Dependency Management with RequireJS

http://requirejs.org/

Who ?

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What are we talkin' about?

- RequireJS.org : ~~Script~~ Module Loader

- Browsers **&& Node && Rhino**

- Dependencies

- Global Pollution

- Optimization

Context

Libs of choice

jQuery

Backbone

Context

Libs of choice

Plugins

jQuery

Backbone

Context

Libs of choice

jQuery

Backbone

Plugins

Your Code

Bad Context

Libs of choice

Plugins

Your Code

jQuery

Backbone

Good Context

Libs of choice

jQuery

Backbone

Plugins

Your Code

Dependencies

Libs of choice   Plugins   Your Code

jQuery

Backbone

Solution ?

```
<script src="jquery.min.js"></script>
<script src="backbone.min.js"></script>
...
<script src="jquery.plugin.js"></script>
<script src="jquery.plugin.js"></script>
...
<script src="my-code.js"></script>
<script src="my-code.js"></script>
<script src="my-code.js"></script>
<script src="my-code.js"></script>
<script src="my-code.js"></script>
...
```
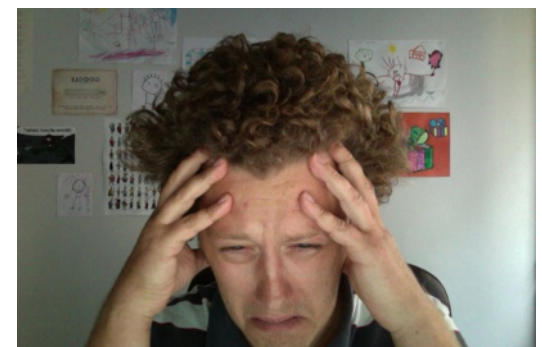
Async Solution ?

```
<script src="LAB.js"></script>
<script type="text/javascript">
$LAB
    .script('jquery.min.js')
    .script('backbone.min.js')
    ...
    .script('jquery.plugin.js')
    .script('jquery.plugin.js')
    .script('jquery.plugin.js')
    ...
    .script('my-code.js')
    .script('my-code.js')
    .script('my-code.js');
</script>
```

Namespace ?

```
var MyNamespace = {};

MyNamespace.Config = {…};

MyNamespace.Product = function() {…};

MyNamespace.Video = function() {…};

MyNamespace.Audio = function() {…};

MyNamespace.Mail = function() {…};
```

AMD

Not your CPU...

Asynchronous **M**odule **D**efinition

https://github.com/amdjs/amdjs-api/wiki/AMD

define()

API

```
define(id?, dependencies?, factory);
```

Usage

```
define('My-Module', ['Another-Module'],
    function(AnotherModule) {
      // Do Something

    }
);
```

Example

```javascript
// App/Conf.js
define(function() {
    return {
        path: '...',
        debug: true,
        ...
    };
});
```

Example

```
// App/Conf.js
define(function() {
    return {
        path: '...',
        debug: true,
        ...
    };
});
```

Example

```javascript
// App/Controller/Product.js
define(['App/Conf', 'App/Models/Product', 'App/Views/Product'],
function(Conf, Model, View) {

    // Locale & Private Vars !!!
    var myPrivateVar = {...};

    // API
    return {
        show: function(productId) {

            console.log(Conf.path);

            var productView = new View();
            productView.setModel(Model.getById(productId));

            return productView.render();
        },
        ...
    };
});
```

Example

```javascript
// App/Controller/Product.js
define(['App/Conf', 'App/Models/Product', 'App/Views/Product'],
function(Conf, Model, View) {

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            return productView.render();
        },
        ...
    };
});
```

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      show: function(productId) {

          console.log(Conf.path);

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      ...
    };
});
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    // API
    return {
      show: function(productId) {

          console.log(Conf.path);

          var productView = new View();
          productView.setModel(Model.getById(productId));

          return productView.render();
      },
      ...
    };
});
```

Example

```javascript
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define(['App/Conf', 'App/Models/Product', 'App/Views/Product'],
function(Conf, Model, View) {

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    // API
    return {
        show: function(productId) {

            console.log(Conf.path);

            var productView = new View();
            productView.setModel(Model.getById(productId));

            return productView.render();
        },
        ...
    };
});
```

Scope vs. Global Pollution

```javascript
// App/Controller/Product.js
define(['App/Conf', 'App/Models/Product', 'App/Views/Product'],
function(Conf, Model, View) {

    // Locale & Private Vars !!!
    var myPrivateVar = {...};

    // API
    return {
      show: function(productId) {

          console.log(Conf.path);

          var productView = new View();
          productView.setModel(Model.getById(productId));

          return productView.render();
      },
...
    };
});
```

Plugins Example

```javascript
// App/View/Product.js
define([
    'order!FirstModule',
    'order!SecondModule',
    'i18n!fr/some-i18n-bundle',
    'text!some-text-file.txt',
    'cs!some-coffee',
    'tpl!App/View/Product.tpl'
], function(First, Second, bundle, text, coffee, productTpl) {

    // API
    return Backbone.View.extend({

        render: function() {
            return productTpl({
                model: this.model.toJSON()
            });
        }
    });
});
```

Order Plugin

```
// App/View/Product.js
define([
    'order!FirstModule',           // Keep execution order
    'order!SecondModule',          // requirejs.org/docs/api.html#order
    'i18n!fr/some-i18n-bundle',
    'text!some-text-file.txt',
    'cs!some-coffee',
    'tpl!App/View/Product.tpl'
], function(First, Second, bundle, text, coffee, productTpl) {

    // API
    return Backbone.View.extend({

        render: function() {
            return productTpl({
                model: this.model.toJSON()
            });
        }
    });
});
```

i18n Plugin

```
// App/View/Product.js
define([
    'order!FirstModule',
    'order!SecondModule',
    'i18n!fr/some-i18n-bundle',      // Load i18n bundle
    'text!some-text-file.txt',       // requirejs.org/docs/api.html#i18n
    'cs!some-coffee',
    'tpl!App/View/Product.tpl'
], function(First, Second, bundle, text, coffee, productTpl) {

    // API
    return Backbone.View.extend({

        render: function() {
            return productTpl({
                model: this.model.toJSON()
            });
        }
    });
});
```

Text Plugin

```
// App/View/Product.js
define([
    'order!FirstModule',
    'order!SecondModule',
    'i18n!fr/some-i18n-bundle',
    'text!some-text-file.txt',        // Guess what ?
    'cs!some-coffee',                 // requirejs.org/docs/api.html#text
    'tpl!App/View/Product.tpl'
], function(First, Second, bundle, text, coffee, productTpl) {

    // API
    return Backbone.View.extend({

        render: function() {
            return productTpl({
                model: this.model.toJSON()
            });
        }
    });
});
```

CoffeeScript Plugin

```
// App/View/Product.js
define([
    'order!FirstModule',
    'order!SecondModule',
    'i18n!fr/some-i18n-bundle',
    'text!some-text-file.txt',
    'cs!some-coffee',                  // returns compiled CoffeeScript !
    'tpl!App/View/Product.tpl'         // github.com/jrburke/require-cs
], function(First, Second, bundle, text, coffee, productTpl) {

    // API
    return Backbone.View.extend({

        render: function() {
            return productTpl({
                model: this.model.toJSON()
            });
        }
    });
});
```
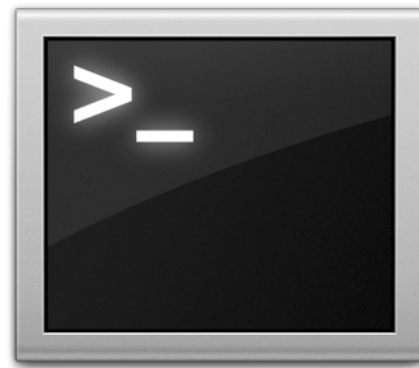
Template Plugin

```
// App/View/Product.js
define([
    'order!FirstModule',
    'order!SecondModule',
    'i18n!fr/some-i18n-bundle',
    'text!some-text-file.txt',        // My Favorite Plugin ! (mine...)
    'cs!some-coffee',                 // Returns a compiled template !
    'tpl!App/View/Product.tpl'        // github.com/ZeeAgency/requirejs-tpl
], function(First, Second, bundle, text, coffee, productTpl) {

    // API
    return Backbone.View.extend({

        render: function() {
            return productTpl({
                model: this.model.toJSON()
            });
        }
    });
});
```

Optimization
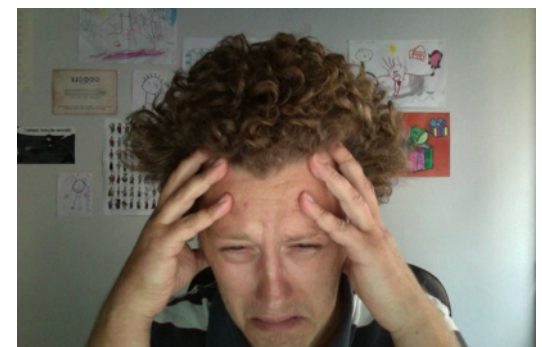
```
node r.js -o name=bootstrap out=built.js baseUrl=js
```

http://requirejs.org/docs/optimization.html

Remember ?

Optimized !

Libs of choice   Ready for Production

jQuery

Optimized !

Libs of choice   Ready for Production

jQuery

CoffeeScript ?

Optimized !

Libs of choice

jQuery

Ready for Production

CoffeeScript ?
Templates ?

Optimized !

Libs of choice

jQuery

Ready for Production

CoffeeScript ?
Templates ?
Compiled

so browser doesn't need to...

Optimized !

Libs of choice   Ready for Production

jQuery

CoffeeScript ?
Templates ?
Compiled & **Minified**

Thx !