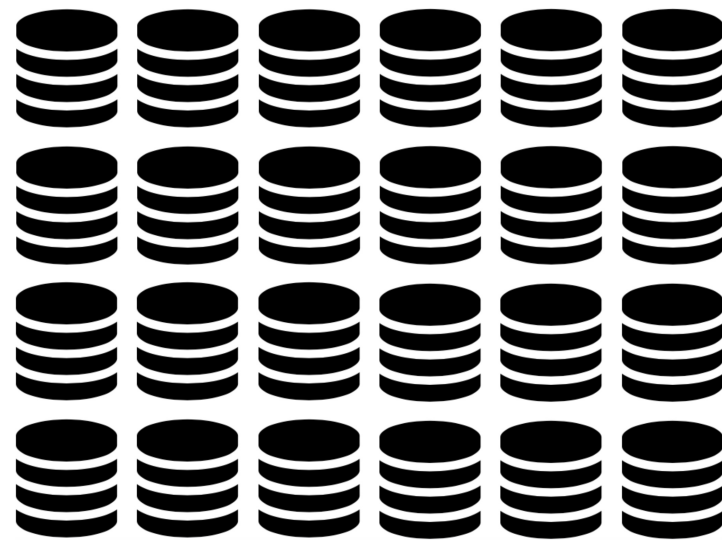
```
server <- function(input, output) {  
  load("starwars.Rda")  
}
```





Inside the server function, inside a reactive object

```
server <- function(input, output) {  
  output$my_plot <- renderPlot({  
    load("starwars.Rda")  
    starwars_sub <- starwars[starwars$height <= input$height, ]  
    hist(starwars_sub$height)  
  })  
}
```





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**May the force be with
you!**



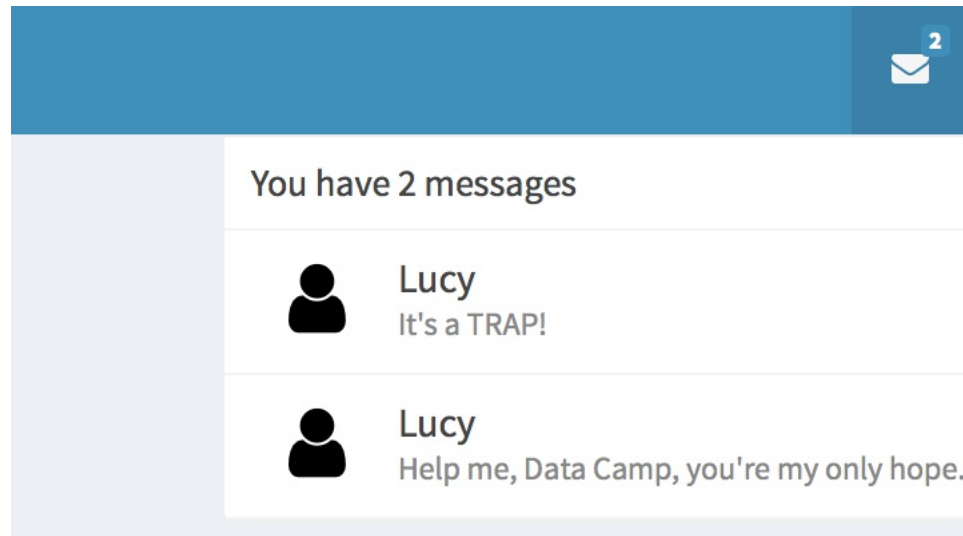
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UI dynamic how-to

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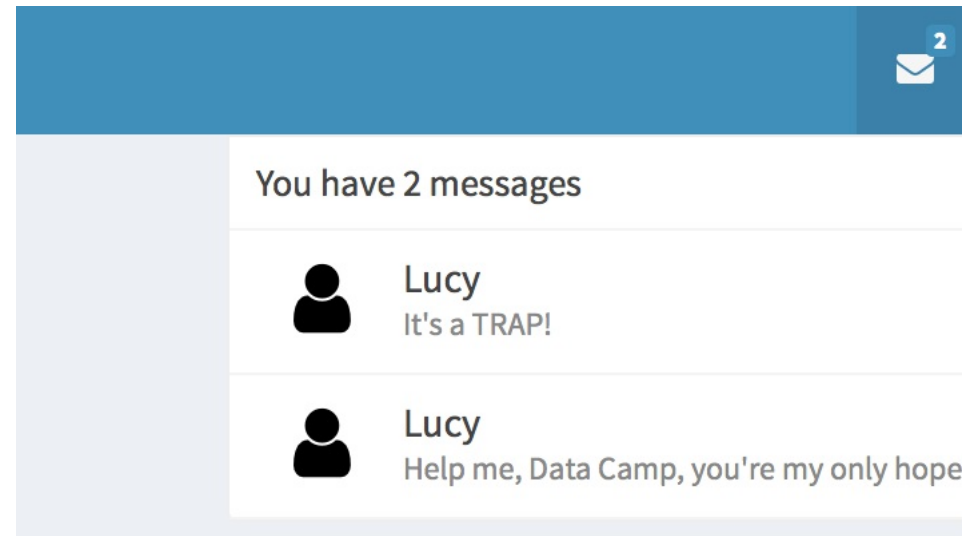
Dynamic Dropdown Menu



```
dropdownMenu(  
  type = "messages",  
  messageItem(  
    from = "Lucy",  
    message = "It's a TRAP!"  
  ),  
  messageItem(  
    from = "Lucy",  
    message = "Help me, Data Camp, you're my only hope."  
  )  
)
```

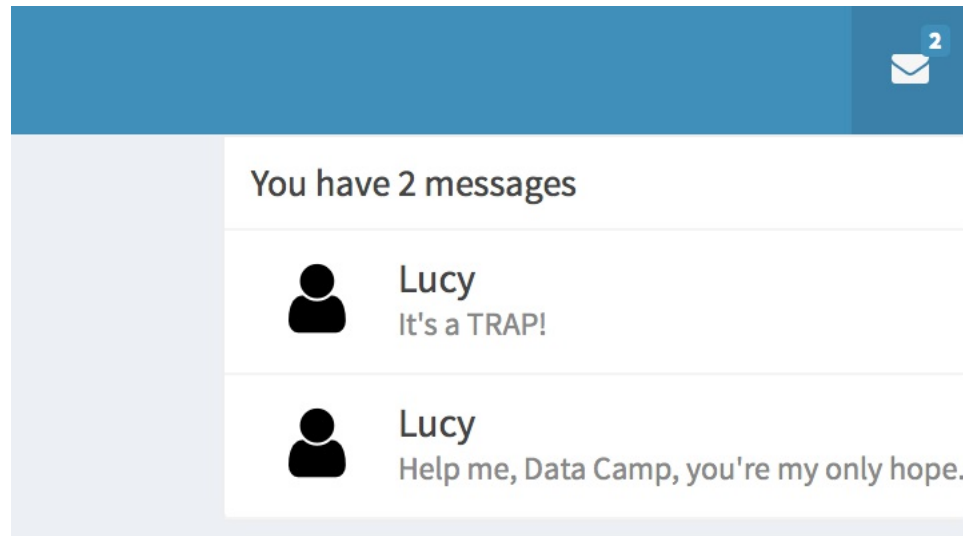


Dynamic Dropdown Menu



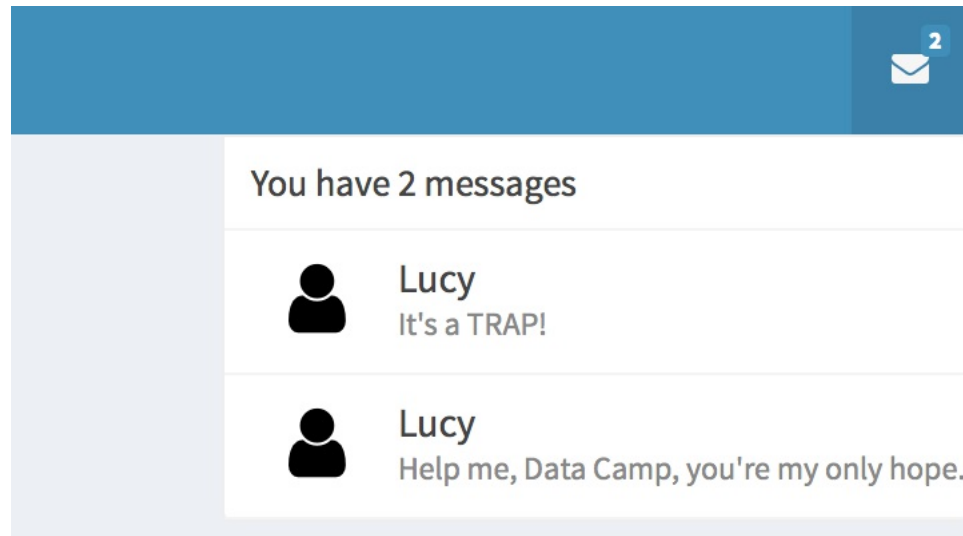
```
msg_df
#>   from              message
#> 1 Lucy             It's a TRAP!
#> 2 Lucy Help me, Data Camp, you're my only hope.
```

Dynamic Dropdown Menu



```
messages <- apply(data, 1, function(row) {  
  messageItem(from = row[["from"]],  
              message = row[["message"]])  
})  
dropdownMenu(type = "message", .list = messages)
```

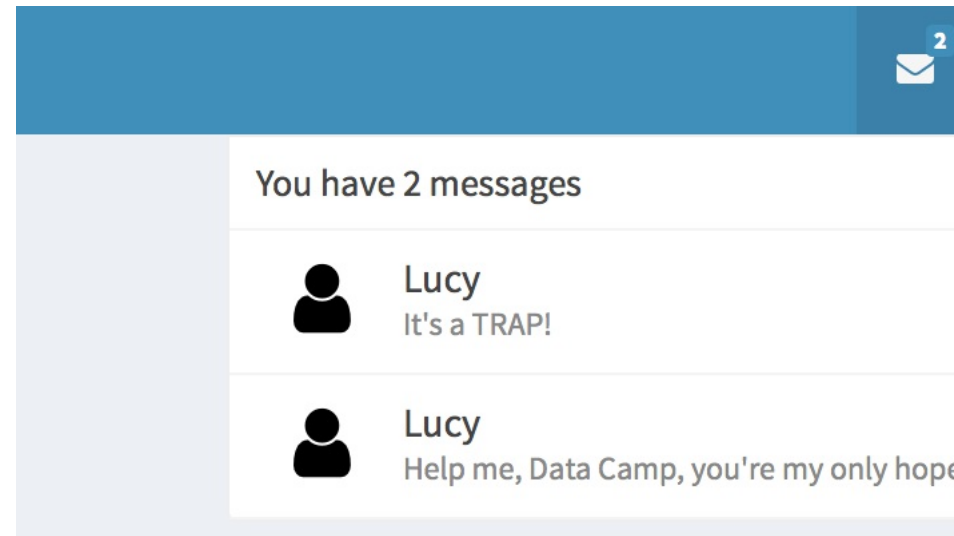
Dynamic Dropdown Menu



```
server <- function(input, output) {  
  output$msg_menu <- renderMenu({  
    messages <- apply(data, 1, function(row) {  
      messageItem(from = row[["from"]],  
                  message = row[["message"]])  
    })  
    dropdownMenu(type = "message", .list = messages)  
  })  
}
```




Dynamic Dropdown Menu



```
header <- dashboardHeader(dropdownMenuOutput("msg_menu"))
```



Dynamic boxes

- `renderInfoBox()` -- `infoBoxOutput()`
- `renderValueBox()` -- `valueBoxOutput()`



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You give it a try!