

# Flexdashboard: Let the Data Story Tell Itself

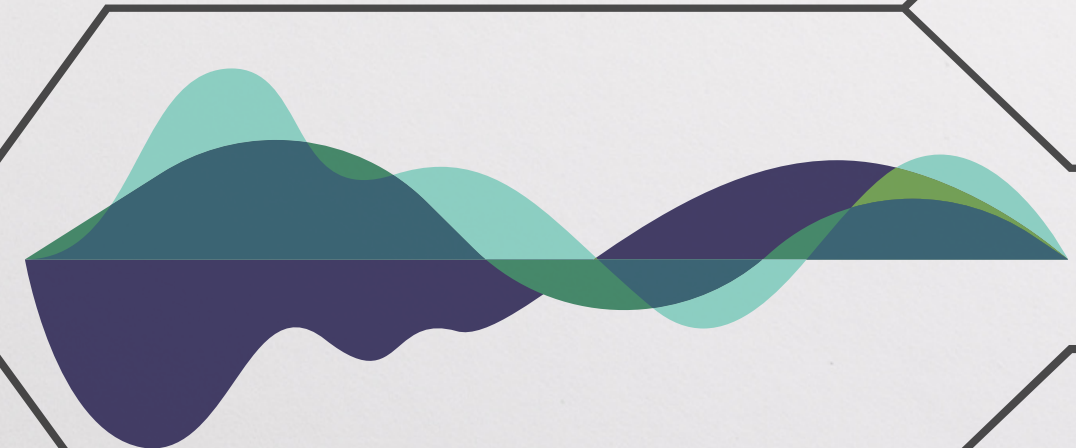


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Udi Alter

Class presentation

April 5th, 2022





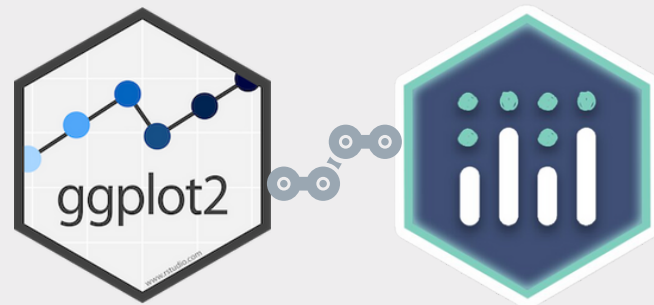
# What is a Dashboard?

An interactive dashboard is a data visualization tool that allows users to display and analyze data, and to find data-driven answers with ease. Dashboards can feature tables, plots, maps, diagrams, and/or other visualizations to help viewers understand the story the data tells.

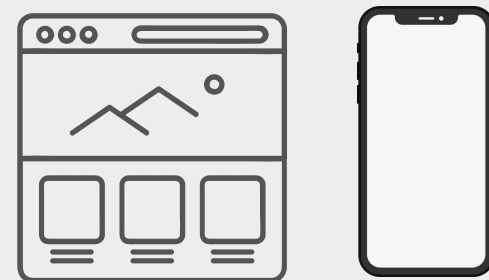
# What is flexdashboard?



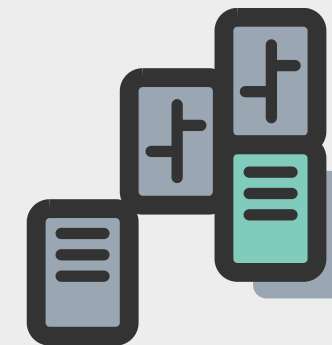
{flexdashboard} is an R package. With flexdashboard, it is quick and easy to create interactive (but, also static) data visualization dashboards using R Markdown. Here are some of its iconic features:



Insert tabular data, ggplots, and plotly objects



Design layouts for both browser and mobile devices

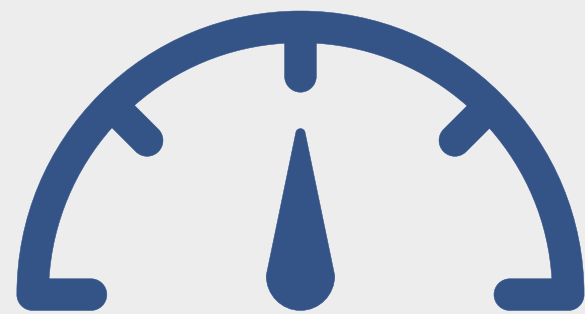


Create a Storyboard for presenting sequences of visualizations and related commentary



Incorporate Shiny to drive visualizations dynamically

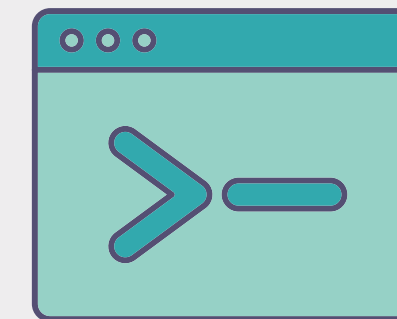
# Other flexdashboard features



Insert gauges, value boxes, and htmlwidgets



Options to share dashboard on social media

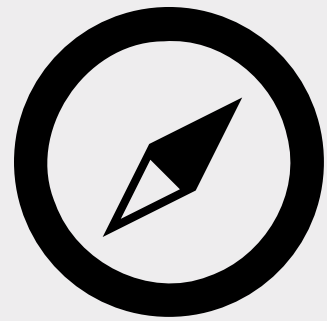


Immediate and accessible source code display

# — What Can flexdashboards Do for You —



Here are some advantages and potential applications of dashboards:



## Data exploration

- a useful tool to answer questions about your data where programming skills are not required



## Data presentation/story telling

- highlight information to best tell your data's story and results

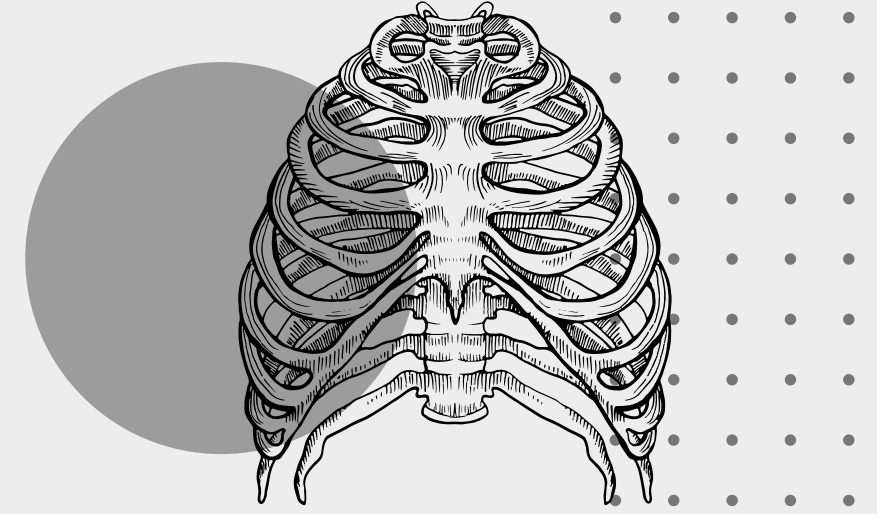


## The next generation of academic/research posters and abstracts

- communicate scientific findings and serve as a teaching/learning tool



# flexdashboard Anatomy



## YAML matter

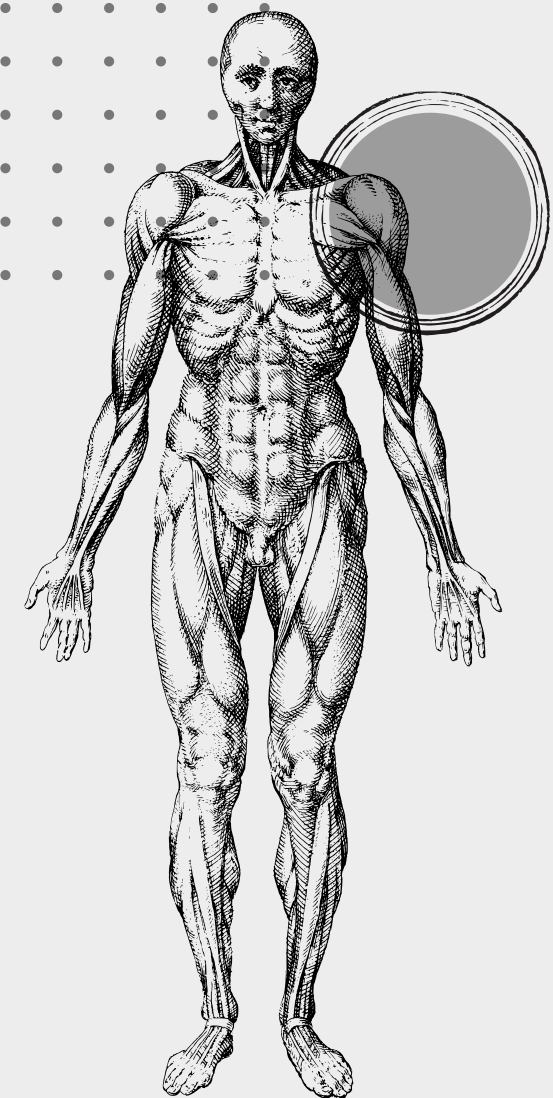
Yet Another Markup Language. The top piece of code specifying different document configurations (e.g., title, author, output type, theme, etc).

## Navigation bar

Nav bar includes the title, author name, pages, and buttons directing to source code, social media, and other links.

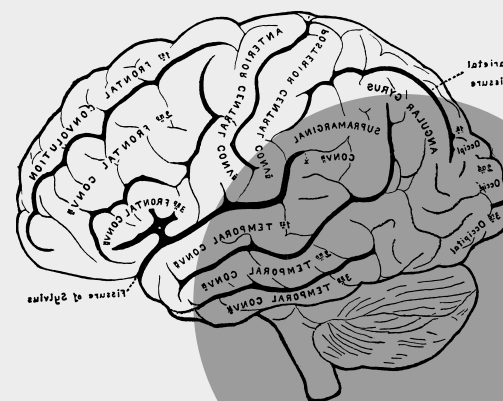
## Layout

Layout includes the type of chart orientations. The most common ones are rows or columns. But, there are many options such as: scroll, fill, tabs, sidebars, and combinations of two or more.

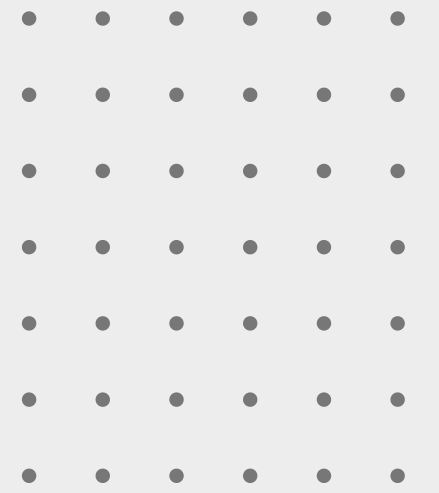


# YAML matter

```
1 ▾ ---
2 title: "Equivalence Testing for Multiple Regression"
3 author: "Alter & Counsell (2021)"
4 output:
5   flexdashboard::flex_dashboard:
6     theme: flatly
7     vertical_layout: fill
8     social: menu
9     source_code: embed
10    navbar:
11      - { icon: "fa-newspaper", href: "https://psyarxiv.com/ugc9e/", align: right }
12 ▲ ---
```



# Navigation Bar



Equivalence Testing for Multiple Regression Alter & Counsell (2021)

 Paper Highlights

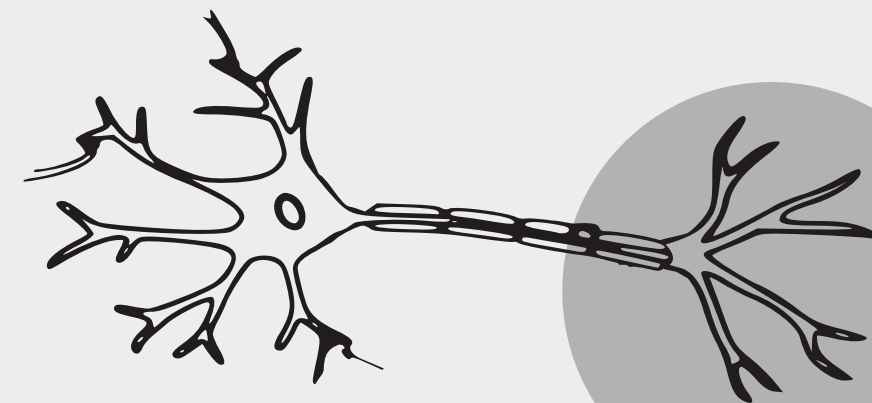
 Contact the Authors

 References



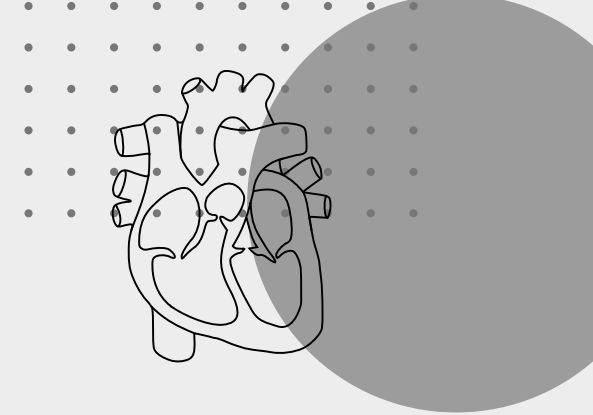
 Source Code

Nav bar is easily customizable. For example, you can change the font, size, colour, theme, pages, buttons, links, icons, favicons, etc.





# Layout



## COLUMN

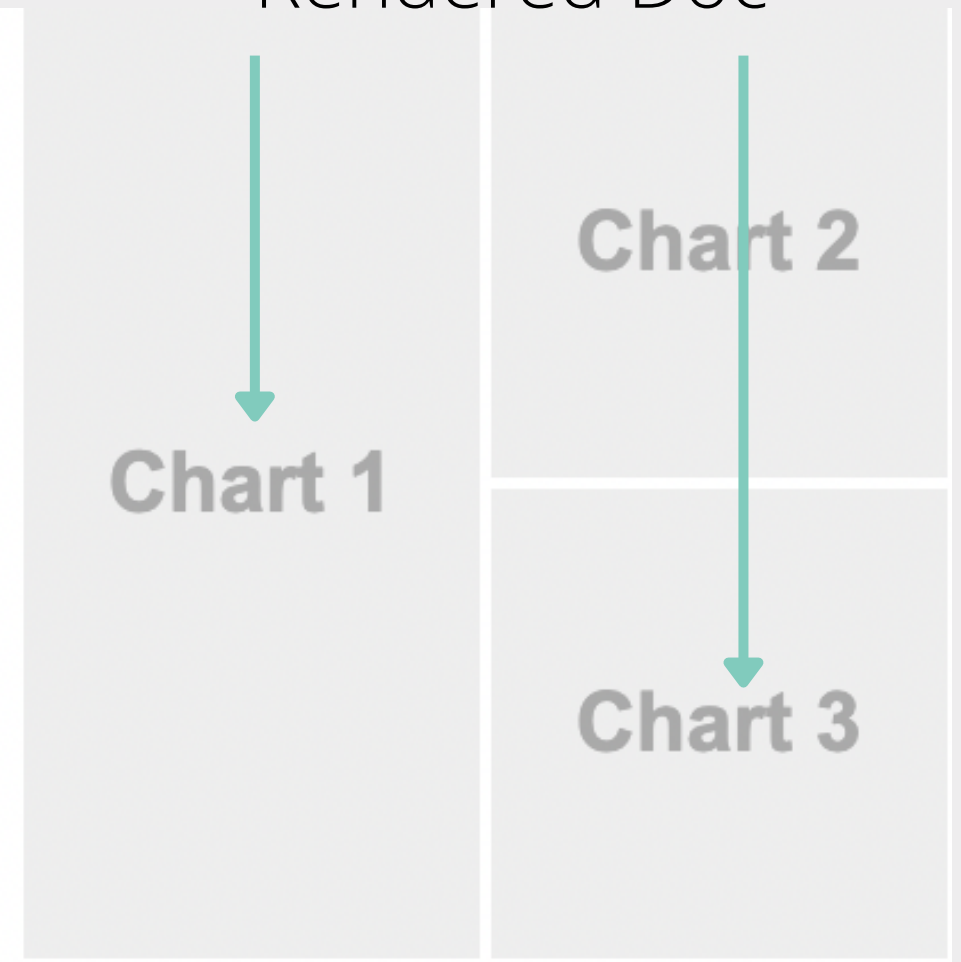
orientation



### Source Code

```
1 ---
2 title: "Column Orientation"
3 output: flexdashboard::flex_dashboard
4 ---
5
6 Column
7 -----
8
9 ### Chart 1
10
11 {{{{r}}}
12 {{{{r}}}
13
14 Column
15 -----
16
17 ### Chart 2
18
19 {{{{r}}}
20 {{{{r}}}
21
22 ### Chart 3
23
24 {{{{r}}}
25 {{{{r}}}
26
```

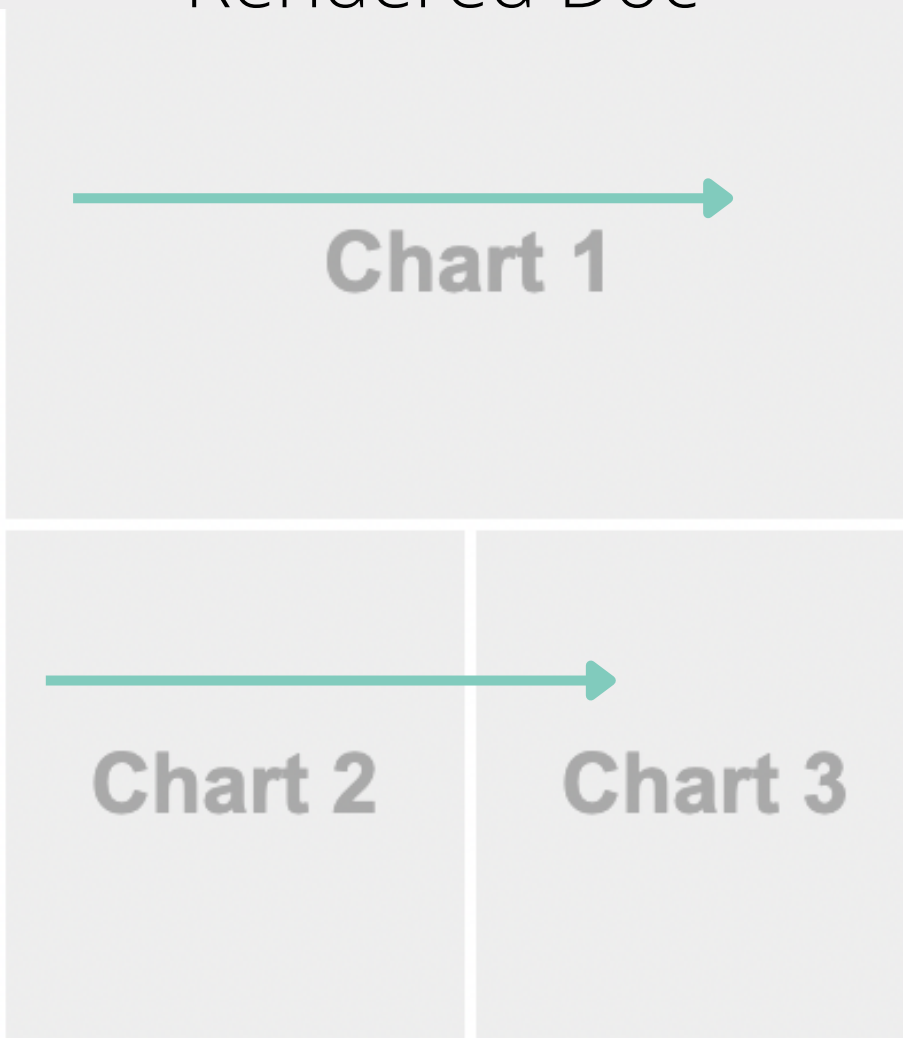
### Rendered Doc



### Source Code

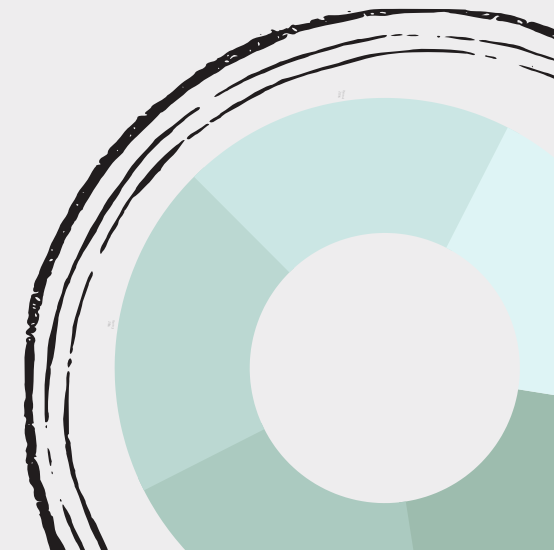
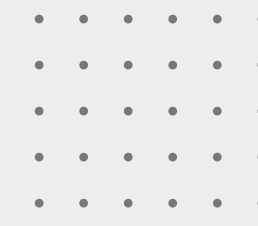
```
1 ---
2 title: "Row Orientation"
3 output:
4   flexdashboard::flex_dashboard:
5     orientation: rows
6 ---
7
8 Row
9 -----
10
11 ### Chart 1
12
13 {{{{r}}}
14 {{{{r}}}
15
16 Row
17 -----
18
19 ### Chart 2
20
21 {{{{r}}}
22 {{{{r}}}
23
24 ### Chart 3
25
26 {{{{r}}}
27 {{{{r}}}
28
```

### Rendered Doc



## ROW

orientation



# Onion- Structured Syntax



Page 1

=====

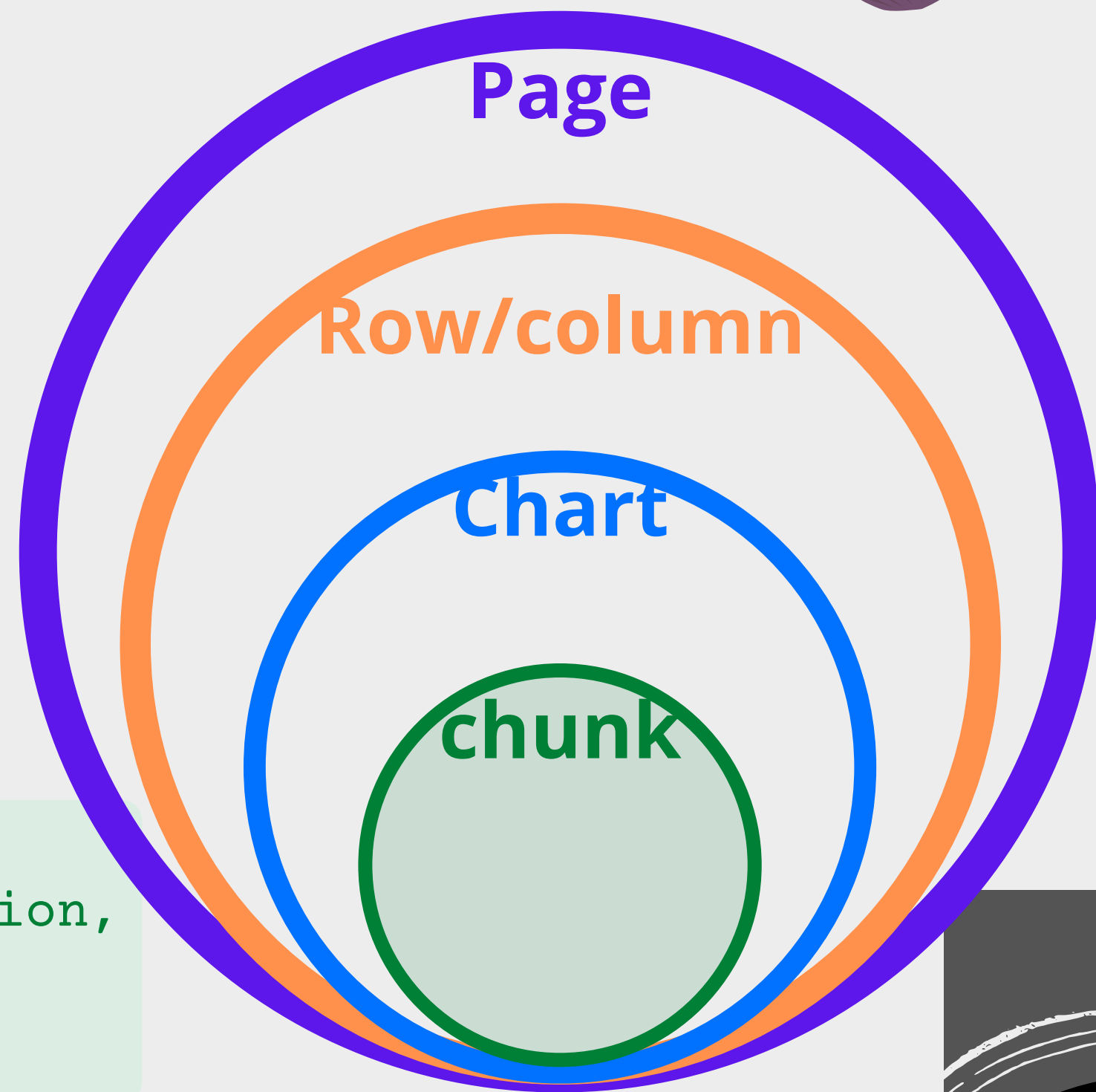
Row/Column

-----

### Chart 1

Text example: Hello world!

```
```{r chunk name}
# inside chunk: r operation e.g., data manipulation,
generating plots etc.
```
```



# Installation & Initialization

## #' # Installation

- 1 `install.packages("flexdashboard")`
- 2 `install.packages("plotly")`

## #' # Initialization

New R Markdown

Document  
Presentation  
Shiny  
From Template

Template: [Using R Markdown Templates](#)

|                                    |                        |
|------------------------------------|------------------------|
| Distill Article                    | {distill}              |
| <b>Flex Dashboard</b>              | <b>{flexdashboard}</b> |
| Flex Dashboard themed with {bslib} | {flexdashboard}        |
| Interactive Tutorial               | {learnr}               |
| reprex (lots of features)          | {reprex}               |
| reprex (minimal)                   | {reprex}               |
| GitHub Document (Markdown)         | {rmarkdown}            |
| Package Vignette (HTML)            | {rmarkdown}            |
| ASA Journal Article                | {articles}             |

Create Empty Document

OK Cancel



# Helpful Resources



Font Awesome Icons



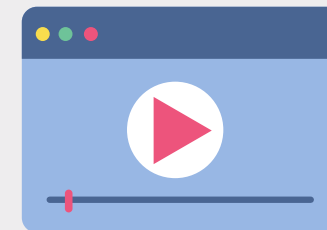
flexdashboard website

**Example**

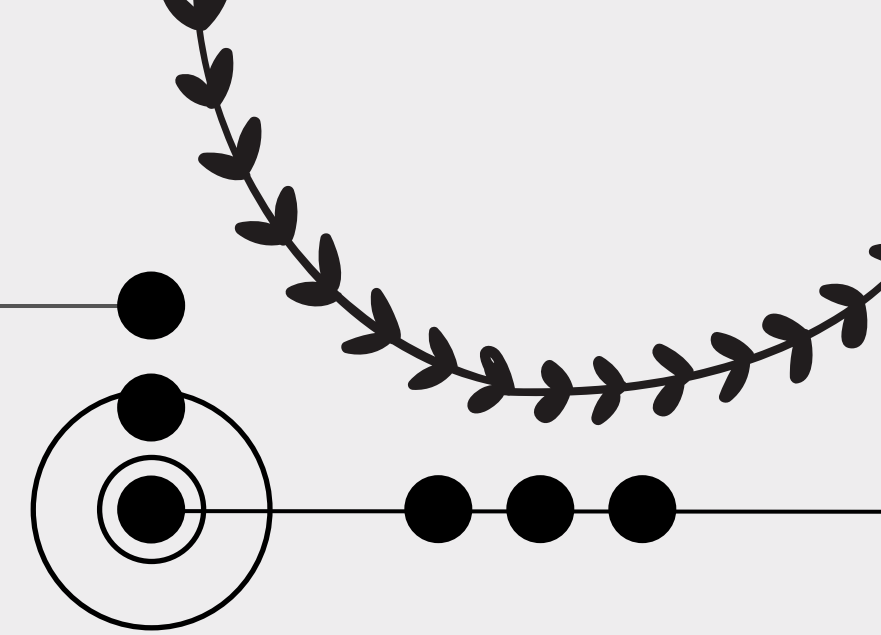
Good examples



User manual

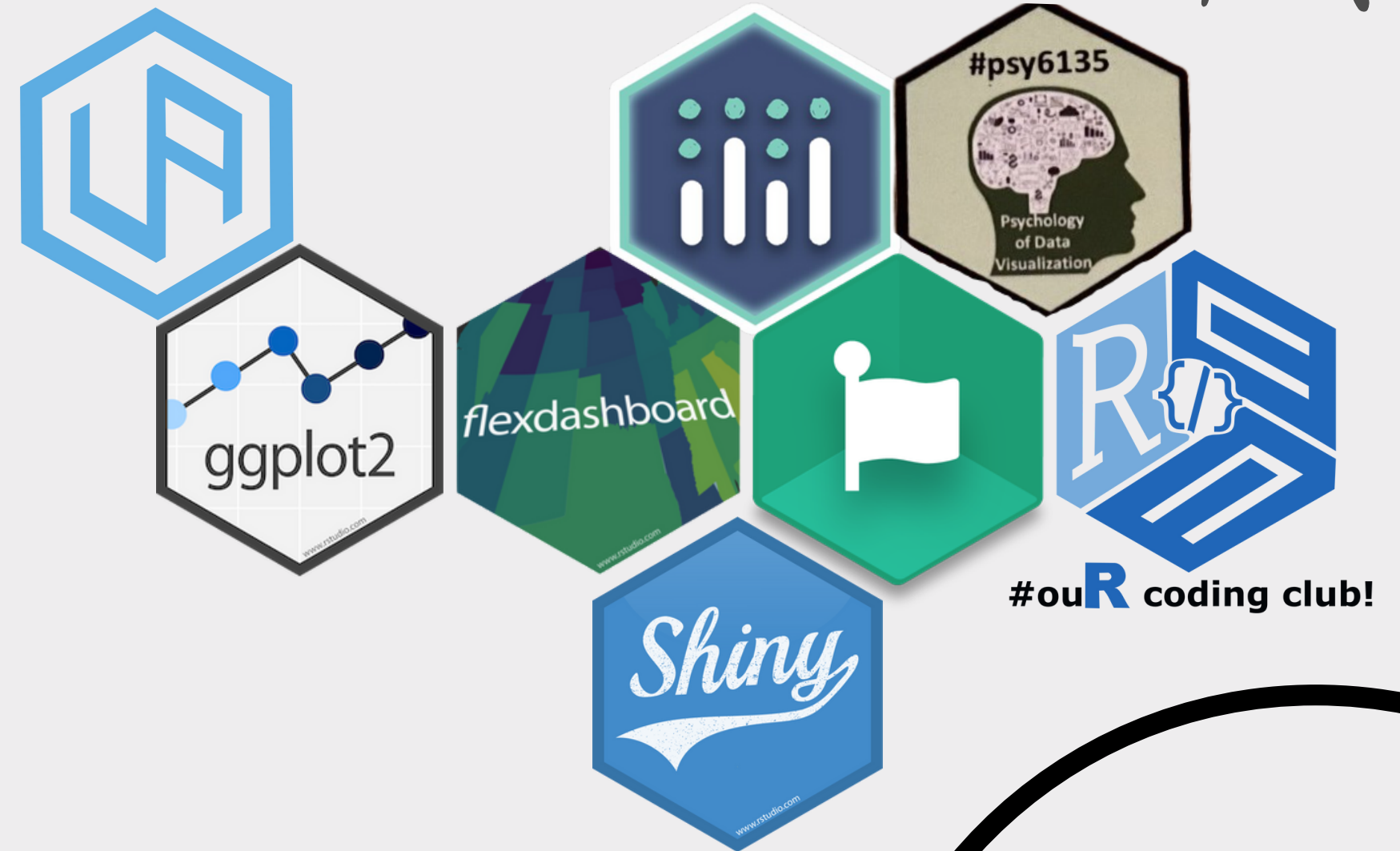


flexdashboard tutorial



# — Thank You!

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Source code available at:

<https://github.com/udialter/welcome2flexdashboard>