무료 전자 책

배우기

shiny

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#shiny

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1:

shiny .

. .

Examples

Shiny , shinyapps.io .

1. **Shiny** : R / RStudio CRAN `install.packages("shiny")` RStudio Github `devtools::install_github("rstudio/shiny")` . Github CRAN Shiny .

?

1. , '' . .
2. . .
3. . UI
4. . , "Sales", "Production", "Finance" . .

`shiny` (`UI`) (`server`) . UI "Hello world" .

UI.R

UI (div, ,) .

```
library(shiny)

# Define UI for application print "Hello world"
shinyUI(

  # Create bootstrap page
  fluidPage(

    # Paragraph "Hello world"
    p("Hello world"),

    # Create button to print "Hello world" from server
    actionButton(inputId = "Print_Hello", label = "Print_Hello World"),

    # Create position for server side text
    textOutput("Server_Hello")

  )
)
```

Server.R

.

```
# Define server logic required to print "Hello World" when button is clicked
```

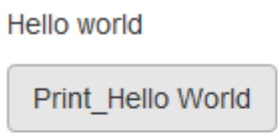
```
shinyServer(function(input, output) {

  # Create action when actionButton is clicked
  observeEvent(input$Print_Hello,{

    # Change text of Server_Hello
    output$Server_Hello = renderText("Hello world from server side")
  })


})
```

?

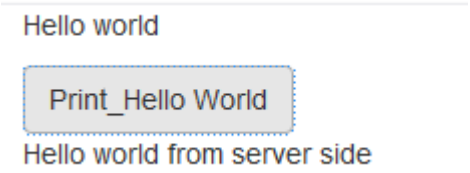
.

1. `runApp('your dir path')`
2. (: ui server) `shinyApp(ui,server)` `shinyApp(ui,server)`

.



.



shinyApp `plotOutput` `renderPlot` . `ggPlot` .

```
library(shiny)
library(ggplot2)

ui <- fluidPage(
  plotOutput('myPlot'),
  plotOutput('myGgPlot')
)

server <- function(input, output, session){
  output$myPlot = renderPlot({
    hist(rnorm(1000))
  })
  output$myGgPlot <- renderPlot({
    ggplot(iris, aes(Sepal.Length, Sepal.Width, color = Species)) + geom_point()
  })
```

```
}

shinyApp(ui, server)
```

JavaScript DataTables R DT .

```
library(shiny)
library(DT)

ui <- fluidPage(
  dataTableOutput('myTable')
)

server <- function(input, output, session){
  output$myTable <- renderDataTable({
    datatable(iris)
  })
}

shinyApp(ui, server)
```

: https://riptutorial.com/ko/shiny/topic/2667/---

2: MCVE (Minimal, Complete, Verifiable) Shiny apps

Shiny , . . , (I / O ID) , .

MCVE .

Examples

MCVE Shiny . `shinyApp` `shinyApp` . :

?

```
library(shiny)

ui <- fluidPage(
  checkboxInput('checkbox', 'click me'),
  verbatimTextOutput('text')
)

server <- function(input, output, session){
  output$text <- renderText({
    isolate(input$checkbox)
  })
}

shinyApp(ui, server)
```

`ui` `server` .

```
library(shiny)

shinyApp(
  fluidPage(
    checkboxInput('checkbox', 'click me'),
    verbatimTextOutput('text')
  ),
  function(input, output, session){
    output$text <- renderText({
      isolate(input$checkbox)
    })
  }
)

shinyApp(ui, server)
```

.

Apps . . MCVE .

?

```
library(shiny)
library(ggplot2)

ui <- fluidPage(
  plotOutput('plot')
)

server <- function(input, output, session){
  df <- data.frame(treatment = rep(letters[1:3], times = 3),
                   context = rep(LETTERS[1:3], each = 3),
                   effect = runif(9,0,1))
  df$treat.con <- paste(df$treatment,df$context, sep = ".")
  df$treat.con <- reorder(df$treat.con, -df$effect, )
  output$plot = renderPlot({
    myPlot <- ggplot(df, aes(x = treat.con, y = effect)) +
       geom_point() +
       facet_wrap(~context,
                  scales = "free_x",
                  ncol = 1)
  })
}

shinyApp(ui, server)
```

?

```
library(shiny)
library(ggplot2)

ui <- fluidPage(
  plotOutput('plot')
)

server <- function(input, output, session){
  output$plot = renderPlot({
    myPlot <- ggplot(mtcars, aes(mpg, wt)) + geom_point()
  })
}

shinyApp(ui, server)
```

MCVE (Minimal, Complete, Verifiable) Shiny apps :
https://riptutorial.com/ko/shiny/topic/10653/mcve--minimal--complete--verifiable----shiny-apps

3: reactive, reactiveValue eventReactive, Shiny

reactive, reactiveValue eventReactive Shiny . , .

observe observeEvent . .

.

Examples

. , $ text text_reactive , text_reactive $ user_text . $ user_text $ text text_reactive . $ user_text .

```
library(shiny)

ui <- fluidPage(
  headerPanel("Example reactive"),

  mainPanel(

    # input field
    textInput("user_text", label = "Enter some text:", placeholder = "Please enter some
text."),

    # display text output
    textOutput("text"))
)

server <- function(input, output) {

  # reactive expression
  text_reactive <- reactive({
    input$user_text
  })

  # text output
  output$text <- renderText({
    text_reactive()
  })
}

shinyApp(ui = ui, server = server)
```

eventReactive

eventReactives .

```
eventReactive( event {
code to run
})
```

eventReactives (' ') . .

eventReactive . $ user_text , eventReactive actionButton $ submit eventReactive .
text_reactive $ text $ user_text .

```
library(shiny)

ui <- fluidPage(
  headerPanel("Example eventReactive"),

  mainPanel(

    # input field
    textInput("user_text", label = "Enter some text:", placeholder = "Please enter some
text."),

    # submit button
    actionButton("submit", label = "Submit"),

    # display text output
    textOutput("text"))
)

server <- function(input, output) {

  # reactive expression
  text_reactive <- eventReactive( input$submit, {
    input$user_text
  })

  # text output
  output$text <- renderText({
    text_reactive()
  })
}

shinyApp(ui = ui, server = server)
```

reactiveValues

reactiveValues .

, reactiveValues " ." . reactiveValues v . reactValues .

```
library(shiny)

ui <- fluidPage(
  headerPanel("Example reactiveValues"),

  mainPanel(

    # input field
    textInput("user_text", label = "Enter some text:", placeholder = "Please enter some
text."),
    actionButton("submit", label = "Submit"),

    # display text output
```

```
    textOutput("text"))
)

server <- function(input, output) {

  # observe event for updating the reactiveValues
  observeEvent(input$submit,
               {
    text_reactive$text <- input$user_text
  })

  # reactiveValues
  text_reactive <- reactiveValues(
    text = "No text has been submitted yet."
  )

  # text output
  output$text <- renderText({
    text_reactive$text
  })
}

shinyApp(ui = ui, server = server)
```

observeEvent

observeEvent . .

```
observeEvent( event {
code to run
})
```

observeEvent *'event'* . ' ' . .

```
library(shiny)

ui <- fluidPage(
  headerPanel("Example reactive"),

  mainPanel(

    # action buttons
    actionButton("button1","Button 1"),
    actionButton("button2","Button 2")
  )
)

server <- function(input, output) {

  # observe button 1 press.
  observeEvent(input$button1, {
    # The observeEvent takes no dependency on button 2, even though we refer to the input in
the following line.
    input$button2
    showModal(modalDialog(
      title = "Button pressed",
      "You pressed one of the buttons!"
    ))
```

```
  })
}

shinyApp(ui = ui, server = server)
```

. (: reactiveValues) .

observe NULL NULL . observeEvent NULL .

```
library(shiny)

ui <- fluidPage(
  headerPanel("Example reactive"),

  mainPanel(

    # action buttons
    actionButton("button1","Button 1"),
    actionButton("button2","Button 2")
  )
)

server <- function(input, output) {

  # observe button 1 press.
  observe({
    input$button1
    input$button2
    showModal(modalDialog(
      title = "Button pressed",
      "You pressed one of the buttons!"
    ))
  })
}

shinyApp(ui = ui, server = server)
```

reactive, reactiveValue eventReactive, Shiny :
https://riptutorial.com/ko/shiny/topic/10787/reactive--reactivevalue--eventreactive--shiny----

4:

Examples

.RData fileInput () .

.RData . `load get` . "standalone" , .

```
library(shiny)

# Define two datasets and store them to disk
x <- rnorm(100)
save(x, file = "x.RData")
rm(x)
y <- rnorm(100, mean = 2)
save(y, file = "y.RData")
rm(y)

# Define UI
ui <- shinyUI(fluidPage(
  titlePanel(".RData File Upload Test"),
  mainPanel(
    fileInput("file", label = ""),
    actionButton(inputId="plot","Plot"),
    plotOutput("hist"))
  )
)

# Define server logic
server <- shinyServer(function(input, output) {

  observeEvent(input$plot,{
    if ( is.null(input$file)) return(NULL)
    inFile <- input$file
    file <- inFile$datapath
    # load the file into new environment and get it from there
    e = new.env()
    name <- load(file, envir = e)
    data <- e[[name]]

    # Plot the data
    output$hist <- renderPlot({
      hist(data)
    })
  })
})

# Run the application
shinyApp(ui = ui, server = server)
```

csv Shiny .

CSV Shiny . . radioButton .

```
library(shiny)
library(DT)

# Define UI
ui <- shinyUI(fluidPage(

  fileInput('target_upload', 'Choose file to upload',
            accept = c(
              'text/csv',
              'text/comma-separated-values',
              '.csv'
            )),
  radioButtons("separator","Separator: ",choices = c(";",",","","":"), selected=";",inline=TRUE),
  DT::dataTableOutput("sample_table")
)
)

# Define server logic
server <- shinyServer(function(input, output) {

  df_products_upload <- reactive({
    inFile <- input$target_upload
    if (is.null(inFile))
      return(NULL)
    df <- read.csv(inFile$datapath, header = TRUE,sep = input$separator)
    return(df)
  })

  output$sample_table<- DT::renderDataTable({
    df <- df_products_upload()
    DT::datatable(df)
  })

}
)

# Run the application
shinyApp(ui = ui, server = server)
```

: https://riptutorial.com/ko/shiny/topic/7576/--

5: API

- $ sendCustomMessage (,)
- Shiny.addCustomMessageHandler (*name* , *JS*)
- Shiny.onInputChange (,)

Examples

R JS . .

```
library(shiny)
runApp(
  list(
    ui = fluidPage(
      tags$script(
        "Shiny.addCustomMessageHandler('message', function(params) { alert(params); });"
      ),
      actionButton("btn","Press Me")
    ),
    server = function(input, output, session) {
      observeEvent(input$btn,{
        randomNumber <- runif(1,0,100)
        session$sendCustomMessage("message",list(paste0(randomNumber," is a random number!")))
      })
    }
  )
)
```

workhorses `R session$sendCustomMessage javascript Shiny.addCustomMessageHandler .`

`session$sendCustomMessage R javascript Shiny.addCustomMessageHandler R javascript .`

: `R javascript` JSON .

JS R . javascript `Shiny.onInputChange` .

```
library(shiny)
runApp(
  list(
    ui = fluidPage(
      # create password input
      HTML('<input type="password" id="passwordInput">'),
      # use jquery to write function that sends value to
      # server when changed
      tags$script(
        '$("#passwordInput").on("change",function() {
          Shiny.onInputChange("myInput",this.value);
        })'
      ),
      # show password
      verbatimTextOutput("test")
    ),
    server = function(input, output, session) {
```

```
      # read in then show password
      output$test <- renderPrint(
        input$myInput
      )
    }
  )
)
```

`passwordInput` . `passwordInput` UI Javascript `Shiny.onInputChange` .

`Shiny.onInputChange` `input$*name*` `input$*name*`

`input$*name*` .

API : https://riptutorial.com/ko/shiny/topic/3149/--api

S. No		Contributors
1		Batanichek, Bogdan Rau, chrki, Community, Florian, Gregor de Cillia, jsb, Mathias711, micstr, sigmabeta
2	MCVE (Minimal, Complete, Verifiable) Shiny apps	Florian, Gregor de Cillia
3	reactive, reactiveValue eventReactive, Shiny	Florian
4		Florian, symbolrush
5	API	Carl, Tomás Barcellos