serious #**js**

to **infinity** and beyond!

plaatje: http://www.disneypictures.tk/disney-pictures/buzz-lightyear-pictures.html

THE PRINCIPLES OF OBJECT-ORIENTED JAVASCRIPT

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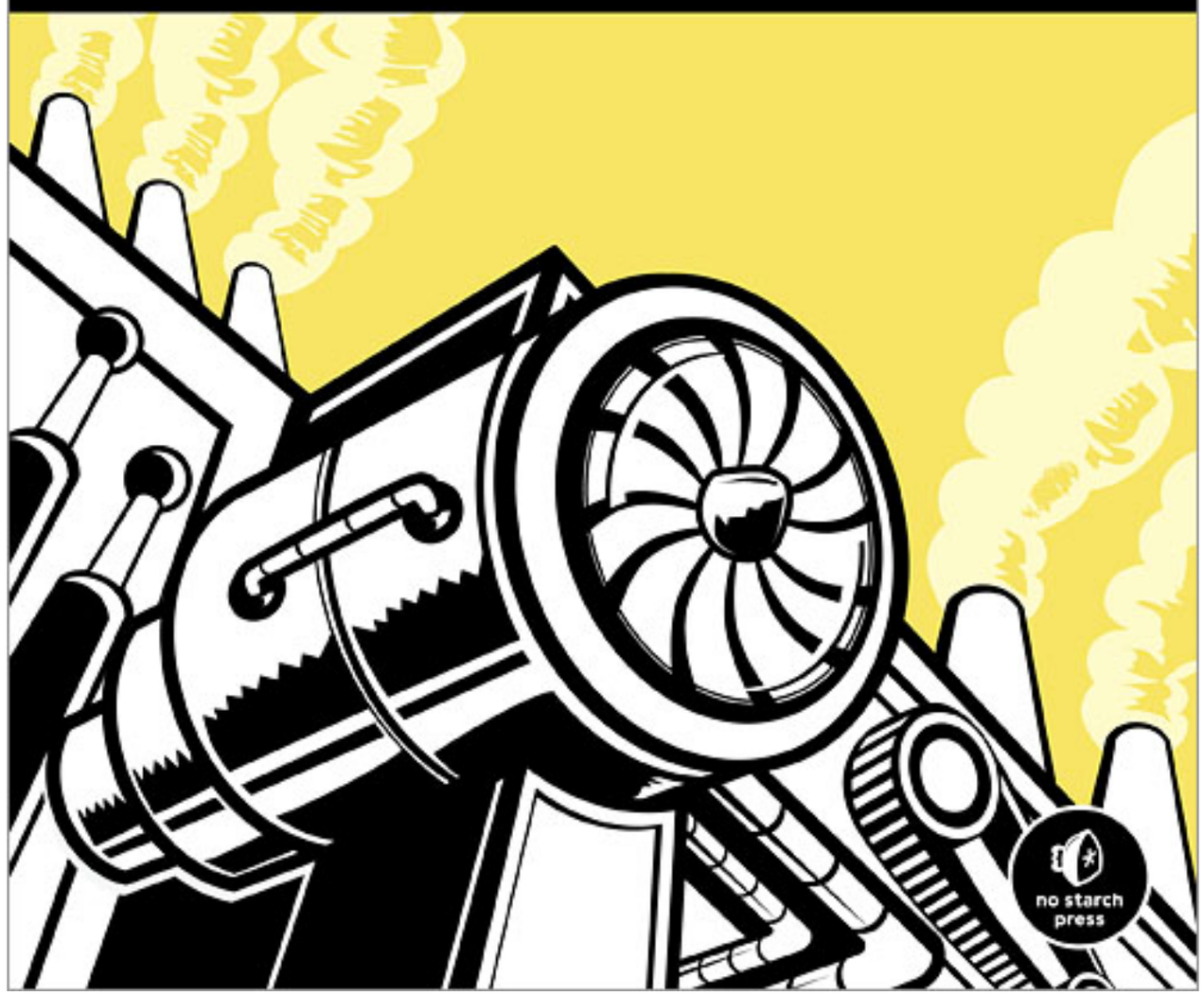

views

views are wrappers around HTML elements. 1 view should be responsible for 1 element

```
//Create some logic structure within your project
<script src="js/init.js" type="text/javascript"></script>
<script src="js/views/View1.js" type="text/javascript"></script>
<script src="js/views/View2.js" type="text/javascript"></script>
<script src="js/main.js" type="text/javascript"></script>
```

```
//Base structure to create a global scope variable (init.js)
(function () {
    window.site = {};
    site.views = {};
})();
```

```
//Now you're able to create views within the site.views scope:
//Every view should be in it's own file, just like any other object
site.views.View1 = function(){
   //Logic
}
```

assignment

Maak 2 views, **BoxBlock** & **ClickA**. Beide zijn verantwoordelijk voor 1 element.

BoxBlock is verantwoordelijk voor een met het id ‘box’, en **ClickA** is verantwoordelijk voor een <a> met het id ‘clicker’.

Doe dit met native Javascript & initialiseer de Views binnen je main.js

```
//main.js where we initiate the 2 views.
(function () {
    site.init = function () {
        new site.views.ClickA(document.getElementById("clicker"));
        new site.views.BoxBlock(document.getElementById("box"));
    };

    window.addEventListener('load', site.init);
})();
```

```
site.views.BoxBlock = function (el) { //Same goes for ClickA
    this.el = el;

    this.init = function () {
        //From now on we have this.el to use our element for anything
        console.log(this.el);
    };

    this.init();
};
```

assignment

Zorg er nu eens voor dat wanneer je op de link klinkt, de box een andere kleur krijgt. Je moet hiervoor met een **CustomEvent** gaan werken.

```
site.views.ClickA = function (el) {
    this.el = el;
    //Custom event initialisation
    this.event = new CustomEvent("boxChange");

    this.init = function () {
        //Normal click event on this.el
        this.el.addEventListener('click', this.clickHandler.bind(this));
    };

    this.clickHandler = function (e) {
        //Prevent default behaviour & dispatch event for others to listen
        e.preventDefault();
        document.dispatchEvent(this.event);
    };

    this.init();
};
```

```
site.views.BoxBlock = function (el) {
    this.el = el;

    this.init = function () {
        //Listen to event & bind custom function, just like normal events
        document.addEventListener("boxChange", this.changeColor.bind(this));
    };

    this.changeColor = function () {
        this.el.classList.add('blue');
    };

    this.init();
};
```

#JS - VIEWS (NATIVE)

code

assignment

Maak nu eens de vertaalslag van native Javascript naar jQuery. Voeg de jQuery library toe en bouw de code om naar **jQuery syntax**.

```
(function () {
    window.site = {};
    //We can use wrappers for anything we will use more than once.
    //Think about $('body'), $(window), etc.
    site.$document = $(document);
    site.views = {};
})();
```

#JS - VIEWS (JQUERY)

code

```
(function () {
    site.init = function () {
        new site.views.ClickA($(“#clicker")); //jQuery selectors
        new site.views.BoxBlock($("#box"));
    };

    site.$document.on('ready', site.init); //jQuery ready event
})();
```

#JS - VIEWS (JQUERY)

code

```
site.views.ClickA = function ($el) {
    this.$el = $el;

    this.init = function () {
        this.$el.on('click', this.clickHandler); //on handler
    };

    this.clickHandler = function (e) {
        e.preventDefault();
        //Trigger can be used, it excepts custom events by default
        site.$document.trigger(“boxChange”);
    };

    this.init();
};
```

#JS - VIEWS (jQUERY)

code

```
site.views.BoxBlock = function ($el) {
    this.$el = $el;

    this.init = function () {
        //.on & using $.proxy instead of .bind
        site.$document.on("boxChange", $.proxy(this.changeColor, this));
    };

    this.changeColor = function () {
        this.$el.addClass("blue");
    };

    this.init();
};
```

#JS - VIEWS (JQUERY)

code

underscore.js

underscore.js is a library with a lot
of utility functions. If you only use 1 function,
it's always better to use custom Javascript
for performance reasons

underscore is also the Backbone of the
backbone.js framework, developed by the
same development team

```
/** Some source code of underscore **/

  // The cornerstone, an `each` implementation, aka `forEach`.
  // Handles objects with the built-in `forEach`, arrays, and raw
objects.
  // Delegates to **ECMAScript 5**'s native `forEach` if available.
  var each = _.each = _.forEach = function(obj, iterator, context) {
    if (obj == null) return obj;
    if (nativeForEach && obj.forEach === nativeForEach) {
      obj.forEach(iterator, context);
    } else if (obj.length === +obj.length) {
      for (var i = 0, length = obj.length; i < length; i++) {
        if (iterator.call(context, obj[i], i, obj) === breaker) return;
      }
    } else {
      var keys = _.keys(obj);
      for (var i = 0, length = keys.length; i < length; i++) {
        if (iterator.call(context, obj[keys[i]], keys[i], obj) ===
breaker) return;
      }
    }
    return obj;
  };
```

#JS - UNDERSCORE.JS

code

```
var data = [
    {
        title: "Article 1",
        order: 3,
        status: 1
    },
    {
        title: "Article 2",
        order: 1,
        status: 0
    },
    {
        title: "Article 3",
        order: 2,
        status: 1,
        awesome: true
    }
];
```

```
//Alter data with the _.each method, using _.random to create different
numbers for our images
_.each(data, function (item, index, list) {
    item.imageUrl = "http://lorempixel.com/" + _.random(200, 600) + "/" +
_.random(200, 600) + "/";
});


//Filter data by property with _.filter
var publishedData = _.filter(data, function (item, index, list) {
    return item.status == 1;
});
```

```
//Native
document.getElementById("title").addEventListener('click',
this.click.bind(this));

//Native with _.bind
document.getElementById("title").addEventListener('click',
_.bind(this.click, this));

//jQuery
$(“#title”).on('click', $.proxy(this.click, this));

//jQuery with _.bind
$(“#title”).on('click', _.bind(this.click, this));
```

```
//Extending the _ functionality with your own Utils
_.mixin({
    isIE8OrLower: function () {
        return navigator.userAgent.match(/MSIE\s/) !== null ? document.all
&& !document.addEventListener : false;
    }
});

//Now available within the _ namespace
console.log("_.mixin:_.isIE8OrLower", _.isIE8OrLower());
```

assignment

Probeer eens de _.template method te gebruiken. Check http://underscorejs.org/ voor een voorbeeld implementatie.

Gegeven is:
$.get('templates/articles.html', articlesHtmlLoaded);

Creeër een bovenstaande map en bestand, en zorg dat de articlesHtmlLoaded de artikelen data op je scherm toont (in een met id ‘articles’). Je zult hiervoor de underscore template syntax moeten gebruiken.

```
var data = [
    {
        title: "Article 1",
        order: 3,
        status: 1
    },
    {
        title: "Article 2",
        order: 1,
        status: 0
    },
    {
        title: "Article 3",
        order: 2,
        status: 1,
        awesome: true
    }
];

//Filter data by property with _.filter
var publishedData = _.filter(data, function (item, index, list) {
    return item.status == 1;
});
```

#JS - UNDERSCORE.JS (TEMPLATING)

code

```
<% _.each(articles, function(article, index, list){ %>
<div class="article">
    <h2><%= article.title %></h2>
    <img src="<%= article.imageUrl %>" alt="<%= article.title %>"/>
</div>
<% }) %>
```

#JS - UNDERSCORE.JS (TEMPLATING)

code

```
//Using _.template to generate HTML without any HTML in JS,
//HTML needs to be loaded first from external template file
function articlesHtmlLoaded(html) {
   var articlesHtml = _.template(html, {articles: publishedData});
   $('#articles').append(articlesHtml);
}

$.get('templates/articles.html', articlesHtmlLoaded);
```

#JS - UNDERSCORE.JS (TEMPLATING)

code

huiswerk

Zie github:

- Backbone.js website & voorbeelden (http://backbonejs.org)
- From jQuery to Backbone, beetje verouderd maar goed voor je inzicht! (https://github.com/kjbekkelund/writings/blob/master/published/understanding-backbone.md)

- Bouw waar nodig je ToDo list code om zodat het concept van Views er goed in verwerkt zit
- Pas templating toe zodat nieuwe TodoList items netjes worden toegevoegd, geen HTML meer in je Javascript code dus!