

# Interactive Lightning Components using the Reports & Dashboards API

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salesforce

# Sean Cuevo



6 years of Software Development

Experience in consulting, app development, and industry

Salesforce, JavaScript, Golang, Python



# GUILD ▶





# Guild is redefining higher education & the future of work for 64 million Americans

Our students-first approach is helping millions of working adults advance their careers through education.

# Agenda

- The troubles with navigating and working with data
- What options we have out of the box
- Configuration Driven Development
- Demo!
- Code samples to get your feet wet



# Data can be hard to navigate

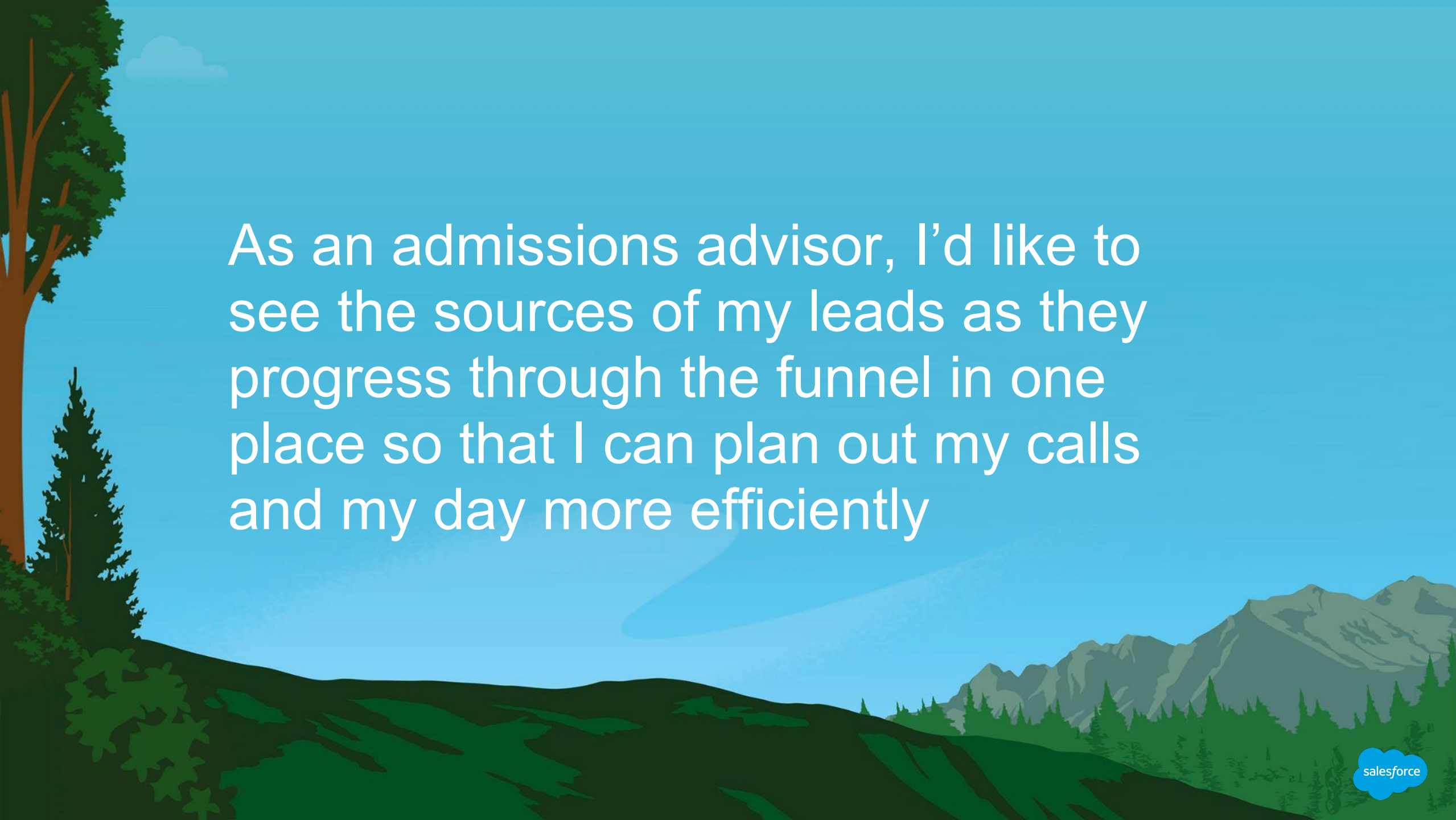
We have aggregate views to see what to work on

Detail pages to actually work on them

Consider every click as bad

Every page load is a chance to lose focus





As an admissions advisor, I'd like to see the sources of my leads as they progress through the funnel in one place so that I can plan out my calls and my day more efficiently

# Options to View Data in Aggregate

## List Views

- Very easy and quick to build
- Allows for inline editing
- Available as a Lightning Component (for most objects)
- Limited to one level of data (e.g. can't view child records)

## Reports

- Easy to build
- Allows for multiple levels of objects
- Uneditable
- Can't be used in Lightning Component (other than as a chart)

## Custom Visualforce/Lightning

- Super customizable, only limited to what your developer can do
- Expensive to maintain and deploy



# Configuration Driven Development

Process Builders that fire Apex

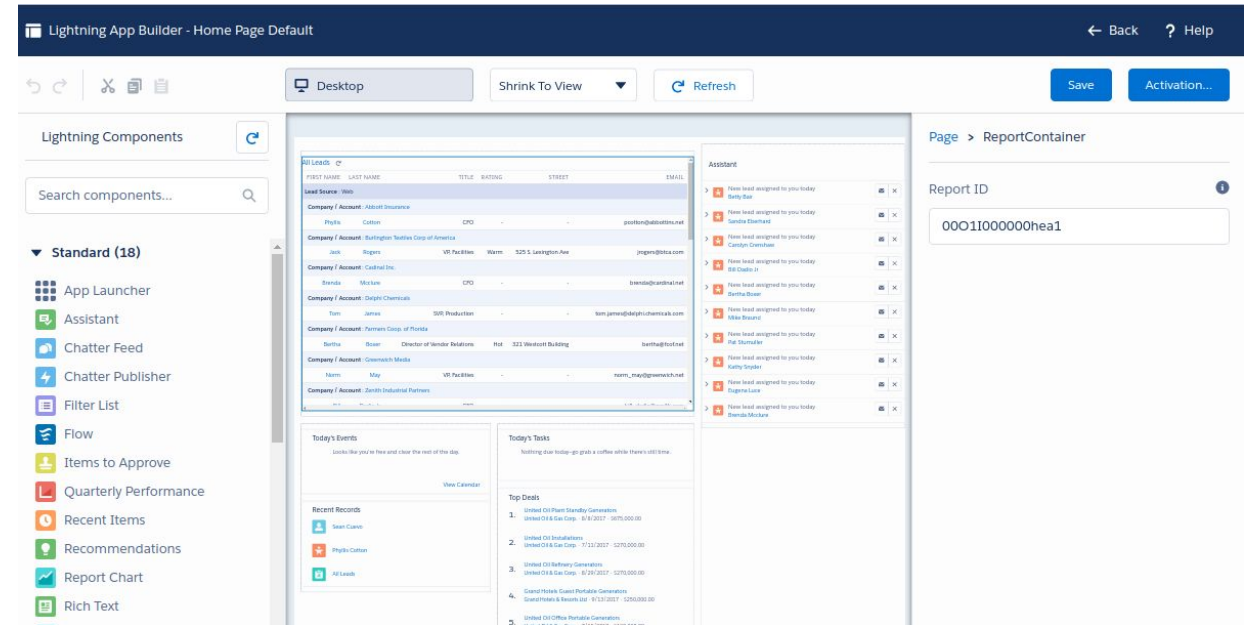
Leveraging the API to access configurable components

- Field sets
- Custom metadata types
- List views



# Lightning Components and Design Attributes

Lightning allows for greater configuration on the front end, enabling more customization and easier maintenance without having to touch as much code



# Lightning Component Design Attributes

Configurable values you can set when selecting components for a Lightning Application

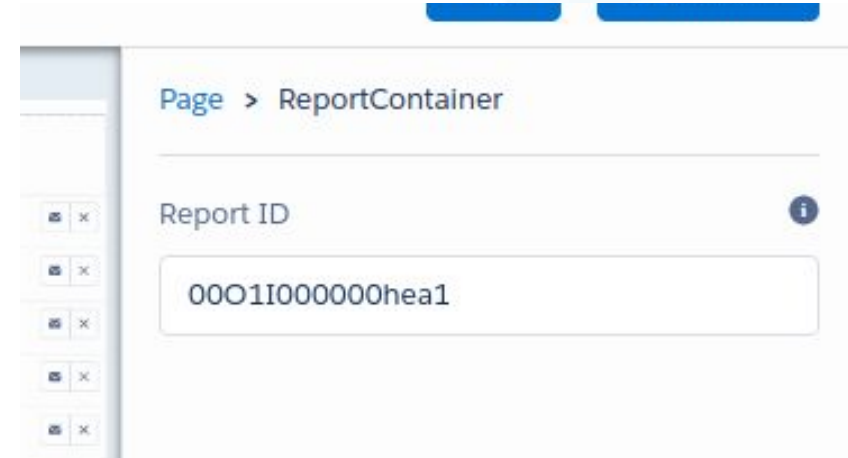
Accessible to Apex and JavaScript allowing for dynamic functionality

Examples

Report IDs

Field Set Names

Filter criteria



The screenshot shows a configuration window for a component named 'ReportContainer'. On the left is a sidebar with a list of components, each with a small icon and a close button. The main area has a breadcrumb 'Page > ReportContainer'. Below this is a label 'Report ID' with an information icon. A text input field contains the value '0001I000000hea1'.

```
<design:component>
  <design:attribute
    name="reportIdAttribute"
    label="Report ID"
    description="
      Use the ID of the report that you want to display.
      Make sure the user has access to it
    "
  />
</design:component>
```

# Interactive Reporting Components

Custom Lightning components backed with data from the Reports and Dashboards API

All Leads ↻

First Name	Last Name	Title	Rating	Street	Email
Lead Source : Web					
Company / Account : Abbott Insurance					
Phyllis	Cotton	CFO	-	-	pcotton@abbottins.net
Company / Account : Burlington Textiles Corp of America					
Jack	Rogers	VP, Facilities	Warm	525 S. Lexington Ave	jrogers@btca.com
Company / Account : Cadinal Inc.					
Brenda	Mcclure	CFO	-	-	brenda@cardinal.net
Company / Account : Delphi Chemicals					
Tom	James	SVP, Production	-	-	tom.james@delphi.chemicals.com
Company / Account : Farmers Coop. of Florida					
Bertha	Boxer	Director of Vendor Relations	Hot	321 Westcott Building	bertha@fcof.net
Company / Account : Greenwich Media					
Norm	May	VP, Facilities	-	-	norm_may@greenwich.net
Company / Account : Zenith Industrial Partners					



# Navigating the Reports and Dashboards API

- Build to the data provided
- Understand what you can and cannot control



# Reporting and Dashboards API JSON Structure

## Header Info

```
"reportExtendedMetadata": {  
  "groupingColumnInfo": {  
    "COMPANY": {  
      "name": "COMPANY",  
      "label": "Company / Account",  
      "groupingLevel": 1,  
      "dataType": "STRING_DATA"  
    },  
    "LEAD_SOURCE": {  
      "name": "LEAD_SOURCE",  
      "label": "Lead Source",  
      "groupingLevel": 0,  
      "dataType": "PICKLIST_DATA"  
    }  
  },  
  "detailColumnInfo": {  
    "EMAIL": {  
      "name": "EMAIL",  
      "label": "Email",  
      "dataType": "EMAIL_DATA"  
    }  
  }  
}
```

### groupingColumnInfo

- Summary labels
- In reverse order (starts at  $n$ , not 0)

### detailColumnInfo

- Column labels under grouping

# Reporting and Dashboards API JSON Structure

## Grouping Info

```
"hasDetailRows": true,  
"groupingsDown": {  
  "groupings": [  
    {  
      "value": "Web",  
      "label": "Web",  
      "key": "0",  
      "groupings": [  
        {  
          "value": "00Q1I0000",  
          "label": "Abbott T",  
          "key": "0_0",  
          "groupings": null  
        },  
        {  
          "value": "00Q1I0000",  
          "label": "Abbott T",  
          "key": "0_0",  
          "groupings": null  
        }  
      ]  
    }  
  ]  
}
```

### groupings

- The values of the field you grouped by in your report
- Recursive objects

### key

- Need this to find rows associated to this grouping

# Reporting and Dashboards API JSON Structure

## Row Info

```
factMap": {
  "1_0!T": {
    "key": "1_0!T",
    aggregates": [
      {
        "value": 1,
        "label": "1"
      }
    ]
  }
},
"rows": [
  {
    "dataCells": [
      {
        "value": "00Q1I000002D1z9UAC",
        "label": "Carolyn"
      },
      {
        "value": "00Q1I000002D1z9UAC",
        "label": "Crenshaw"
      },
      {
        "value": "VP, Technology",
        "label": "VP, Technology"
      }
    ]
  }
]
```

### factMap

- contains mapping of keys from groupings

### rows

- actual row data



# Planning our Components

## Report Container

Top level interface

Fetches report data and sets attributes in child components

## Report Grouping

Displays a Grouping in a summary report, including header labels

Holds the rows, but not the information for the rows themselves

## Grouping Data Cells

Displays actual data for each record and each cell

Should grow dynamically based on columns from report

The diagram illustrates the component structure of a Salesforce report. A red box represents the 'Report Container', which is the top-level interface. A green box represents the 'Report Grouping', which holds rows for a specific lead owner. A purple box represents the 'Grouping Data Cells', which display the actual data for each record.

FIRST NAME	LAST NAME	PHONE
Lead Owner : <a href="#">Sara Davenport</a>		
<a href="#">Buster</a>	<a href="#">Bluth</a>	123-567-8964
<a href="#">Gene</a>	<a href="#">Parmesan</a>	999-222-3333
Lead Owner : <a href="#">Sean Cuevo</a>		
<a href="#">Carolyn</a>	<a href="#">Crenshaw</a>	(251) 679-2200
<a href="#">David</a>	<a href="#">Monaco</a>	(033) 452-1299
<a href="#">Kristen</a>	<a href="#">Akin</a>	(434) 369-3100
<a href="#">Andy</a>	<a href="#">Young</a>	(620) 241-6200
<a href="#">Pat</a>	<a href="#">Stumuller</a>	33562156600
<a href="#">Norm</a>	<a href="#">May</a>	(419) 289-3558
<a href="#">Pamela</a>	<a href="#">Owenby</a>	(570) 326-1571
<a href="#">Shelly</a>	<a href="#">Brownell</a>	(408) 326-9000
<a href="#">Tom</a>	<a href="#">James</a>	(952) 346-3500



# DEMO

## Recap

Don't code if you don't have to

If you have to, build with a configurable mindset

Break down solution into modular parts



# Resources

<https://github.com/seanpat09/dreamforce17>

Install the package!

<https://login.salesforce.com/packaging/installPackage.apexp?p0=04t1I000001ChKn&isdtp=p1>

Lightning Design System

Reporting and Dashboards API





# Trailheads



Lightning  
App Builder



Lightning Design  
System



Lightning  
Component Basics



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Thank You

