



Module

shiny on flexdashboard

(wordcloud)

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Review - Flexdashboard

Word Cloud

I have a dream - King

Three Questions

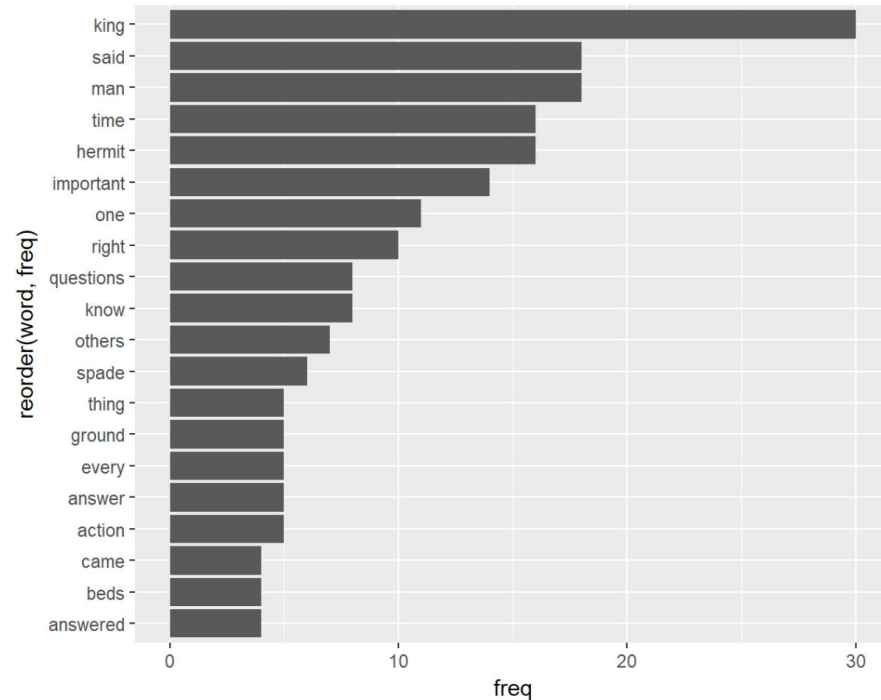
RainFall

Appeal

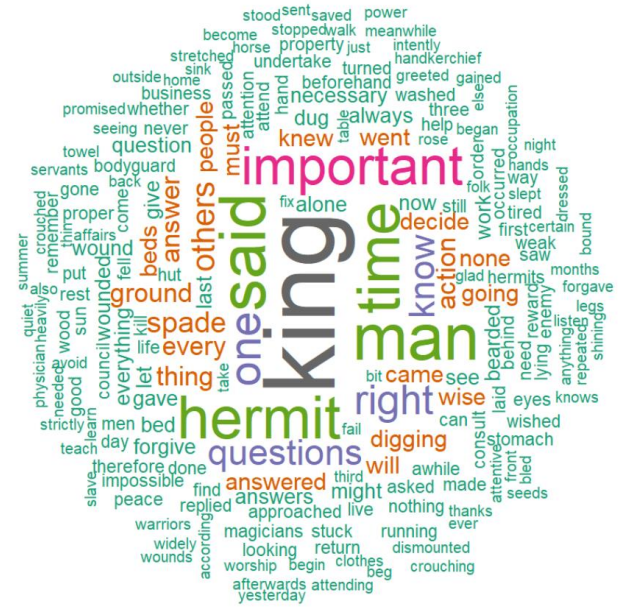
The Art of Loving

Choi

Boxplot



Word Cloud



Preview — Shiny on Flexdashboard

여러분이 생각하는 *interactive*한
문서의 모습을 그려보세요.

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 source 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$set(echo = TRUE)  
11  
12 {r eruptions, echo=FALSE}  
13 inputPanel(  
14   selectInput("myVar", label = "Choose a number:",  
15             choices = c(10, 20, 30), selected = 20)  
16 )  
17  
18  
19 renderText({  
20   input$myVar  
21 })  
22  
23
```

The rendered Shiny app is shown on the right. It displays the title 'Step 1. Hello Shiny', the author 'LearningSpoonsR', and the date '2018-05-04'. Below this is a section titled 'Choose a number:' with a dropdown menu showing '10' selected. The number '10' is also displayed below the dropdown.

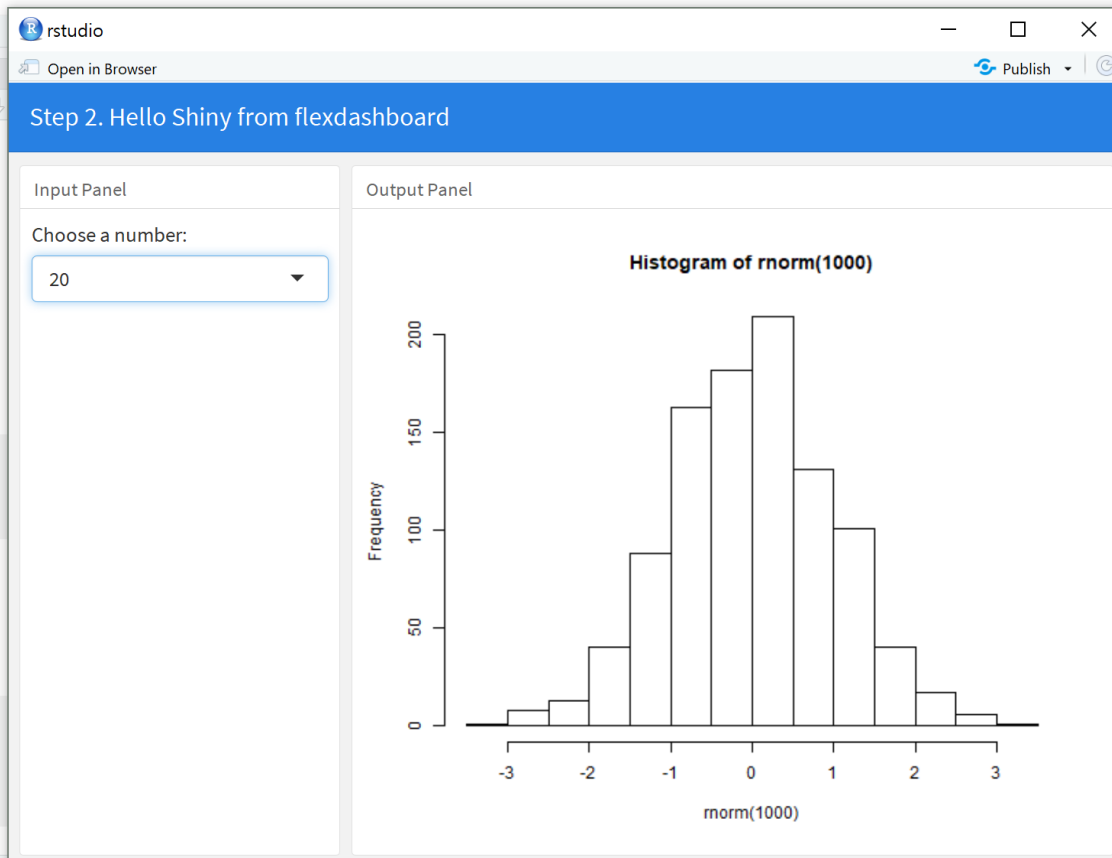
Annotations in the image include:

- A red circle with the number '1' around the title 'Step 1. Hello shiny' in the rendered app, with a blue arrow pointing to the `title` field in the source code.
- A red circle with the number '2' around the `selectInput` function in the source code, with a blue arrow pointing to the dropdown menu in the rendered app.
- A red circle around the value '10' in the dropdown menu, with a red arrow pointing to the `selected = 20` parameter in the source code.
- A red circle around the `input$myVar` in the `renderText` block, with a red arrow pointing to the displayed number '10' below the dropdown.

Part II. “Hello Shiny” from flexdashboard

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

```
RStudio
File Edit Code View Plots Session Build Debug Profile Tools Help
Step1.Rmd Step2.Rmd
Run Document Insert
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
```



The background of the slide is a light gray gradient. In the top-left and bottom-right corners, there are several realistic-looking water droplets of various sizes, rendered with soft shadows and highlights to give them a 3D effect.

Part III. Wordcloud

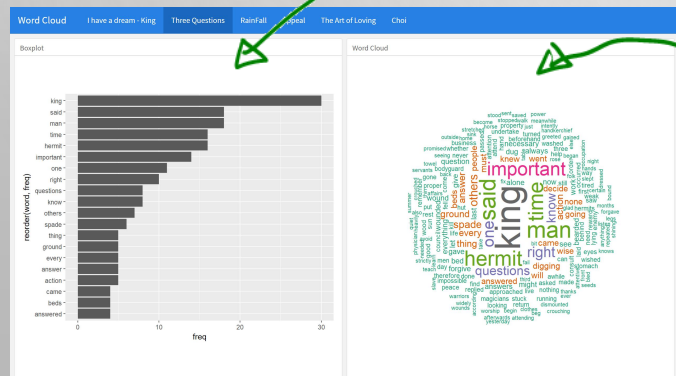
shiny + flexdashboard

Review – flexdashboard

```

1 ---
2 title: "word cloud"
3 output: flexdashboard::flex_dashboard
4 ---
5
6 {r setup, include=FALSE}
7 knitr::opts_chunk$set(echo = FALSE)
8 knitr::opts_chunk$set(message = FALSE)
9
10
11 {r}
12 source("LSR.R")
13 activate(c("tm", "SnowballC", "wordcloud", "KoNLP", "pdftools"))
14 activate(c("ggplot2", "dplyr", "RColorBrewer"))
15
16 I have a dream - King
17 =====
18
19 {r}
20 filePath <- paste0("http://www.sthda.com/sthda/RDoc/example-files/",
21 "martin-luther-king-i-have-a-dream-speech.txt")
22 text <- readLines(filePath)
23 docs <- Corpus(VectorSource(text))
24 lang <- "en"
25 freqTable <- cleanDocsGenerateFreqTable(docs, lang)
26
27
28 Column {data-width=500}
29 -----
30
31 Bar
32 boxplot
33
34 {r}
35 ggplot(head(freqTable, 20)) +
36   geom_bar(aes(x=reorder(word, freq), y=freq), stat="identity") +
37   coord_flip()
38
39 Column {data-width=500}
40 -----
41
42 Word cloud
43
44 {r}
45 wordcloud(words = freqTable$word, freq = freqTable$freq,
46   min.freq = 1, max.words=200, random.order=FALSE, rot.per=0.35,
47   colors=brewer.pal(8, "Dark2"))
48

```



LSR.R에는 다음의 두 함수가 있습니다.

```
cleanDocsGenerateFreqTable <- function(docs, lang) {
  activate(c("tm", "SnowballC", "wordcloud", "KoNLP", "pdftools"))
  activate(c("ggplot2", "dplyr", "RColorBrewer"))
  if (lang %in% c("Korean", "kr", "kor")) {
    docs <- unlist(docs)
    docs <- Filter(function(x) {nchar(x) >= 2}, docs) # character
    freqTable <- data.frame(table(docs))
    names(freqTable) <- c("word", "freq")
    freqTable <- freqTable %>% arrange(desc(freq))
  } else { # lang %in% c("English", "en", "Eng")
    tospace <- content_transformer(
      function(x, pattern) gsub(pattern, " ", x))
    docs <- docs %>%
      tm_map(tospace, "/") %>%
      tm_map(tospace, "@") %>%
      tm_map(tospace, "\\|")
    docs <- docs %>%
      tm_map(content_transformer(tolower)) %>%
      tm_map(removeNumbers) %>%
      tm_map(removeWords, stopwords("english")) %>%
      tm_map(removeWords, c("blabla1", "blabla2")) %>%
      tm_map(removePunctuation) %>%
      tm_map(stripwhitespace)
    termMat <- TermDocumentMatrix(docs)
    termTable <- as.matrix(termMat)
    freqTable <- data.frame(word = rownames(termTable),
                           freq = rowSums(termTable))
    freqTable$word <- rownames(freqTable)
    freqTable <- freqTable %>% arrange(desc(freq))
  }
  return(freqTable)
}
```

```
getDocs <- function(fileName, lang) {
  activate(c("tm", "SnowballC", "wordcloud", "KoNLP", "pdftools"))
  activate(c("ggplot2", "dplyr", "RColorBrewer"))
  fileType <- unlist(strsplit(fileName, split = "\\.")) [2] ✓
  if (fileType == "pdf") {
    text <- pdf_text(fileName) ✓
  } else if (fileType == "txt") {
    text <- readLines(fileName) ✓
  } else {
    stop("We only support pdf and txt!")
  }
  if (lang %in% c("English", "en", "Eng")) {
    docs <- Corpus(VectorSource(text))
  } else if (lang %in% c("Korean", "kr", "kor")) {
    docs <- sapply(text, extractNoun, USE.NAMES = F) %>% unlist()
    docs <- Filter(function(x) {nchar(x) >= 2}, docs)
  } else {
    stop("We only support English or Korean!") ✓
  }
  return(docs)
}
```

작업 환경

The image displays two side-by-side Windows File Explorer windows. The left window is titled 'Module-Shiny' and shows a folder view. The right window is titled 'scriptData' and shows a file view. Both windows have yellow highlights on specific files and folders.

Left Window: Module-Shiny

이름	수정한 날짜	유형	크기
scriptData	2018-05-05 ...	파일 폴더	
.Rhistory	2018-05-05 ...	RHISTORY 파일	2KB
LSR	2018-05-05 ...	R 파일	4KB
Module-Shiny	2018-05-05 ...	Microsoft Po...	6,775KB
Part1	2018-05-04 ...	RMD 파일	1KB
Part2	2018-05-05 ...	RMD 파일	1KB
Part3 - for ppt	2018-05-05 ...	RMD 파일	4KB
Part3	2018-05-05 ...	RMD 파일	2KB
새 텍스트 문서	2018-05-05 ...	텍스트 문서	1KB

Right Window: scriptData

이름	수정한 날짜	유형	크기
appeal	2018-04-28 ...	텍스트 문서	36KB
artofloving	2018-05-01 ...	Adobe Acrobat Docu...	1,197KB
choi	2018-04-30 ...	텍스트 문서	120KB
dream	2018-05-05 ...	텍스트 문서	4KB
sonaki	2018-04-28 ...	Adobe Acrobat Docu...	298KB
SR9Questions	2018-04-28 ...	Adobe Acrobat Docu...	28KB

Step 1. Setup & Design Panel

```
1 ---
2 title: "Step 3. word cloud (txt or pdf) (en or kr)"
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 source("LSR.R") ✓
13 activate(c("tm", "SnowballC", "wordcloud2", "KoNLP", "pdftools")) ✓
14 activate(c("ggplot2", "dplyr", "RColorBrewer")) ✓
15
16
17 Inputs {sidebar}
18 -----
19 {r}
20 {r}
21
22
23 column {data-width=500}
24 -----
25
26 ### Boxplot bar plot
27 {r} ✓
28 {r}
29
30
31 column {data-width=500}
32 -----
33
34 ### word cloud
35 {r} ✓
36 {r}
37
38
```

Step 2. Inputs sidebar

```
1 ---
2 title: "Step 3. Word Cloud (txt or pdf) (en or kr)"
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 source("LSR.R")
13 activate(c("tm", "SnowballC", "wordcloud2", "KoNLP", "pdftools"))
14 activate(c("ggplot2", "dplyr", "RColorBrewer"))
15 ```
```

```
16
17 Inputs {.sidebar}
18 -----
19
20 ```{r}
```

```
21 selectInput(inputId = "theFile", label = "Choose File",
22             choice = list.files("scriptData"))
23 selectInput(inputId = "lang", label = "Language",
24             choice = c("Korean", "English"))
25 `|`
```

```
26
27 column {data-width=500}
28 -----
29
30 ### Boxplot
31
```

0

1

scriptData

Step 3. barplot

```
17 Inputs {.sidebar}
18 -----
19
20 {r}
21 selectInput(inputId = "theFile", label = "Choose File",
22             choice = list.files("scriptData"))
23 selectInput(inputId = "lang", label = "Language",
24             choice = c("Korean", "English"))
25
26
27 Column {data-width=500}
28 -----
29
30 Boxplot
31
32 {r}
33 renderPlot({
34   docs <- getDocs(paste0("scriptData/", input$theFile), input$lang)
35   freqTable <- cleanDocsGenerateFreqTable(docs, input$lang)
36   g <- ggplot(head(freqTable, 20)) +
37     geom_bar(aes(x=reorder(word, freq), y=freq), stat="identity") +
38     coord_flip()
39   g
40 })
41
```

①
input\$lang ← "English"
input\$theFile ← "the0.txt"

②

Step 4. wordcloud

```
27 column {data-width=500}
28 -----
29
30 ### Boxplot
31
32 {r}
33 renderPlot({
34   docs <- getDocs(paste0("scriptData/", input$theFile), input$lang)
35   freqTable <- cleanDocsGenerateFreqTable(docs, input$lang)
36   g <- ggplot(head(freqTable, 20)) +
37     geom_bar(aes(x=reorder(word, freq), y=freq), stat="identity") +
38     coord_flip()
39   g
40 })
41
42
43 column {data-width=500}
44 -----
45
46 ### word cloud
47
48 {r, warning = FALSE, fig.width = 8, fig.height = 8}
49 renderWordcloud2({
50   docs <- getDocs(paste0("scriptData/", input$theFile), input$lang)
51   freqTable <- cleanDocsGenerateFreqTable(docs, input$lang)
52   # w <- wordcloud(words = freqTable$word, freq = freqTable$freq,
53   #               min.freq = 1, max.words=200, random.order=FALSE,
54   #               rot.per=0.35,
55   #               colors=brewer.pal(8, "Dark2"))
56   wordcloud2(freqTable)
57 })
58
```


프로그램 시연!



Part IV. More Shiny on Flexdashboard

Control Widgets

Function	Widget	비고
checkboxGroupInput	A group of check boxes	복수선택 가능
checkboxInput	A single check box	Boolean
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	

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

Action button

Action

Current Value:

```
[1] 0  
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

2018-05-06

to

2018-05-06

Current Values:

[1] "2018-05-06" "2018-05-06"

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

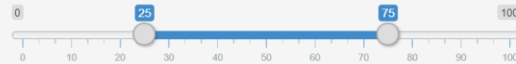


Current Value:

[1] 50

See Code

Slider range



Current Values:

[1] 25 75

See Code

Text input

Enter text...

Current Value:

[1] "Enter text..."

See Code

Rendering

<code>renderText</code>	
<code>renderTable</code>	
<code>renderPlot</code>	
<code>renderDygraph</code>	
<code>renderWordCloud2</code>	
...	

