SPA Basics:
Separating the Ravioli

John Papa

pluralsight
hardcore developer training

Agenda

- Starting the SPA
- Creating JavaScript Modules
- Managing Modules as the SPA Grows
- Solving Modularity with Require.js

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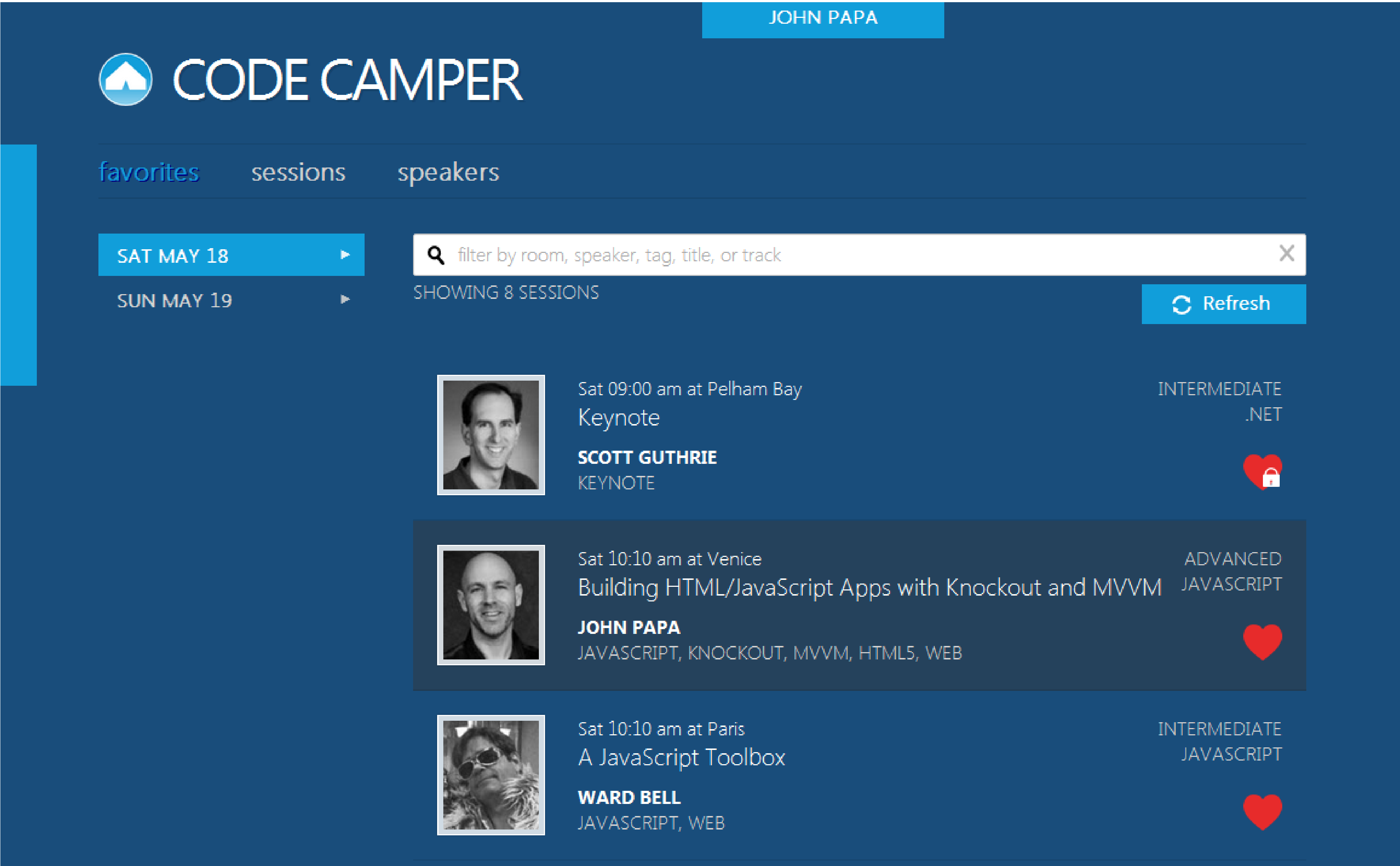
How Do We Get Here?



JOHN PAPA

CODE CAMPER

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SHOWING 8 SESSIONS

Refresh

Sat 09:00 am at Pelham Bay
Keynote
SCOTT GUTHRIE
KEYNOTE
INTERMEDIATE
.NET

Sat 10:10 am at Venice
Building HTML/JavaScript Apps with Knockout and MVVM
JOHN PAPA
JAVASCRIPT, KNOCKOUT, MVVM, HTML5, WEB
ADVANCED
JAVASCRIPT

Sat 10:10 am at Paris
A JavaScript Toolbox
WARD BELL
JAVASCRIPT, WEB
INTERMEDIATE
JAVASCRIPT

Avoiding Function Spaghetti Code

Who's Responsible For What?

Global Scope Pollution

Low Code Re-Use

Ravioli Code

Separation of Concerns

Easier to Maintain and Understand

Code Re-Use

Revealing Module Pattern

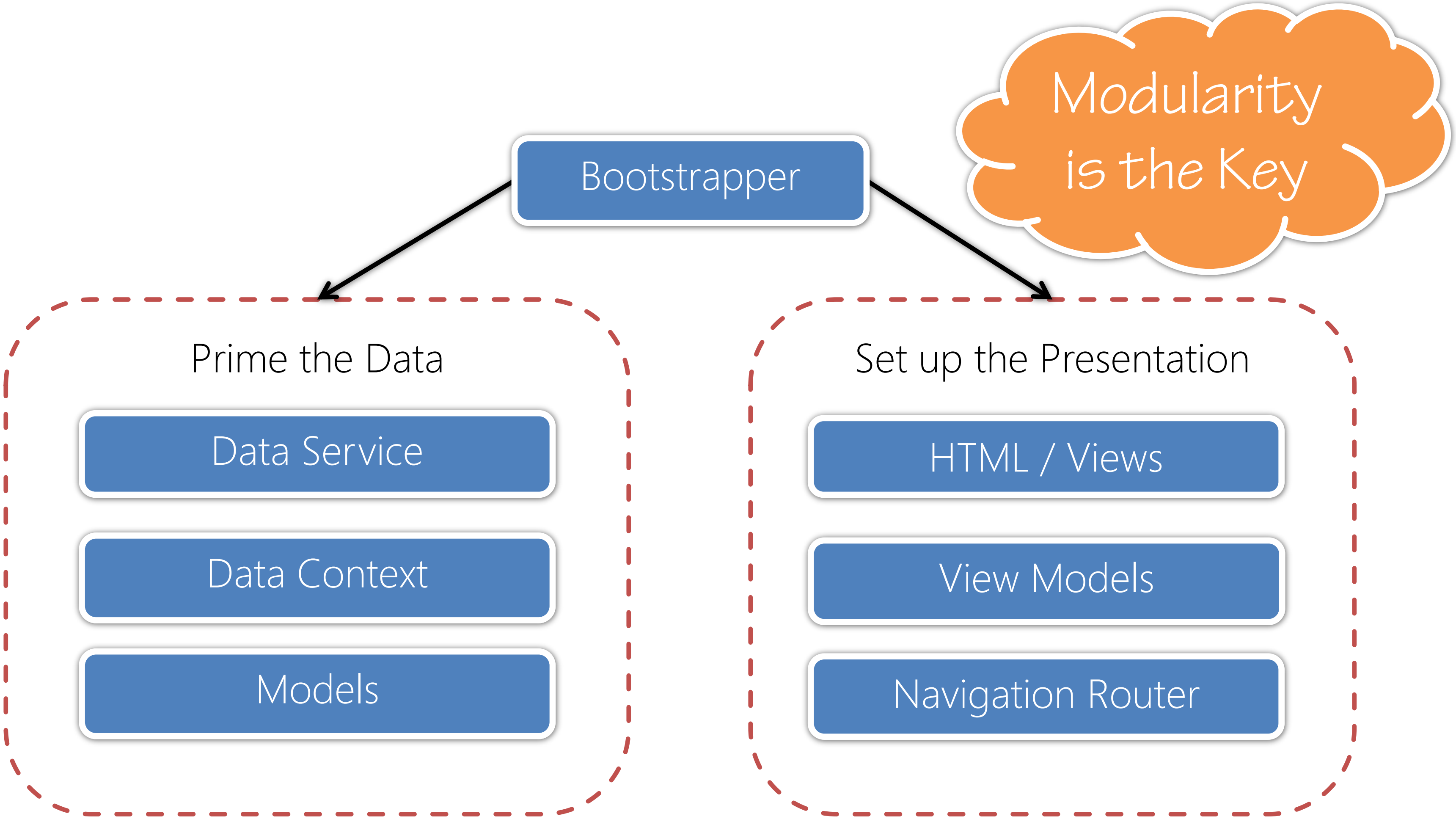
```
var dataservice = (function($) {
    var baseUrl = 'http://johnpapa.net/',
        getPerson = function(id, callback) {
            var url = baseUrl + 'person/' + id;
            $.getJSON(url, function(data) {
                callback(data);
            });
        };

    return {
        getPerson: getPerson
    };
})($);
```

Internal

Accessible as dataservice.getPerson()

Depends on jQuery

Starting the SPA - Birds Eye View



Modularity is the Key

Bootstrapper

Prime the Data

- Data Service
- Data Context
- Models

Set up the Presentation

- HTML / Views
- View Models
- Navigation Router

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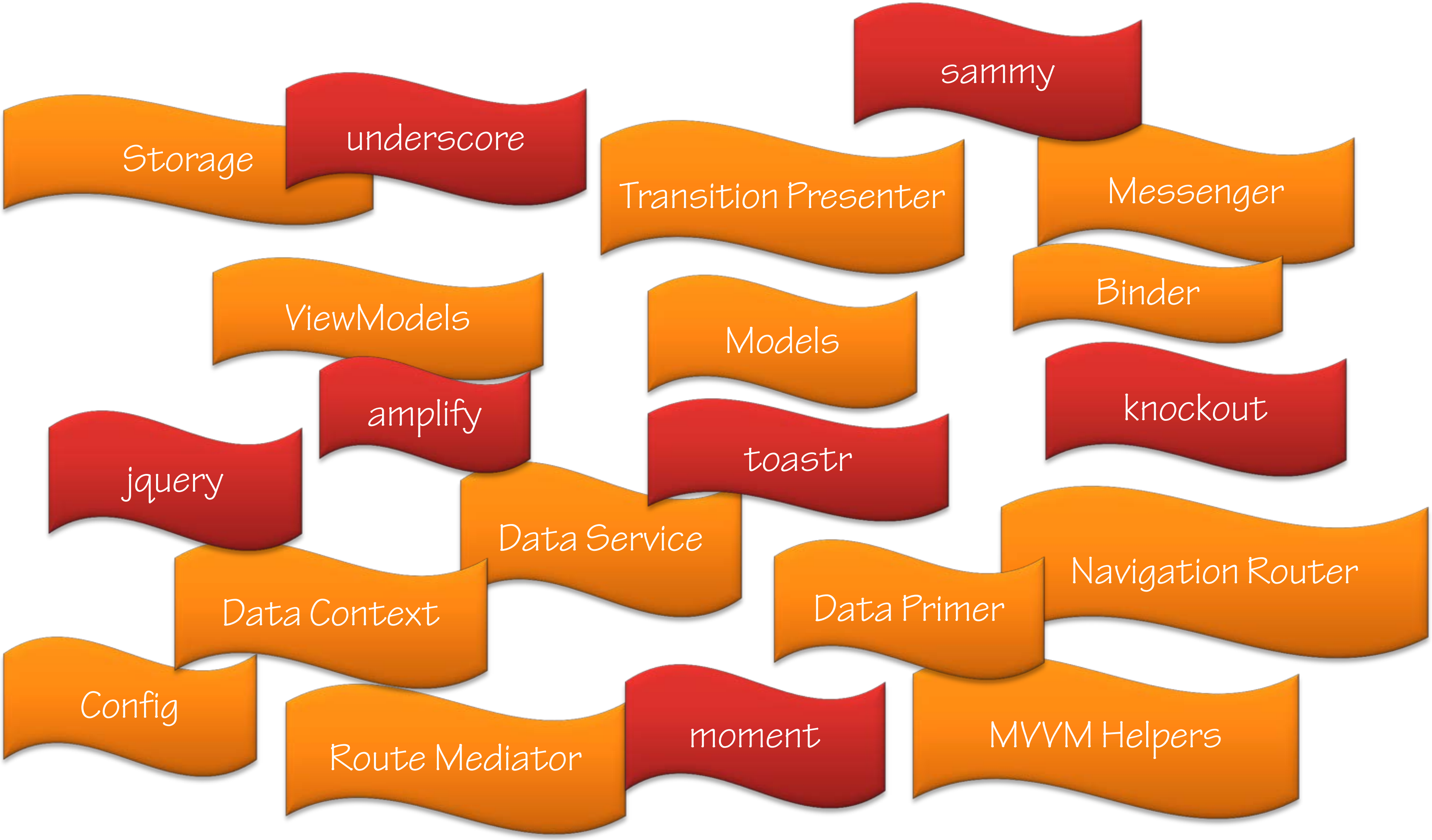
Keeping Track of Modules



sammy

Storage

underscore

Transition Presenter

Messenger

Binder

ViewModels

Models

knockout

amplify

jquery

toastr

Data Service

Navigation Router

Data Context

Data Primer

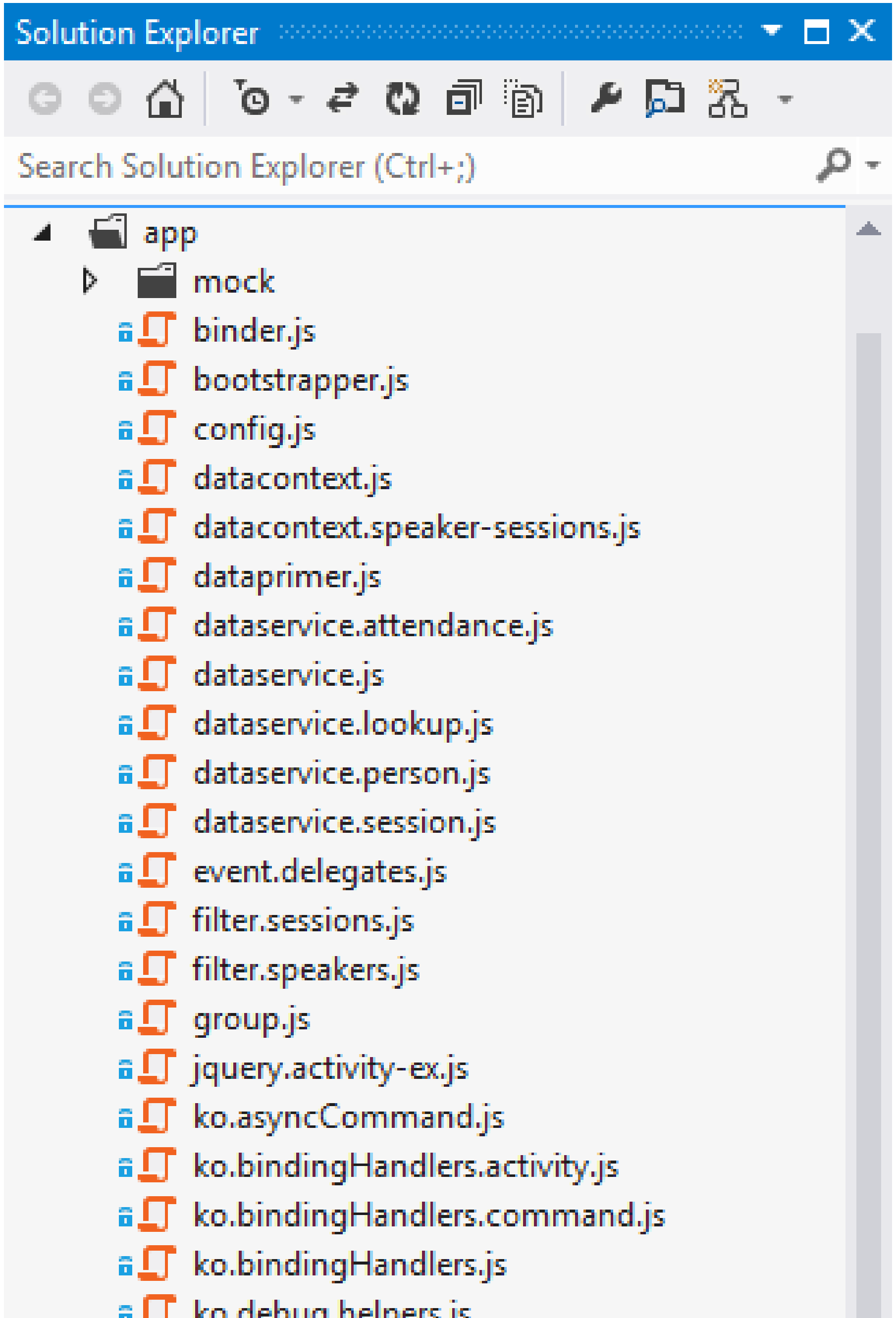
Config

moment

Route Mediator

MVVM Helpers

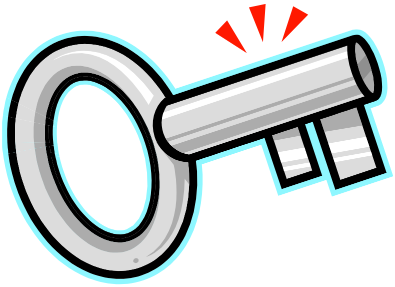
Many Small Modules with Distinct Roles



- app
  - mock
  - binder.js
  - bootstrapper.js
  - config.js
  - datacontext.js
  - datacontext.speaker-sessions.js
  - dataprimer.js
  - dataservice.attendance.js
  - dataservice.js
  - dataservice.lookup.js
  - dataservice.person.js
  - dataservice.session.js
  - event.delegates.js
  - filter.sessions.js
  - filter.speakers.js
  - group.js
  - jquery.activity-ex.js
  - ko.asyncCommand.js
  - ko.bindingHandlers.activity.js
  - ko.bindingHandlers.command.js
  - ko.bindingHandlers.js
  - ko.debug.helpers.js

How do we Manage Dependencies and Order?

Keys to Modularity



Separation of Concerns

Define the Dependencies

Load Scripts in the Proper Sequence

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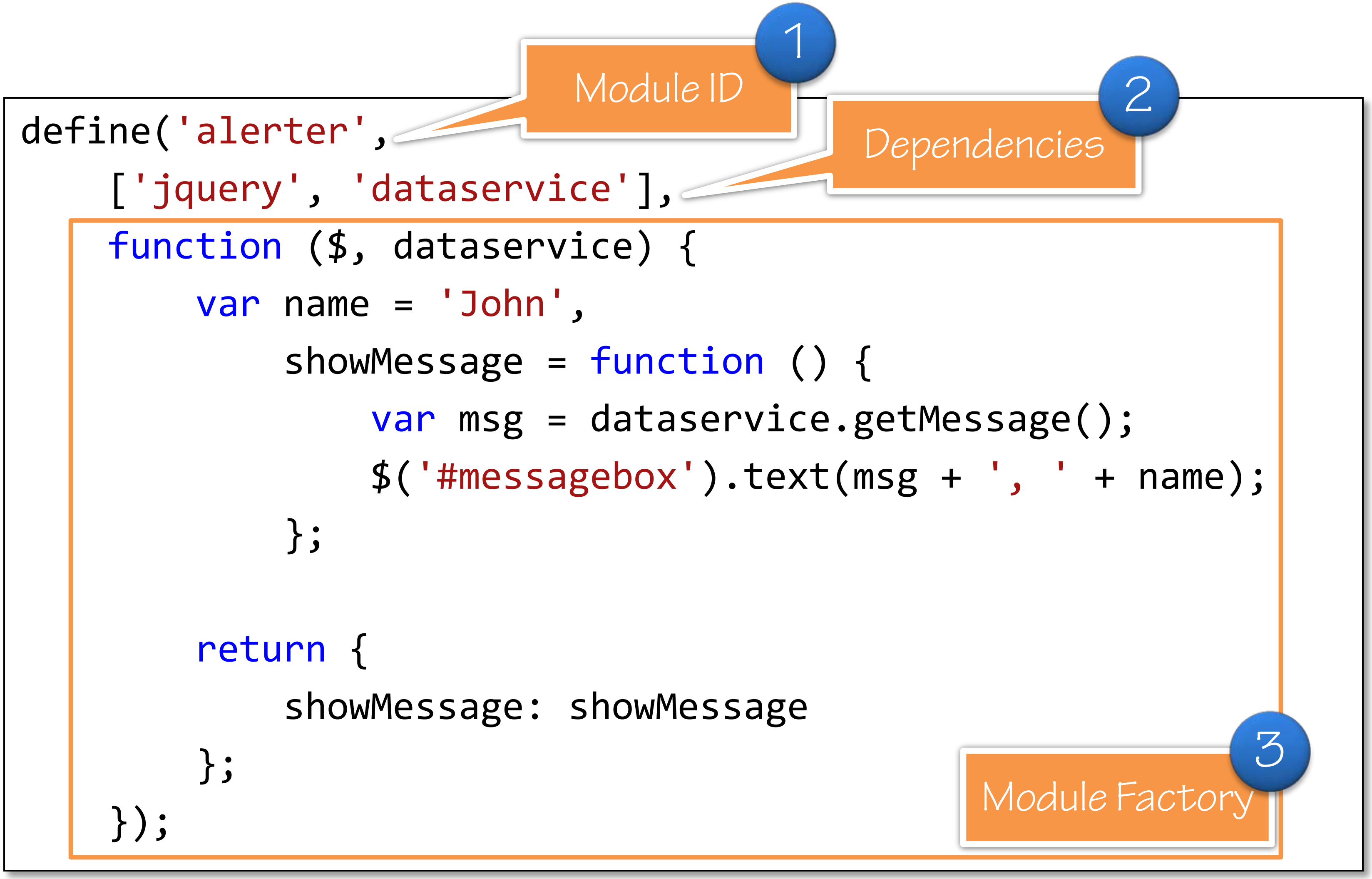
RequireJS

- ✓ Separation of Concerns
- ✓ Define the Dependencies
- ✓ Load Scripts in the Proper Sequence

http://requirejs.org/

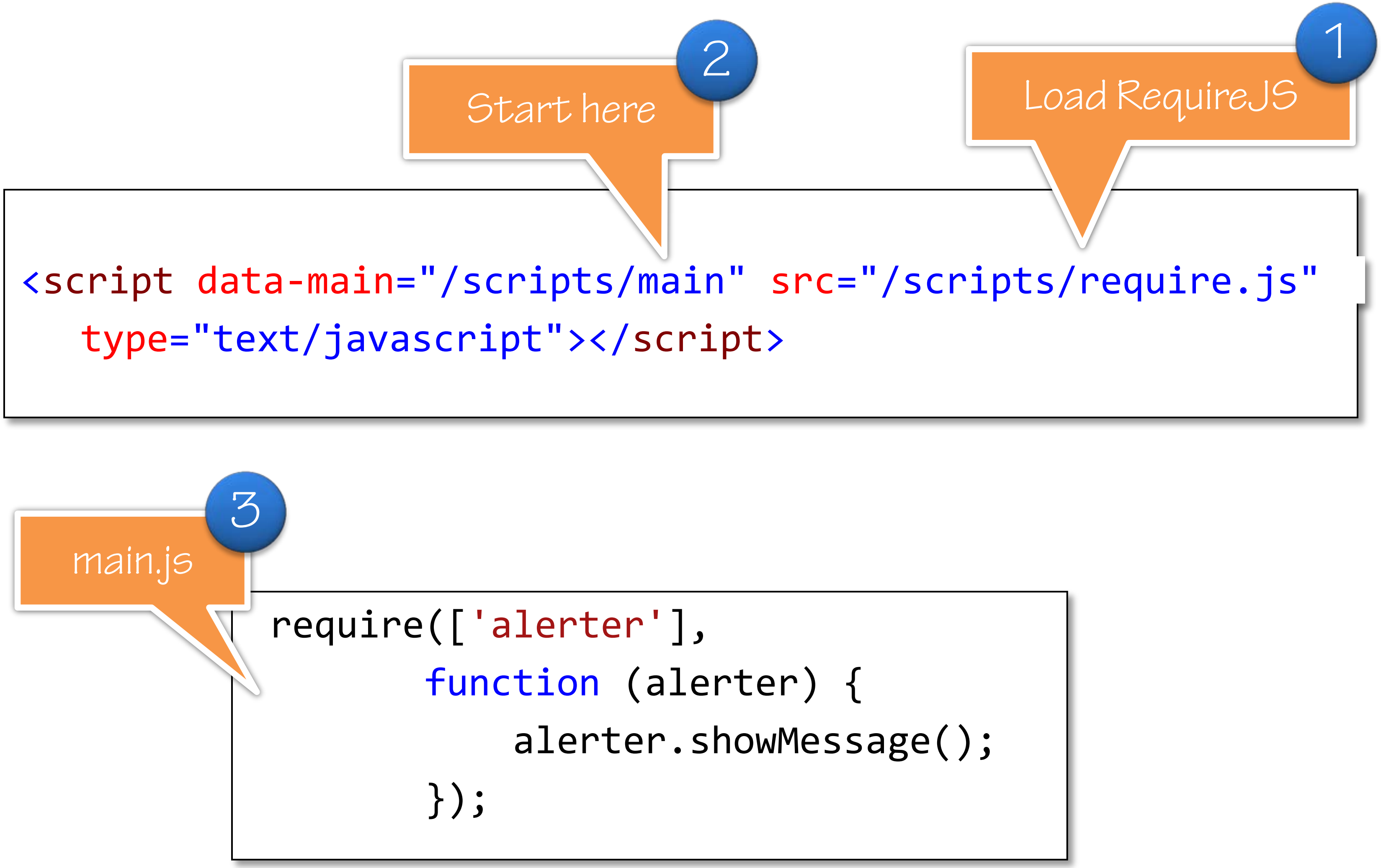
Defining a Module – 3 Steps



```
define('alerter',
    ['jquery', 'dataservice'],
    function ($, dataservice) {
        var name = 'John',
            showMessage = function () {
                var msg = dataservice.getMessage();
                $('#messagebox').text(msg + ', ' + name);
            };

        return {
            showMessage: showMessage
        };
});
```

Kicking Off the SPA with RequireJS



1 Load RequireJS

2 Start here

```
<script data-main="/scripts/main" src="/scripts/require.js"
   type="text/javascript"></script>
```

3 main.js

```
require(['alerter'],
        function (alerter) {
            alerter.showMessage();
        });
```

Summary

- **Modularity**
  - Promotes code reuse and maintainability
- **Creating JavaScript Modules**
- **Bootstrapping the SPA**
- **Managing Modularity**
  - Script Load Sequence
  - Dependency Resolution
- **Require.js**
  - Demo: http://jpapa.me/requirejsdemo
  - Library: http://requirejs.org/