REUSABLE CODE

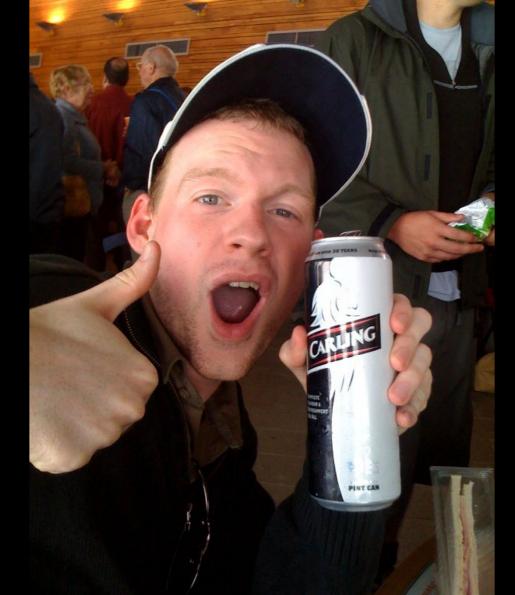
For Good or For Awesome!





tion of two or more wave wave, which may be big wha (only before a n ising.] the imac sth until sb/sth mo th to south through the Pa rangement . e interim the west side is one day earlie ast side. o picture at earth me be vent Internet / mtənet/ (also informa 1 [C see [sing.] (computing) the intersional eri ry le puters that makes it possible fo. /ou tion from all around the world on your to send information to other comp gr It it on the Internet. 3 Compare In 7 [Wide Web. ess s lurray ol /'mtəppl/ noun [sing., with international organization th











Glow is a JavaScript library which gives Simplified DOM manipulation, event hundling animalian

- A versalite set of user interface whiteels.

theTeam.







STARTING Your Journey

GETTING STARTED

- Find something worth building
- Could be an application...
- ...or a small component

RECONSTRUCTION

I made a laser!





RECONSTRUCTION

You suck!



RECONSTRUCTION

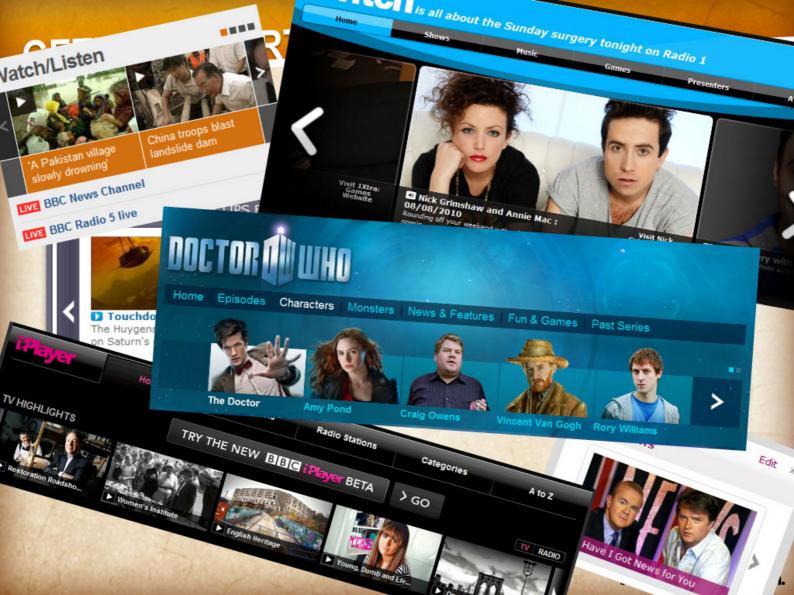
Yey for lasers!!



GETTING STARTED

- Find something worth building
- Could be an application...





REQUIREMENTS

What does the thing need to do?



REQUIREMENTS

What does the thing need to do?



REQUIREMENTS

What does the thing need to do?



API& DOCS Getting them right



Historical Fallacies

A look at common misconceptions people hold about historical events

Historical Fallacies Manuses

Cocks. Lots of them.

WHY SO SERIOUS?

- The better the API, the more the user will get out of your code
- A bad API may hide or distract from the best way of doing something
- APIs are difficult to change

WHY SO SERIOUS?

- The better the API, code
- A bad API may hid something
- APIs are difficult to



vill get out of your

e best way of doing

WHY SO SERIOUS?

The better the API, the more the user will get out of your

code

A bad API m something

APIs are diff



way of doing

AFUNCTION But where to put it?

Glahal scope

Custom 'namespace'

Existing object

Library Plugin

Namespaces group similar things together

```
jToys.carousel();
jToys.accordion();
```

- Namespaces group similar things together
- Namespaces can contain other namespaces

```
jToys.ui.carousel();
jToys.ui.accordion();
jToys.net.searchFlickr();
```

- Namespaces group similar things together
- Namespaces can contain other namespaces
- Be careful not to over-organise

```
jToys.ui.carousel();
```

→ Namespa

→ Namespa

⇒ Be careful

jToys.ui.ca



- Namespaces group similar things together
- Namespaces can contain other namespaces
- Be careful not to over-organise
- Organise when necessary
- Alias for backwards compatibility

```
QUnit.same(obj1, obj2, 'Check objects are the same');
```

77 Fine superior series to recrease to the same time.

7.3 Other pairs that do not both pass typical value on Tutopania analysis.

determined by ==.

the same number of owned properties (as verified with object.prototype.hasOwnProperty.call), the same set of keys (although not necessarily the same order), equivalent values for every corresponding key, and an identical "prototype" property. Note: this accounts for both named and indexed properties on Arrays.

assert.deepEqual(actual, expected, message opt);

8. The non-equivalence assertion tests for any deep inequality.

NAMESPACES

- Namespaces group similar things together
- Namespaces can contain other namespaces
- Be careful not to over-organise
- Organise when necessary
- Alias for backwards compatibility

```
QUnit.same(obj1, obj2, 'Check objects are the same');
QUnit.deepEqual(obj1, obj2, 'Check objects are the same');
QUnit.same = QUnit.deepEqual;
```

Glahal scope

Custom 'namespace'

Existing object

Library Plugin

In JS all objects can be modified

```
jToys.sum( [4, 8, 15, 16, 23, 42] ); // 108
[4, 8, 15, 16, 23, 42].sum(); // 108
```

- In JS all objects can be modified
- Can create sexy-looking readable code

```
(6).weeks().fromNow();
Number.prototype.weeks = function() {
    return // a Date 'this' number of weeks from zero
};
Date.prototype.fromNow = function() {
    return // 'this' Date plus now Date
};
```

- In JS all objects can be modified
- Can create sexy-looking readable code
- What's the catch?

```
document.getElementsByClassName('comment').slice(0, 1);
```

object returned by the earlier call. In other cases, a new returned.

The getElementsByClassName (classNames) method on must return a live NodeList with the nodes that the measurement (s), excluding any elements that are not described on which the method was invoked. When the limit object again with the same argument (s) the context as the object returned by the context as the con

- In JS all objects can be modified
- Can create sexy-looking readable code
- What's the catch?

```
var comments = document.getElementsByClassName('comment');
comments.length; // 2
$('<div class="comment"></div>').appendTo('body');
comments.length; // 3
```

- In JS all objects can be modified
- Can create sexy-looking readable code
- What's the catch?
- Don't mess with objects you don't own!

Glahel scope

Custom 'namespace'

Ling object

Library Plugin

WRITING A PLUGIN

Similar to extending core types, but with less risk



Article Discussion

Read Edit View history

Jake Weary

From Wikipedia, the free encyclopedia

Jake Weary (born February 14, 1990) is an American actor.

Contents [hide]

- 1 Biography
 - 1.1 Movie career
 - 1.2 Music career
 - 1.3 Personal life

WRITING A PLUGIN

Similar to extending core types, but with less risk

```
$('#whatever').carousel();

jQuery.fn.carousel = function() {
    // ...
};

$ === jQuery;

jQuery.fn === jQuery.prototype;
```

WRITING A PLUGIN

- Similar to extending core types, but with less risk
- You can still have collisions

Glahal scope

Custom 'namespace'

Ling object

Library Plugin

SO. WHICH?

- Namespaces or plugin, you pick
- Consider the users!
- ...but be consistent

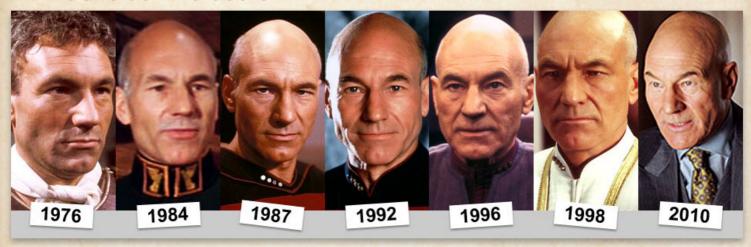
```
("I LIKE POTATOES").toLowerCase();
String.fromCharCode(63);

// How it should be...
(42.2).round();
Number.random();

// How it is...
Math.round(42.2);
Math.random();
```

SO. WHICH?

- Namespaces or plugin, you pick
- Consider the users!



FUNCTIONS & Parameters

Start with documentation

```
/**
    @name jToys.carousel
    @function
    @description Create an interactive carousel

    @param {selector} container Element to enhance
        Direct children of this item will be treated as carousel items.

    @example
        jToys.carousel('#whatever');
*/
```



woosh._utils Some basic util functions

Index

woosh

woosh._LibraryTest

woosh._TestFrame

woosh._TestRunner

woosh._utils

woosh.AsyncTest

woosh.Conductor

woosh.DummyTest

woosh.LibraryResult

woosh.Result

woosh. Result Comparison

woosh.Test

woosh.TimeTest

woosh.views

woosh.VisualTest

Full API

Writing Plugin

Writing Tests

Methods

▶ apply Copies properties from one object to another

► constructorName Gets the constructor name for a function

▼ extend Copies the prototype of one object to another.

Synopsis

woosh._utils.extend(sub, base, additionalProperties)

Description

The 'subclass' can also access the 'base class' via subclass.base

Parameters

sub

Type Function Required Yes

Class which inherits properties.

base

7....

Type Function

Start with documentation

```
/**
    @name jQuery#carousel
    @function
    @description
        Turn each element in the set of matched elements into a carousel.

    Direct children of each matched element will be treated as carousel items.

@example
    $('#whatever').carousel();
*/
```

.appendTo()

Insert every element in the set of matched elements to the end of the target.

.attr()

Get the value of an attribute for the first element in the set of matched elements.

.before()

Insert content, specified by the parameter, before each element in the set of matched elements.

Attributes, General Attributes

DOM Insertion, Or

clone()

reate a deep copy of the set of matched elements.





Main page Contents Featured content Current events Random article

- Interaction About Wikipedia Community portal Recent changes Contact Wikipedia Donate to Wikipedia Help
- Toolbox
- Print/export
- Languages

Article Discussion

Read Edit View history

Search

New features & Log in / create account

Consistency

From Wikipedia, the free encyclopedia

Not PHP[1]

See also

edit

Disaster - the collective noun for PHP developers, e.g. "They hired a disaster of PHP developers"

Footnotes

edit

1. The screams of millions of developers

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- Start with documentation
- Name functions and parameters consistently

```
// prefixed with 'str', no underscores / camelCasing
strtolower('Hello World');

// prefixed with 'str', but now also underscores!
str_pad($i, 4, '0', STR_PAD_LEFT);

// Now suffixed with 'string'
convert_cyr_string('cBMПЛП', 'w', 'm');

// A mix of no underscores & underscores (i.e. taking the piss)
htmlspecialchars_decode('<p&gt;Hello&lt;/p&gt;');
```



- Start with documentation
- Name functions and parameters consistently

```
/**
    @name jToys.carousel
    @function
    @description Create an interactive carousel
    @param {selector} container Element to enhance
        Direct children of this item will be treated as
        carousel items.
    @param {boolean} [loop=false]
        Loop the carousel from the last item to the first.
    @param {number} [duration=200]
        Duration of scrolling animations in milliseconds.
    @example
        jToys.carousel('#whatever', true, 500);
*/
```

- Start with documentation
- Name functions and parameters consistently

```
jToys.carousel('#whatever', true, 500);
```

- Start with documentation
- Name functions and parameters consistently
- Try to make arguments read well

```
$('<div>Hello</div>').appendTo('#main');
```

- Start with documentation
- Name functions and parameters consistently
- Try to make arguments read well

```
something.size(640, 360);
```

- Start with documentation
- Name functions and parameters consistently
- Try to make arguments read well

```
element.cloneNode(true);
```

- Start with documentation
- Name functions and parameters consistently
- Try to make arguments read well

```
// match dates like 2010/10/12
var re = /^\s*(\d{2}|\d{4})[-\/](\d\d?)[-\/](\d\d?)\s*$/
```





- Start with documentation
- Name functions and parameters consistently
- Try to make arguments read well

```
jToys.carousel('#whatever', undefined, 500);
```

- Start with documentation
- Name functions and parameters consistently
- Try to make arguments read well

```
swfobject.embedSWF('movie.swf', 'vid', 500, 300, 9, false, {foo:'bar'}, ...);
```

- Start with documentation
- Name functions and parameters consistently
- Try to make arguments read well
- Use option objects for optional arguments

```
jToys.carousel('#whatever', {
    loop: true,
    duration: 500
});
```

FUNCTIONS & PARAMETERS

- Start with documentation
- Name functions and parameters consistently
- Try to make arguments read well
- Use option objects for optional arguments

```
jToys.carousel('#whatever', {
    loop: false,
    duration: 200,
    spotlightSize: 3,
});
```

```
jToys.carousel('#whatever', {
    loop: false,
    dura
    spot
});
Mass
```



```
jToys.carousel('#whatever', {
    loop: false,
    dura
    spot
});
Mass
```



Use metaphors if necessary, but careful they don't mislead

```
jToys.carousel('#whatever', {
    loop: false,
    duration: 200,
    spotlightSize: 3,
    step: 3
});
/**
    @param {number} [opts.step=1]
        Number of places to move at a time
*/
```

- Use metaphors if necessary, but careful they don't mislead
- Consider common usage, make those things easy

```
jToys.carousel('#whatever', {
    paged: true
});
jToys.carousel('#whatever', {
    step: 2
});
/**
    @param {boolean} [opts.paged=false]
        Move by the number of items in the spotlight
    @param {number} [opts.step=1]
        Number of places to move at a time
*/
```

- Use metaphors if necessary, but careful they don't mislead
- Consider common usage, make those things easy

```
jToys.carousel('#whatever', {
    paged: true,
    step: 2
});
/**
    @param {boolean} [opts.paged=false]
        Move by the number of items in the spotlight
    @param {number} [opts.step=1]
        Number of places to move at a time
*/
```

- Use metaphors if necessary, but careful they don't mislead
- Consider common usage, make those things easy
- Avoid options that depend on or clash with other options

```
#whatever {
    overflow-x: hidden;
    overflow-y: auto;
}
```

that case the content height of d1 is exactly the maximum height of 5em, proving that the assumption was correct and d1 indeed should not have scrollbars.

The computed values of 'overflow-x' and 'overflow-y' are the same as their specified values, except that some combinations with 'visible' are not possible: if one is specified as 'visible' and the other is 'scroll' or 'auto', then 'visible' is set to 'auto'. The computed value of 'overflow' is equal to the computed value of 'overflow-x' if 'overflow-y' is the same; otherwise it is the pair of computed values of 'overflow-x' and 'overflow-y'.

The scrolling mechanism depends on the UA. The most common mechanism is a scrollbar, but panners, hand cursors, page flickers, etc. are also possible. A value of second would tell Life that support a weather scrolling mechanism to display one so that

- Use metaphors if necessary, but careful they don't mislead
- Consider common usage, make those things easy
- Avoid options that depend on or clash with other options

```
jToys.carousel('#whatever', {
   paged: true
});
```

- Use metaphors if necessary, but careful they don't mislead
- Consider common usage, make those things easy
- Avoid options that depend on or clash with other options

```
jToys.carousel('#whatever', {
   paged: 2
});
```

- Use metaphors if necessary, but careful they don't mislead
- Consider common usage, make those things easy
- Avoid options that depend on or clash with other options
- Blah blah consistency again etc etc

```
#whatever {
    color: rgba(50%, 50%, 50%, 0.5);
}
```



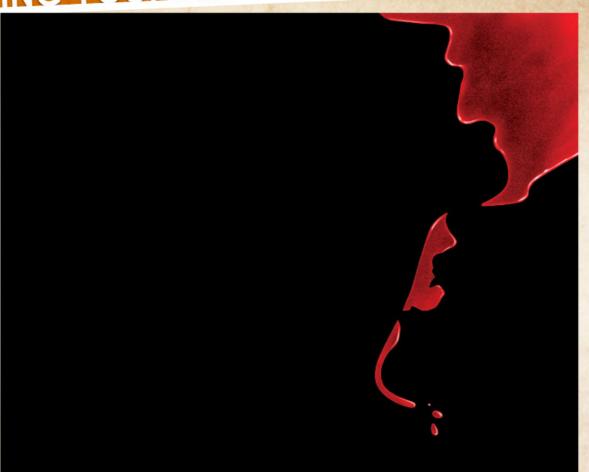
- Use metaphors if necessary, but careful they don't mislead
- Consider common usage, make those things easy
- Avoid options that depend on or clash with other options
- Blah blah consistency again etc etc

```
#whatever {
    color: rgba(255, 127, 0, 50%);
}
```

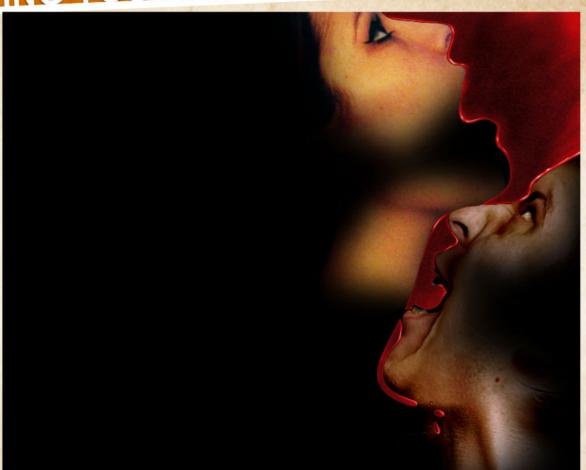
ARE WE...

...on the right tracks?

TESTING YOUR API



TESTING YOUR APL



TESTING YOUR API

- Show your code examples to someone else
- Do they have a rough idea what it does?
- Let them read your documentation
- Capture any questions they have are they missing from your docs?

TESTING YOUR API

⇒ Sho

⇒ Do

→ Let

→ Cap



Jake Archibald - theTeam.

Allowing the user to do something a bit different

Resign yourself to the idea that what you make will never do exactly what the user wants

Resign yourself to the idea that what you make will never



- Resign yourself to the idea that what you make will never do exactly what the user wants
- How can we add more flexibility to our carousel?
- Build something more abstract to use or inherit from



- Resign yourself to the idea that what you make will never do exactly what the user wants
- How can we add more flexibility to our carousel?
- Build something more abstract to use or inherit from
- Eases the learning curve & adds perception of progress



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- Resign yourself to the idea that what you make will never do exactly what the user wants
- How can we add more flexibility to our carousel?
- Build something more abstract to use or inherit from
- Eases the learning curve & adds perception of progress

```
$.get('someFile.txt', function(data) {
   console.log(data);
});
```

- Resign yourself to the idea that what you make will never do exactly what the user wants
- How can we add more flexibility to our carousel?
- Build something more abstract to use or inherit from
- Eases the learning curve & adds perception of progress

```
$.ajax({
    url: 'someFile.txt',
    success: function(data) {
        console.log(data);
    },
    error: function() {
        console.log('Oh noes!');
    },
    timeout: 4000
});
```

INSTANCES ... and Instance Properties & Mothada

INSTANCES

```
var carousel = new jToys.CarouselPane('#whatever', {
    loop: false,
    page: true
});
carousel.moveTo(3).itemsInSpotlight().css('color', 'red');
```

INSTANCES

```
var $carousel = $('#whatever').carouselPane({
    loop: false,
    page: true
});

$carousel.carouselPane('moveTo', 3)
        .carouselPane('itemsInSpotlight')
        .css('color', 'red');
```

INSTANCES

```
var $dialog = $('#whatever').dialog();
$dialog.bind('dialogfocus', callback);
$dialog.show();
$dialog.hide();
$dialog.dialog('open');
$dialog.dialog('close');
$dialog.dialog('cloes'); // silent fail
dialog.cloes(); // undefined is not a function
```





ADDING HOOKS For More Flexibility

FEATURE REQUESTS



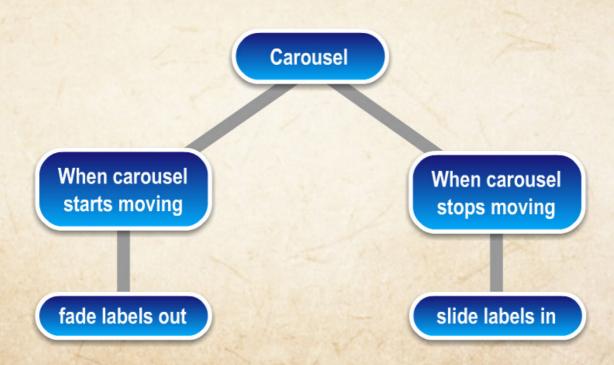
FEATURE REQUESTS

```
$('#whatever').carousel({
    loop: true,
    duration: 200,
    spotlightSize: 3,
    labels: '.label',
    labelAnimIn: ?,
    labelAnimOut: ?
});
```



FEATURE REQUESTS

- Don't get into option-hell
- Break the request down into components



FEATURE REQUESTS

- Don't get into option-hell
- Break the request down into components



Firing & Listening For

```
// User's code
var carousel = new jToys.Carousel('#whatever');

carousel.on('move', function() {
   console.log('hello!');
});
```

* sugent-custom > EventTarget

Class EventTarget
Known Subclasses:
AsyncQueue

EventTarget provides the implementation for any custom events, and also allows other EventTarget is designed to be supposed to possible for implementing code to suppose the supposed to the s



EventEmitter

Many objects in Node emit events: a TCP server a child process emits an event when it exists events. EventEmitter.

Events are regresented by a carel-co

Constructor Detail

public function EventDispatcher(target:IEventDispatcher

Language Version: ActionScript 3.0 Runtime Versions: Flash Player 9, AIR 1.0

Aggregates an instance of the EventDispatcher class.

The EventDispatcher class is generally used as a base class, which means the constructor function. However, advanced developers who are implementally the constructor. If you are unable to extend the EventDispaticher classes and reques interface, use this constructor to apprepate an instance of the Town Chouse Charles Parameters

target Steents spatisher (default = NATT) - The terror open. The parameter is used when the EventDepartChar and Exercisorius, it a recessory or that the consuming strate a project come or which or their sections. Supplied the

```
// User's code
var carousel = new jToys.Carousel('#whatever')
    .on('move', function() {
        console.log('hello!');
    });
carousel.moveBy(1); // logs 'hello!'
// Our code
jToys.Carousel.prototype._startMove = function() {
    this.fire('move');
    // then do moving stuff...
};
```

```
// User's code
var $carousel = $('#whatever').carousel()
   .bind('carouselmove', function() {
       console.log('hello!');
   });

$carousel.carousel('moveTo', 5); // logs 'hello!'
```

- Fire lots of events
- Fire events before an action happens
- Fire events after asynchronous actions
- Document them!

```
/**
  @name jToys.Carousel#event:move
  @description Fires when the carousel is about to move.

@param {jToys.Event} event Event Object
    @param {number} event.moveBy
        The number of items the Carousel will move by.
        Negative when moving backwards.

@example
    myCarousel.on('move', function(event) {
        console.log('Moving by ' + event.moveBy);
    });
*/
```

- Fire lots of events
- Fire events before an action happens
- Fire events after asynchronous actions
- Document them!

```
var carousel = new jToys.Carousel('#whatever')
    .on('move', function(event) {
        // fade labels out
    })
    .on('afterMove', function() {
        // slide labels in
    });
```

WRAPPING UP

- Consider the users...
- Write great docs BEFORE implementation
- Adopt existing conventions where relevant
- Ensure the naming of methods, properties, params & events reads well
- Use option objects for optional params
- Aim for a 1 line, 1 param usage
- But allow the user to get more by writing more
- Let the user get creative



THAT'S IT!

- Email: jakearchibald@theteam.co.uk
- Twitter: @jaffathecake
- Also twitter: @theteam
- JsDoc Toolkit: http://code.google.com/p/jsdoc-toolkit/