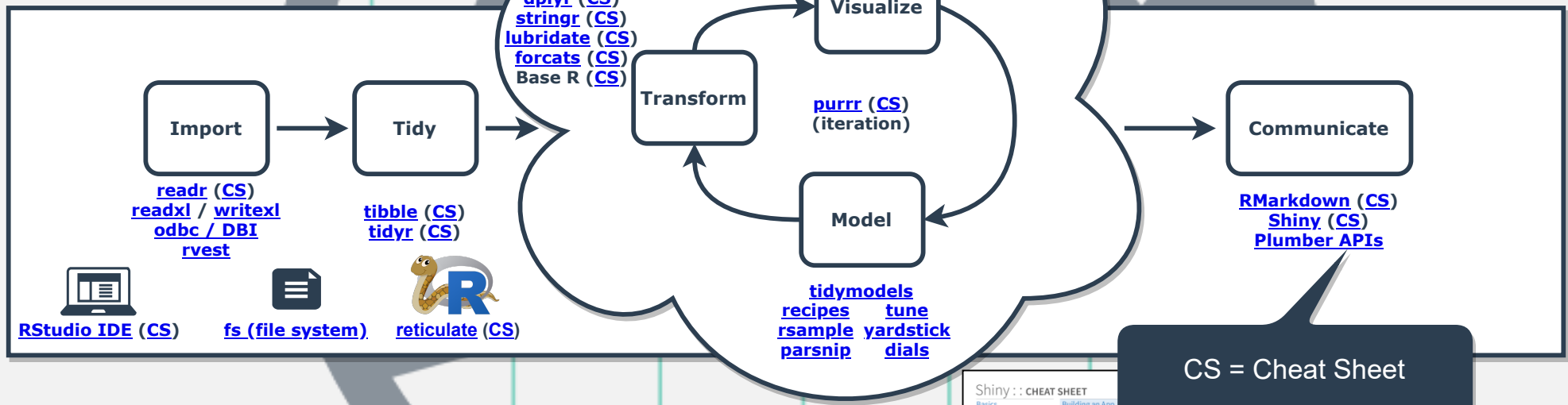
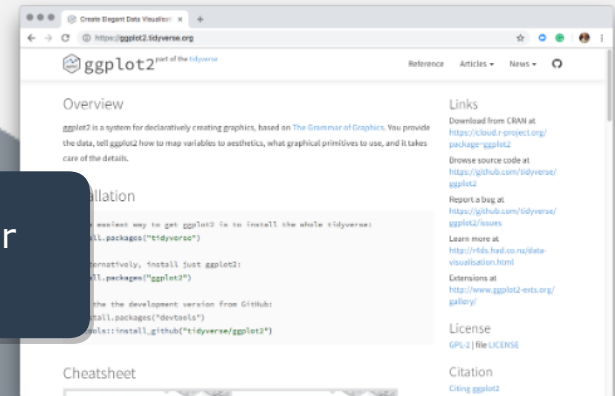


# Data Science with R Workflow

Learn R following the tidyverse & tidymodels workflow for business analysis in the [R For Business Analysis \(DS4B 101-R\) course](#) through Business Science University.



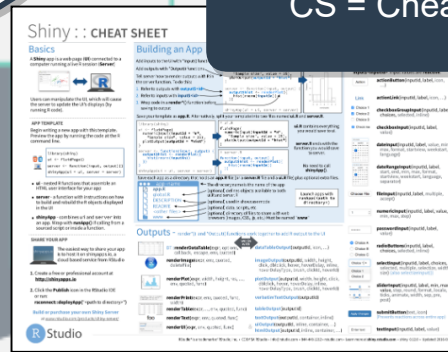
Click the links for Documentation



## Important Resources

- **R For Data Science Book:** <http://r4ds.had.co.nz/>
- **Rmarkdown:** [Book](#) and [Cookbook](#)
- **More Cheatsheets:** <https://www.rstudio.com/resources/cheatsheets/>
- **tidyverse packages:** <https://www.tidyverse.org/>
- **Connecting to databases:** <https://db.rstudio.com/>
- **Reproducible Environments:** <https://environments.rstudio.com/>

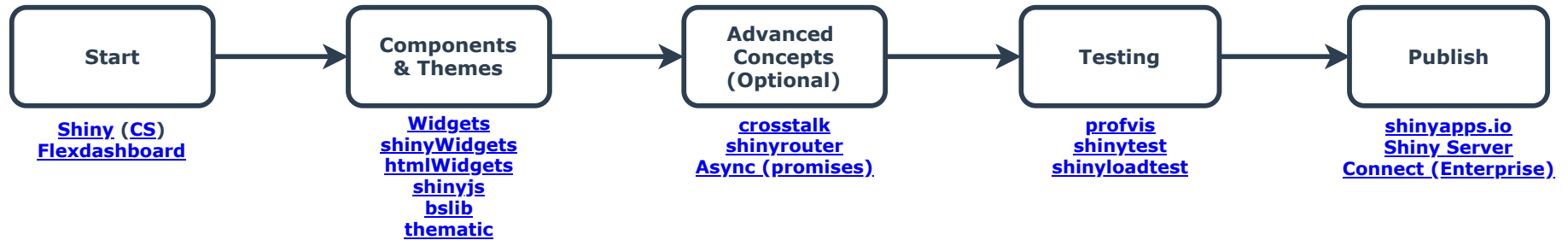
[Learn the Tidyverse & Tidymodels](#)



Business Science University  
[university.business-science.io](http://university.business-science.io)

# Data Science with

## Web Applications & the "Shinyverse"

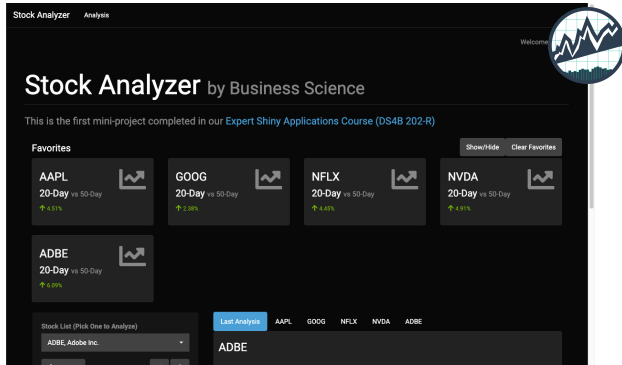


### Flexdashboard Apps

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.



**Shiny App - AWS Multi-User App**  
Built in Expert Apps Course ([Demo Our App Gallery](#))  
[Start Learning Today with 5-Course R-Track Bundle!](#)

### Shiny Themes & Dashboards

[Flexdashboard Gallery](#)  
[Themes](#)  
[Layouts](#)

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

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

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

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

[ShinyMobile \(CS\)](#)

### Web Frameworks & Tools

Bootstrap & Themes

[Bootstrap 3](#)  
[Bootstrap 4](#)  
[Bootstrapwatch](#)  
[bslib](#)  
[thematic](#)

Fonts & Icons

[Font Awesome](#)  
[Google Fonts](#)

Chrome Browser

[Chrome DevTools](#)



### Time Series Analysis

- Time Series Data Wrangling: [timetk](#)
- Time Series Visualization: [timetk](#)
- Feature Engineering: [timetk](#)
- Convert between classes: [timetk](#) & [tsbox](#)
- Time Series Index Summary: [timetk](#)
- Generating Future Series: [timetk](#)

### Forecasting

- Prophet, ARIMA, Boost, ML: [modeltime](#)
- Ensembles: [modeltime.ensemble](#)
- Resampling & Backtesting: [modeltime.resample](#)
- Deep Learning: [modeltime.gluonts](#)

### Anomaly Detection

- Identify anomalies: [anomalize](#), [timetk](#)

### Exploratory (EDA)

- [DataExplorer](#), [skimr](#), [correlationfunnel](#)

### Financial Analysis

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

### Financial 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: [textrecipes](#)

### 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, pre-sf)

### 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

- AutoML: [H2O \(CS\)](#)
- ML (Tidymodels): [tidymodels.org](#)
  - [parsnip](#) - ML
  - [recipes](#) - Feature Engineering
  - [tune](#) - Hyperparameter Tuning
  - [rsample](#) - Resampling
  - [yardstick](#) - Accuracy Metrics
- ML (pre-Tidymodels): [caret \(CS\)](#)
- MLR: [mlr](#) & [mlr3](#)
- MLverse: [mlverse](#)

### Deep Learning

- [R Interface to TensorFlow](#)
- [Keras \(CS\)](#), [TF Estimators](#), [TensorFlow \(Core\)](#)
- [Torch for R](#)

### Speed & Scale

- Faster than dplyr & pandas: [data.table \(CS\)](#)
- Combine dplyr + data.table: [dtplyr](#)
- Parallel Processing w/ purrr: [furry](#)
- Larger than RAM: [sparklyr \(CS\)](#), [Disk Frame](#)

### Interoperability

- Python: [reticulate \(CS\)](#)
- Java: [rJava](#)
- C++: [Rcpp](#)
- D3: [r2d3](#)

### Miscellaneous Tools

- Production:
  - [plumber](#), [targets](#), [renv](#)
- Building R Packages: [R packages Book](#)
  - [devtools \(CS\)](#), [usethis](#), [pkgdown](#)
- Advanced Concepts ([Advanced R Book](#))
  - [rlang & Tidy Evaluation \(CS\)](#)
- Making Blogs & Books:
  - [blogdown](#), [bookdown](#)
- Posting Code (GitHub, Stack Overflow):
  - [reprex](#)