UNSLUCK YOUR BACKBONE
WHO AM I
JUST SUPER QUICK
@ammeep

AINT HE HANDSOME?
WE HAVE
EVOLVED
FROM STATIC HTML
jQuery soup
structure
we need
then came the revolution
MODEL
VIEW
CONTROLLER
MODEL
VIEW
VIEW
VIEW
MODEL
DATA CONCERNS
SEPARATE
VIEW CONCERNS
WHAT'S THE DIFFERENCE?
FRAMEWORKS:

are generally prescriptive and sometimes restrictive.
Libraries are generally focused and specific.
according to GitHub

**Frameworks**
- angular (8,449)
- meteor (8,144)
- ember (6,610)
- batman (1,321)

**Libraries**
- backbone (13,619)
- knockout (3,532)
- spine (2,336)
- canJS (569)

Star count
backbone.js is ridiculously unopinionated
Models data & associated functions
Views
Events
Router
Models  data & associated functions
Views  ui backed by a model
Events
Router
Models  data & associated functions
Views   ui backed by a model
Events  bind & trigger custom events
Router
Models  data & associated functions
Views    ui backed by a model
Events   bind & trigger custom events
Router   linkable URLs
1st refactoring step
<div id="animal">
<h2 class="name">The Grinch.<h2>
<h2 class="desc">meanest grinch of all.</h2>
</div>

function sayHello()
{
    var name = $('\.name').text();
    var desc = $('\.desc').text();
    return 'Hello I’m ' + name + 'The ' + desc;
}

sayHello();
```javascript
var Animal = Backbone.Model.extend({
    sayHello: function () {
        var name = this.get('name');
        return 'Hello, I am ' + name;
    }
});

var animal = new Animal({name: 'cat'});
animal.sayHello();
```

refactored to
backbone.js
Backbone Views

```javascript
var MyView = Backbone.View.extend({

    template:_.template($('#animal_template').html()),

    initialize: function() {
        this.listenTo(this.model, "change", this.render);
    }

    render: function() {
        $(this.el).html(this.template(this.model.toJSON()));
        return this
    }

});
```
Backbone keeps it small
Backbone keeps it focused
Backbone keeps it encapsulated
LEGO BACKBONE
Strength
No Instructions
Weakness
No Instructions
all it gives you is a base to help you into the world of well structured javascript
one thousand models
one thousand views
impossible to extend

what the hell
is going on
wait...

WHAT

shouldn’t mv☆prevent the soup?
my stars are

Presentation Patterns

ONLY
mv ⭐ can’t save us now
unsuck
MY BACKBONE
HOW DO I
can we build scalable backbone applications
how do people build desktop applications
can we learn anything
The secret to building large apps is never build large apps. Break your application into small pieces. Then, assemble those testable, bite-sized pieces into your big application.

Justin Meyer, author JavaScriptMVC
Round up Models into Modules
How do you spot modules in a crowded room?
Scott Hanselman 13:35 - Public
Love this

Fred Hicks originally shared this post:

Candid superhero moments by Phil Noto - Blog - GeekDraw

Nothing shows off Phil Noto's ability to place characters in the decade of his choosing better...

Ev Sütter 14:02
+Neila Rey this is right up your alley.
Modules

a small piece of functionality
Modules are decoupled from each other
Modules
ask never take
Modules don't pollute the global scope
A change to this module:

Doesn't impact other modules
Put this module on a new page:

and it still works!
presentation patterns still play a part ...
How do these modules work together?
they could self organise
I’m taking you all down with me!
planes don't rule the runway
air traffic control does no flips!
air traffic control
Application

- Application
  - Start Up
  - Eventing
  - Lifecycle
  - Placement

Module
- Presents views
- Publishes events
- Subscribes to events
Application

Start Up  Eventing  Lifecycle  Placement
Application

fire up the engines

Start Up   Eventing   Lifecycle   Placement
Application

initial global setup

Start Up  Eventing  Lifecycle  Placement
Application

do we have permission to land?

Start Up  Eventing  Lifecycle  Placement
Application

publish & subscribe to events

Start Up    Eventing    Lifecycle    Placement
Application

time to take off?

Not yet!

Start Up  Eventing  Lifecycle  Placement
Application

when is it safe for a module to start
Application

Start Up  Eventing  Lifecycle  Placement
Application

Start Up  Eventing  Lifecycle  Placement

which runway?

that runway
Application

places modules inside the application shell

Start Up  Eventing  Lifecycle  Placement
Application

**application**

- start up
- eventing
- module lifecycle
- module placement

---

**Start Up**

**Eventing**

**Lifecycle**

**Placement**
round up your features into focused modules
compose yourself

regain control
APPLICATIONS

built this way
are flexible enough to
ACCEPT CHANGE
CAN WE BUILD backbone.js applications THIS WAY?
marionette can be split into two parts
mv_extensions to backbone.js
ItemView
CollectionView
Layout
ItemView
CollectionView
Layout
MyView = Backbone.Marionette.ItemView.extend({
    template: "#some-template"
});

var view = new MyView({model: new FakeModel()});
view.render();
ItemView
CollectionView
Layout
MyItemView = Backbone.Marionette.ItemView.extend({});

MyColView = Backbone.Marionette.CollectionView.extend({
  itemView: MyItemView
});
MyItemView = Backbone.Marionette.ItemView.extend({});

MyColView = Backbone.Marionette.CollectionView.extend({
    itemView: MyItemView
});

var view = new MyColView({collection: stuff});
view.render();
ItemView
CollectionView
Layout
AppLayout = Backbone.Marionette.Layout.extend({
  template: "#layout-template",

  regions: {
    menu: "#menu",   // template elements
    content: "#content"  // template elements
  }
});
AppLayout = Backbone.Marionette.Layout.extend({
  template: "#layout-template",

  regions: {
    menu:     "#menu",   // template elements
    content:  "#content"  // template elements
  }
});

var layout = new AppLayout();
layout.render();

layout.menu.show(new MenuView());

layout.content.show(new MainContentView());
No more boilerplate code
Composite Apps

Eventing

Application

Modules
Eventing
Application
Modules
COMPOSITE APPS

Eventing

Backbone.Wreqr
Event Aggregator
Requests
Commands
Backbone.Wreqr
var vent = new Backbone.Wreqr.EventAggregator();

vent.on("foo", function()
    console.log("foo event");
});

// elsewhere in your app
vent.trigger("foo");
COMPOSITE APPS  Eventing  

Event Aggregator  Requests  Commands  

Backbone.Wreqr
var reqres = new Backbone.Wreqr.RequestResponse();

reqres.setHandler("foo", function()
{
    return "foo requested. this is the response";
});

//elsewhere in your app
var result = reqres.request("foo");
console.log(result);
Composite Apps

Eventing

Event Aggregator

Requests

Commands

Backbone.Wreqr
var commands = new Backbone.Wreqr.Commands();

commands.setHandler("foo", function()
{
    console.log("the foo command was executed");
});

//elsewhere in your app
commands.execute("foo");
Composite Apps

Eventing

Event Aggregator

Requests

Commands

Backbone.Wreqr
Eventing

Application

Modules
COMPOSITE APPS

application

- start up
- mediation/eventing
- module lifecycle
- module placement

module
- presents views
- publishes events
- subscribes to events
StartUp
Eventing
Lifecycle
Placement
MyApp = new Backbone.Marionette.Application();
MyApp.start();
MyApp.onInitializeBefore = function(options) {
    //stuff
});

MyApp.onInitializeAfter = function(options) {
    if (Backbone.history) {
        Backbone.history.history.start();
    }
});

MyApp.start();
MyApp = new Backbone.Marionette.Application();

MyApp.vent.on("foo", function()
    alert("bar");
});

MyApp.vent.trigger("foo"); // => alert box "bar"
StartUp
Eventing
Lifecycle
Placement
// start the app
MyApp.start();

// later, start the module
MyApp.FooModule.start();
COMPOSITE APPS

StartUp
Eventing
Lifecycle
Placement
var MyApp = new Backbone.Marionette.Application();

MyApp.addRegions({
  navigation : '#navigation_container',
  content : '#content_container',
  rightSidebar : '#right_sidebar_container',
  footer : '#footer_container'
});
var MyApp = new Backbone.Marionette.Application();

MyApp.addRegions({
    navigation : '#navigation_container',
    content : '#content_container',
    rightSidebar : '#right_sidebar_container',
    footer : '#footer_container'
});

MyApp.start();
MyApp.content.show(new View());
Composite Apps

Eventing
Application
Modules
Composite Apps

Modules

hang off the application

module

models

router

internal events

module services

views

module

models

router

internal events

module services

views
MyApp.module("MyModule", function(MyModule, MyApp, Backbone) {

    /// insert module functionality here

});
MyApp.module("MyModule", function(MyModule, MyApp, Backbone){

...define models...

ImageItemView = Backbone.Marionette.ItemView.extend({
    template: "#image-template"
});

Library.show = function (region) {
    region.show(new ImageItemView({model: new MyModel()}));
};
});
MyApp.module('ImageCatalog', function(ImageCatalog, App...){

    .... module initialisation code...

    App.commands.addHandler('catalog:add', function(image){
        allImages.add(image);
    });

    App.reqres.addHandler('catalog:get', function(){
        return allImages;
    });

});
Composite Apps
Eventing Application Modules
say goodbye to crappy plumbing code
add semantic meaning to your events
accept the winds of change with composite design
unsuck our backbone using marionette.js
ONLY SCRATCHED THE SURFACE
TL;DR

backbone.js is awesome
TL;DR but scaling it is ridiculously hard.
tl;dr

mv ⭐ help us create structure
TL;DR

they don’t help us write scalable JavaScript applications
TL;DR
we need to think beyond mv
Large JavaScript applications composed from smaller parts
TL;DR
make your application dance
marionette.js
Thats it!

internet related activities:

@ammeep
amy.palamounta.in
greenbutton.com
backbonejs.org
marionettejs.com
lostechies.com/derickbailey
addyosmani.com/blog