

**UNSUCK
YOUR
BACKBONE**



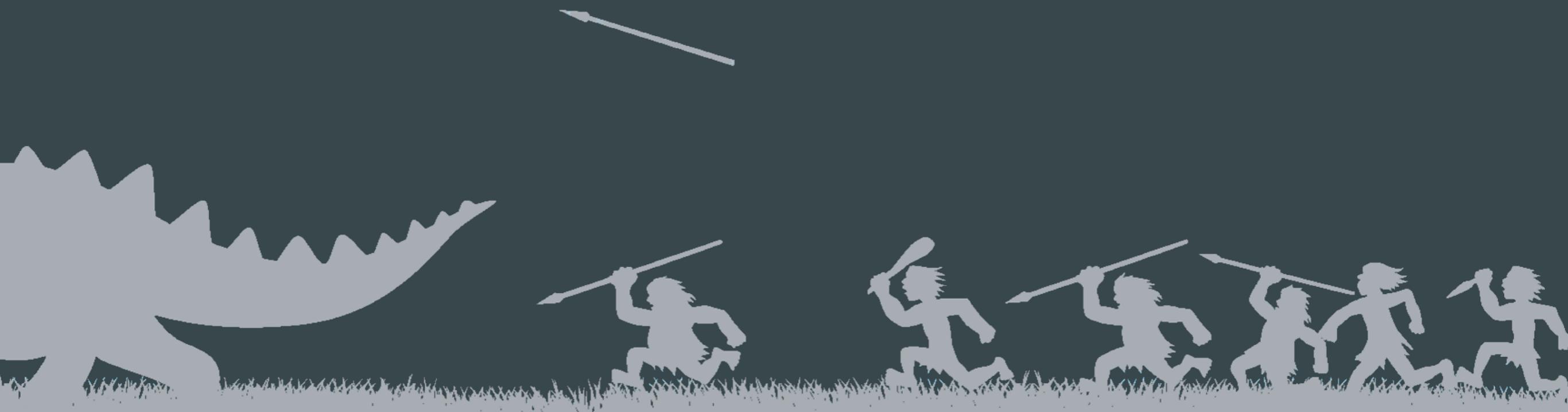
WHO AM I
JUST SUPER QUICK

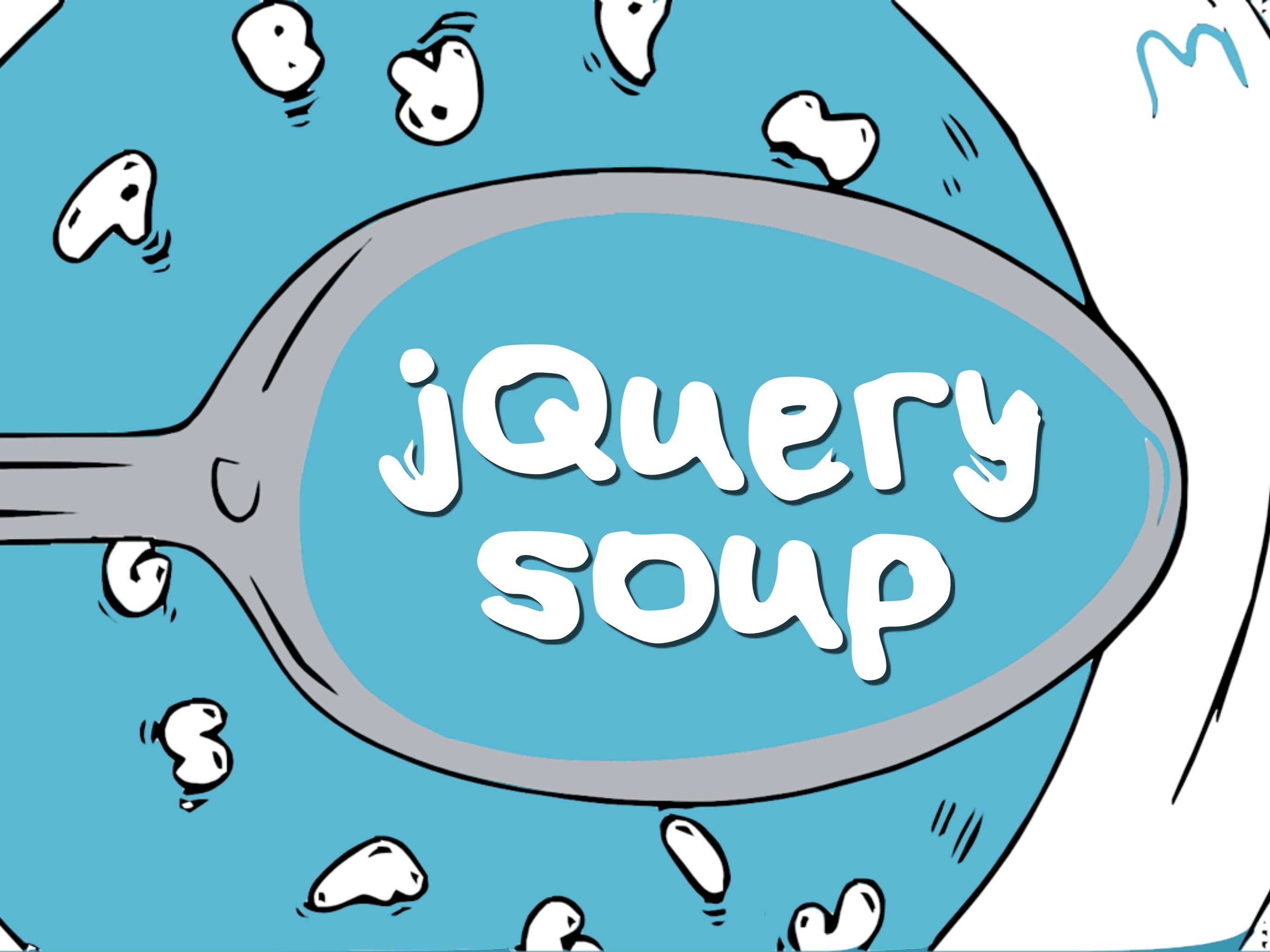
@ammeep



AIN'T HE HANDSOME?

WE HAVE
EVOLVED
FROM STATIC HTML





jQuery SOUP

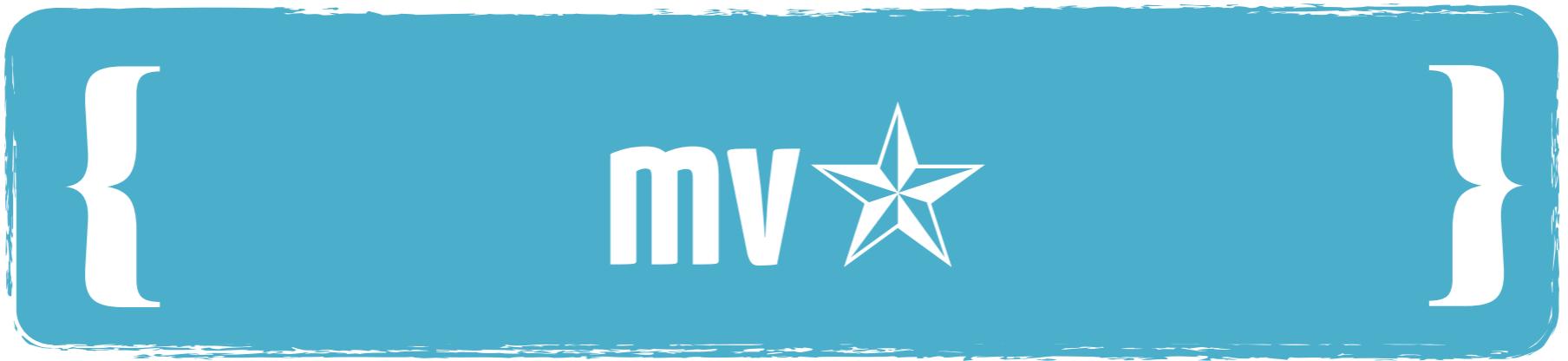
we need



structure

then came the
revolution





**MODEL
VIEW
CONTROLLER**

MODEL
VIEW
PRESENTER

MODEL

VIEW

VIEW MODEL

MODEL

VIEW

ARSE BANANA



oh dear!

DATA CONCERNS

SEPARATE

VIEW CONCERNS



{mv★ libraries}

{ mv★ frameworks }

WHATS THE
DIFFERENCE?

FRAMEWORKS:

are generally
prescriptive
and sometimes
restrictive

LIBRARIES

are generally
focused
and
specific

according to 

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



A black and white illustration of the Grinch from Dr. Seuss's How the Grinch Stole Christmas. He is shown from the chest up, looking slightly to the right with a mischievous expression. He has his signature green skin, yellow hair, and a wide, toothy grin.

```
<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();
```

state stored
everywhere

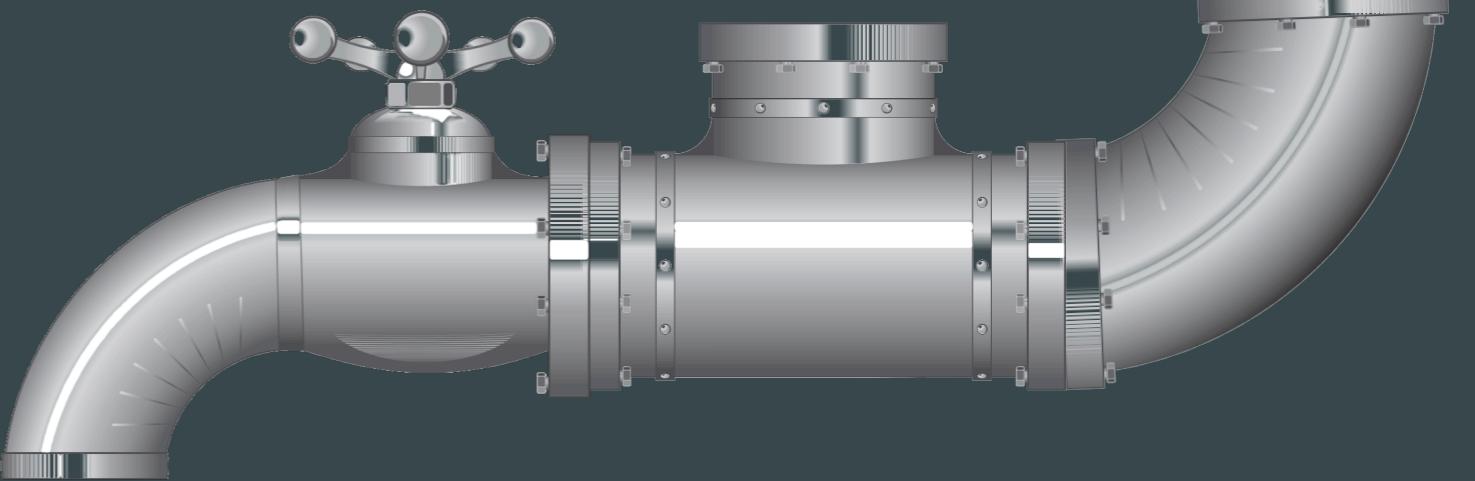


```
var Animal = Backbone.Model.extend( {  
  sayHello: function () {  
    var name = this.get('name');  
    return 'Hello, I am ' + name;  
  }  
};  
  
var animal = new Animal({name:'cat'});  
animal.sayHello();
```

refactored to
backbone.js

Backbone Views

```
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

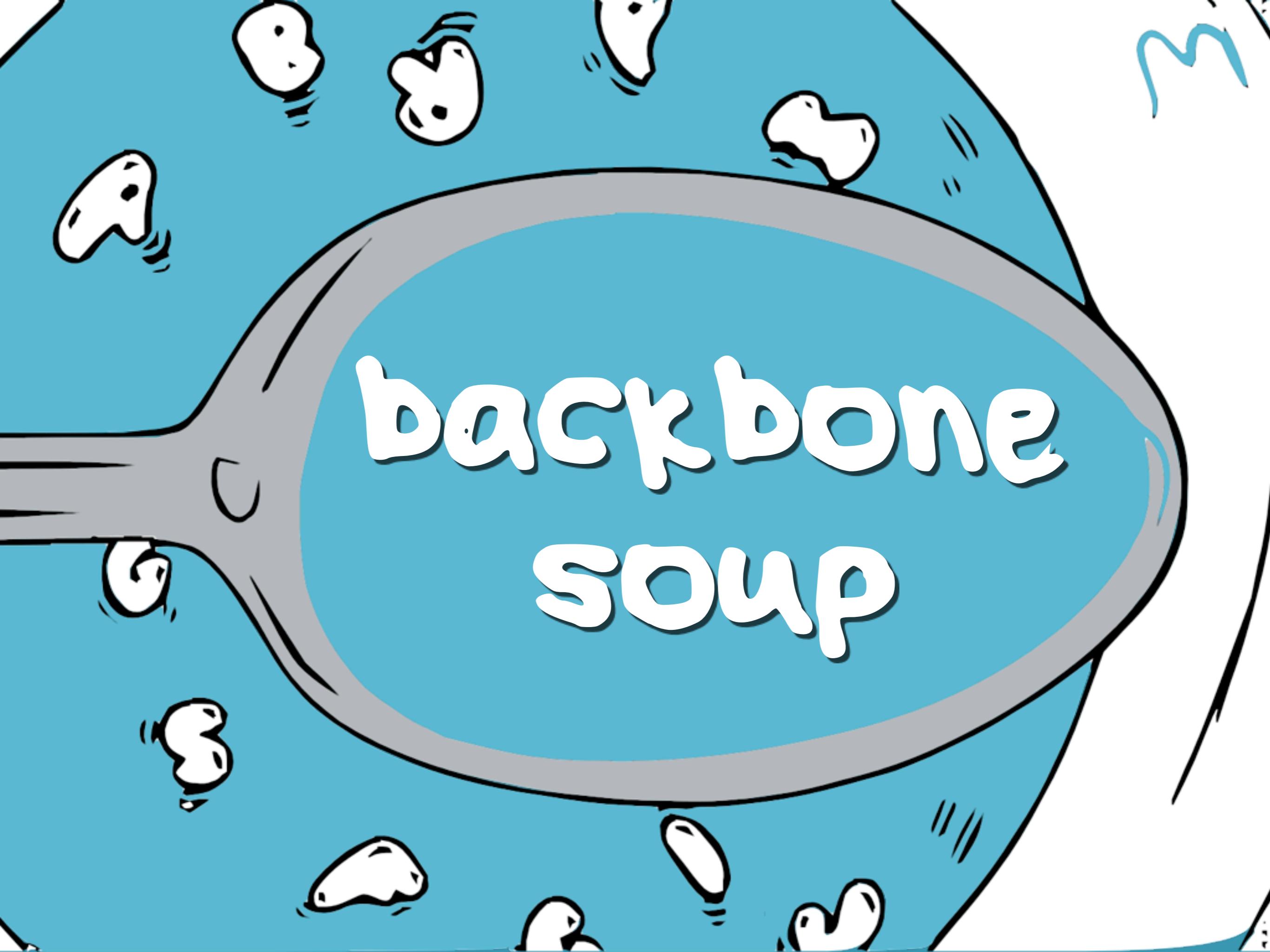
one thousand models

one thousand views

impossible to extend

what the hell
is going on





backbone soup

wait...

WHAT

shouldn't my ★
prevent the soup?





mv stars are
Presentation
Patterns
ONLY

{ mv★ can't save us now }

HOW DO I
unsuck
MY BACKBONE

can we build
scalable backbone
applications

how do people build
desktop applications
can we learn anything

COMPOSITE APPLICATIONS

“ 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**
Round up **Views**
into
Modules

How do you spot modules in a crowded room?





Share what's new...

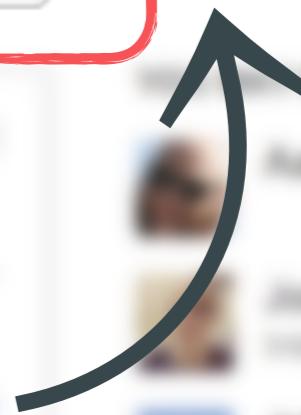


Post something
View this

Post something
View this



MODULE



Post something
View this
Sharing allows all the users with the share
link to see the details of the sharing link.



Share this post
View your profile to see
changes that were made



Share this post
View your profile to see



Share this post
View your profile to see



MODULE



Scott Hanselman 13:35 - Public

Love this



Fred Hicks originally shared this post:

<http://geekdraw.com/main/2013/3/12/candid-superhero-moments-by-phil-noto.html>



 [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 ...

+1



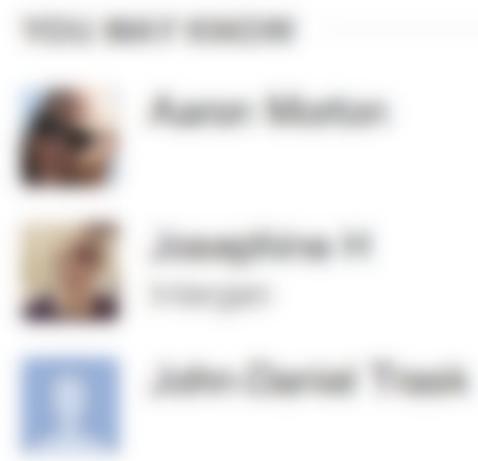
+11 ▶ 5



Ev Sütter 14:02

[+Neila Rey](#) this is right up your alley.

Add a comment...



 Search

Home



Profile



Explore



Events



Photos



Communities

Find people NEW

More

All

Friends

Family

Acquainta...

Following

More



Share what's new...

**Scott Hanselman** 13:35 - Public

Love this

**Fred Hicks** originally shared this post:<http://geekdraw.com/main/2013/3/12/candid-superhero-moments-by-phil-noto.html>**G** [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 ...

+1



+11



5

**Ev Sütter** 14:02

+Neila Rey this is right up your alley.

Add a comment...

YOU MAY KNOW

Aaron Morton

Josephine H
Intergen

John-Daniel Trask

GOOGLE+ PROFILE

View your profile to see changes that we've made

COMPLETE YOUR PROFILE

Update your contact details so your friends can find you

Add contact info

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:



Share what's new...



Doesn't impact other modules



Scott Hanselman 13:35 - Public

Love this



Fred Hicks originally shared this post:

<http://geekdraw.com/main/2013/3/12/candid-superhero-moments-by-phil-noto.html>



 [Candid superhero moments by Phil Noto - Blog - GeekDraw »](#)

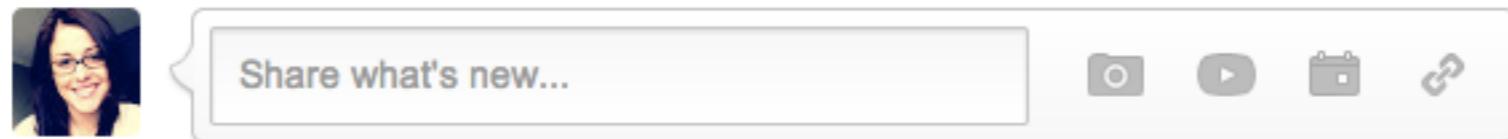
Nothing shows off Phil Noto's ability to place characters in the decade of his choosing better ...

+1



+11 5

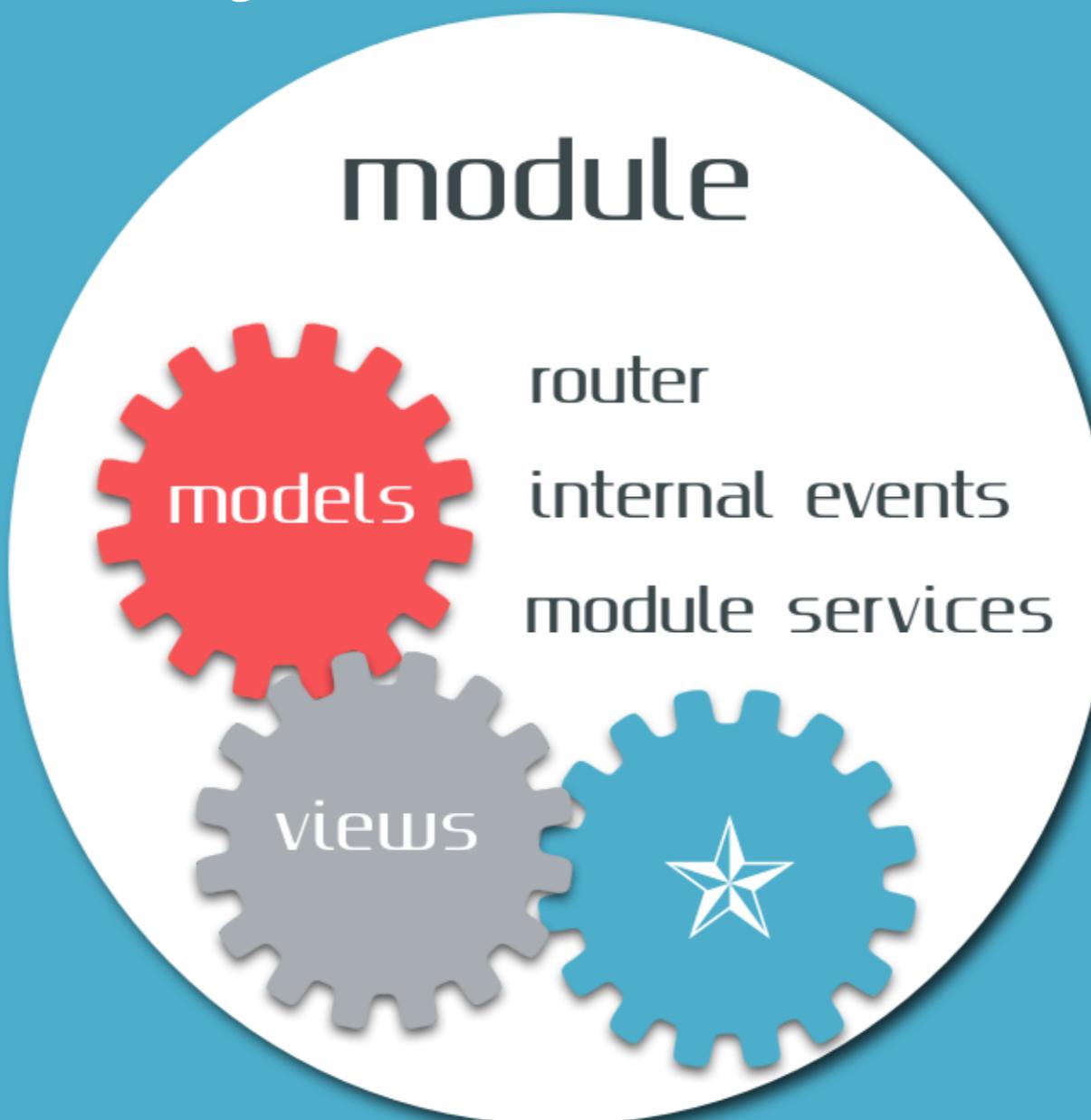
Put this module on a new page:



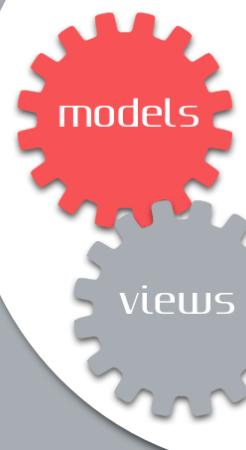
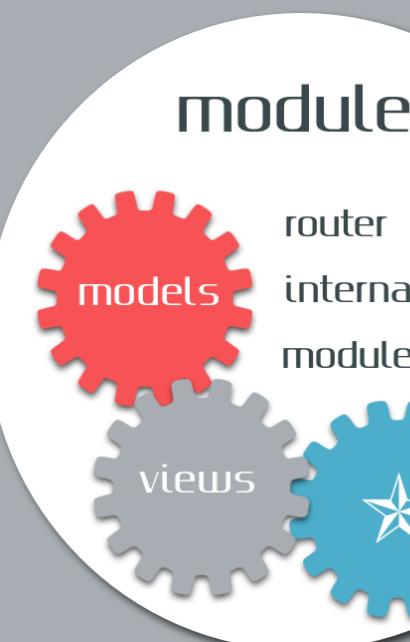
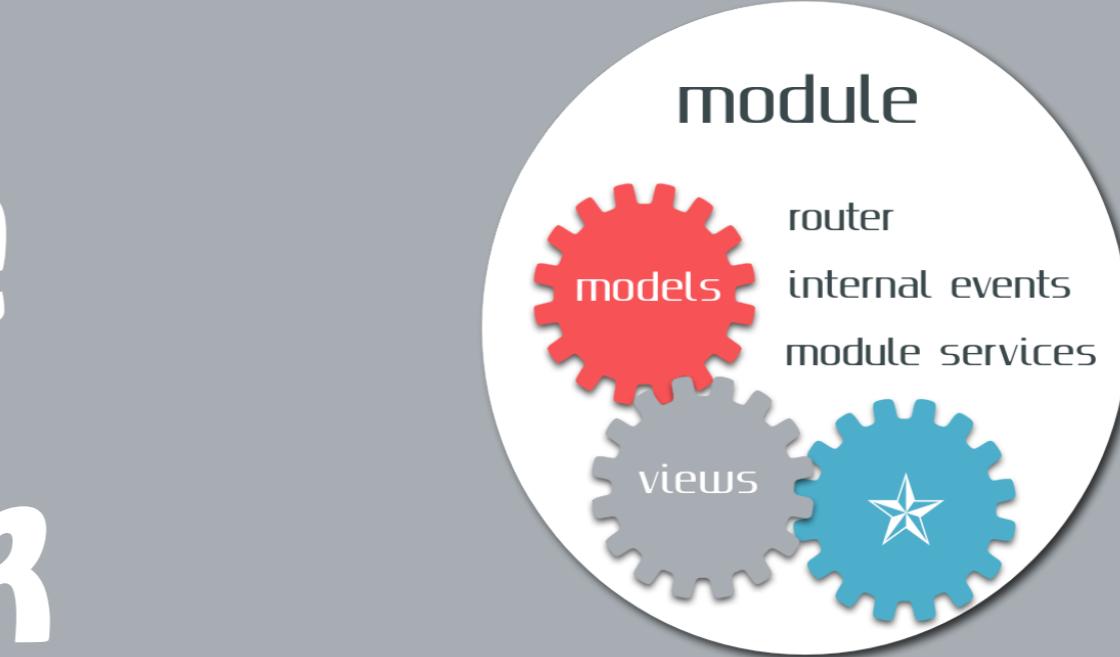
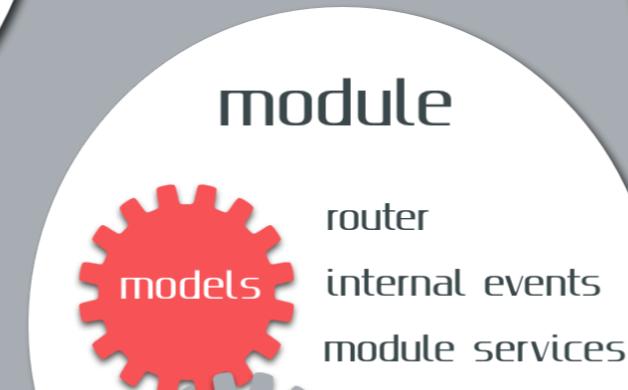
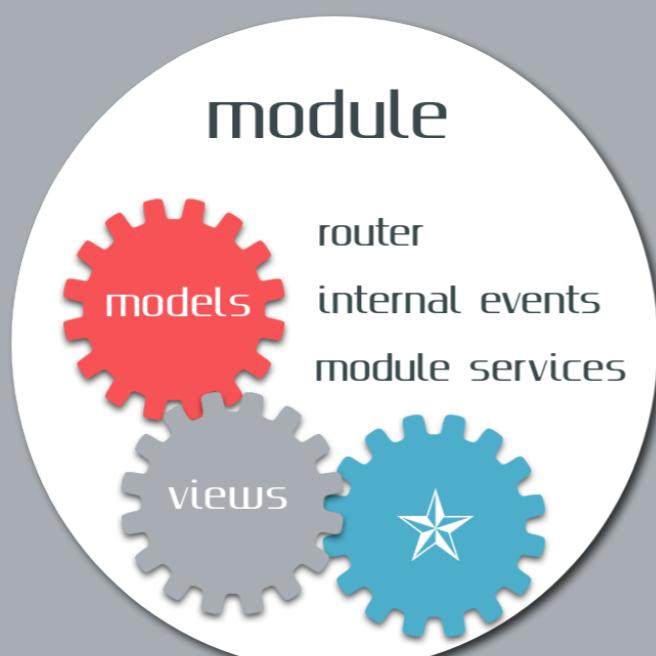
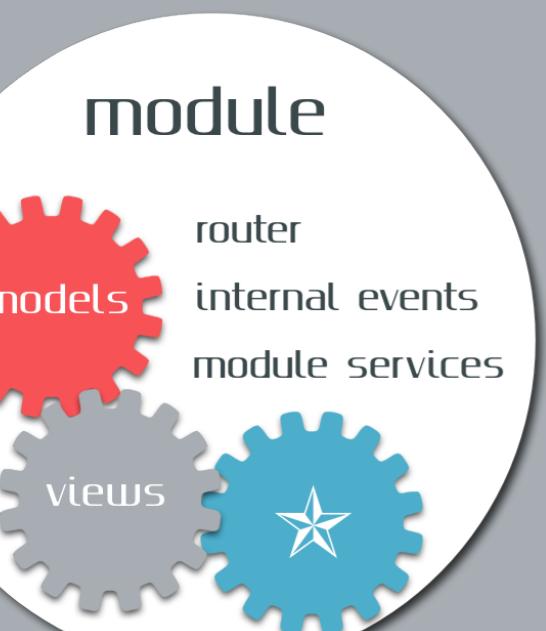
and it still works!

presentation patterns

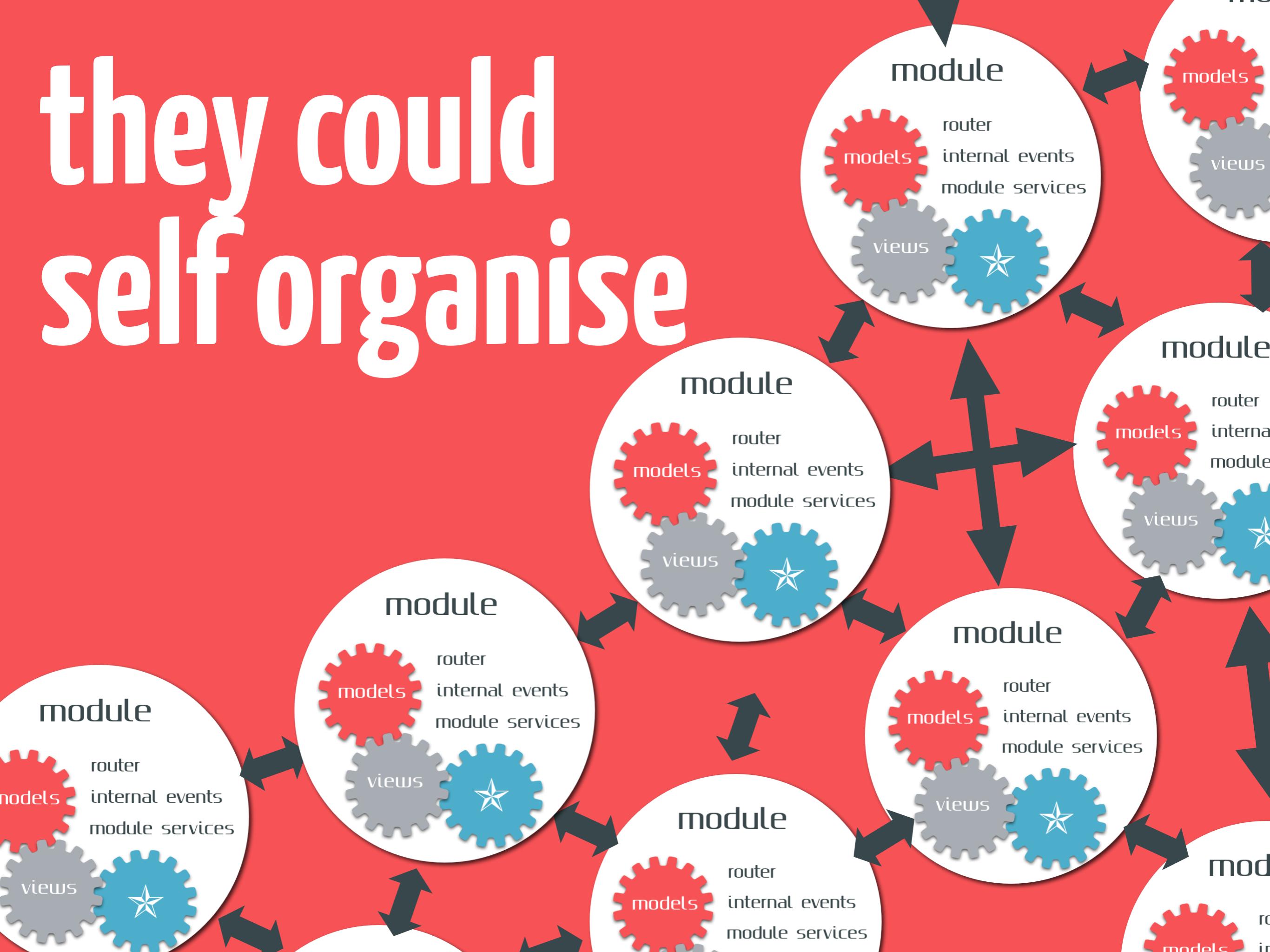
still play a part ...



How do these modules work together?

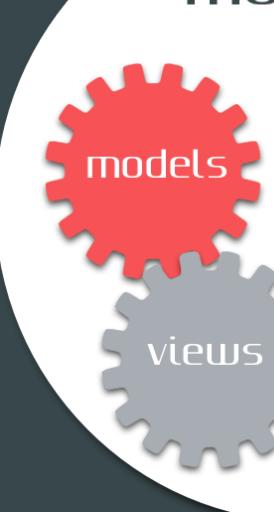
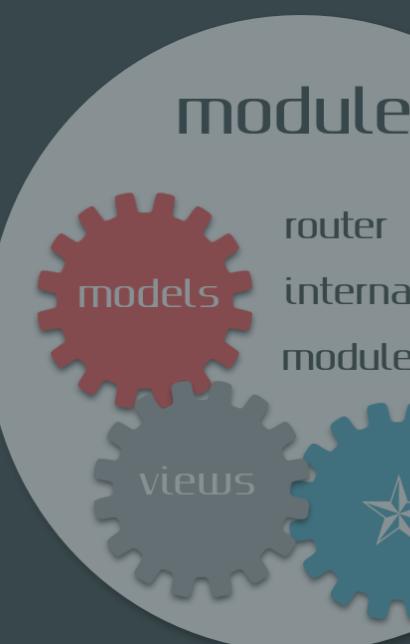
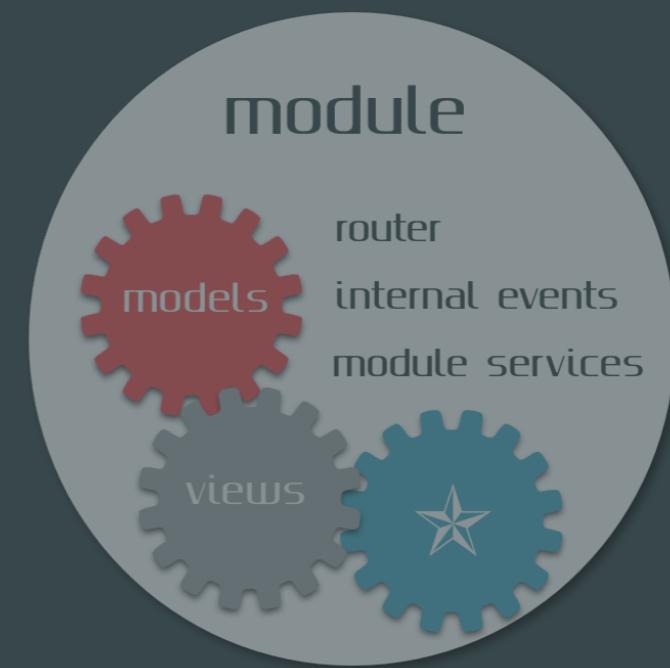
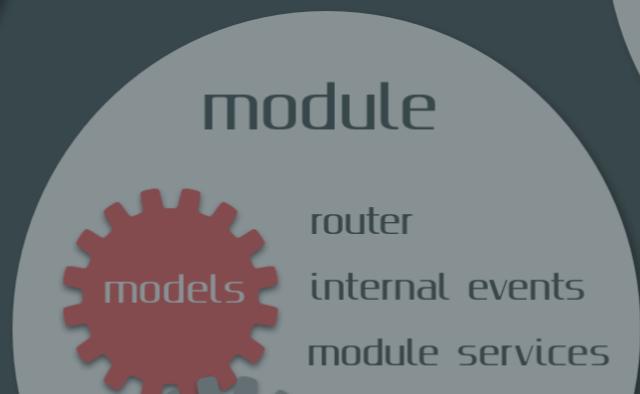
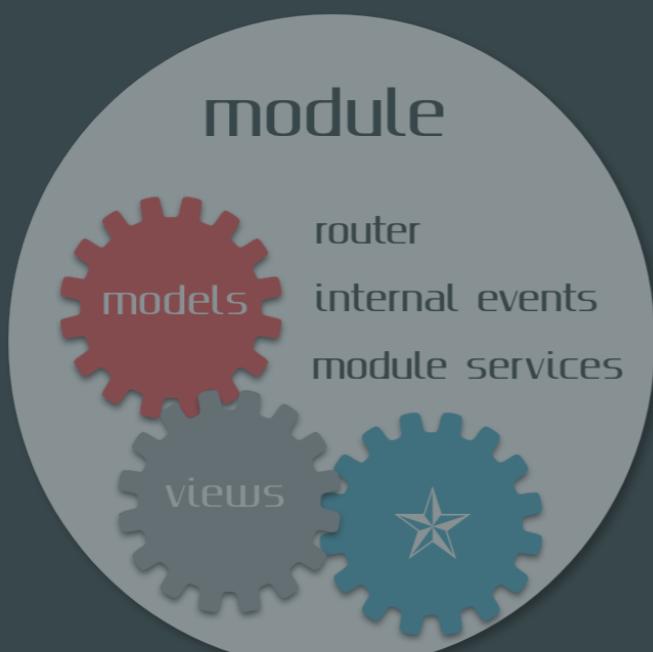
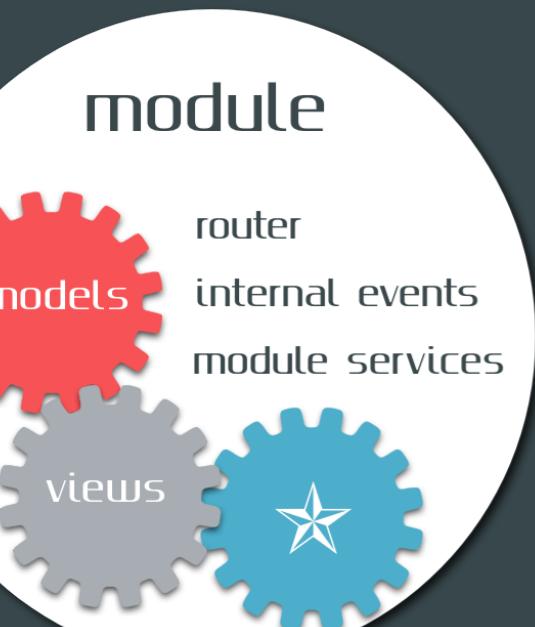


they could self organise



I'm taking you all down with me!

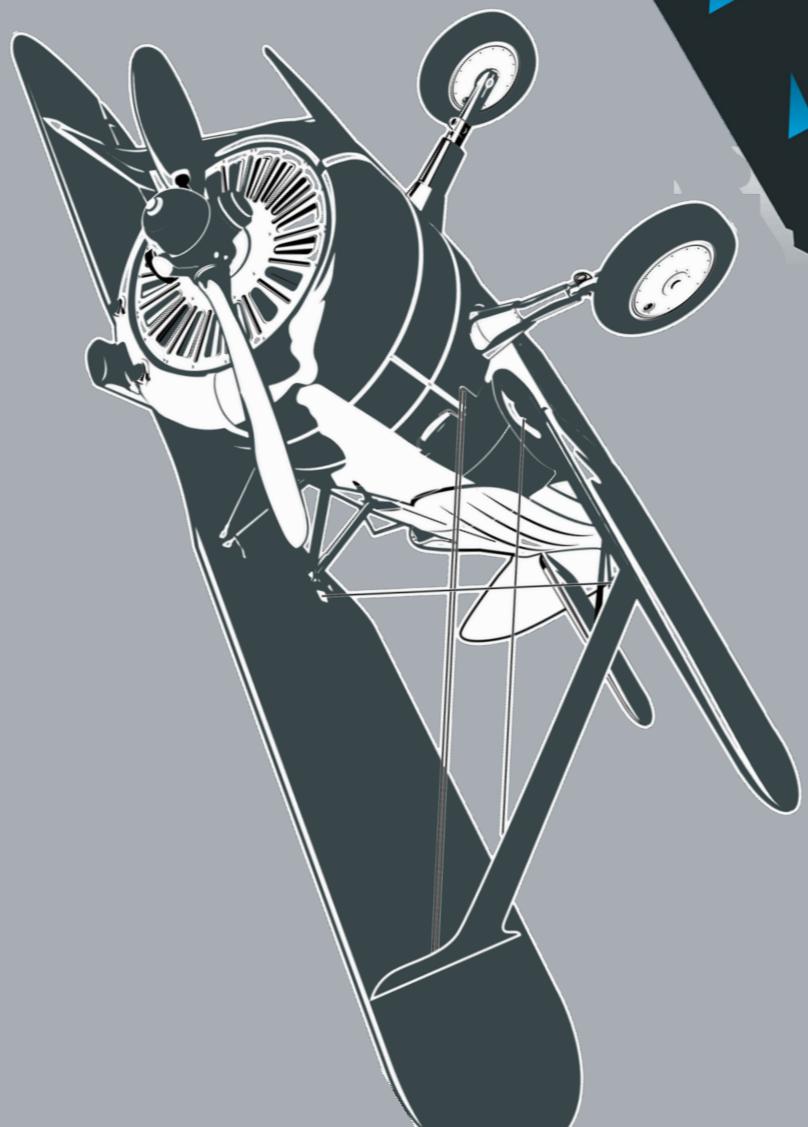
BUGS!



planes don't rule the runway

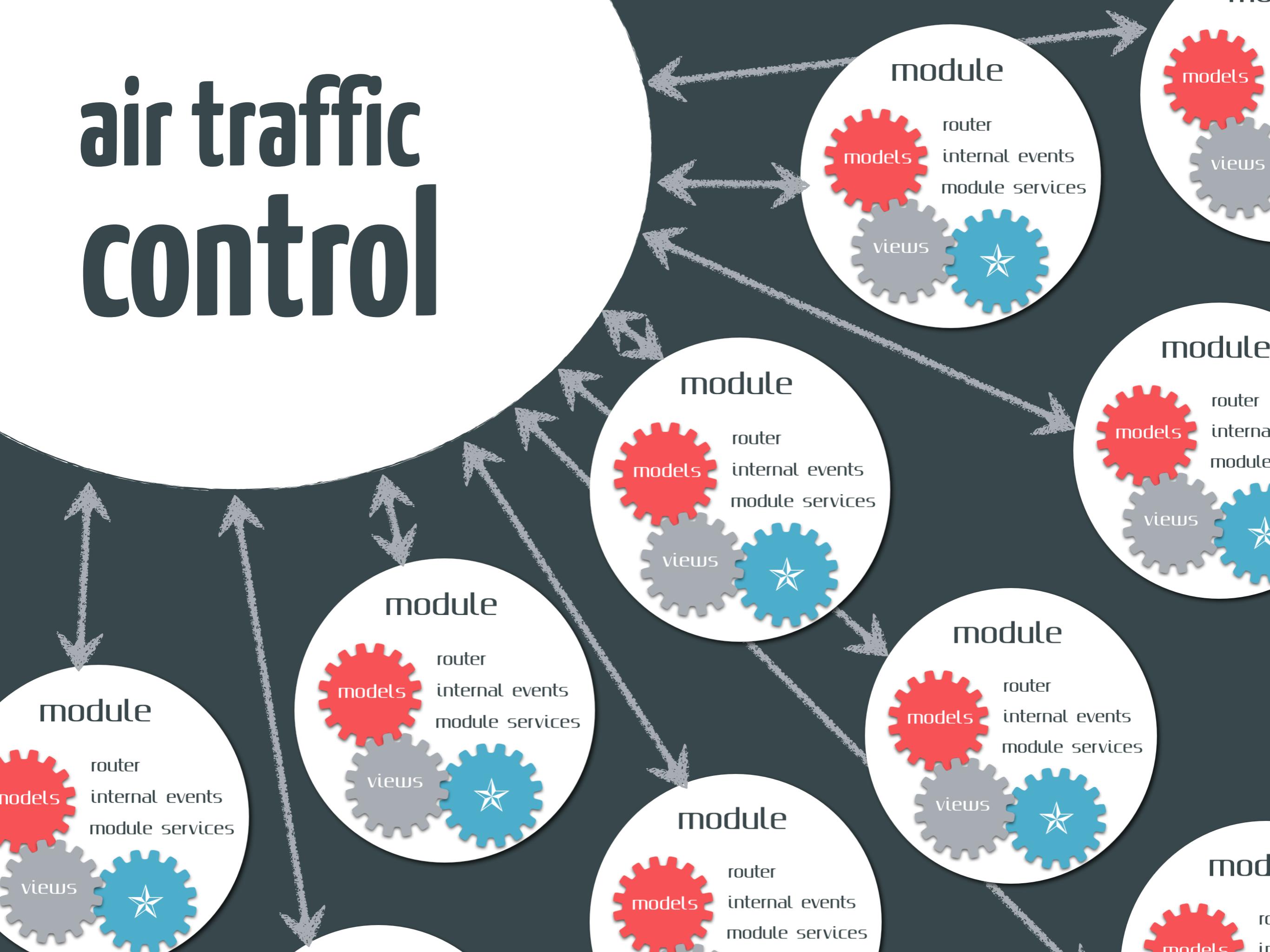


air traffic
control
does



no flips!

air traffic control



Application

application

start up

eventing

module lifecycle

module placement



module

presents views
publishes events
subscribes to events



module

presents views
publishes events
subscribes to events



module

presents views
publishes events
subscribes to events

Start Up

Eventing

Lifecycle

Placement

Application

Start Up

Eventing

Lifecycle

Placement



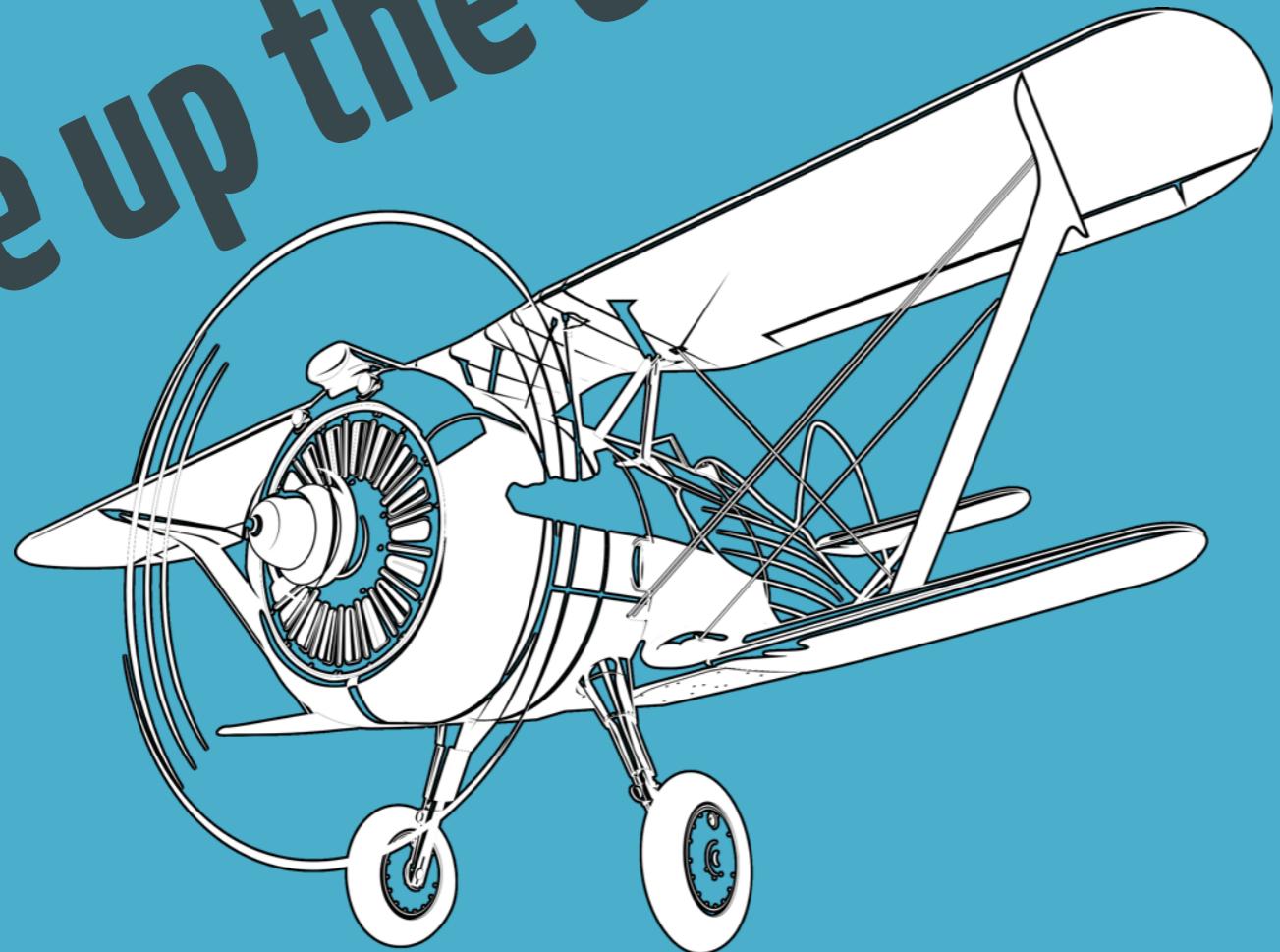
Application

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

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

Start Up Eventing

Lifecycle Placement



Application

time to take off?



Start Up

Eventing

Lifecycle

Placement



Application

when is it safe for a module to start

Start Up

Eventing

Lifecycle

Placement

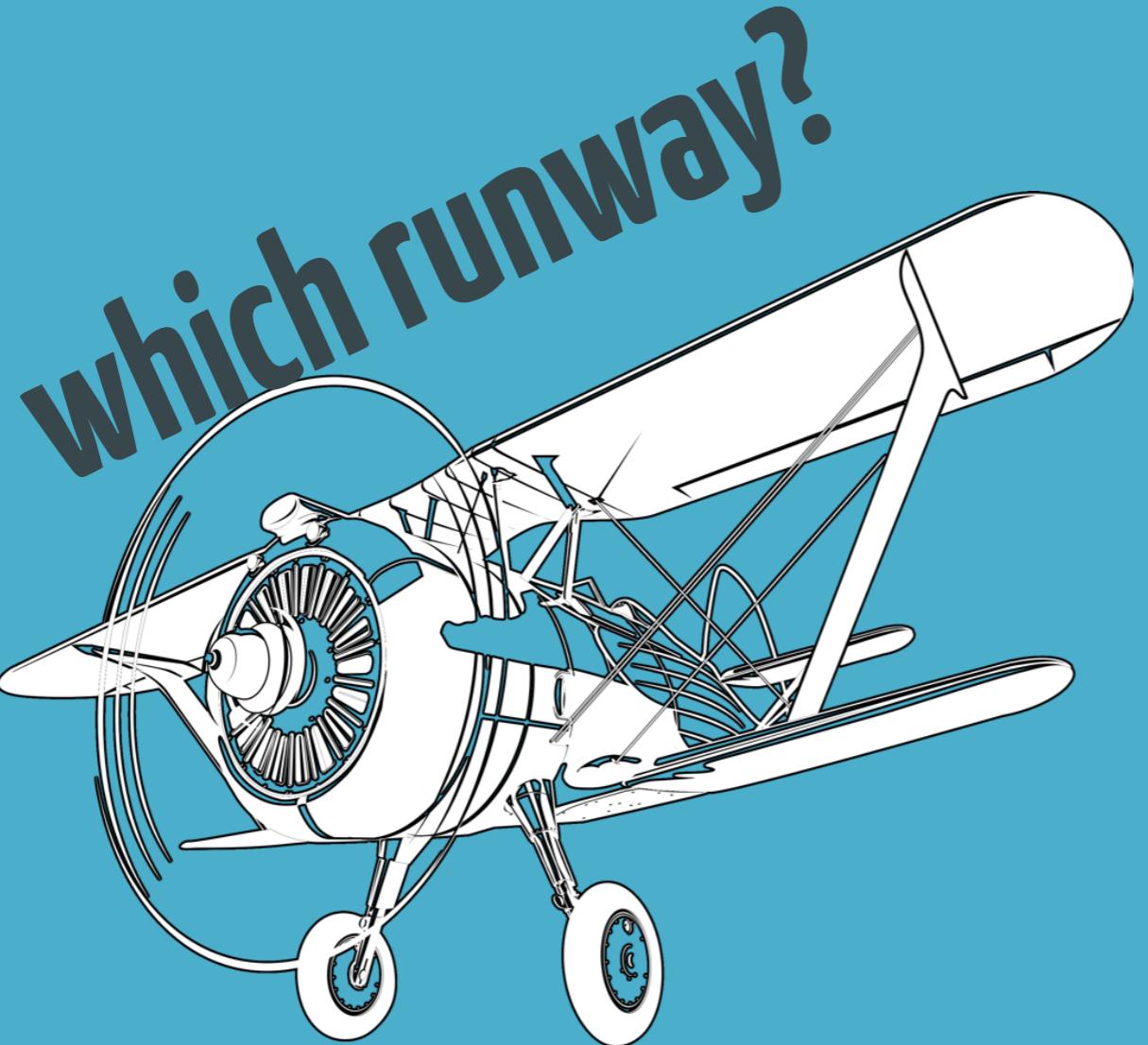


Application

Start Up Eventing Lifecycle Placement



Application



Start Up Eventing Lifecycle Placement



Application

places modules **inside**
the application shell

Start Up

Eventing

Lifecycle

Placement



Application

application

start up

eventing

module lifecycle

module placement



module

presents views
publishes events
subscribes to events

module

presents views
publishes events
subscribes to events

module

presents views
publishes events
subscribes to events

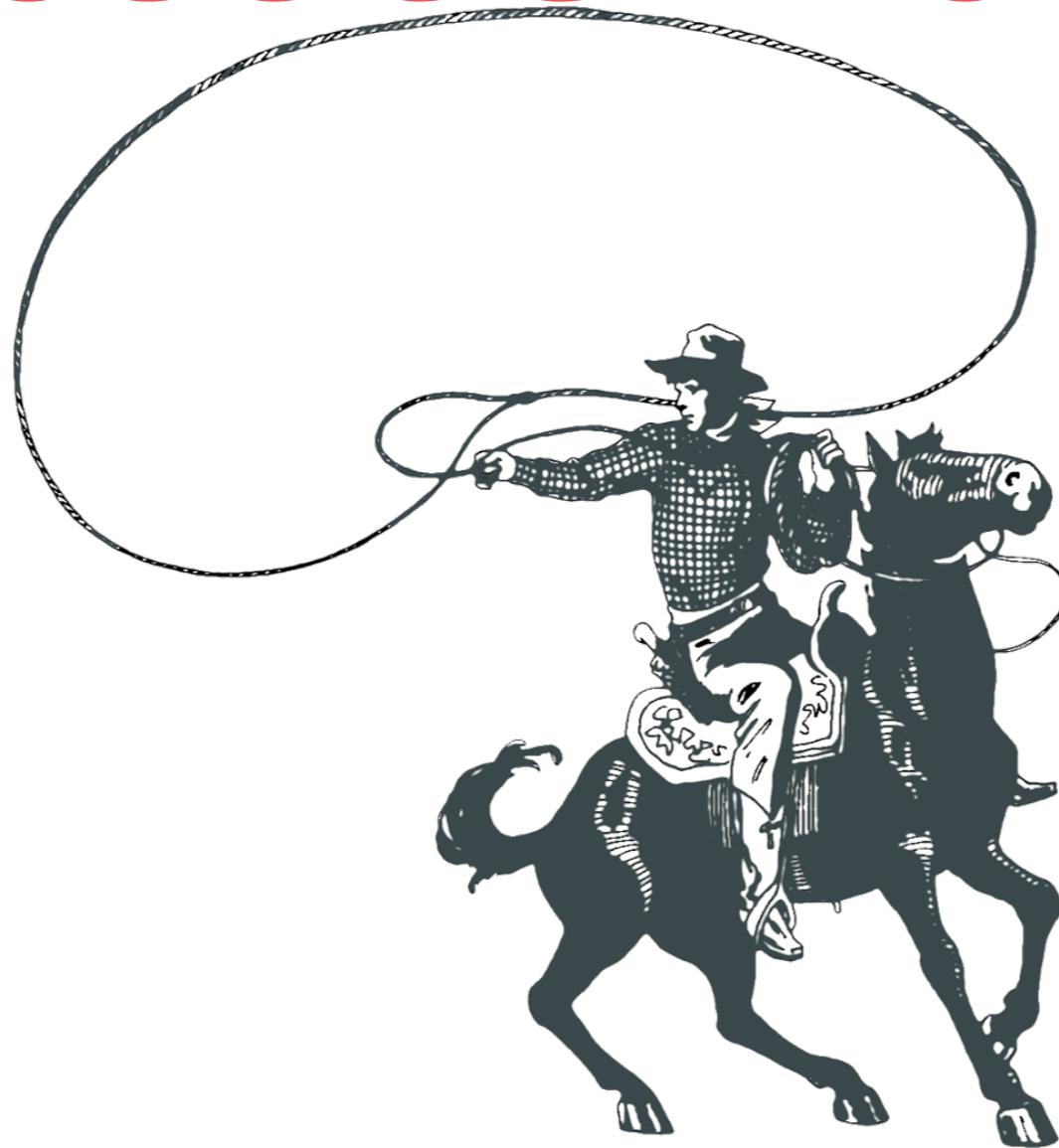
Start Up

Eventing

Lifecycle

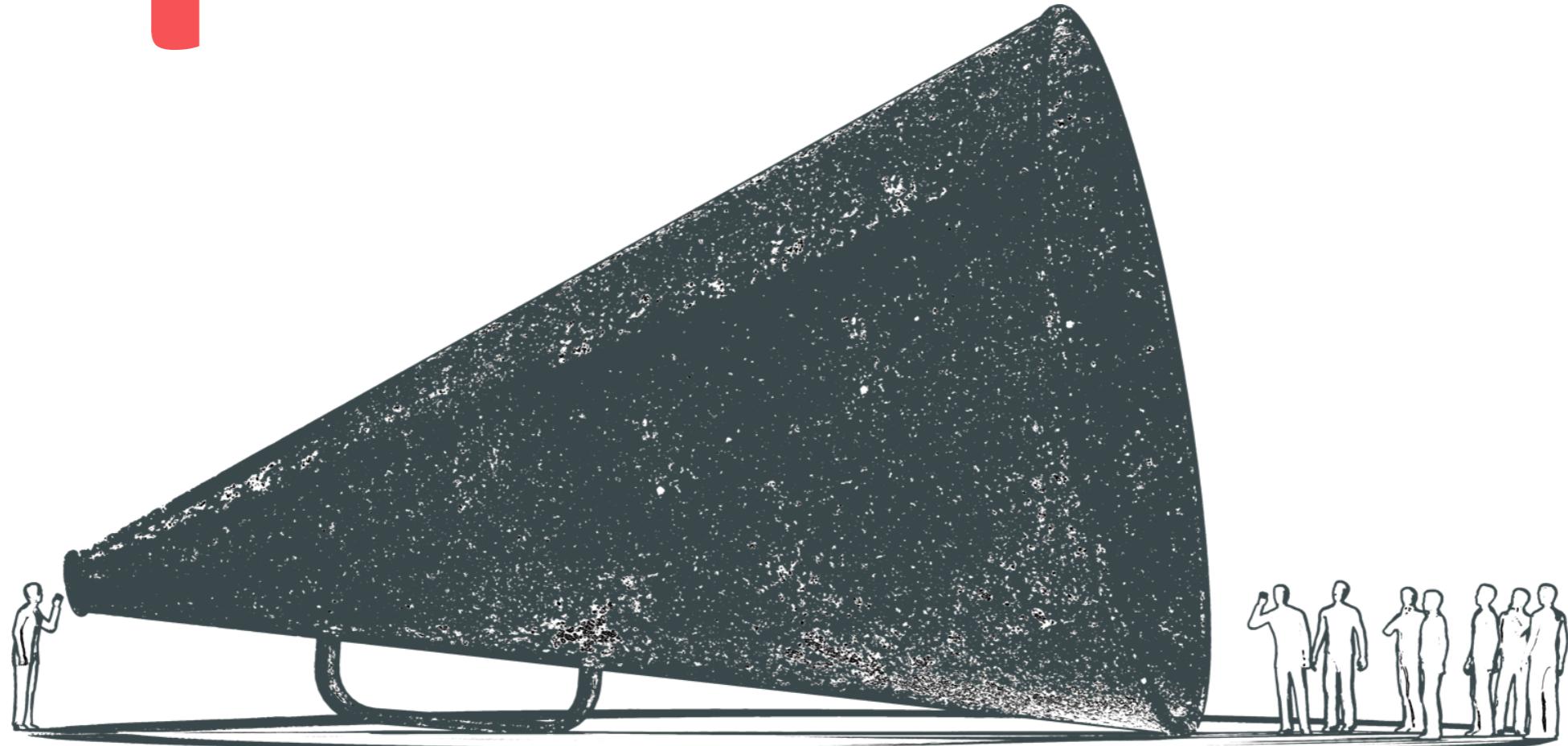
Placement

round up your features into
focused modules



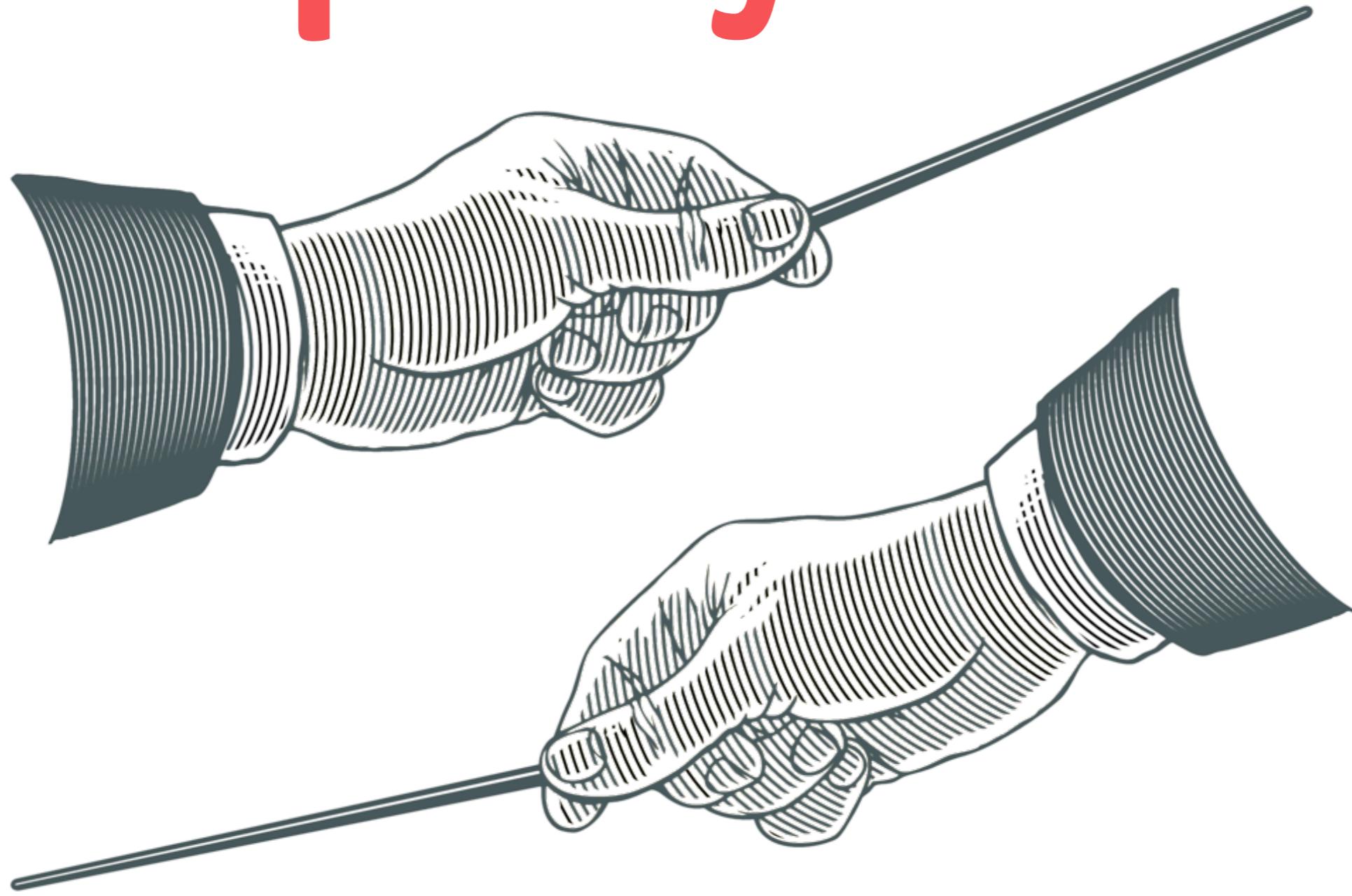
fire and forget

pub & sub



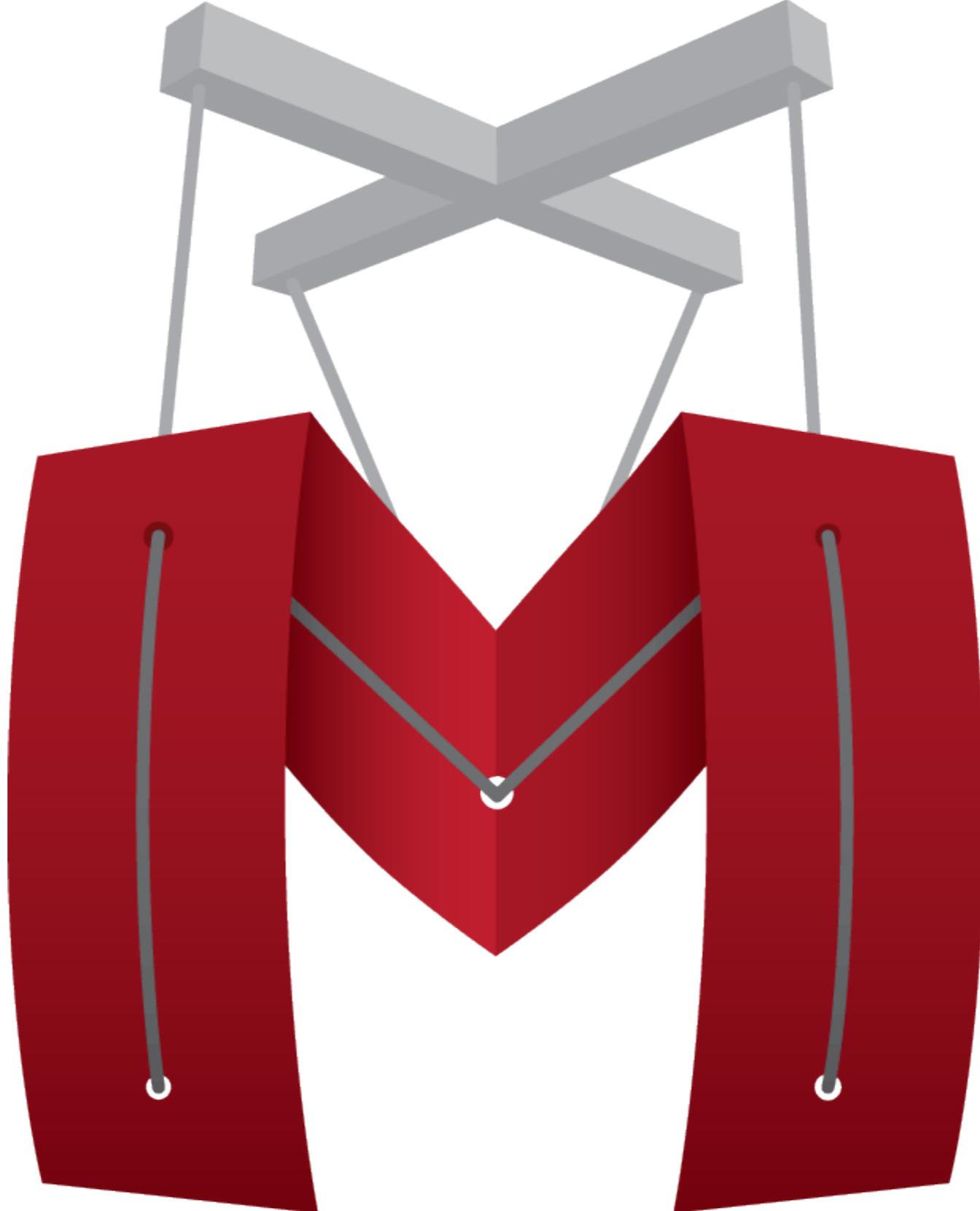
regain control

compose yourself

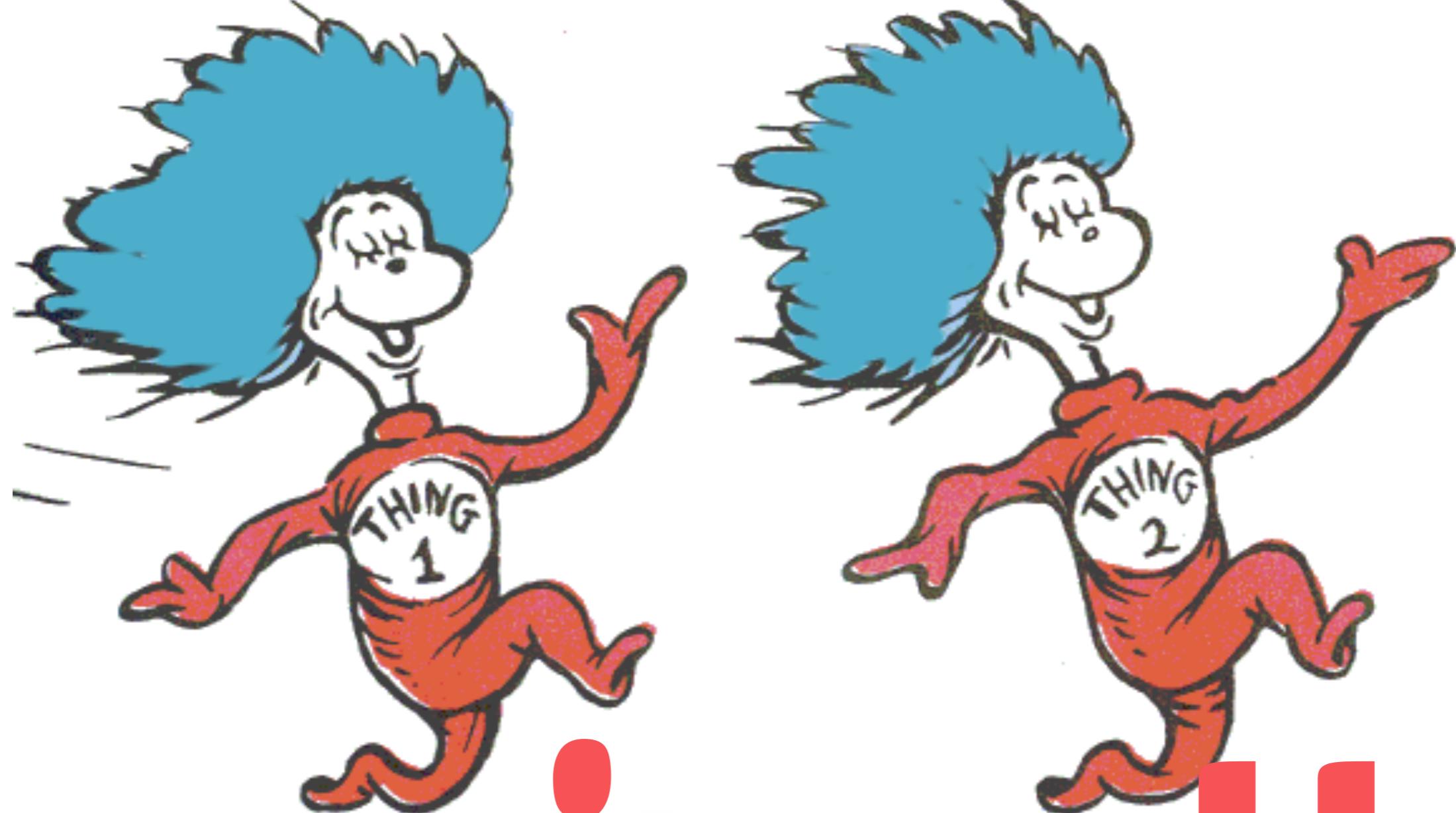


APPLICATIONS
built this way
are flexible enough to
ACCEPT CHANGE

CAN WE BUILD
backbone.js
applications
THIS WAY?



Marionette^{js}



marijuana
can be split
into two parts



mv 
extensions
to backbone.js

1

MV★ EXTENSIONS

ItemView
CollectionView
Layout



1

MV★ EXTENSIONS

ItemView
CollectionView
Layout





```
MyView = Backbone.Marionette.ItemView.extend({  
  template: "#some-template"  
});
```

```
var view = new MyView({model: new FakeModel()});  
view.render();
```

1

MV★ EXTENSIONS

ItemView
CollectionView
Layout





MV★ EXTENSIONS

CollectionView

```
MyItemView = Backbone.Marionette.ItemView.extend({});
```

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



MV  EXTENSIONS

CollectionView

```
MyItemView = Backbone.Marionette.ItemView.extend( {} );  
  
MyColView = Backbone.Marionette.CollectionView.extend( {  
  itemView: MyItemView  
} );  
  
var view = new MyColView({collection: stuff});  
view.render();
```

1

MV★ EXTENSIONS

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 event driven architecture



COMPOSITE APPS

Eventing Application Modules





COMPOSITE APPS

Eventing Application Modules





COMPOSITE APPS

Eventing

Backbone.Wreqr



COMPOSITE APPS

Eventing

Event Aggregator
Requests
Commands

Backbone.Wreqr



COMPOSITE APPS

Eventing

Event Aggregator

Requests

Commands

Backbone.Wreqr



COMPOSITE APPS

Eventing

```
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



COMPOSITE APPS

Eventing

```
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



COMPOSITE APPS

Eventing

```
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



COMPOSITE APPS

Eventing Application Modules





COMPOSITE APPS

application

start up

mediation/eventing

module lifecycle

module placement



module

presents views
publishes events
subscribes to events

module

presents views
publishes events
subscribes to events

module

presents views
publishes events
subscribes to events



COMPOSITE APPS

Startup
Eventing
Lifecycle
Placement





COMPOSITE APPS

Startup
Eventing
Lifecycle
Placement





COMPOSITE APPS

Start Up

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



COMPOSITE APPS

Start Up

```
MyApp.onInitializeBefore = function(options){  
  //stuff  
});  
  
MyApp.onInitializeAfter = function(options){  
  if (Backbone.history){  
    Backbone.history.start();  
  }  
};  
  
MyApp.start();
```



COMPOSITE APPS

Startup
Eventing
Lifecycle
Placement





COMPOSITE APPS

Eventing

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

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

```
MyApp.vent.trigger("foo"); // => alert box "bar"
```



COMPOSITE APPS

Startup
Eventing
Lifecycle
Placement





COMPOSITE APPS

Lifecycle

```
// start the app  
MyApp.start();
```

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



COMPOSITE APPS

Startup
Eventing
Lifecycle
Placement





COMPOSITE APPS

Placement

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



COMPOSITE APPS

Placement

```
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



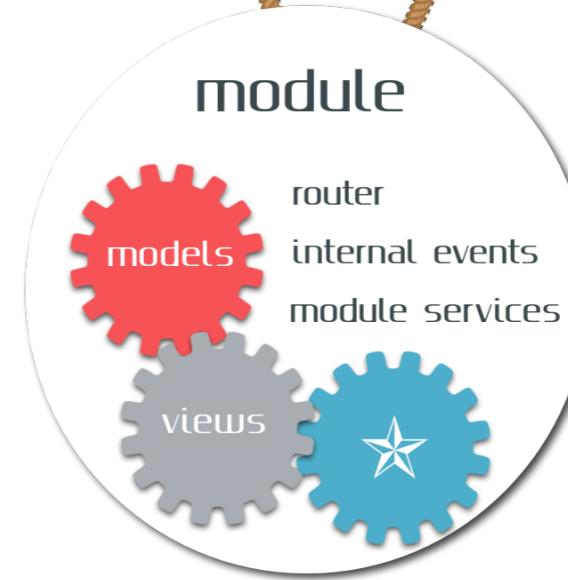
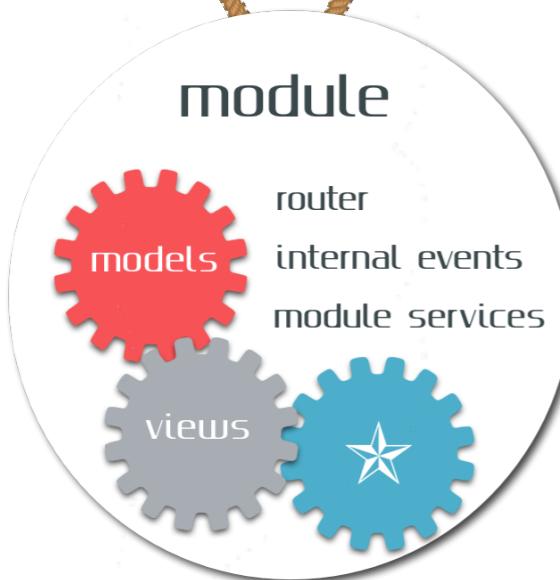


COMPOSITE APPS

Modules

hang off the

application

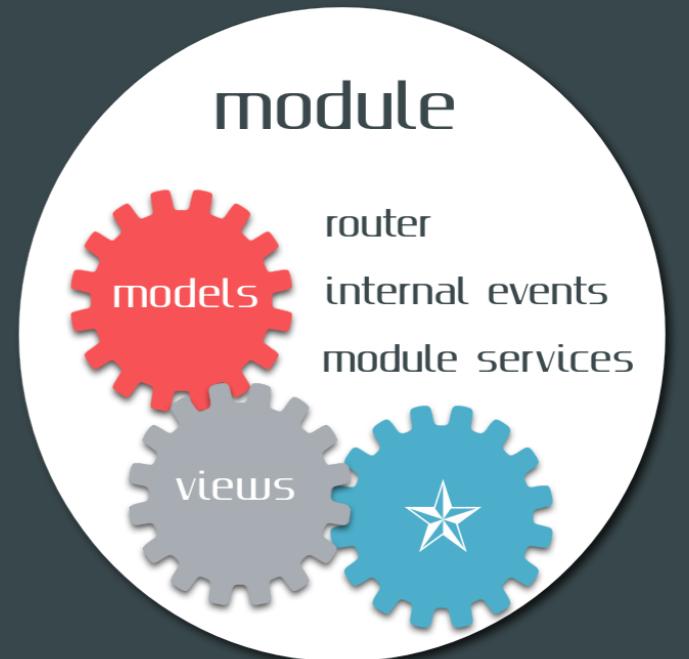




COMPOSITE APPS

Modules

```
MyApp.module("MyModule", function(MyModule, MyApp, Backbone)  
{  
    // Insert module functionality here  
});
```





COMPOSITE APPS

Modules

```
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()}));  
    };  
});
```



COMPOSITE APPS

Modules

```
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



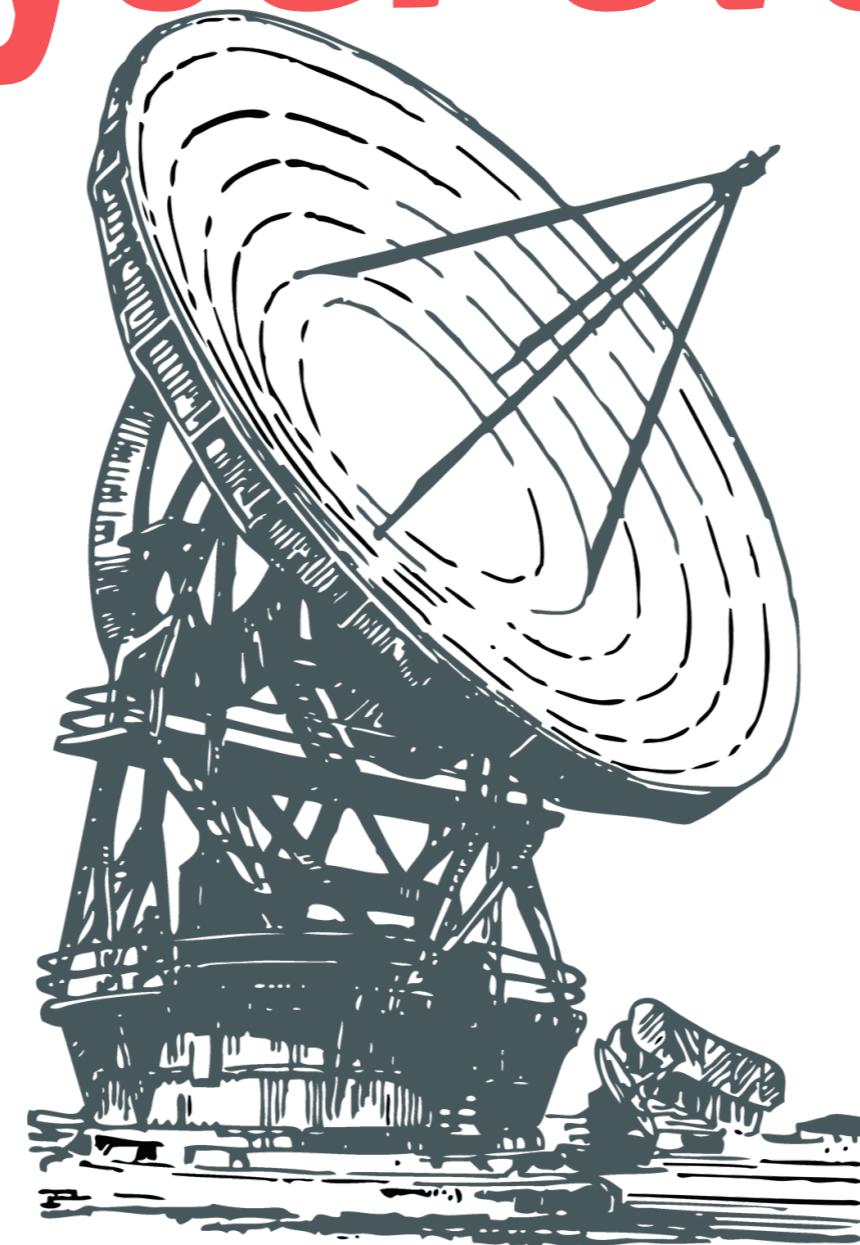


say goodbye to crappy
plumbing code



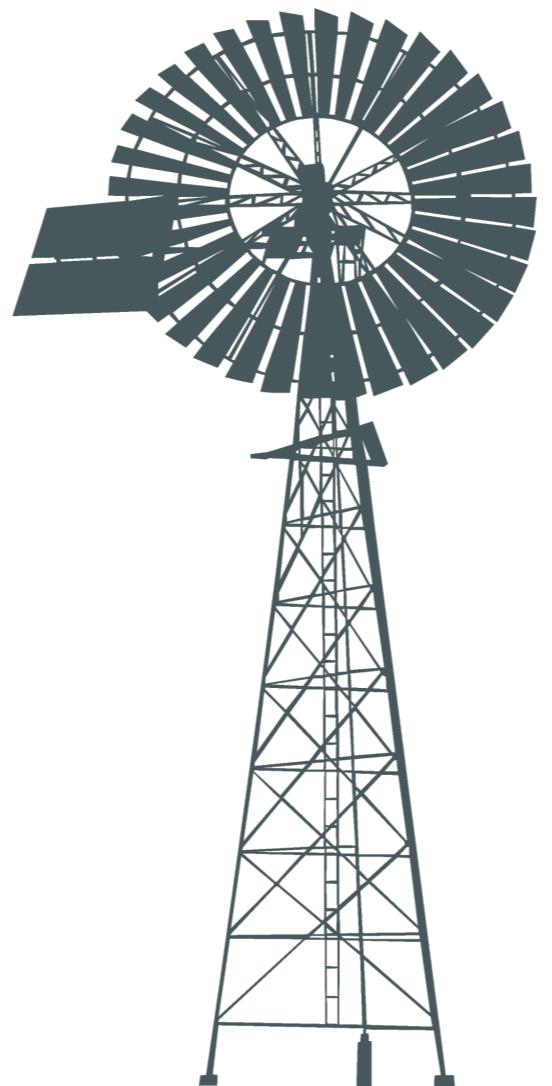


add semantic meaning
to your events



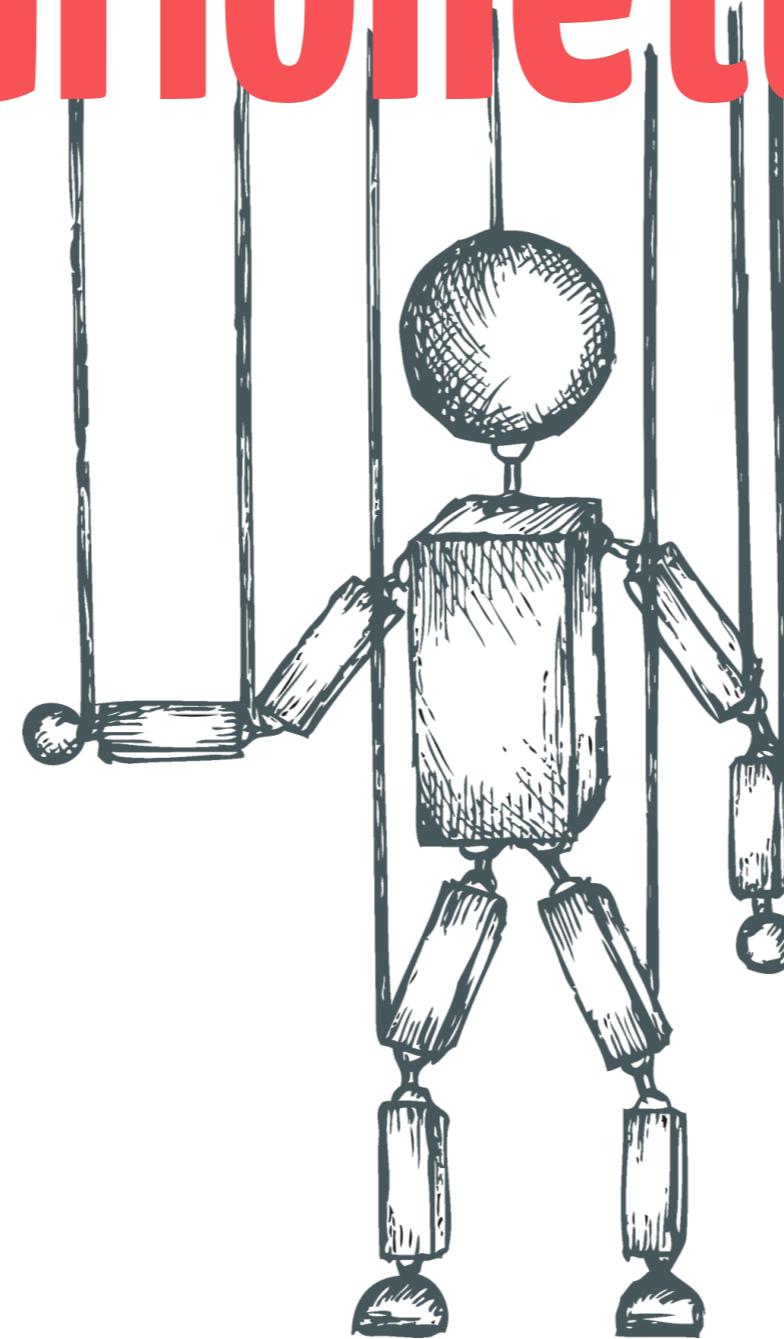


accept the winds of change with
composite design

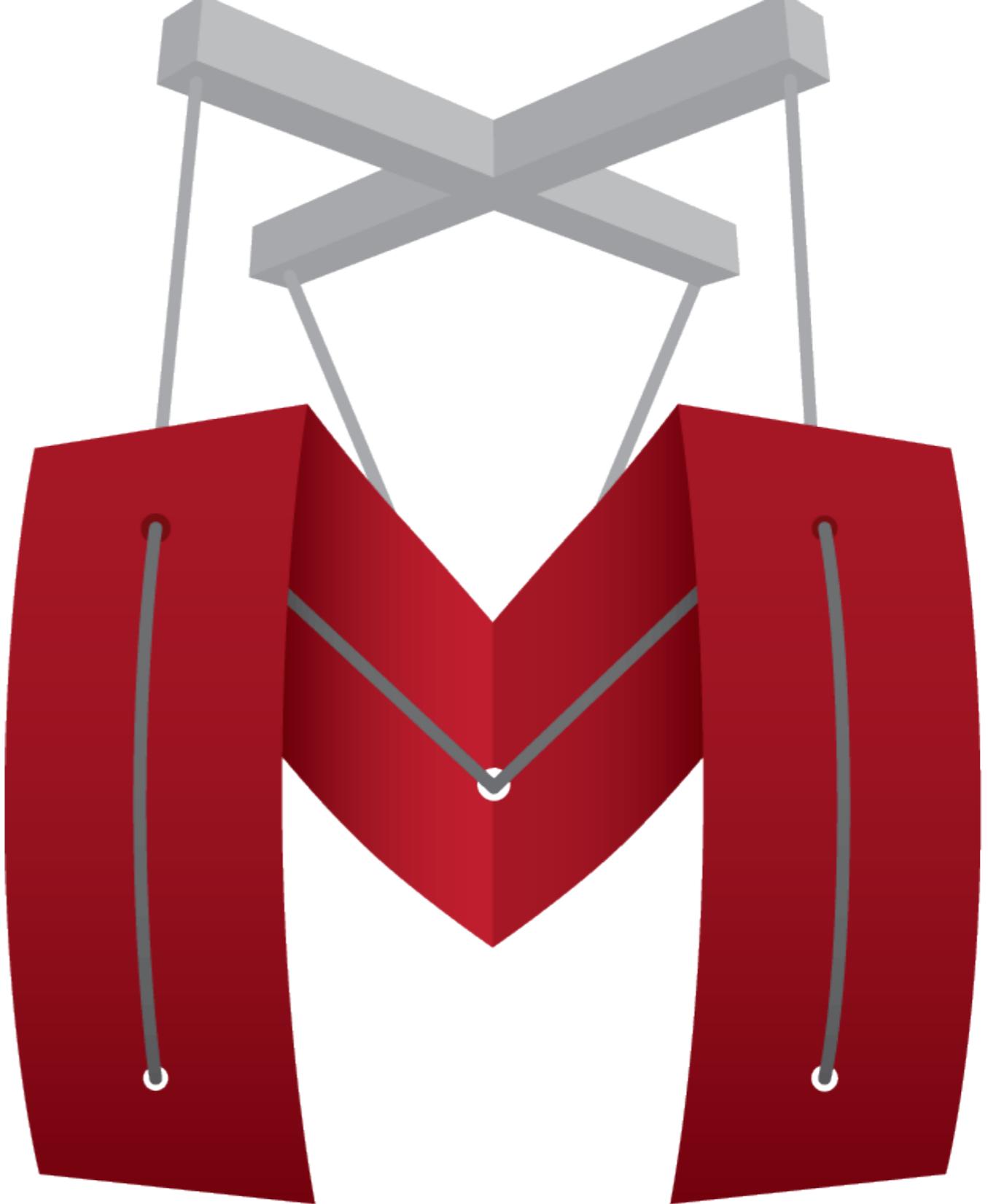




unsuck our backbone using
marionette.js



ONLY
SCRATCHED
THE
SURFACE



Marionette^{js}

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*

TL;DR

large JavaScript applications
composed
from smaller parts

TL;DR

make your application dance

mariionette.js

Thats it!

internet related activities:

@ammeep

amy.palamounta.in

greenbutton.com

backbonejs.org

marijuana.js.com

lostechies.com/derickbailey

addyosmani.com/blog