

Front-End Modular & Automated Development

建立前端團隊開發環境

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D-Link 網路服務處

在 D-Link 現有的網路設備上
建立服務、強化與使用者的關聯性

因為超有趣的概念、決定進入 D-Link
當時只想要發揮前端的專長、把產品做出來
卻怎麼也沒想到...

因 D-Link 過去幾乎沒有開發大型網站的經驗，一進去什麼都沒有、得從零開始，我居然就開始去建立開發環境與決定軟體架構。

Software Engineer Project Manager

Service Engineer System Architect DBA

Front-end Engineer QA Engineer QA Tester

System Analyzer Operation Engineer

而這些事情在前一家公司 (Y!) 是沒有機會碰的。因為它分工明確、高手多，且很多工具甚至有專門負責的團隊，加上各個服務大都已經有解決方案了，能够真的大刀闊斧地改變現有環境、或注入自己想法的機會相對較少。

而在過程之中，我發現自己非常喜歡做前後端整合的工作。若只是單純 HTML/CSS/JavaScript 的撰寫以不能滿足我。結合其它技術讓前端能夠更好（開發速度、效能、模組化、維護性）是我現在熱血的方向。

Azure Firmware
Flash I18N/L10N PEAR
CMS Apache Module Hardware
Android Win32 Objective C
Embedded System
Server-side Script

非常鼓勵前端工程師跨往不同的領域
因只有前端工程師才知道前端工程師要的是什麼

本日大綱

- 模組化開發：網站的基本單元
不管 HTML, CSS, JavaScript 都以模組開發
- 自動化開發：讓犯錯變得困難
Nicholas Zakas, “Make it difficult to make mistakes.”

DIV 模組化開發

Modular Development

Modular Development

模組化是現今網站主流

不再以「頁」為開發邏輯
而是開發一個個可獨立運作的的「DIV 模組」
它有獨立的 HTML、CSS、JS 檔案



Photo Viewer



About JavaScript Platform

問題

- JavaScript 需處理模組之間溝通的問題，透過全域變數或方法傳遞會沒辦法彼此獨立。

概念

- 請參考 Nicholas Zakas 的 [Scalable JavaScript Architecture](#)

好處

- 每個人開發邏輯一致、花點時間了解概念都可以快速上手。

Photo Filter

Search: coscup

Find Photos

Flickr Photo List

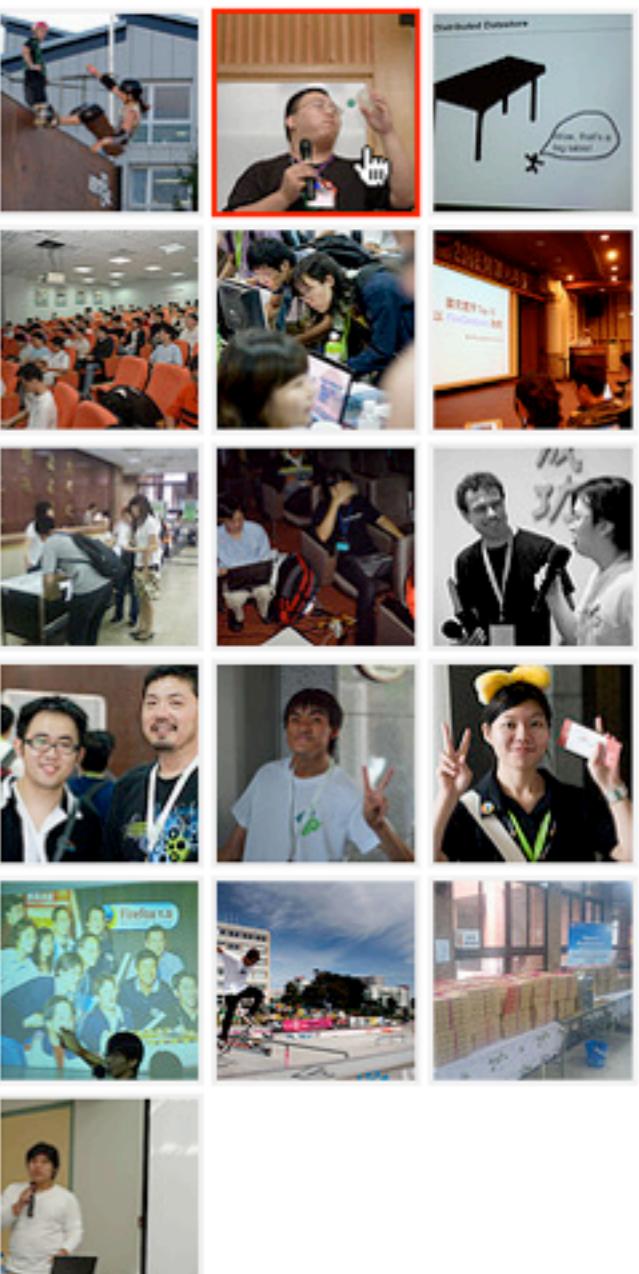


Photo Viewer

照片顯示模組

[_photo_view.php](#)
[_photo_view.css](#)
[_photo_view.js](#)

About JavaScript Platform

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概念

- 請參考 Nicholas Zakas 的 [Scalable JavaScript Architecture](#)

好處

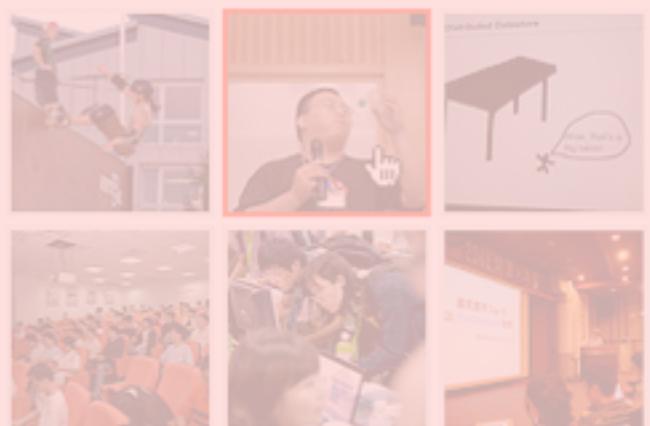
- 每個人開發邏輯一致、花點時間了解概念都可以快速上手。

Photo Filter

搜尋模組

Search: coscup
[_photo_filter.php](#)
[_photo_filter.css](#)
[_photo_filter.js](#)

Flickr Photo List



列表模組



HTML - 由許多模組所構成

Aptana Web - sftp://josephj@josephj.com:443/var/www/modev/frontend/views/index.php - Aptana Studio - /Users/josephj/Documents/Ap...



```
1 <?php include_once VIEW_PATH . "_before_body.php"; ?>
2 <div id="hd">
3 <div class="yui3-d3">
4 <?php include_once VIEW_PATH . "_masthead.php"; ?>
5 </div><!-- .yui3-d3 (end) -->
6 </div><!-- #hd (end) -->
7 <div id="bd">
8 <div class="yui3-d3">
9 <div class="yui3-t6">
10 <div class="yui3-main">
11 <div class="yui3-b">
12 <?php include_once VIEW_PATH . "_photo_viewer.php"; ?>
13 <?php include_once VIEW_PATH . "_introduction.php"; ?>
14 </div><!-- .yui3-b (end) -->
15 </div><!-- .yui3-main (end) -->
16 <div class="yui3-b">
17 <?php include_once VIEW_PATH . "_photo_filter.php"; ?>
18 <?php include_once VIEW_PATH . "_photo_list.php"; ?>
19 </div><!-- .yui3-b (end) -->
20 </div><!-- .yui3-t4 (end) -->
21 </div><!-- .yui3-d3 (end) -->
22 </div><!-- #bd (end) -->
23 <div id="ft">
24 <div class="yui3-d3">
25 <?php include_once VIEW_PATH . "_mastfoot.php"; ?>
26 </div><!-- .yui3-d3 (end) -->
27 </div><!-- #ft (end) -->
28 <?php include_once VIEW_PATH . "_after_body.php"; ?>
29
```

獨立的 HTML 模組檔案

Josephj

CSS – 由許多模組所構成

Aptana Web - Untitled HTML 1 - Aptana Studio - /Users/josephj/Documents/Aptana Studio Workspace

My Studio index.php static.php *Untitled HTML 1

html js css

BR H1 H2 H3 B EM I S LI TD TR

```
1 <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">
2 <html>
3 <head>
4 <meta http-equiv="content-type" content="text/html; charset=utf-8">
5 <title>Modular Development (Raw) @ webrebuild.org | josephj.com</title>
6 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/yui/3.1.1/cssreset/reset.css" media="all">
7 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/yui/3.1.1/cssfonts/fonts.css" media="all">
8 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/yui/3.1.1/cssgrids/grids.css" media="all">
9 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/core.css" media="all">
10 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/mod.css" media="all">
11 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/_masthead.css" media="all">
12 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/_photo_list.css" media="all">
13 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/_photo_filter.css" media="all">
14 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/_photo_viewer.css" media="all">
15 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/_introduction.css" media="all">
16 </head>
17
18 <body class="yui3-skin-sam">
19 <h1>Modular Development (Raw) @ webrebuild.org</h1>
20 <div id="hd">
21 <div class="yui3-d3">
22 <!-- #masthead (start) -->
23 <div id="masthead">
24 <div class="bd clearfix">
25 <span class="title">
26 <a name="top">
27 
28 Modular Development
29 </a>
```

獨立的 CSS 模組檔案

Source Safari Writable Insert 2 : 7

josephj

JavaScript - 由許多模組所構成

Aptana Web - Untitled HTML 1 - Aptana Studio - /Users/josephj/Documents/Aptana Studio Workspace

```
278     </div>
279     </div>
280   </div>
281   <!-- #mastfoot (end) -->
282 </div><!-- .yui3-d3 (end) -->
283
284 </div><!-- #ft (end) -->
285 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/yui/yui.js"></script>
286 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/oop/oop.js"></script>
287 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/dom/dom.js"></script>
288 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/event-custom/event-custom.js"></script>
289 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/event/event.js"></script>
290 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/pluginhost/pluginhost.js"></script>
291 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/node/node.js"></script>
292 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/classnamemanager/classnamemanager.js"></script>
293 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/attribute/attribute.js"></script>
294 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/base/base.js"></script>
295 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/plugin/plugin.js"></script>
296 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/event-simulate/event-simulate.js"></script>
297 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/node/node-event-simulate.js"></script>
298 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/node-focusmanager/node-focusmanager.js"></script>
299 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/substitute/substitute.js"></script>
300 <script type="text/javascript" src="http://josephj.com:50019/core.js"></script>
301 <script type="text/javascript" src="http://josephj.com:50019/_photo_viewer.js"></script>
302 <script type="text/javascript" src="http://josephj.com:50019/_photo_filter.js"></script>
303 <script type="text/javascript" src="http://josephj.com:50019/_photo_list.js"></script>
304 </body>
305 </html>
```

獨立的 JavaScript 模組檔案

模組化的困難

- HTML：很好解決，只要用 include 即可。效能影響不大。
- CSS：以 ID Selector 作為 CSS 命名空間可以做到。但若每個模組有一個檔案，一頁 30 個模組就會有 30 個檔案，Request 對性能影響很大。
- JavaScript：跟 CSS 一樣有檔案數量的問題。另外該如何有效率的做跨模組的溝通？

Request 數量的問題

static.php – 每個頁面要放置哪些 JS/CSS 的組態檔

The screenshot shows the Aptana Studio interface with the file 'static.php' open. The code defines an array '\$static' containing multiple entries for static files. Each entry is an array with keys 'type', 'href', and 'is_top'. Red annotations highlight specific parts of the code:

- An arrow points to the key 'key - 頁面名稱' from the line '\$static["raw"] = array('.
- An arrow points to the key 'is_top: 放在 </head> 前或 </body> 前' from the line ' "is_top" => TRUE,'.
- A large red annotation at the bottom right states '另外有 is_noscript, media 等屬性可以設定'.

```
<?php
/*
 * Static files configuration
 * The proxy between tool and web pages
 */
$static = array();
$static["raw"] = array(
    "type"      => "css",
    "href"      => STATIC_URL . "yui/3.1.1/cssreset/reset.css",
    "is_top"    => TRUE,
);
$static["raw"] = array(
    "type"      => "css",
    "href"      => STATIC_URL . "yui/3.1.1/cssfonts/fonts.css",
    "is_top"    => TRUE,
);
$static["raw"] = array(
    "type"      => "css",
    "href"      => STATIC_URL . "yui/3.1.1/cssgrids/grids.css",
    "is_top"    => TRUE,
);
$static["raw"] = array(
    "type"      => "css",
    "href"      => STATIC_URL . "core.css",
    "is_top"    => TRUE,
);
$static["raw"] = array(
    "type"      => "css",
    "href"      => STATIC_URL . "mod.css",
    "is_top"    => TRUE,
);
```

static.php 把模組的 CSS/JS 檔用一致的方法設定 但 Request 量過多，勢必會造成性能問題

Aptana Web - Untitled HTML 1 - Aptana Studio - /Users/josephj/Documents/Aptana Studio Workspace

My Studio index.php static.php *Untitled HTML 1

html js css

1 <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">
2 <html>
3 <head>
4 <meta http-equiv="content-type" content="text/html; charset=utf-8">
5 <title>Modular Development (Raw) @ webrebuild.org | josephj.com</title>
6 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/yui/3.1.1/cssreset/reset.css" media="all">
7 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/yui/3.1.1/cssfonts/fonts.css" media="all">
8 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/yui/3.1.1/cssgrids/grids.css" media="all">
9 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/core.css" media="all">
10 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/mod.css" media="all">
11 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/_masthead.css" media="all">
12 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/_photo_list.css" media="all">
13 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/_photo_filter.css" media="all">
14 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/_photo_viewer.css" media="all">
15 <link type="text/css" rel="stylesheet" href="http://josephj.com:50019/_introduction.css" media="all">
16 </head>
17
18 <body class="yui3-skin-sam">
19 <h1>Modular Development (Raw) @ webrebuild.org</h1>
20 <div id="hd">
21 <div class="yui3-d3">
22 <!-- #masthead (start) -->
23 <div id="masthead">
24 <div class="bd clearfix">
25
26
27
28 Modular Development
29
30 </div>
31 </div>
32 <!-- #mastfoot (start) -->
33 <div id="mastfoot">
34 <div class="bd clearfix">
35 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/yui/yui.js"></script>
36 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/oop/oop.js"></script>
37 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/dom/dom.js"></script>
38 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/event-custom/event-custom.js"></script>
39 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/event/event.js"></script>
40 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/pluginhost/pluginhost.js"></script>
41 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/node/node.js"></script>
42 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/classnamemanager/classnamemanager.js"></script>
43 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/attribute/attribute.js"></script>
44 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/base/base.js"></script>
45 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/plugin/plugin.js"></script>
46 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/event-simulate/event-simulate.js"></script>
47 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/node/node-event-simulate.js"></script>
48 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/node-focusmanager/node-focusmanager.js"></script>
49 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/substitute/substitute.js"></script>
50 <script type="text/javascript" src="http://josephj.com:50019/core.js"></script>
51 <script type="text/javascript" src="http://josephj.com:50019/_photo_viewer.js"></script>
52 <script type="text/javascript" src="http://josephj.com:50019/_photo_filter.js"></script>
53 <script type="text/javascript" src="http://josephj.com:50019/_photo_list.js"></script>
54 </body>
55 </html>

Source Safari Writable Insert 2 : 7

10 個 CSS Request

Aptana Web - Untitled HTML 1 - Aptana Studio - /Users/josephj/Documents/Aptana Studio Workspace

My Studio index.php static.php *Untitled HTML 1

html js css

278 </div>
279 </div>
280 <!-- #mastfoot (end) -->
281 </div><!-- .yui3-d3 (end) -->
282
283
284 </div><!-- #ft (end) -->
285 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/yui/yui.js"></script>
286 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/oop/oop.js"></script>
287 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/dom/dom.js"></script>
288 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/event-custom/event-custom.js"></script>
289 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/event/event.js"></script>
290 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/pluginhost/pluginhost.js"></script>
291 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/node/node.js"></script>
292 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/classnamemanager/classnamemanager.js"></script>
293 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/attribute/attribute.js"></script>
294 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/base/base.js"></script>
295 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/plugin/plugin.js"></script>
296 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/event-simulate/event-simulate.js"></script>
297 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/node/node-event-simulate.js"></script>
298 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/node-focusmanager/node-focusmanager.js"></script>
299 <script type="text/javascript" src="http://josephj.com:50019/yui/3.1.1/substitute/substitute.js"></script>
300 <script type="text/javascript" src="http://josephj.com:50019/core.js"></script>
301 <script type="text/javascript" src="http://josephj.com:50019/_photo_viewer.js"></script>
302 <script type="text/javascript" src="http://josephj.com:50019/_photo_filter.js"></script>
303 <script type="text/javascript" src="http://josephj.com:50019/_photo_list.js"></script>
304 </body>
305 </html>

Source Safari Writable Insert 278 : 15

19 個 JavaScript Request

Mini Tool

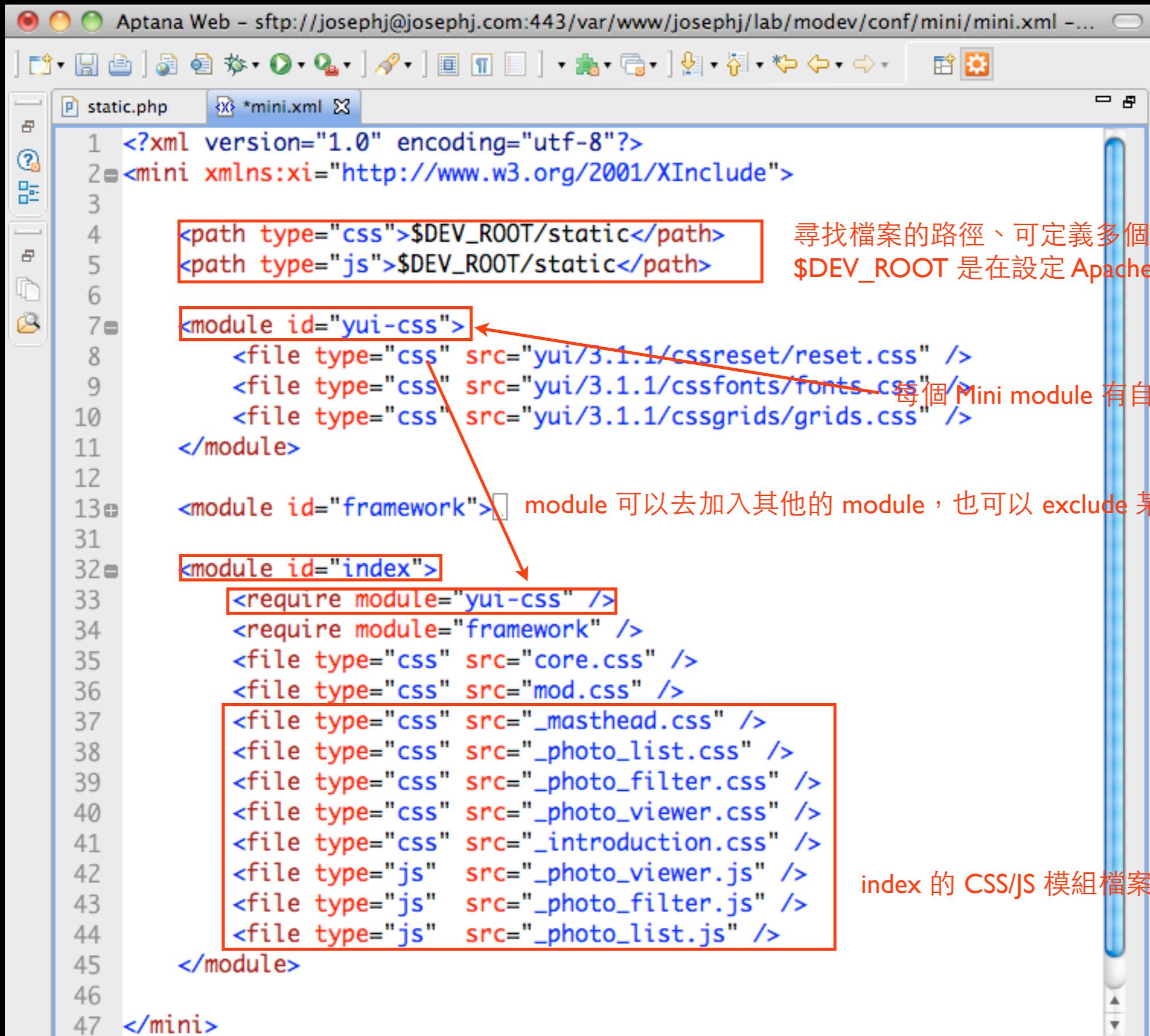


將代碼縮小
多個 CSS/JS 檔案合併的
開發環境工具

模組檔再多也不需擔心效能的問題

<http://www.flickr.com/photos/prettypony/2644225789/>

Mini 的 XML 設定檔，把剛剛的設定移往這吧



The screenshot shows the Aptana Web interface with the file `*mini.xml` open. The code is as follows:

```
<?xml version="1.0" encoding="utf-8"?>
<mini xmlns:xi="http://www.w3.org/2001/XInclude">

<path type="css">$DEV_ROOT/static</path>
<path type="js">$DEV_ROOT/static</path>

<module id="yui-css">
    <file type="css" src="yui/3.1.1/cssreset/reset.css" />
    <file type="css" src="yui/3.1.1/cssfonts/fonts.css" />
    <file type="css" src="yui/3.1.1/cssgrids/grids.css" />
</module>

<module id="framework"><!-- module 可以去加入其他的 module，也可以 exclude 某個檔案
    &lt;require module="yui-css" /&gt;
    &lt;require module="framework" /&gt;
    &lt;file type="css" src="core.css" /&gt;
    &lt;file type="css" src="mod.css" /&gt;
    &lt;file type="css" src="_masthead.css" /&gt;
    &lt;file type="css" src="_photo_list.css" /&gt;
    &lt;file type="css" src="_photo_filter.css" /&gt;
    &lt;file type="css" src="_photo_viewer.css" /&gt;
    &lt;file type="js" src="_photo_viewer.js" /&gt;
    &lt;file type="js" src="_photo_filter.js" /&gt;
    &lt;file type="js" src="_photo_list.js" /&gt;
--&gt;&lt;/module&gt;

&lt;/mini&gt;</pre>

Annotations in red:



- <path type="css">$DEV_ROOT/static</path> 寻找檔案的路徑、可定義多個。  
$DEV_ROOT 是在設定 Apache VirtualHost 的環境變數
- <module id="yui-css"> 每個 Mini module 有自己的 CSS 與 JS 檔
- <module id="framework"> module 可以去加入其他的 module，也可以 exclude 某個檔案
- <require module="yui-css" />
- <require module="framework" />
- <file type="css" src="core.css" />
- <file type="css" src="mod.css" />
- <file type="css" src="_masthead.css" />
- <file type="css" src="_photo_list.css" />
- <file type="css" src="_photo_filter.css" />
- <file type="css" src="_photo_viewer.css" />
- <file type="js" src="_photo_viewer.js" />
- <file type="js" src="_photo_filter.js" />
- <file type="js" src="_photo_list.js" />



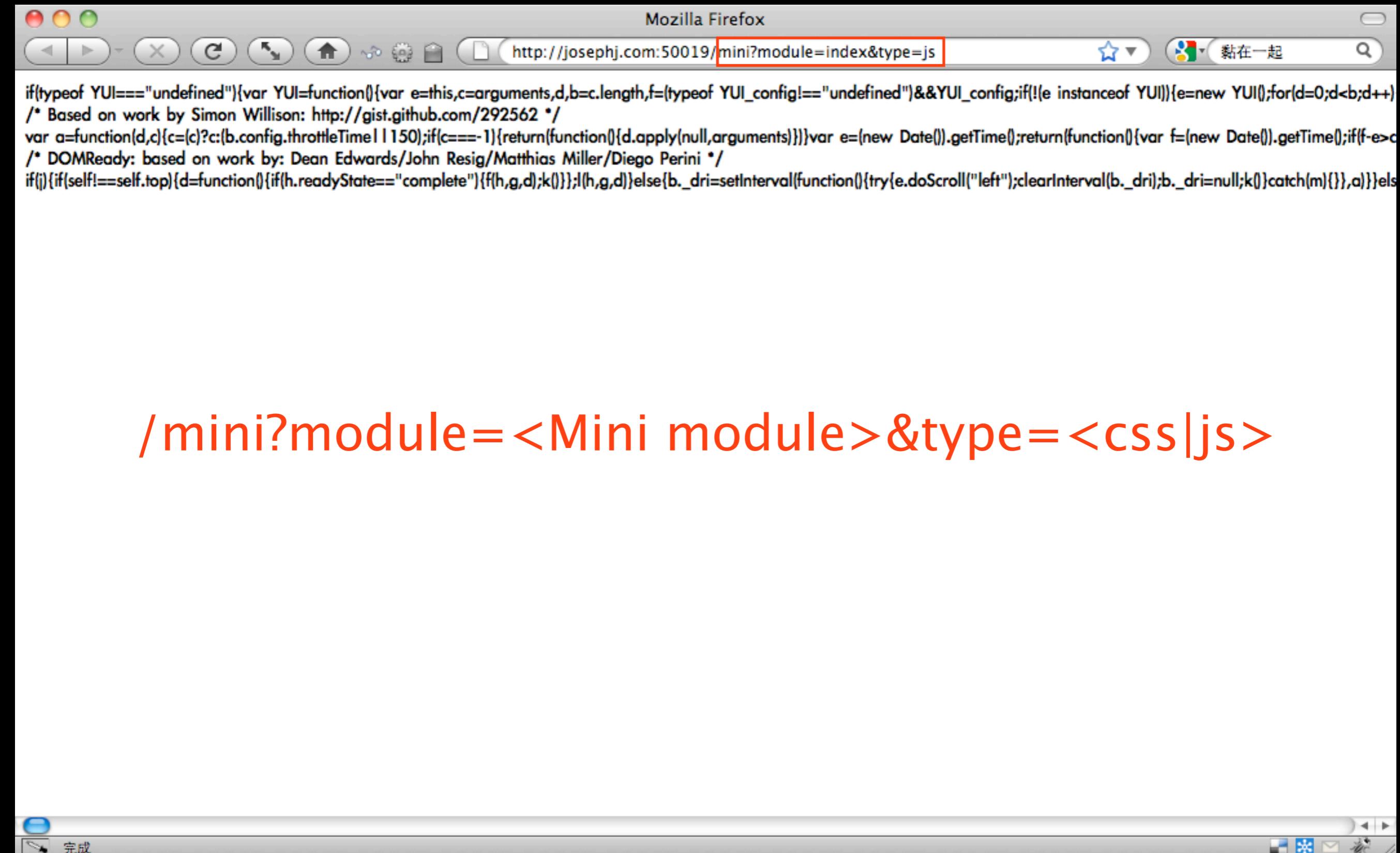
Annotation for the index module:



index 的 CSS/JS 模組檔案


```

經過 Mini 合并及压缩的內容：跟線上一致



也可以只觀看合併但未壓縮的內容

Mozilla Firefox

http://josephj.com:50019/mini?module=index&type=js&nominify

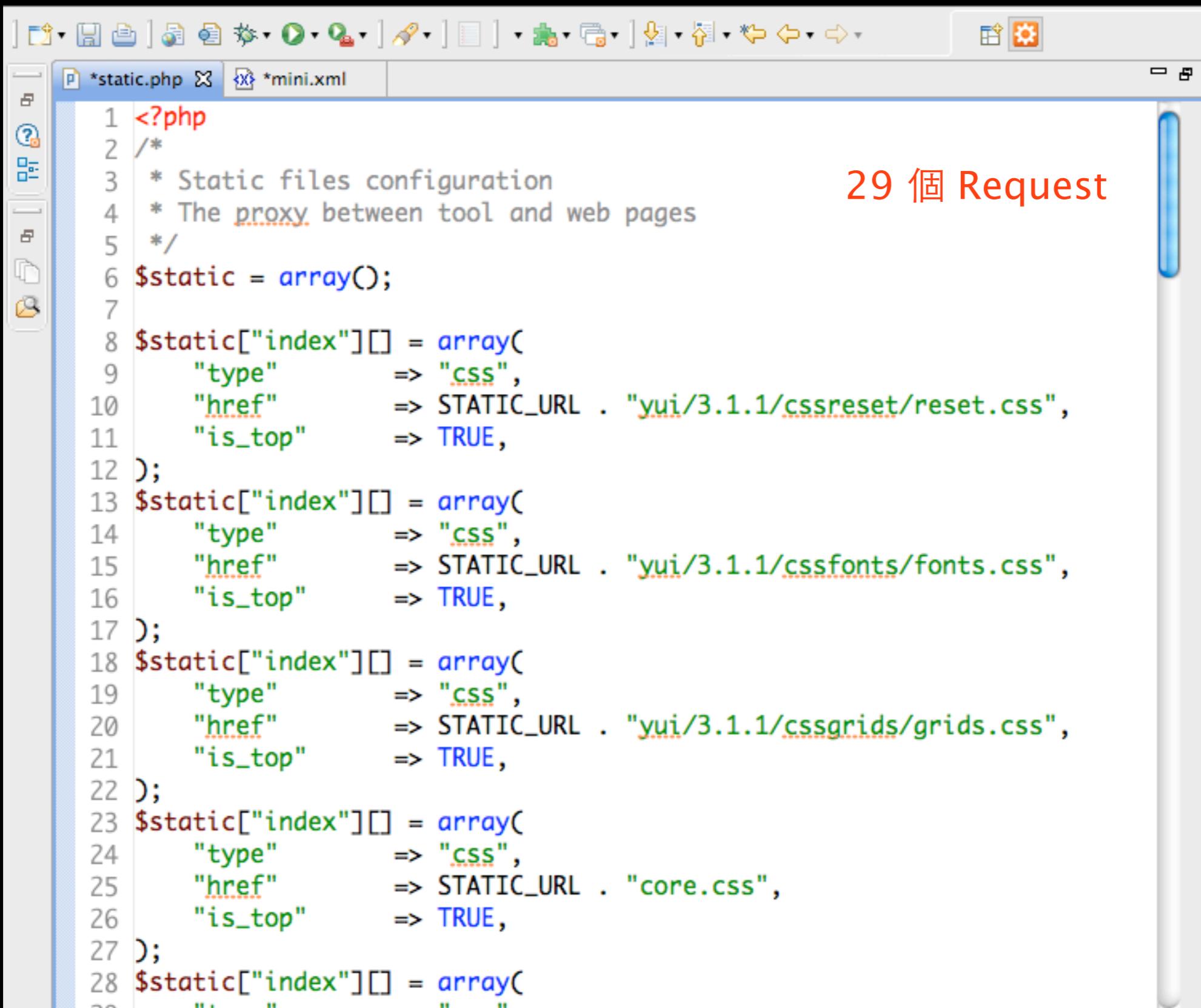
```
/*
Copyright (c) 2010, Yahoo! Inc. All rights reserved.
Code licensed under the BSD License:
http://developer.yahoo.com/yui/license.html
version: 3.1.1
build: 47
*/
/**
 * The YUI module contains the components required for building the YUI seed file.
 * This includes the script loading mechanism, a simple queue, and the core utilities for the library.
 * @module yui
 * @submodule yui-base
 */
if (typeof YUI === 'undefined') {

/**
 * The YUI global namespace object. If YUI is already defined, the
 * existing YUI object will not be overwritten so that defined
 * namespaces are preserved. It is the constructor for the object
 * the end user interacts with. As indicated below, each instance
 * has full custom event support, but only if the event system
 * is available.
 *
 * @class YUI
 * @constructor
 * @global
 * @uses EventTarget
 * @param o* 0..n optional configuration objects. these values
 * are store in Y.config. See config for the list of supported
 * properties.
 */
/*global YUI*/
/*global YUI config*/
}

從 josephj.com 接收資料...
```

&nominify

這是原本又臭又長的 static.php



The screenshot shows a code editor window with the file `*static.php` open. The code defines an array `$static` containing multiple entries for static files, primarily CSS files. A red annotation `29 個 Request` is overlaid on the right side of the editor window.

```
1 <?php
2 /*
3  * Static files configuration
4  * The proxy between tool and web pages
5  */
6 $static = array();
7
8 $static["index"][] = array(
9     "type"      => "css",
10    "href"       => STATIC_URL . "yui/3.1.1/cssreset/reset.css",
11    "is_top"     => TRUE,
12 );
13 $static["index"][] = array(
14     "type"      => "css",
15    "href"       => STATIC_URL . "yui/3.1.1/cssfonts/fonts.css",
16    "is_top"     => TRUE,
17 );
18 $static["index"][] = array(
19     "type"      => "css",
20    "href"       => STATIC_URL . "yui/3.1.1/cssgrids/grids.css",
21    "is_top"     => TRUE,
22 );
23 $static["index"][] = array(
24     "type"      => "css",
25    "href"       => STATIC_URL . "core.css",
26    "is_top"     => TRUE,
27 );
28 $static["index"][] = array(
```

網頁的 Request 量超級多 Orz...

Modular Development (Raw) @ webrebuild.org | josephj.com

http://josephj.com:50010/raw.php

黏在一起

muchi Modular Development Power by Y! YUI

Photo Viewer

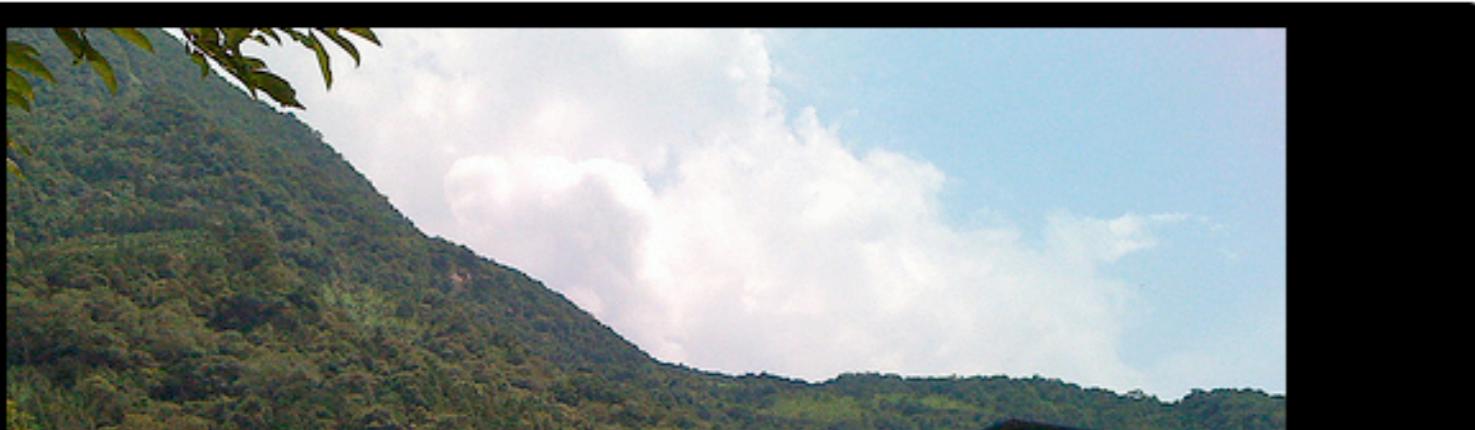


Photo Filter

Search:

Find Photos

Flickr Photo List



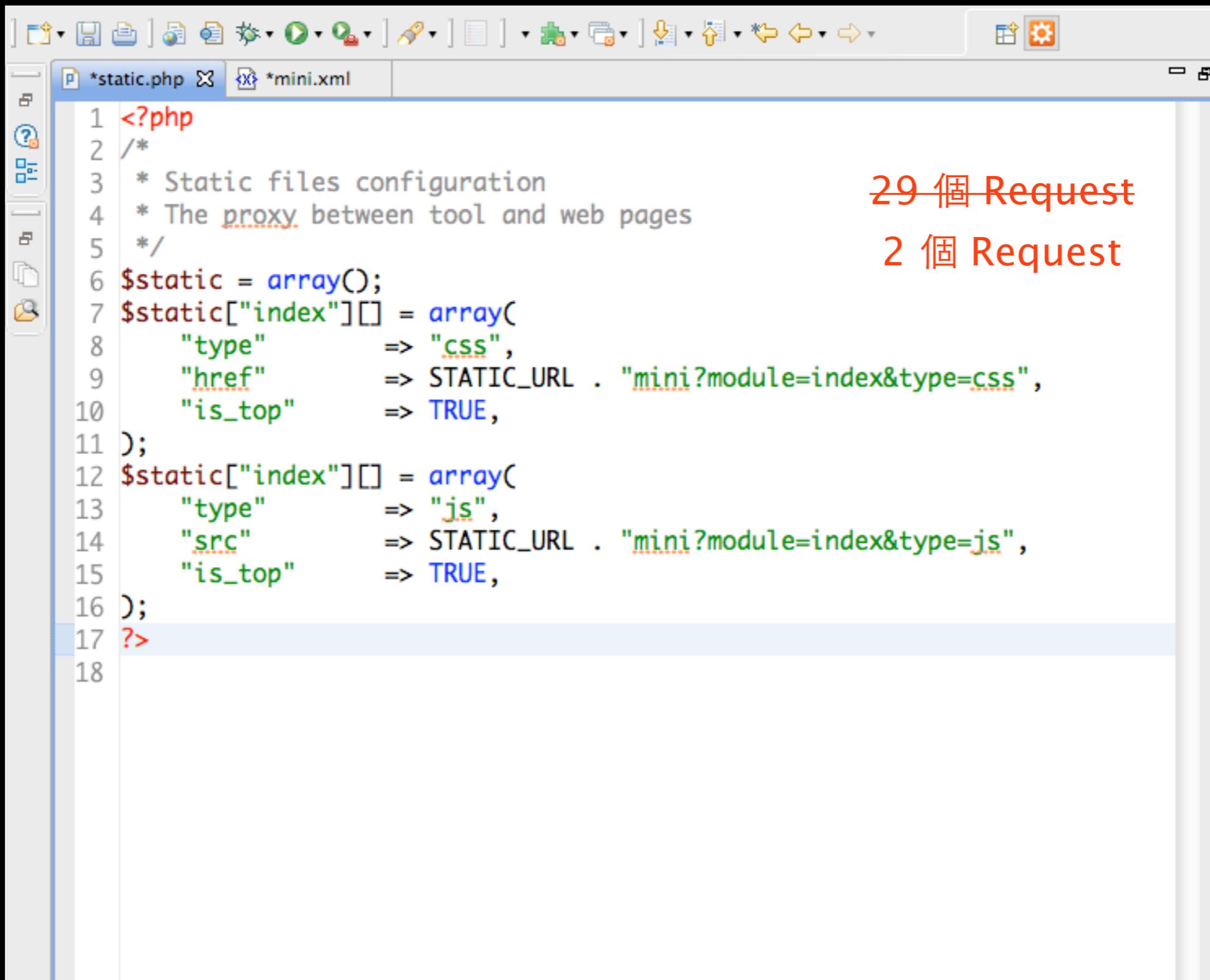
主控台 HTML CSS Script DOM 網路

清除 Persist All HTML CSS JS XHR Images Flash

URL	Status	Domain	Size	Timeline
▶ GET yui.js	304 Not Modified	josephj.com:50019	96.9 KB	4.34s
▶ GET oop.js	304 Not Modified	josephj.com:50019	12.5 KB	4.39s
▶ GET dom.js	304 Not Modified	josephj.com:50019	84.7 KB	4.41s
▶ GET event-custom.js	304 Not Modified	josephj.com:50019	68.1 KB	4.54s
▶ GET event.js	304 Not Modified	josephj.com:50019	61.2 KB	4.55s
▶ GET pluginhost.js	304 Not Modified	josephj.com:50019	10 KB	4.57s
▶ GET node.js	304 Not Modified	josephj.com:50019	62.9 KB	4.58s
▶ GET classnamemanager.j	304 Not Modified	josephj.com:50019	2.2 KB	4.6s
▶ GET attribute.js	304 Not Modified	josephj.com:50019	45.1 KB	4.62s
▶ GET base.js	304 Not Modified	josephj.com:50019	31 KB	4.66s
▶ GET plugin.js	304 Not Modified	josephj.com:50019	7.8 KB	103ms
▶ GET event-simulate.js	304 Not Modified	josephj.com:50019	21.7 KB	97ms
▶ GET node-event-simulat	304 Not Modified	josephj.com:50019	793 B	112ms
▶ GET node-focusmanager	304 Not Modified	josephj.com:50019	23.9 KB	102ms

完成

精簡過後的 static.php... 哇 !



The screenshot shows a code editor window with the file `*static.php` open. The code defines static files configuration, specifically for CSS and JS files, using arrays and conditionals. Handwritten annotations in red text are present on the right side of the editor:

- 29 個 Request** (29 Requests) is written above the first array definition.
- 2 個 Request** (2 Requests) is written above the second array definition.

```
1 <?php
2 /*
3  * Static files configuration
4  * The proxy between tool and web pages
5  */
6 $static = array();
7 $static["index"][] = array(
8     "type"          => "css",
9     "href"          => STATIC_URL . "mini?module=index&type=css",
10    "is_top"        => TRUE,
11 );
12 $static["index"][] = array(
13     "type"          => "js",
14     "src"           => STATIC_URL . "mini?module=index&type=js",
15    "is_top"        => TRUE,
16 );
17 ?>
18
```

網頁的 Request 量大幅減少 (大拇指)

Modular Development @ webrebuild.org | josephj.com

http://josephj.com:50010/

muchi Modular Development Power by Y! YUI

Photo Viewer



Photo Filter

Search:

Find Photos

Flickr Photo List

主控台 HTML CSS Script DOM 網路 ▾

XHR 清除 Persist All HTML CSS JS XHR Images Flash

URL	Status	Domain	Size	Timeline
http://josephj.com:50019/mini?module=index&type=js	j.com:50019	113.1 KB		4.29s
Request_Count		113.1 KB		4.29s (onload: 5.9s)

完成

透過 Mini 的設定檔，可將原本各自獨立的 CSS/
JavaScript 檔案合併且最小化，達到效能最佳化的目的！

但需要注意 Mini 並不適用於正式環境、通常放置 Statif File 的 Web Server 不安裝 PHP、而就算有也會對效能造成影響。

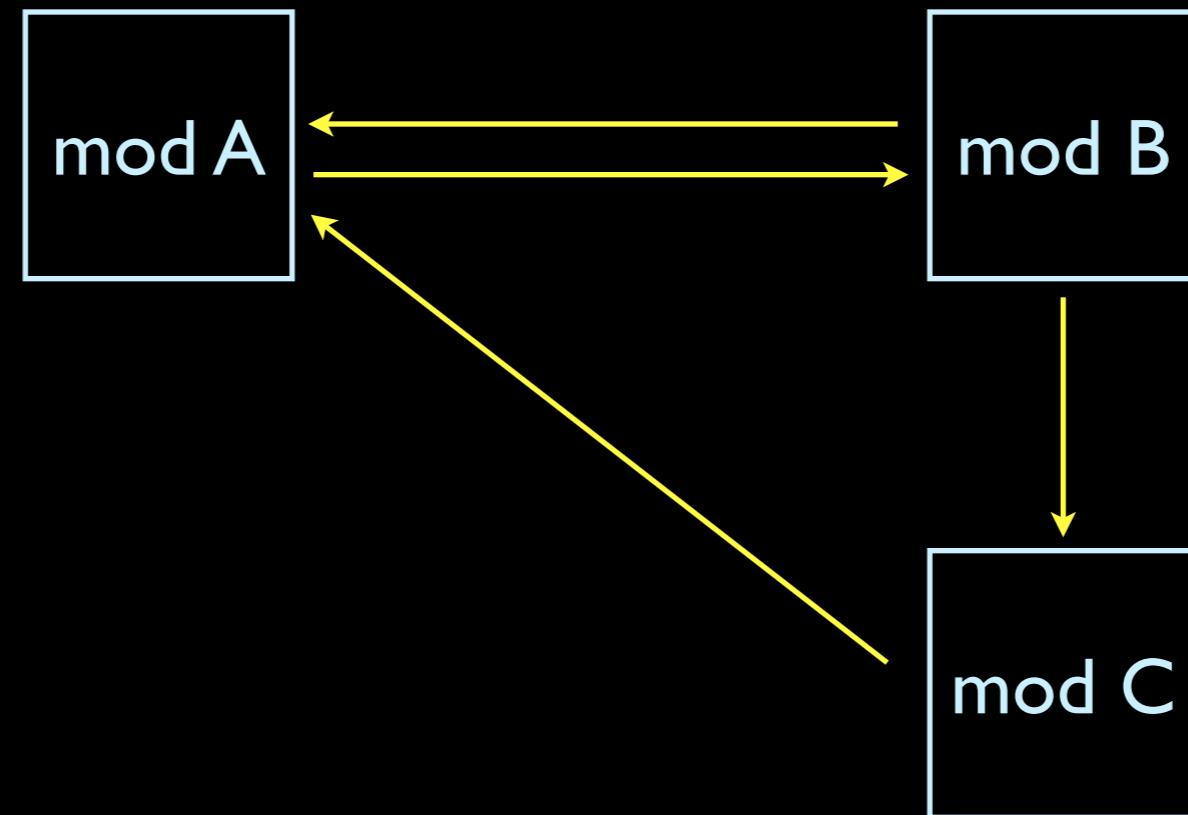
```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN" "http://www.w3.org/TR/html4/strict.dtd">
<html>
<head>
<meta http-equiv="content-type" content="text/html; charset=utf-8">
<meta http-equiv="X-UA-Compatible" content="IE=EmulateIE7" />
<title>Modular Development @ webrebuild.org | josephj.com</title> 線上的 CSS/JS 在 Deploy 後變成單一檔
<link type="text/css" rel="stylesheet" href="http://img.modev.josephj.com/min_index_abf2a38f11b42c992888552d6fe3408c.css" media="all">
<script type="text/javascript" src="http://img.modev.josephj.com/min_index_58f8402b3d9ca4ed2dbca1e1179ad18b.js"></script>
</head>
```

* 用 `md5_file()` 檢查檔案內容產生的 stamping
可減少 CDN 上有重複內容的檔案

跨模組溝通的問題

JavaScript 跨模組溝通

JavaScript 若以模組為單位區分
通常是獨立的 Function 或 Object
有系統的跨模組溝通將會是大挑戰



muchiiii JavaScript Modular Platform



Photo Viewer



About JavaScript Platform

問題

- JavaScript 需處理模組之間溝通的問題，透過全域變數或方法傳遞會沒辦法彼此獨立。

概念

- 請參考 Nicholas Zakas 的 [Scalable JavaScript Architecture](#)

好處

- 每個人開發邏輯一致、花點時間了解概念都可以快速上手。

Photo Filter

Flickr Photo Filter
使用者送出表單 取得資料





Photo Viewer

```
window.mods["photo-show"] = {
  showPhoto : function (src) {
    ...
  }
}
```

九成的人會用全域變數解決問題



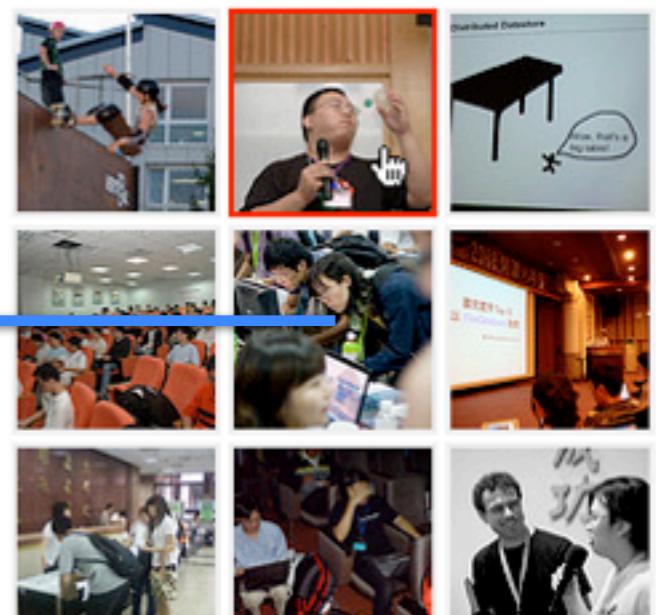
使用者點選
←

Photo Filter

Search: coscup

Find Photos

Flickr Photo List



About JavaScript Platform

問題

- JavaScript 需處理模組之間溝通的問題，透過全域變數

概念

- 請參考 Nicholas Zakas 的 [Scalable JavaScript Architecture](#)

好處

- 每個人開發邏輯一致、花點時間了解概念都可以快速上手。

```
window.mods["photo-list"] = {
```

```
  init : function () {
```

...

```
  $("img").on("click", function(e) {
```

```
    window.mods["photo-show"].showPhoto(this.src);
```

}

}

當照片顯示模組沒有一起在同一頁時，
列表模組就會出現 Bug!

我們都希望球員（模組）們扮演好自己的角色
在球場（頁面）上合作有場好比賽（功能）



但是缺乏紀律 (無架構、使用全域變數)
最後必將造成 (模組) 之間的衝突

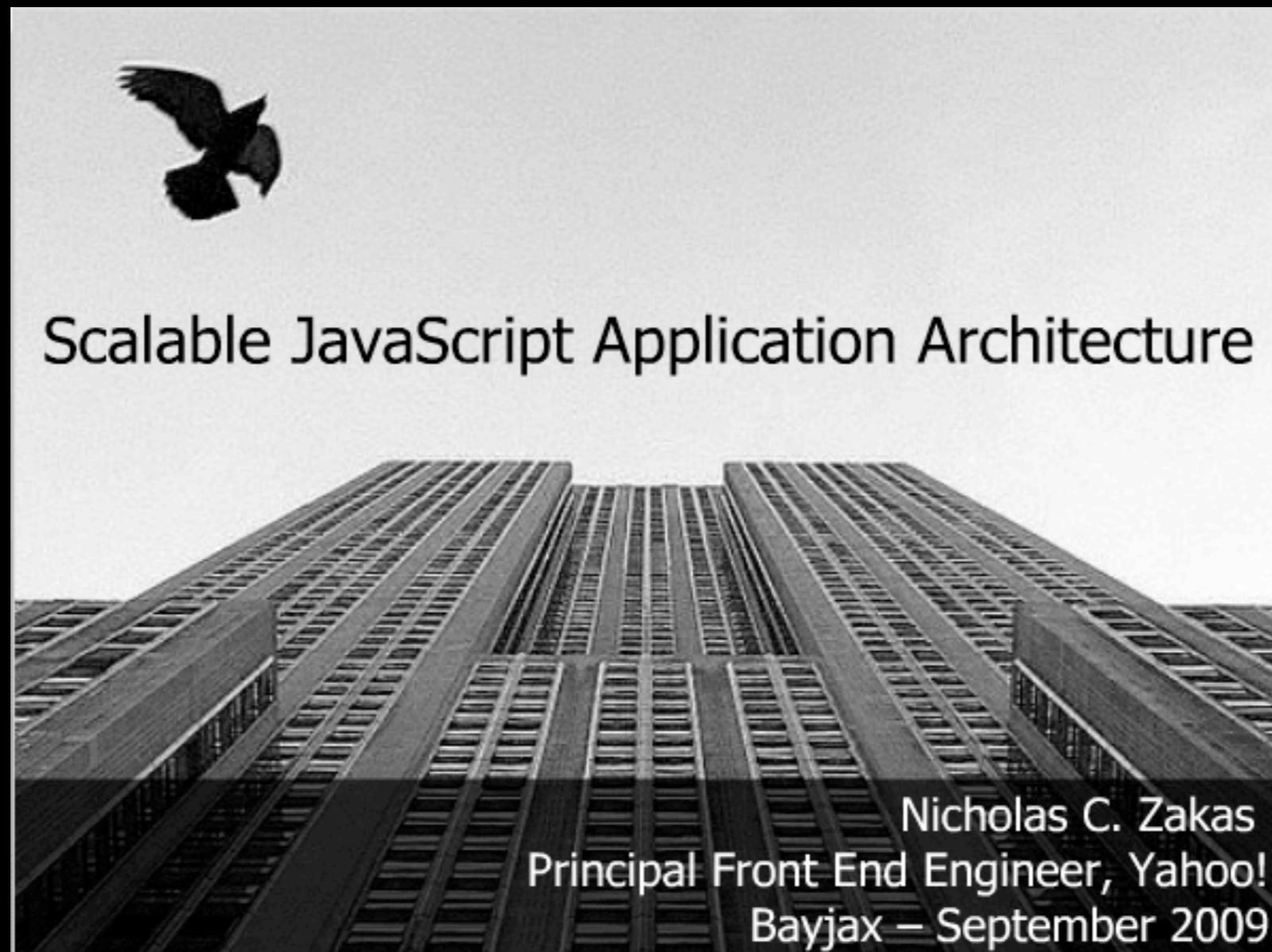


<http://www.flickr.com/photos/acaben/2477822120/>

雅虎首頁前端架構師 Nicholas Zakas 的啟發



JavaScript 應用程式架構





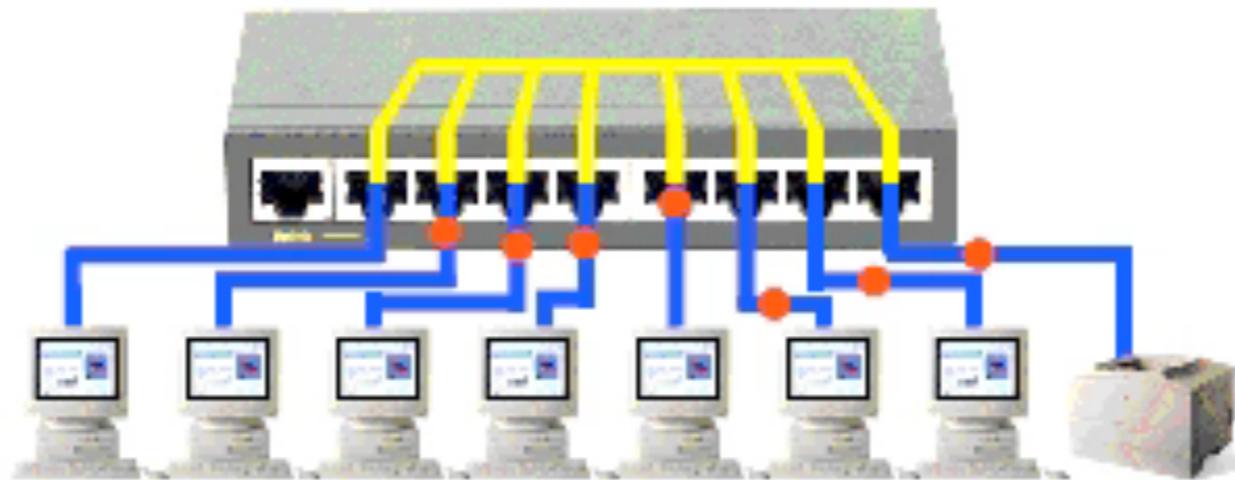
Loose Coupling 鬆散耦合 與其他模組的關係是鬆散的

http://www.thesoftwaredevotional.com/images/coupling_train.jpg

當頁面上多了一個模組
它將不會破壞其他模組的結構、樣式與行為
它將提供新的功能、讓其他的模組可以與它溝通互動
拿掉它時不需修改、也不會影響與其溝通模組的原有功能

Broadcast & Listen
模組溝通的方式類似 Hub 的概念

Hub



一台電腦出任何訊息，所有電腦都會收到
但是其他電腦只處理它有興趣的訊息

Module - 獨立運作的個體

Module
Static

Module
Static

Module
Static

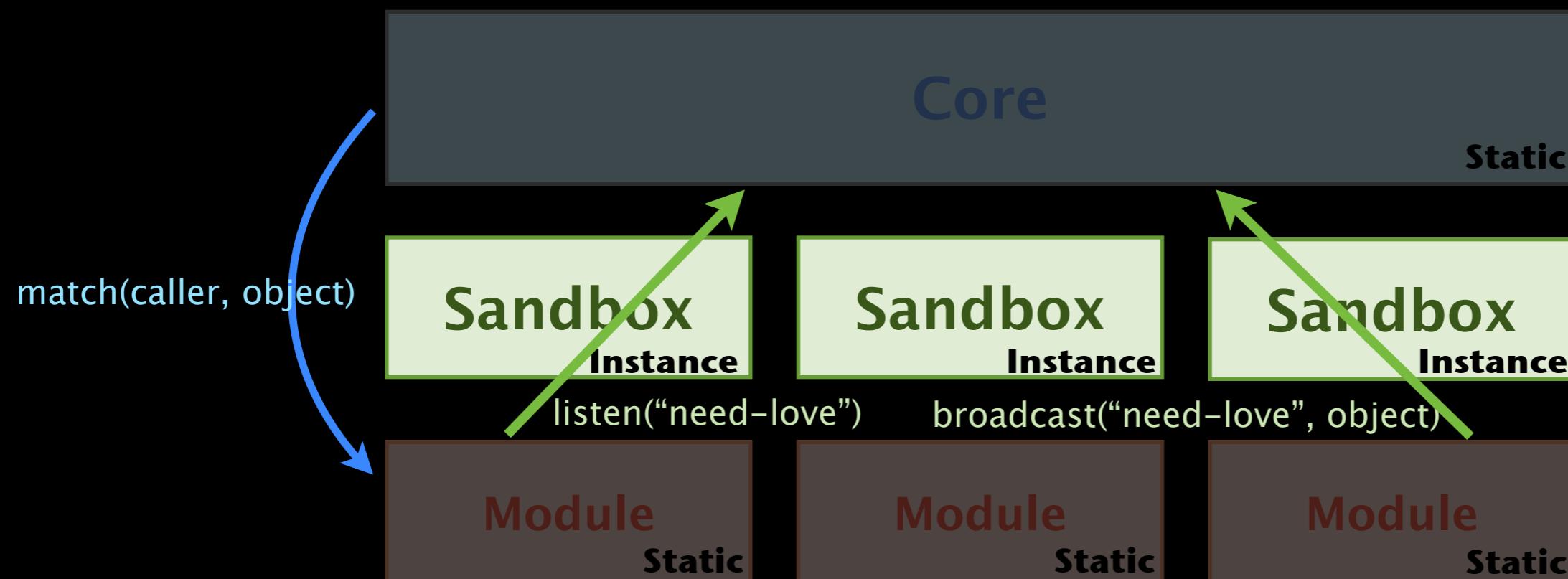
- 模組之間不知道彼此的存在
- 模組只在意自己本身的功能

Core - 整個架構的核心



- 接受模組註冊 (register)
- 控制模組啟動關閉 (start, stop)
- 所有廣播訊息的傳遞與對應 (match)

Sandbox - 模組 API 介面



- 以 Instance 的方式讓模組不受污染
- 模組與 Core 溝通都需要透過 Sandbox
- 模組只能使用 Sandbox 提供的方法
 - 提供模組 broadcast 與 listen 功能

_photo_list.js 照片列表模組



```
Y.Core.register("photo-list", {  
    // 此模組的初始化  
    init: function (api) {  
  
    },  
    // 此模組在頁面上 ContentReady  
    onviewload: function () {  
  
    },  
    // 此模組收到訊息時  
    onmessage: function (eventType, callerName, data) {  
  
    }  
});
```

範例 Demo

<http://josephj.com/project/javascript-platform-yui-demo>

模組架構 Keep Going

有了這樣的架構後
可以依據需求加 Extension !
替每個模組添增新 API Method

Language Extension

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Focused Figure

香港與台灣的朋友
大家好，我是大家
最熟悉的豆花妹！



Language Selector

Language: Traditional Chinese

主控台 HTML CSS Script DOM 網路 ▾ zh-Hant

Xhr	清除 Persist	All	HTML	CSS	JS	XHR	Images	Flash	耗時
							josephj.com		45ms
							josephj.com		45ms
							yui.yahooapis.com		25ms
							yui.yahooapis.com		967ms
							josephj.com		3ms

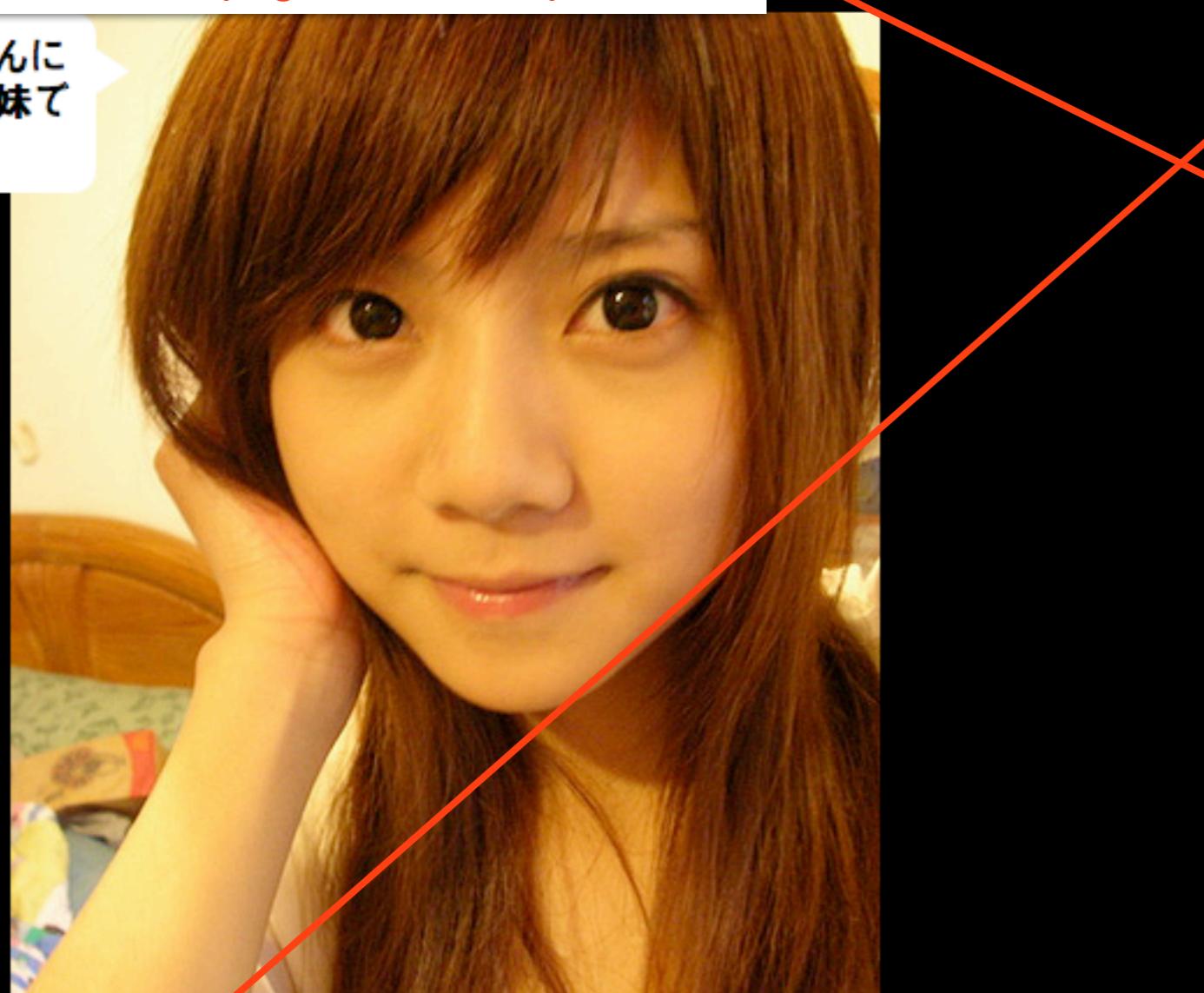
YUI Intl 自動會將目前 JS 語系檔下載

muchii JavaScript Modular Platform

Foc

3. 原本就註冊了 api.listen("lang-change")
因此直接再取得一次 api.getTrans(<key>) 即可;

日本の皆様 こんにちは！私は豆花妹です



Language Selector

Language: Japanese

1. 執行 api.setLang("jp-JP");
會自動取得日文語系檔
2. 新的語系檔被動態拉下來後
執行 api.broadcast("lang-change")

主控台 HTML CSS Script DOM 网路 ▾ zh-Hant

Xhr 消除 Persist All HTML CSS JS XHR Images Flash

URL	Status	Domain	Size	Timeline
GET demo_jp-JP.js	200 OK	josephj.com	360 B	57ms
Request_Count			360 B	57ms

完成

順道一提！ PHP 與 JavaScript 的 Language Key 都是基於模組為單位去定義的

```
<?php
$trans = get_trans("lang-show_title", "Focus Figure", tokens);
?>
```

```
<script>
var trans =
    api.getTrans(
        "lang-show_message",
        "Nice to see you, I am Tofu flower girl",
        tokens);
</script>
```

好處：

模組化開發讓各別團隊成員能專注在單一功能的開發上、不需要煩惱整頁複雜的架構、或共用 API 後面複雜的邏輯（剛的多國語系不好搞）。另外在測試上也可以以模組為單位單獨測試、符合 Unit Test 的精神

自動化：讓犯錯變得困難

Make it difficult to make mistakes

到從零開始公司的好處就是先搶先贏



<http://www.flickr.com/photos/eye1/3184963395/>
by Ivan Mlinaric

一開始我就制定了許多 Guidelines

Front-end Engineering

New Hire

- [F2E Software Installation](#)
- [➡ Accessibility](#)
- [➡ Yahoo! F2E Guidelines](#) : Our basic ideas about front-end development
- [➡ Introduction to Yahoo! User Interface Library 3](#) : Our JavaScript framework
- About muchiiBar

Conventions

- [HTML Code Conventions](#)
- [HTML Code Conventions For CodeIgniter View](#)
- [HTML Code Conventions For CodeIgniter Layout](#)
- [CSS Code Conventions](#)
- [JavaScript Code Conventions](#)
- [File Naming Conventions](#)
- [Image Optimization Rules](#)
- [JavaScript L10N](#)

在前家公司時最難忘的話
一位主管對我們的品質提出質疑
「As a team，你們的價值究竟在哪裡？」

軟體開發團隊必須要有規範的制定
基本框架的設計
代碼品質才能得到提升

任何規範或框架都是開發人員的限制
但若不設限制的情況就會像...

煙囗上架屋頂？
這就是疊床架屋



有 Guideline 不錯，但是老祖宗形容地很貼切：「積習難改」、「陽奉陰違」，每個人對於自己的習慣與理念有所不同，有意無意地 Guideline 放到一旁。

久而久之，當初大家同意的 Guideline 就會被遺忘、整個團隊的程式品質開始陷入混亂...

Code Review 是一個好方法，但得花許多時間、沒辦法常辦，即使發現了問題，也只能用妥協的方式做小部分的修改...

軟體開發不應該存在的妥協

電腦的世界不就是 0 跟 1 嘽？

軟體開發不應該存在的妥協

電腦的世界不就是 0 跟 1 嘽？

1. Commit/Push 時的作法

每次 Commit/Push 以 Hook 對變動檔案做檢查

- 執行 **JSLint**：
必須符合 JavaScript Good Parts
- 執行 **PHP CodeSniffer**：
可自訂 Code Convention 檢查 PHP、JavaScript、CSS
- 執行 **OptImg**：
提示圖檔尚未最佳化、是否要用程式自動最佳化？

若沒通過檢查就無法 Commit !

```
[joseph_chiang@devm1:/home/dev/joseph_chiang/muchiii/static/i]$ jslint toolbar.js
/home/dev/joseph_chiang/muchiii/static/i/toolbar.js

Lint at line 60 character 17: document.write can be a form of eval.
document.write([

Lint at line 67 character 17: document.write can be a form of eval.
document.write('<script id="' + scriptId + '" src="' + routerUri + '></script>');

Lint at line 91 character 13: The body of a for in should be wrapped in an if statement to filter unwanted properties from the prototype.
for (i in iframeAttrs) {

Lint at line 135 character 119: Insecure '^'.
obj.outerHTML = html.replace(/<param\s+name\s*=\s*('|\")flashvars('|\")\s+value\s*=\s*('|\")[^"]*('|\")\s*\V?\>/i, "
<param name='flashvars' value='" + child[j].getAttribute('value') + "' />");

Lint at line 167 character 17: document.write can be a form of eval.
document.write([

Lint at line 193 character 17: The body of a for in should be wrapped in an if statement to filter unwanted properties from the prototype.
for (i in scriptEls) {

Lint at line 232 character 13: The body of a for in should be wrapped in an if statement to filter unwanted properties from the prototype.
for (i in bodyStyles) {

Lint at line 250 character 13: The body of a for in should be wrapped in an if statement to filter unwanted properties from the prototype.
for (i in wrapperStyles) {

[joseph_chiang@devm1:/home/dev/joseph_chiang/muchiii/static/i]$ | 0.00 0.00 0.00 | 2010-07-03 | 13:59:34
```

document.write
can be form of eval

JSLint

Default (99,34)

```
[joseph_chiang@devm1:~dev/joseph_chiang/muchiii/static/lab]$ phpcs dogfood.css
FILE: /home/joseph_chiang/muchiii/static/lab/dogfood.css
-----
FOUND 21 ERROR(S) AND 0 WARNING(S) AFFECTING 19 LINE(S)
-----
2 | ERROR | Expected 1 space after colon in style definition; 0 found
2 | ERROR | CSS colours must use shorthand if available; expected #fff but
|       | found #ffffff
3 | ERROR | Expected 1 space after colon in style definition; 0 found
6 | ERROR | Expected 1 space after colon in style definition; 0 found
7 | ERROR | Expected 1 space after colon in style definition; 0 found
8 | ERROR | Expected 1 space after colon in style definition; 0 found
12 | ERROR | Expected 1 space after colon in style definition; 0 found
15 | ERROR | Expected 1 space after colon in style definition; 0 found
16 | ERROR | Expected 1 space after colon in style definition; 0 found
18 | ERROR | Whitespace found at end of line
20 | ERROR | Expected 1 space after colon in style definition; 0 found
20 | ERROR | CSS colours must be defined in lowercase; expected #16387c but
|       | found #16387C
21 | ERROR | Expected 1 space after colon in style definition; 0 found
24 | ERROR | Expected 1 space after colon in style definition; 0 found
26 | ERROR | Expected 1 space after colon in style definition; 0 found
27 | ERROR | Expected 1 space after colon in style definition; 0 found
28 | ERROR | Expected 1 space after colon in style definition; 0 found
29 | ERROR | Expected 1 space after colon in style definition; 0 found
32 | ERROR | Expected 1 space after colon in style definition; 0 found
33 | ERROR | Expected 1 space after colon in style definition; 0 found
34 | ERROR | Expected 1 space after colon in style definition; 0 found
-----
```

[joseph_chiang@devm1:~dev/joseph_chiang/muchiii/static/lab]\$ | [1]phpcs @ devm1 | 0.00 0.00 0.00 | 2010-07-03 | 14:10:03 | 0-\$ jslint 1\$ phpcs

.rule {
attr: value;
}

PHP CodeSniffer (a.k.a phpcs)



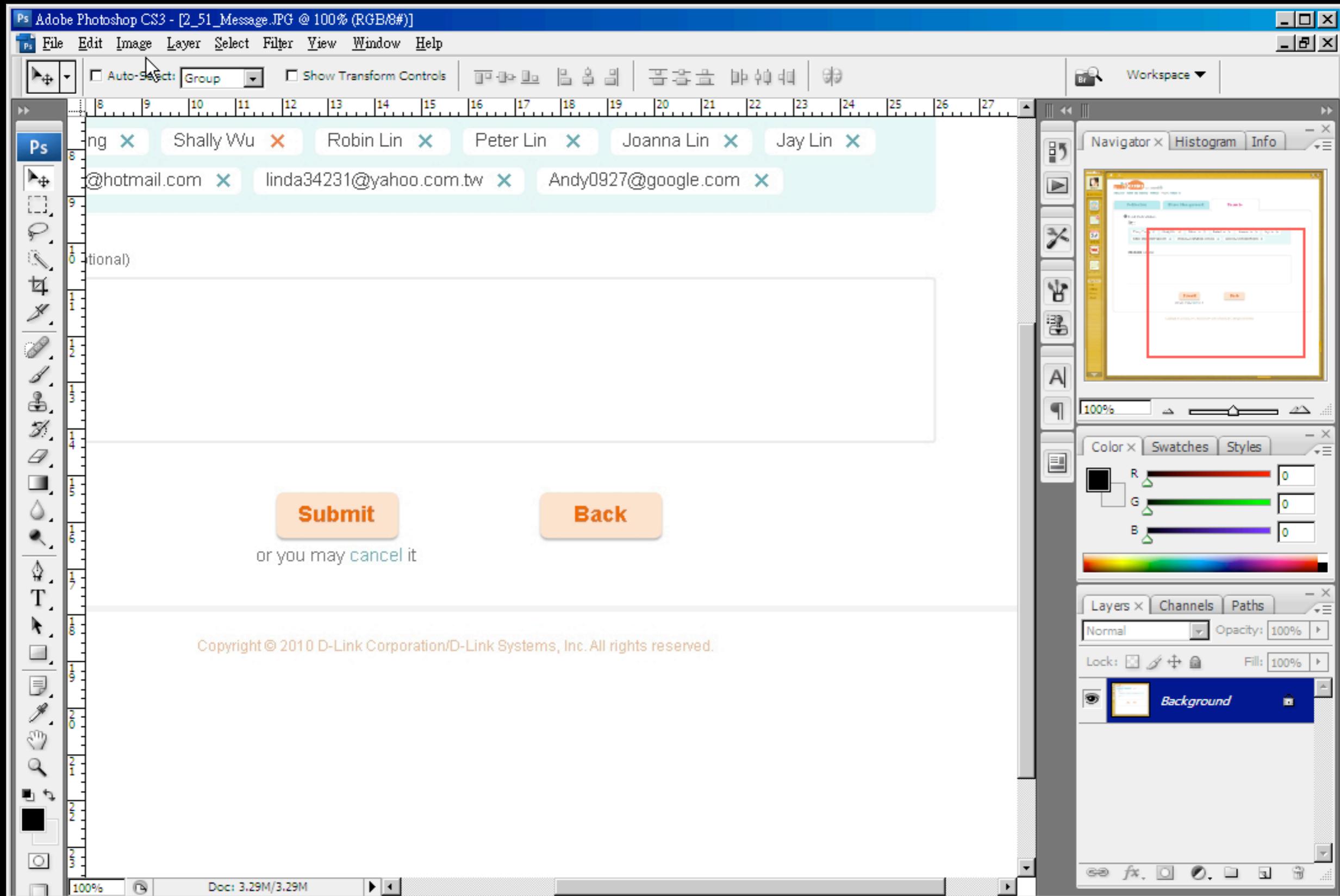
敝公司的 Visual Designer
只負責製作 PSD 檔案

F2E 得自己處理圖檔最佳化的問題

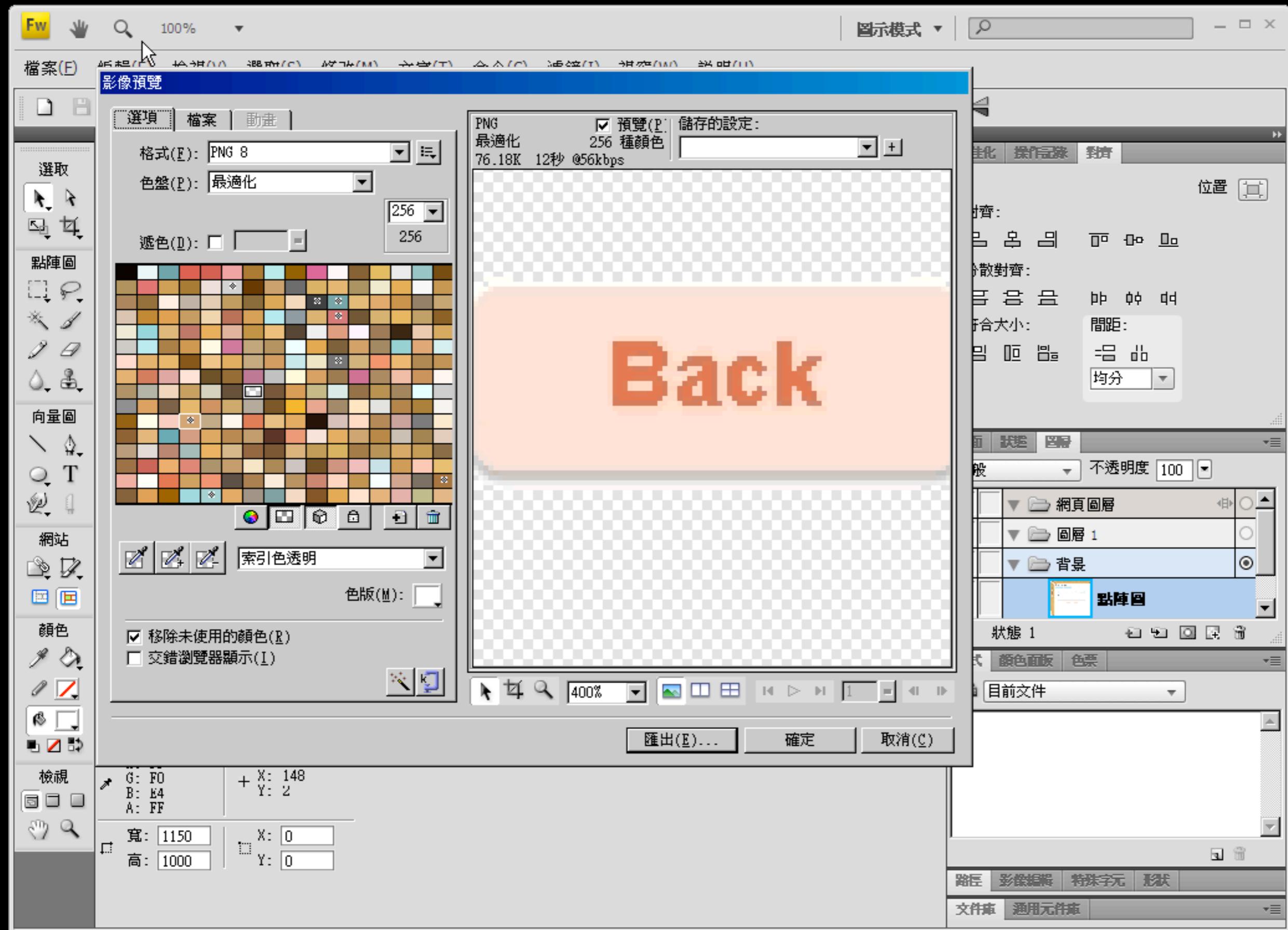


PNG8 是目前公認在 Web 最好的格式
但是只有 Fireworks 支援轉換
Alpha Transparency (索引色透明)

每次切圖都超痛苦，先用 Photoshop 打開 PSD



再開 Firework 轉換成索引色透明



生命就這樣浪費在沒有意義的事物上了

OptImg: 一個指令按下去幫你搞定

```
Default (113,35)

37. toggle_shrinking.png : save 322 bytes
38. rc_grip_rb.png.bak : save 21 bytes
39. ico_telephone.png : save 53 bytes
40. btn_close.png : save 111 bytes
41. sep_vertical.png : save 42917 bytes
42. ico_plurk.jpg : optimized already!
43. bg_total_text.png : save 116 bytes
44. bg_total_left.png : save 145 bytes
45. ico_mydlink.png : save 44984 bytes
46. btn_search.png : save 114 bytes
47. bg_pane_left.png : save 21 bytes
48. logo_minimize.png : save 44723 bytes
49. ico_game.png : save 46747 bytes
50. lock_open.png : save 21 bytes
51. ico_phone.png : save 188 bytes
52. ico_information.png : save 129 bytes
53. rc_grip_rt.png.bak : save 21 bytes
54. bg_pane_right.png : save 110 bytes
55. lock.png : save 21 bytes
56. ico_dlink.jpg : optimized already!
57. bg_pane_top.png : save 22 bytes
58. btn_expand.png : save 155 bytes
59. logo_dlink.png : save 90 bytes
60. ico_facebook.png : save 45233 bytes
61. bg_toggle.png : save 323 bytes
62. bg_profile_photo.png : save 21 bytes
63. blank.gif : optimized already!
64. sep.png : save 65843 bytes
65. bg_content.png : save 124550 bytes
66. ico_warning.png : save 130 bytes

Total saved: 873599 bytes
[joseph_chiang@devm1:/home/dev/joseph_chiang/muchiii/static/lab]$ optimg --report .
[2]optimg @ devm1                                         0.27 0.19 0.08 | 2010-07-03
$ jslint 1-$ phpcs 2$ optimg                                | 14:21:25
```

圖檔占網站總頻寬的 46%

Image Optimization

不修改就不给 Commit

The screenshot shows a terminal window titled "josephj.com (99,44)" with the URL "josephj.com" selected. The window displays a command-line session where a user attempts to commit code that fails JSLint validation.

```
[josephj@cockatoo:modev/static]$ git commit -am 'code check test' (07-16 19:28)
COMMIT FAILED!
=====
JSLint Error report
=====
8cb14e387d723da33a8d12d3908a89f7c6f2ff53
static/core.js
Lint at line 1 character 9: 'YUI' is not defined.
var Y = YUI();

Lint at line 6 character 6: Missing semicolon.
}

Lint at line 7 character 9: Too many var statements.
var proto = Sandbox.prototype;

Lint at line 26 character 9: Too many var statements.
var listeners = {};

Lint at line 27 character 9: Too many var statements.
var Core = {

Lint at line 30 character 22: Too many var statements.
for (var i in listeners) {

Lint at line 31 character 26: Too many var statements.
for (var x in listeners[i]) {

Lint at line 46 character 59: Unexpected use of '++'.
for (var i = 0, j = listeners.length; i < j; i++) {

Lint at line 50 character 21: Unreachable 'break' after 'return'.
break;
=====

Please fix your code and commit again.

[josephj@cockatoo:modev/static]$ | (07-16 19:28)
[?]Frontend @ cockatoo | 0.12.0.04.0.01 | 2010-07-16
```

1. Commit/Push 時的作法

唯有將檢查放入每天的開發流程中
Guideline 才能真正地被落實

2. Packaging 時的作法

我深深認為...

F2E 寫程式最重要的就是 Maintenance
你的程式必須很容易地被其它成員看懂

其它像是 Performance 或 Security 的議題
大多有機會交由工具或架構處理掉

打包 (Packaging) 就是一個很好的機會

2. Packaging 時的作法

- 執行 JS/CSS 的最小化與合併
例如：mii_index_d38eba51136ed0bf6d159770853b393b.css
是首頁所有 CSS 合併最小化產生的
- 執行 Static 設定檔的取代
是首頁所有 CSS 合併最小化產生的
- 執行 CSS 背景圖檔取代為 DataURI/MHTML
不再使用超手工的 CSS Sprites

[joseph_chiang@devm1:~]\$ pkg_create index development /tmp/muchiii/
Create working directory...(done)
Minify CSS & JavaScript file...(done) ← 合併 JS/CSS 檔案與最小化
Update static configuration...(done) ← 檔案合併後、檔名也會改變（不再使用 Mini 工具）
Modify URLs in static and configuration directories...(done)
Packing necessary files...(done)

Packages are generated under "/tmp/muchiii/development_josephchiang_201007031426/pkg/" directory
You can use the following command to install packages:
=====
pkg_deploy /tmp/muchiii/development_josephchiang_201007031426/pkg/index.tar.gz devm1.corp.muchiii.com;pkg_deploy /tmp/muchiii/development_josephchiang_201007031426/pkg/static.tar.gz devm1.corp.muchiii.com;
=====

[joseph_chiang@devm1:~]\$ pkg_deploy /tmp/muchiii/development_josephchiang_201007031426/pkg/index.tar.gz devm1.corp.muchiii.com;pkg_deploy /tmp/muchiii/development_josephchiang_201007031426/pkg/static.tar.gz devm1.corp.muchiii.com;
Install packages to devm1.corp.muchiii.com:22...
Connection to devm1.corp.muchiii.com closed.
(done)
Install packages to devm1.corp.muchiii.com:22...
Connection to devm1.corp.muchiii.com closed.
(done)
[joseph_chiang@devm1:~]\$ |

[3]package @ devm1 0.25 0.28 0.14 | 2010-07-03 | 14:27:27
0\$ jslint 1\$ phpcs 2\$ optimg 3\$ package

打包 pkg_create & pkg_deploy

2. Packaging 時的作法

版本控制中不應該有無法維護的檔案，例如：

合併或最小化的 CSS/JS

CSS Sprites 圖檔

DataURI/MHTML 字串

就讓打包流程去產生、以其它環境做驗證

以自動化的方式、讓妥協與錯誤不會重複地發生

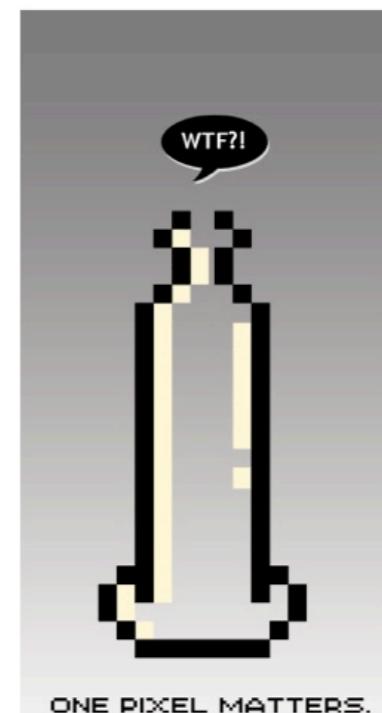
Review

- 模組化開發
將每個模組檔案獨立、用工具減少 Performance 爭議、用架構讓模組相互溝通。
- 自動化開發
透過流程整合自動化機制、減少每天浪費的時間、及每個人犯錯的機率。

相關連結

- **JavaScript Module Platform @ GitHub**
<http://github.com/josephj/javascript-platform-yui>
 - **Online Demo**
<http://josephj.com/project/javascript-platform-yui-demo>
 - **Demo Source @ GitHub**
<http://github.com/josephj/javascript-plaform-yui-demo>

Finally... 有貼紙可以拿嚟！





<http://www.flickr.com/photos/phploveme/2847931240/>

Thank You
so Powered by D-Link

Any Questions?

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