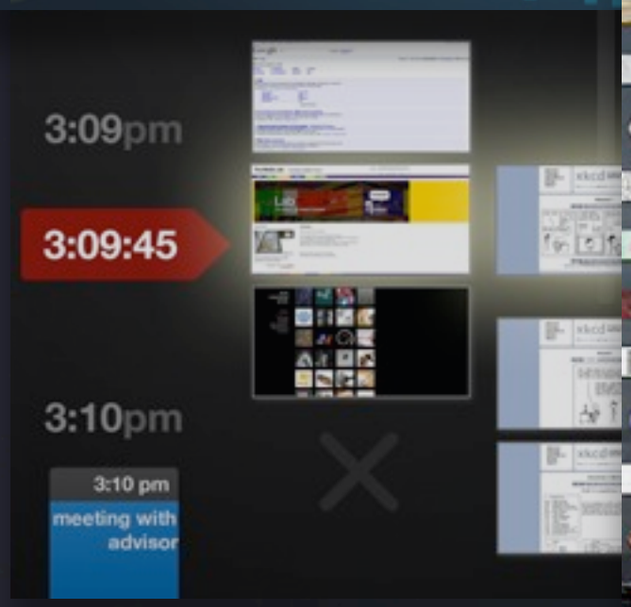
The Web Platform

Ben Galbraith and Dion Almaer

mozilla LABS
concept series

rain
weather
object label
metadata
Sun Jan 11
amazon.com

B


3:09pm
3:09:45
3:10pm
3:10 pm
meeting with
advisor

sports
basketball
football

Version 4.79 [en]-20011017 - Netscape

File Edit View Go Communicator Help

Back Forward Reload Home Search Netscape Print Security Shop Stop

Bookmarks Location: about: What's Related

Netscape® Communicator 4.79

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Document: Done

Mozilla Firefox Start Page

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Google

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Firefox Start

Google™

Advanced Search
Preferences

Google Search

Experience the Web the way you want it: our add-ons wizard will customize Firefox to your exact interests.

About Mozilla

Done

Google

Google

http://www.google.com/

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Google™

Google Search I'm Feeling Lucky

Advanced Search
Preferences
Language Tools

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"Google Suggest
and Google Maps are two
examples of a new approach
to web applications that we at
Adaptive Path have been calling
Ajax. The name is shorthand for
Asynchronous JavaScript + XML,
and it represents a fundamental
shift in what's possible
on the Web."

Jesse James Garrett
Co-founder, Adaptive Path

```
var xhr = new XMLHttpRequest();
xhr.onreadystatechange = function() {
    if (xhr.readyState == 4) {
        processChange();
    }
}
xhr.open("GET", "/foo/bar");
xhr.send(null);
```

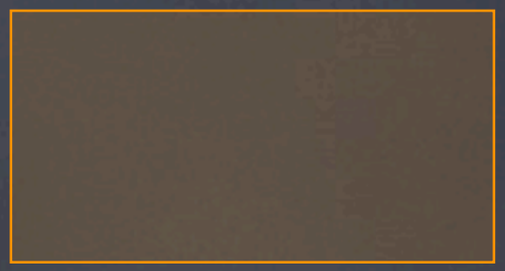
dojo

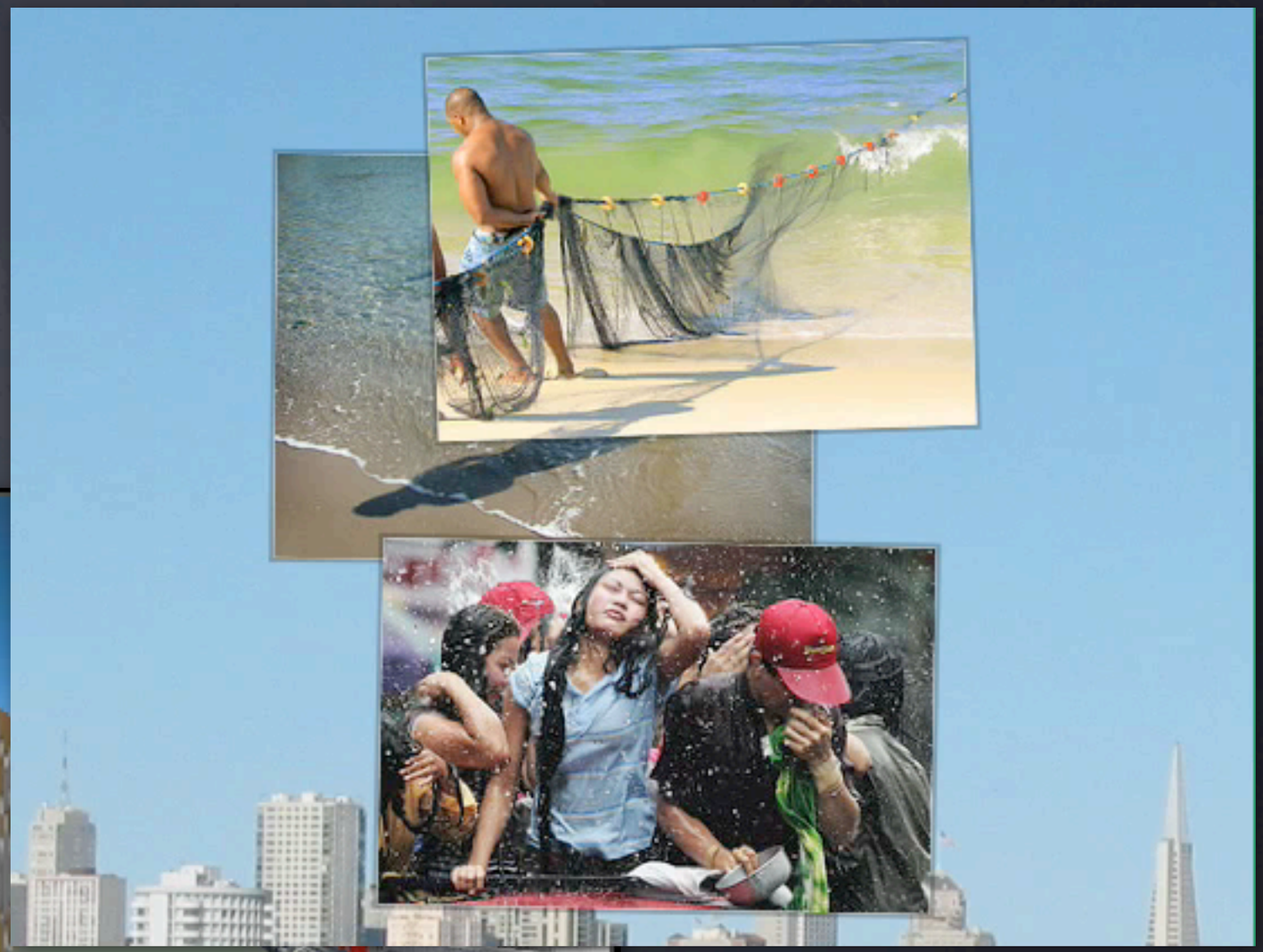
jQuery
write less, do more.

prototype

Canvas

Text





No start-up delay

Available on mobile devices today

Rendering fidelity with browser
(especially important for typography)

No bridges necessary

Not a plug-in

Microsoft® Silverlight™

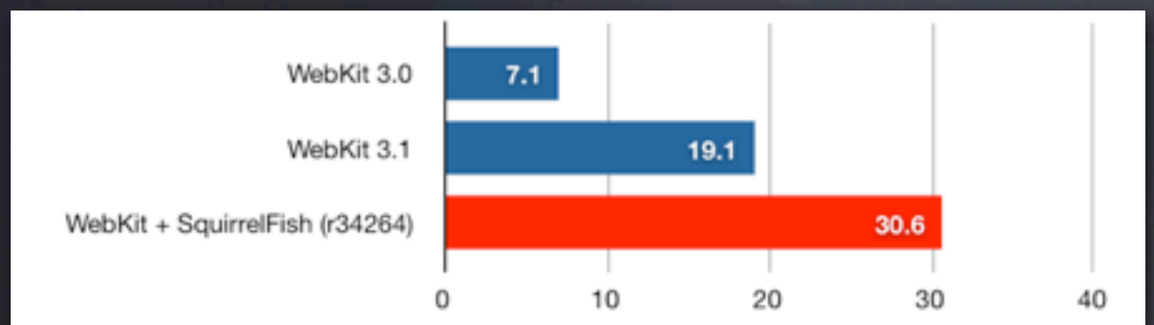
Fast JavaScript
SVG

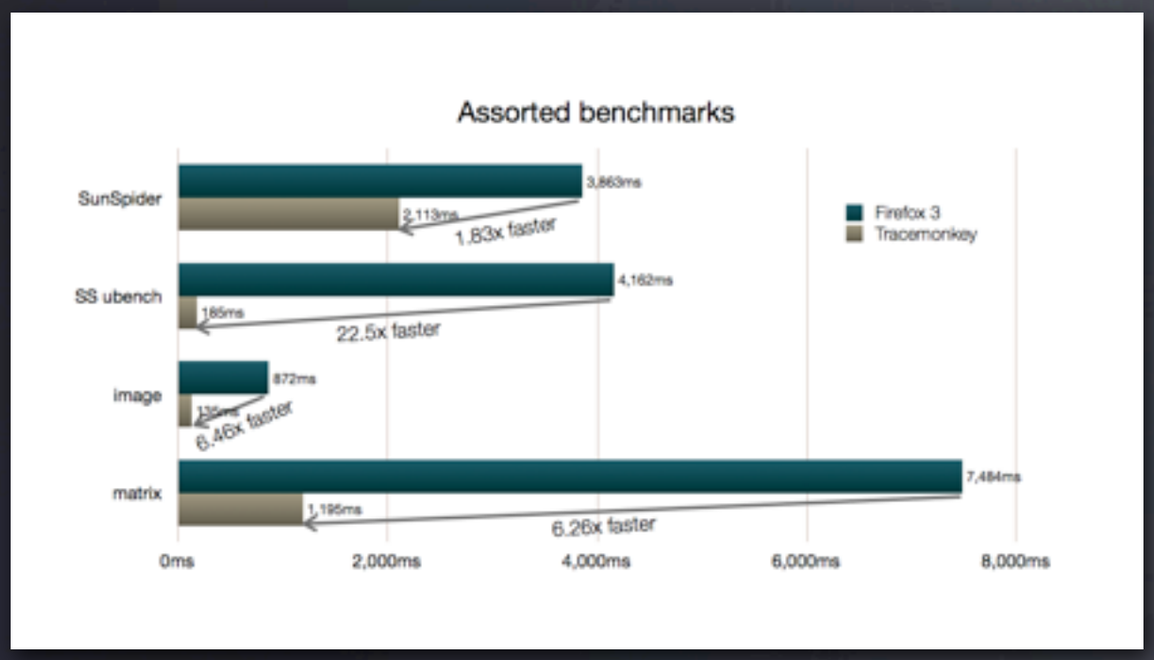
Chrome's V8

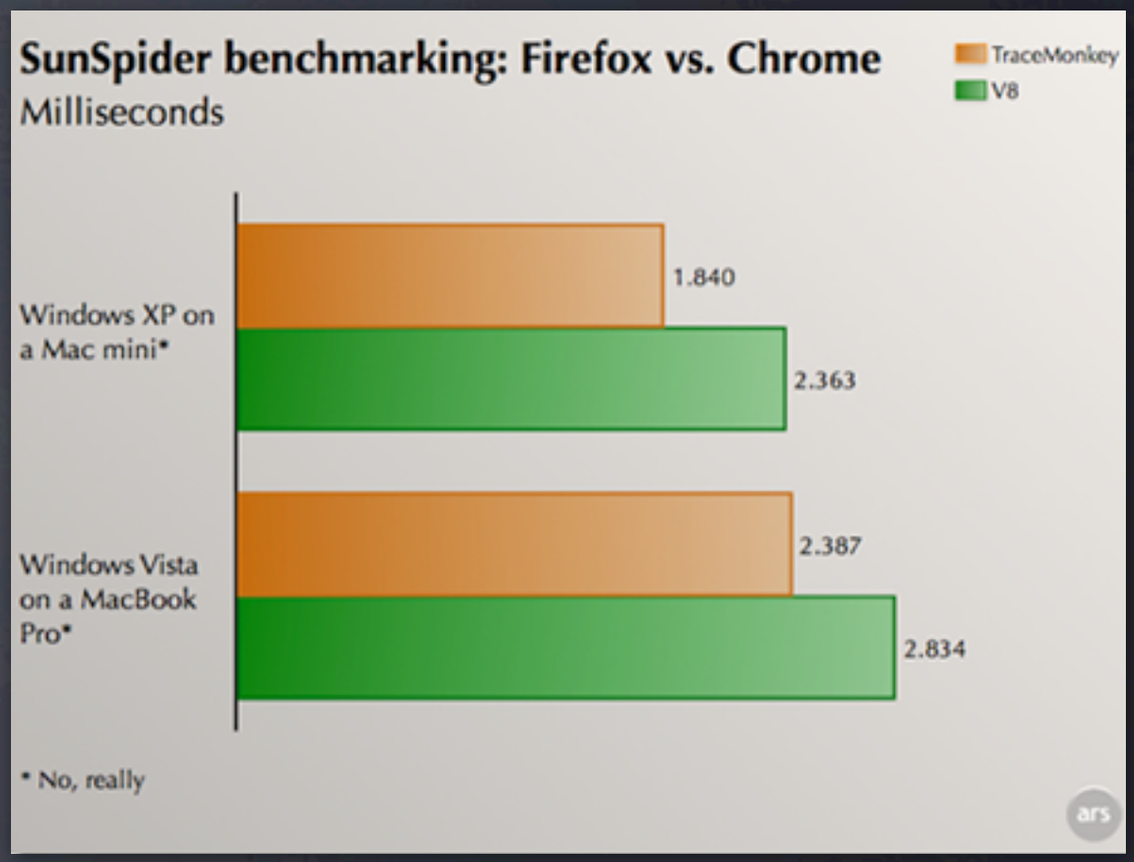
Safari's SquirrelFish Extreme

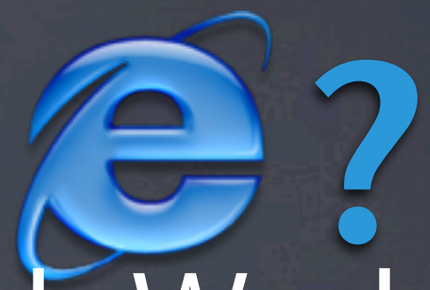
Firefox's TraceMonkey

Opera's Carakan

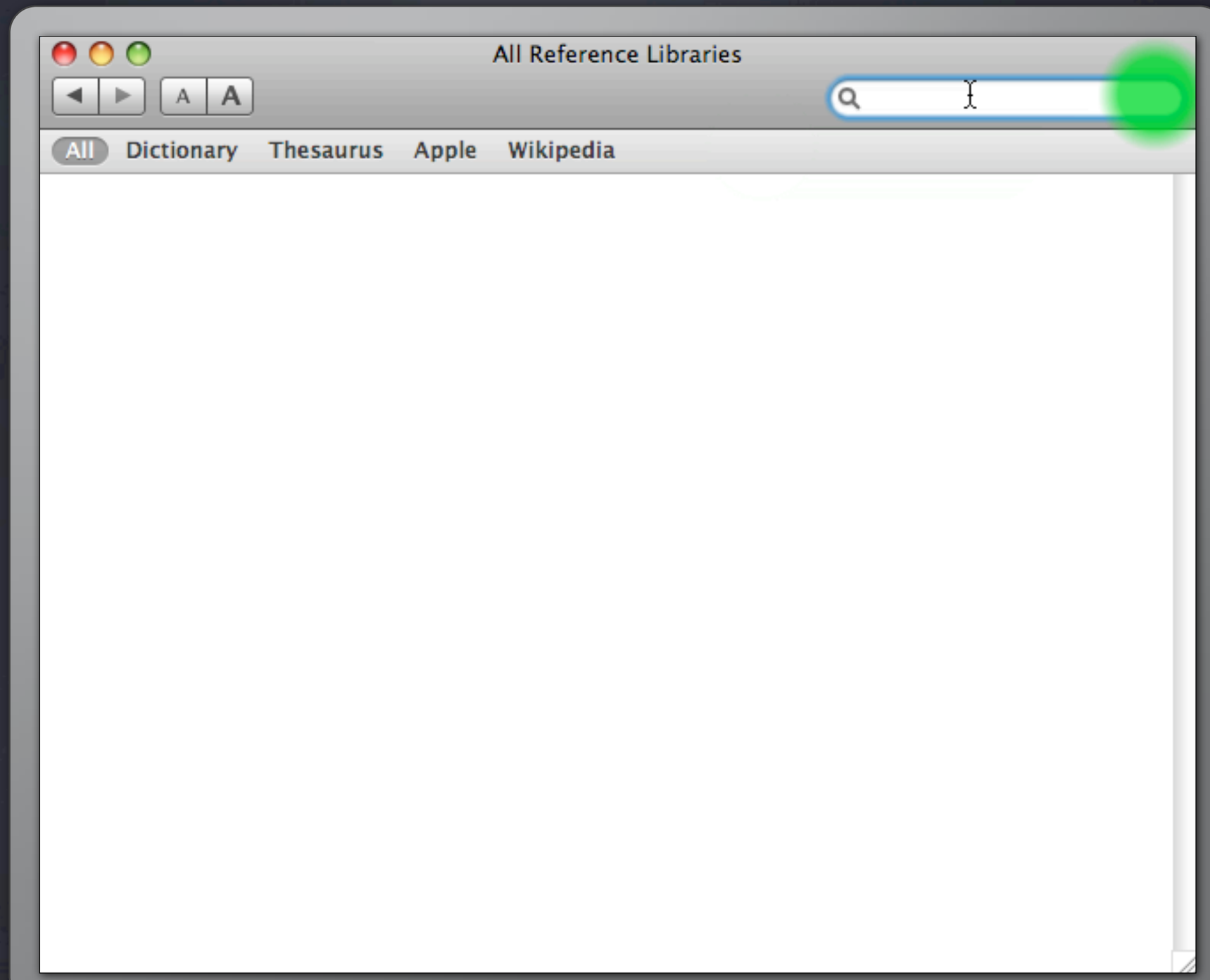








Web Workers

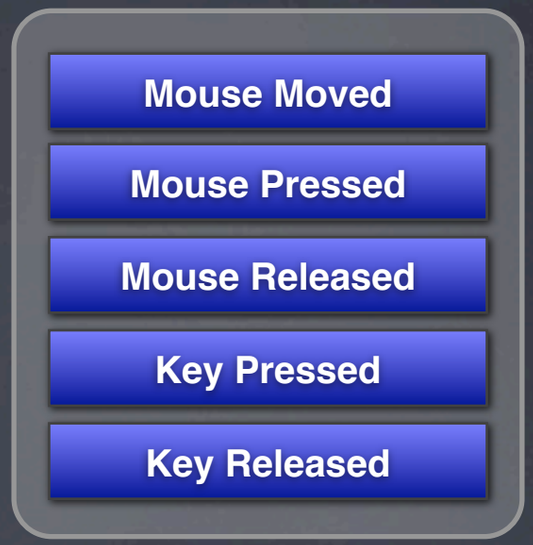

All Reference Libraries
A
A
All
Dictionary
Thesaurus
Apple
Wikipedia

Jakob Nielsen
Noted Usability Expert

"0.1 second is about the limit for having the user feel that the system is reacting instantaneously, meaning that no special feedback is necessary except to display the result.

"1.0 second is about the limit for the user's flow of thought to stay uninterrupted, even though the user will notice the delay.

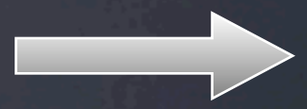
Operating System



Event Queue

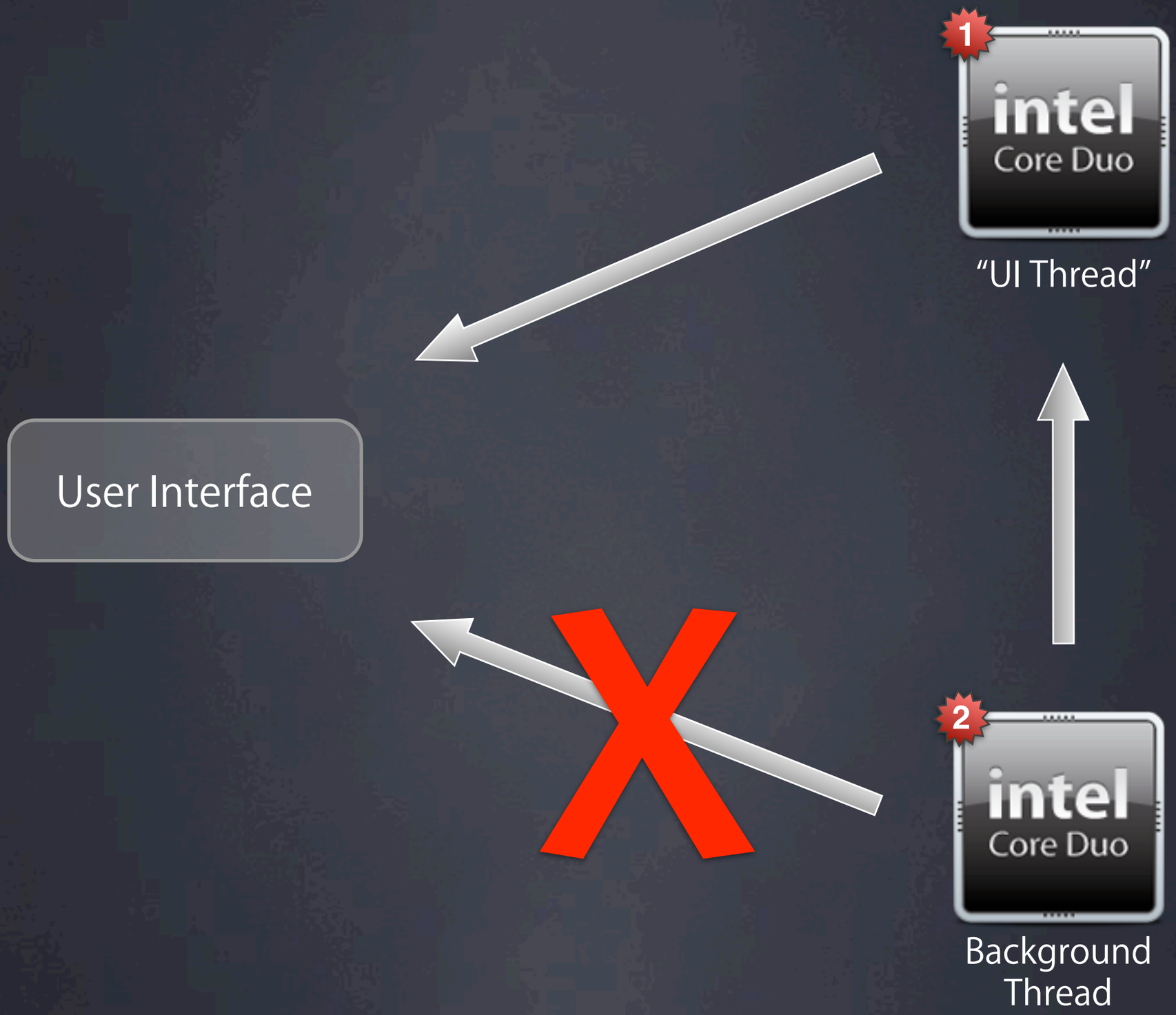
Potential Bottleneck

User Code

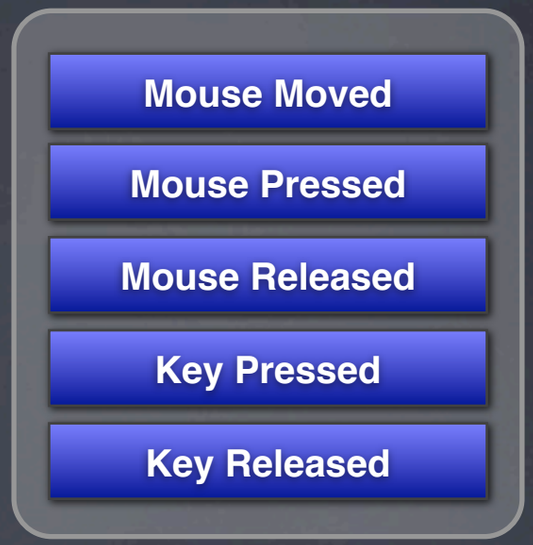


Painting, etc.

"UI Thread"


1
intel
Core Duo
"UI Thread"
User Interface
2
intel
Core Duo
Background
Thread

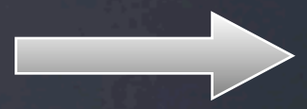
Operating System



Event Queue

Potential Bottleneck

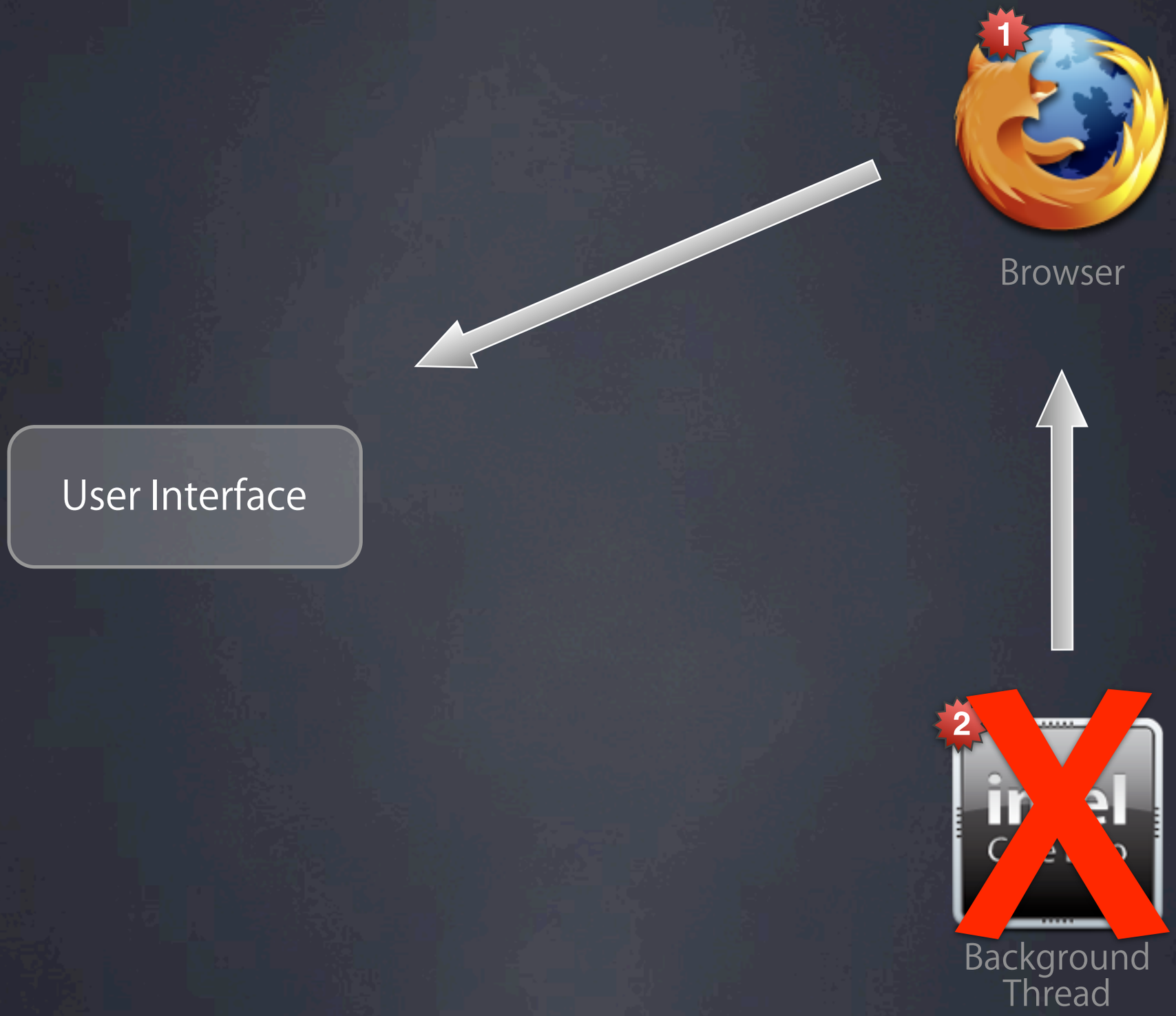
User Code



Painting, etc.

"UI Thread"

Operating System
Mouse Moved
Mouse Pressed
Mouse Released
Key Pressed
Key Released
Event Queue
Potential Bottleneck
JavaScript
Browser
Web Browsing


1
Browser
User Interface
2
Background
Thread

Brendan Eich
Inventor of JavaScript
CTO, Mozilla

Brendan's Blog

*"Most programmers should **run away** crying [from threading]. But they don't...*

"Instead, as with most other sharp tools, the temptation is to show how big one is by... tempting race-condition fate... Occasionally the results are infamous, but too often, with only virtual fingers and limbs lost, no one learns.

Brendan Eich
Inventor of JavaScript
CTO, Mozilla

"Threads violate abstractions six ways to Sunday.

"Mainly by creating race conditions, deadlock hazards, and pessimistic locking overhead.

"And still they don't scale up to handle the megacore teraflop future."

Brendan's Blog

Brendan Eich
Inventor of JavaScript
CTO, Mozilla

“Threads suck.”

Brendan’s Blog

Browser

User Interface

Desktop Integration

XMLHttpRequest

(Ajax)

Web Workers

Google Gears BETA

Background Thread

Finder File Edit View Go Window Help

Sun 10:56 PM

"You just got another email from your wife!"

Fluid

Mozilla Prism

Adobe AIR

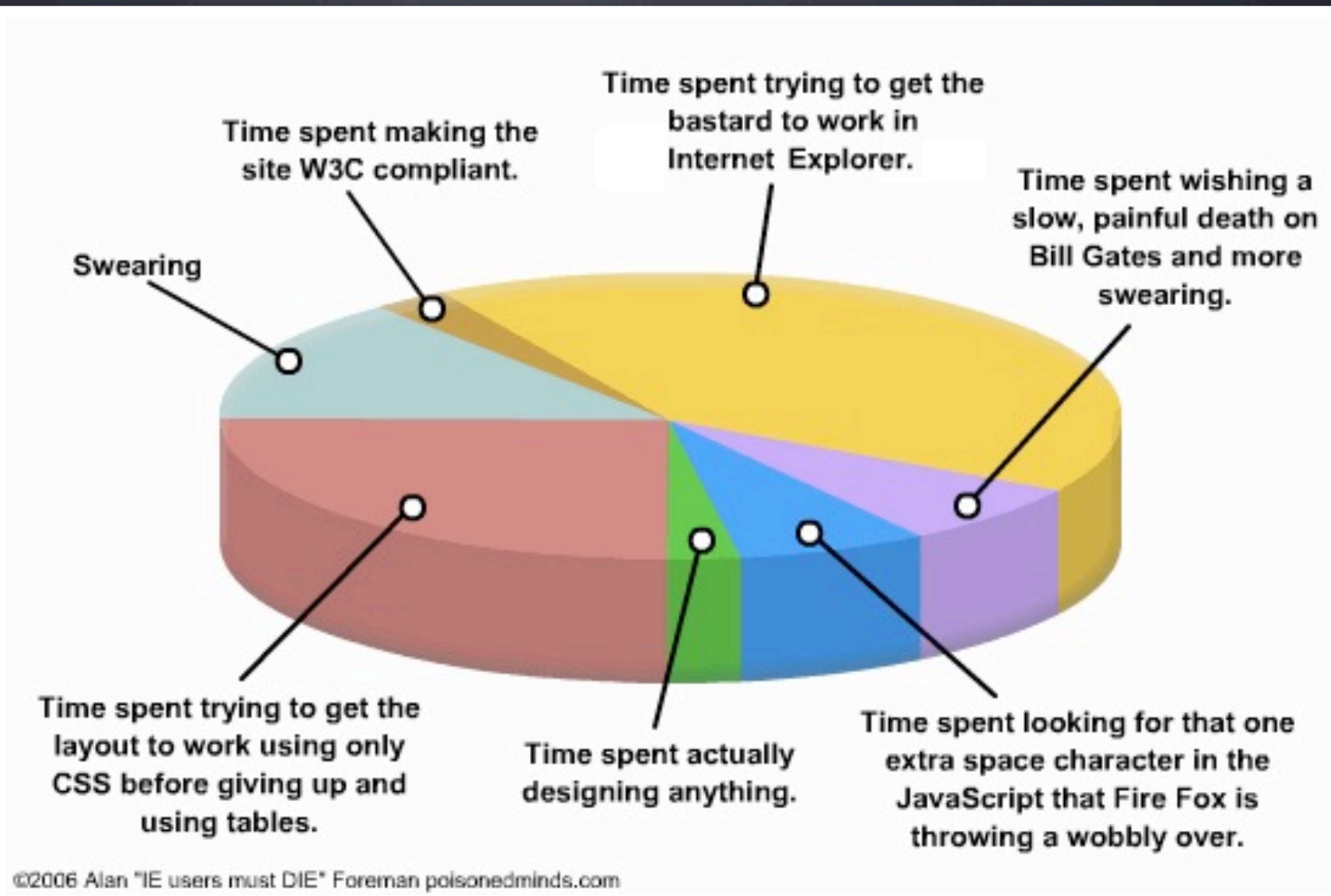
Appcelerator Titanium

Gears

Sprint
3:01
(408) 555-1234
1
2 abc
3 def
4 ghi
5 jkl
6 mno
7 pqrs
8 tuv
9 wxyz
*
0 +
#

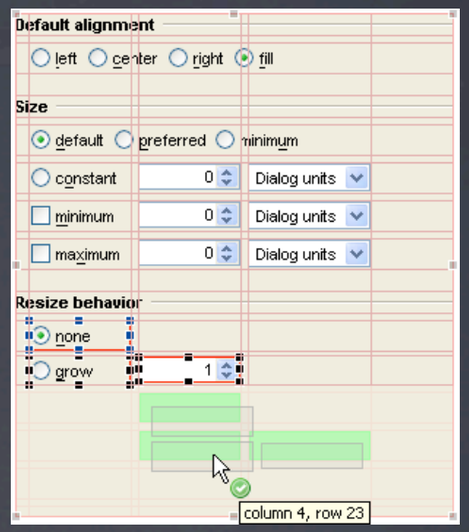
PhoneGap
9:42 AM
Text
Calendar
Photos
Camera
YouTube
Stocks
Maps
Weather
Clock
Calculator
Notes
Settings
iTunes
App Store
Phone
Mail
Safari
iPod

The Breakdown of Modern Web Development



Canvas

+



Sophisticated Grid-based Layout

=

Microsoft Silverlight

Adobe Flash

Apple Cocoa

Sun JavaFX

Ajax Web Platform

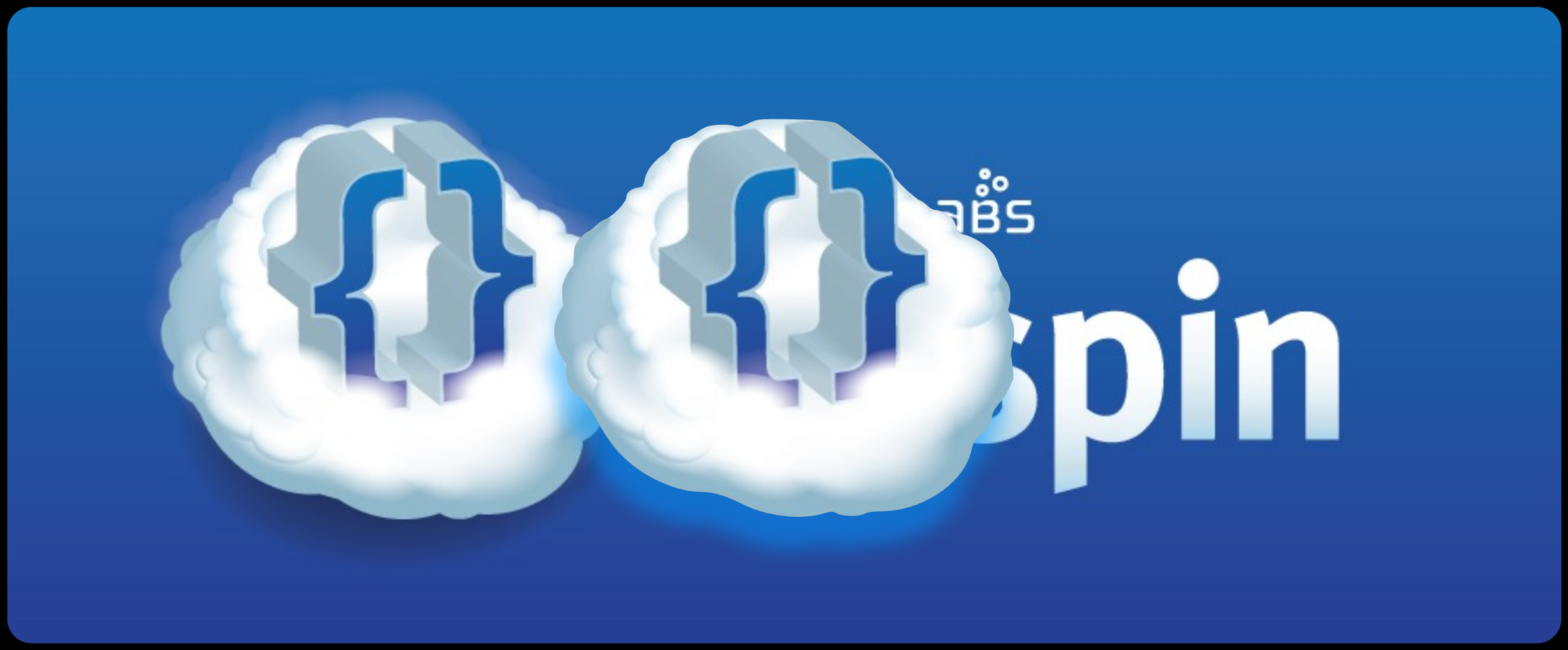
Open Web Platform

Home

Documentation

Dashboard

Roadmap


ABS
spin

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://www.w3.org/TR/xhtml1/D
<html>
	<head>
		<title>Syntaxed Demo</title>
		<style type="text/css">
			@import url(/test/test.css);

			/* comment */

			body
			{
				font-size: 80%;
			}

			div.test
			{
				float: left;
				left: 4.2em;
			}

		</style>

	</head>
	<body>
		<!-- this is just a sample, OK? -->
		<h1 class="test">Hello, World!</h1>
		<p>What a lovely day it is!</p>
	</body>
</html>
```

The Editor of Our Dreams

Accessible from anywhere

Any device in any location

Simple to use, like Textmate

An editor, not an IDE

Wicked fast

Performance, performance, performance

Rock-solid real-time collaboration, like SubEthaEdit

It just works

Integrated command-line, like vi

Fun like Quicksilver, social like Ubiquity

“Self-hosted” environment, like Emacs

For extreme extensibility, but with JavaScript!

Bespin >

My Project 01: index.html

Open Sessions

- ReadMe.htm
- callforpapers.js
- error.php
- index.php
- index.php
- downloads.htm
- frmscpt_KA_news.php
- com

Find Files

s

- syntaxhilighter.js
- sync.py
- sybase.py
- svntestbase.py
- svnlookrepo.dump
- svnlook.py
- svncommon.py
- svn.txt
- svn.py — store
- svn.py — store

../path/to/sybase.py

```
1
2   //This is going to be a very long line that triggers horizontal scrolling so I can see exactly how wide
    to be a very long line that triggers horizontal scrolling so I can see exactly how wide this is.
3   function DefaultHeaderRenderer() {
4       this.paintCell = function(ctx) {
5           var g = ctx.gc;",
6           g.fillStyle = \"rgb(223, 205, 151)\";
7           g.fillRect(ctx.origin.x, ctx.origin.y, ctx.size.width, ctx.size.height);
8           g.strokeStyle = \"rgb(168, 155, 114)\";
            g.strokeRect(ctx.origin.x + ctx.size.width - 1, ctx.origin.y, 1, ctx.size.height);
            g.strokeRect(ctx.origin.x, ctx.origin.y + ctx.size.height - 1, ctx.size.width, 1);
            drawText(g, \"rgb(0, 0, 0)\", ctx.value,",
                ctx.origin.x + ctx.insets.left, ctx.origin.y + ctx.size.height - ctx.insets.bottom - ctx.ins
        }


    /This is going to be a very long line that triggers horizontal scrolling so I can see exactly how wide
    o be a very long line that triggers horizontal scrolling so I can see exactly how wide this is.
    unction DefaultHeaderRenderer() {
        this.paintCell = function(ctx) {
            var g = ctx.gc;
            g.fillStyle = \"rgb(223, 205, 151)\";
            g.fillRect(ctx.origin.x, ctx.origin.y, ctx.size.width, ctx.size.height);
            g.strokeStyle = \"rgb(168, 155, 114)\";
23          g.strokeRect(ctx.origin.x + ctx.size.width - 1, ctx.origin.y, 1, ctx.size.height);
24          g.strokeRect(ctx.origin.x, ctx.origin.y + ctx.size.height - 1, ctx.size.width, 1);
25
```

> open

3

example.js – editing with Wide Boy

file:///Users/bgalbs/source/vcs/webide/editor.html?path=example.js

Google

Bespin >

SomeAjaxApp : example.js

AAA

```
1  function() {
2    // hello world
3
4    // here's another edit
5  }
```

example.js – editing with Wide Boy

file:///Users/bgalbs/source/vcs/webide/editor.html?path=example.js

Google

Bespin >

SomeAjaxApp : example.js

AAA

```
1  function() {
2    // hello world
3
4    // here's another edit
5  }
```

Hey ben

Done

Bespin >

My Project 01: index.html

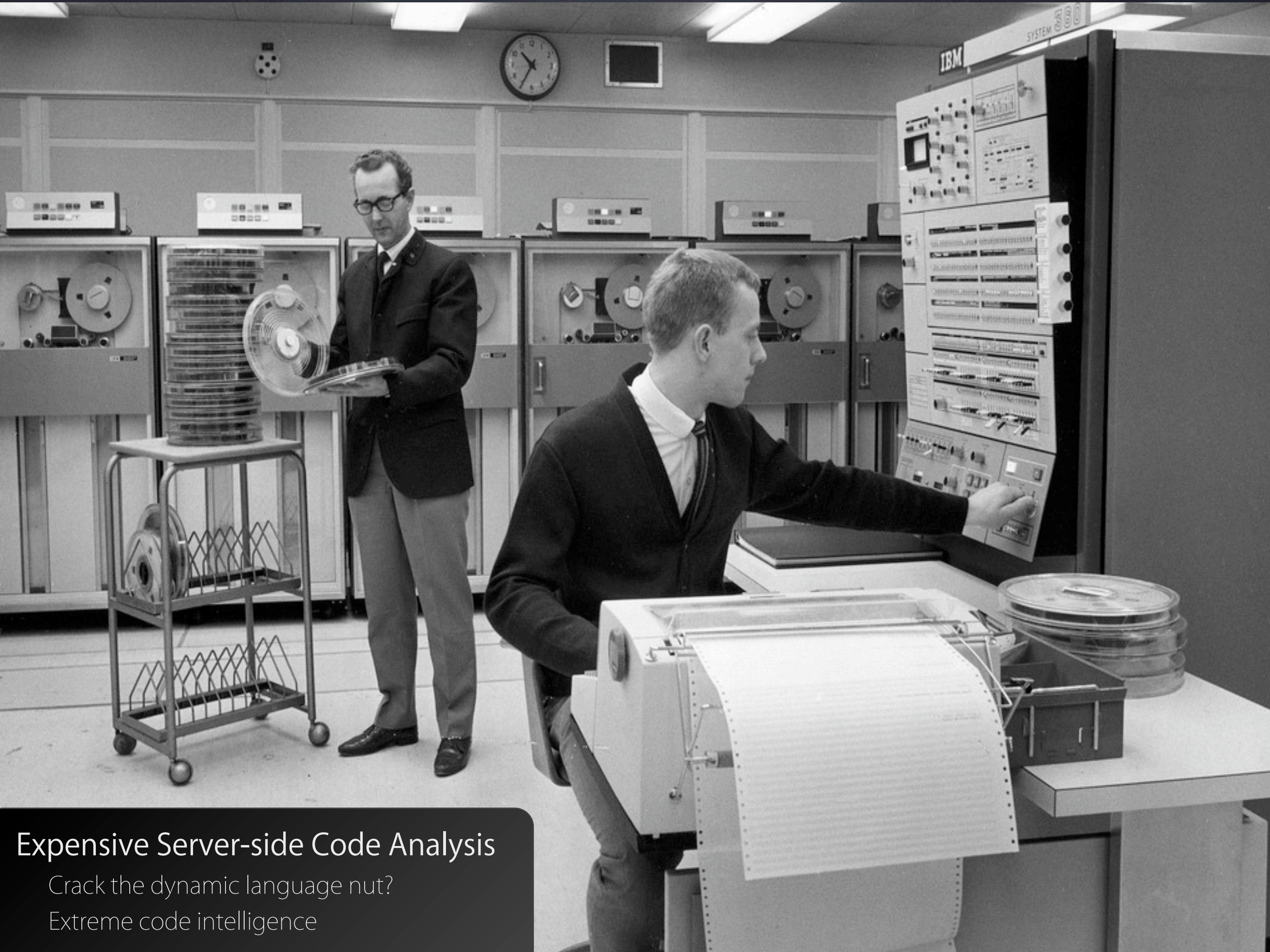
Heat Map

Line 125:
g.fillStyle = \"rgb(223, 205, 151)\";

Last Edited
Recently Edited
Commonly Edited

```
1
2   //This is going to be a very long line that triggers horizontal scrolling so I can see exactly how wide
    to be a very long line that triggers horizontal scrolling so I can see exactly how wide this is.
3   function DefaultHeaderRenderer() {
4       this.paintCell = function(ctx) {
5           var g = ctx.gc;",
6           g.fillStyle = \"rgb(223, 205, 151)\";
7           g.fillRect(ctx.origin.x, ctx.origin.y, ctx.size.width, ctx.size.height);
8           g.strokeStyle = \"rgb(168, 155, 114)\";
9           g.strokeRect(ctx.origin.x + ctx.size.width - 1, ctx.origin.y, 1, ctx.size.height);
10          g.strokeRect(ctx.origin.x, ctx.origin.y + ctx.size.height - 1, ctx.size.width, 1);
11          drawText(g, \"rgb(0, 0, 0)\", ctx.value,",
12              ctx.origin.x + ctx.insets.left, ctx.origin.y + ctx.size.height - ctx.insets.bottom - ctx.ins
13      }
14
15
16  //This is going to be a very long line that triggers horizontal scrolling so I can see exactly how wide
    to be a very long line that triggers horizontal scrolling so I can see exactly how wide this is.
17  function DefaultHeaderRenderer() {
18      this.paintCell = function(ctx) {
19          var g = ctx.gc;
20          g.fillStyle = \"rgb(223, 205, 151)\";
21          g.fillRect(ctx.origin.x, ctx.origin.y, ctx.size.width, ctx.size.height);
22          g.strokeStyle = \"rgb(168, 155, 114)\";
23          g.strokeRect(ctx.origin.x + ctx.size.width - 1, ctx.origin.y, 1, ctx.size.height);
24          g.strokeRect(ctx.origin.x, ctx.origin.y + ctx.size.height - 1, ctx.size.width, 1);
25
```

3



Expensive Server-side Code Analysis

Crack the dynamic language nut?

Extreme code intelligence

RubyConf08

Dave Thomas
Noted Software Expert,
Author, and Publisher

"Programmers, like poets, constantly start with a blank sheet of paper and they construct things purely out of their imagination.

It's difficult work; if you don't love your tools, you're going to start resenting what you're doing, and that will show in your work.

RubyConf08

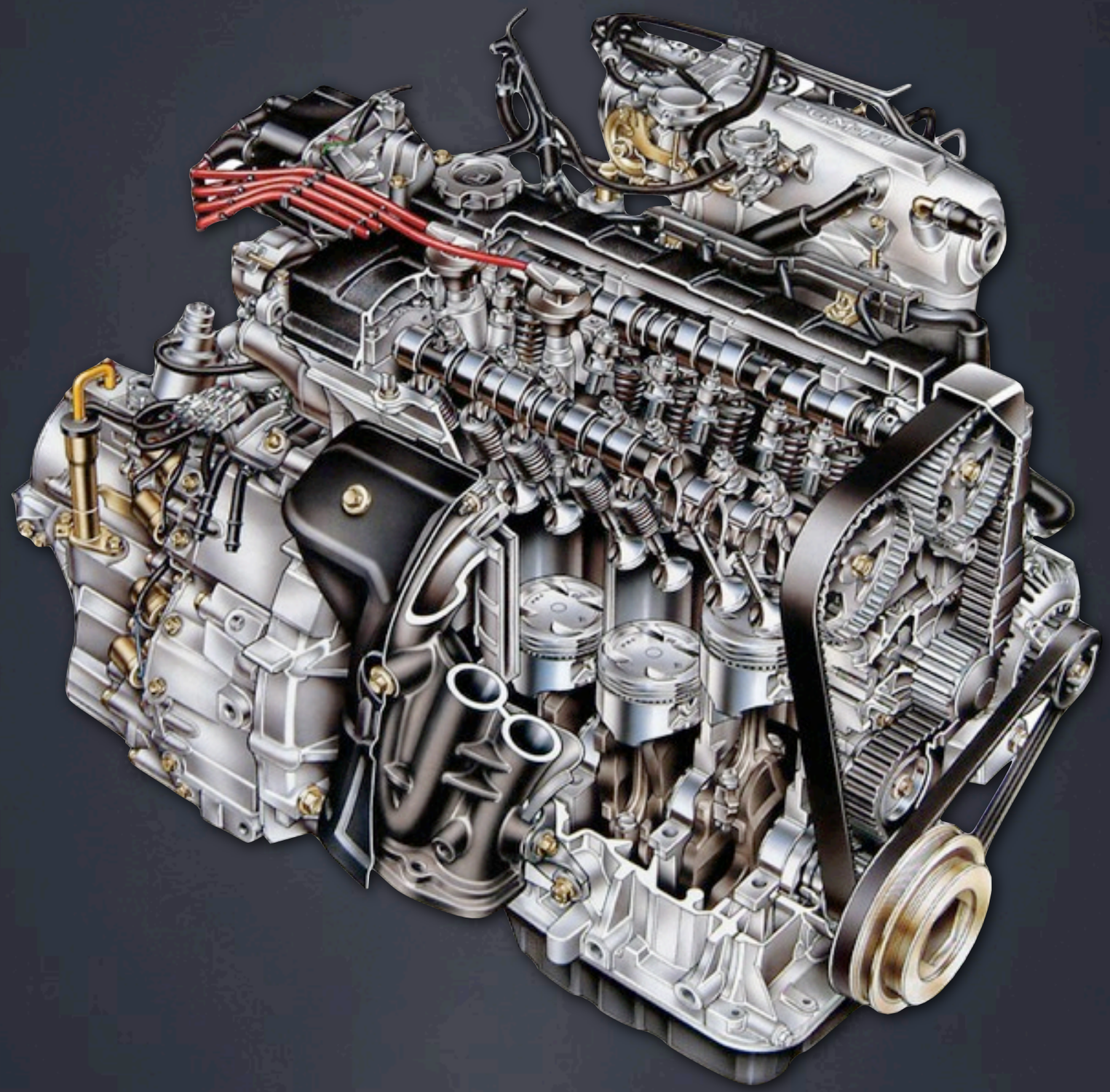
Dave Thomas
Noted Software Expert,
Author, and Publisher

"You must love your software tools."

RubyConf08

mozilla LABS

Thunderhead

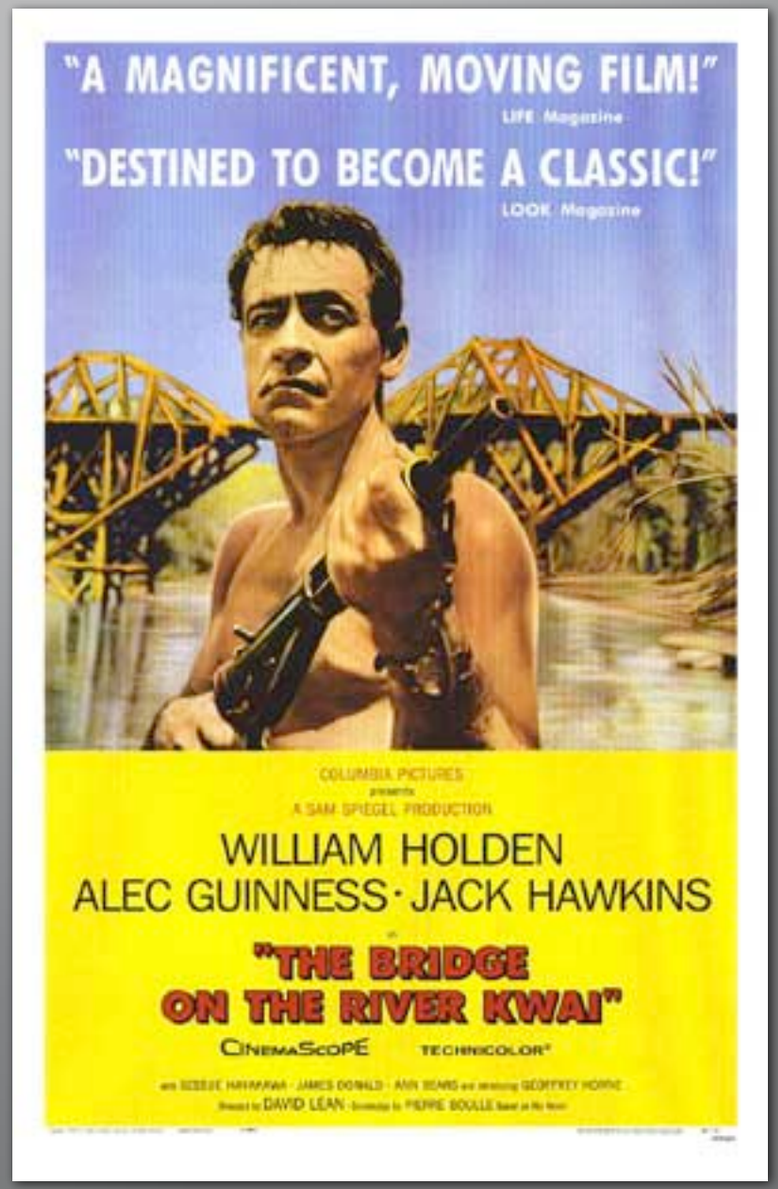


European model shown

Compelling User Experience

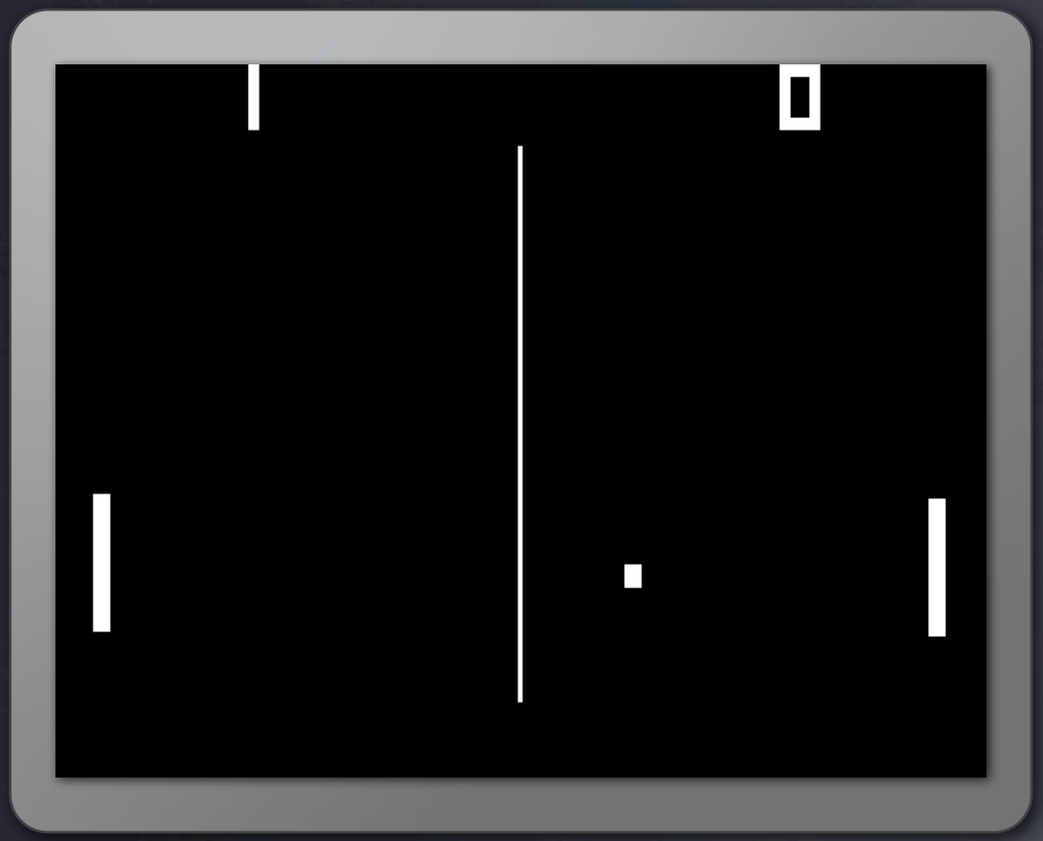
JUST TAKE YOUR BEST GUESS.
SO. . . I SHOULD MAKE UP A NUMBER SO I CAN GET APPROVAL TO MAKE A PHONE CALL AND ASK WHAT THE NUMBER SHOULD HAVE BEEN?
RIGHT. BUT FIRST YOU NEED TO GET MY APPROVAL TO DO THE COST-BENEFIT ANALYSIS.
WILL YOU APPROVE IT?
I'D HAVE TO SEE THE NUMBERS.
www.dilbert.com

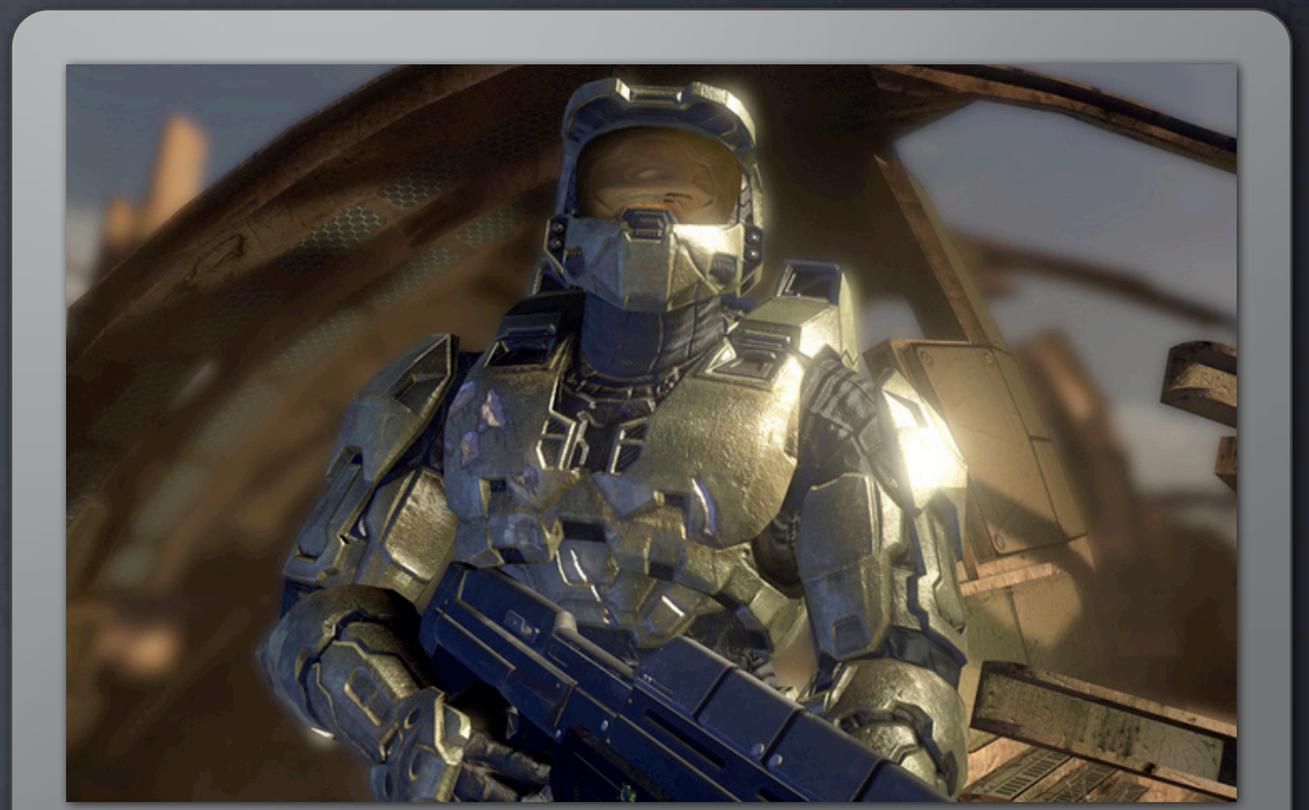
Managing Expectations



Top Grossing Film of 1957

Top Grossing Film of 2007





Apple Store

1-800-MY-APPLE | Chat

Search Store

- Shop Mac
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- Shop iPhone

Similar Products

Brenthaven Trek Sleeve...

★★★★☆

$29.95

Incase Nylon Sling Pack...

★★★★½

$89.95

Incase Hardshell Case for...

★★★★★

$49.95

Shop Mac › Mac Accessories › Notebook Cases

SwissGear Neon Backpack for 15" MacBook Pro

Created specially for the 15-inch MacBook Pro or smaller models, Neon features the meticulous attention to detail that distinguishes all SwissGear computer backpacks.

Learn more ▸

Customer Rating

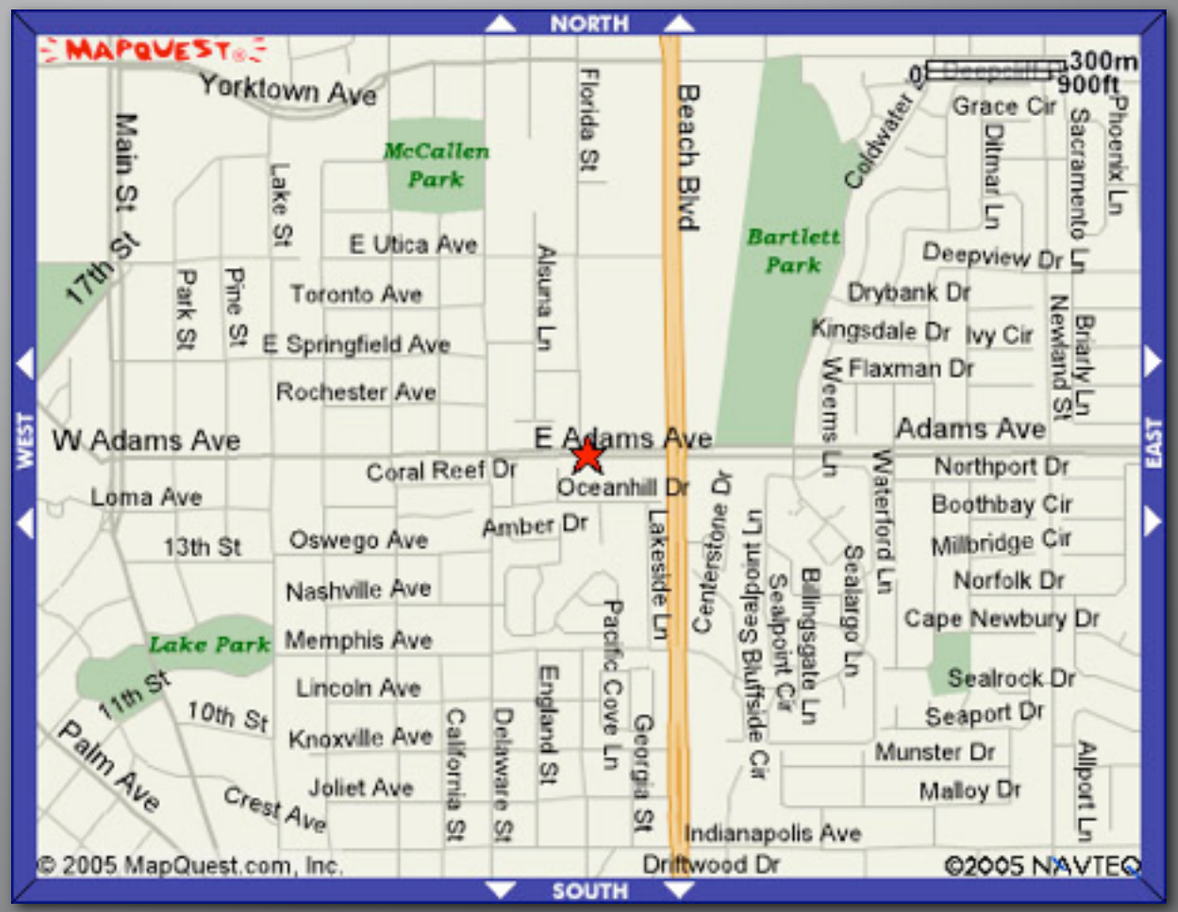
★★★★☆ (Based on 5 reviews)

Read all reviews ▸ | Write a review ▸

Enlarge Images ▸

Overview

Built to the same stringent standards as the Genuine Swiss Army Knife, the SwissGear Neon backpack offers a spe
pocket that completely encloses and protects your 15-inch MacBook Pro. Its construction pays special attention t
incorporating air-flow back padding and shock-absorbing shoulder straps, including two special ergonomic hand


MAPQUEST
NORTH
SOUTH
WEST
EAST
0
300m
900ft
Yorktown Ave
Main St
17th St
Lake St
McCallen Park
Florida St
Beach Blvd
Bartlett Park
Coldwater
Grace Cir
Ditmar Ln
Sacramento Ln
Phoenix Ln
E Utica Ave
Park St
Pine St
Toronto Ave
Alsuna Ln
Deepview Dr
Drybank Dr
Kingsdale Dr
Ivy Cir
Newland St
Briarly Ln
E Springfield Ave
Flaxman Dr
Rochester Ave
Weems Ln
W Adams Ave
E Adams Ave
Adams Ave
Coral Reef Dr
Oceanhill Dr
Northport Dr
Loma Ave
Boothbay Cir
Amber Dr
Lakeside Ln
Centerstone Dr
Waterford Ln
13th St
Oswego Ave
Millbridge Cir
Sealpoint Ln
Sealpoint Cir
Billingsgate Ln
Sealargo Ln
Norfolk Dr
Nashville Ave
Cape Newbury Dr
Lake Park
Memphis Ave
Pacific Cove Ln
Bluffside Cir
Sealrock Dr
11th St
Lincoln Ave
England St
Seaport Dr
10th St
Knoxville Ave
California St
Delaware St
Georgia St
Munster Dr
Palm Ave
Joliet Ave
Malloy Dr
Allport Ln
Crest Ave
Indianapolis Ave
Driftwood Dr
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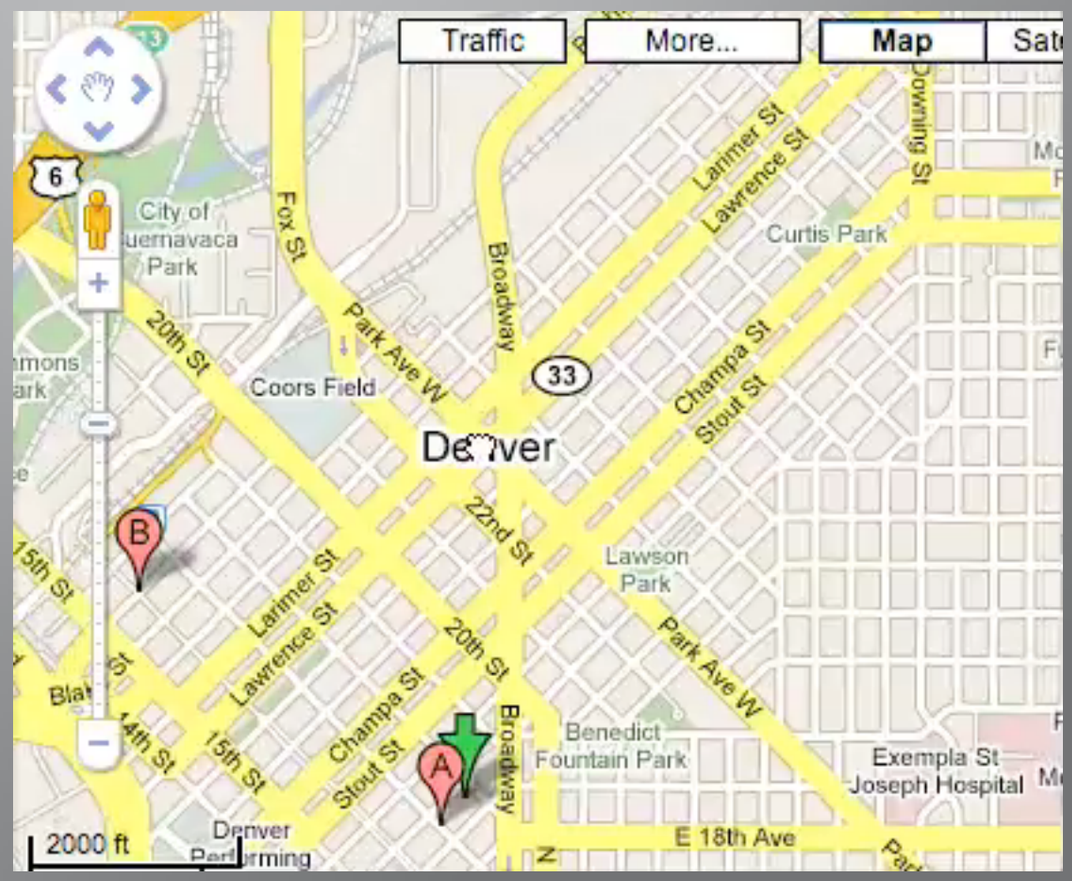
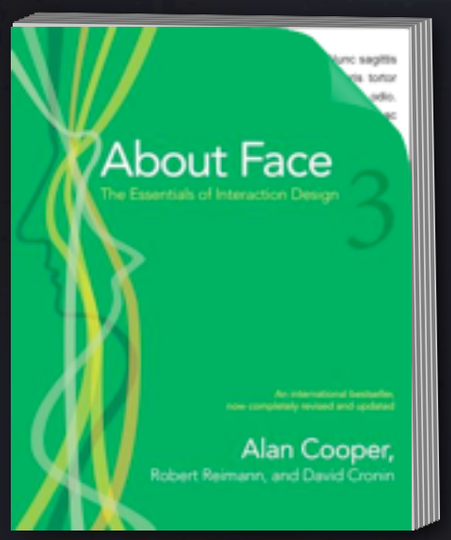

Traffic
More...
Map
Sat
6
City of Cuernavaca Park
Fox St
Broadway
Larimer St
Lawrence St
Downing St
Curtis Park
20th St
Park Ave W
Coors Field
33
Champa St
Stout St
Denver
22nd St
Lawson Park
15th St
Larimer St
Lawrence St
20th St
Park Ave W
Champa St
Stout St
Broadway
Benedict Fountain Park
Exempla St Joseph Hospital
14th St
15th St
E 18th Ave
2000 ft
Denver Performing
A
B

Alan Cooper
Noted Usability Expert

"If you ask users how to design their software, they will ignore their own goals and describe tasks to you. You must observe users to determine their goals, but don't be fooled by their own ignorance of their objectives.

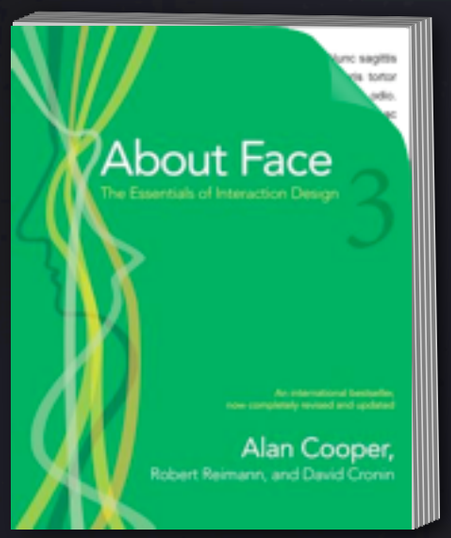
About Face

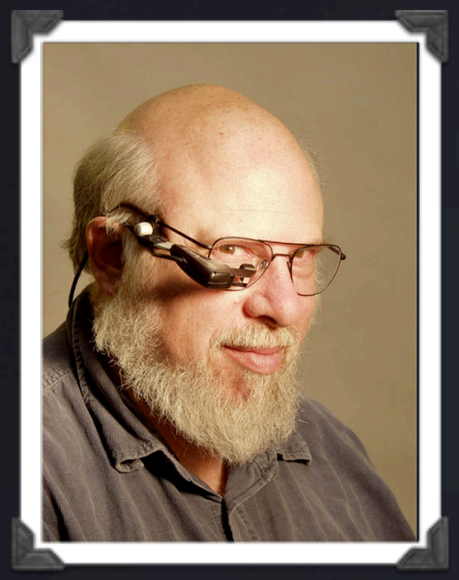


Alan Cooper
Noted Usability Expert

"The process of designing for user's goals is one that begins with the software designer, not with the user. You must identify the hygienic goals and the user's personal goals and design an interface that serves them directly, ignoring all other demands."

About Face

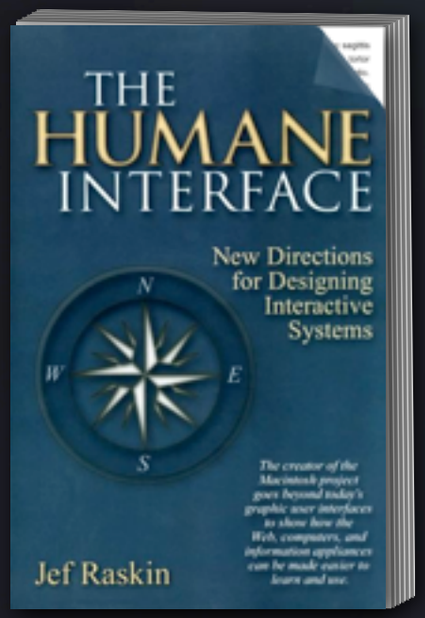


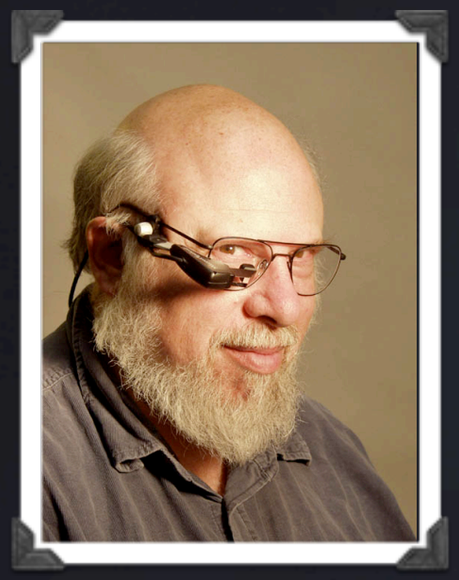


Jef Raskin
Noted Usability Expert

*"Before [doing user research], interface designers [should] exploit what is **common** to all humans with regards to interface design."*

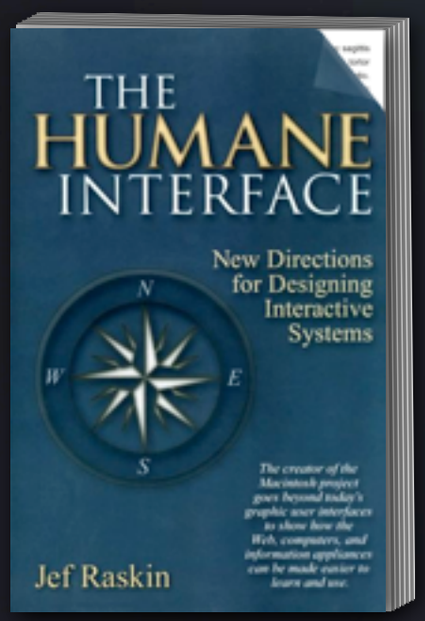
The Humane Interface





Jef Raskin
Noted Usability Expert

The Humane Interface



"Universal psychological facts"

Sex Sells

JOHNNY KNOXVILLE
SEANN WILLIAM SCOTT
JESSICA SIMPSON
COUSINS. OUTLAWS. THRILLBILLIES.
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Amanda BYNES
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Duke wants Olivia who likes
Sebastian who is really Viola
whose brother is dating
Everybody has a secret...

Case Study:

Delicious Library

by Delicious Monster

Delicious Library

Collections

- Books 57
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- Wil Shipley 5

Movies: by series, a to z

Happy to Jackie

Jaws to Life

Video

Search

Details

Kill Bill, Volume 1

Quentin Tarantino

publisher / label	Miramax
release date	Tuesday, April 13, 2004
stars	Uma Thurman Lucy Liu Daryl Hannah David Carradine Michael Madsen
theatrical debut	Friday, October 10, 2003
genres	Feature Film-action/Adventure
MPAA rating	R
format	DVD
features	Color
running time	111
retail price	$29.99
current value	$13.75
amazon® users	★★★★☆
u.p.c.	786936226997
amazon® #	B00005JMEW

Quentin Tarantino's *Kill Bill, Vol. 1* is trash for connoisseurs. From his opening gambit (including a "Shaw-Scope" logo and gaudy '70s-vintage "Our Feature Presentation" title card) to his cliffhanger finale (a teasing lead-in to 2004's Vol. 2), Tarantino pays loving tribute to grindhouse cinema, specifically the Hong Kong action flicks and spaghetti Westerns that fill his fervent brain--and this frequently breathtaking movie--with enough cinematic references and cleverly pilfered soundtrack cues to send cinephiles running for their reference books. Everything old is new again in Tarantino's humor-laced vision: he steals from the best while injecting his own oft-copied, never-duplicated style into what is, quite simply, a revenge flick.

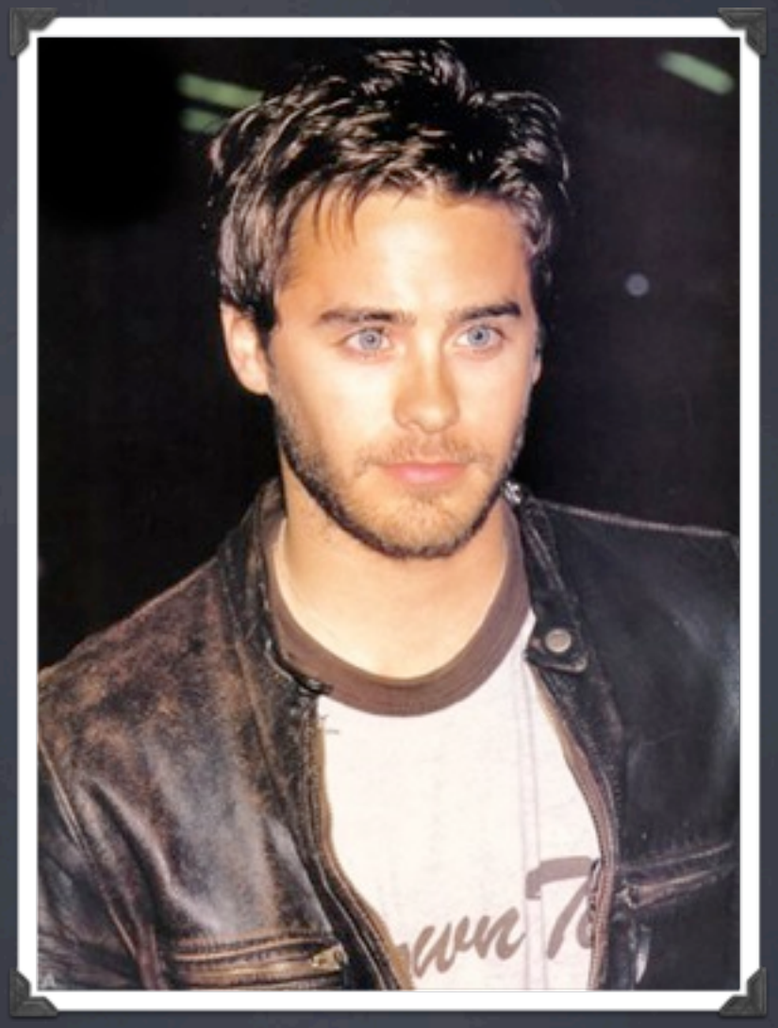
Details | My Info | Similar

EDIT

Overdue from: Wil Shipley

$500,000 in three months

“$54,000 profit. The first day. With no advertising.”



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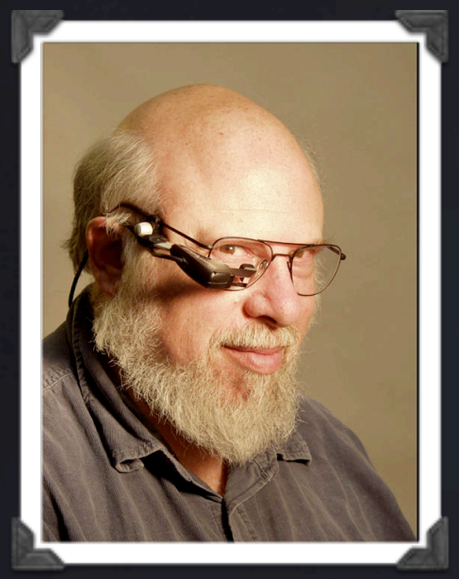
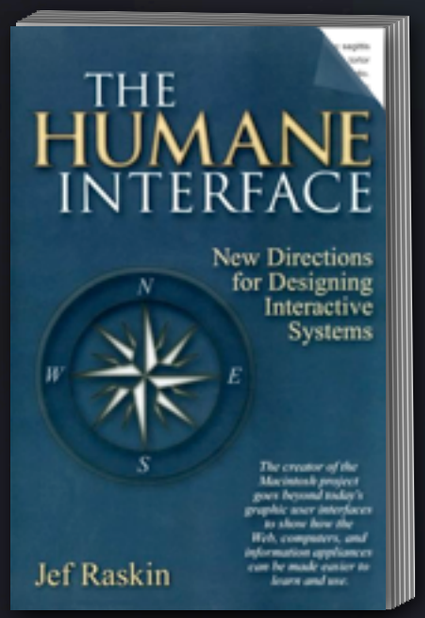


Jef Raskin
Noted Usability Expert

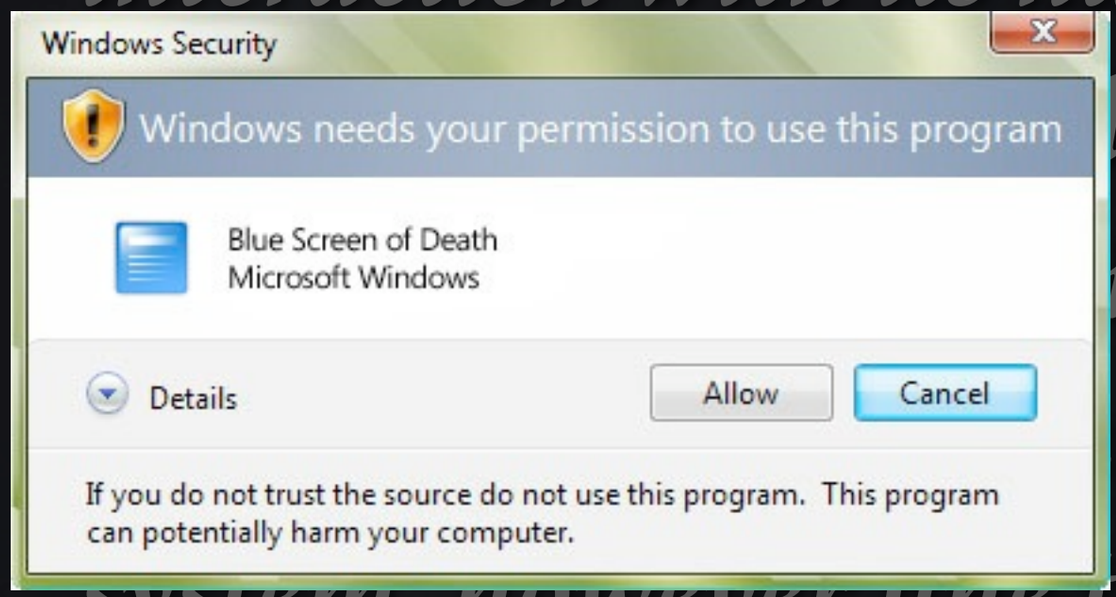
"The quality of any [software] is ultimately determined by the quality of the interaction between one human and one system."

The Humane Interface



Jef Raskin
Noted Usability Expert

"If a system's one-on-one interaction with its human user is



le, the

ill poison

e entire

system, however fine that system might be in its other aspects.

The Humane Interface

User Interface

HCI researchers are nerds!

Visual Design

Microsoft Rulez!

vi!

Real programmers use C++

Emacs!

Interaction Design

"Seductive user interfaces" are vacuous distractions!

Donald Norman
Noted Usability Expert

"Attractive things work better."

Emotional Design

Donald Norman
Noted Usability Expert

"Attractive things make people feel good, which in turn makes them think more creatively. How does that make something easier to use?

Emotional Design

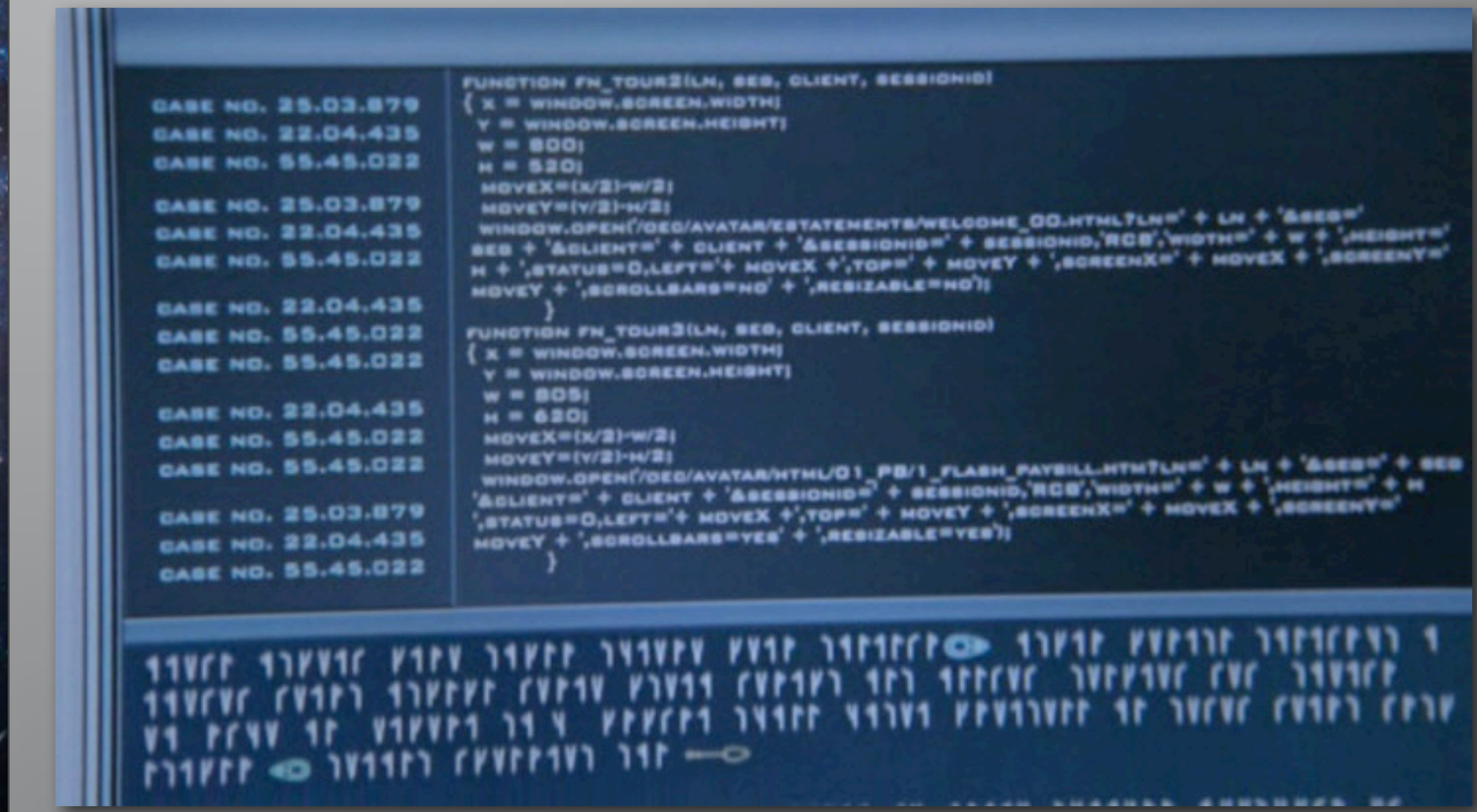
"Simple, by making it easy for people to find solutions to the problems they encounter."

“Dress for Success”

Four Points for Creating Compelling Software

1. Get to Know Your Users
2. Practice Goal-Oriented Design
   Listen to Users, but Don't Let Them Design Software
3. Both Visual and Interaction Design are Important
4. Aesthetics Matter

Great Widgets



Programming Model

Plug-ins