



# Mura 7: JSON API & Mura ORM Via The Magic of DataTables

- By Grant Shepert

# What we'll cover

- JSON API
- MURA ORM
- MURA JS
- DataTables

# The problem we'll solve

- Data is only as useful as the ease in which it can be consumed
- Mura can easily fill up with a vast trove of data, core and custom, and we often need an easy method of displaying and/or interacting with specific views
- DataTables, via the Mura JSON API and MuraORM, gives us a useful, easy scaffolded starting point

# Tables suck

- Tabular data is deceptively hard for humans to process, frustrating to work with
- Large amounts of data magnify the problem
- Managing tabular data is equally problematic, as it often involves either custom one-off code or worse, a static manually edited table



# Regular HTML Table

Name	Position	Office	Age	Start date	Salary
Tiger Nixon	System Architect	Edinburgh	61	2011/04/25	\$320,800
Garrett Winters	Accountant	Tokyo	63	2011/07/25	\$170,750
Ashton Cox	Junior Technical Author	San Francisco	66	2009/01/12	\$86,000
Cedric Kelly	Senior Javascript Developer	Edinburgh	22	2012/03/29	\$433,060
Airi Satou	Accountant	Tokyo	33	2008/11/28	\$162,700
Brielle Williamson	Integration Specialist	New York	61	2012/12/02	\$372,000
Herrod Chandler	Sales Assistant	San Francisco	59	2012/08/06	\$137,500
Rhona Davidson	Integration Specialist	Tokyo	55	2010/10/14	\$327,900
Colleen Hurst	Javascript Developer	San Francisco	39	2009/09/15	\$205,500
Sonya Frost	Software Engineer	Edinburgh	23	2008/12/13	\$103,600
Jena Gaines	Office Manager	London	30	2008/12/19	\$90,560
Quinn Flynn	Support Lead	Edinburgh	22	2013/03/03	\$342,000
Charde Marshall	Regional Director	San Francisco	36	2008/10/16	\$470,600
Haley Kennedy	Senior Marketing Designer	London	43	2012/12/18	\$313,500
Tatyana Fitzpatrick	Regional Director	London	19	2010/03/17	\$385,750
Michael Silva	Marketing Designer	London	66	2012/11/27	\$198,500
Paul Byrd	Chief Financial Officer (CFO)	New York	64	2010/06/09	\$725,000
Gloria Little	Systems Administrator	New York	59	2009/04/10	\$237,500
Bradley Greer	Software Engineer	London	41	2012/10/13	\$132,000
Dai Rios	Personnel Lead	Edinburgh	35	2012/09/26	\$217,500
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Bradley Greer	Software Engineer	London	41	2012/10/13	\$132,000
Gloria Little	Systems Administrator	New York	59	2009/04/10	\$237,500
Paul Byrd	Chief Financial Officer (CFO)	New York	64	2010/06/09	\$725,000
Michael Silva	Marketing Designer	London	66	2012/11/27	\$198,500
Tatyana Fitzpatrick	Regional Director	London	19	2010/03/17	\$385,750

# What is DataTables?

- jQuery plugin that converts static html tables into a filtered, paged, sortable interface (not a grid, though)
- Can also access data remotely via ajax
- Combined with MURA JSON API, it can easily (well, sort of easily) access and display content

# DataTables Basic

```
$(document).ready(function() {  
    $('#myTable').DataTable();  
});
```

# Data Tables

Show  entries

Search:

Name	Position	Office	Age	Start date	Salary
Airi Satou	Accountant	Tokyo	33	2008/11/28	\$162,700
Angelica Ramos	Chief Executive Officer (CEO)	London	47	2009/10/09	\$1,200,000
Ashton Cox	Junior Technical Author	San Francisco	66	2009/01/12	\$86,000
Bradley Greer	Software Engineer	London	41	2012/10/13	\$132,000
Brenden Wagner	Software Engineer	San Francisco	28	2011/06/07	\$206,850
Brielle Williamson	Integration Specialist	New York	61	2012/12/02	\$372,000
Bruno Nash	Software Engineer	London	38	2011/05/03	\$163,500
Caesar Vance	Pre-Sales Support	New York	21	2011/12/12	\$106,450
Cara Stevens	Sales Assistant	New York	46	2011/12/06	\$145,600
Cedric Kelly	Senior Javascript Developer	Edinburgh	22	2012/03/29	\$433,060

Name	Position	Office	Age	Start date	Salary
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Showing 1 to 10 of 57 entries

Previous  2 3 4 5 6 Next

Showing 1 to 10 of 57 entries

Previous  2 3 4 5 6 Next

Name Position Office Age Start date Salary



# DataTables Options

- Easily themed via Bootstrap, Foundation jQuery, others
- Open Source, MIT license, good community & support
- Actions processed locally (client) or remotely (server)
- Source content via Ajax
- Latest version works off a JSON data model

# DataTables Headaches

- Isn't always easy, cooperative
- A bit of a “black box”
- Some archaic nomenclatures,
- Has a complicated mix of legacy and modern code/  
documentation that sometimes confuses development

# JSON API

- Mura Remote API, a way to access core functionality and content programmatically
- JSON, standardized notation for objects in javascript
- [http://site.com/index.cfm/\\_api/json/v1/default/](http://site.com/index.cfm/_api/json/v1/default/)
- built-in permissions
- access to feeds, iterators and more...

# MuraORM

- Object Relational Management, automates management of objects (cfc's)
- CFML (Hybernate) ORM is application oriented, complicated for extendible/pluggable architectures like MuraCMS
- MuraORM replicates much of this functionality, as well as providing direct integration to the core

# Mura JS

- Client requirements: jQuery good, or bad, or good if you are using a specific version otherwise it's bad!
- Vanilla environments, custom integrations
- Programatically interact with Mura core via JavaScript
- Doesn't necessarily replace jQuery, in fact they play together quite nicely

# DataTables & Mura

- Standard JSON API response, massaged client-side to provide DataTables-specific requirements and format
- Identify what Mura ORM object we want to interact with, what data items we want to display
- Create a Mura JS extension to do all the heavy lifting
- Mura 7 Display Object to put it all together

# JSON configuration

```
var content_datatable =
```

```
{  
  "object": "content",  
  "columns": [{  
    "name": "Title",  
    "data": "title",  
    "orderable": true,  
    "filter": true,  
    "fn": "fnFormatMyContent",  
    "handlebar": "<a href='mailto:{{email}}'>{{email}}</a>";  
  }]  
}
```

# Example: Display Object

- Let's take a look...



# In Conclusion

- JSON API provides everything you need to provide DataTables a valid feed
- DataTables can quickly make long lists of complex data easy to interact with
- Mixing in tools like Handlebars and Display Objects will produce some very quick wins

# Questions?