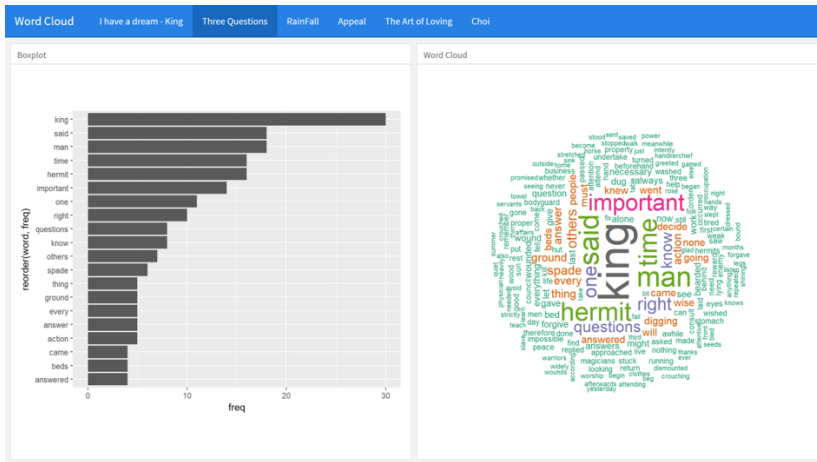


M33 - Shiny

LearningSpoonsR

2018-07-08

Review - Flexdashboard



- Interactive한 feature를 추가한다면, 대시보드는 어떤 모양이어야 할까요?

Part I. "Hello, Shiny!"

- 파일 - 새파일 - 새 R Markdown - Shiny

The image shows the RStudio interface with an R Markdown file named 'Step1.Rmd' open. The code is as follows:

```
1 ---  
2 title: "Step 1. Hello shiny"  
3 author: "LearningSpoonsR"  
4 date: "`r Sys.Date()`"  
5 output: html_document  
6 runtime: shiny  
7 ---  
8  
9 ```{r setup, include=FALSE}  
10 knitr::opts_chunk$set(echo = TRUE)  
11 ```  
12  
13 ```{r eruptions, echo=FALSE}  
14 inputPanel(  
15   selectInput("myVar", label = "choose a number:",  
16     choices = c(10, 20, 30), selected = 20)  
17 )  
18  
19 renderText(  
20   input$myVar  
21 )  
22 ```
```

The rendered output on the right shows the title 'Step 1. Hello Shiny', the author 'LearningSpoonsR', the date '2018-05-04', and a form titled 'Choose a number.' with a dropdown menu showing '10'. Blue lines and circles connect the code to the output: 'Step 1. Hello shiny' to the title, 'LearningSpoonsR' to the author, '2018-05-04' to the date, 'choose a number:' to the label, 'c(10, 20, 30)' to the choices, 'selected = 20' to the selected value, and 'input\$myVar' to the dropdown menu.

Part II. "Hello shiny" from flexdashboard

- 파일 - 새파일 - 새 R Markdown - From Template - flexdashboard

The screenshot displays the RStudio environment with two panes. The left pane shows the R Markdown source code for 'Step2.Rmd', and the right pane shows the rendered Shiny application.

Left Pane (R Markdown Code):

```
1 ---  
2 title: "Step 2. Hello Shiny from flexdashboard"  
3 output:  
4   flexdashboard::flex_dashboard:  
5     runtime: shiny  
6 ---  
7  
8 column {data-width=300}  
9  
10  
11 ## Input Panel  
12  
13 {r}  
14 selectInput("myVar", label = "Choose a number:",  
15             choices = c(10, 20, 30), selected = 20)  
16  
17  
18  
19 column {data-width=700}  
20  
21 ## Output Panel  
22  
23 {r}  
24 renderPlot({  
25   hist(rnorm(1000), as.numeric(input$myVar))  
26 })  
27  
28
```

Right Pane (Shiny App):

The rendered application has a title bar "Step 2. Hello Shiny from flexdashboard". It features two panels:

- Input Panel:** Contains a label "Choose a number:" and a numeric input field with the value "20".
- Output Panel:** Displays a histogram titled "Histogram of rnorm(1000)". The x-axis is labeled "rnorm(1000)" and ranges from -3 to 3. The y-axis is labeled "Frequency" and ranges from 0 to 200.

Handwritten blue annotations include:

- A circle around the `flexdashboard::flex_dashboard:` line in the code, with an arrow pointing to the "flexdashboard" label in the app title bar.
- A circle around the `runtime: shiny` line in the code, with an arrow pointing to the "shiny" label in the app title bar.
- A circle around the `column {data-width=300}` line in the code, with an arrow pointing to the "Input Panel" label.
- A circle around the `column {data-width=700}` line in the code, with an arrow pointing to the "Output Panel" label.
- A blue arrow pointing from the `rnorm(1000)` in the code to the histogram.
- Handwritten text at the bottom left: "normal 1000 random 1000 700".

Shiny 실행시 주의점

1. 에러가 난다면 Tools - Check for Package Updates...로 가서 모든 패키지를 최신 상태로
2. activate와 같이 패키지를 인스톨하는 명령이나 시스템을 변경시키는 명령은 실행 전에 하는 것이 좋음
3. 컴퓨터가 인터넷에 연결이 되어있지 않으면 정상적으로 작동하지 않는 경우가 있음

Part III. Wordcloud using fd & shiny

```
1 ---
2 title: "Word Cloud Program on Shiny"
3 author: LearningSpoonsR
4 output:
5   flexdashboard::flex_dashboard:
6     runtime: shiny
7   ---
8
9   ```{r setup, include=FALSE}
10  knitr::opts_chunk$set(echo = FALSE)
11  knitr::opts_chunk$set(message = FALSE)
12  #-----#
13  #----- 1.Source & Package -----#
14  #-----#
15  ```
16
17 Inputs {.sidebar}
18 -----
19
20 ```{r}
21 #-----#
22 #----- 2.Taking Input -----#
23 #-----#
24 ```
25
```

```
26 Column {data-width=500}
27 -----
28
29 ### Barplot
30
31 ```{r}
32 renderPlot({
33   #-----#
34   #----- 3.Render Barplot -----#
35   #-----#
36 })
37 ```
38
39 Column {data-width=500}
40 -----
41
42 ### Word Cloud
43
44 ```{r, warning = FALSE, fig.width=18, fig.height=18}
45 renderWordcloud2({
46   #-----#
47   #----- 4.Render Wordcloud -----#
48   #-----#
49 })
50 ```
```

1. Source & Package & 2. Taking Input

```
9 ▾ ```{r setup, include=FALSE}
10 knitr::opts_chunk$set(echo = FALSE)
11 knitr::opts_chunk$set(message = FALSE)
12 source(".././LSR.R")
13 setLang("kr")
14 library(tm); library(SnowballC); library(KoNLP); library(pdftools); library(cld3)
15 library(ggplot2); library(dplyr); library(wordcloud2); library(RColorBrewer)
16 ```
17
18 Inputs {.sidebar}
19 ▾ -----
20
21 ▾ ```{r}
22 selectInput(inputId = "theFile", label = "Choose a file",
23             choice = list.files("../script/"))
24 ```
25
```

input to theFile

3.Render Barplot & 4.Render Wordcloud

```
26 Column {data-width=500}
27 ▾ -----
28
29 ▾ ### Barplot
30
31 ▾ ```{r}
32 ▾ renderPlot({
33   docs <- getDocs2(paste0("../script/", input$theFile))
34   freqTable <- cleanDocsGenerateFreqTable(docs, attr(docs, "lang"))
35   g <- ggplot(head(freqTable,20)) +
36     geom_bar(aes(x = reorder(word, freq), y = freq), stat="identity") +
37     theme(axis.text = element_text(size = 16)) +
38     labs(x = "Word", y = "Frequency") +
39     coord_flip()
40   print(g)
41 })
42 ```
43
44 Column {data-width=500}
45 ▾ -----
46
47 ▾ ### Word Cloud
48
49 ▾ • ```{r, warning = FALSE, fig.width=18, fig.height=18}
50 ▾ renderWordcloud2({
51   docs <- getDocs2(paste0("../script/", input$theFile))
52   freqTable <- cleanDocsGenerateFreqTable(docs, attr(docs, "lang"))
53   w <- wordcloud2(freqTable, color = "random-light", backgroundColor = "grey")
54   print(w)
55 })
56 ```
```

시연

Part IV. Control Widgets & Rendering

- Control Widgets
- <http://shiny.rstudio.com/gallery/widget-gallery.html>

Function	Widget	비고
<u>checkboxGroupInput</u>	A group of check boxes	복수선택 가능 ✓
<u>checkboxInput</u>	A single check box	Boolean (TRUE/FALSE)
dateInput	A calendar to aid date selection	
dateRangeInput	A pair of calendars for selecting a date range	
numericInput	A field to enter numbers	
radioButtons	A set of radio buttons	복수선택 불가
selectInput	A box with choices to select from	드롭다운 메뉴
sliderInput	A slider bar	
textInput	A field to enter text	
submitButton	A submit button	

Action button

Action

Current Value:

```
[1] @  
attr(,"class")  
[1] "integer" "shinyActionButtonValue"
```

[See Code](#)

Single checkbox

☒ Choice A

Current Value:

[1] TRUE

[See Code](#)

Checkbox group

- ☒ Choice 1
☐ Choice 2
☐ Choice 3

Current Values:

[1] "1"

[See Code](#)

Date input

2014-01-01

Current Value:

[1] "2014-01-01"

[See Code](#)

Date range

2018-05-08 to 2018-05-08

Current Values:

[1] "2018-05-08" "2018-05-08"

[See Code](#)

File input

Browse... No file selected

Current Value:

NULL

[See Code](#)

Numeric input

1

Current Value:

[1] 1

[See Code](#)

Radio buttons

- ☒ Choice 1
☐ Choice 2
☐ Choice 3

Current Values:

[1] "1"

[See Code](#)

Select box

Choice 1

Current Value:

[1] "1"

[See Code](#)

Slider



Current Value:

[1] 50

[See Code](#)

Slider range



Current Values:

[1] 25 75

[See Code](#)

Text input

Enter text...

Current Value:

[1] "Enter text..."

[See Code](#)

- `renderOBJECT` 함수를 이용해서 결과물을 보여줌.
- (기본적인것 외에 패키지에서 제공하는 `render`함수도 있음)

- `renderOBJECT` 종류

1. `renderText`
2. `renderTable`
3. `renderPlot`
4. `renderDygraph`
5. `renderWordClouds`
6. ...

- <https://shiny.rstudio.com/tutorial/>

```
"Hello"
```