

Twitter Meta:
@kvangork
#OOJS



Object-Oriented Javascript

order from chaos (we hope)

```
function bfIsAlphaNumeric( cfield )
{
    cfield.value = TRIM2(cfield.value);
    for ( i = 0 ; i < cfield.value.length ; i++)
    {
        var n = cfield.value.substr(i,1);
        if ( n != 'a' && n != 'b' && n != 'c' && n != 'd'
            && n != 'e' && n != 'f' && n != 'g' && n != 'h'
            //...
            && n != '8' && n != '9'
            && n != '_' && n != '@' && n != '-' && n != '.')
        {
            window.alert("Only Alphanumeric are allowed.\nPlease re-enter the value.");
            cfield.value = '';
            cfield.focus();
        }
        cfield.value = cfield.value.toUpperCase();
    }
    return;
}
```

script.aculo.us
it's about the user interface, baby!

mootools

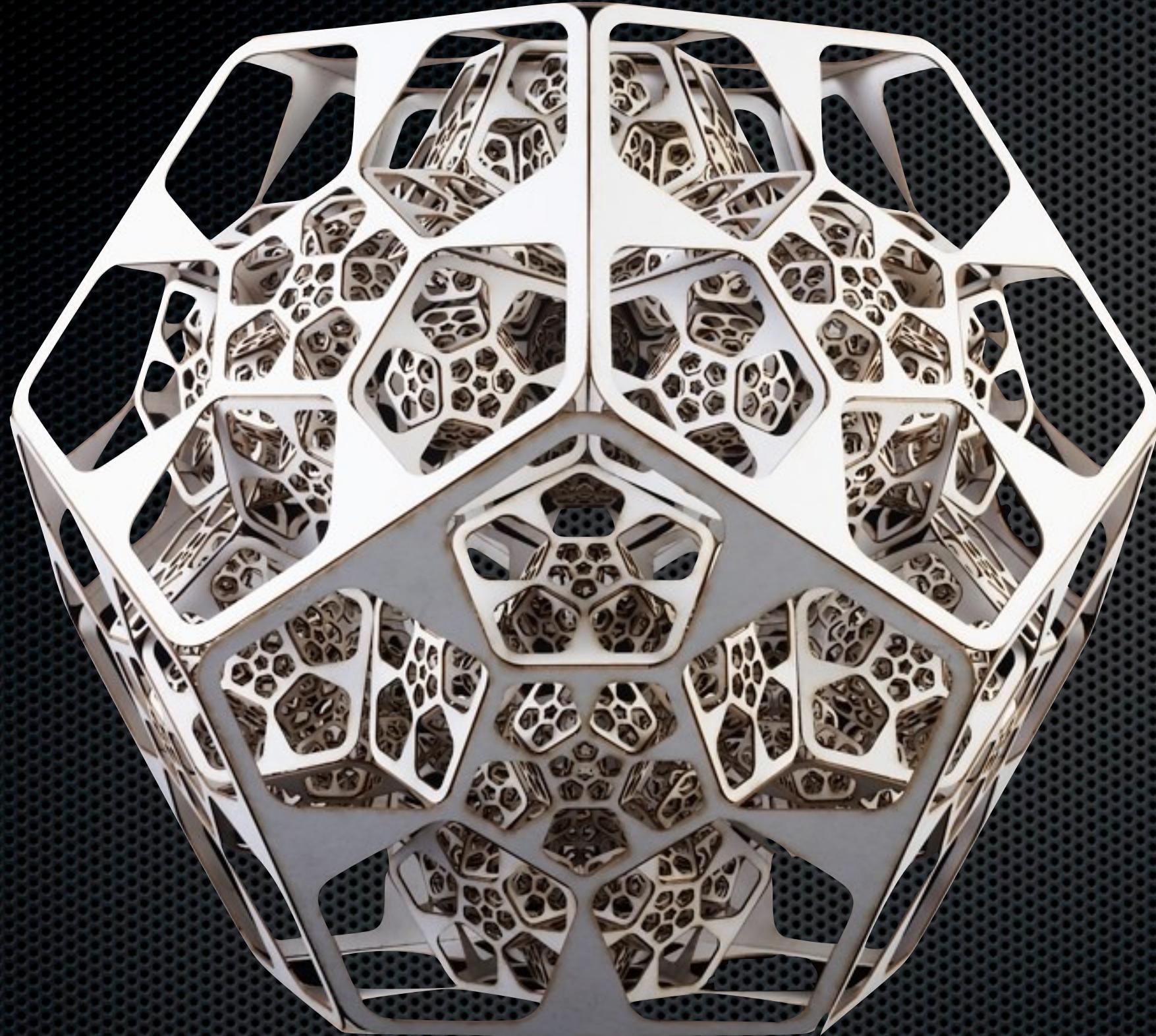


dojo
toolkit

jQuery
write less, do more.

prototype
JavaScript framework





*everything is an
Object
even functions*

every
Object
has a
Prototype

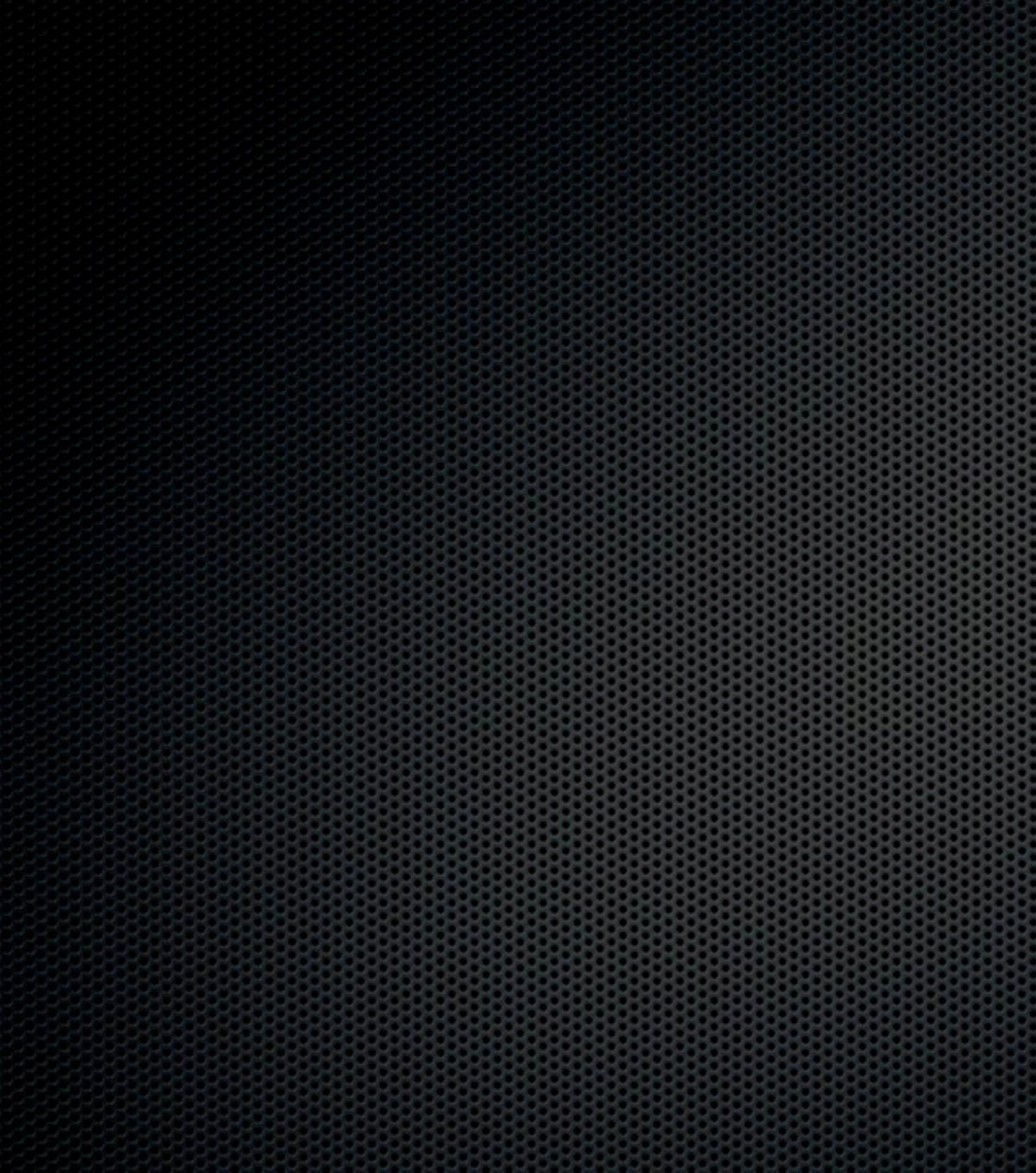
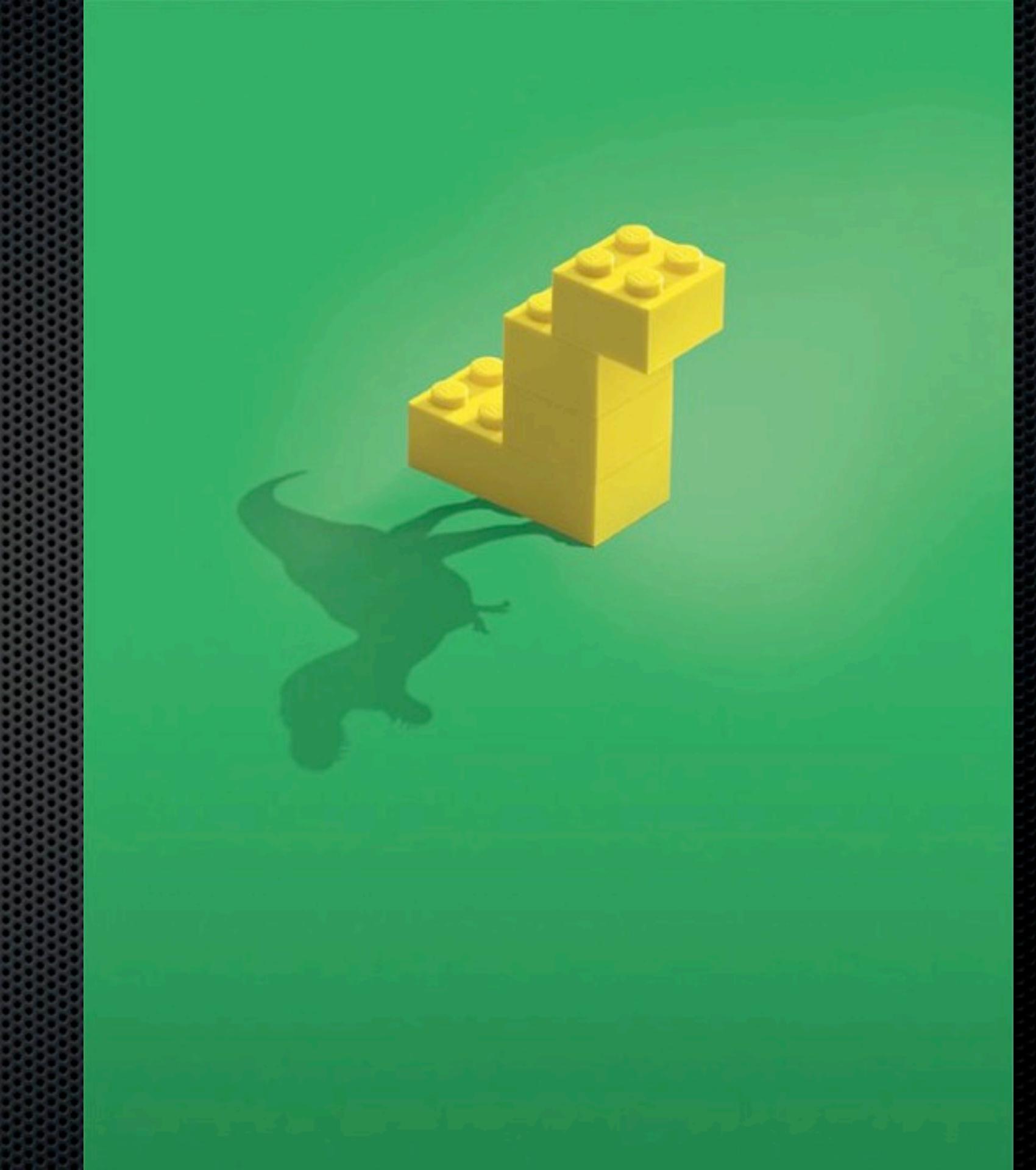


Tools

```
//Helper function. Copy all properties of props into obj
function mixin (obj, props) {
  if(obj && props && typeof props == 'object') {
    for(var property in props) {
      obj[property] = props[property];
    }
  }
}
```

Tools

```
//Pseudo-Classical Extension Function
//Preserves: inheritance
//          superclass
function extend (superclass, overrides) {
    //...complicated, dragon-filled, etc...
    //get the well-commented code from http://gist.github.com/339766
    //Returns new class, descended from superclass, with overrides applied.
}
```



Basic Container Class

```
var Container = function(){
    this.items = []; //empty array to hold items
};
```

```
Container.prototype.addItem = function(item) {
    this.items.push(item);
}
```

```
Container.prototype.getCount = function() {
    return this.items.length;
}
```

```
var Container = function(){
    this.items = []; //empty array to hold items
};
Container.prototype.addItem = function(item) {
    this.items.push(item);
}
Container.prototype.getCount = function() {
    return this.items.length;
}
```

```
var LimitedContainer = extend(Container, {
    constructor: function(maxItems) {
        LimitedContainer.superclass.constructor.call(this);
        this.maxItems = maxItems;
    },
    addItem: function(item) {
        if(this.getCount() < this.maxItems) {
            LimitedContainer.superclass.addItem.call(this, item);
        }
    }
});
```

```
var Container = function(){
    this.items = []; //empty array to hold items
};

Container.prototype.addItem = function(item) {
    this.items.push(item);
}

Container.prototype.getCount = function() {
    return this.items.length;
}

var LimitedContainer = extend(Container, {
    constructor: function(maxItems) {
        LimitedContainer.superclass.constructor.call(this);
        this.maxItems = maxItems;
    },
    addItem: function(item) {
        if(this.getCount() < this.maxItems) {
            LimitedContainer.superclass.addItem.call(this, item);
        }
    }
});
```

**BE
CAREFUL
THIS MACHINE
HAS NO BRAIN
USE YOUR OWN**



Bearded Men of the 21st Century (1939)

Config Objects

```
function LimitedContainer (maxItems) {  
    this.maxItems = maxItems;  
}
```

```
new LimitedContainer(3);
```

Config Objects

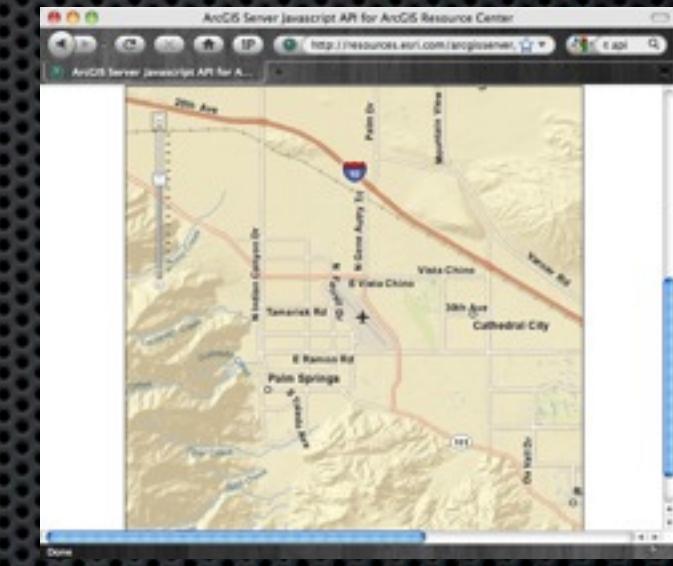
```
function LimitedContainer(config) {  
  mixin(this, config); //who knows what you'll need  
  this.maxItems = config.maxItems || 3;  
}  
  
new LimitedContainer({maxItems: 3});
```



Model



Controller



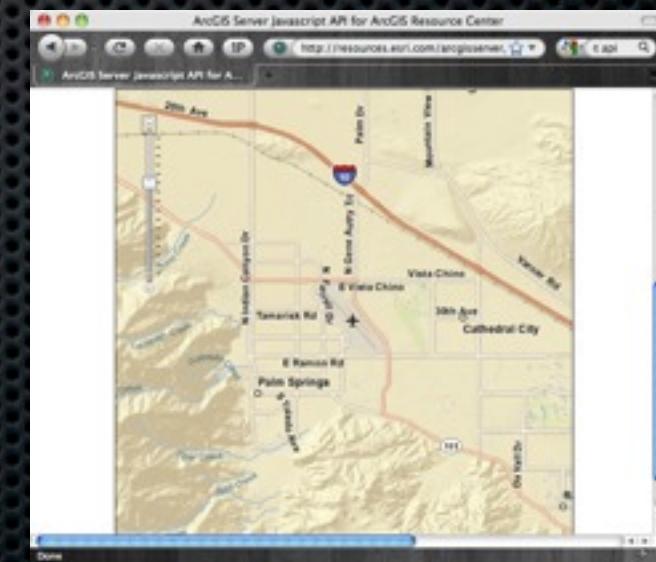
View

Example



A screenshot of the ArcGIS Server REST API documentation page. The left sidebar contains a "Table of Contents" with sections like Overview, Data, Getting Started, Services Directory, Resources and Operations, KML support, REST API versioning, REST API Admin, Configuring the REST API, Catalog, Map Service, Export Map, Identify, Find, Generate KML, Map Tile, Layer, Query Layer, KML Image, Geocode Service, Find Address Candidates, Reverse Geocode, GP Service, Task, Execute Task, Submit Job, Job, Result, and Geometry Service Project. The main content area is titled "ArcGIS Server REST API - Overview" and includes sections for Introduction, Getting Started, and Services Directory.

Model



View

```
var DS = {};  
  
//Empty constructor, this is just a stub  
DS.QueryControllerView = extend(Object, {  
    //No constructor required, use Object's default  
  
    //Required Delegate methods:  
    QueryCompleted: function (resultSet) {  
        alert("Your query finished with " + resultSet.features.length + " features returned.");  
    },  
  
    QueryFailed: function (error) {  
        alert("Sorry, your query failed. Here are its last words: " + error);  
    }  
});
```

```
DS.QueryController = extend(Object, {

    constructor: function (config) {
        //copy all config parameters
        mixin(this, config);

        //verify required parameter presence and types
        if (!(this.view instanceof DS.QueryControllerView)) throw("Incorrect view...");
        if (!this.serviceURL) throw("Missing Service URL.");

        this.queryTask = new esri.tasks.QueryTask(this.serviceURL);
    },

    initiateQuery: function (geometry) {
        if (!geometry instanceof esri.geometry.Geometry) throw("Invalid geometry parameter...");

        var query = new esri.tasks.Query();
        query.geometry = geometry;
        query.returnGeometry = true;

        this.runningQuery = this.queryTask.execute(query, this.callback, this.errback);
    },
});
```

```
view = new DS.QueryControllerView();

controller = new DS.QueryController({
    view: view,
    serviceURL: "http://sampleserver1.arcg...mographics/ESRI_Census_USA/MapServer/3"
});

//set up click event handler
dojo.connect(map, "onClick", function(evt) {
    controller.initiateQuery(evt.mapPoint);
});
```

Demo

```
DS.QueryControllerMapView = extend(DS.QueryControllerView, {
  constructor: function(config) {
    mixin(this, config);

    if (!(this.map instanceof esri.Map)) throw("Incorrect map parameter...");

  },
  QueryCompleted: function(resultSet) {
    if(resultSet.features.length) {
      this.map.graphics.clear();

      var mySymbol = new esri.symbol.SimpleFillSymbol(...255,0,0.25]);
      var feature = resultSet.features[0];

      feature.setSymbol(mySymbol);

      this.map.graphics.add(feature);
    }
  }
});
```

```
view = new DS.QueryControllerMapView({map: map});  
  
controller = new DS.QueryController({  
    view: view,  
    serviceURL: "http://sampleserver1.arcg...mographics/ESRI\_Census\_USA/MapServer/3"  
});  
  
//set up click event handler  
dojo.connect(map, "onClick", function(evt) {  
    controller.initiateQuery(evt.mapPoint);  
});
```

Demo

Resources

- Object-Oriented Javascript by Stoyan Stefanov
- YUI Theater, especially Douglas Crockford's videos
- Read Library Source Code - Dojo, jQuery, YUI
- Download this deck and code at <http://prng.vangorkom.org>
- You should follow me on Twitter: @kvangork