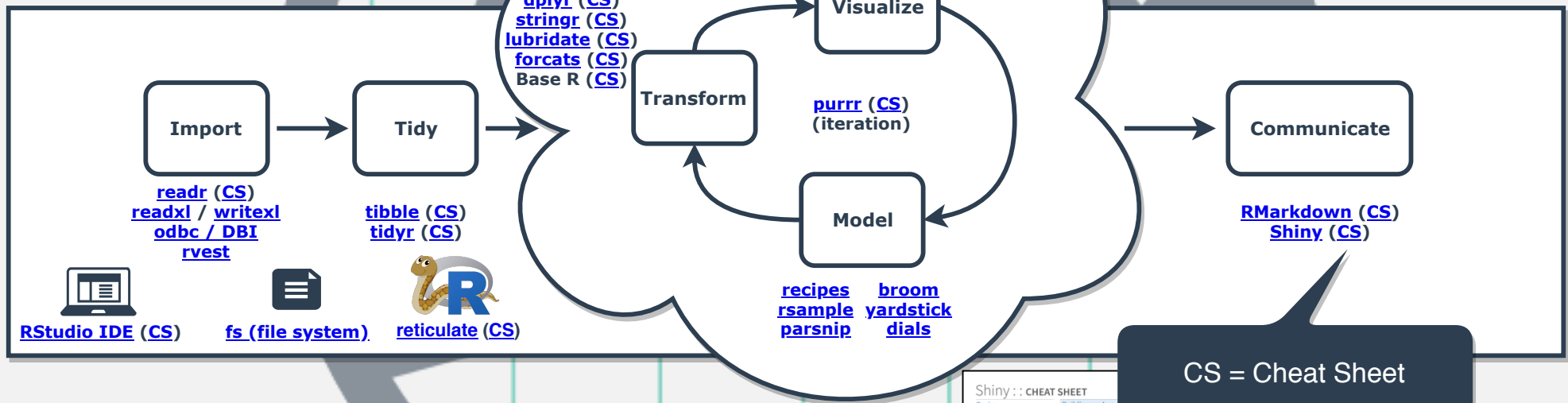
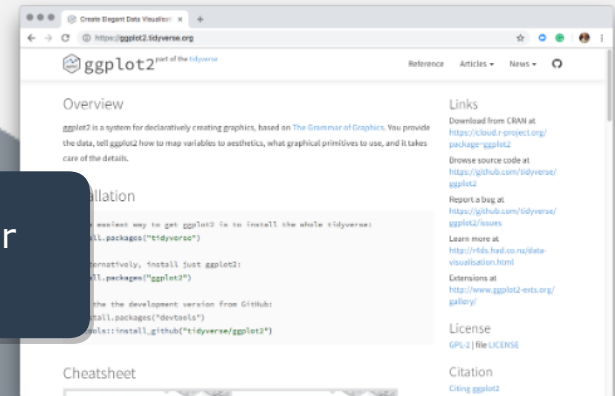


# Data Science with R Workflow

If you want to learn R and this workflow *for business analysis*, take the [R For Business Analysis \(DS4B 101-R\) course](#) through Business Science University.

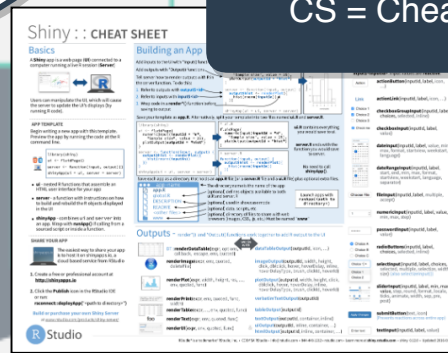


Click the links for Documentation



## Important Resources

- R For Data Science Book: <http://r4ds.had.co.nz/>
- Rmarkdown Book: <https://bookdown.org/yihui/rmarkdown/>
- Data Visualization Book: <https://r-graphics.org/>
- More Cheatsheets: <https://www.rstudio.com/resources/cheatsheets/>
- tidyverse packages: <https://www.tidyverse.org/>
- Connecting to databases: <https://db.rstudio.com/>
- RMarkdown website: <https://rmarkdown.rstudio.com/>
- Shiny web applications website: <http://shiny.rstudio.com/>
- Jenny Bryan's purrr tutorial: <https://jennybryan.org/>



# Data Science with

## Web Applications & the "Shinyverse"

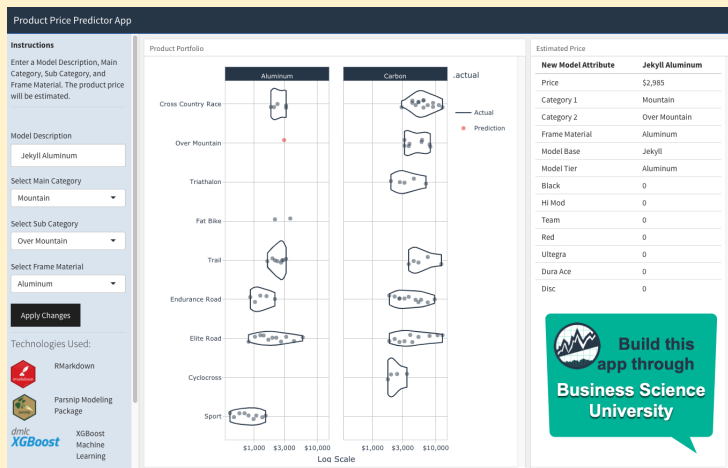


## Flexdashboard Apps

Flexdashboard is an [RMarkdown-based](#) dashboard tool that can be used to integrate shiny components at runtime. Development is fast and efficient, but layouts are not as open to modification as building an app using Shiny.

## Shiny Apps

Shiny is an R-Package that enables [web app development from R](#). Contains R functions for common HTML structures, UI Controls (Components/Widgets), and web framework tools. The framework is highly flexible, but users require more knowledge of HTML & CSS.



**Flexdashboard App**  
Built in DS4B 102-R ([Demo Here](#))

## Themes, Dashboards, & Examples

[Flexdashboard Gallery](#)

[Themes](#)  
[Layouts](#)

[Shiny Gallery](#)  
[shinythemes](#)  
[shinydashboard](#)  
[shinydashboardPlus](#)

[Semantic](#)  
[shiny.semantic](#)  
[semantic.dashboard](#)

[Bootstrap 4](#)  
[bs4Dash](#)

[Argon](#)  
[argonR](#)  
[argonDash](#)

### Time Series Analysis

- Time-aware tibbles: [tibbletime](#) & [tsibble](#)
- Convert between classes: [timetk](#) & [tsbox](#)
- Time Series Index Summary: [timetk](#)
- Generating Future Series: [timetk](#)

### Forecasting

- ARIMA, ETS, etc: [forecast](#) & [fable](#)
- Tidy, glance, augment for forecast models: [sweep](#)
- Converting forecast prediction to tibble: [sweep](#)

### Anomaly Detection

- Identify anomalies: [anomalize](#)

### Financial Analysis

- Getting financial data: [tidyquant](#) & [quantmod](#)
- Quantitative Analysis: [tidyquant](#) & [xts/TTR](#)
- Portfolio Analysis: [tidyquant](#) & [PerformanceAnalytics](#)

### Financial & Time Viz

- Static:
  - [tidyquant](#) - Financial ggplot2 geoms
- Interactive:
  - [highcharter](#) - highchart.js in R
  - [dygraphs](#) - xts plotting
  - [plotly](#) (CS) - plotly.js (financial) in R

### Text Analysis & NLP

- [Text Mining with R \(Book\)](#): [tidytext](#)
- NLP:
  - [H2O word2vec](#): Word embeddings
  - [text2vec](#): fast vectorization, topic modeling
  - [udpipe](#): [UDPipe](#) C++ lib in R

### Network Analysis

- Network Data Transformations (Tidy): [tidygraph](#)
- Network Data Transformations: [igraph](#)

### Network Viz

- Static:
  - [ggraph](#) - Graph plotting utilities for ggplot2
- Interactive (JavaScript):
  - [networkD3](#) - D3 Networks in R
  - [plotly](#) (CS) - plotly.js (network graphs) in R

### Geospatial Analysis

- Geocoding (getting lat/long, bboxes, & sf's):
  - [ggmap](#) - Google API (requires key)
  - [osmdata](#) - OpenStreet Overpass API
  - [tmaptools](#) - OpenStreet Nominatum API
- Simple Features (sf objects): [sf](#) (CS) (tidy)
- Spatial Objects (sp objects): [sp](#) (non-tidy)

### Geospatial Viz

- Static:
  - [ggmap](#) - Google API (requires key)
  - [osmplotr](#) - Impressive Maps via OSM
  - [tmap](#) - Thematic Maps
  - [cartography](#) (CS) - Thematic Maps
- Interactive (JavaScript):
  - [leaflet](#) (CS) - leaflet.js in R
  - [plotly](#) (CS) - plotly.js (maps) in R

### Machine Learning

- Multi-Threaded/Scalable/Production ML:
  - [H2O](#) (CS)
  - Extreme Gradient Boosting: [xgboost](#)
  - R + Spark: [sparklyr](#) (CS)
  - Sparkling Water (Spark + H2O): [rsparkling](#)
- ML (Tidy): [parsnip](#)
- ML: [caret](#) (CS)

### Deep Learning

- [R Interface to TensorFlow Homepage](#):
  - [Keras](#) (CS)
  - [TF Estimators](#)
  - [TensorFlow \(Core\)](#)

### Speed & Scale

- Faster than dplyr & pandas: [data.table](#) (CS)
- Distributed Cluster (Spark): [sparklyr](#) (CS)
- Parallel Processing: [furry](#)

### Interoperability

- Python: [reticulate](#) (CS) • Java: [rJava](#)
- C++: [Rcpp](#)

### Miscellaneous Tools

- Interactive Plotting: [htmlwidgets for R](#)
- Building R Packages: [R packages Book](#)
  - Pkg Development Tools: [devtools](#) (CS)
  - R Templates: [usethis](#)
  - Build Web Doc's: [pkgdown](#)
- Advanced Concepts ([Advanced R Book](#))
  - [rlang](#) & [Tidy Evaluation](#) (CS)
- Making Blogs & Books:
  - [blogdown](#), [bookdown](#)
- Posting Code (GitHub, Stack Overflow): [reprex](#)