

INTRIDEA

Visualizing Big Data on Small Devices



Tom Zeng

Director of Engineering
tom@intridea.com

@tomzeng

www.linkedin.com/in/tomzeng



Agenda

Introduction

Front End - HTML5/Bootstrap, Backbone/CoffeeScript, D3, MapBox

Backend - Rails, MongoDB

Big Data Processing - Hadoop, Hive, Pig

Showcase - Mobile and Data Visualization Related Projects

Q & A



Introduction

Intridea - Rails, UX/Data Visualization, Mobile, Big Data, e-commerce

American Bible Society (ABS <http://www.americanbible.org/>) - partners with Bible publishers

- Provides API access to 539 Bible versions in 242 languages
- The usage of the APIs is tracked at the verse level, along with ip location, timestamp, and duration
- 530 million view logs/year ('12-'13 data), 1.5 mil/day, each view log has packed about 12 bible views
- Amounts to 5-6 billion Bible views each year

ABS asked Intridea to build the dashboard app Scripture Analytics (<http://www.scriptureanalytics.com>)



We Make

Bloomberg



PewResearchCenter



xo group/



Washington D.C.

FOUNDED & STARTED IN 2007



30+ Employees

ACROSS THE US & OVERSEAS



Open Source Software

ON GITHUB



9,816 Hours Saved Annually

BY WORKING REMOTELY



Major Open Source Contributions

github.com/intridea



OmniAuth

OmniAuth is a flexible authentication system utilizing Rack middleware.



Grape

An opinionated micro-framework for creating REST-like APIs in Ruby.



Stately

A symbol font that makes it easy to create a map of the U.S. with HTML/CSS.



Houston

Mission control dashboard for your distributed teams.

Hashie

Hashie is a simple collection of useful Hash extensions.

oauth2

A Ruby wrapper for the OAuth 2.0 protocol.

Multi_JSON

A generic swappable back-end for JSON handling.





14Z - PEOS01 Company Name
26841

Summary Products Client Contacts ADP Contacts

DBA Name PEOS01 Company Name 26841

Contact Signer Guerra,Lia

Address 1310 N 22nd St Tampa FL, 33605 Get Directions

Federal EIN 59-1978963

Start Date 01/01/2012

Payroll Employees 14

Phone 813/241-1907

Fax 813/242-4980

Simplified and modernized application experience for ADP

Bloomberg

Bloomberg Businessweek

SAVE 89% SUBSCRIBE

Headlines

Is Manchester United Worth \$1 Billion to Nike?

Technology Companies & Industries Global Economics

Beats Electronics' Luke Wood Finally Won His Fight for Digital Music With Keurig 2.0, Green Mountain Wants Its Monopoly Back A Libyan Militia Tries—and Fails—to Sell Crude Oil to North Korea

Market Summary

US	Europe	Asia
S&P500	1873.12	-4.05 ▾
DJIA	16377.36	-41.32 ▾
NASDAQ	4330.496	-3.952 ▾

CompanyLookup

Newsletter Signup

Application engineering for BusinessWeek.com

Agilysys...

OnTray Christopher T 12:00AM

Qty	Item	Total
10	1 Liter Water	10.00
1	20oz Soda	1.60
1	Brownie	3.00
1	Cakes	4.00
1	Carved Meat Sand.	6.00
1	Cheese Cake	4.60

Total Due **32.39**

Amount Tendered **40.00**

Cash 40.00

Credit 0.00

Change **32.39**

New Sale

Appetizers Mashed Potatoes Desserts Brunch Specials

Side	20oz Soda	Naked Juice
Orange	Root Beer	

Chesaburger Ham and Cheese Sandwich

Cookies Brownie Tart

Cookies Brownie Tart

World's first 100% web based Point of Sale system



VESTED

VESTED

IMPACT INVESTING IS
Connecting Communities & Capital

Since 1995, more than 13,500 investors have invested \$800 million in our portfolio.

[LEARN MORE](#)

Have a question about our impact investment options? Find your answer on our Impact Investing FAQs page.

Fair Trade
Protect the environment and the future of communities around the world.
Africa, Latin America, North America
Community Development
[INVEST](#)

Financial Inclusion
Protect the environment and the future of communities around the world.
Africa, Latin America, North America
Community Development
[INVEST](#)

Healthy Communities
Protect the environment and the future of communities around the world.
Africa, Latin America, North America
Community Development
[INVEST](#)

Women's Environment
Protect the environment and the future of communities around the world.
Africa, Latin America, North America
Community Development
[INVEST](#)

Calvert Foundation
powered by the CALVERT FOUNDATION

COMPANY
About Us
Our Blog
Contact Us

POURS
Your Account
Terms of Service
Privacy Policy

MEMBRES
Twitter
Facebook

© 2014 Calvert Foundation
All Rights Reserved

Calvert Social Investment Foundation, a 501(c)(3) nonprofit, offers the Community Investment Note, which is subject to certain risks, is not a mutual fund, is not FDIC or SIPC insured, and should not be confused with any Calvert Group-sponsored investment product. This website is neither an offer to sell nor a solicitation of an offer to buy these securities; the offering is made only by the prospectus, which should be read before investing. Due to Blue-Sky regulations, the current offering of the Community Investment Note cannot be offered or sold in the states of Pennsylvania, South Carolina, or Washington.

Where people go to make a difference with their investment capital.



SAMPLE CLIENT LOGO

Take Me Back Feedback Support Log Out

1 Enter Payroll 2 Preview Payroll 3 Payroll Summary

PAYROLL DUE: 06/13/2014 PAYROLL PERIOD: 06/04/2014 - 06/14/2014 CHECK DATE: 06/21/2014 ESTIMATED GROSS PAYROLL TOTAL: \$20,015.00

Enter Payroll

Page 1 of 4 1 2 3 4 Show 20 Employees per Page

Viewing: Salaried Employees P Manage Views View All Employees

Sort By: Last Name Descending ▾ Customize columns for this view

File Num	Last Name	First Name	Rate	Hours		Earnings		Deductions	
				Regular	Overtime	Regular	Overtime	Code	Amount
0001	Abraham	Brian	1,625.00	40		1,625.00			
0002	Alice	Christopher	3,750.00	40		3,750.00			
0003	Bryant	Daniel	6,250.00	40		6,250.00			
0004	Bonnet	Effret	2,291.00	40		2,291.00			
0005	Collins	Frank	2,237.00	40		2,237.00			
0006	Cray	Gayle	1,625.00	40		1,625.00			
0007	Davis	Henry	2,237.00	40		2,237.00			
0008	Daniels	Mollie	1,625.00	40		1,625.00			
0009	Egliestas	Hannah	3,750.00	40		3,750.00			
0010	Eisenhower	Joey	6,250.00	40		6,250.00			
0011	Fritz	Lois	2,291.00	40		2,291.00			
0012	Franklin	Yvette	2,237.00	40		2,237.00			
0013	Gavin	Jeanine	1,625.00	40		1,625.00			
0014	Garrett	Christopher	2,237.00	40		2,237.00			
0015	Hunter	Ralph	1,625.00	40		1,625.00			
0016	Huay	Joseph	3,750.00	40		3,750.00			

Simplifying ADP's core business:
Payroll

xo group/

the knot

JOIN FREE LOG IN

the knotSHOP Bonus \$20 Off Orders \$175+ use code: 20FREE SHOP NOW

OUR FAVORITES

Wedding Dresses Wedding Flowers Venues and Vendors

Details and Decor Photographers Bridesmaid Dresses

Engagement Rings Pretzel Cakes Bridal Hairstyles

AMAZING VENDORS Reception & Ceremony Ideas

TODAY TRENDING WEDDING IDEAS

6 wedding dress designers to watch How to plan a wedding in 30 days Astrology predictions for wedding planning 50+ pretty wedding cakes

the knotSHOP Outdoor Party Essentials SHOP NOW From \$9.95

Engineering for the most-trafficked wedding planning solution



Bloomberg



accenture

JPMORGAN CHASE & Co.

RentPath

ORACLE®

PewResearchCenter

CATO
INSTITUTE

GANNETT

The Merck logo consists of a stylized four-pointed star or flower shape made of dots, followed by the word "MERCK" in a bold, sans-serif font.

Copyright © 2014 Intridea Inc. All rights reserved.

GENERAL DYNAMICS

ADP®

The logo for white pages features the word "white" in a serif font above the word "pages" in a smaller, sans-serif font. The "w" in "white" is capitalized and has a decorative flourish.

amazon.com®

OPower

citi

Mashable

The Verizon logo features a stylized checkmark icon composed of three slanted lines forming a V-shape, followed by the word "verizon" in a lowercase, sans-serif font.

Agilysys..

The Mitsubishi Electric logo consists of a stylized diamond shape made of dots, followed by the words "MITSUBISHI ELECTRIC" in a bold, sans-serif font, with "HVAC Advanced Products Division" in smaller text below it.



ABS Scripture Analytics Query Requirements

Visualizations

Admin Top Level View

Big Number Total Views
Big Number Unique Views
Big Number Total Number of Versions
Big Number Total Number of Projects (and change)
Graph World Map Choropleth (Darker Colors Indicate more Views)
Graph Line Graph - Views & Unique Views by Day
Table Top Version Owners (Drill In or Link to See All)
Table Top Versions (Drill In or Link to See All)
Table Top Project Owners (Drill In or Link to See All)
Table Top Projects (Drill In or Link to See All)
Table Most Views by Country
Table Most Views by State
Table Most Views by City
Table Top Verses & # of Total Views
Table Top Chapters & # of Total Views

Admin Multiple Version View

Big Number Total Views
Big Number Unique Views
Graph World Map Choropleth (Darker Colors Indicate more Views)
Graph Line Graph - Views & Unique Views by Day
Table Top Versions for this Version Owner (Drill In or Link to See All)
Table Top Projects for this Version Owner (Drill In or Link to See All)
Table Most Views by Country
Table Most Views by State
Table Most Views by City
Table Top Verses & # of Total Views
Table Top Chapters & # of Total Views

Admin Version View

Big Number Total Views
Big Number Unique Views
Big Number Version Rank
Graph World Map Choropleth (Darker Colors Indicate more Views)
Graph Line Graph - Views & Unique Views by Day
Table Top Projects (Drill In or Link to See All)
Table Top Project Owners (Drill In or Link to See All)
Table Most Views by Country
Table Most Views by State
Table Most Views by City
Table Top Verses & # of Total Views
Table Top Chapters & # of Total Views

Admin Multiple Projects View

Big Number Total Views
Big Number Unique Views
Big Number Project Owner Rank
Graph World Map Choropleth (Darker Colors Indicate more Views)
Graph Line Graph - Views & Unique Views by Day
Table Top Projects (Drill In or Link to See All)
Table Top Versions (Drill In or Link to See All)
Table Top Version Owners (Drill In or Link to See All)
Table Most Views by Country
Table Most Views by State
Table Most Views by City
Table Top Verses & # of Total Views
Table Top Chapters & # of Total Views

Admin Project View

Big Number Total Views
Big Number Unique Views
Big Number Version Rank
Graph World Map Choropleth (Darker Colors Indicate more Views)
Graph Line Graph - Views & Unique Views by Day
Table Top Version Owners (Drill In or Link to See All)
Table Top Versions (Drill In or Link to See All)
Table Most Views by Country
Table Most Views by State
Table Most Views by City
Table Top Verses & # of Total Views

Version Owner Top Level (Multiple Version) View

Big Number Total Views
Big Number Unique Views
Graph World Map Choropleth (Darker Colors Indicate more Views)
Graph Line Graph - Views & Unique Views by Day
Table Top Versions for this Version Owner (Drill In or Link to See All)
Table Top Projects for this Version Owner (Drill In or Link to See All)
Table Most Views by Country
Table Most Views by State
Table Most Views by City
Table Top Verses & # of Total Views
Table Top Chapters & # of Total Views

Version Owner Version View

Big Number Total Views
Big Number Unique Views
Big Number Version Rank (of their versions)
Graph World Map Choropleth (Darker Colors Indicate more Views)
Graph Line Graph - Views & Unique Views by Day
Table Top Projects (Drill In or Link to See All)
Table Top Project Owners (Drill In or Link to See All)
Table Most Views by Country
Table Most Views by State
Table Most Views by City
Table Top Verses & # of Total Views
Table Top Chapters & # of Total Views

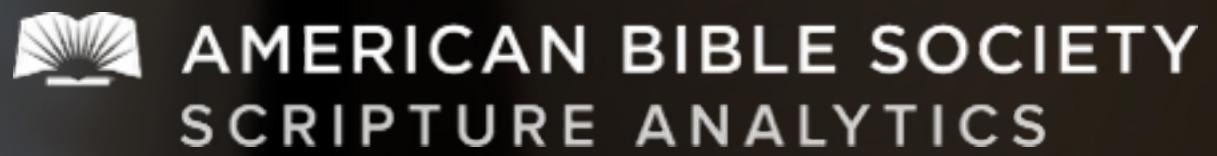
Project Owner Top Level (Multiple Projects) View

Big Number Total Views
Big Number Unique Views
Graph World Map Choropleth (Darker Colors Indicate more Views)
Graph Line Graph - Views & Unique Views by Day
Table Top Projects (Drill In or Link to See All)
Table Top Versions (Drill In or Link to See All)
Table Most Views by Country
Table Most Views by State
Table Most Views by City
Table Top Verses & # of Total Views
Table Top Chapters & # of Total Views

Project Owner Project View

Big Number Total Views
Big Number Unique Views
Big Number Project Rank (of their projects)
Graph World Map Choropleth (Darker Colors Indicate more Views)
Graph Line Graph - Views & Unique Views by Day
Table Top Versions (Drill In or Link to See All)
Table Most Views by Country
Table Most Views by State
Table Most Views by City
Table Top Verses & # of Total Views
Table Top Chapters & # of Total Views





Public and private dashboards visualizing Bible reading across the Internet

Up to the minute dashboards showing what Bible verses are being read when, and where, all over the globe.



Mobile



Desktop



Tablet

Responsive Web App



Front End User Interface

Single Page Application using Backbone.js

CoffeeScript (Ruby like, Jasmine in CoffeeScript similar to RSpec)

D3 for Data Visualization

Twitter Bootstrap for Responsive UI

Packery for Responsive Layout - <http://packery.metafizzy.co/>

Mapbox for Map Rendering - <https://www.mapbox.com/>



Backend Servers/Services

Rails on Ruby Application mostly as the API server

MongoDB as the data store/cache

Mongoid for Active Record like queries

MongoDB Aggregation Framework for complex queries

Pulling data periodically from S3 to populate the Mongo database

Local R&D Hadoop and Mongo clusters for data exploration



MongoDB

Document oriented, schema free, JSON format

Very high data read and write throughput

Rich query capabilities (aggregation framework), flexible indexes

Scale with auto-sharded replica sets

Map/Reduce in JavaScript



Hadoop/Pig/Hive/Impala

Hadoop cluster (AWS Elastic Map/Reduce on-demand) to process and store data in S3

Pig to parse, transform, geo-code data

Hive to query data and generate aggregated JSON reports

Impala is similar to Hive (but much fast than the older version of Hive), used for ETL



Root Device	Type	State	Status Checks	Alarm Status	Monitoring	Security Groups
instance store	m1.small	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-master
instance store	m1.large	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-master
instance store	m1.xlarge	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.xlarge	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.xlarge	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.xlarge	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.xlarge	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.xlarge	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.xlarge	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.large	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.large	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.large	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.large	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.large	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.xlarge	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.xlarge	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.xlarge	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
instance store	m1.xlarge	● running	✓ 2/2 checks passed	<i>none</i>	basic	ElasticMapReduce-slave
ebs	m1.large	● running	✓ 2/2 checks passed	<i>none</i>	basic	scripture-analytics-app

Elastic Map/Reduce Hadoop Cluster - On Demand Processing



m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave
m1.large	terminated		none	basic	ElasticMapReduce-master
m1.xlarge	terminated		none	basic	ElasticMapReduce-slave

Elastic Map/Reduce Hadoop Cluster - Terminated when done



Cluster 1 - CDH4

Name	Status	Health	Role Counts
 hbase1 ▾	 Started	 Good	10 RegionServers, 1 Master
 hdfs1 ▾	 Started	 Good	1 SecondaryNameNode, 1 NameNode, 1 Balancer, 10 DataNodes
 hive1 ▾	 Started	 Good	1 Hive Metastore Server, 11 Gateways
 hue1 ▾	 Started	 Good	1 Beeswax Server, 1 Hue Server
 impala1 ▾	 Started	 Good	10 Impala Daemons, 1 Impala StateStore Daemon
 mapreduce1 ▾	 Started	 Good	1 JobTracker, 10 TaskTrackers
 oozie1 ▾	 Started	 Good	1 Oozie Server
 zookeeper1 ▾	 Started	 Good	1 Server

Cloudera CDH4 - on local 10-node cluster



Hue

File Browser

Search for file name

A Rename

Move

Change Permissions

Download

Delete

New

Upload

Home / user / flume / tweets / 2013 / 05 / 12 / 17

Type	Name	Size	User	Group	Permissions	Date
..			flume	flume	drwxr-xr-x	May 12, 2013 05:42 pm
File	FlumeData.1368395131396	12.1 KB	root	flume	-rw-r--r--	May 12, 2013 05:46 pm
File	FlumeData.1368395131397	21.0 KB	root	flume	-rw-r--r--	May 12, 2013 05:46 pm
File	FlumeData.1368395131398	5.0 KB	root	flume	-rw-r--r--	May 12, 2013 05:47 pm
File	FlumeData.1368395131399	9.1 KB	root	flume	-rw-r--r--	May 12, 2013 05:47 pm
File	FlumeData.1368395131400	4.7 KB	root	flume	-rw-r--r--	May 12, 2013 05:48 pm
File	FlumeData.1368395131401	4.3 KB	root	flume	-rw-r--r--	May 12, 2013 05:49 pm
File	FlumeData.1368395131402	13.0 KB	root	flume	-rw-r--r--	May 12, 2013 05:49 pm
File	FlumeData.1368395131403	2.4 KB	root	flume	-rw-r--r--	May 12, 2013 05:50 pm
File	FlumeData.1368395131404	13.7 KB	root	flume	-rw-r--r--	May 12, 2013 05:50 pm
File	FlumeData.1368395131405	9.3 KB	root	flume	-rw-r--r--	May 12, 2013 05:51 pm
File	FlumeData.1368395131406.tmp	0 bytes	root	flume	-rw-r--r--	May 12, 2013 05:51 pm

Show 60 items per page. Showing 1 to 11 of 11 items, page 1 of 1

Cloudera CDH4 - Streaming Data into Hive Table



The screenshot shows the Apache Hue interface, specifically the Pig script editor. At the top, there's a green navigation bar with various icons for HDFS, HQL, HCQL, HCat, Impala, Hue, and Help. On the right of the bar is a user dropdown labeled "sandbox". Below the bar, there are two tabs: "My Scripts" (which is selected) and "Query history".

The main area is titled "My scripts". On the left, there's a sidebar with a list of existing scripts: masterlog, masterlog-0, python-udf-test, ruby-udf-test, script1-hadoop, script2-hadoop, tutorial1, and WordCount. Each item has a small preview icon.

In the center, there's a form for creating a new script. It includes fields for "Title:" (set to "Pig script") and "Pig script:" (containing the code "ruby-udf-test"). Below the title field is a code editor containing the following Pig Latin script:

```
1 REGISTER file:/tmp/udfs/jruby_udfs.rb USING jruby AS myfuncs;
2
3 a = LOAD 'test_data' USING PigStorage(',') as (first:chararray, last:chararray, salary:float);
4 b = FOREACH a GENERATE myfuncs.concat(first, last), myfuncs.adjust(salary,0.10);
5
6 DUMP a;
7 DUMP b;
```

Below the code editor is a "PIG helper" section with four buttons: "Save", "Execute", "Explain", and "Syntax check". The "Syntax check" button is highlighted with a green background. There's also a large green rectangular placeholder box below the buttons.

Pig Sample Query



Hue             cloudera ▾

Query Editor [My Queries](#) [Saved Queries](#) [History](#) [Settings](#)

Query Results: Unsaved Query

Results [Query](#) [Log](#) [Columns](#)

```
select zip,income from zipcode_incomes order by income desc limit 10
```

Results [Query](#) [Log](#) [Columns](#)

	zip	income
0	10514	189570
1	98243	188363
2	10577	187019
3	11568	184298
4	94028	181337
5	02493	181041
6	16155	177361
7	02108	175940

Hive Sample Query



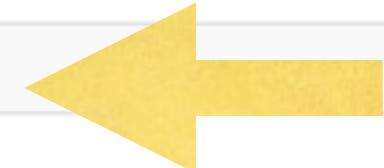
	state	city
0		622543
1	TX	Houston
2	CA	Los Angeles
3	NY	New York
4	IL	Chicago
5	TX	Dallas
6	DC	Washington
7	PA	Philadelphia
8	GA	Atlanta
9	CA	San Diego
10	FL	
11	TX	San Antonio
12	NY	Brooklyn
13	TX	Austin
14	VA	Ashburn
15	OH	Columbus

Hive Query Results - Bible views by City



Results **Query** Log Columns

	verse_id	views
0	GEN.1.1	1405904
1	MAT.1.1	83616
2	JHN.1.1	47246
3	PSA.23.4	30448
4	PRO.31.1	28451
5	PSA.1.1	27481
6	PRO.31.28	27275
7	1CO.13.4	26870
8	REV.1.1	25820
9	1CO.13.1	22351
10	ROM.1.1	22180



²⁸ Her children show their appreciation, and her husband praises her.

Hive Query Results - Most popular verse **before** Mother's day



Results Query Log Columns

	verse_id	views
0	GEN.1.1	1447150
1	PRO.31.28	94408
2	MAT.1.1	79920
3	PRO.31.1	54381
4	EPH.6.2	50385
5	JHN.1.1	45639
6	PRO.31.10	36132
7	1CO.13.4	31879
8	PSA.23.4	29993
9	REV.1.1	29417
10	EPH.6.1	28007

²⁸ Her children show their appreciation, and her husband praises her.

Hive Query Results - Most popular verse on Mother's day



Results Query Log Columns

	verse_id	views
0	GEN.1.1	1447150
1	PRO.31.28	94408
2	MAT.1.1	79920
3	PRO.31.1	54381
4	EPH.6.2	50385
5	JHN.1.1	45639
6	PRO.31.10	36132
7	1CO.13.4	31879
8	PSA.23.4	29993
9	REV.1.1	29417
10	EPH.6.1	28007

²⁸ Her children show their appreciation, and her husband praises her.

Hive Query Results - Most popular verse after Mother's day



<http://docs.mongodb.org/manual/core/aggregation-pipeline/>

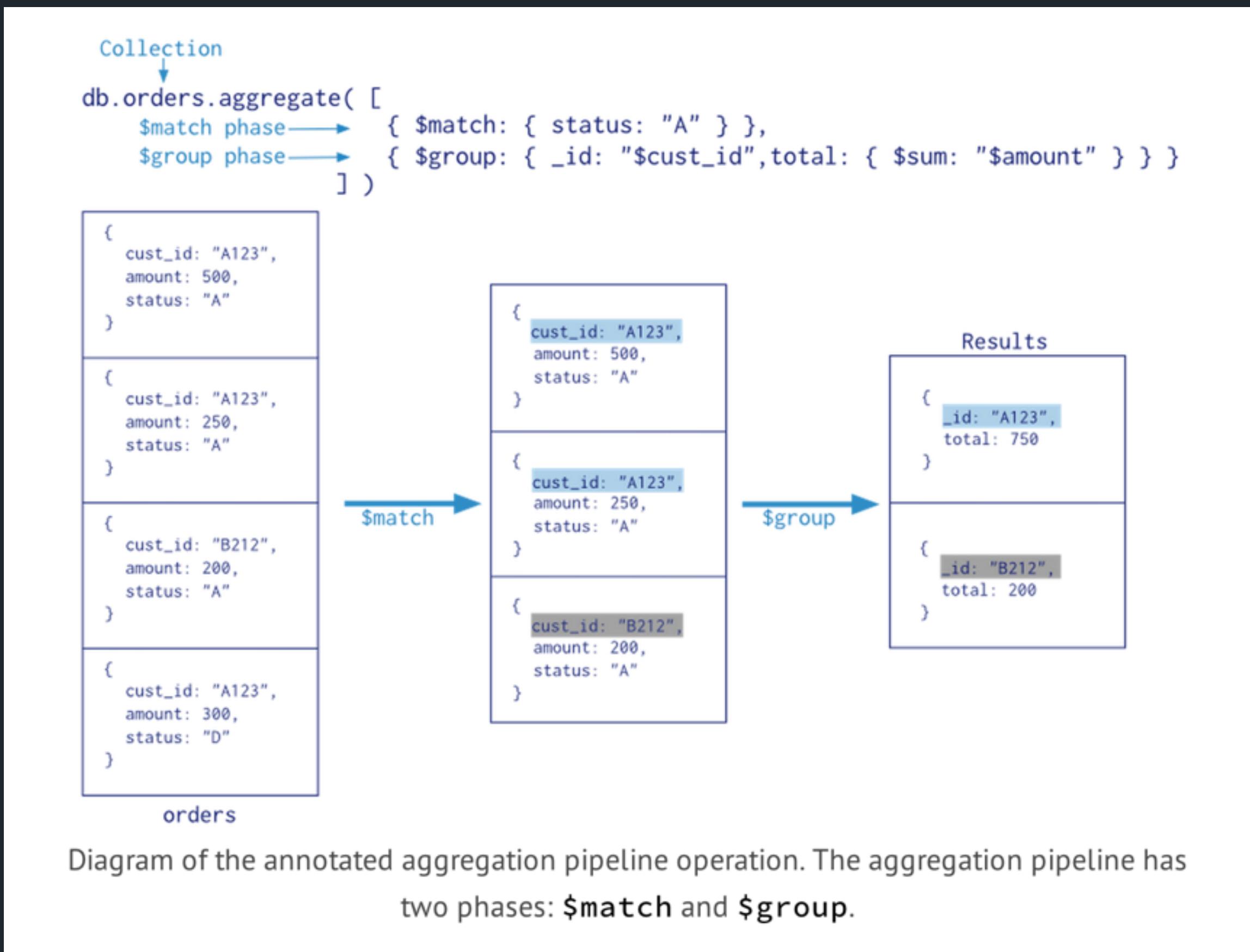


Diagram of the annotated aggregation pipeline operation. The aggregation pipeline has two phases: `$match` and `$group`.

MongoDB Aggregation Framework Example



Mongo Runner: null/scripture_analytics_app_development/daily_country_views null/scripture_analytics_app_development/daily_views null/scripture_analytics_app_development/daily_city_views

```

$match
{country: "US"}
$group
{_id: { state: "$state", city: "$city" },
views: { $sum: "$counts" } }
$sort
{ views: 1 }
$group
{_id : "$_id.state",
mostReadCity: { $last: "$_id.city" },
mostViews: { $last: "$views" },
leastReadCity: { $first: "$_id.city" },
leastViews: { $first: "$views" }
}
$project
{_id: 0,
state: "$_id",
mostReadCity: { name: "$mostReadCity", views: "$mostViews" },
leastReadCity: { name: "$leastReadCity", views: "$leastViews" }
}
$sort
{ state: 1 }

```

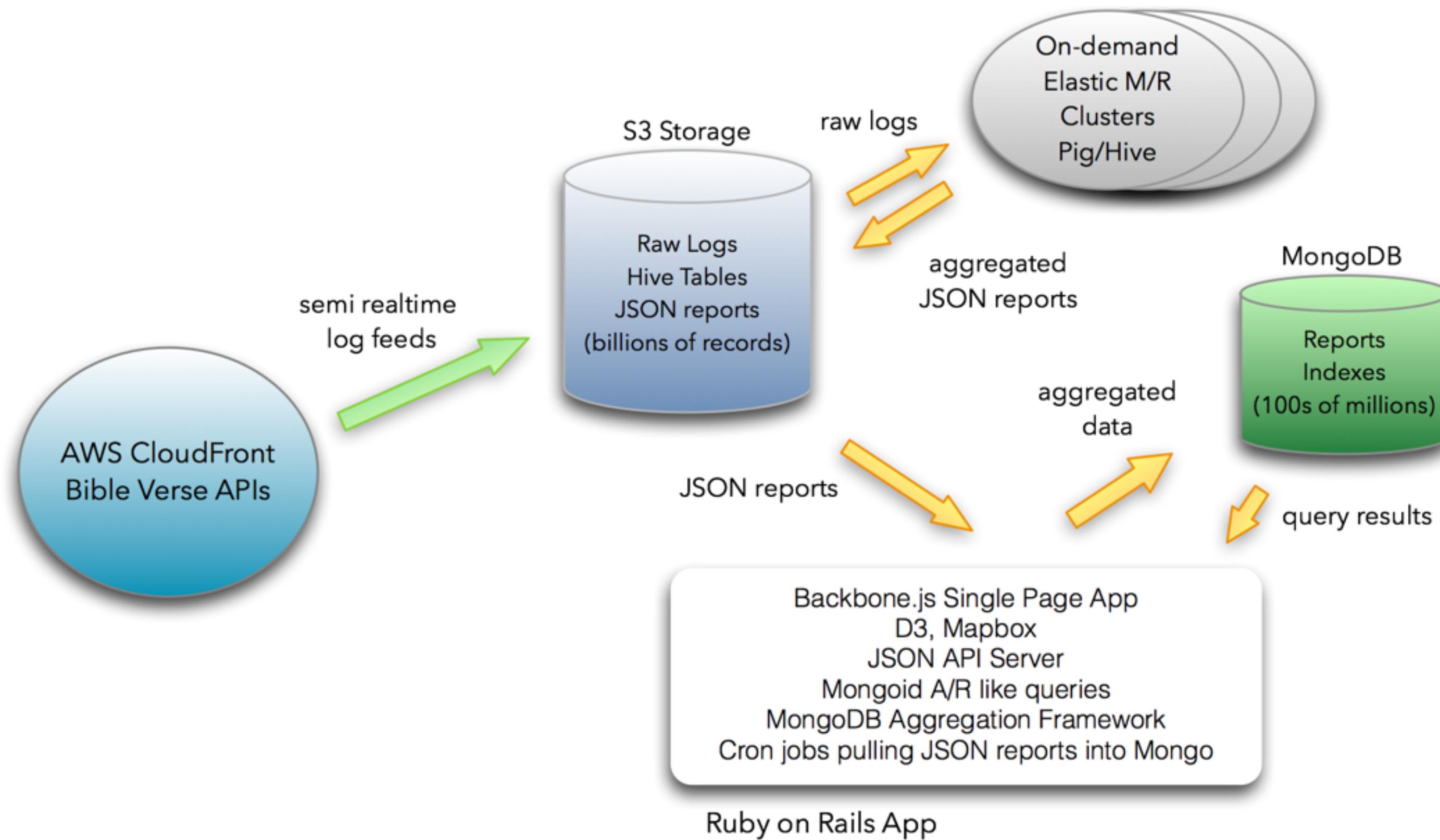
Key	Value
► 'mostReadCity'	{ 'name': 'Louisville', 'views': 4352667}
► 'leastReadCity'	{ 'name': 'Turners Station', 'views': 3}
'state'	'KY'
▼ [22]	
► 'mostReadCity'	{ 'name': 'Baton Rouge', 'views': 3046708}
► 'leastReadCity'	{ 'name': 'Chandeleur Islands', 'views': 1}
'state'	'LA'
▼ [23]	
► 'mostReadCity'	{ 'name': 'Boston', 'views': 2559491}
► 'leastReadCity'	{ 'name': 'Cummaquid', 'views': 17}
'state'	'MA'
▼ [24]	
► 'mostReadCity'	{ 'name': 'Baltimore', 'views': 4596954}
► 'leastReadCity'	{ 'name': 'Saint Inigoes', 'views': 1}
'state'	'MD'
▼ [25]	
► 'mostReadCity'	{ 'name': 'Bangor', 'views': 400905}
► 'leastReadCity'	{ 'name': 'Pembroke', 'views': 2}
'state'	'ME'
▼ [26]	
► 'mostReadCity'	{ 'name': 'Grand Rapids', 'views': 3787677}
► 'leastReadCity'	{ 'name': 'New Troy', 'views': 2}
'state'	'MI'

2: Favorites

6: TODO Mongo Runner Regex Tester 9: Changes

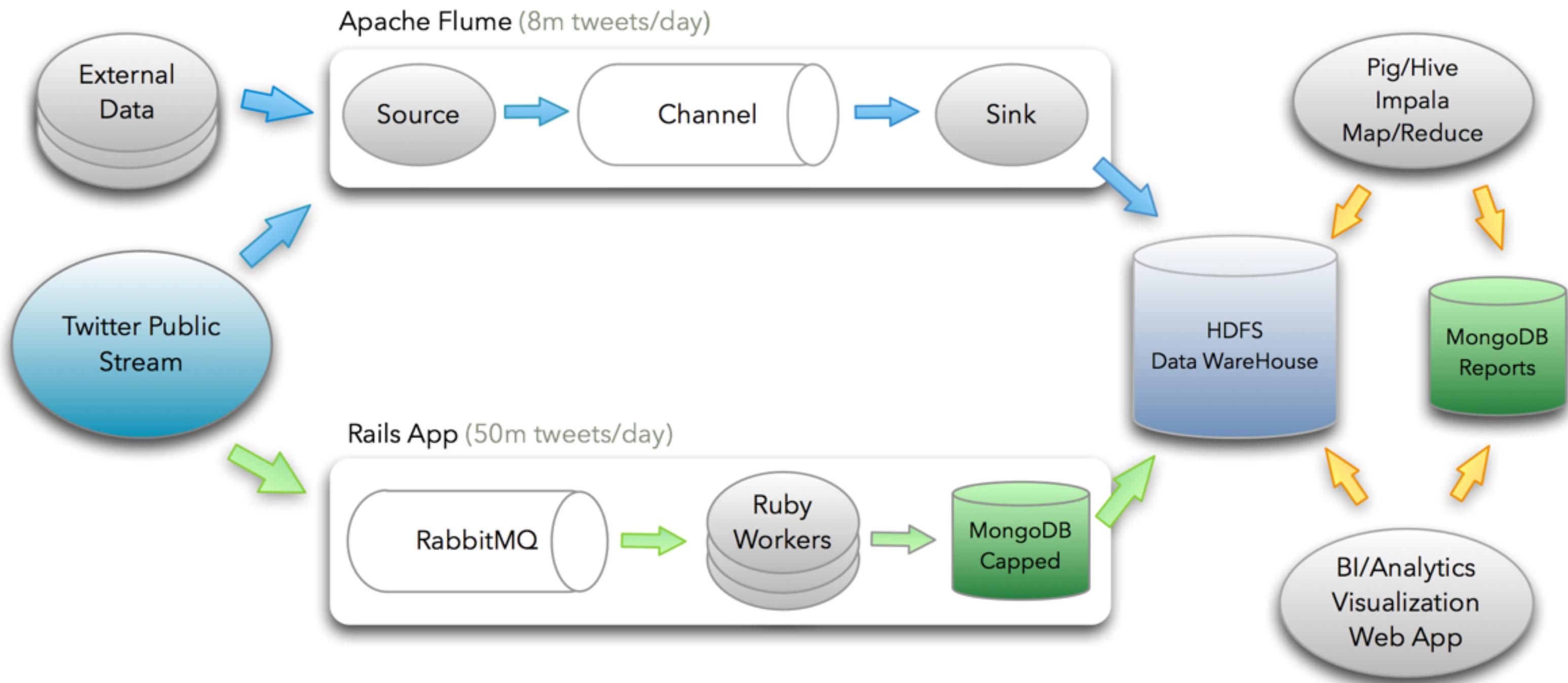
MongoDB Aggregation Framework Example





ABS Data Processing using Hadoop and MongoDB





- ✓ Top Topics / Locations / Users
- ✓ Trends and Sentiments

Analyzing Twitter using Hadoop and MongoDB



Mobile and Data Visualization Project Showcase

ADP

BLiNQ

PEW Templeton - Global Religious Futures

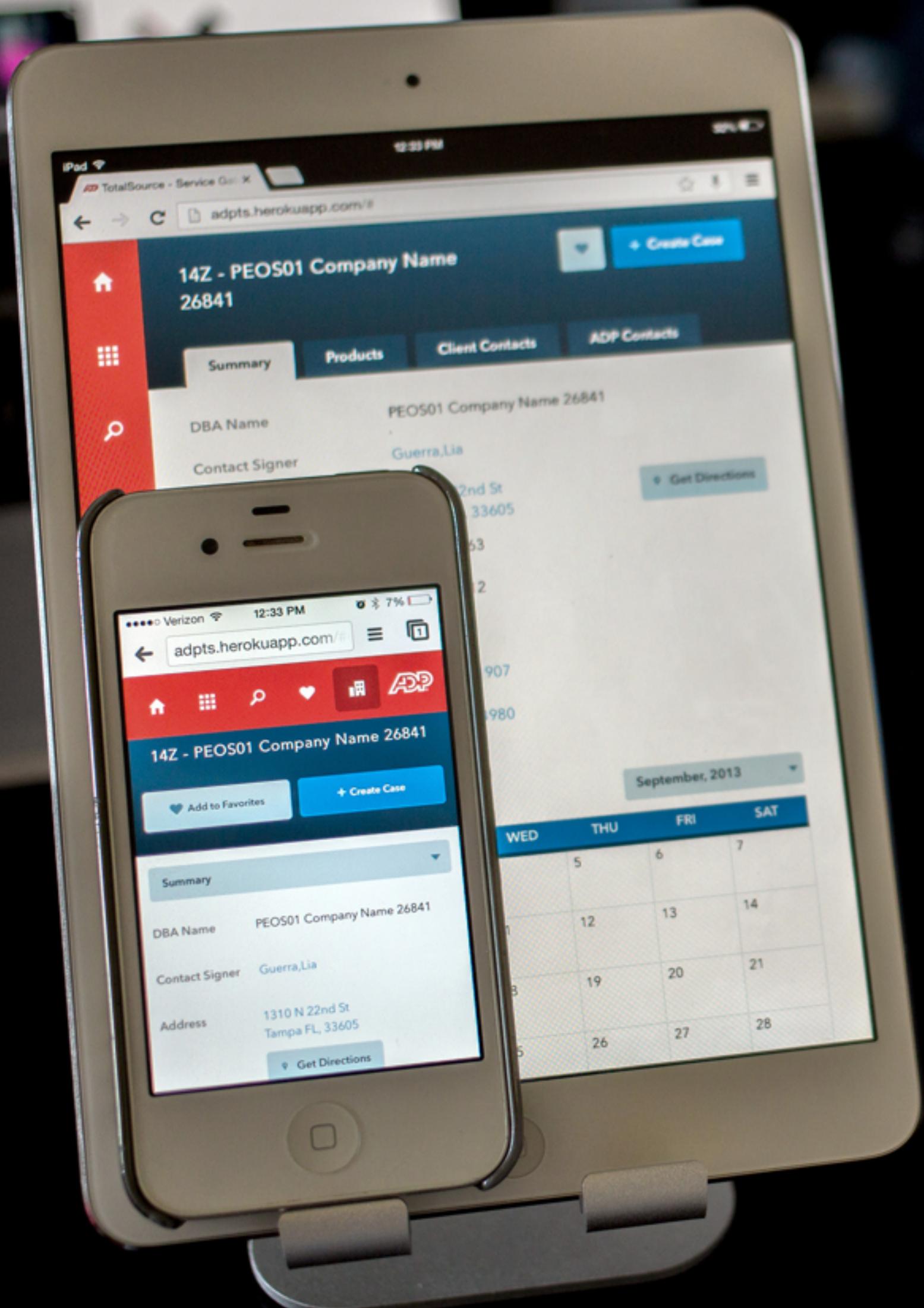
Cato Institute - HumanProgress





Redefining ADP's touch and desktop experiences

ADP processes one out of every six paychecks in the United States. We're bringing payroll into the decade of touch.





14Z - PEOS01 Company Name
26841

Summary Products Client Contacts ADP Contacts

DBA Name PEOS01 Company Name 26841

Contact Signer Guerra,Lia

Address 1310 N 22nd St
Tampa FL, 33605 [Get Directions](#)

Federal EIN 59-1978963

Start Date 01/01/2012

Payroll Employees 14

Phone 813/241-1907

Fax 813/242-4980

Pay periods September, 2013

SUN	MON	TUE	WED	THU	FRI	SAT
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	1	2	3	4	5

14Z - PEOS01 Company Name 26841

Add to Favorites + Create Case

Summary

DBA Name PEOS01 Company Name 26841

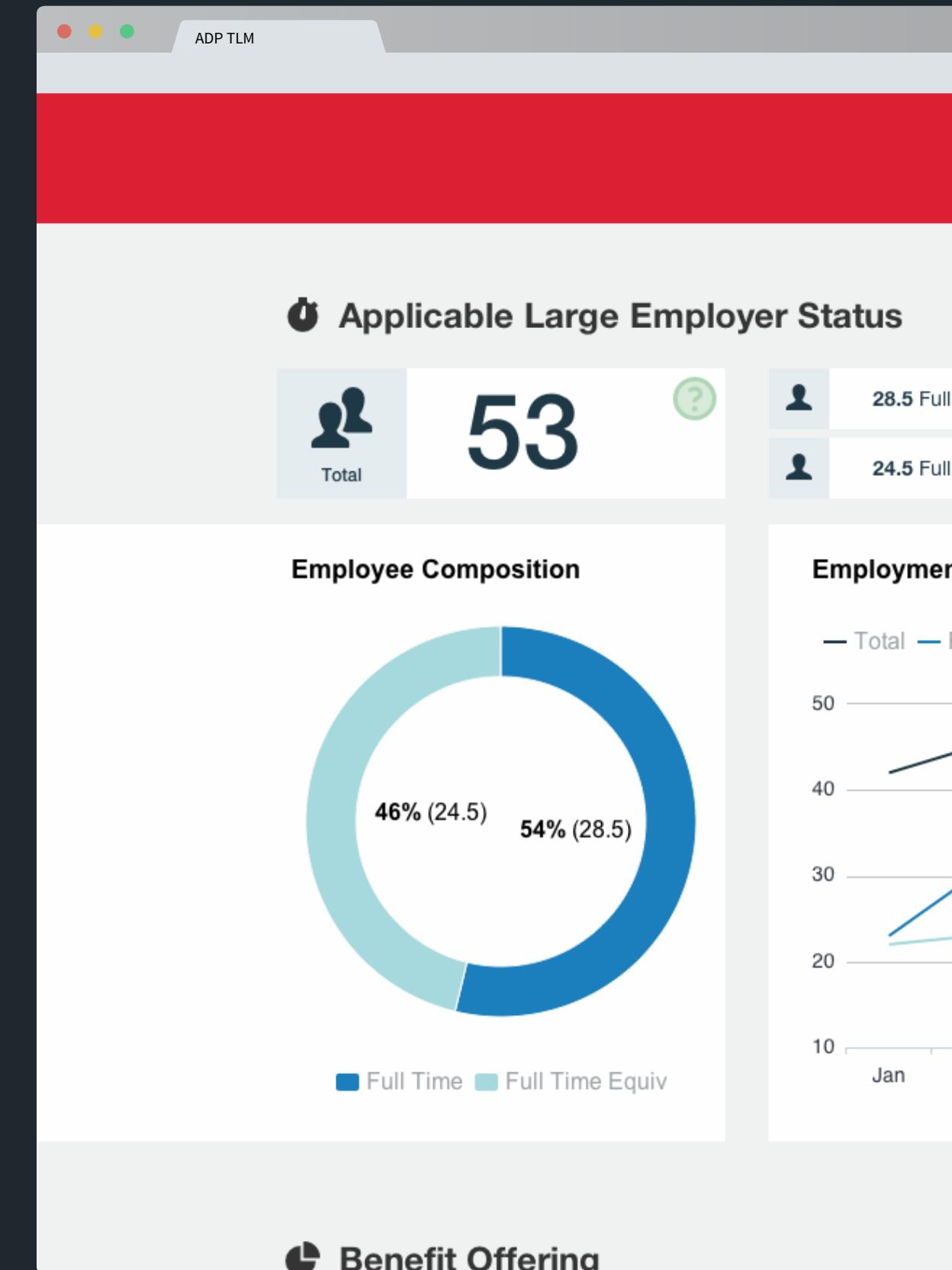
Contact Signer Guerra,Lia

Address 1310 N 22nd St
Tampa FL, 33605 [Get Directions](#)

Federal EIN 59-1978963

Start Date 01/01/2012

Payroll Employees 14





ADP HCR

Preferences Support Logout

Search

Personal Days

2 Days remaining

2 Used

- You've used 2 of your 5 available.

View All

Copyright 2013 Automatic Data Processing, Inc.

Applicable Large Employer Status

53

Total

28.5 Full Time Employees

24.5 Full Time Equivalents

Shared Responsibility Applies to your Company for the Selected Benefit Period.

[Learn More](#)

Employee Composition

Type	Count	Percentage
Full Time	28.5	54%
Full Time Equivalents	24.5	46%

Legend: ■ Full Time ■ Full Time Equivalents

Employment Trends

— Total — Full Time — Full Time Equivalents

Month	Total	Full Time	Full Time Equivalents
Jan	42	24	22
Feb	45	30	23
Mar	35	23	17
Apr	41	35	21
May	38	28	19
Jun	40	30	21
Jul	32	27	14
Aug	44	31	23
Sep	39	24	19
Oct	43	28	24

Benefit Offering

14Z - PEOS01 Company Name
26841

Summary Products Client

DBA Name	PEOS01 Cor
Contact Signer	Guerra,Lia
Address	1310 N 22nd Tampa FL, 3
Federal EIN	59-1978963
Start Date	01/01/2012
Payroll Employees	14
Phone	813/241-190
Fax	813/242-498

Pay periods

SUN	MON	TUE	WED
1	2	3	4
8	9	10	11
15	16	17	18
22	23	24	25
29	30	1	2





INTRIDEA

Your Profile Welcome Back, Meghan

Search

Dashboard

Multi-tasks

Inbox

Calendar

Tasks

Favorites

History

Your Team

Reports

Your Team

Daniel Shea Senior Engineer

Sara Thompson Engineer

Ashleigh Bruek QA Lead

Employee Retention September 2013

OF EMPLOYEES LOST HIDE LABELS AVG PERFORMANCE RATING

# OF EMPLOYEES LOST	HIDE LABELS	Avg Performance Rating
-5	CONSISTENT STAR	80%
-4	FUTURE STAR	70%
-3	ROUGH DIAMOND	60%
-1	CURRENT STAR	50%
0	KEY PLAYER	45%
-1	INCONSISTENT STAR	40%
-3	HIGH PROFESSIONAL	30%
-4	SOLID PROFESSIONAL	20%
-5	TALENT RISK	10%

2 Employees At Risk of Leaving 70% Chance they'll leave

Company News

October 7, 2013 Carlos Rodrigues featured on CNBC's "Squawk Box"

October 3, 2013 CEO, Ryan Keller, on Larry King Live discussing corporate finance policy

September 30, 2013 Company Awarded the "2013 Best Companies to Work For" Award

September 12, 2013 Details announced for the Corporate Fall BBQ

Potential Employees

POTENTIAL ASSESSMENT HIGH MOD LOW

PERFORMANCE ASSESSMENT HIGH MOD LOW

Diversity Index

0.88 +0.10 (0.15%) September 2013

✓ Your department meets the requirements





Dashboard insights for 600 of the world's largest advertisers

Analytics, planning, and flight management for social advertising campaigns and brand engagement.



INTRIDEA

BLiNQ MEDIA
A GANNETT COMPANY

22 Squared / Publix / Initiative Name

Sign Out

Likes 68,000

Clicks 2,120,000

Imp. 68,000

Initiative Dates 6/1/13 - 6/30/13
24 Days Remaining

Maximization Goal Maximize Likes
68% Pace

Budget Spend \$70,000 Spent
\$100,000 Budget

IO Spend 23% This Initiative
57% Other Initiatives

Buy Type Management Fee

Pricing \$0.12

Publisher FB Marketplace

Account Manager Maria Sanzone

JUNE 1, 2013 - JUNE 30, 2013 METRIC LIKES

Daily Engagement

6/20/13 2,457 Likes Spend \$65

Daily Spend

Expected \$123.45

Average \$123.45

Pace vs. Actual

Targeting

Demographic	Percentage
Males Age 18-25	22%
Females Age 18-25	20%
Females Age 18-25	12%

Demographic	Percentage
58K Likes	73%
21K Likes	27%
Age 18-24 48k	56%
Age 25-34 48k	24%
Age 35-42 48k	20%
Age 18-24 48k	56%
Age 25-34 48k	24%
Age 35-42 48k	20%

INTRIDEA

BRM

Back To Reports / Vertical Report for: #Tumi

Food & Drink

Interests/Topics Ferrero rocher 8

Candy & Sweets

Interests/Topics Ferrero rocher 8

Team Sports

Interests/Topics fc barcelona 8

Soccer

Interests/Topics fc barcelona 8





INTRIDEA

BLiNQ MEDIA A GANNETT COMPANY

LIFT | Analyze

Sign Out

Colors

Primary Colors	Secondary Colors	Text & Link Colors
#2a2a2a	#f78c31	#666666
#ffffff	#444444	#f78c31
#919191		#e2890e

Typography

General Typography Helvetica Neue

h1. This is a very large header

h2. This is a large header

h3. This is a medium header

h4. This is a moderate header

h5. This is a small header

This is a paragraph. Paragraphs are preset with a font size, line height and spacing to match the overall vertical rhythm. To show what a paragraph looks like this needs a little more content so, let's see... did you know that there are

Buttons & Inputs

Rest	Hover	Search Box
Button	Button	United States <input type="button" value="X"/> <input type="text" value="United States"/> <input type="button" value=""/>
Dropdown	Dropdown	United States Aland Islands Albania Algeria America Samoa
Text Input	Text Input	
Search Box	Search Box	

INTRIDEA

BLiNQ MEDIA

22 Squared / Publix / Initiative Name

Likes 68,000

Clicks 2,120,000

Imp. 68,000

Initiative Dates 6/1/13 - 6/30/13 24 Days Remaining

Maximization Goal Maximize Likes 68% Pace

Budget Spend \$70,000 Spent \$100,000 Budget

IO Spend 23% This Initiative 57% Other Initiatives

Buy Type Management Fee

Pricing \$0.12

Publisher FB Marketplace

Account Manager Maria Sanzone

Copyright © 2014 Intridea Inc. All rights reserved.



METRIC LIKES

Daily Spend

Expected \$123.45

Average \$123.45

Pace vs. Actual

58K Likes 73% 21K Likes 27%

Age Group	Total Likes	Percentage
Age 18-24	48k	56%
Age 25-34	48k	24%
Age 35-42	48k	20%

Age Group	Total Likes	Percentage
Age 18-24	48k	48k
Age 25-34	48k	48k
Age 35-42	48k	48k

INTRIDEA

BLiNQ MEDIA A GANNETT COMPANY

Staging ▾ Hello patti@intridea.com Support Sign out

Back To Reports / Vertical Report for: #Tumi

Exclude Topics # Weighted Lift Score ▾ Topic Report Export

▼ Food & Drink Weighted LiFT Score: 8 Brand Union: N/A Unique Audience: 1,214,120

Interests/Topics	LIFT Score	Brand Union	Population
ferrero rocher	8	23.8%	1,214,120

▼ Candy & Sweets Weighted LiFT Score: 8 Brand Union: N/A Unique Audience: 1,214,120

Interests/Topics	LIFT Score	Brand Union	Population
ferrero rocher	8	23.8%	1,214,120

▼ Team Sports Weighted LiFT Score: 8 Brand Union: N/A Unique Audience: 1,526,100

Interests/Topics	LIFT Score	Brand Union	Population
fc barcelona	8	35.5%	1,526,100

▼ Soccer Weighted LiFT Score: 8 Brand Union: N/A Unique Audience: 1,526,100

Interests/Topics	LIFT Score	Brand Union	Population
fc barcelona	8	35.5%	1,526,100

INTRIDEA

BLiNQ MEDIA LIFT | Analyze

Colors

Primary Colors

- #2a2a2a
- #ffffff
- #919191

Typography

General Typography Helvetica

h1. This is a very large header

h2. This is a large header

h3. This is a medium header

h4. This is a moderate header

h5. This is a small header

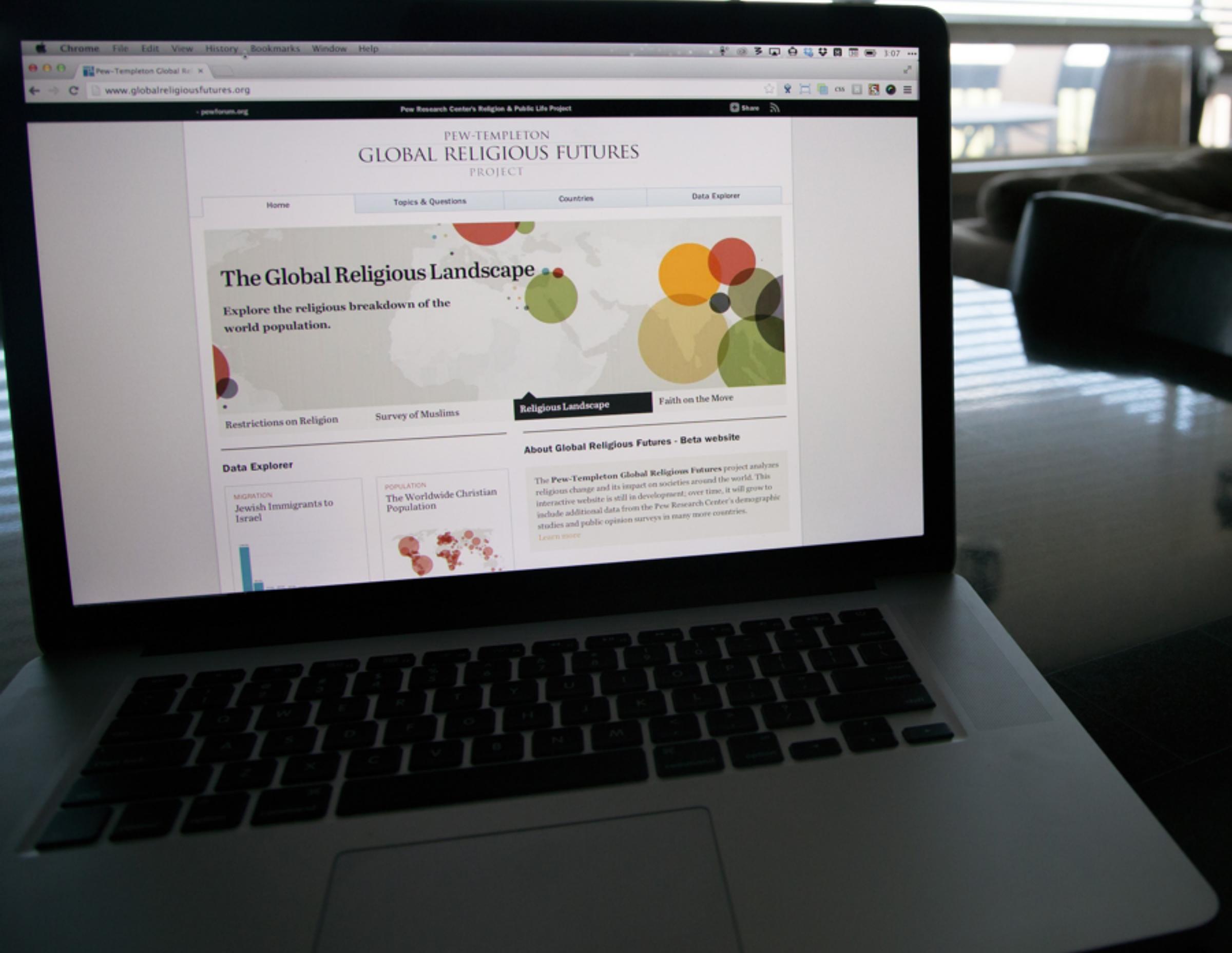
This is a paragraph. Paragraphs are preset with spacing to match the overall vertical rhythm. like this needs a little more content so, let's s

Buttons & Inputs

Rest

- Button
- Dropdown
- Text Input
- Search Box





PEW-TEMPLETON
GLOBAL RELIGIOUS FUTURES
PROJECT

Analyzing religious change and its impact on societies around the world

Interactive website exploring the patterns and trends in religions across the globe

PEW Global Research

pewforum.org Pew Research Center's Religion & Public Life Project Share

PEW-TEMPLETON GLOBAL RELIGIOUS FUTURES PROJECT

Home Topics & Questions Countries Data Explorer

The Global Religious Landscape

Explore the religious breakdown of the world population.

Restrictions on Religion Survey of Muslims Religious Landscape Faith on the Move

Data Explorer

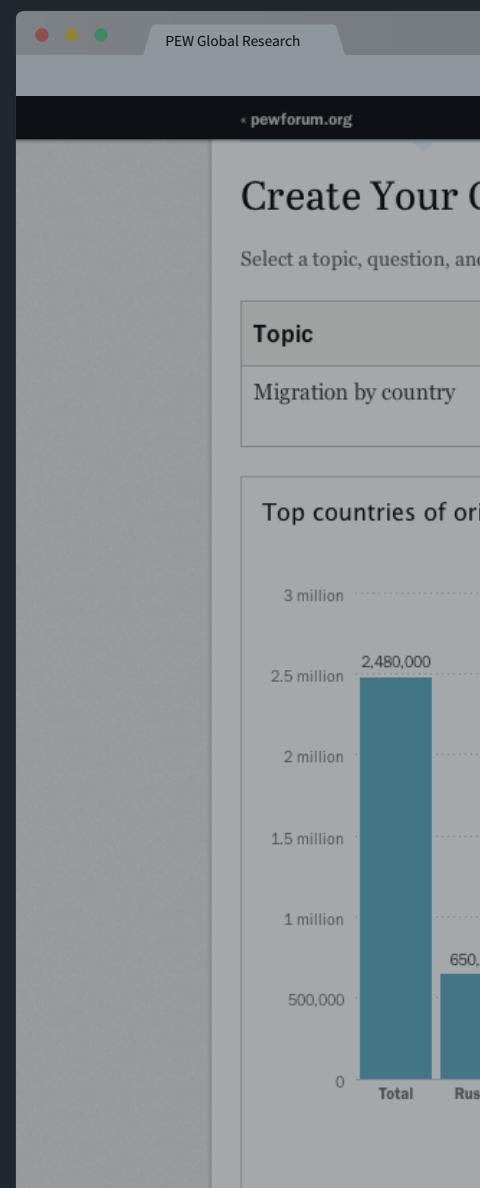
MIGRATION Jewish Immigrants to Israel

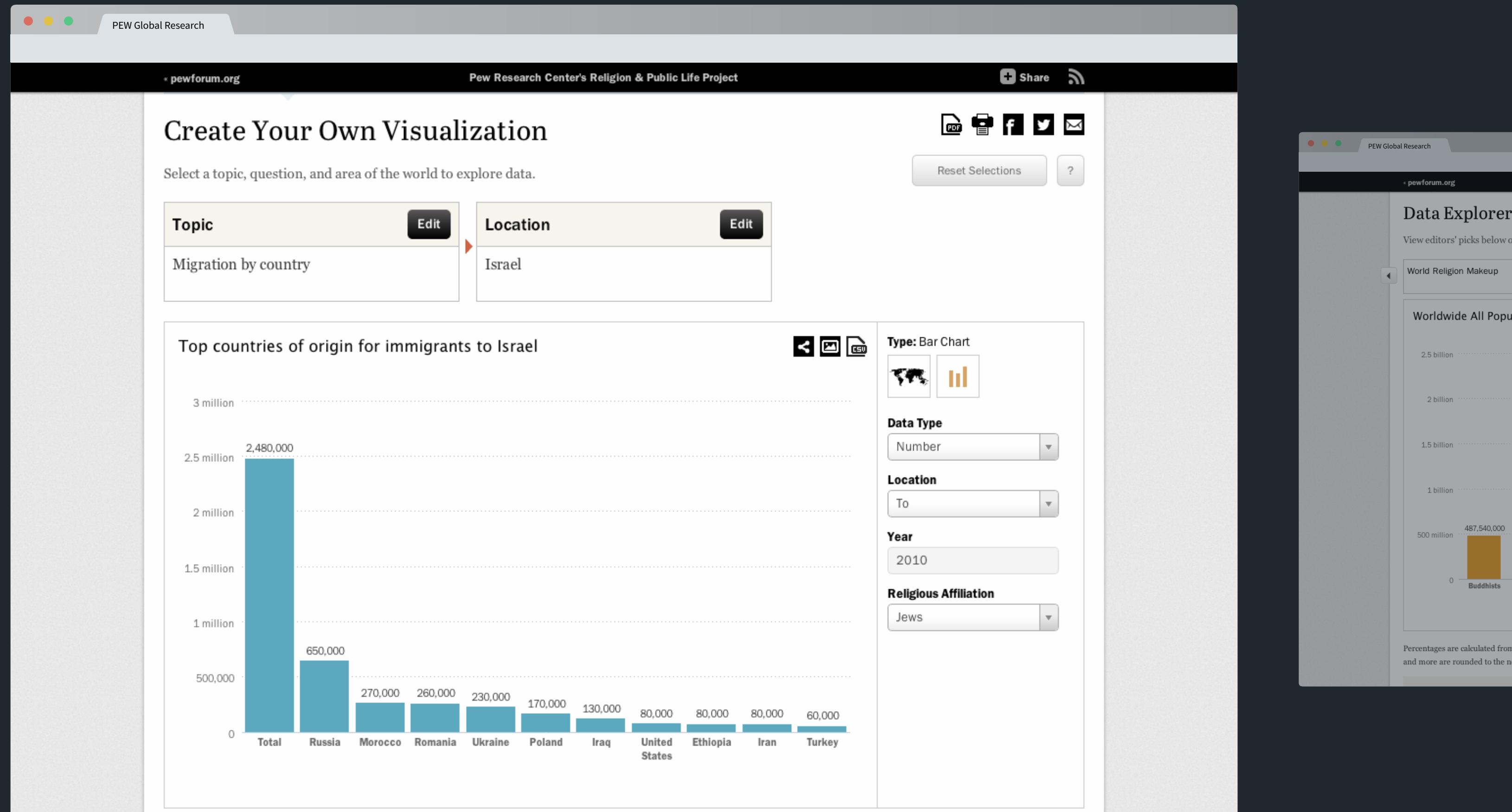
POPULATION The Worldwide Christian Population

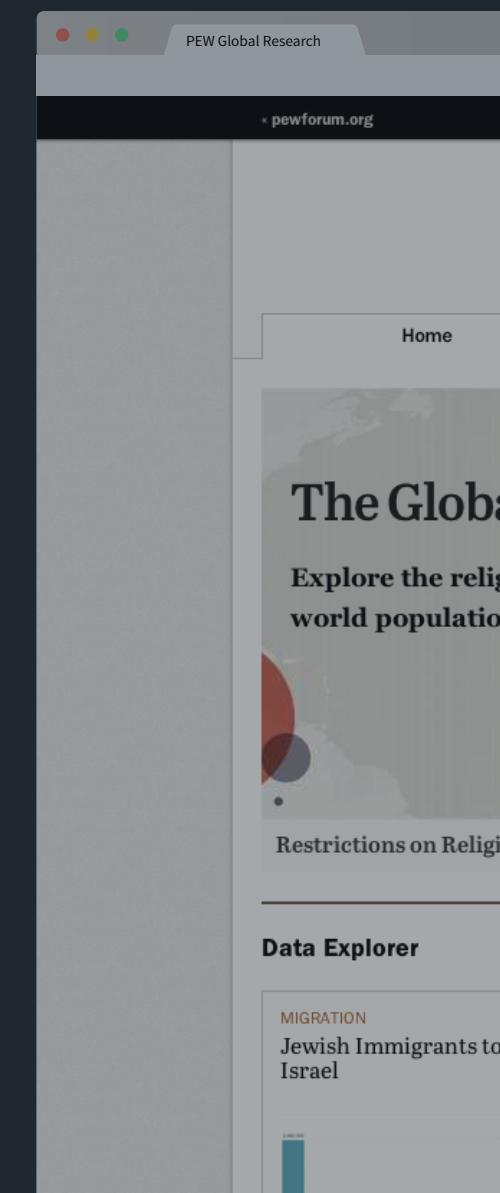
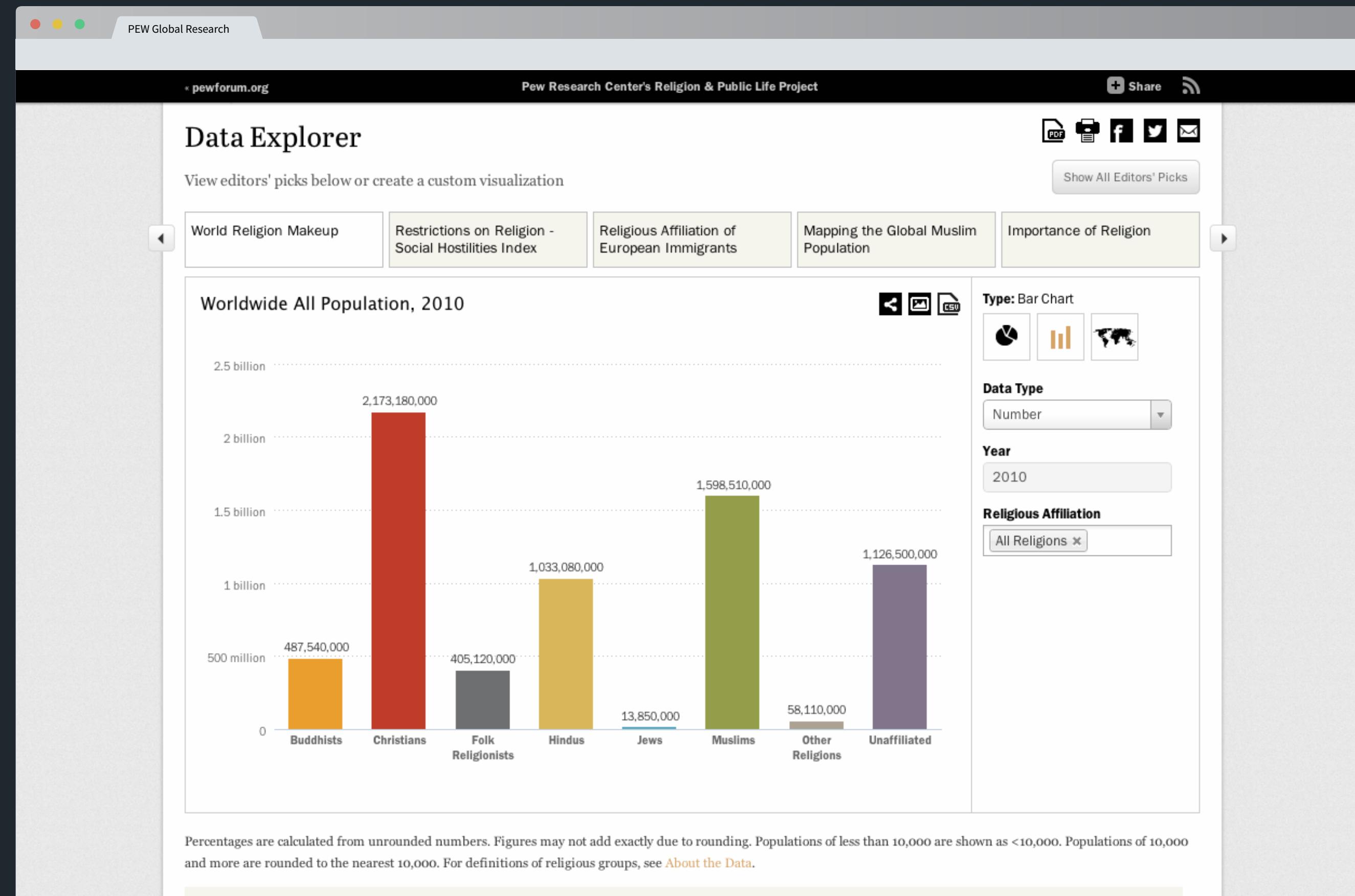
About Global Religious Futures - Beta website

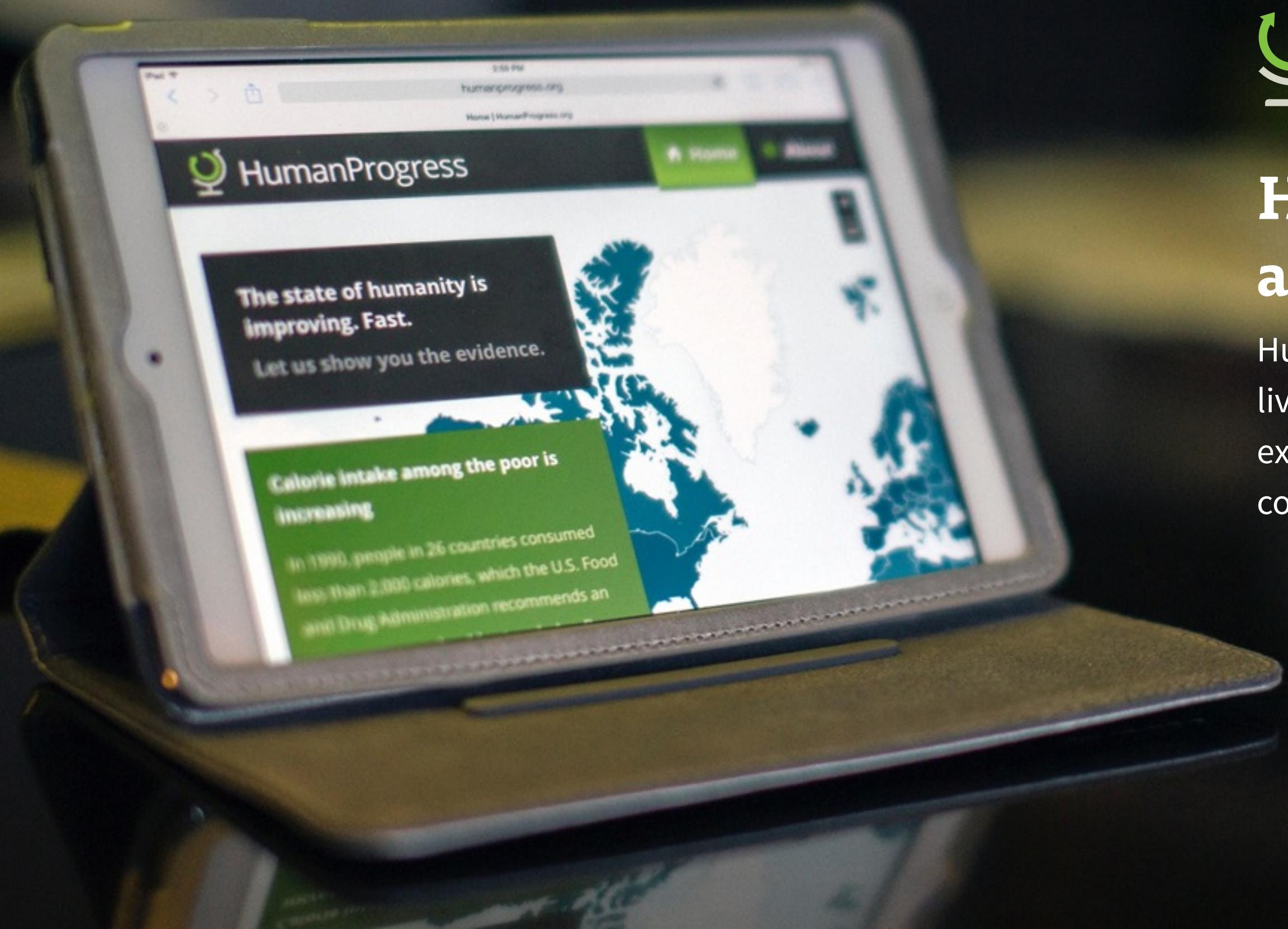
The Pew-Templeton Global Religious Futures project analyzes religious change and its impact on societies around the world. This interactive website is still in development; over time, it will grow to include additional data from the Pew Research Center's demographic studies and public opinion surveys in many more countries.

Learn more



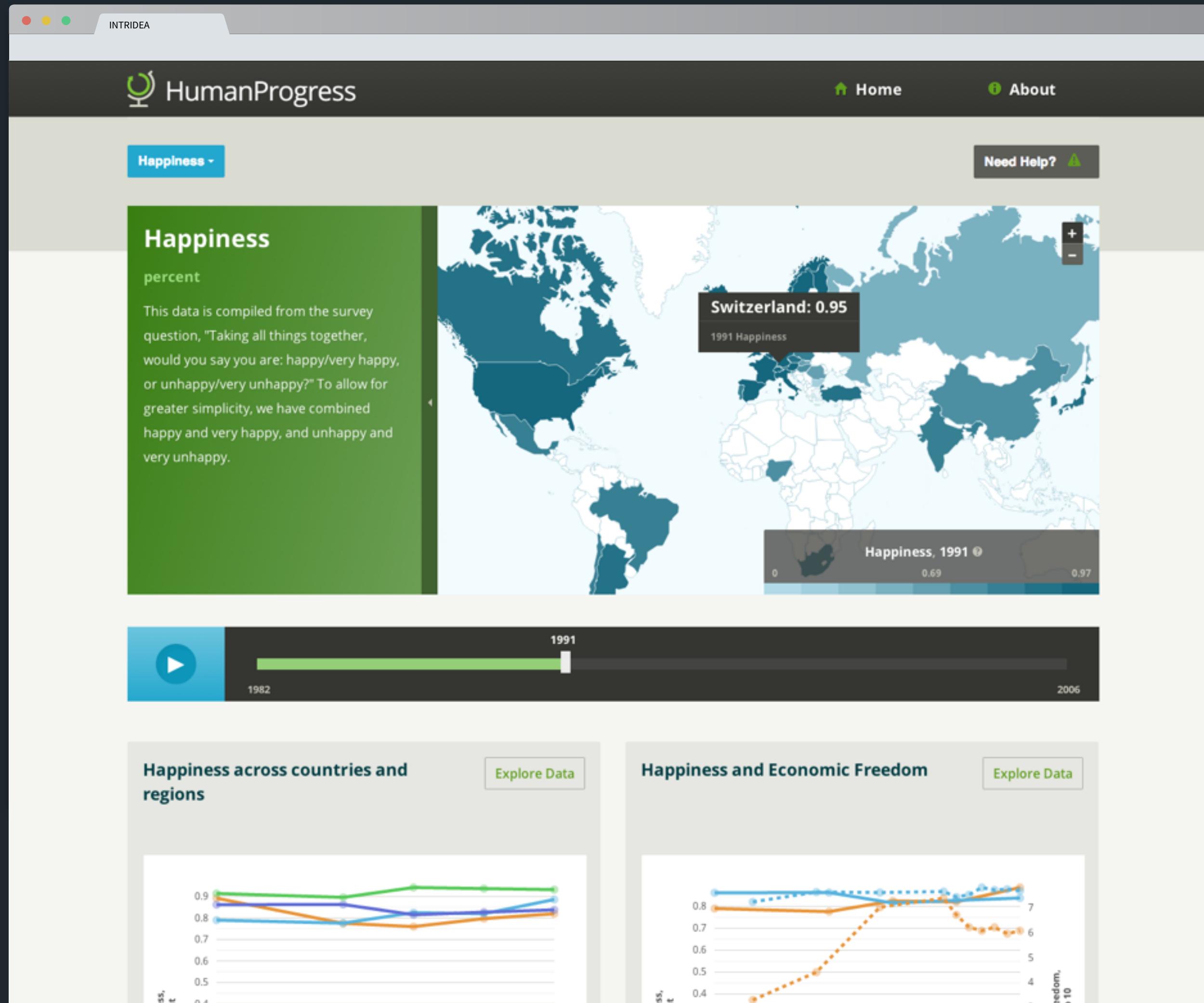






Human advancement to a higher stage

Human Progress seeks to document changes in living standards in the past and present while explaining and exploring the best ways to improve conditions for people.



INTRIDEA

Thank You

Gracias

Danke

Merci

谢谢

ありがとう



Tom Zeng

Director of Engineering

tom@intridea.com

@tomzeng

www.linkedin.com/in/tomzeng

