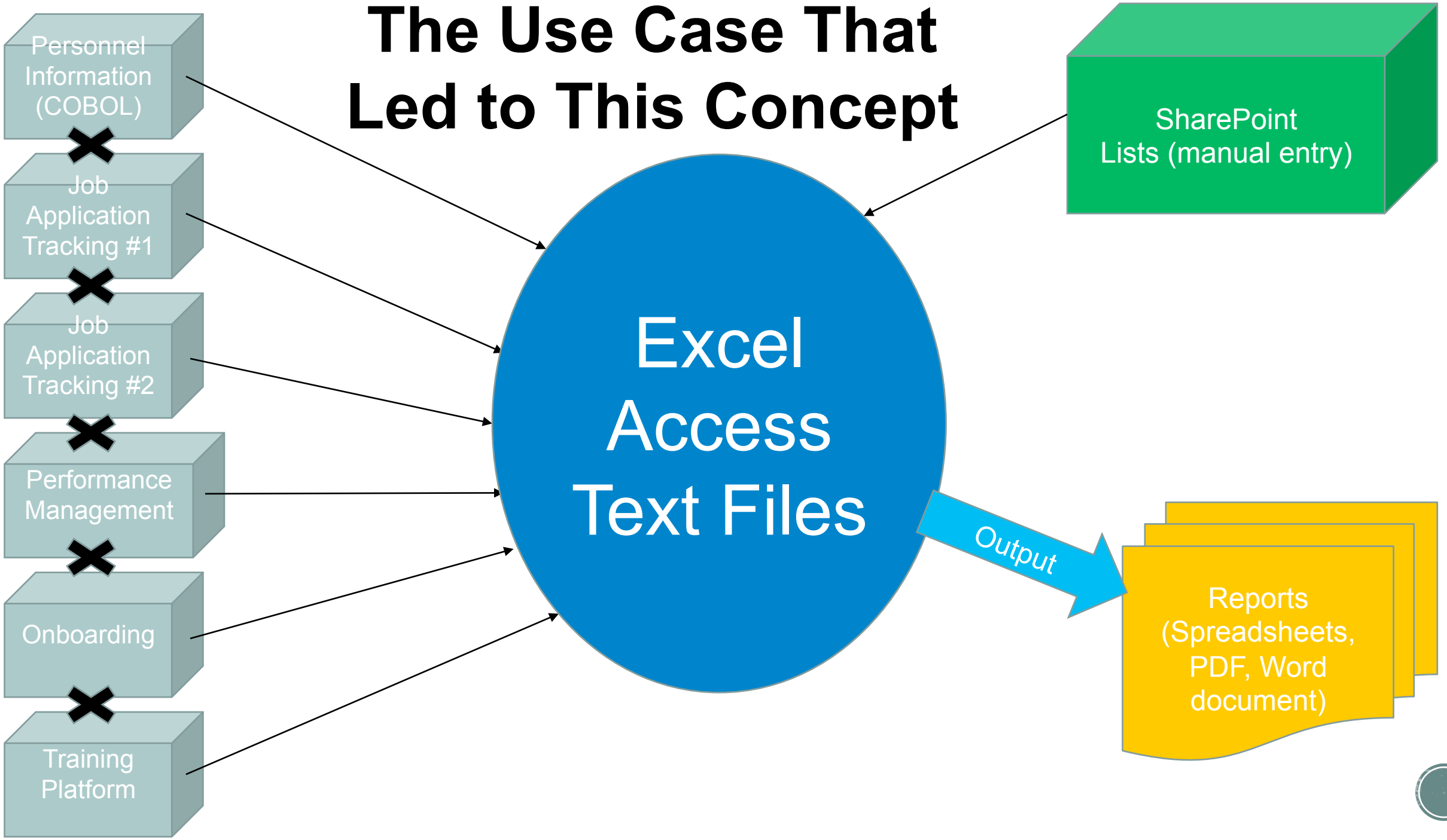
Shiny Headless Drupal: A MVP of Drupal, R, and the MEAN Stack

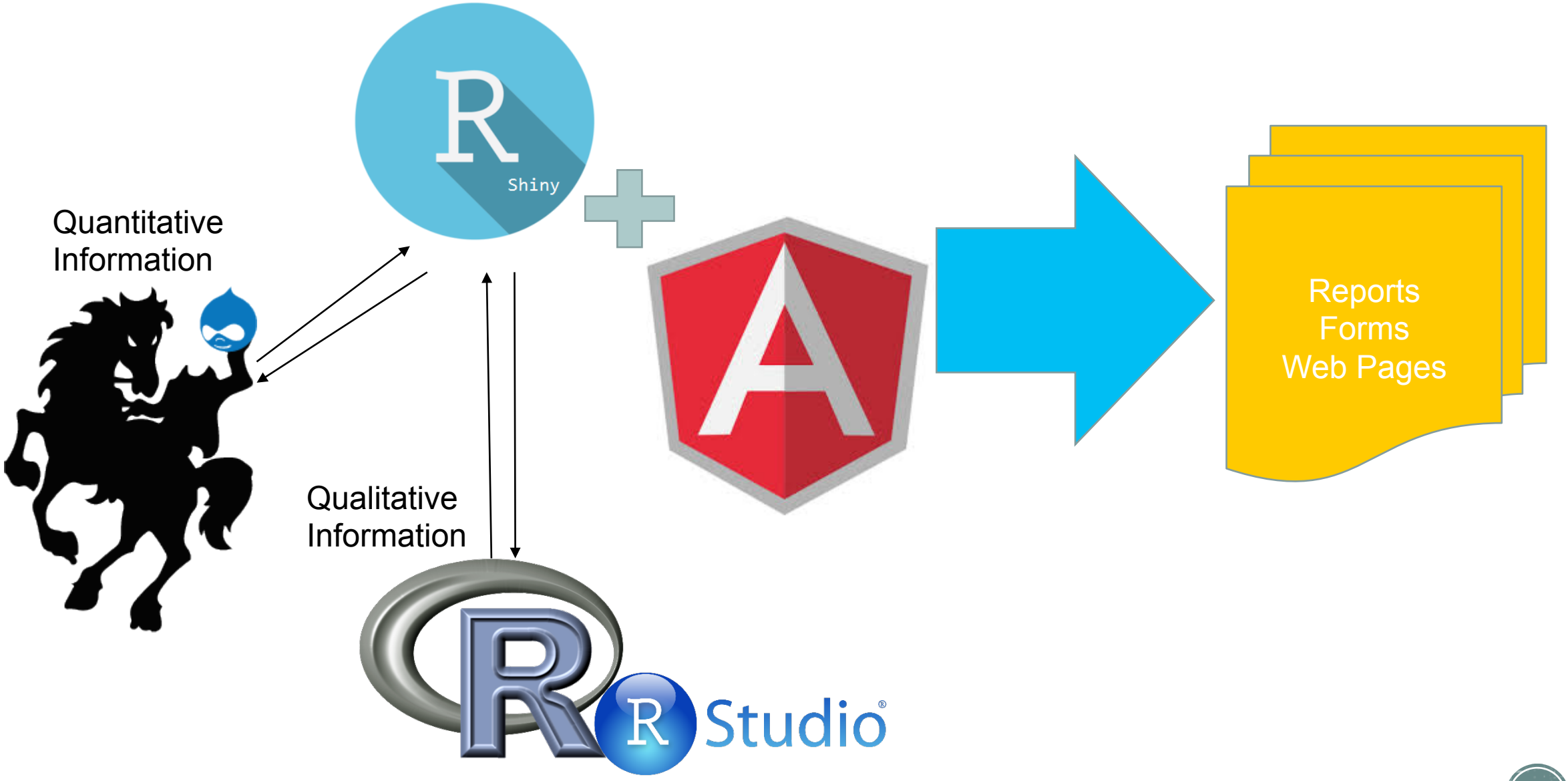
Bill Brantley

Drupal GovCon 2015

The Use Case That Led to This Concept



The Original Concept

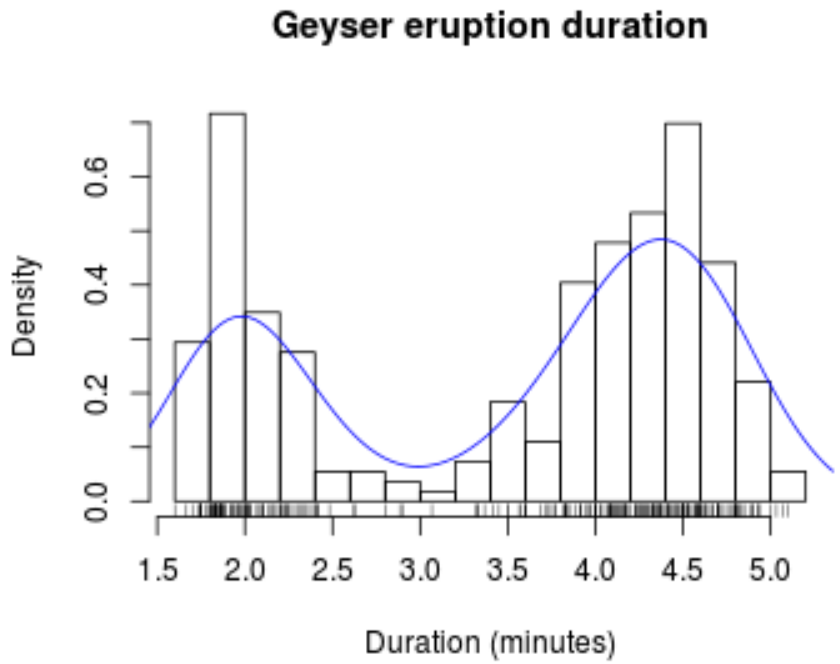


Number of bins in histogram (approximate):

20

☑ **Show individual observations**

☑ **Show density estimate**



Bandwidth adjustment:

ui.R | server.R

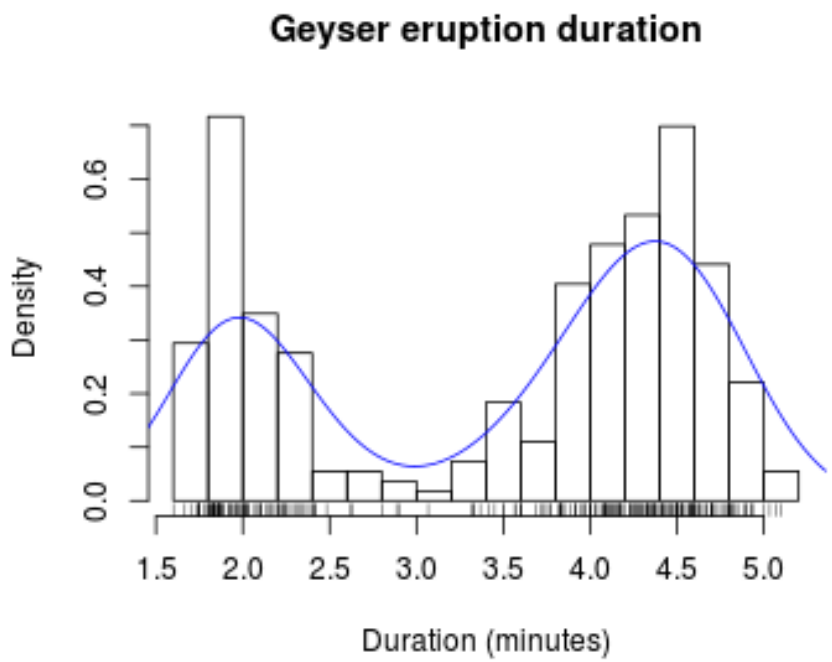
```
shinyUI(bootstrapPage(

  selectInput(inputId = "n_breaks",
      label = "Number of bins in histogram (approximate):",
      choices = c(10, 20, 35, 50),
      selected = 20),

  checkboxInput(inputId = "individual_obs",
      label = strong("Show individual observations"),
      value = FALSE),

  checkboxInput(inputId = "density",
      label = strong("Show density estimate"),
      value = FALSE),

  plotOutput(outputId = "main_plot", height = "300px"),

  # Display this only if the density is shown
  conditionalPanel(condition = "input.density == true",
    sliderInput(inputId = "bw_adjust",
        label = "Bandwidth adjustment:",
        min = 0.2, max = 2, value = 1, step = 0.2)
  )

))
```

Number of bins in histogram (approximate):

20

☑ **Show individual observations**

☑ **Show density estimate**

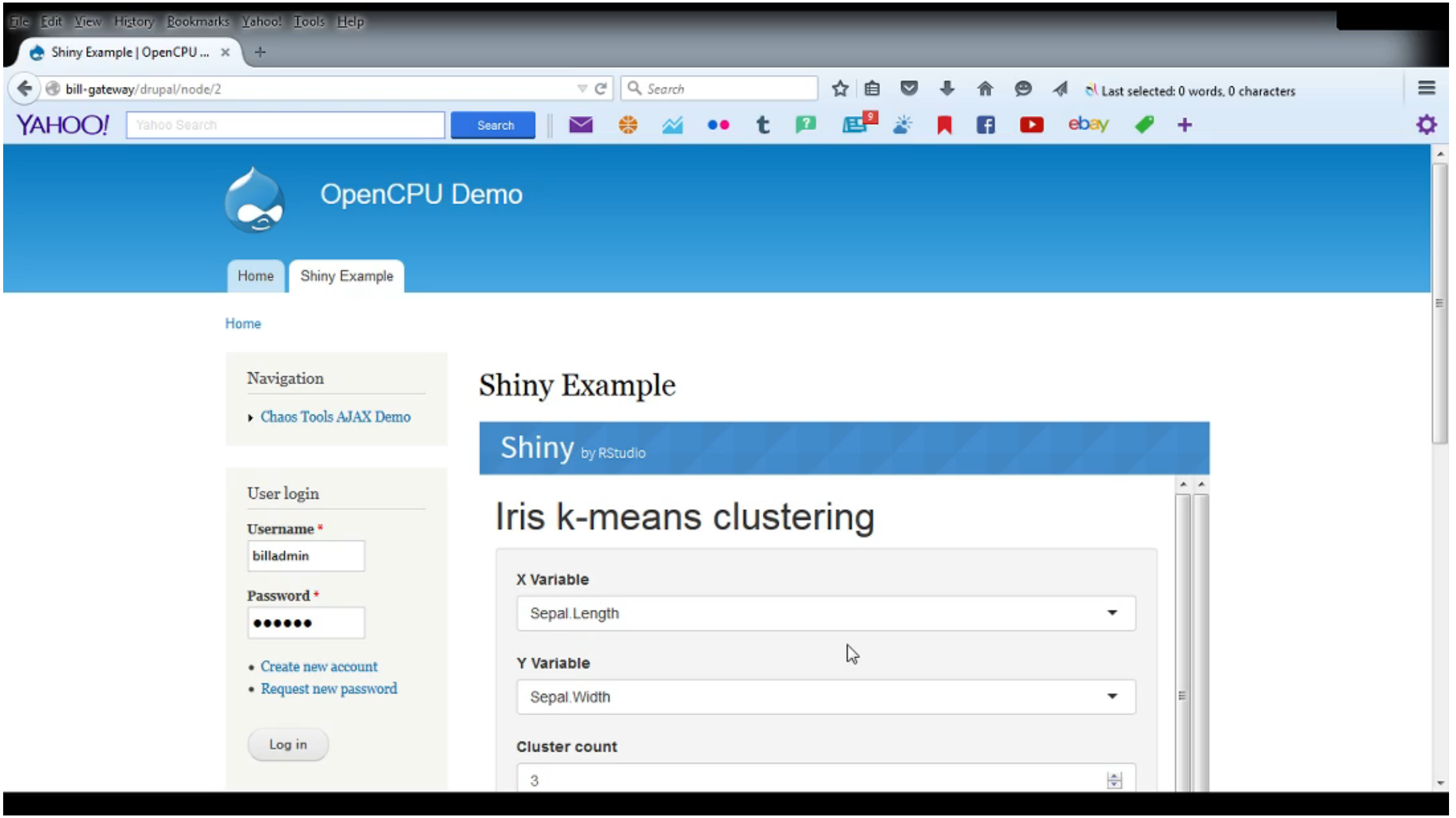


Bandwidth adjustment:

0.2 1 2

ui.R server.R

```
shinyServer(function(input, output) {

  output$main_plot <- renderPlot({

    hist(faithful$eruptions,
      probability = TRUE,
      breaks = as.numeric(input$n_breaks),
      xlab = "Duration (minutes)",
      main = "Geyser eruption duration")

    if (input$individual_obs) {
      rug(faithful$eruptions)
    }

    if (input$density) {
      dens <- density(faithful$eruptions,
          adjust = input$bw_adjust)
      lines(dens, col = "blue")
    }

  })
})
```


File Edit View History Bookmarks Yahoo! Tools Help
Shiny Example | OpenCPU ...
bill-gateway/drupal/node/2
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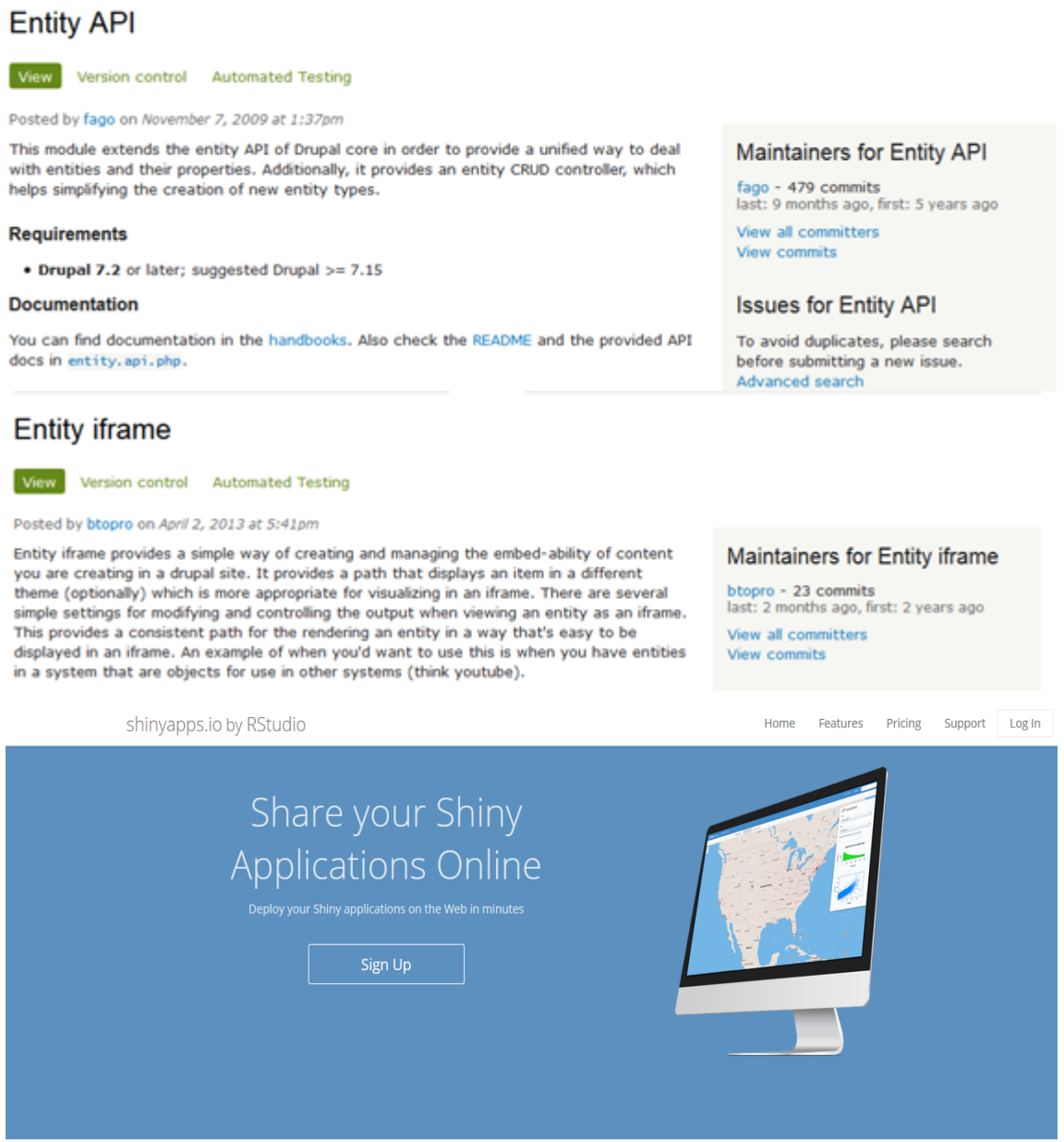
YAHOO!
Yahoo Search
Search
OpenCPU Demo
Home
Shiny Example
Home
Navigation
Chaos Tools AJAX Demo
User login
Username *
billadmin
Password *
Create new account
Request new password
Log in
Shiny Example
Shiny by RStudio
Iris k-means clustering
X Variable
Sepal.Length
Y Variable
Sepal.Width
Cluster count
3

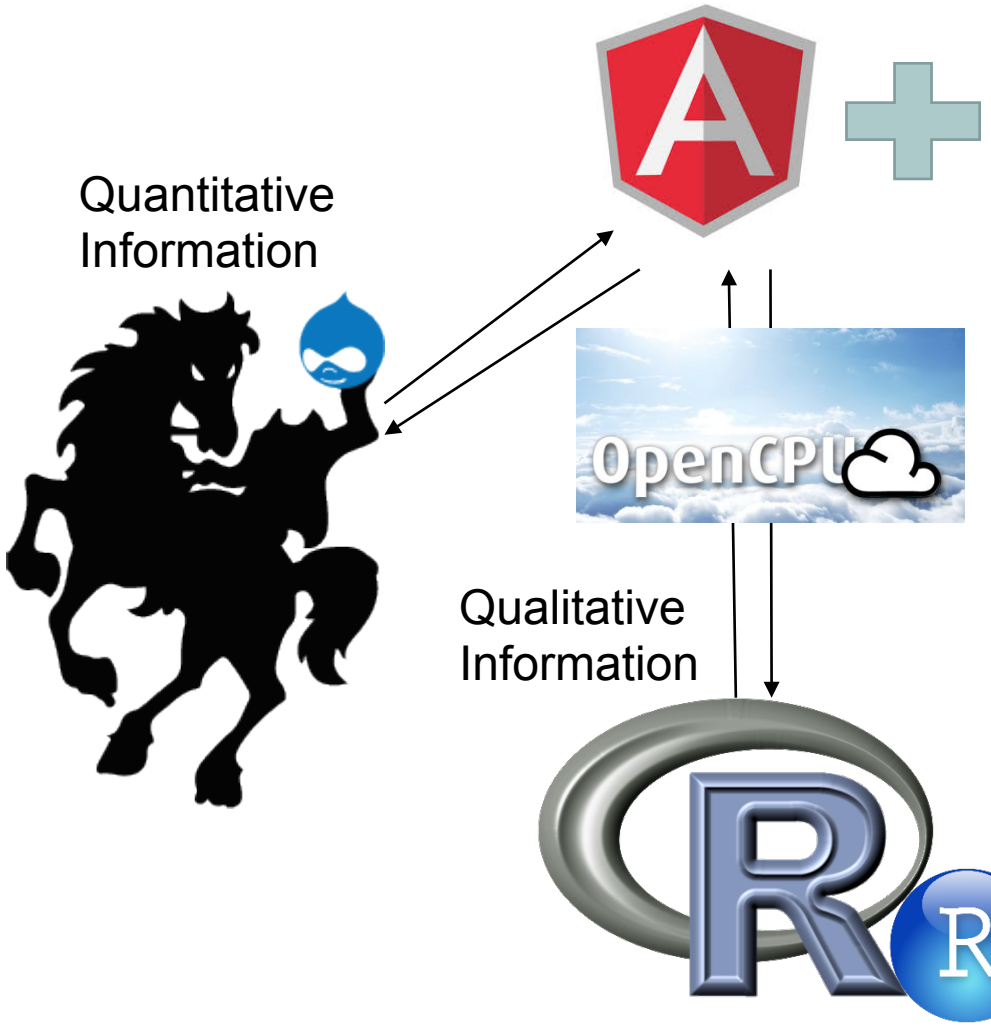
What You Need:

- R and RStudio
- Install Shiny and Dependencies through RStudio
- Account on www.shinyapps.io
- Github Account
- Drupal 7
- Entity API module
- Entity Iframe module



this is inadequate
ROFLCAT.COM

The Revised Concept



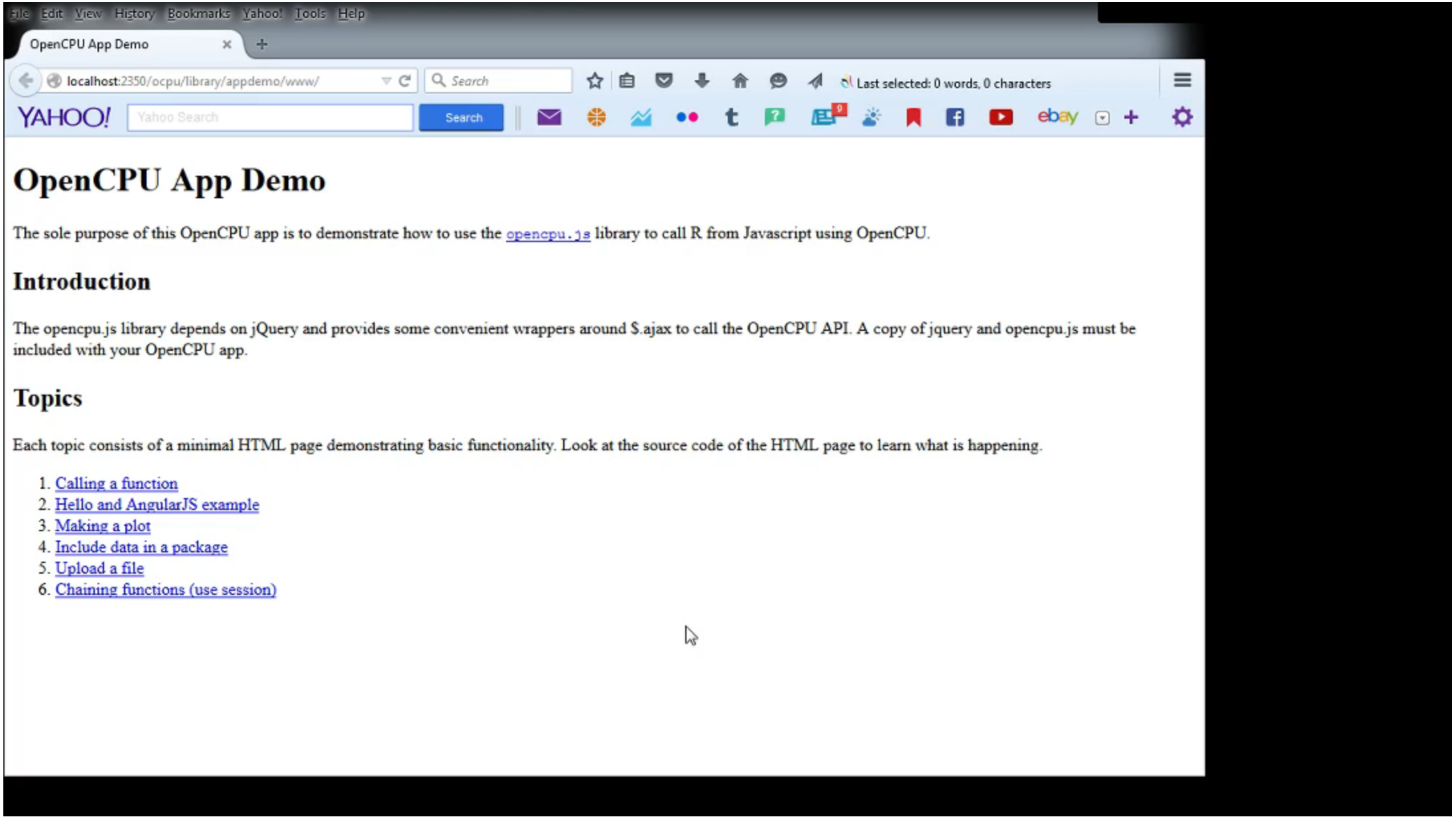
JS Libraries
and
HTML5 and
CSS 3 and . . .

Reports
Forms
Web Pages

Why?

- ✓ **Seamless R and JavaScript Integration**
- ✓ **The OpenCPU API is a clean and simple interface to R. It is compatible with any language or framework that speaks HTTP.**
- ✓ **Statistical Apps**
- ✓ **Concurrency by design**
- ✓ **Easy Installation, Configuration**

- ✓ **The cloud server builds on AppArmor to enforce security, and Nginx for caching and load balancing.**
- ✓ **All parts of OpenCPU are released under the Apache2 license.**


File Edit View History Bookmarks Yahoo! Tools Help
OpenCPU App Demo
localhost:2350/ocpu/library/appdemo/www/
Search
Last selected: 0 words, 0 characters
YAHOO!
Yahoo Search
Search
OpenCPU App Demo
The sole purpose of this OpenCPU app is to demonstrate how to use the opencpu.js library to call R from Javascript using OpenCPU.
Introduction
The opencpu.js library depends on jQuery and provides some convenient wrappers around $.ajax to call the OpenCPU API. A copy of jquery and opencpu.js must be included with your OpenCPU app.
Topics
Each topic consists of a minimal HTML page demonstrating basic functionality. Look at the source code of the HTML page to learn what is happening.
1. Calling a function
2. Hello and AngularJS example
3. Making a plot
4. Include data in a package
5. Upload a file
6. Chaining functions (use session)

Download & Install

Ubuntu 14.04 (recommended)

```
#requires ubuntu 14.04 (Trusty)
sudo add-apt-repository -y ppa:opencpu/opencpu-1.5
sudo apt-get update
sudo apt-get upgrade

#install opencpu server
sudo apt-get install -y opencpu

#optional
sudo apt-get install -y rstudio-server
```

Dual-boot Windows 7 and Ubuntu

Fedora

Go here to add the opencpu repository. Also have look at the readme for rpm packages.

```
sudo yum install opencpu
```

Debian / CentOS / Suse etc

See the readme on building **deb** or **rpm** packages from source.

Docker

Local Single-User Server

```
install.packages("opencpu")
library(opencpu)
```

Installing OpenCPU Apps

```
#install the "gitstats" or "stocks" app from github
library(devtools)
install_github("opencpu/gitstats")
install_github("opencpu/stocks")

#open in single-user server
library(opencpu)
opencpu$browse("/library/gitstats/www")
```

Recommended: appdemo

Server Manual PDF

The OpenCPU server manual PDF is the primary reference for installing and managing OpenCPU servers.

Example Apps

stocks

nabel

gitstats

rollcorr

markdownapp

mapapp

appdemo

- Package Info
- ▶ Live App Demo
- Source Code

VisiStat

tvscore

OpenCPU APP: appdemo

The purpose of this OpenCPU app is to demonstrate how to use the opencpu.js library for calling R functions from Javascript using OpenCPU.

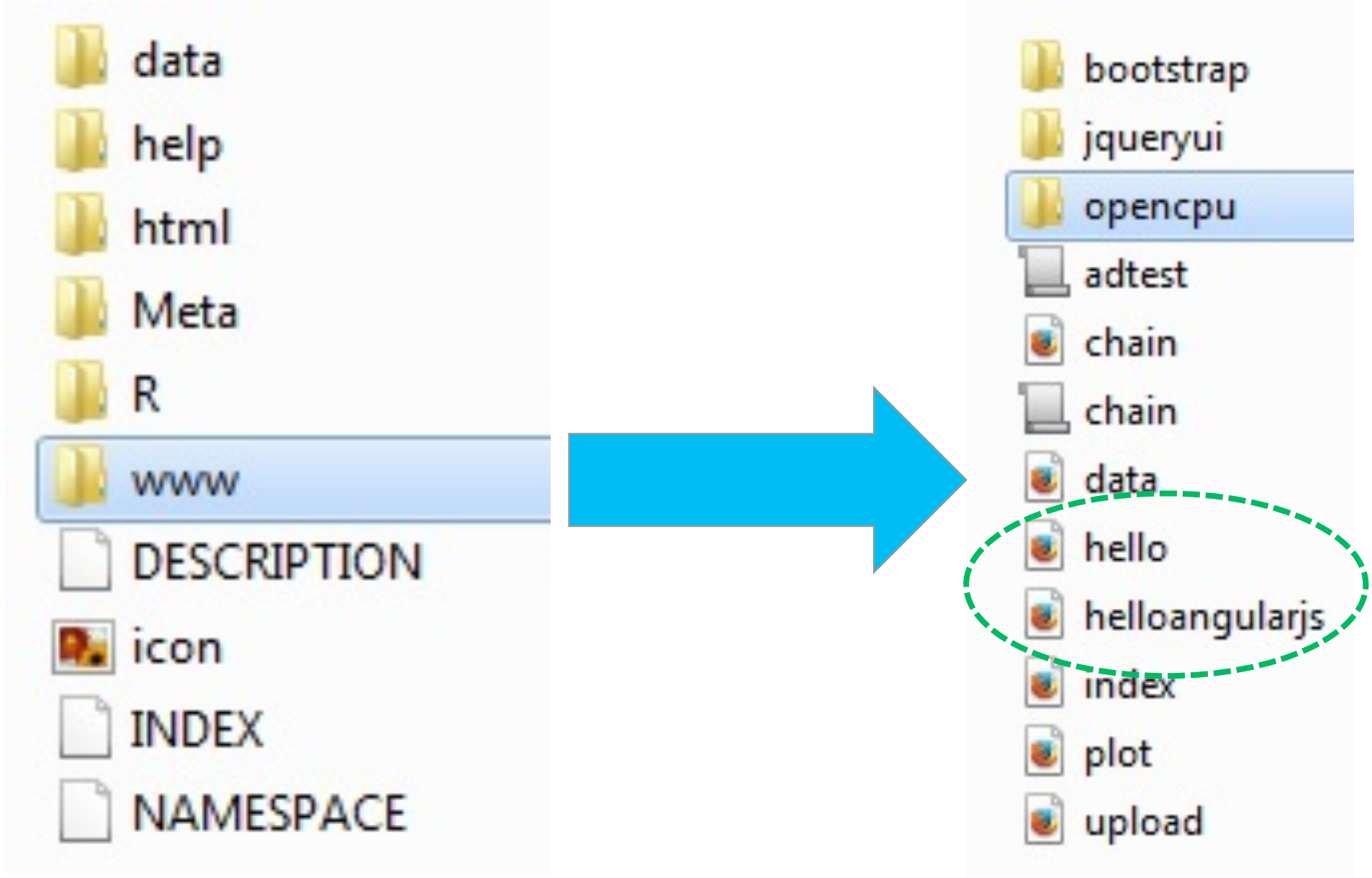
Cloud Demo

Try the application online at the OpenCPU apps public demo server: https://public.opencpu.org/apps.html

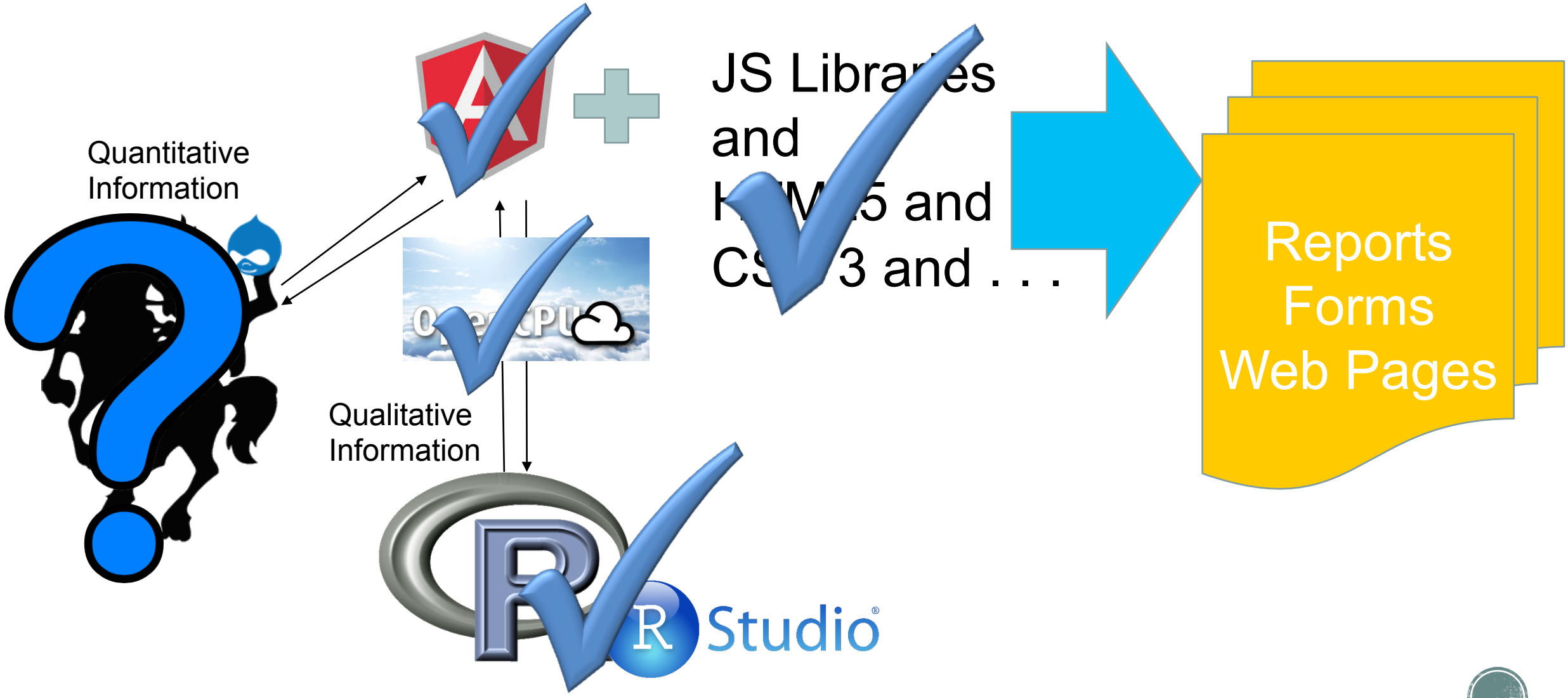
Use locally

To run the app in your local R session:

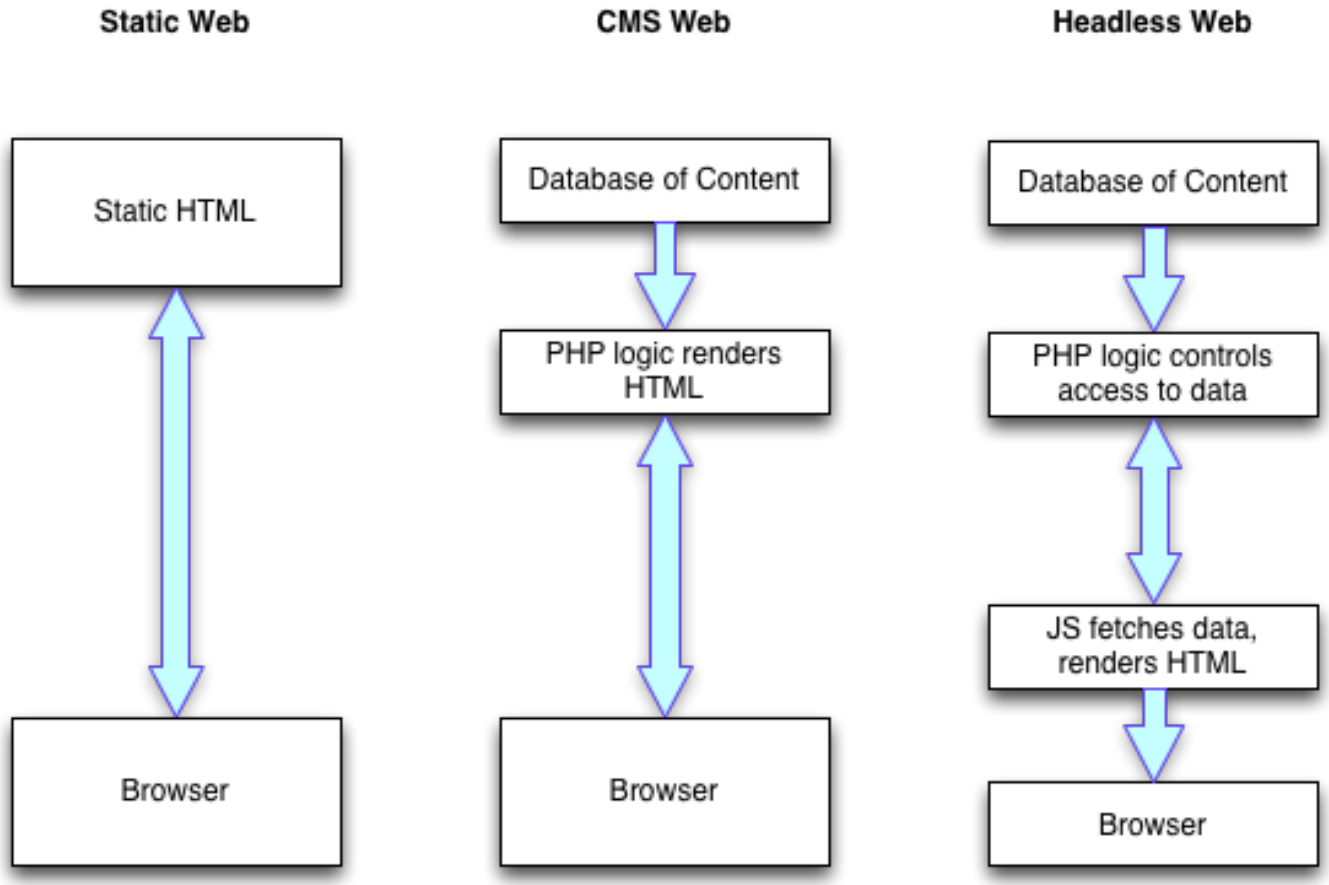
```
#install app
library(devtools)
install_github("appdemo", "opencpu")

#load in opencpu
library(opencpu)
opencpu$browse("/library/appdemo/www")
```


data
help
html
Meta
R
www
DESCRIPTION
icon
INDEX
NAMESPACE
bootstrap
jqueryui
opencpu
adtest
chain
chain
data
hello
helloangularjs
index
plot
upload

The Revised Concept



its..... so close...
ICANHASCHEEZBURGER.COM


Static Web
Static HTML
Browser
CMS Web
Database of Content
PHP logic renders HTML
Browser
Headless Web
Database of Content
PHP logic controls access to data
JS fetches data, renders HTML
Browser

AngularJS

View | Version control | Automated Testing

Posted by wwhurley on *October 22, 2012 at 9:54pm*

What this module does

This module provides a bridge between Drupal and the AngularJS framework for creating rich, interactive web applications that rely on Drupal content. By default the module uses version 1.0.8 of AngularJS pulling the unminified code from the Google CDN. This may be changed by going to the administrative page. If you want to download the files to host locally they can be found at http://code.angularjs.org/ and placed in sites/all/libraries/angular.

Depenencies

- Libraries API

Installation

- Download and install the dependencies
- Enable angularjs module and angularjs_examples module
- Go to /angular/nodes to see example interacting with Drupal

Maintainers for AngularJS

wwhurley - 20 commits
last: 2 months ago, first: 2 years ago

View all committers
View commits

Issues for AngularJS

To avoid duplicates, please search before submitting a new issue.
Advanced search

All issues

19 open, 45 total

Bug report

9 open, 22 total

Subscribe via e-mail

Statistics

Angular Drupal

View | Version control | Automated Testing

Posted by tyler.frankenstein on *July 14, 2015 at 1:18pm*

This is the companion Drupal module for the Angular JS module, angular-drupal.

Supporting organizations:
Easy Street 3

Project Information

Maintenance status: Actively maintained
Development status: Under active development

Module categories: JavaScript Utilities , Mobile , Utility

Reported installs: **8** sites currently report using this module. View usage statistics.
Downloads: 49
Last modified: July 14, 2015

Downloads

Recommended releases

Version	Download	Date
7.x-1.0	tar.gz (8.01 KB) | zip (8.56 KB)	2015-Jul-14

Maintainers for Angular Drupal

tyler.frankenstein - 3 commits
last: 5 days ago, first: 5 days ago

View all committers
View commits

Issues for Angular Drupal

To avoid duplicates, please search before submitting a new issue.
Advanced search

All issues

0 open, 0 total

Bug report

0 open, 0 total
Subscribe via e-mail

Statistics

angular-drupal

An Angular JS module for Drupal 7 Services.

Intro

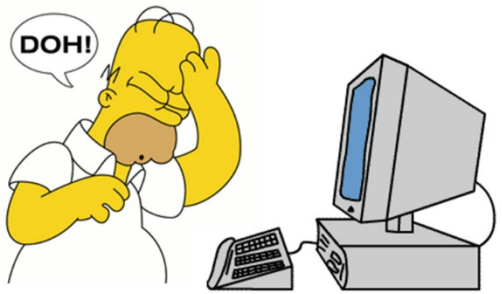
This Angular module makes it easy to `read/write` entity data `to/from` Drupal, handles user authentication and registration, and makes it easy to retrieve JSON data from Views.

Here's a very *simple* Angular app that loads `node # 123` from Drupal and then displays the node's title (via an `alert`):

```
// My simple app.
angular.module('myApp', ['angular-drupal']).run(['drupal', function(drupal) {

  drupal.node_load(123).then(function(node) {
    alert(node.title);
  });

}]);

// The angular-drupal configuration settings for my simple app.
angular.module('angular-drupal').config(function($provide) {

  $provide.value('drupalSettings', {
    sitePath: 'http://my-drupal-site.com',
    endpoint: 'api'
  });

});
```

- Comment
- File
- Node
- System
- Taxonomy_Term
- Taxonomy_Vocabulary
- User

Current Status



Quantitative Information

Qualitative Information

JS Libraries and HTML5 and CSS3 and . . .

Reports
Forms
Web Pages

Next Steps . . .

- ❑ Intensive training in AngularJS
- ❑ Complete the Ubuntu test server's environment so that I can integrate NodeJS into the architecture
- ❑ Replace Drupal 7 with Drupal 8 in the architecture
- ❑ Investigate DeployR as a potential substitute for OpenCPU (http://deployr.revolutionanalytics.com/

- ❑ Determine if other applications can be integrated into the architecture (WordPress, Alfresco, Salesforce, and so on)