Go Ahead, Roll Your Own Framework

Ryan Stevens
@ryan_stevens
Director of Technology – UI Platform
Go Ahead, Roll Your Own Framework

Creating A Framework To Think About Frameworks

Ryan Stevens
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Director of Technology – UI Platform
My JavaScript Journey

More Complex

Years of Experience
My JavaScript Journey

Years of Experience

More Complex
My JavaScript Journey

```javascript
var name = 'Ryan';

$('btn').click(function() {
    $('label').html('Hello!' + name);
});
```
Learned First MVC Framework
Learned First MVC Framework

```javascript
var Namer = Backbone.Model.extend({
  sayGreeting : function(){
    return 'Hello ' + this.get('name');
  }
});

var toggle = new Backbone.View({
  model : new Namer({name : 'Ryan'}),
  render : function() {
    this.find('.label').html(this.model.sayGreeting());
  }
});
```
Progression of JavaScript Devs

Rolls First Custom Framework
Rolls First Custom Framework

More Complex

Years of Experience
Rolls First Custom Framework

```javascript
CustomThing.register({
  field : 'name',
  value : 'Ryan',
  allowUpdate : 'mostlyTrue',
  renderOnClick : 'almostAllTheTime',
  domElement : '.btn',
  behavior : 'apply.name.toSelf'
});
```
No Framework, Modular

Years of Experience

More Complex
No Framework, Modular

Years of Experience

More Complex
No Framework, Modular

```javascript
var updater = require('updater');
var sayName = require('echo')('Ryan');
var clicker = require('clicker');

clicker('.btn', updater(sayName));
```
Why All This Complexity?

More Complex

Years of Experience

LendingClub
Why All This Complexity?

More Complex

Years of Experience

LendingClub
Why All This Complexity?

```html
<div class='btn' onclick='sayName()'></div>
<script>
function sayName() {
    document.querySelector('.label').innerHTML='Hello Ryan';
}
</script>
```
Diverging, Not Converging
We've found 17,551 repository results

meteor/meteor
Updated an hour ago

bartaz/impress.js
It's a presentation framework based on the power of CSS3 transforms and transitions in modern browsers and inspired by the idea behind prezi.com.
Updated 12 days ago

hakimel/reveal.js
The HTML Presentation Framework
Updated 2 days ago

strongloop/express
Fast, unopinionated, minimalist web framework for node.
Current Landscape - Node

- 1,425 projects for node, frameworks
  - 3 projects with 10k+ stars
  - 17 projects with 1k - 10k stars
Current Landscape - Node

- 1,425 projects for node, frameworks
  - 3 projects with 10k+ stars
  - 17 projects with 1k - 10k stars

<table>
<thead>
<tr>
<th></th>
<th>Github Search</th>
<th>Registry Search</th>
</tr>
</thead>
<tbody>
<tr>
<td>Express</td>
<td>6,893</td>
<td>19,217</td>
</tr>
<tr>
<td>Meteor</td>
<td>11,170</td>
<td>6,009*</td>
</tr>
<tr>
<td>Sails</td>
<td>2,145</td>
<td>494</td>
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<tr>
<td>Hapi</td>
<td>1,566</td>
<td>718</td>
</tr>
<tr>
<td>Restify</td>
<td>381</td>
<td>349</td>
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</tbody>
</table>
Current Landscape - Frontend

- 64 TODO MVC apps
Current Landscape - Frontend

- 64 TODO MVC apps

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<tr>
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<tbody>
<tr>
<td>Angular</td>
<td>35,313</td>
<td>3,277</td>
</tr>
<tr>
<td>Backbone</td>
<td>12,339</td>
<td>2,386</td>
</tr>
<tr>
<td>React</td>
<td>11,438</td>
<td>3,643</td>
</tr>
<tr>
<td>Ember</td>
<td>8,627</td>
<td>1,806</td>
</tr>
<tr>
<td>Polymer</td>
<td>1,255</td>
<td>214</td>
</tr>
</tbody>
</table>
“Framework” - A Single Definition?
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- Application Platform
“Framework” - A Single Definition?

- Application Platform
- Application Frameworks
“Framework” - A Single Definition?

- Application Platform
- Application Frameworks
- Application Architectures
“Framework” - A Single Definition?

- Application Platform
- Application Frameworks
- Application Architectures
- Design Patterns
“Framework” - A Single Definition?

- Application Platform
- Application Frameworks
- Application Architectures
- Design Patterns
- Libraries
“Framework” - A Single Definition?

- Application Platform
- Application Frameworks
- Application Architectures
- Design Patterns
- Libraries
- Modules
Frontend Progression
Frontend Progression

- **Framework**
  - asp.net
  - YUI

- **Library**
  - prototype
  - jQuery
  - ExtJS 2.0
  - SproutCore 1.0
  - Ember.js

Timeline:
- 2005
- 2010
- 2015
<table>
<thead>
<tr>
<th>Library</th>
<th>Description</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>$script.js</td>
<td>An asynchronous JavaScript loader and dependency manager with an astonishingly impressive lightweight footprint.</td>
<td>0.8k</td>
</tr>
<tr>
<td>Zepto</td>
<td>jQuery API-compatible micro-framework for mobile WebKit browsers, with DOM manipulation, Ajax and events.</td>
<td>4.2k</td>
</tr>
<tr>
<td>Bonzo</td>
<td>A simple, to the point, hassle-free, small, library agnostic, extensible DOM utility.</td>
<td>1.4k</td>
</tr>
<tr>
<td>Underscore</td>
<td>A utility-belt that provides functional programming support that you would expect in Ruby.</td>
<td>3k</td>
</tr>
<tr>
<td>Qwery</td>
<td>Qwery is a 1k blazing fast query selector engine allowing you to select elements with CSS1 &amp; CSS2 selectors.</td>
<td>1k</td>
</tr>
<tr>
<td>Émile</td>
<td>Émile is a no-frills stand-alone CSS animation JavaScript framework, named after Émile Cohl, early animator.</td>
<td>0.9k</td>
</tr>
<tr>
<td>Micro-Templating</td>
<td>Templating function that is fast, caches quickly, and is easy to use.</td>
<td>0.2k</td>
</tr>
</tbody>
</table>
Frontend Progression

- YUI
- asp.net
- AngularJS
- ExtJS
- Ember.js
- Marionette
- backbone
- SproutCore 2.0
- jQuery
- prototype
- Framework
- Library
- Module

Timeline:
- 2005
- 2010
- 2015

LendingClub
Frontend Progression

- Frameworks:
  - asp.net
  - YUI
  - AngularJS
  - ExtJS
  - Ember.js
  - Marionette
  - backbone
  - React.js
  - Flux

- Libraries:
  - prototype
  - jQuery
  - SproutCore

- Modules:
  - LendingClub

Timeline:
- 2005
- 2010
- 2015
Frontend Progression

- YUI
- asp.net
- prototype
- jQuery
- Ember.js
- Marionette
- React.js
- Flux

Framework
- AngularJS
- ExtJS 2.0

Library
- SproutCore 1.0

Module
- 2005
- 2010
- 2015
Frontend Progression

- Frameworks: asp.net, AngularJS, Ember.js, React.js
- Libraries: YUI, jQuery, Backbone, Marionette
- Modules: SproutCore 1.0, ExtJS 2.0

Timeline:
- 2005: YUI, asp.net, jQuery
- 2010: AngularJS, ExtJS 2.0, Backbone, SproutCore 1.0
- 2015: Ember.js, React.js, Flux, Marionette

Source: LendingClub
ephemeral
/əˈfem(ə)ral/

adjective

1. lasting for a very short time.
   "fashions are ephemeral"
   synonyms: transitory, transient, fleeting, passing, short-lived, momentary, brief, short;  More
Possible Conclusions
Possible Conclusions

- Maybe it doesn’t matter
Possible Conclusions

- Maybe it doesn’t matter
- Seeking the right decision is exhausting
Possible Conclusions

- Maybe it doesn’t matter
- Seeking the right decision is exhausting
- The only constant in our industry is **CHANGE**
Why Create Your Own Framework?
“Technical Reasons”
“Technical Reasons”

- Better architectures
“Technical Reasons”

- Better architectures
- Fixing wrong architectures
“Technical Reasons”

- Better architectures
- Fixing wrong architectures
- Too many features
“Technical Reasons”

- Better architectures
- Fixing wrong architectures
- Too many features
- Missing features
“Technical Reasons”

- Better architectures
- Fixing wrong architectures
- Too many features
- Missing features
- Improving upon others solid design patterns
Developer Control

- Domain specific design patterns
Developer Control

- Domain specific design patterns
- Hardening team conventions
Developer Control

- Domain specific design patterns
- Hardening team conventions
- Simplify framework API’s overtime
var foo = require('foo');
module.exports = function registerModule(express, config) {
    return { name: foo.getName(config) };
};
var foo = require('foo');
module.exports = function registerModule(express, config) {
  return { name: foo.getName(config) }
};
Idea - Stuff Config into GLOBAL

```javascript
if (!GLOBAL._config) {
    var config = require('config');
    GLOBAL._config = config;
}

module.exports = GLOBAL._config;
```
var foo = require('foo');
module.exports = function registerModule(express) {
    return { name: foo.getName() };  
  
};
```javascript
var config = require('new-config');
module.exports = config.get('name');
```
...because I wanted to
Developer Joy

“Choose a job you love, and you will never have to work a day in your life.”

- Confucius
...because you can
Composable Modules

Framework
- asp.net
- YUI
- React.js
- AngularJS
- Backbone
- Ember.js
- Flux
- Marionette
- jQuery

Library
- prototype
- jQuery

Module
- SproutCore 2.0

Timeline:
- 2005
- 2010
- 2015

Composable Modules by LendingClub
Composable Modules

Zephyr 1.0.0
Composable Modules

Zephyr 1.0.0

Zephyr 1.1.0
Composable Modules

Zephyr 1.0.0

Zephyr 1.1.0
Embrace Ephemeral Code
Embrace Ephemeral Code

- Adapt and **change** your framework as much as your product does
Embrace Ephemeral Code

- Adapt and **change** your framework as much as your product does
- **How** software is built is constantly changing, assume your framework will too
Embrace Ephemeral Code

- Adapt and **change** your framework as much as your product does
- **How** software is built is constantly changing, assume your framework will too
- **Modularize well** to preserve your investment while rearranging the pieces into a new framework
Embrace Ephemeral Code

Zephyr 1.0.0

Zephyr 1.1.0

Zephyr 2.0.0
Embrace Ephemeral Code

Zephyr 1.0.0

Zephyr 1.1.0

Zephyr 2.0.0
Embrace Ephemeral Code

Zephyr 1.0.0

Zephyr 1.1.0

Zephyr 2.0.0
Where Do I Start?
Assess Where Your Team Is
Understand Teams Expertise
Understand Teams Expertise

- HTML
- CSS
- JavaScript
- Frameworks
- Modules
- UI Widgets
- CSS
- JavaScript
Divide and conquer across people > Separations of concerns
Understand Team’s Journey
Understand Team’s Journey
Team Growth

More Complex vs. Years of Experience
New JavaScript Programmers

Flexible

Simple

Complex

Rigid

LendingClub
Expert JavaScript Programmers

Simple  Flexible  Complex

Rigid

jshttp

Angular
Team Growth

More Complex

Years of Experience

LendingClub
Team Growth

More Complex

Years of Experience

LendingClub
It’s an exercise in team ownership
Where Are You In Your JavaScript Journey?
Where Are You && Your Team In Your JavaScript Journey?
Go Ahead, Roll Your Own Framework

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Thank You

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Q & A

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Director of Technology – UI Platform
Q & A

Disagreements Welcome

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