Easy Online Data Dissemination and Research Tools: R Shiny and FISHEyE

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Problem

- People want numbers broken down “everything by everything”
  - Fisheries, states, ports, vessel classes
- Cannot show all results in a static report
- Many interest groups can’t use a database
- Public Access to Research Results requirement
- Want to engage key constituents (fishermen and policy makers)

Background

- Economic Data Collection (EDC) Program was created as a part of the West Coast Groundfish Trawl Catch Share Program
- EDC information will be critical to the Program's mandated 5 year review
- West Coast Groundfish Trawl fishery is a complex multispecies fishery

The West Coast groundfish trawl fishery

- 26% of all fish (including shellfish) landed on the West Coast of the United States

"Two" fisheries

"Non-whiting": over 30 groundfish species and rockfish complexes

"Whiting": Pacific whiting

- Only about 50% of their annual revenue comes from the groundfish fishery

Dungeness crab
Pink shrimp

Alaska pollock

Solution

https://dataexplorer.northwestscience.fisheries.noaa.gov/fisheye/

NOAA FISHERIES
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

FISHeries Economics Explorer (FISHEyE)

FISHEyE is an interactive tool to help you examine the economic impacts of the West Coast Groundfish Trawl Catch Share Program on participants and regional economies.

FISHEyE applications

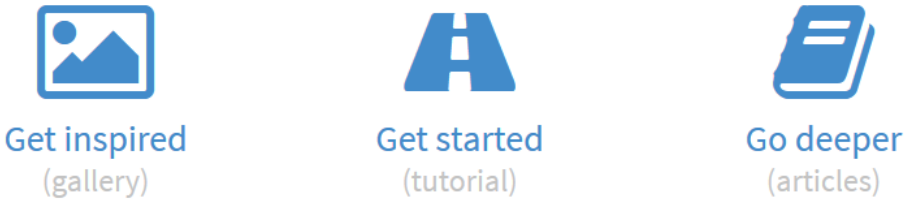
Click on a button below to go to a FISHEyE application.

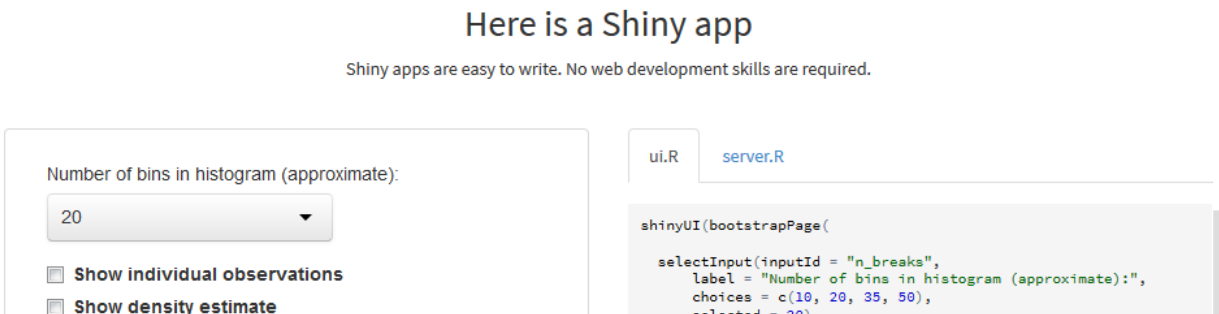
How was FISHEyE developed?

- Paid for by a research grant from NOAA headquarters
  - Lesson: be careful where you get your money!
- Took about 3 years development from scratch
  - Biggest challenges were getting permission for the server, getting server set up, figuring out how to deal with data confidentiality

Platform

Shiny
by RStudio
A web application framework for R
Turn your analyses into interactive web applications
No HTML, CSS, or JavaScript knowledge required
TUTORIAL
ARTICLES
GALLERY
REFERENCE
DEPLOY
HELP

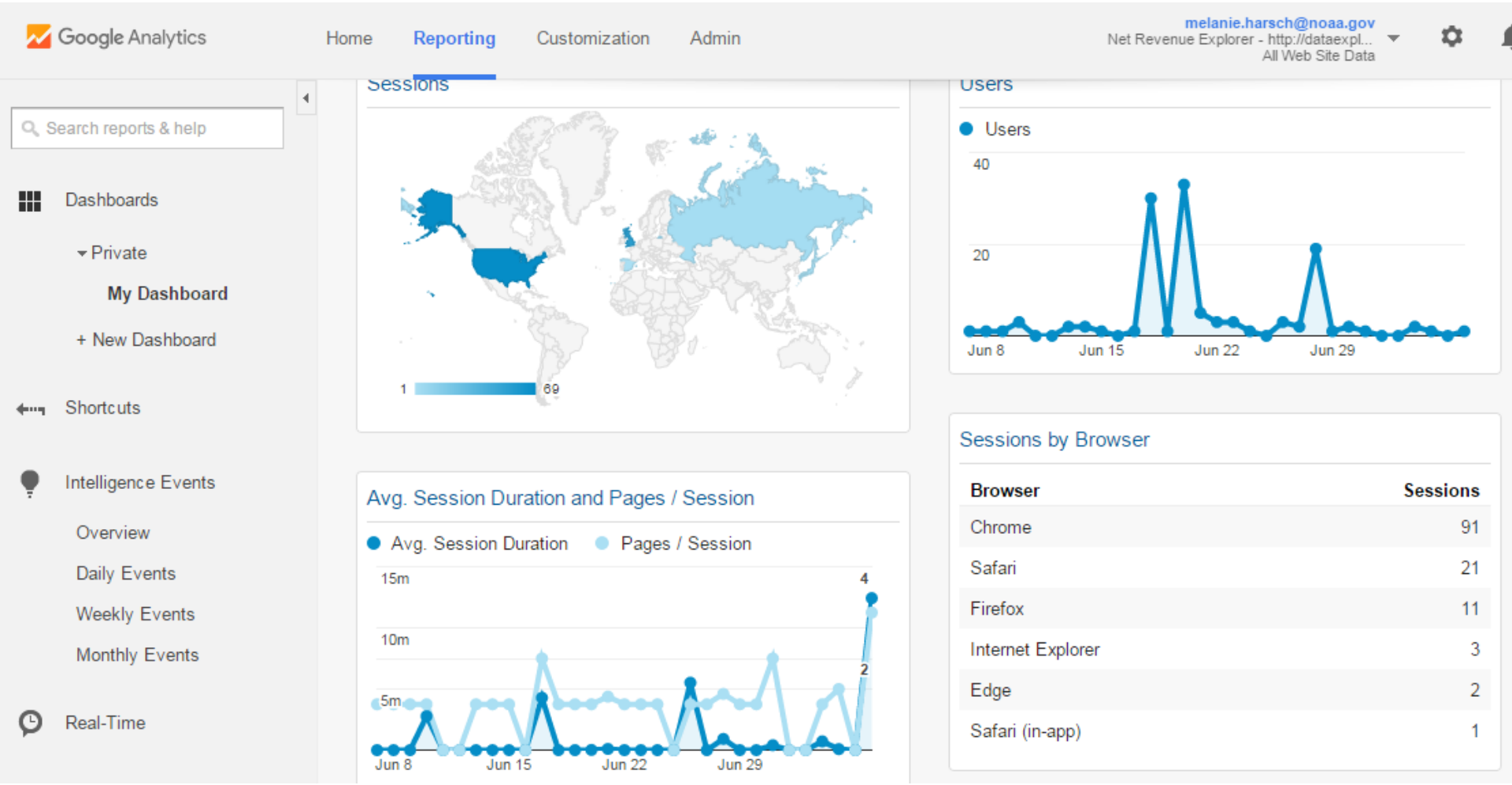

Get inspired
(gallery)
Get started
(tutorial)
Go deeper
(articles)


Here is a Shiny app
Shiny apps are easy to write. No web development skills are required.
Number of bins in histogram (approximate):
20
Show individual observations
Show density estimate
ui.R
server.R
shinyUI(bootstrapPage(
selectInput(inputId = "n_breaks",
label = "Number of bins in histogram (approximate):",
choices = c(10, 20, 35, 50),

Shiny Server Pro

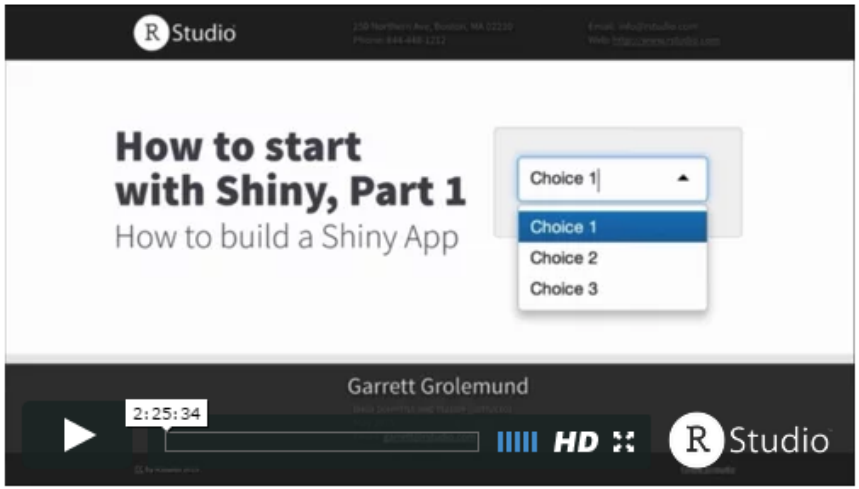
- Allows us to host data on own server (IT requirement)
- Shiny is a R package that has the basic codes used to develop web pages wrapped in functions.
  - Makes it easy for users familiar to R code but not CSS, HTML, or JAVA to develop web pages
  - Seamlessly integrate analyses, figures, and tables developed in R code onto the website
- HTML and CSS can be used to modify the basic shiny functions
- Lots of great tutorials and examples

Google analytics to track usage



Teach yourself Shiny

The How to Start Shiny video series will take you from R programmer to Shiny developer. Watch the complete tutorial here, or jump to a specific chapter by clicking a link below. The entire tutorial is two hours and 25 minutes long.



Part 1 - How to build a Shiny app

1. Introduction
2. R
3. App architecture
4. App template
5. Inputs and outputs

Thanks and questions

FISHEyE

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