# Dash Board

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# OUTLINE

I. What's a dashboard?

II. Introducing flexdashboard

III. Dashboard layouts

IV. Dashboard components

V. Interactive dashboards

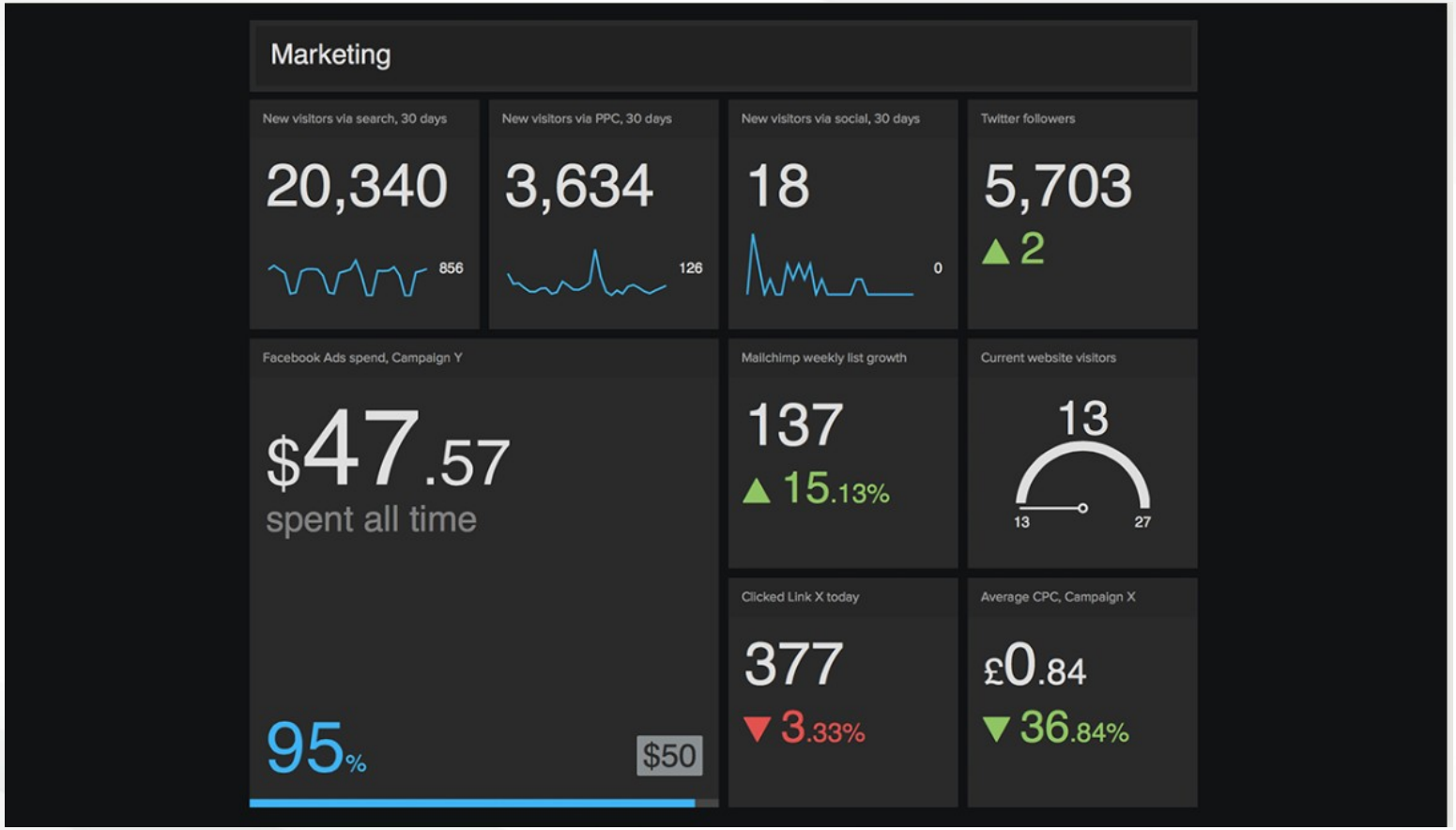
VI. flexdashboard vs. shinydashboard

VII. Example projects

# I. What’s a dashboard?

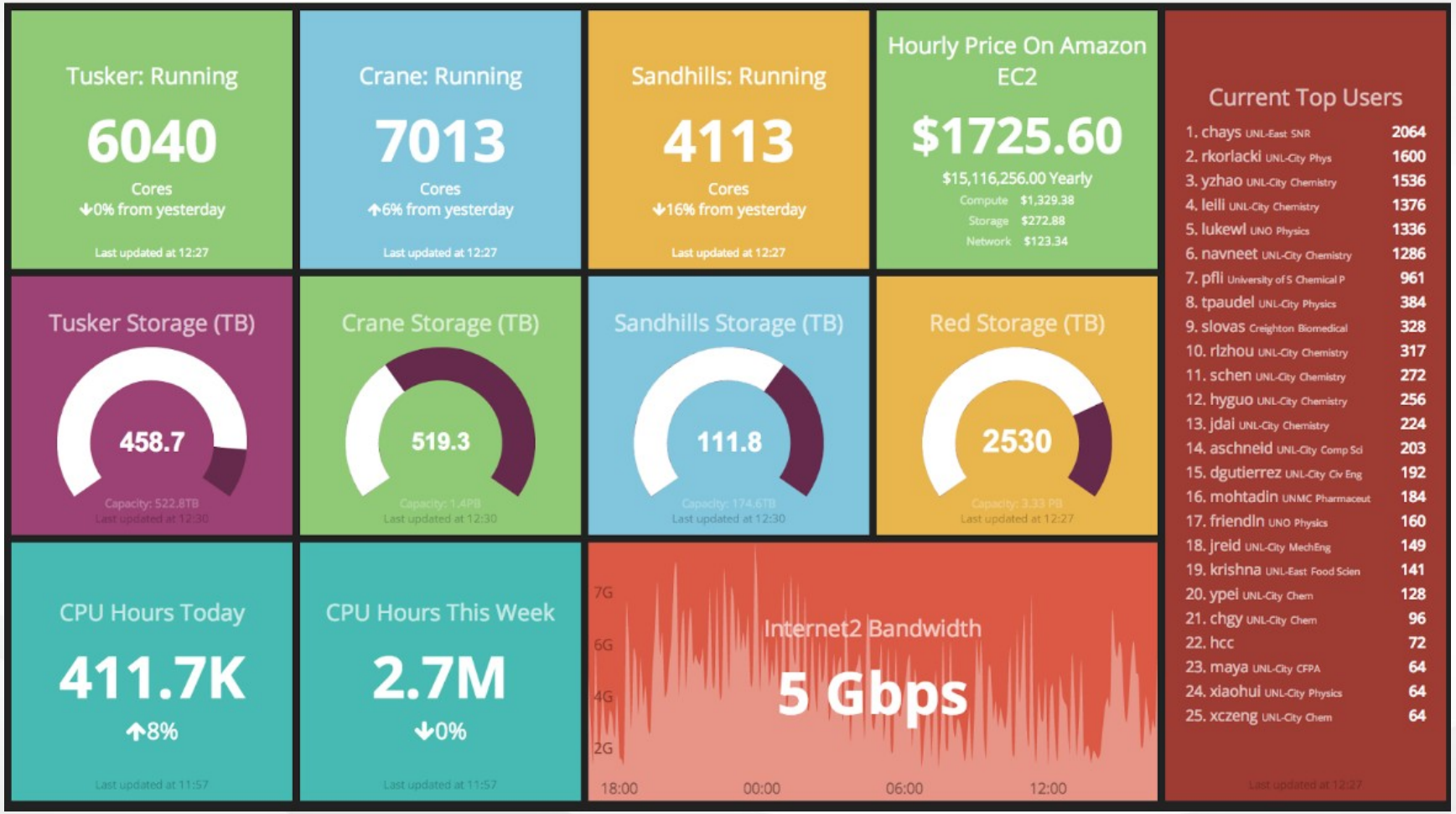
# I. What's a dashboard?

This is a dashboard



# I. What's a dashboard?

This is a dashboard



# I. What's a dashboard?

?????

# II. Introducing flexdashboard

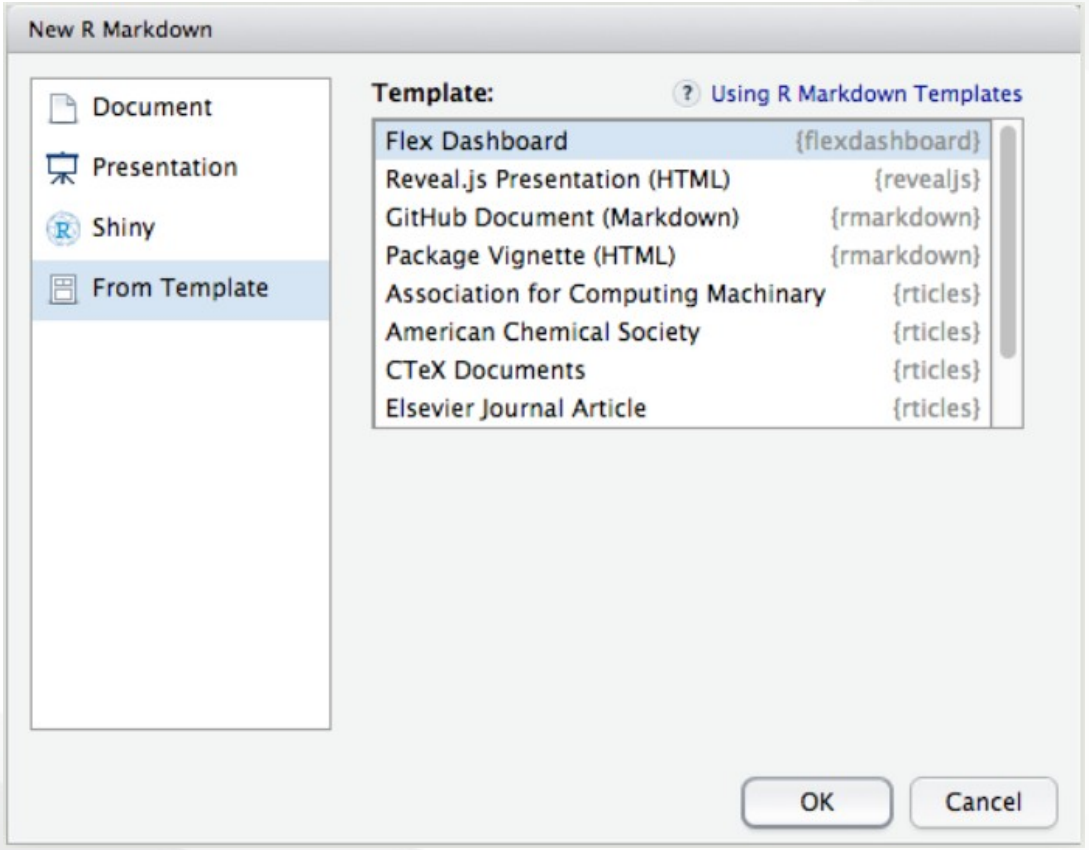
- A communications tool showing relevant information about different aspects of a system
- Full-screen, space-consuming layout
- Often via subdivision
- High-level trends and summaries favored over details
- Information designed for quick, glancing consumption

# Installation

```
install.packages("flexdashboard", type = "source")
```

# II. Introducing flexdashboard

## Via RStudio



# Via the R prompt

```
rmarkdown::draft("dashboard.Rmd",
                 template = "flex_dashboard",
                  package = "flexdashboard")
```

# III. Dashboard layouts

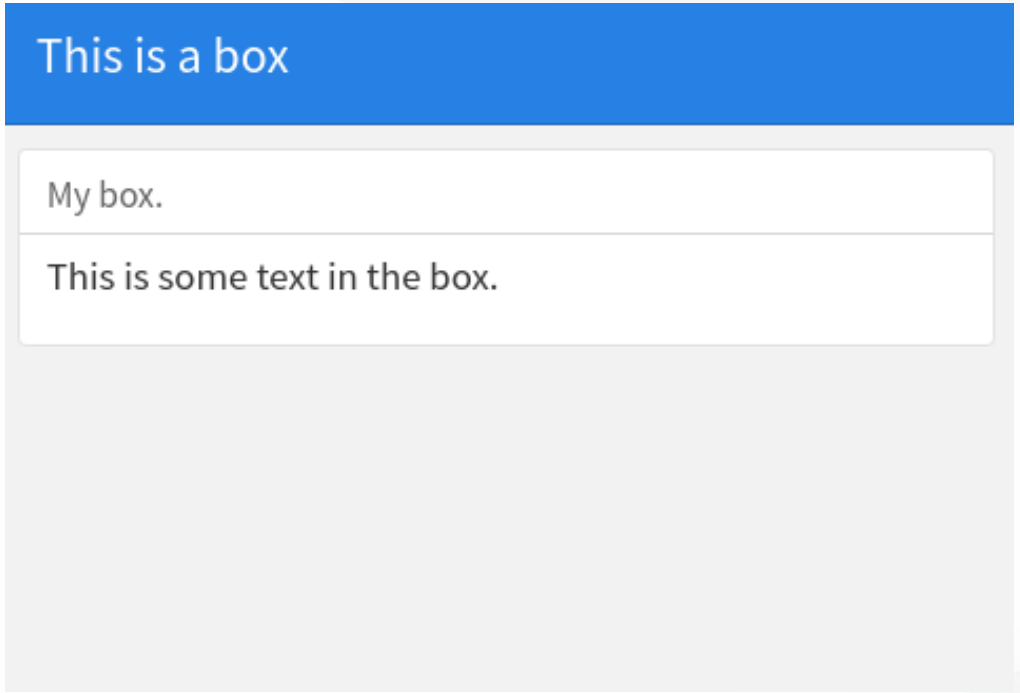
- **The Big Idea**

- Use Markdown headings to describe the boxes and space division of your dashboard
- Layout is implicit and automatic
- Tweakable with custom attributes
- Content in your boxes fills the box automatically
- Supply gaps between R offerings and common dashboard components

# III. Dashboard layouts

## Level three: boxes.

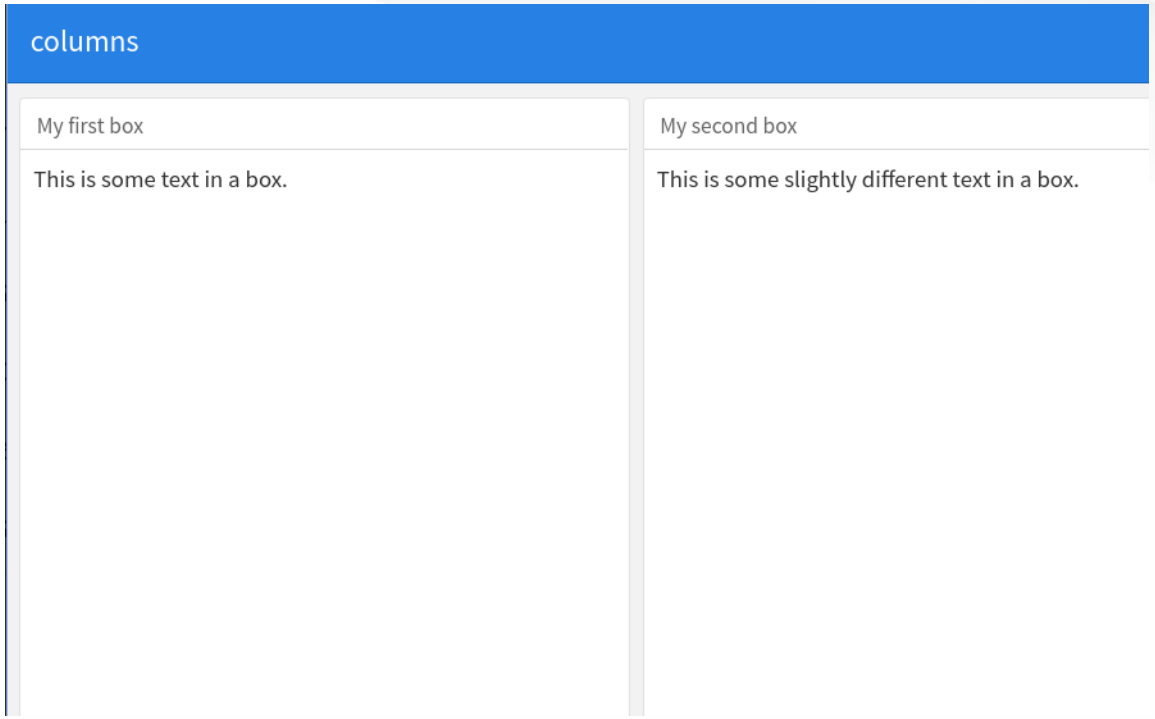
```
---
title: "This is a box"
output:
  flexdashboard::flex_dashboard
---
### My box.

This is some text in the box.
```



# III. Dashboard layouts

## Level two: columns

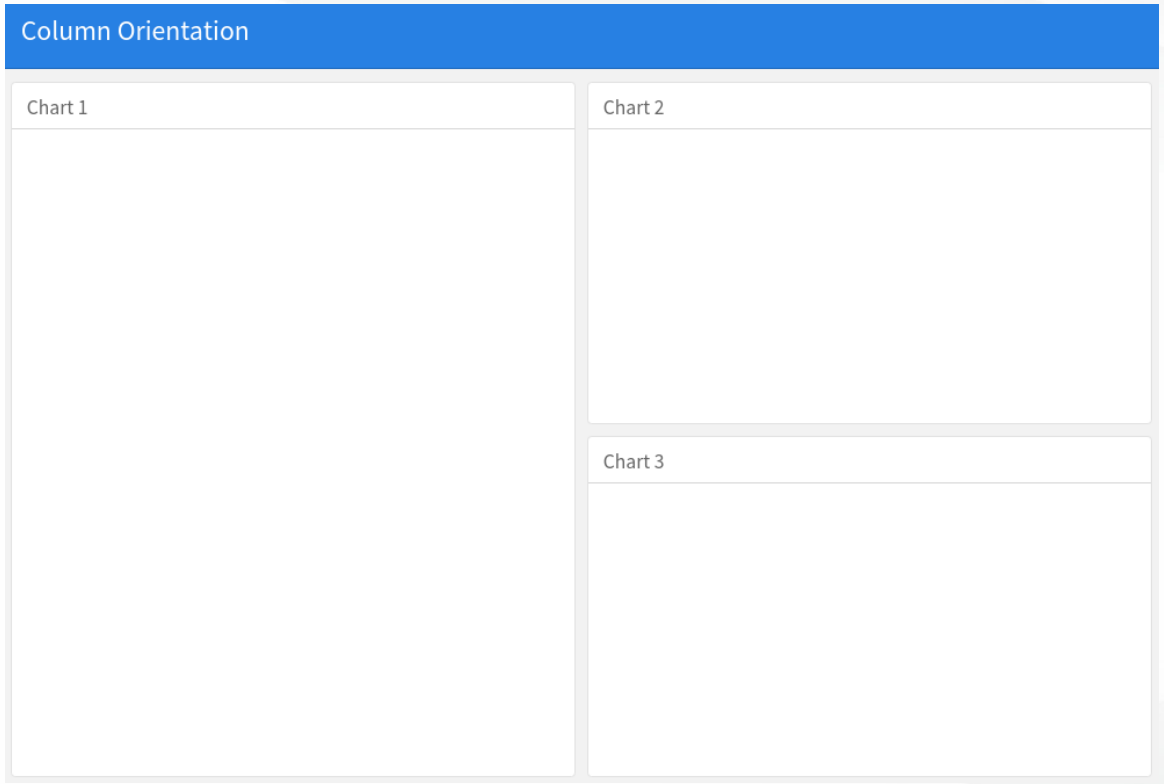
```
---
title: "columns"
output: flexdashboard::flex_dashboard
---
## My first column

### My first box

This is some text in a box.

## My second column

### My second box

This is some slightly different text in a box.
```



# III. Dashboard layouts

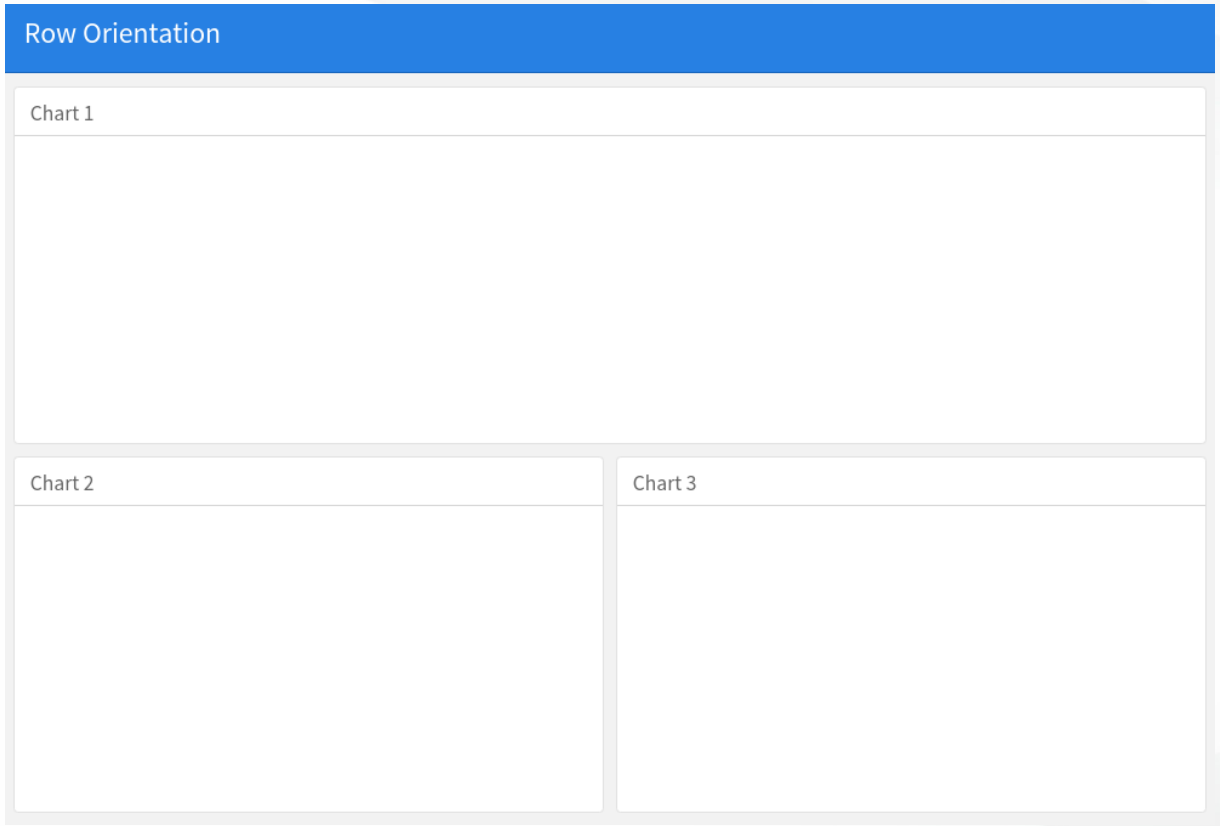
## Level two: Layout by columns, row

````
---
title: "Column Orientation"
output: flexdashboard::flex_dashboard
---

Column
-----------------------------------

### Chart 1

```{r}
```

Column
-----------------------------------

### Chart 2

```{r}
```

### Chart 3

```{r}
```
````



# Level two: Layout by columns, row

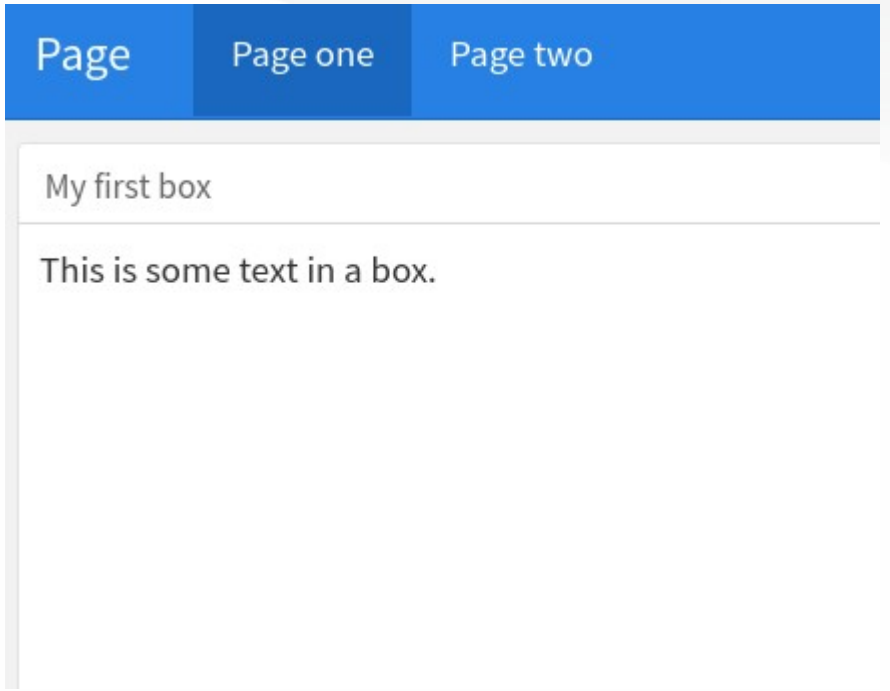
````
---
title: "Row Orientation"
output:
  flexdashboard::flex_dashboard:
    orientation: rows
---

Row
-----------------------------------

### Chart 1

```{r}
```

Row
-----------------------------------

### Chart 2

```{r}
```

### Chart 3

```{r}
```
````



# III. Dashboard layouts

## Level one: pages

```
---
title: "Page"
output: flexdashboard::flex_dashboard
---
# Page one

### My first box

This is some text in a box.

# Page two

### My second box

This is some slightly different text in a box.
```



# III. Dashboard layouts

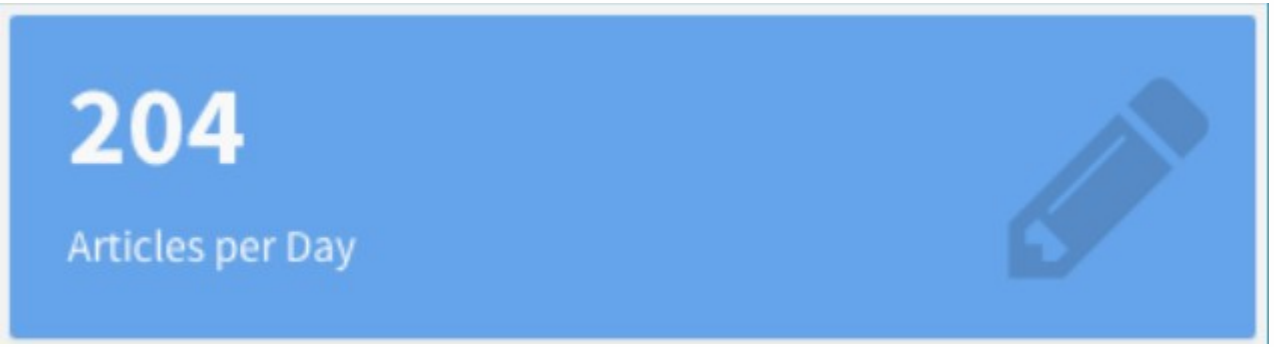
- **Layout Recap:**

- Use Markdown headings to describe the boxes and space division of your dashboard
- Layout is implicit and automatic
- Tweakable with custom attributes
- Content in your boxes fills the box automatically
- Supply gaps between R offerings and common dashboard components

# IV. Dashboard components

- **Value boxes**

```
library(flexdashboard)
articles <- 204
valueBox(articles,
        icon = "fa-pencil",
        caption = "Articles per Day")
```



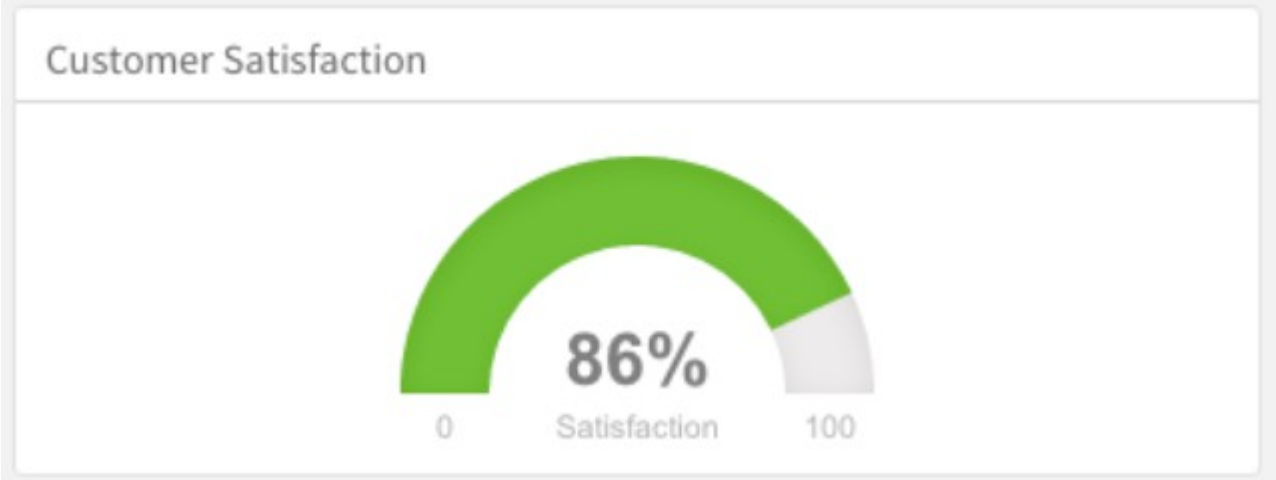

https://bookdown.org/yihui/rmarkdown/dashboard-components.html#value-boxes

https://fontawesome.com/v4/icons/

# IV. Dashboard components

## Gauges

```
satisfaction <- 86
gauge(satisfaction, min = 0, max = 100, symbol
= '%',
  label = "Satisfaction", gaugeSectors(
  success = c(80, 100), warning = c(40, 79),
danger = c(0, 39)
))
```




https://bookdown.org/yihui/rmarkdown/dashboard-components.html#gauges

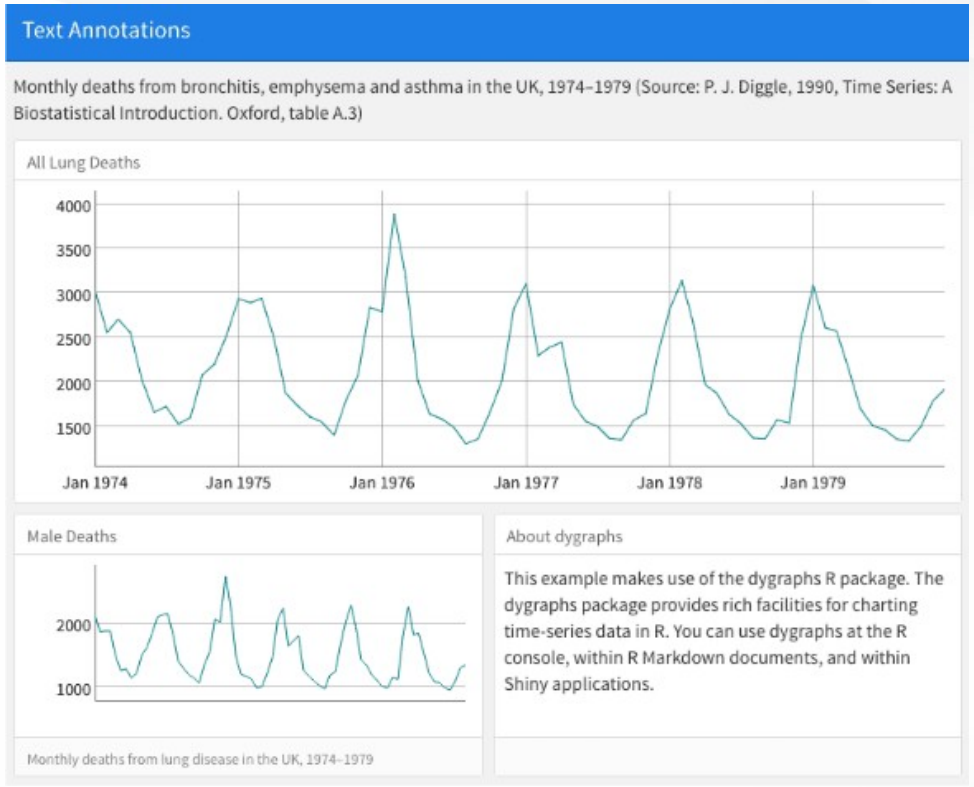
# IV. Dashboard components

## Text Annotations

Each component within a dashboard includes optional title, which is the text following the level 3 heading ###

Notes are any text prefaced with > after the code chunk that yields the component's output, like:

> Monthly deaths from lung disease in the UK, 1974–1979...




https://bookdown.org/yihui/rmarkdown/dashboard-components.html#text-annotations

# IV. Dashboard components

## Navigation Bar

```
---
title: "Navigation Bar"
output:
  flexdashboard::flex_dashboard:
    navbar:
      - { title: "About", href: "https://example.com/about" }
---
```

```
---
title: "Source Code"
output:
  flexdashboard::flex_dashboard:
    source_code: embed
---
```

https://bookdown.org/yihui/rmarkdown/dashboard-components.html#navigation-bar

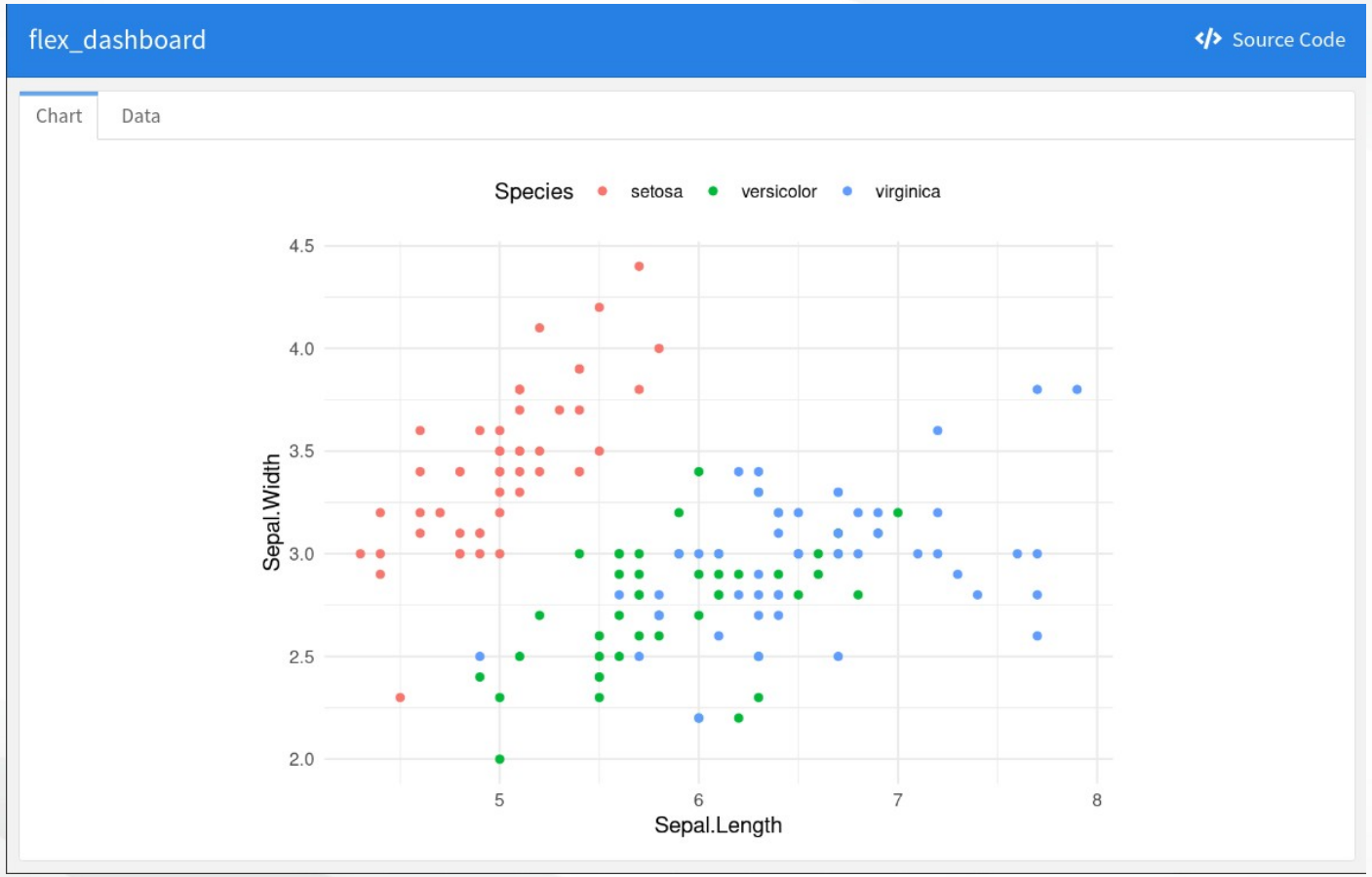
# IV. Dashboard components

## Including Data: tabsets

````
---
title: "flex_dashboard"
output:
  flexdashboard::flex_dashboard:
    source_code: embed
---

## Column {.tabset}

### Chart

```{r}
library("ggplot2")
sp <- ggplot(iris, aes(Sepal.Length, Sepal.Width)) +
  geom_point(aes(color = Species)) +
  theme_minimal()+
  theme(legend.position = "top")
sp
```

### Data

```{r}
knitr::kable(iris)
```
````

# IV. Dashboard components

- **Including Data: Chart**



# IV. Dashboard components

## Including Data: Table

| Sepal.Length | Sepal.Width | Petal.Length | Petal.Width | Species |
|---|---|---|---|---|
| 5.1 | 3.5 | 1.4 | 0.2 | setosa |
| 4.9 | 3.0 | 1.4 | 0.2 | setosa |
| 4.7 | 3.2 | 1.3 | 0.2 | setosa |
| 4.6 | 3.1 | 1.5 | 0.2 | setosa |
| 5.0 | 3.6 | 1.4 | 0.2 | setosa |
| 5.4 | 3.9 | 1.7 | 0.4 | setosa |
| 4.6 | 3.4 | 1.4 | 0.3 | setosa |
| 5.0 | 3.4 | 1.5 | 0.2 | setosa |
| 4.4 | 2.9 | 1.4 | 0.2 | setosa |
| 4.9 | 3.1 | 1.5 | 0.1 | setosa |
| 5.4 | 3.7 | 1.5 | 0.2 | setosa |
| 4.8 | 3.4 | 1.6 | 0.2 | setosa |
| 4.8 | 3.0 | 1.4 | 0.1 | setosa |
| 4.3 | 3.0 | 1.1 | 0.1 | setosa |
| 5.8 | 4.0 | 1.2 | 0.2 | setosa |

# V. Interactive dashboards

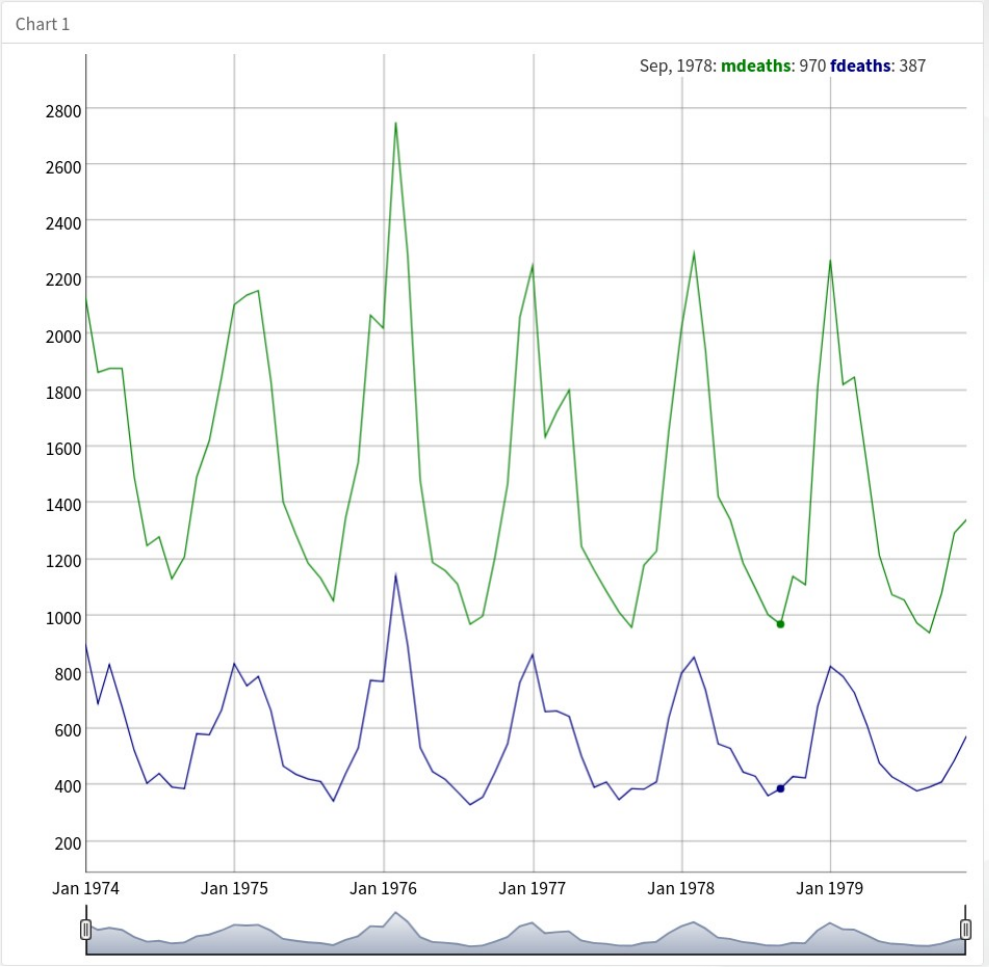
- **Interactivity with HTML widgets**

https://www.htmlwidgets.org/

- Simplest form of interactivity
- Static HTML; no special client or server requirements
  - Host anywhere, view anywhere
- Data must be fixed (can't run R code)
- Interaction can happen across widgets with crosstalk

# V. Interactive dashboards

```
library(dygraphs)
lungDeaths <- cbind(mdeaths, fdeaths)
dygraph(lungDeaths) %>%
  dyRangeSelector()
```



# V. Interactive dashboards

```
library(DT)
datatable(iris, options = list(pageLength = 5))
```

Show 5 entries Search:

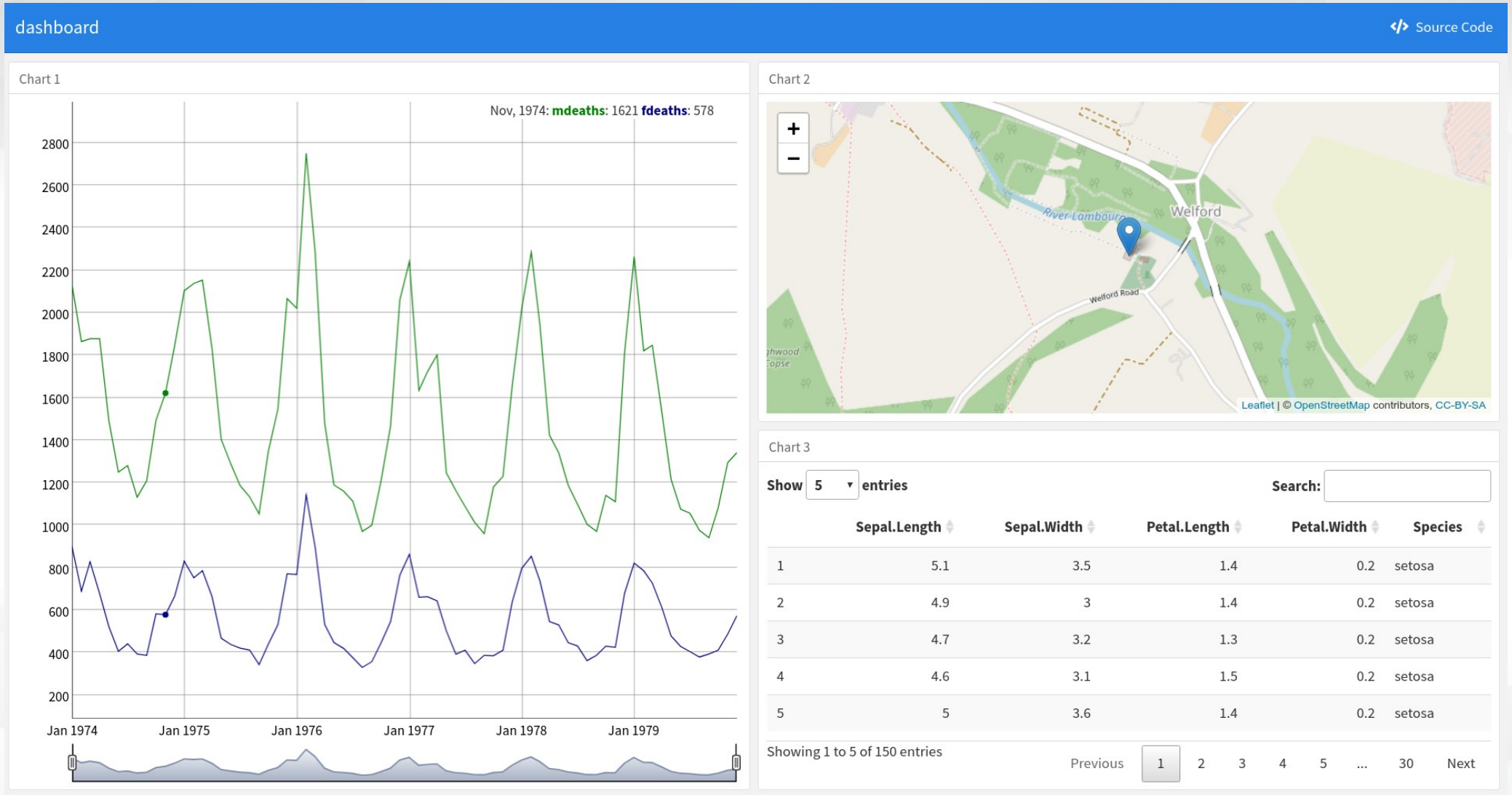
| | Sepal.Length | Sepal.Width | Petal.Length | Petal.Width | Species |
|---|---|---|---|---|---|
| 1 | 5.1 | 3.5 | 1.4 | 0.2 | setosa |
| 2 | 4.9 | 3 | 1.4 | 0.2 | setosa |
| 3 | 4.7 | 3.2 | 1.3 | 0.2 | setosa |
| 4 | 4.6 | 3.1 | 1.5 | 0.2 | setosa |
| 5 | 5 | 3.6 | 1.4 | 0.2 | setosa |

Showing 1 to 5 of 150 entries Previous 1 2 3 4 5 ... 30 Next

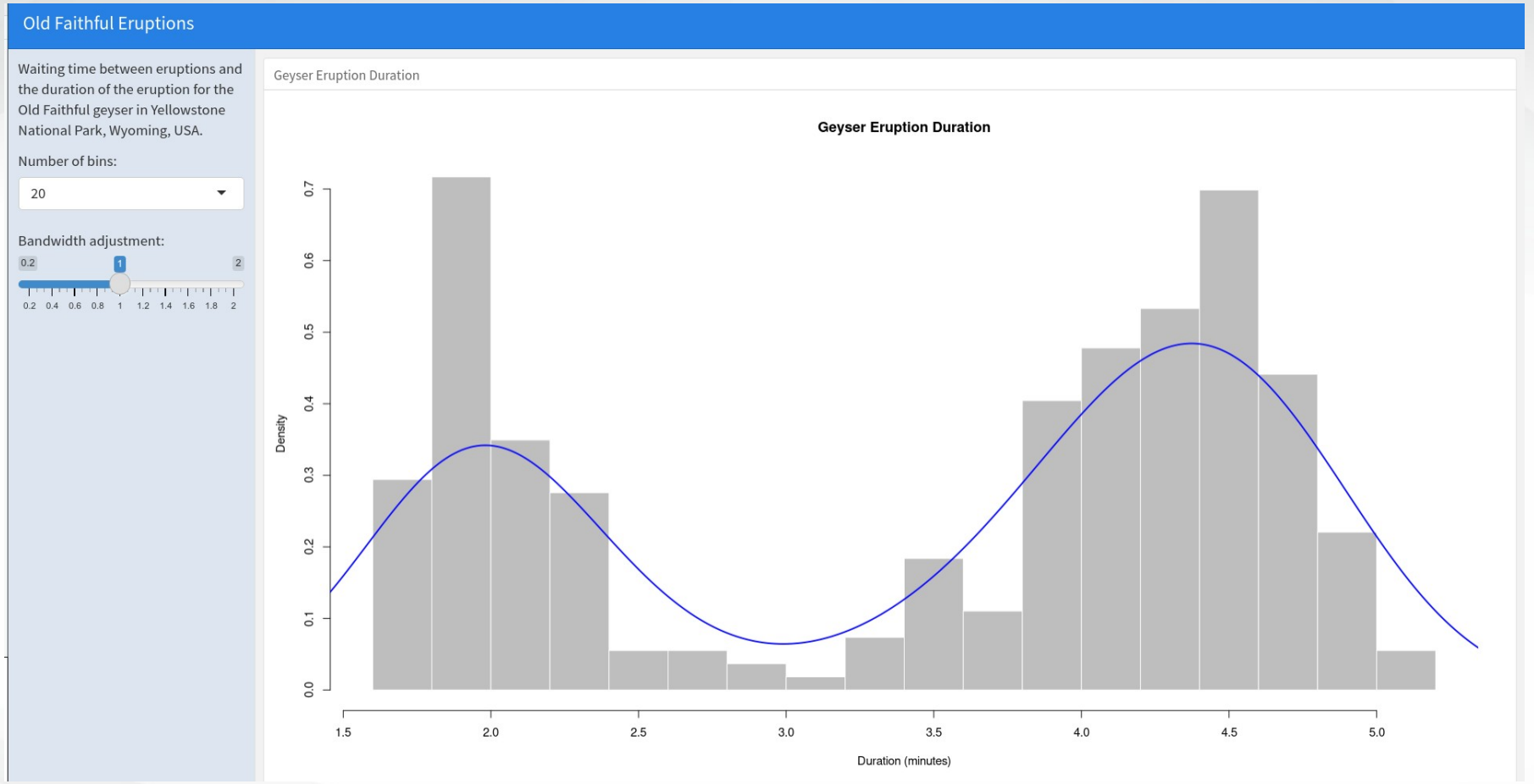
# V. Interactive dashboards

````
---
title: "dashboard"
output:
  flexdashboard::flex_dashboard:
    source_code: embed
---

Column
-----------------------------------

### Chart 1

```{r}

library(dygraphs)
lungDeaths <- cbind(mdeaths, fdeaths)
dygraph(lungDeaths) %>%
  dyRangeSelector()
```

Column
-----------------------------------

### Chart 2

```{r}


library(leaflet)
leaflet() %>%
  addTiles() %>%
  addMarkers(lat = 51.4560, lng = -1.4136)
```

### Chart 3

```{r}
library(DT)
datatable(iris, options = list(pageLength = 5))

```
````

# V. Interactive dashboards

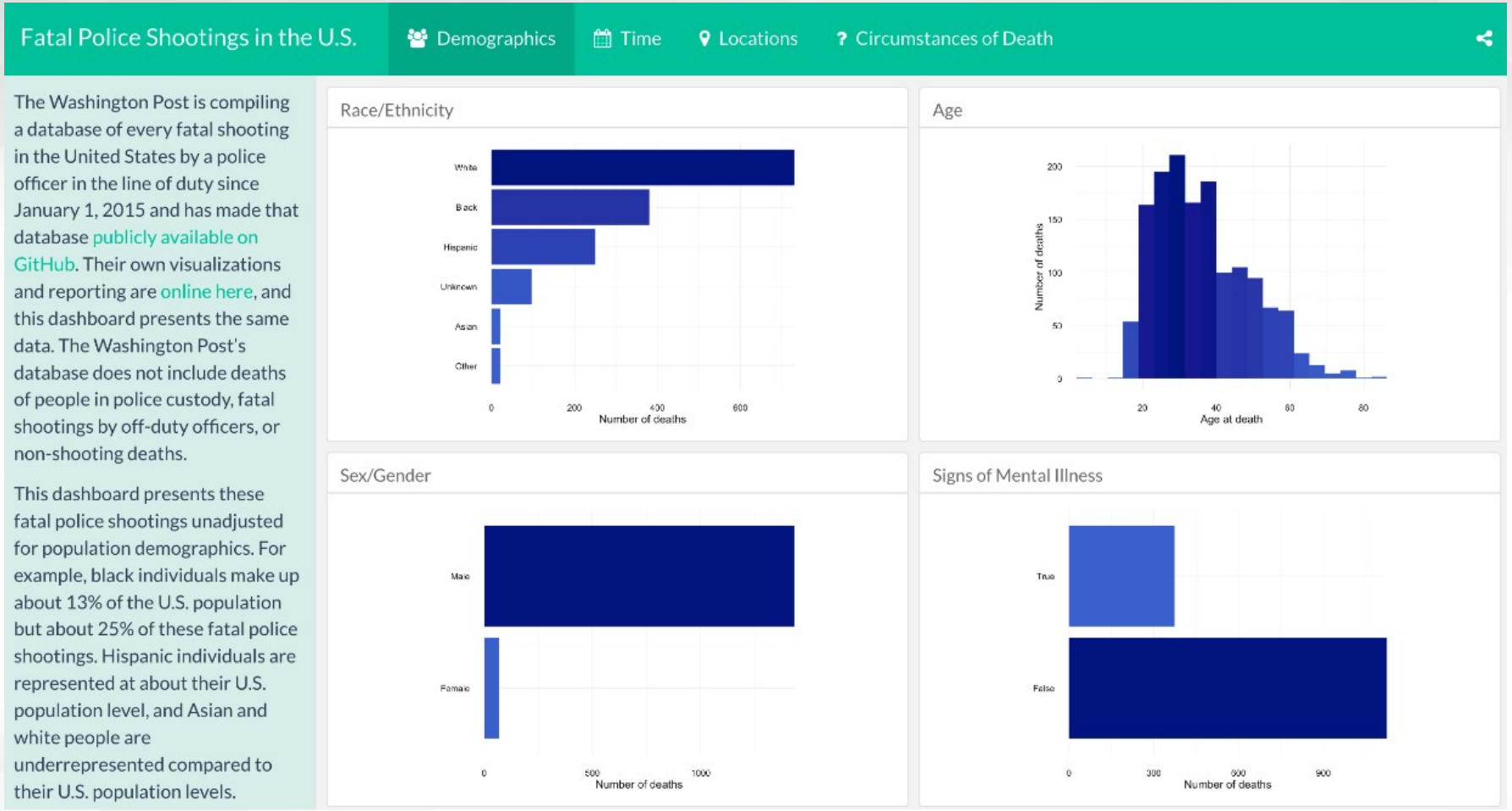


# VI. flexdashboard vs. shinydashboard



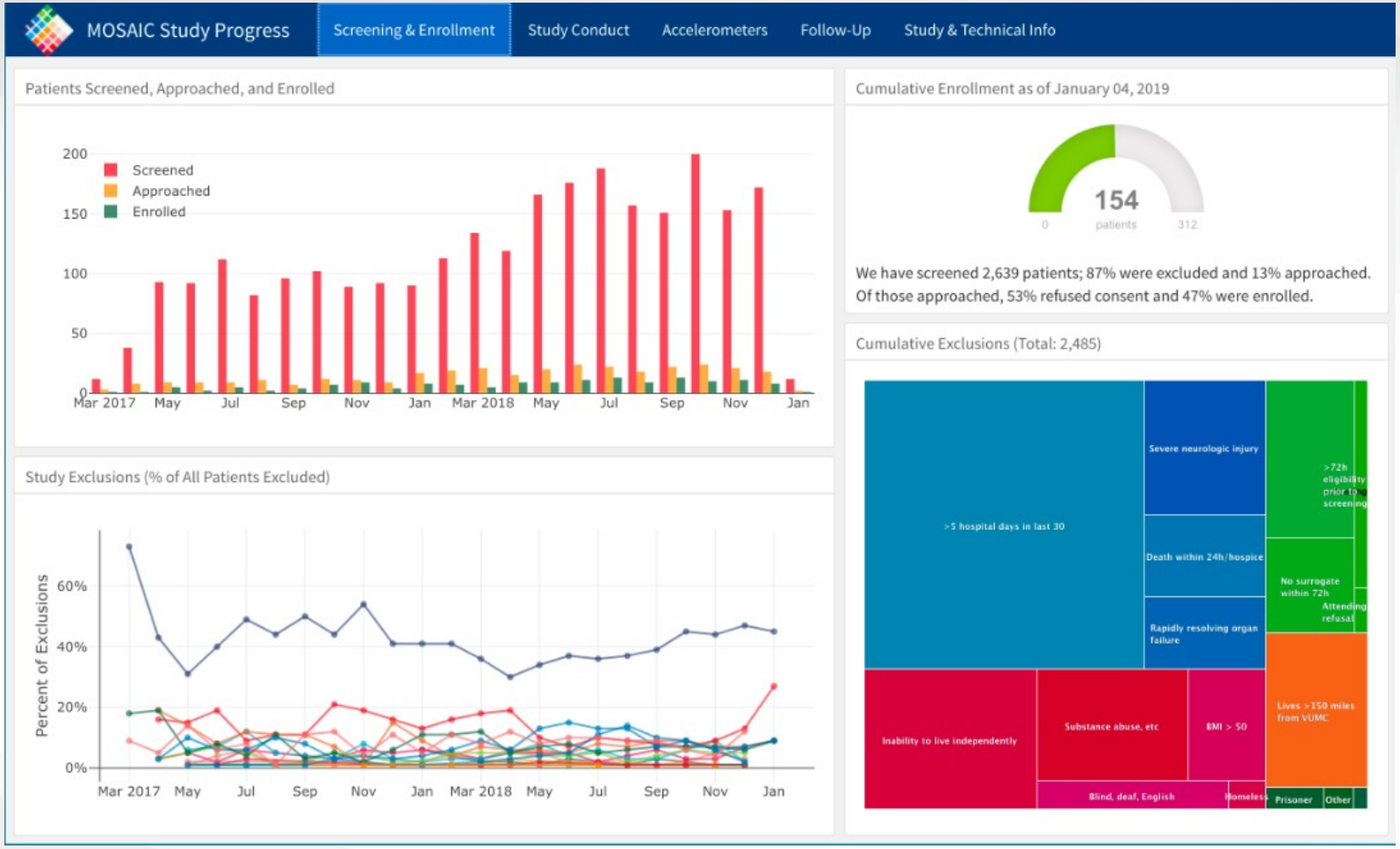

https://bookdown.org/yihui/rmarkdown/shiny.html#a-shiny-dashboard-example

# V. Example projects



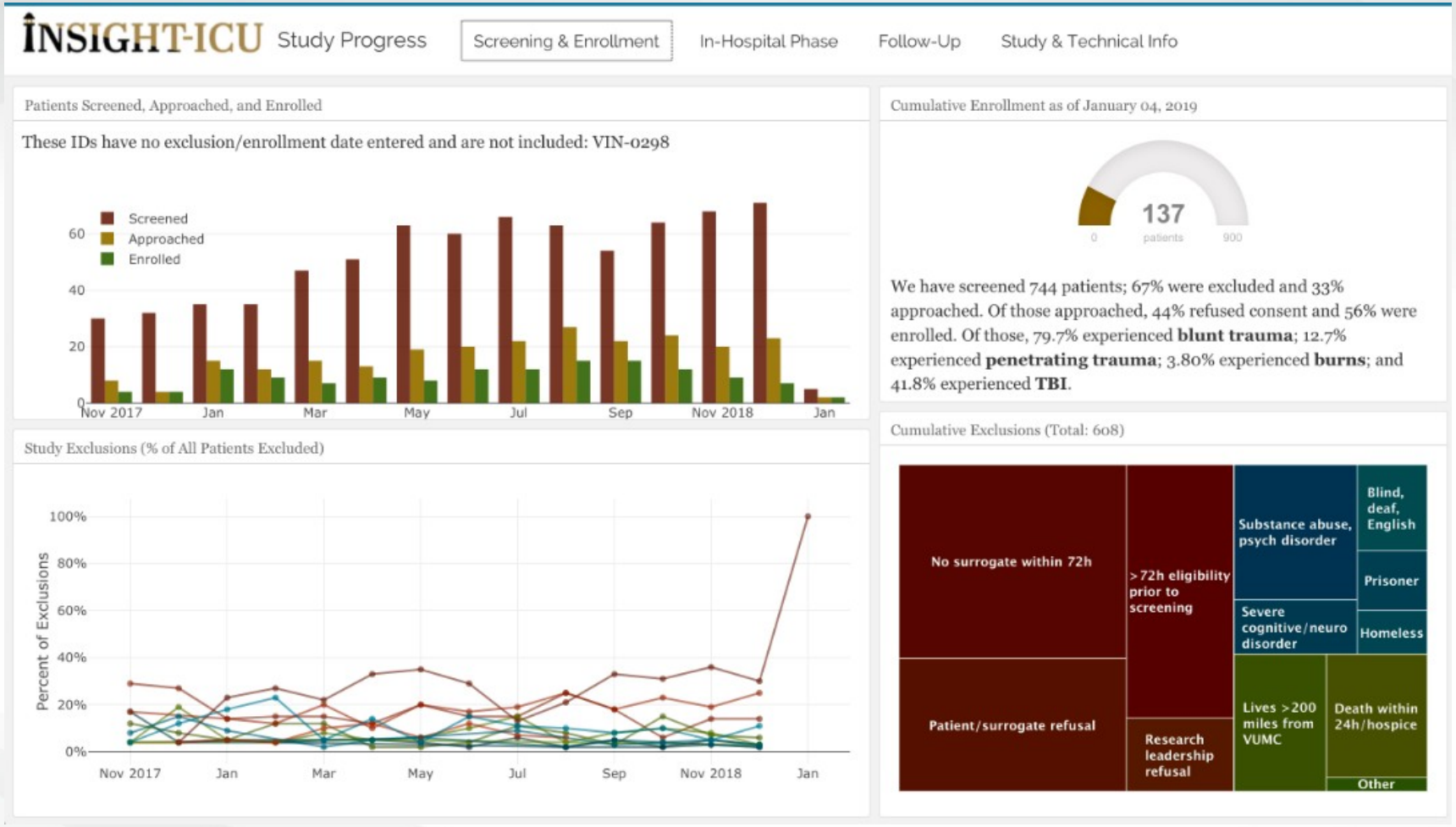

By Julia Silge (blog; flexdashboard; source code)

# V. Example projects




By Jennifer Thompson (blog; dashboard; source code)

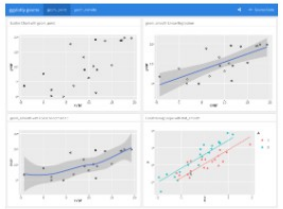
# V. Example projects




By Jennifer Thompson (dashboard; source code)

# V. Example projects

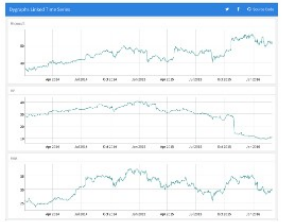
NBA scoring with d3heatmap



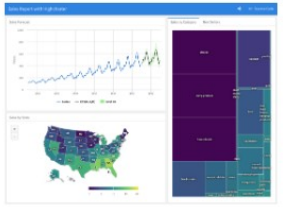
ggplotly: ggplot2 geoms

Shiny: biclust example

Shiny: CRAN downloads

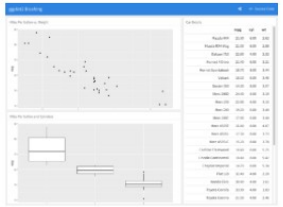


Linked time-series with dygraphs

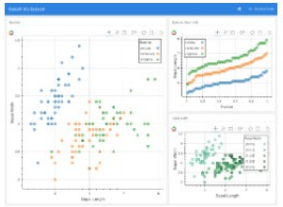


Sales report with highcharter

Storyboard: htmlwidgets showcase



Shiny: ggplot2 linked brushing

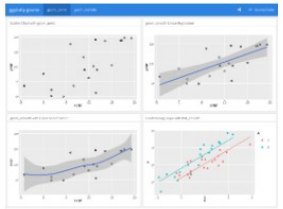


rbokeh: iris dataset

https://pkgs.rstudio.com/flexdashboard/articles/examples.html

# V. Example projects

NBA scoring with d3heatmap



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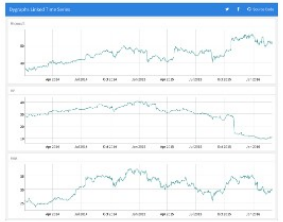

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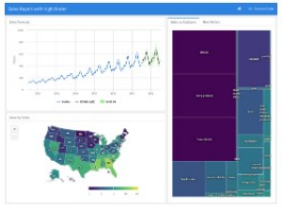

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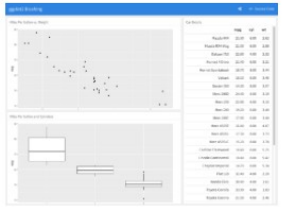
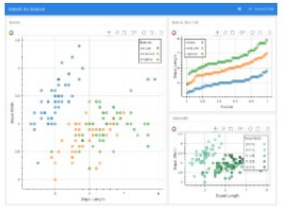


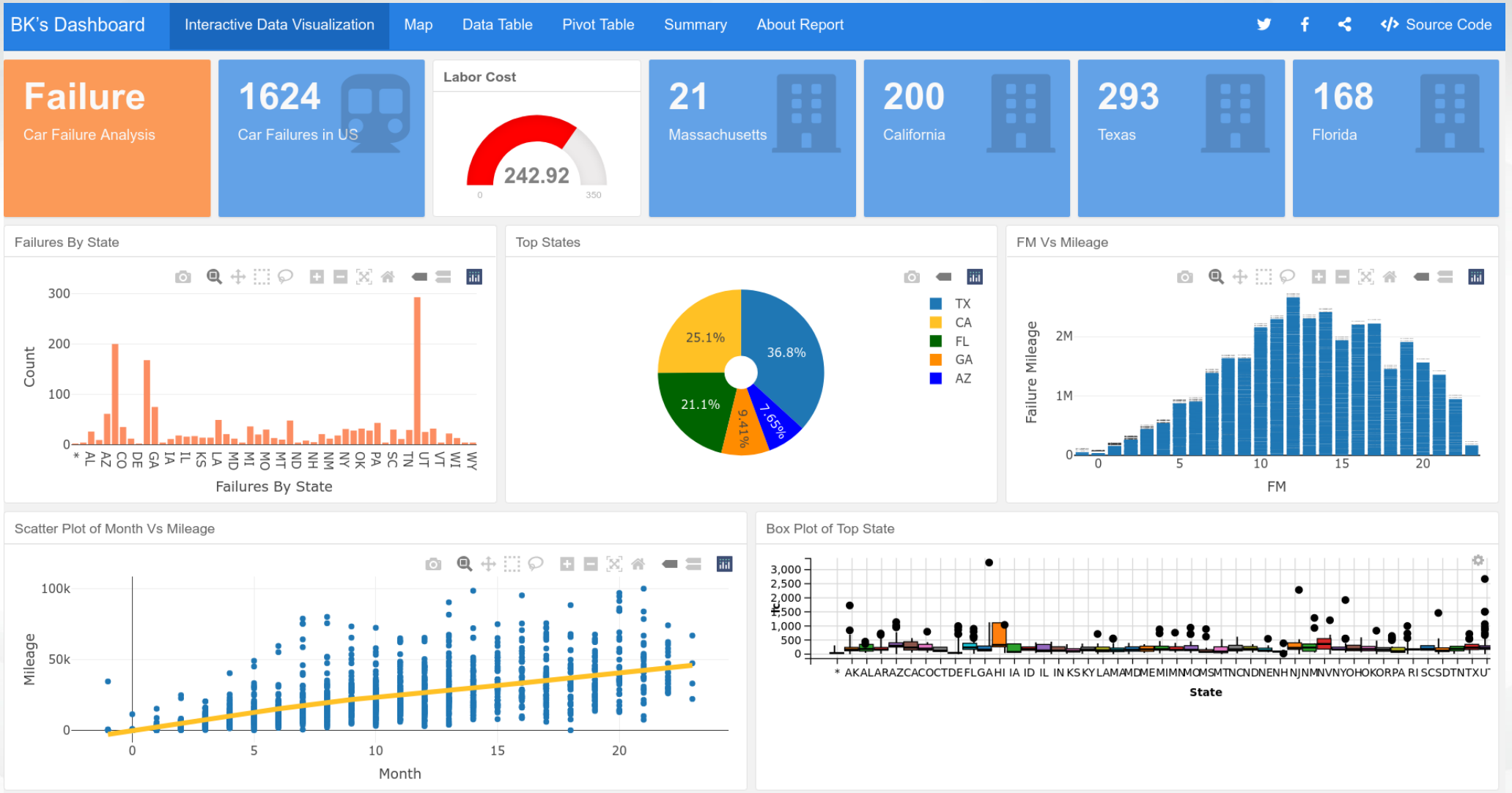
Shiny: ggplot2 linked brushing



rbokeh: iris dataset

https://pkgs.rstudio.com/flexdashboard/articles/examples.html

# V. Example projects




https://youtu.be/_a4S4tq62OE

## More resources

flexdashboard documentation

HTML widget showcase

R Markdown: The Definitive Guide