



Put a little Backbone in your WordPress

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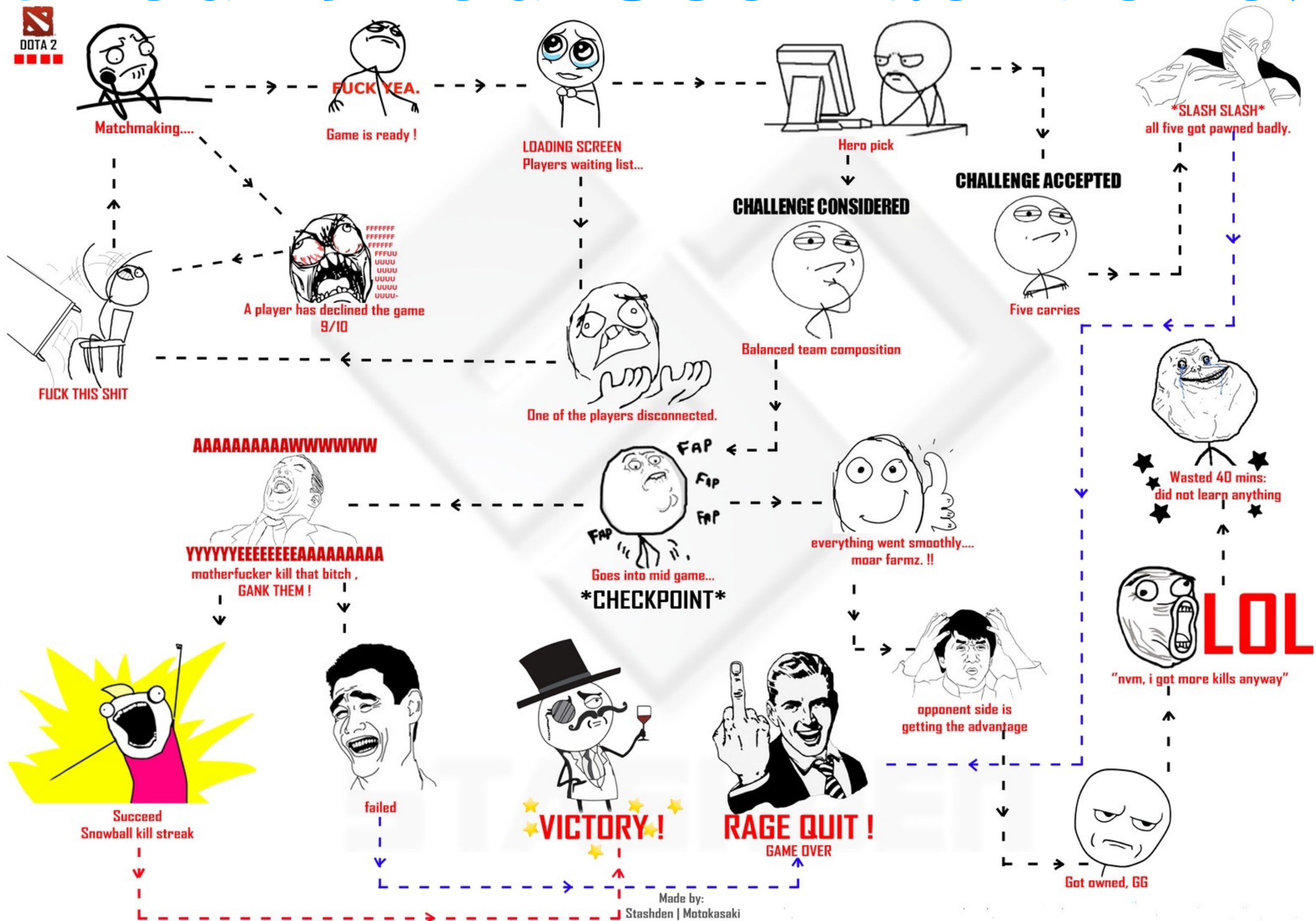




Backbone is Awesome

Philosophically, Backbone is an attempt to discover the minimal set of data-structuring (models and collections) and user interface (views and URLs) primitives that are generally useful when building web applications with JavaScript

Should You Use Backbone?



Backbone Basics

- ➡ Prototypes: Views, Models, Collections.
- ➡ Plus: Events, Routes, History
- ➡ Data: bootstrapping & fetching

Why use Backbone?

- ➡ Fast, interactive, responsive interfaces
- ➡ Organized code structure
- ➡ Lightweight

Some Examples

- ➡ <http://backbonejs.org/#examples>
- ➡ Rdio, Hulu, Gawker, Foursquare, Disqus, Khan Academy, Basecamp, Stripe, AirBnB, Pandora, Code School, CloudApp, Trello and on and on...
- ➡ Backbone in WordPress core...

Backbone in WordPress Core

Underscore is Awesome

- ➡ Collection functions: `_.map`, `_.where`, `_.pluck`, `_.filter`
- ➡ Timing functions: `_.memoize`, `_.throttle`, `_.debounce`, `_.once`, `_.delay`, `_.defer`
- ➡ Utility: `_.pick`, `_.extend`, `_.defaults`
- ➡ <http://underscorejs.org/>

Underscore Examples

```
gridmodel = filter( this backbonePeople model  
$( document ).on( 'keyup', _.throttle( function( e ){  
  self.keyPress( e );  
}, 125 ) );  
  .toLowerCase().replace( ' ', '' );  
} );
```

WordPress and Backbone

➡ WordPress JSON REST API

➡ wp_localize_script

➡ wp_ajax_(action)

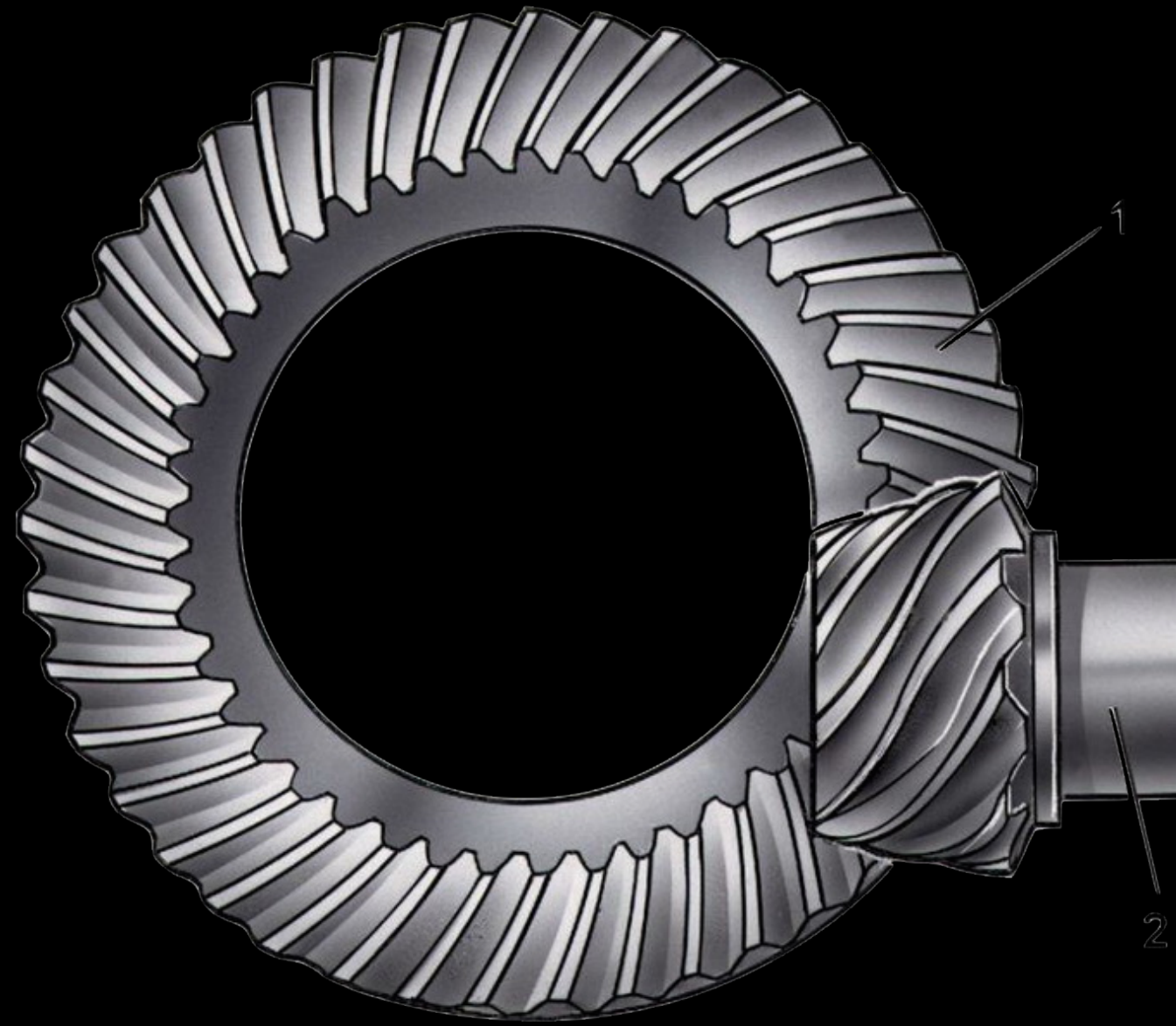
➡ wp_create/verify_nonce

➡ wp_remote_get

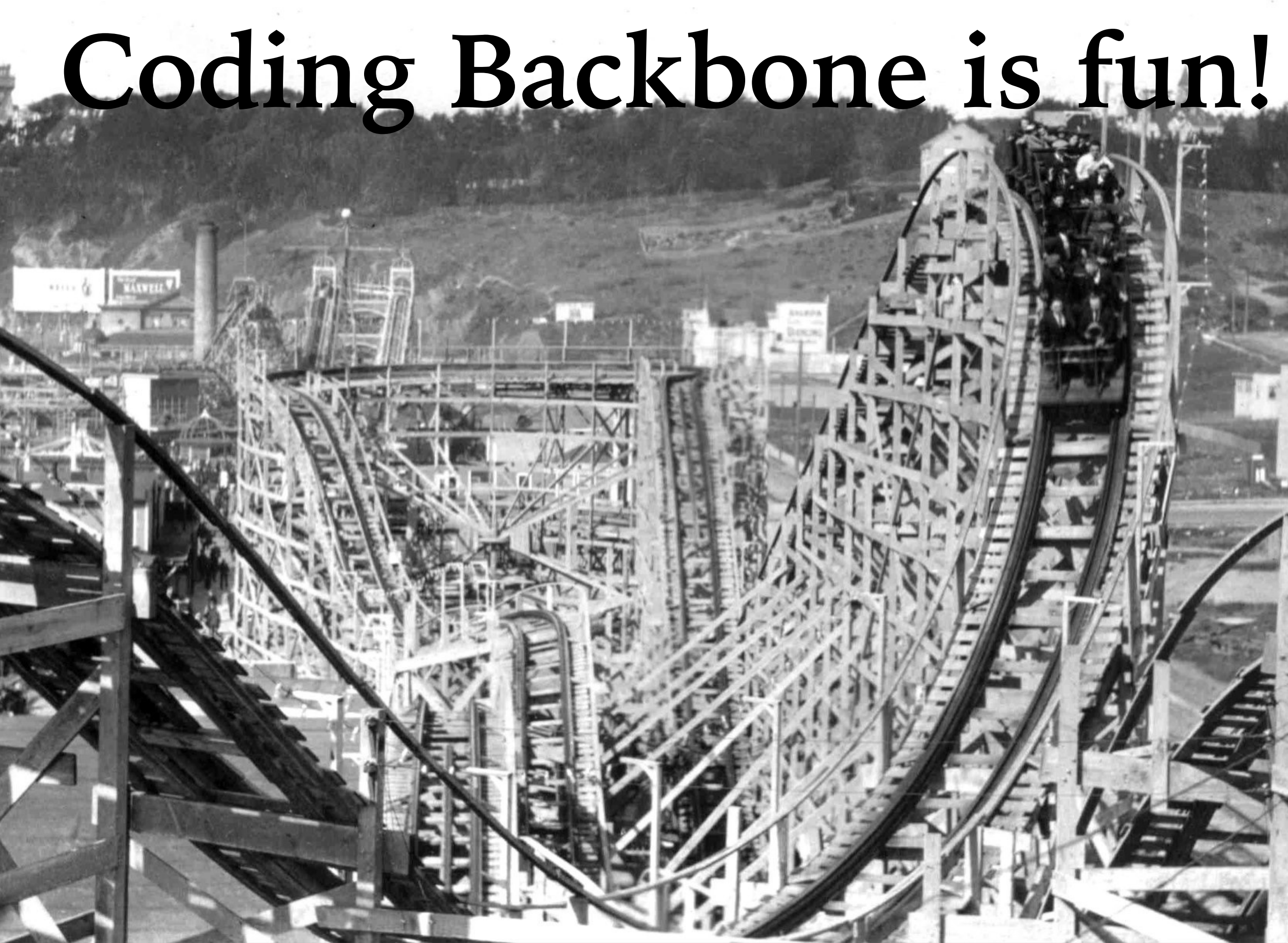
➡ get/set_transient

➡ wp_send_json_success/error

➡ wp.template, wp.Backbone.view/subview



Coding Backbone is fun!



Coding Backbone is fun!

- ➡ annotated source code

backbonejs.org/docs/backbone.html

- ➡ simple and extendable - meant to be flexible
- ➡ clean structure, templates, code data binding



Considerations

➡ Accessibility

➡ nojs

➡ Internationalization

Building a Simple App

- ➡ DEMO 1

- ➡ Display a post

- ➡ Uses View, Model and Template

- ➡ Post data from the WP REST API

Template

```
<!-- Main placeholder div to inject into -->
<div class="backbonedemo"></div>

<!-- Demo post template -->
<script id="tmpl-backbonedemo-post" type="text/html">
  <!-- Post -->
  <div class="backbonedemo-post-container">
    <div class="backbonedemo-post-title">
      <h2>{{ data.title }}</h2>
    </div>
    <div class="backbonedemo-post-content">
      {{ data.content }}
    </div>
  </script>
```

Bootstrap Data

```
/**
 * Bootstrap data for our application using wp_localize_script
 */
$demodata = array(
    'apiurl' => get_json_url(), /* Pass the WP REST API url */
);

wp_localize_script(
    'backbonedemo', /* The script handle */
    'demodata',     /* The localized variable name */
    $demodata       /* The data to pass */
);
```

Post Model

```
/**
 * =====
 * MODELS
 * =====
 */

bbdemo.model.PostModel = Backbone.Model.extend( {

  /**
   * Override the default sync method to call our custom API endpoint.
   */
  sync: function( method, model, options ) {
    console.log( 'bbdemo.model.PostModel::sync' );
    /**
     * Adjust the sync url: set to our api url, Post ID 1.
     */
    options.url = demodata.apiurl + 'posts/1';

    /**
     * Pass back to the default handler.
     */
    return Backbone.sync( method, model, options );
  }
} );
```

JSON REST API

```
{
  ID: 1,
  title: "Hello world!",
  status: "publish",
  type: "post",
  ▶ author: {...},
  content: "Welcome to WordPress. This is your first post. Edit or delete it, then start blogging.  

  \n\r\nLorem ipsum dolor sit amet, consectetur adipiscing elit. Sapiens autem semper beatus est et  

  aliquando in dolore; An eum discere ea mavis, quae cum plane perdidiceriti nihil sciat? Duo Rege  

  constructio interrete. Torquatus, is qui consul cum Cn. Cur id non ita fit? Quod idem cum vestri  

  faciant, non satis magnam tribuunt inventoribus gratiam. Tibi hoc incredibile, quod beatissimum  

  nunc quidem quod eam tuetur, ut de vite potissimum loquar, est id extrinsecus;",
  parent: null,
  link: http://wp.localhost/?p=1,
  date: "2015-03-14T19:49:25",
  modified: "2015-03-15T20:16:00",
  format: "standard",
  slug: "hello-world",
  guid: http://wp.localhost/?p=1,
  excerpt: "<p>Welcome to WordPress. This is your first post. Edit or delete it, then start blogg  

  Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sapiens autem semper beatus est et est  

  aliquando in dolore; An eum discere ea mavis, quae cum plane perdidiceriti nihil sciat? Duo Rege  

  constructio interrete. Torquatus, is qui consul cum Cn. Cur [&hellip;]</p>\n",
  menu_order: 0,
  comment_status: "open",
  ping_status: "open",
  sticky: false,
  date_tz: "UTC",
  date_gmt: "2015-03-14T19:49:25",
  modified_tz: "UTC",
  modified_gmt: "2015-03-15T20:16:00",
  ▶ meta: {...},
  featured_image: null,
  ▶ terms: {...}
}
```

Post View

```
/**
 * The main post view.
 */
bbdemo.view.PostView = wp.Backbone.View.extend( {

    /**
     * Set the view class and template.
     */
    className: 'backbonedemo',
    template: wp.template( 'backbonedemo-post' ),

    /**
     * Initialize the view.
     */
    initialize: function( model ) {
        var self = this;
        this.model = model;
    }
});
```

Initialization

```
/**
 * =====
 * MAIN APP SETUP
 * =====
 */

/**
 * Funciton to initialize the application.
 */
bbdemo.initialize = function() {
    var postmodel = new bbdemo.model.PostModel();
    bbdemo.view.postview = new bbdemo.view.PostView( postmodel );
    $( 'body' ).append( bbdemo.view.postview.el );
}

/**
 * Go! Initialize the application one document ready.
 */
$( document ).ready( function() {
    bbdemo.initialize();
});
```

Result

Hello world!

Welcome to WordPress. This is your first post. Edit or delete it, then start blogging! Lorem ipsum dolor sit amet, consectetur adipiscing elit. Sapiens autem semper beatus est et est aliquando in dolore; An eum discere ea mavis, quae cum plane perdidiceriti nihil sciat? Duo Reges: constructio interrete. Torquatus, is qui consul cum Cn. Cur id non ita fit? Quod idem cum vestri faciant, non satis magnam tribuunt inventoribus gratiam. Tibi hoc incredibile, quod beatissimum. Et nunc quidem quod eam tuetur, ut de vite potissimum loquar, est id extrinsecus;

A bit more complex

➡ DEMO 2

- ➡ Display a post list using bootstrapped data, a template and view
- ➡ Click post to load post via the WP REST API
- ➡ Uses Collection to handle all posts
- ➡ Uses same view from Demo1 for detail view
- ➡ Uses Router and History to handle routing

Template

```
<!-- Demo postlistitem template -->
<script id="tmpl-backbonedemo-postlistitem" type="text/html">
  <div class="backbonedemo-postlistitem-container">
    <div class="backbonedemo-postlistitem-title">
      <h3>
        <a href="#post{{ data.ID }}">
          {{ data.post_title }}
        </a>
      </h3>
    </div>
  </div>
</script>
```

Bootstrap Data

```
$post_data = get_posts( array(  
    'posts_per_page' => 10,  
    'no_count_posts' => true,  
) );  
$demodata = array(  
    'apiurl' => get_json_url(), /* Pass the W  
    'posts' => $post_data,  
);
```

Post Collection

```
/**
 * =====
 * COLLECTIONS
 * =====
 */
bbdemo.PostCollection = Backbone.Collection.extend( {} );
```

Post Collection View

```
bbdemo.PostCollectionView = wp.Backbone.View.extend( {  
  /**  
   * Set the view class and template.  
   */  
  className: 'backbonedemo',  
  template: wp.template( 'backbonedemo-postlistitem' ),  
  
  /**  
   * Initialize the view.  
   */  
  initialize: function( postCollection ) {  
    this.postCollection = postCollection;  
    this.render();  
  },  
  
  /**  
   * Render the collection view  
   */  
}
```

Router

```
bbdemo.Router = Backbone.Router.extend( {  
  
  /**  
   * Set up the route  
   */  
  routes: {  
  
    /**  
     * Route is 'post'+id number, eg /#post10  
     */  
    "post:postId": "postRoute"  
  },  
  
  /**  
   * Handle the postRoute callback - show the post.  
   */  
  postRoute: function( postId ) {
```

Initialization

Function to initialize the application.

```
demo.initialize = function() {  
  /**  
   * Set up the post collection with the bootstrapped data.  
   */  
  var postCollection = new bbdemo.PostCollection( demodata.posts ),  
  
  /**  
   * Set up the post collection view, passing the collection.  
   */  
  postCollectionView = new bbdemo.PostCollectionView( postCollection ),  
  
  /**  
   * Set up the Router.  
   */  
  bbRouter = new bbdemo.Router();  
  
  /**  
   * Start the history engine.  
   */  
  Backbone.history.start();  
}
```

Result

More complex

- ➡ Backbone driven plugin to display user directory
- ➡ Grabs data by scraping WordCamp attendee page
- ➡ Data stored in CPT, passed via JSON REST API

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<https://github.com/adamsilverstein/backbone-directory>

Start Using Backbone

- Simple concepts
- Fast and lightweight
- Flexible and extendible
- Used in WordPress core



Resources

- Backbone - <http://backbonejs.org/>
- Underscore - <http://underscorejs.org/>
- Code School Backbone course - <https://www.codeschool.com/paths/javascript#backbone-js>
- Developing Backbone Applications - <https://www.codeschool.com/paths/javascript#backbone-js>
- JSON REST API - <https://wordpress.org/plugins/json-rest-api/> & <https://github.com/WP-API/WP-API>
- TLC Transients - github.com/markjaquith/WP-TLC-Transients
- wp.Backbone.View/Subview - <http://wordpress.tv/2014/11/03/mark-jaquith-backbone-views-in-wordpress/>
- Demo Code: <https://github.com/adamsilverstein/backbone-demo>



About

- Save assembly code onto cassettes
- Good at JavaScript & bug squashing
- Love contributing to WordPress Core
- WP Revisions Component Maintainer
- Managing Engineer at 10up

