

A Brief Introduction to R-Shiny and Dashboards

Ryan Hafen & J. Hathaway

Agenda



1. Introduction to R-Shiny and Dashboards
2. Examples of R-Shiny
3. Making our first R-Shiny dashboard
4. A few rules for dashboards
5. How do I learn more?

Introduction to R-Shiny and Dashboards

:Dashboards:

Opinionated views for decision making that facilitate user input.



What is R-Shiny?

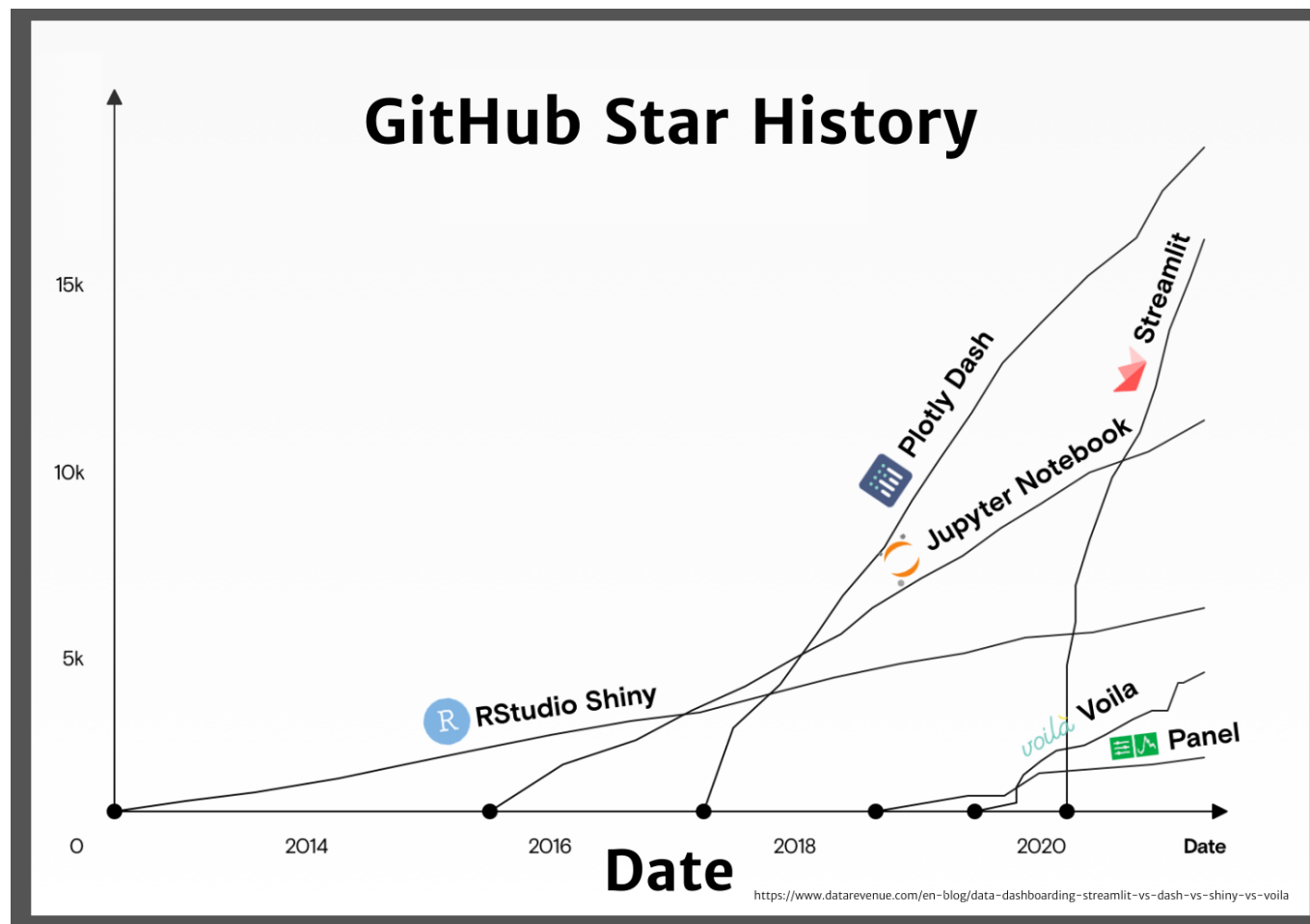
An interactive approach for narrating data stories using R.

Shiny is an R package that makes it easy to build interactive web apps straight from R.

- [RStudio Shiny website](https://www.rstudio.com/shiny/)



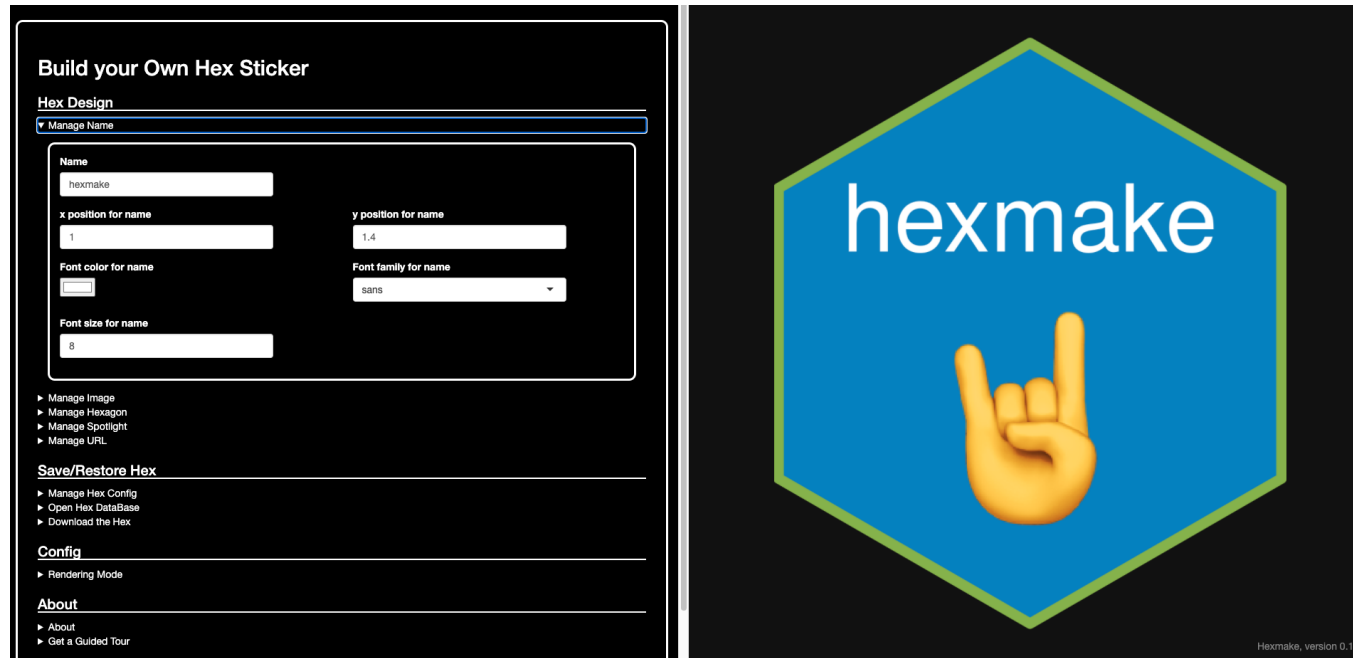
What are the alternatives to R-Shiny?



Examples of R-Shiny

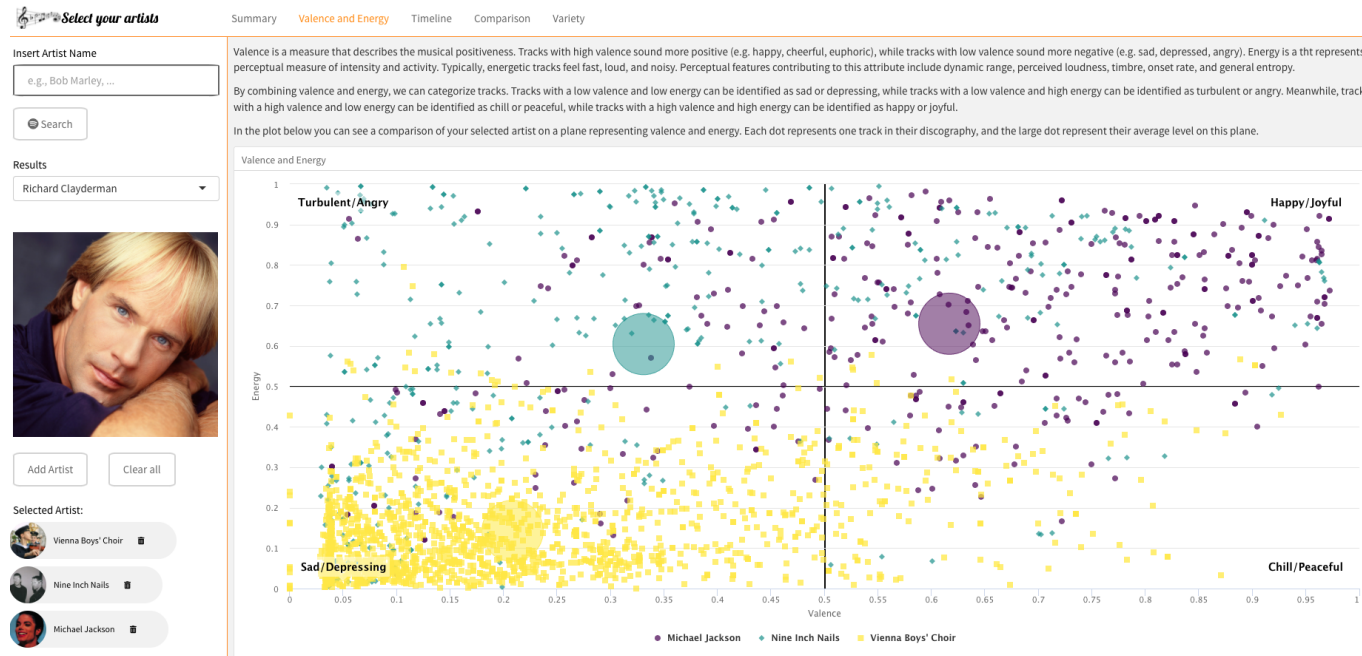
Build your Own Hex Sticker

- *The app's purpose is clear.*
- *Overwhelming inputs are hidden until they are needed.*
- [GitHub Repository](#)



Datify: Spotify Music

- *The search input invites use.*
- *Buttons are big, clear, and organized.*



Radiant: Interactive 'Software' for Modeling

- *Lot's of functionality through drop-down menus.*
- *General purpose application for modeling.*
- [GitHub Repo](#)

The screenshot displays the Radiant software interface. The top navigation bar includes tabs for 'Radiant', 'Data', 'Design', 'Basics', 'Model', 'Multivariate', 'Report', and icons for help, save, and refresh. The 'Project' status is shown as '(None)'. On the left sidebar, the 'Datasets' section shows 'diamonds' selected. Below it are options to 'Add/edit data description', 'Rename data', and 'Display' (with 'preview' selected). The 'Load data of type:' section shows 'rds | rda | rdta' with a 'Browse...' button. The 'Save data to type:' section shows 'rds' with a 'Save' button. There are also checkboxes for 'Show R-code' and 'Remove data from memory'. The main panel shows a dropdown menu for 'Multivariate' with options: 'Maps (Dis)similarity', 'Attributes', 'Factor', 'Pre-factor', 'Cluster', 'Hierarchical', 'K-clustering', 'Conjoint', and 'Conjoint'. Below the menu is a table of diamond data with columns: price, color, depth, table, x, y, z, date. The table shows 10 rows of data. Below the table, it says '10 of 3,000 rows shown. See View-tab for details.' The 'Diamond prices' section shows 'Prices of 3,000 round cut diamonds'. The 'Description' section says 'A dataset containing the prices and other attributes of a sample of 3000 diamonds. The variables are as follows:'. The 'Variables' section lists: price = price in US dollars (\$338-\$18,791), carat = weight of the diamond (0.2-3.00), clarity = a measurement of how clear the diamond is (I1 (worst), SI2, SI1, VS2, VS1, VVS2, VVS1, IF (best)), cut = quality of the cut (Fair, Good, Very Good, Premium, Ideal), color = diamond color, from J (worst) to D (best), and depth = total depth percentage = 2 * max(carat, x, y, z) / (4 * carat + 3.00).

price	color	depth	table	x	y	z	date
580	H	61.00	56.00	4.43	4.45	2.71	2012-02-26
650	G	63.40	57.00	4.45	4.42	2.81	2012-02-26
630	G	63.10	58.00	4.27	4.23	2.68	2012-02-26
706	H	59.20	56.00	4.60	4.65	2.74	2012-02-26
108	F	62.60	58.00	4.72	4.68	2.94	2012-02-26
308	E	62.50	53.70	5.35	5.43	3.38	2012-02-26
332	I	61.70	56.00	6.14	6.18	3.80	2012-02-26
4229	SI1	61.40	57.00	6.34	6.23	3.86	2012-02-26
1895	VVS2	63.40	57.00	5.09	5.06	3.22	2012-02-26
3546	SI2	63.90	58.00	6.31	6.37	4.05	2012-02-26

Making our first R-Shiny dashboard

Using the shinydashboard package

The shinydashboard package is a collection of functions that make it easy to create dashboards.

You can find the code for this example at our [RShinyDashboards Repository](#).

The primary elements

Our first R Shiny Dashboard

A few rules for dashboards

“Know^{the}
user,
they are not programmers

Define your production goals

- How often will it be used?
- How reliable does it need to be?
- What is the impact if it is innacurate?



Design with a purpose

The purpose of design is much more closely linked to strategy than aesthetics. Design is the process of intentionally creating something while simultaneously considering it's objective, function, economics, AND aesthetics.

Kim Schaefer

How do I learn more?

Online Reading Material

- [Mastering Shiny](#)
- [Learn Shiny](#)
- [Get Started w/ shinydashboard](#)
- [Use shinydashboard](#)
- [Engineering Production-Grade Shiny Apps](#)
- [shinyjs](#)
- [shinydashboards](#)
- [Building Web Apps with R Shiny](#)
- [stat545 Shiny Tutorial](#)
- [R markdown: The Definitive Guide - Shiny](#)
- [YouTube: A Gentle Introduction to Creating R Shiny Webb Apps](#)
- [YouTube: Dynamic Dashboards with Shiny](#)

Short Courses

- [Building Web Applications with Shiny in R](#)
- [Shiny Fundamentals with R](#)
- [Building Data Apps with R and Shiny: Essential Training](#)
- [Creating Interactive Presentations with Shiny and R](#)
- [Interactive Visualization with R](#)

Shinyverse of R packages

There are so many packages available. This list can start your journey.

- [shinydashboard](#)
- [shinydashboardPlus](#)
- [Shiny Themes](#)
- [shinymanager](#)
- [shiny.semantic](#)
- [shiny.react](#)
- [shiny.fluent](#)
- [shiny_sense](#)

Thanks