

Web Development

The Absolute Basics

R. Scott Granneman & Jans Carton

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- » underneath the link to this slide show on granneman.com
- » at files.granneman.com/presentations/webdev/Web-Dev-Intro.txt

Scott Granneman



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Scott Granneman is a web developer, author of six books, conference speaker, and co-founder of Washington, DC-based content development firm.

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 - Exploring HTML5 & CSS
 - HTML to CSS to Responsive Web Design
 - Advanced CSS
 - Responsive Web Design for Designers
 - Web Design
 - Operating Systems
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He is a Web development company in St. Louis, Missouri. Scott has written six books for SecurityFocus and *Linux Magazine*. He is an Adjunct Professor at Washington University, [teaching courses](#) on technology, security, web development, & the cloud, and hosts websites for clients in 12 states using an open source, UNIX-based [presentations](#) all over the United States, and loves speaking to people.

Background

HTML

Hypertext Markup Language

H.P. Lovecraft

[The Call of Cthulhu](#)

[At the Mountains of Madness](#)

[Dagon](#)

[The Colour Out of Space](#)

[The Shadow Over Innsmouth](#)


Lovecraft's *Dagon*

It was in one of the most open and least frequented parts of the broad Pacific that the packet of which I was supercargo fell a victim to the German sea-raider. The great war was then at its very beginning, and the ocean forces of the Hun had not completely sunk to their later degradation; so that our vessel was made a legitimate prize, whilst we of her crew were treated ...

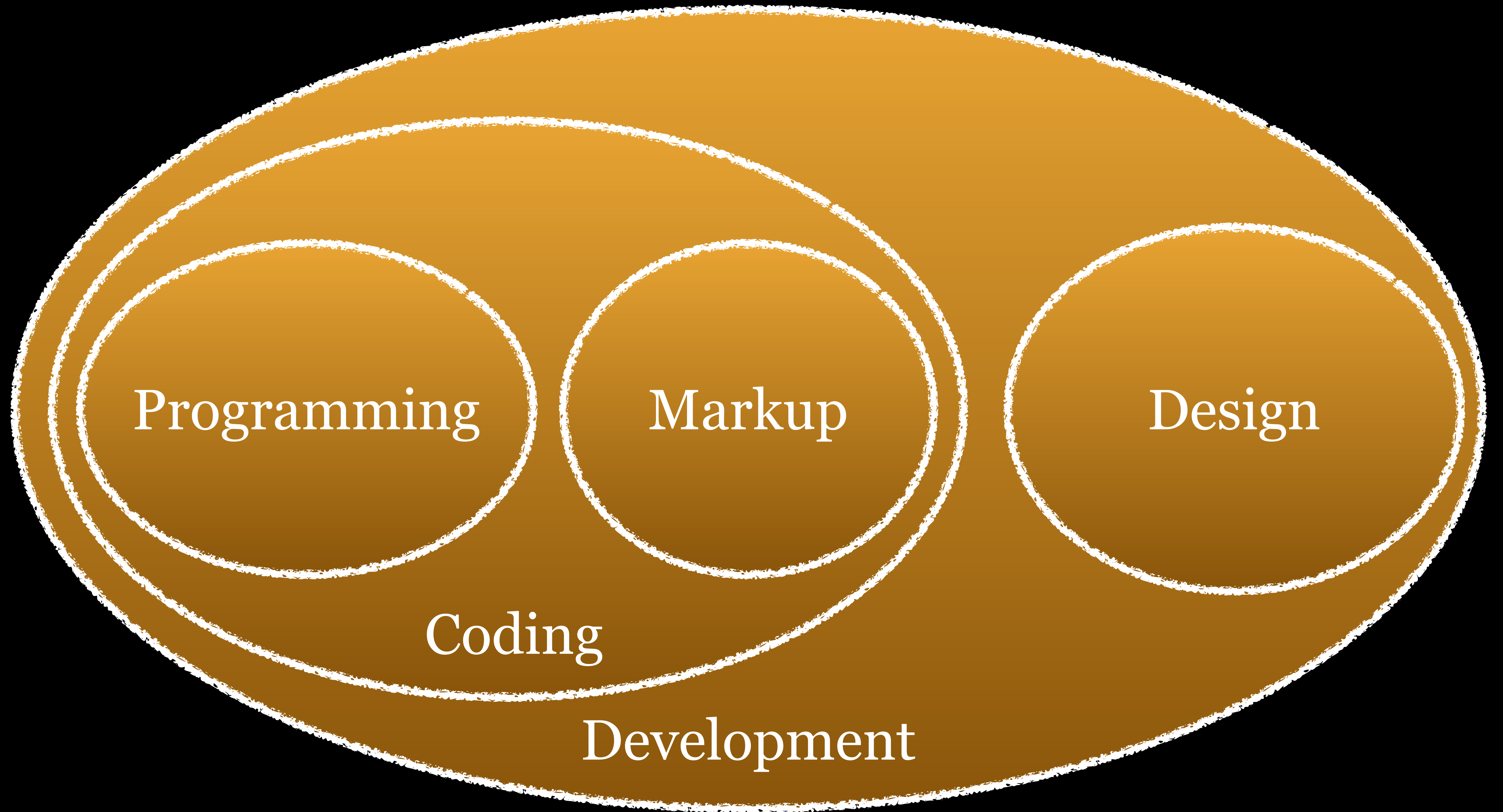
Hypertext means linking

Not HTML!

```
<recipe>
  <title>Banana Soup</title>
  <ingredientlist>
    <ingredient>1 banana</ingredient>
    <ingredient>1 cup milk</ingredient>
  </ingredientlist>
  <preparation>
    Cut banana into slices. Combine with milk.
  </preparation>
</recipe>
```



Markup annotates a document with tags




```
set theURL to "https://washingtonpost.com"
tell application "Safari"
  activate
  try
    tell window 1 to set current tab to make new
      tab with properties {URL:theURL}
  on error
    open location theURL
  end try
end tell
```

A language is a vocabulary & grammar for communicating with a computer





Tim Berners-Lee



Tim Berners-Lee

Invented the World Wide
Web & HTML
1989-1991



Tim Berners-Lee

Current director of the
World Wide Web
Consortium (W3C)

International standards
organization for the World
Wide Web



HTML
CSS
WOFF
XML
XSLT
PNG
SVG

See www.w3.org/TR/

Oct. 1991 *HTML Tags* (informal)

Nov. 1995 HTML 2

Jan. 1997 HTML 3.2

Dec. 1997 HTML 4.0

Dec. 1999 HTML 4.01

Oct. 2014 HTML5

WorldWideWeb: Proposal for a HyperText Project

To:
P.G. Innocenti/ECP, G. Kellner/ECP, D.O. Williams/CN

From:
T. Berners-Lee/CN, R. Cailliau/ECP

Date:
12 November 1990

HyperText is a way to link and access information of various kinds as a web of nodes in which the user can browse at will. It provides a single user-interface to large classes of information (reports, notes, data-bases, computer documentation and on-line help). We propose a simple scheme incorporating servers already available at CERN.

[T. Berners-Lee R. Cailliau](#)

WorldWideWeb:

Proposal for a HyperText Project
T. Berners-Lee / CN, R. Cailliau / ECP

Abstract:

HyperText is a way to link and access information of various kinds as a web of nodes in which the user can browse at will. Potentially, HyperText provides a single user-interface to many large classes of stored information such as reports, notes, data-bases, computer documentation and on-line systems help. We propose the implementation of a simple scheme to incorporate several different servers of machine-stored information already available at CERN, including an analysis of the requirements for information access needs by experiments.

Proposal for a HyperText Project

T. Berners-Lee / CN, R. Cailliau / ECP

Abstract:

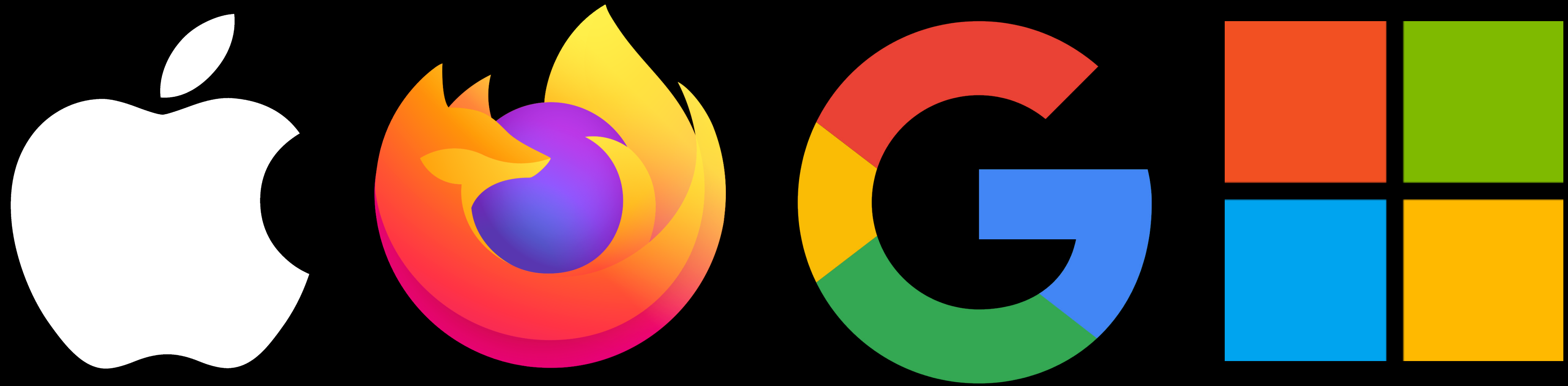
HyperText is a way to link and access information of various kinds as a web of nodes in which the user can browse at will. Potentially, HyperText provides a single user-interface to many large classes of stored information such as reports, notes, data-bases, computer documentation and on-line systems help. We propose the implementation of a simple scheme to incorporate several different servers of machine-stored information already available at CERN, including an analysis of the requirements for information access needs by experiments.



Web Hypertext Application Technology Working Group (WHATWG)

Founded in 2004 by
Apple, Opera, & Mozilla in
response to slow develop-
ment of HTML & CSS by
W3C

Wanted to act as a spur to
the W3C



Current Steering Group of WHATWG

For well over a decade there were specifications for HTML available on both the WHATWG & the W3C websites — & they did not always agree

This is obviously confusing

May 2019

W3C & WHATWG agree that they will work together to produce a Living Standard for HTML, which WHATWG will maintain on its website

HTML

Living Standard — Last Updated 3 September 2019

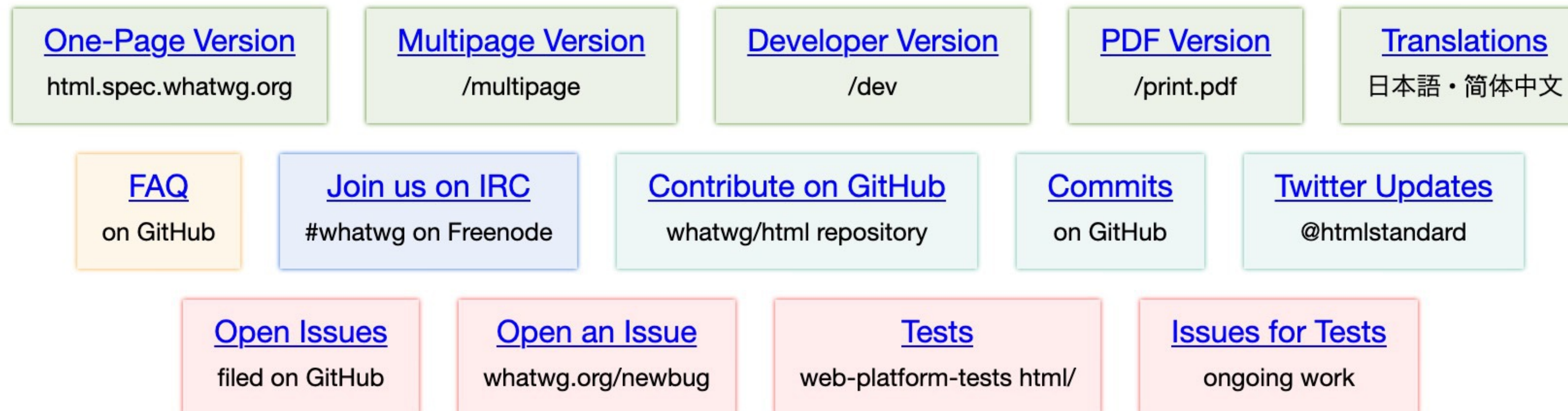


Table of contents

- 1 Introduction
- 2 Common infrastructure
- 3 Semantics, structure, and APIs of HTML documents
- 4 The elements of HTML
- 5 Microdata
- 6 User interaction
- 7 Loading Web pages
- 8 Web application APIs
- 9 Communication
- 10 Web workers



CSS SPECIFICATIONS

This page contains a list of all completed specifications and drafts by the [CSS WG](#) (formerly ‘[CSS & FP WG](#)’). If you want to follow the development of CSS3, this is the place to start. You have ideas? Contributions? See ‘[If you want to help](#)’ on this page.

A specification is not a manual. There is no excuse for badly written drafts and please complain if you find one. But specs do target a specific audience. See [fantasai's Understanding the CSS Specifications](#).. [J. David Eisenberg](#) has written another useful [How to read W3C specs](#). Or you can read about ‘[modules](#),’ ‘[levels](#),’ ‘[snapshots](#)’ and the CSS process.

The W3C still handles CSS

WHAT'S NEW?

- [2020-06-18](#) Updated Working Draft: [CSS Inline Layout Level 3](#).
- [2020-06-03](#) Updated Working Draft: [CSS Containment Level 2](#).
- [2020-06-04](#) Updated Working Draft: [CSS Inline Layout Level 3](#).
- [2020-06-03](#) Updated Working Draft: [CSS Overflow Level 3](#). Updated Working Draft: [Media Queries Level 5](#).

So if HTML & CSS are constantly evolving, which parts can you use?

The answer is “what browsers support” — & if browsers never support a new feature, it’s often removed from the specs!

Can I use

? ⚙ Settings

Index of features

▼ Filter features

Latest features

- [Document Policy](#)
- [Permissions Policy](#)
- [Built-in PDF viewer](#)
- [Portals](#)
- [Web NFC](#)

Browser scores

Current version

Dev version

Chrome 85: 387

Firefox 80: 368

Safari 14.1: 336

Most searched features

1. [Flexbox](#)
2. [CSS Grid](#)
3. [WebP image format](#)
4. [ES6](#)
5. [CSS position:sticky](#)

Third party tools

- [The CanIUse Embed](#) — Add support tables to your site
- [Caniuse Component](#) — Add support tables to your presentations
- [Caniuse command line tool](#)
- [Doiuse...?](#) — Lint your CSS to check what features work

Did you know?

If a feature you're looking for is not available on the site, you can [vote to have it included](#). Better yet, if you've done the research you can even [submit it yourself](#)!

Next

caniuse.com

Can I use grid ? Settings

50 results found

☒ Caniuse (2)☒ MDN (48)

CSS Grid Layout (level 1) - CR

Usage

% of all users  ?

Global

93.13% + 4.21% = 97.33%



Method of using a grid concept to lay out content, providing a mechanism for authors to divide available space for layout into columns and rows using a set of predictable sizing behaviors. Includes support for all `grid-*` properties and the `fr` unit.

Current aligned

Usage relative

Date relative

Filtered

All



| IE | Edge | Firefox | Chrome | Safari | Opera | iOS | Opera Mini | Android Browser | Opera Mobile | Chrome for Android | Firefox for Android | UC Browser for Android | Samsung Internet |
|-----|---------|---------|---------|--------|---------|------|------------|-----------------|--------------|--------------------|---------------------|------------------------|------------------|
| | | 2-39 | 4-28 | | | | | | | | | | |
| | | 3 40-51 | 1 29-56 | | 10-27 | | | | | | | | |
| 6-9 | 2 12-15 | 4 52-53 | 4 57 | 3.1-10 | 1 28-43 | 3.2- | | | | | | | 4-5.4 |

CSS Grid Layout (level 1) - CR

Usage
Global

% of all users  ?
93.13% + 4.21% = 97.33%

Method of using **2** concept to lay out content, providing a mechanism for authors to divide available space for layout into columns and rows using a set of predictable sizing behaviors. Includes support for all `grid-*` properties and the `fr` unit **3**

Current aligned Usage relative Date relative Filtered All 

| IE | Edge * | Firefox | Chrome | Safari | Opera | iOS Safari * | Opera Mini * | Android Browser * | Opera Mobile * | Chrome for Android | Firefox for Android | UC Browser for Android | Samsur Interne |
|------|---------|---------|---------|---------|---------|--------------|--------------|-------------------|----------------|--------------------|---------------------|------------------------|----------------|
| | | 2-39 | 4-28 | | | | | | | | | | |
| | | 3 40-51 | 1 29-56 | | 10-27 | | | | | | | | |
| 6-9 | 2 12-15 | 4 52-53 | 4 57 | 3.1-10 | 1 28-43 | 3.2-10.2 | | | | | | | 4-5.4 |
| 2 10 | 16-83 | 54-79 | 58-84 | 10.1-13 | 44-69 | 10.3-13.3 | | 2.1-4.4.4 | 12-12.1 | | | | 6.2-11 |
| 2 11 | 84 | 80 | 85 | 13.1 | 70 | 13.5 | all | 81 | 46 | 84 | 79 | 12.12 | 12.0 |
| | | 81-82 | 86-88 | 14-TP | | 14.0 | | | | | | | |

Notes Known issues (3) Resources (10) Feedback

See also support for [subgrids](#)

1 Enabled in Chrome through the "experimental Web Platform features" flag in `chrome://flags`

2 Partial support in IE refers to supporting an [older version](#) of the specification



CSS Grid Layout (level 1) - CR

Usage
Global

% of all users
93.13% + 4.21% = 97.33%



Method of using a grid concept to lay out content, providing a mechanism for authors to divide available space for layout into columns and rows using a set of predictable sizing behaviors. Includes support for all `grid-*` properties and the `fr` unit.

- Current aligned
- Usage relative
- Date relative
- Filtered
- All
-

| IE | Edge | Firefox | Chrome | Safari | Opera | iOS Safari | Opera Mini | Android | Opera Mobile | Chrome for Android | Firefox for Android | UC Browser for Android | Samsur Interne |
|------|---------|---------|---------|--------|-------|------------|------------|---------|--------------|--------------------|---------------------|------------------------|----------------|
| | | 2-39 | 4-28 | | | | | | | | | | |
| | | 3 40-51 | 1 29-56 | | | | | | | | | | |
| 6-9 | 2 12-15 | 4 52-53 | 4 57 | | | | | | | | | | 4-5.4 |
| 2 10 | 16-83 | 54-79 | 58-84 | | | | | | 12-12.1 | | | | 6.2-11 |
| 2 11 | 84 | 80 | 85 | | | | | | 46 | 84 | 79 | 12.12 | 12.0 |
| | | 81-82 | 86-88 | | | | | | | | | | |

Chrome 57

Support info

✓ Supported

Browser version

Released Mar 8, 2017

Notes

4 There are some bugs with overflow ([1356820](#), [1348857](#), [1350925](#))

Usage

Global: 0.02%



- Notes
- Known issues (3)
- Resources (10)
- Feedback

See also support for [subgrids](#)

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CSS Grid Layout (level 1) - CR

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Current aligned

Usage relative

Date relative

Filtered

All

| IE | Edge | Firefox | Chrome | Safari | Opera | iOS Safari | Opera Mini | Android Browser | Opera Mobile | Chrome for Android | Firefox for Android | UC Browser for Android | Samsung Internet |
|-----|-------|---------|--------|--------|-------|------------|------------|-----------------|--------------|--------------------|---------------------|------------------------|------------------|
| | | | | | | | | | | | | | |
| 6-9 | 12-15 | | | | | | | | | | | | 4-5.4 |
| 10 | 16-83 | | | | | | | 2.1-4.4.4 | 12-12.1 | | | | 6.2-11 |
| 11 | 84 | | | | | | | 81 | 46 | 84 | 79 | 12.12 | 12.0 |

Edge 12 - 15

Support info

Browser versions

~ Partial support with prefix: -ms-

Released Jul 28, 2015 - Apr 10, 2017

Total usage

Global: 0.04%

Notes

Partial support in IE refers to supporting an older version of the specification.



Notes

Known issues (3)

Resources (10)

Feedback

See also support for [subgrids](#)

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#

Method of using a grid concept to lay out content, providing a mechanism for authors to divide available space for layout into columns and rows using a set of predictable sizing behaviors. Includes support for all `grid-*` properties and the `fr` unit.

Usage relative

Filtered



Global

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| IE | Edge* | Firefox | Chrome | Safari | Opera | iOS Safari* | Opera Mini* | Android Browser* | Opera Mobile* | Chrome for Android | Firefox for Android | UC Browser for Android | Samsur Internet | | | |
|----|--|---------|---------|---------|-------|-------------|-------------|------------------|---------------|--------------------|---------------------|------------------------|-----------------|--|--|--|
| | <div><div>IE 6 - 9</div><div><div>Support info</div><div>Browser versions</div></div><div><div>6 - 9</div><div>10</div><div>11</div></div><div><div>✗ Not supported</div><div>Released Aug 26, 2001 - Mar 13, 2011</div><div>Total usage</div><div>Global: 0.31%</div></div></div> | | | | | | | | | | | | | | | |
| | | | | | 27 | | | | | | | | | | | |
| | | | | | 13 | 3.2 - 10.2 | | | | | | | 4 - 5.4 | | | |
| | | | | | 39 | 10.3 - 13.3 | | 2.1 - 4.4.4 | 12 - 12.1 | | | | 6.2 - 11 | | | |
| | | | | | | 13.5 | all | 81 | 46 | 84 | 79 | 12.12 | 12.0 | | | |
| | | 81 - 82 | 86 - 88 | 14 - TP | | 14.0 | | | | | | | | | | |

Known issues (3)

Feedback

See also support for [subgrids](#)

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CSS Grid Layout (level 1) - CR

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Method of using a grid concept to lay out content, providing a mechanism for authors to divide available space for layout into columns and rows using a set of predictable sizing behaviors. Includes support for all `grid-*` properties and the `fr` unit.

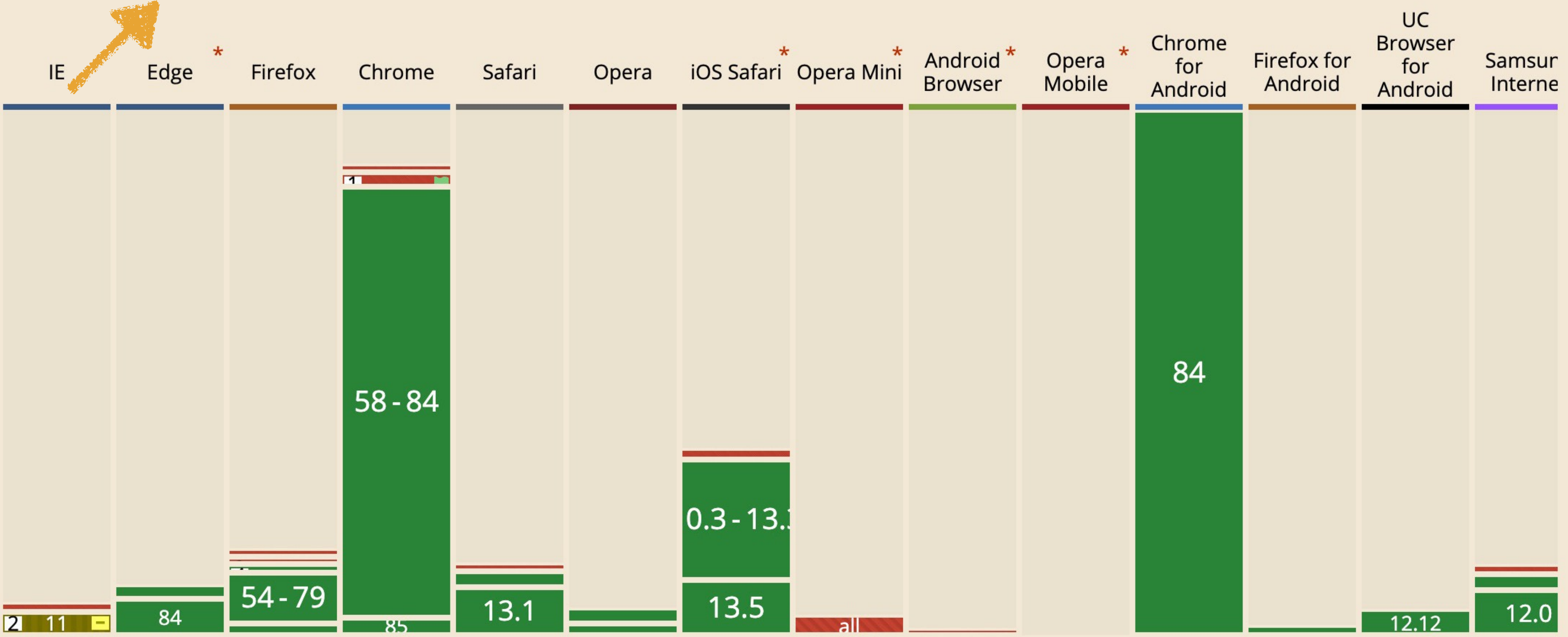
Current aligned

Usage relative

Date relative

Filtered

All



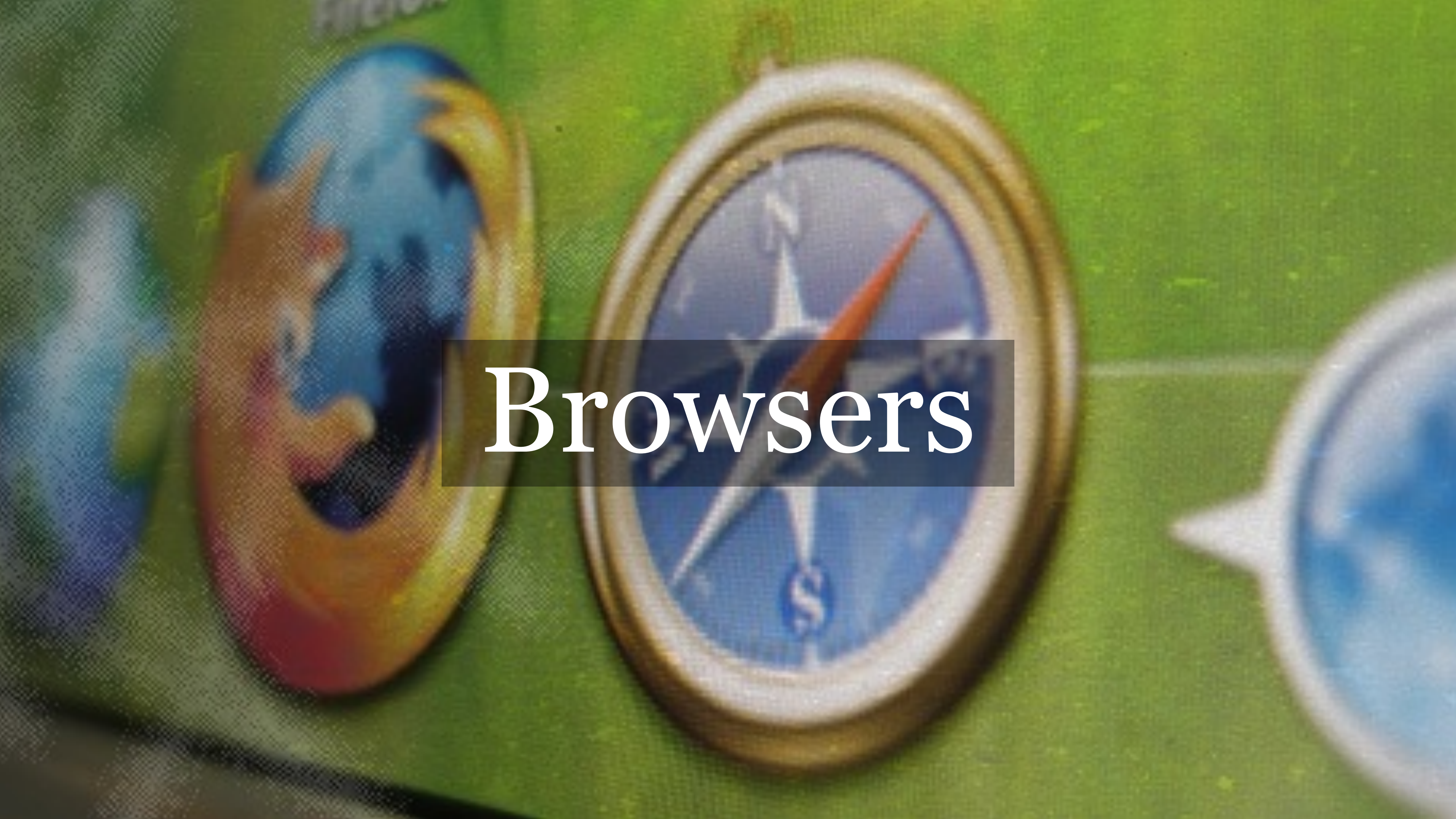
How the Web Works

Browsers are the Web clients & make requests

Web servers respond to client requests

HTTP is the set of rules determining how browsers & servers communicate with each other

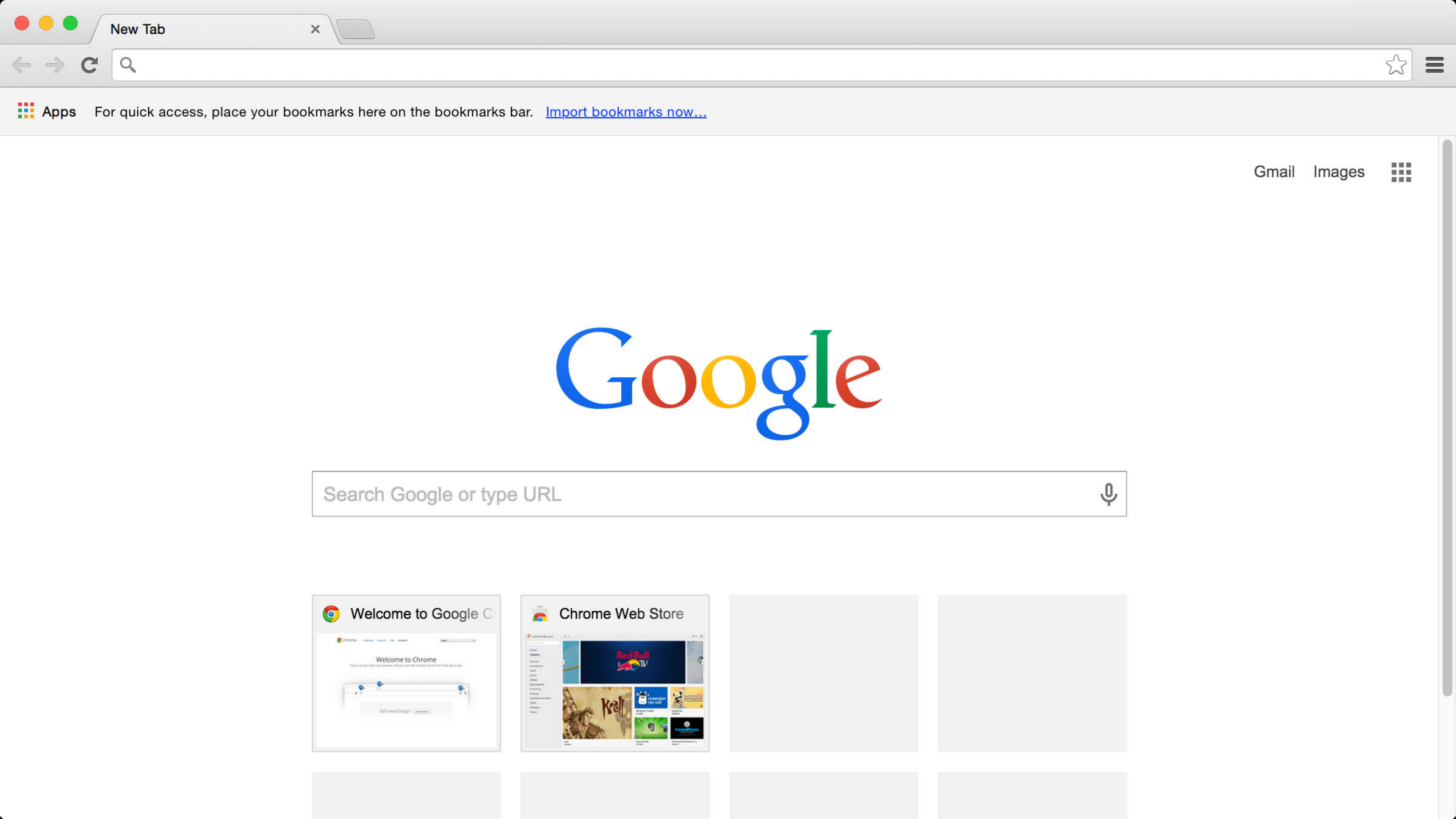
Browsers

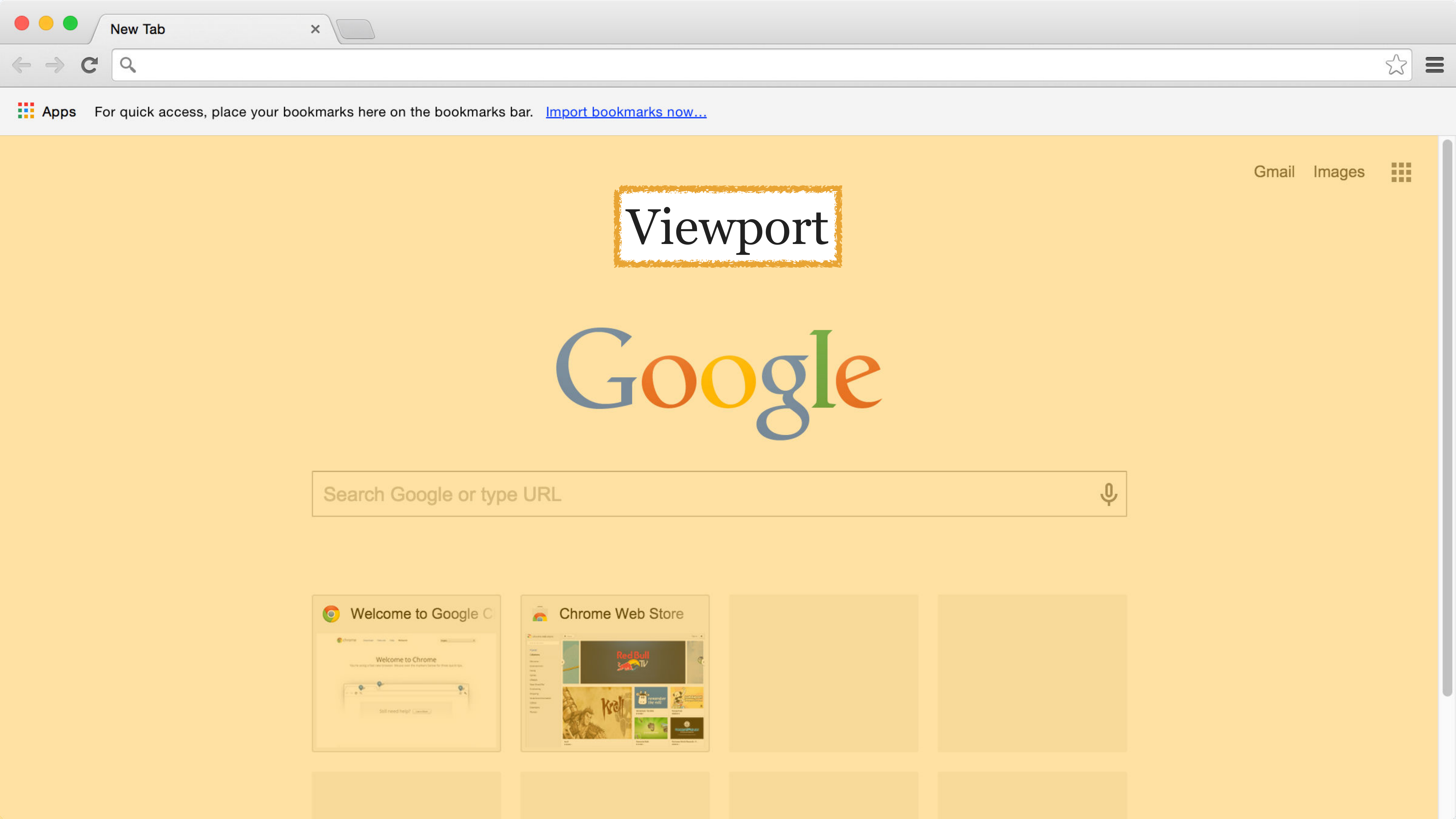


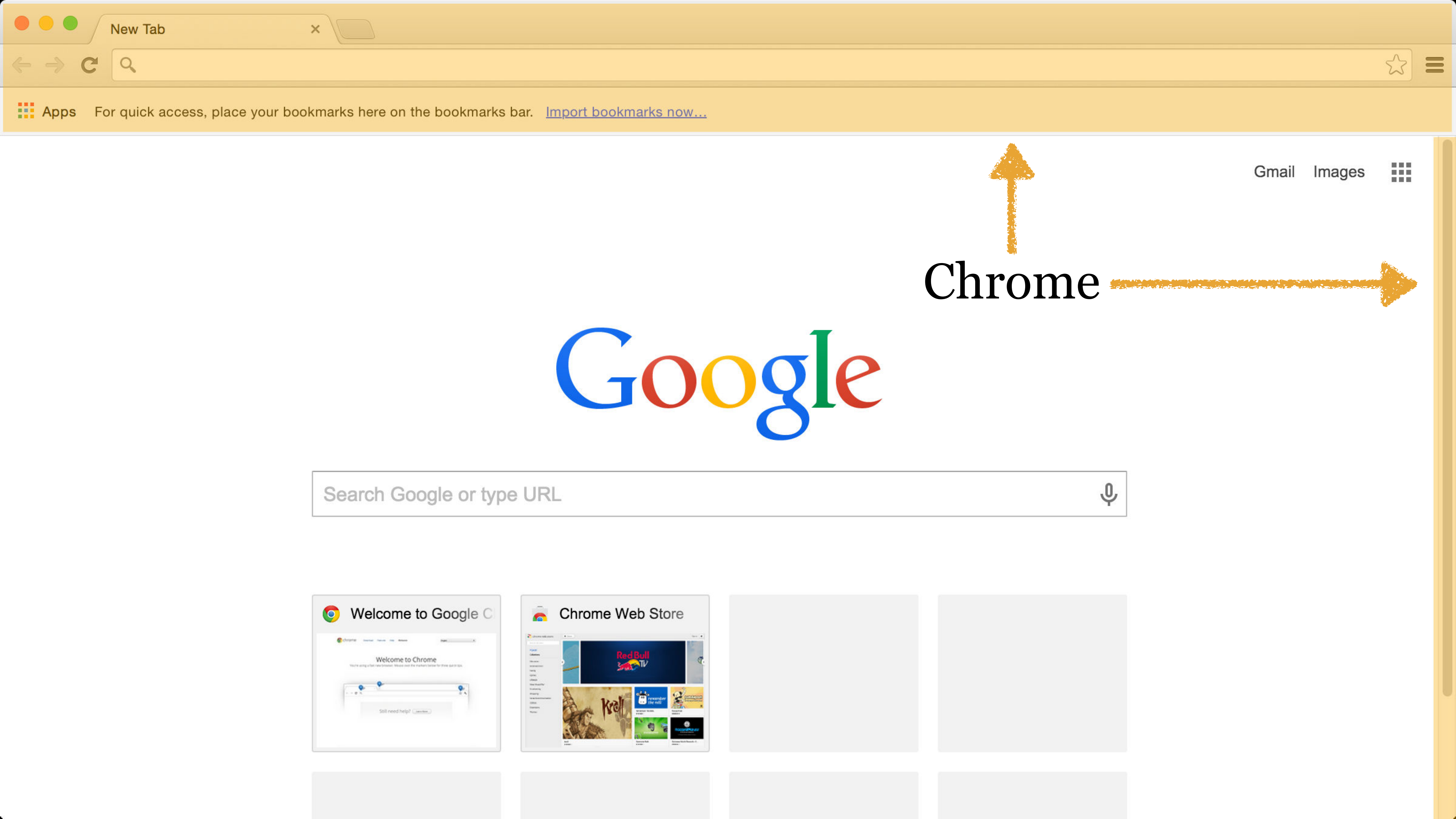
You cannot support *all* browsers (unless you are, say, Amazon)

You need to choose the browsers you will support

Browser Parts







New Tab



Apps

For quick access, place your bookmarks here on the bookmarks bar. [Import bookmarks now...](#)

Gmail Images



Chrome

Google

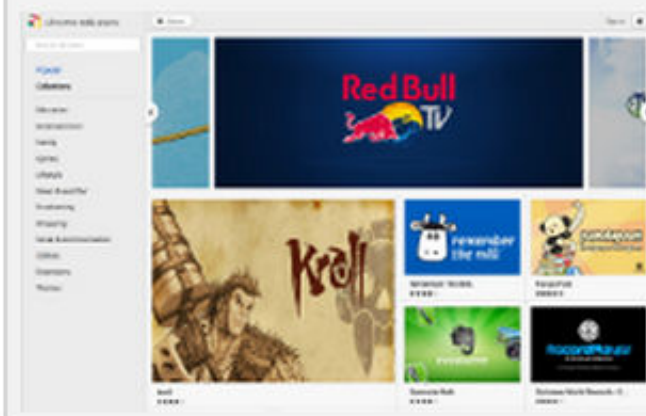
Search Google or type URL



Welcome to Google C



Chrome Web Store

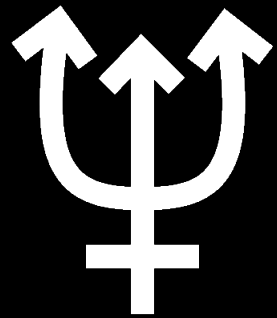
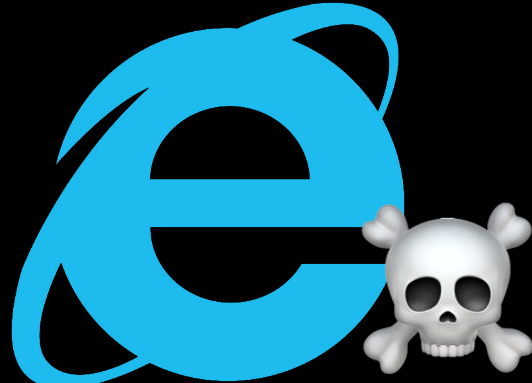
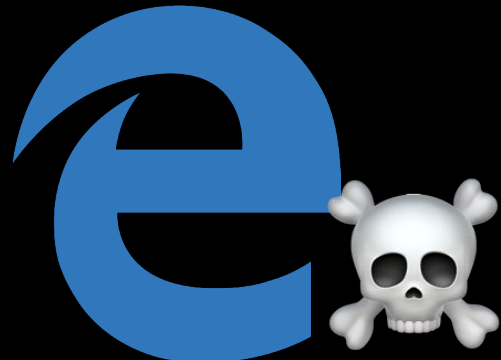






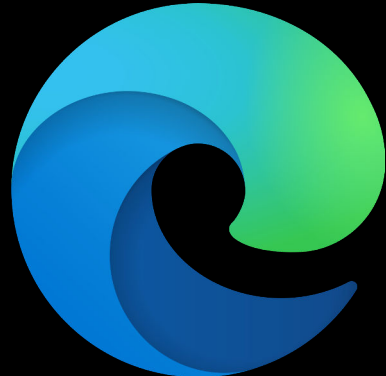


Rendering Engines

Rendering Engine (AKA Layout Engine or Web Browser Engine)

Combines HTML & CSS into formatted webpages in the viewport of a web browser (or other programs, like email)

January 2020–Now

| Rendering Engine | Name | Browser |
|---|----------|---|
|  | Trident |  |
| | EdgeHTML |  |
|  | Gecko |  |
|  | WebKit |  |
| <code><blink></code> | Blink |    |

March 9, 2021: Edge Legacy no longer receives security updates

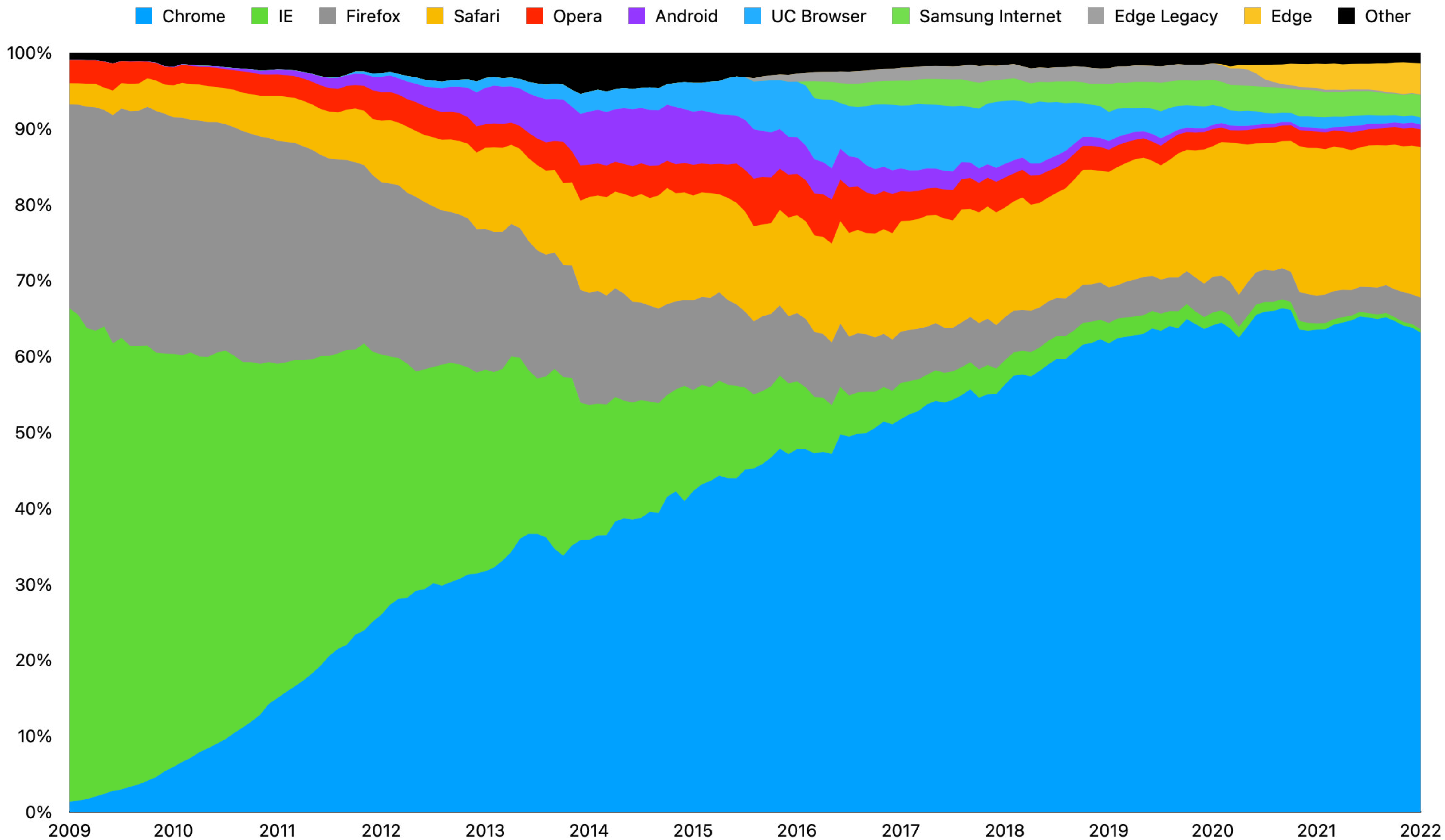
August 17, 2021: Microsoft 365 apps & services no longer supports IE 11

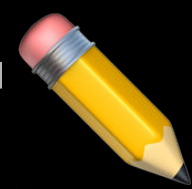
Chromium is an open source browser, overseen by Google, that uses the Blink rendering engine

About every 6 weeks, Google takes Chromium, adds Google (spying) stuff to it & other non-open source code, & releases it as Chrome

Other browsers besides Chrome, Opera, & Edge are also based on Chromium

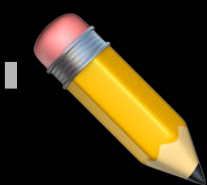
Amazon Silk • Blisk • *Brave* • Comodo Dragon • Cốc Cốc • Epic • Falkon • Qihoo 360 Secure Browser • SalamWeb • Samsung Internet • Sleipnir • Slimjet • Torch • UC Browser • *Vivaldi* • Yandex





SIDE NOTE

A JavaScript engine (or interpreter) executes JavaScript code in the web browser



SIDE NOTE

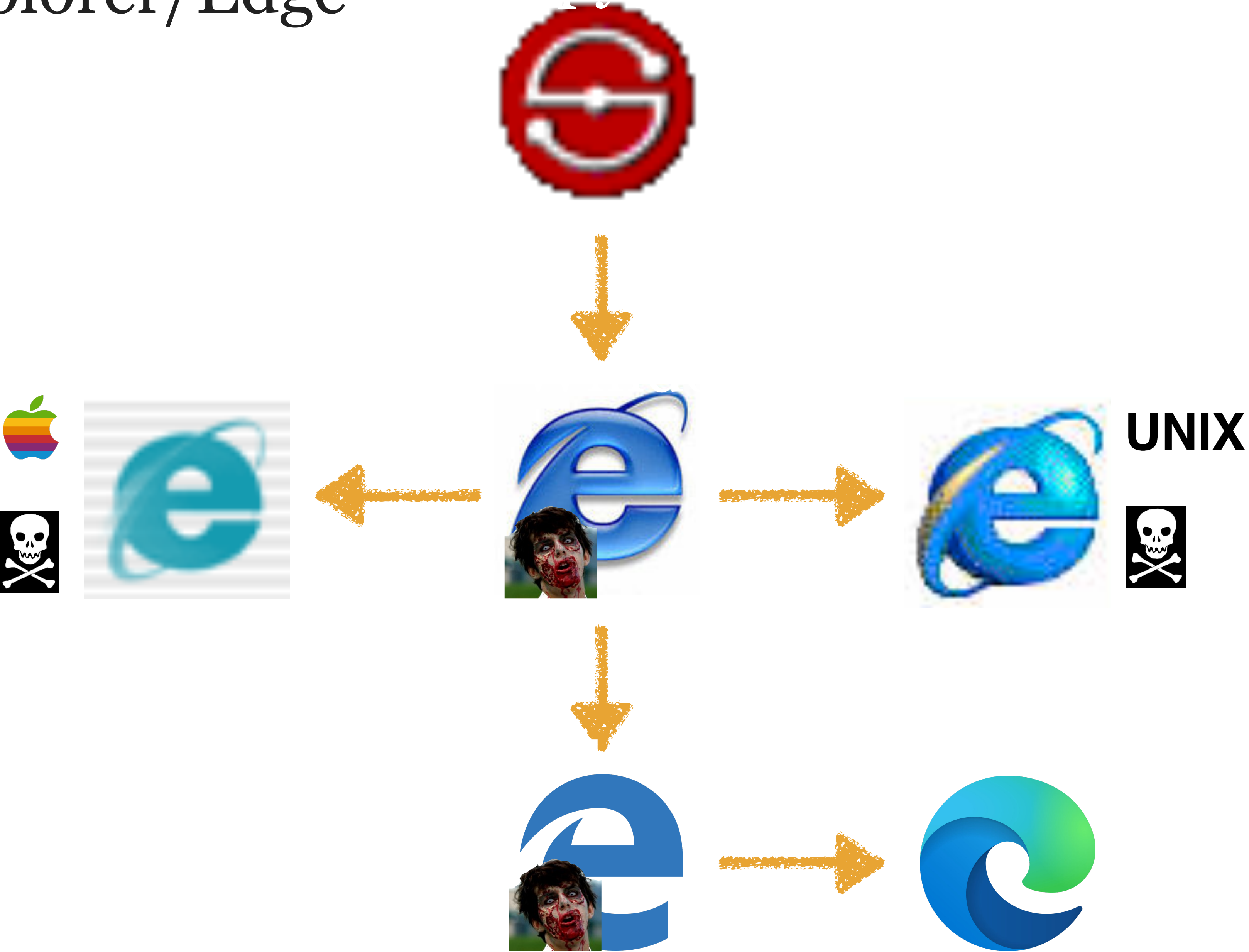
January 2020–Now

| JavaScript Engine | Browser |
|-------------------|---|
| Spider Monkey |  |
| Nitro |  |
| V8 |    |

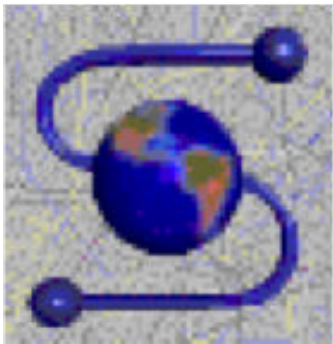


Choices

Internet Explorer/Edge Family Tree



Netscape/Mozilla/Firefox Family Tree



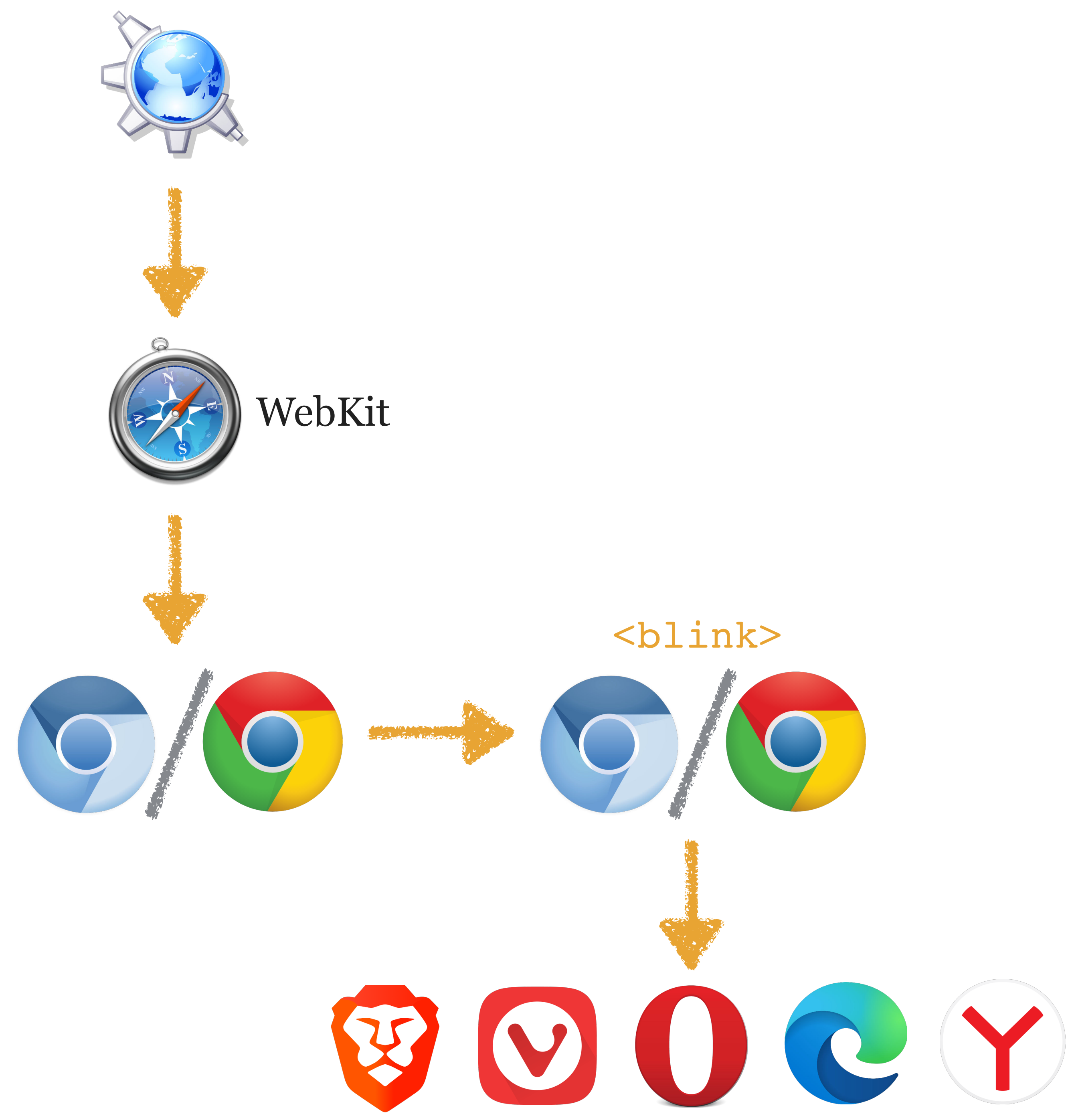
Mosaic

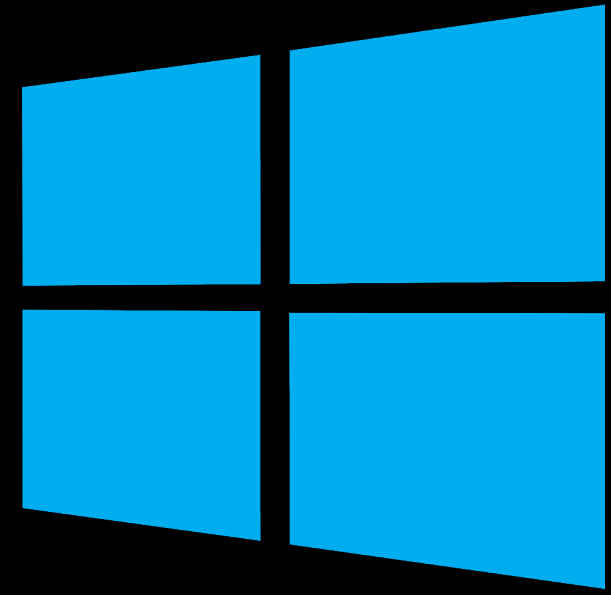


Thunderbird (email)



Safari/Chromium Family Tree





Internet Explorer

Edge

Edge (Chromium-based)

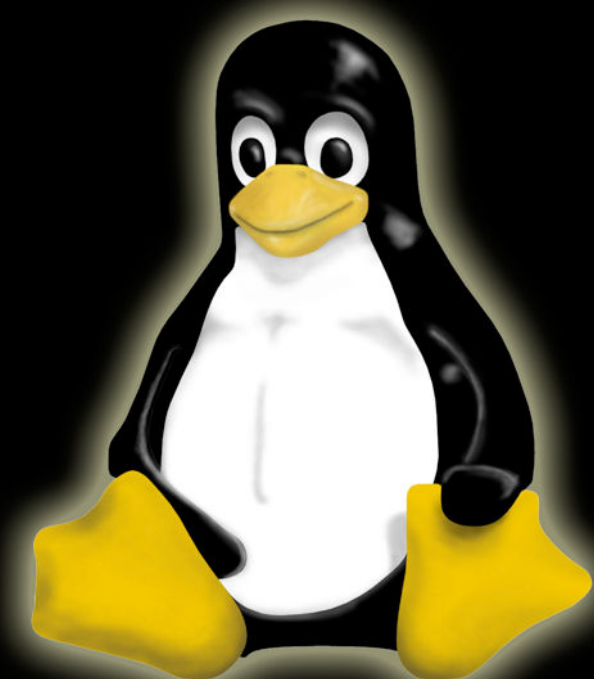
Chrome/Vivaldi/Brave

Firefox



Safari

Chrome/Vivaldi/Brave/Edge (Chromium-based)
Firefox



Chrome/Vivaldi/Brave/Edge (Chromium-based)

Firefox

Konqueror

GNOME Web

Web Servers

You type `https://www.granneman.com/writing` into your browser & press Enter

Your web browser sends a request to the web server

The web server responds

Web servers are computers that run web server software

Web servers are pretty simple: they get requests, & they respond

3 most important web server software

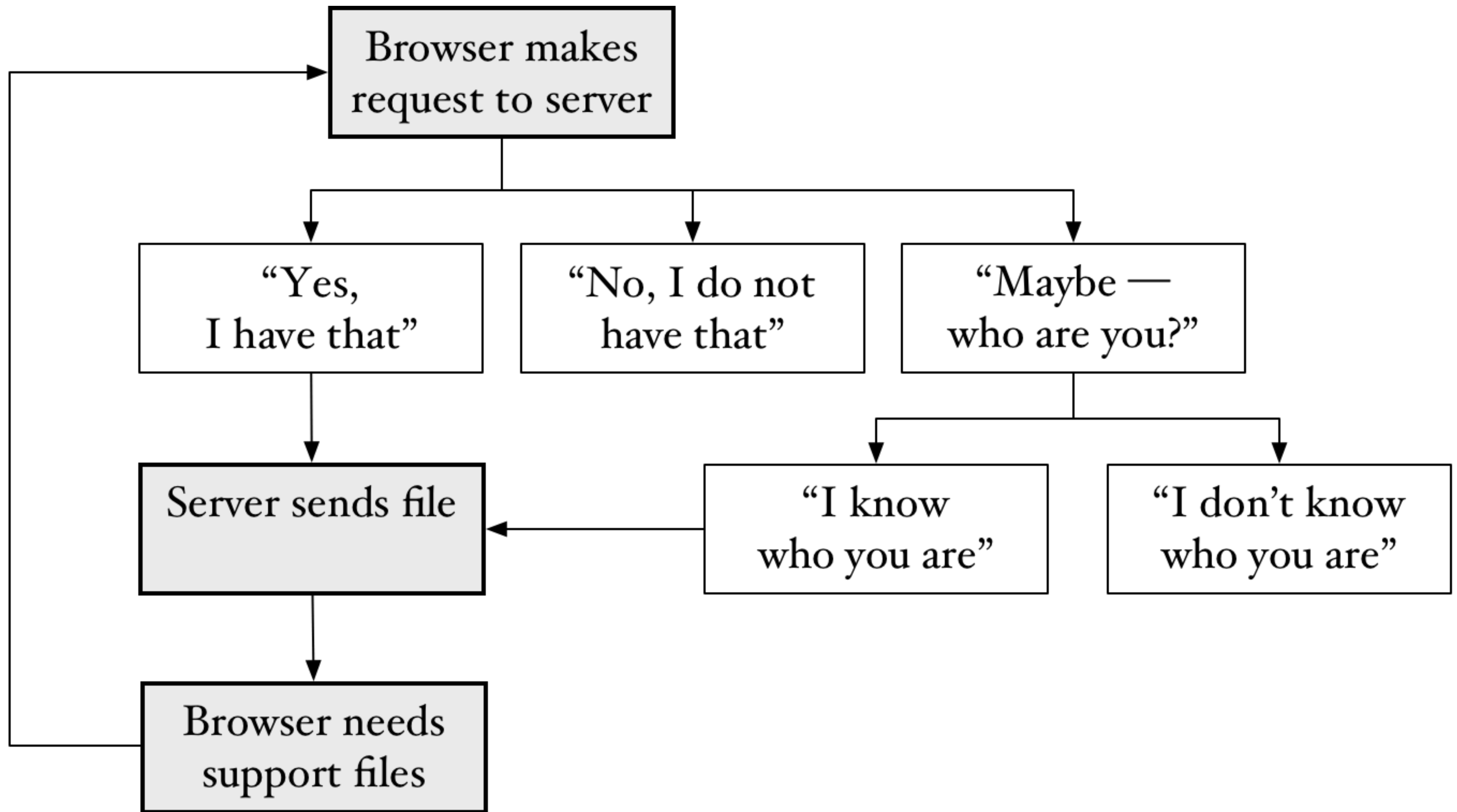
- » Apache
- » IIS (Internet Information Services)
- » Nginx

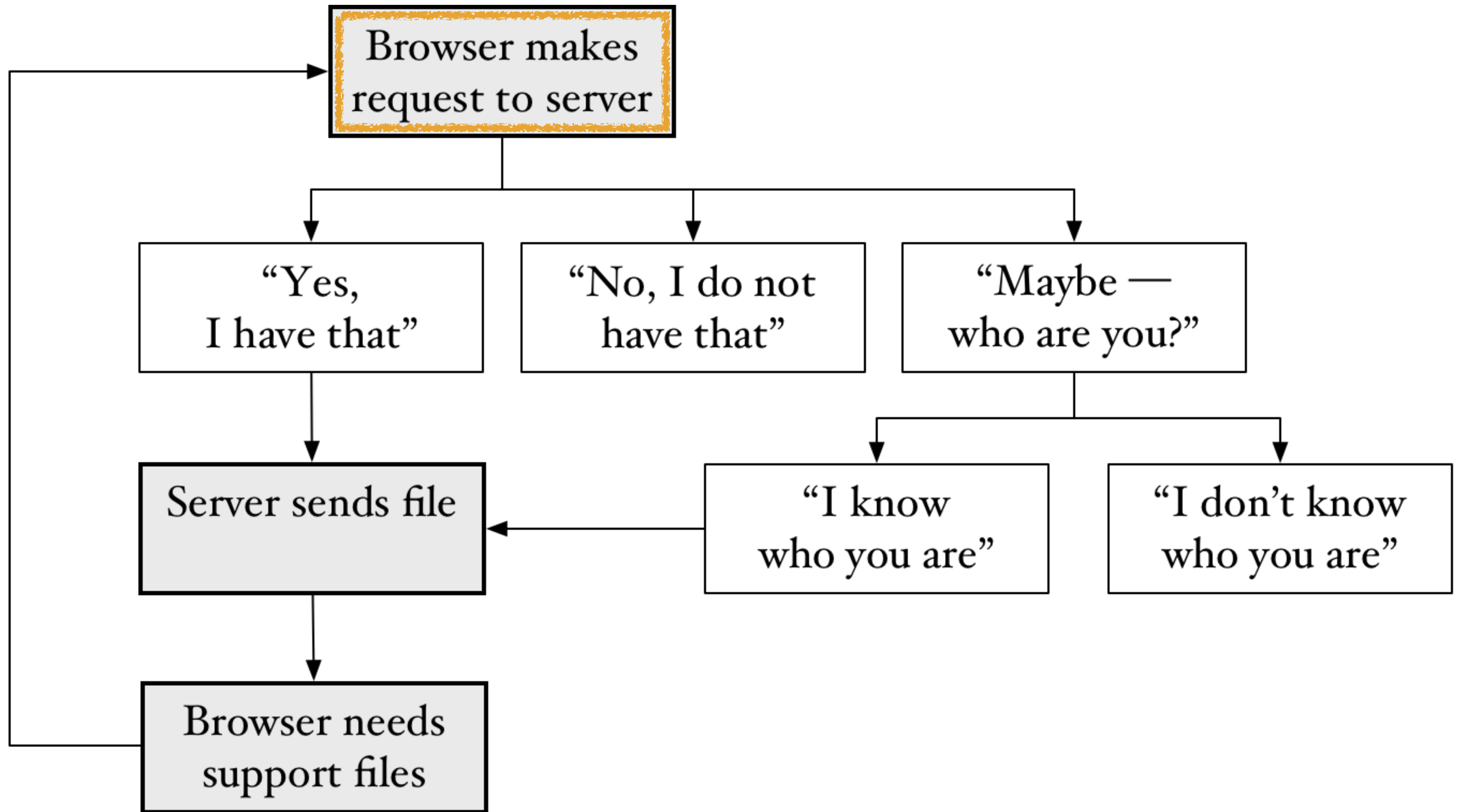
HTTP

A protocol is “a defined set of rules and regulations that determine how data is transmitted in ... computer networking”
—Wikipedia

“*HTTP* [the Hypertext Transfer Protocol] is the foundation of data communication for the World Wide Web. ... HTTP is the protocol to exchange or transfer hypertext.” —Wikipedia

An HTTP *session* consists of a series of “hidden” network request-response transactions between the browser & web server





You type `https://www.granneman.com/writing` into
your browser & press Enter

Your web browser sends a request to the web server

GET /writing/ HTTP/1.1
Host: www.granneman.com
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS
X 10.11; rv:45.0) Gecko/20100101 Firefox/45.0
Accept: text/html,application/
xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
DNT: 1
Cookie: CONCRETE5=6h8714bfr5m4g33p4mawxple93
Connection: keep-alive
Cache-Control: max-age=0

GET /writing/ HTTP/1.1

Host: www.granneman.com

User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.11; rv:45.0) Gecko/20100101 Firefox/45.0

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8

Accept-Language: en-US,en;q=0.5

Accept-Encoding: gzip, deflate

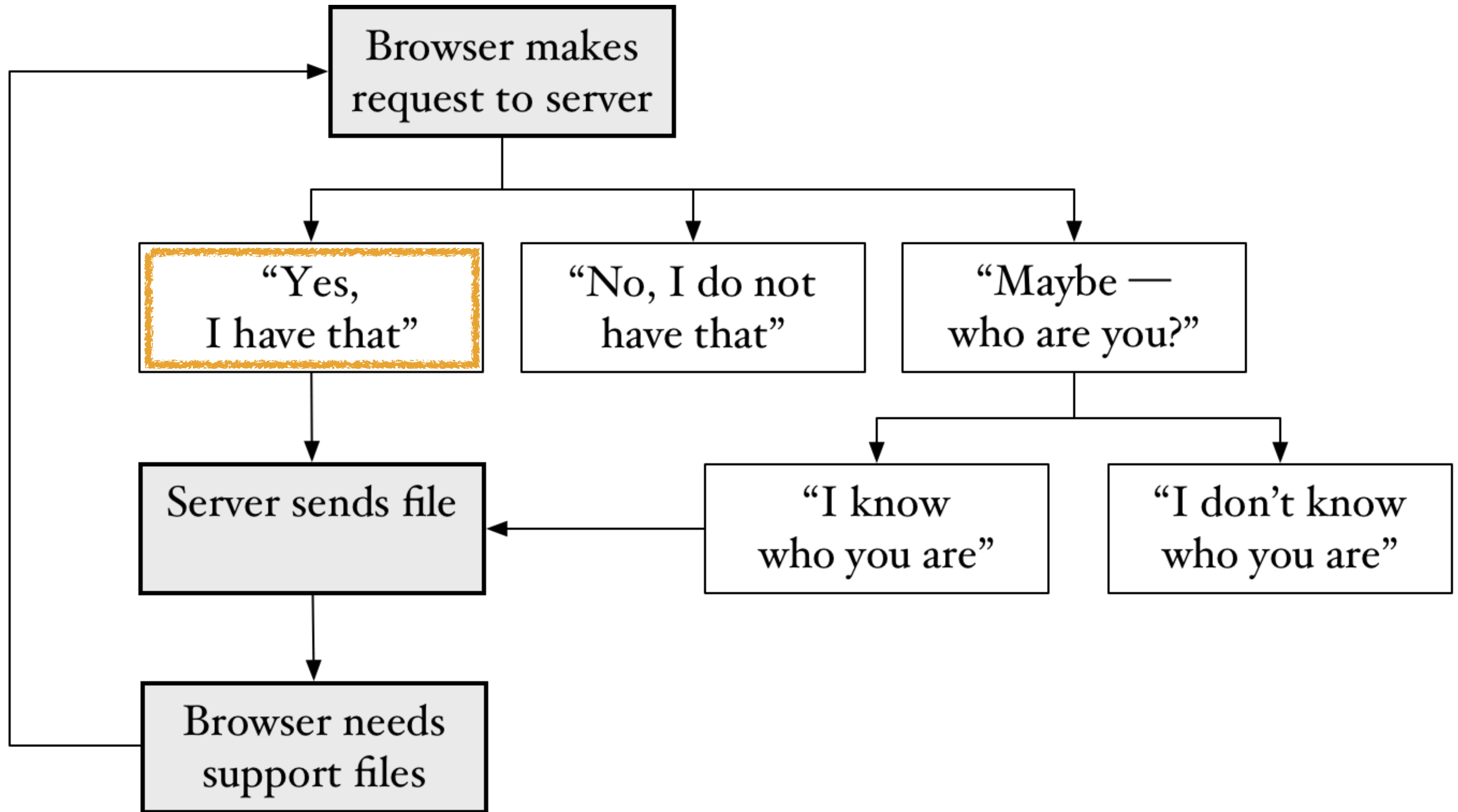
DNT: 1

Cookie: CONCRETE5=6h8714bfr5m4g33p4mawxple93

Connection: keep-alive

Cache-Control: max-age=0

The web server responds with a *Yes*, *No*, or *Maybe*



HTTP/1.1 200 OK
Date: Wed, 20 Apr 2016 17:02:26 GMT
Server: Apache
X-Frame-Options: SAMEORIGIN
Vary: User-Agent,Accept-Encoding
Expires: Thu, 19 Nov 1981 08:52:00 GMT
Cache-Control: no-store, no-cache, must-revalidate,
post-check=0, pre-check=0
Pragma: no-cache
Content-Encoding: gzip
Content-Length: 4031
Keep-Alive: timeout=2, max=100
Connection: Keep-Alive
Content-Type: text/html; charset=UTF-8

HTTP/1.1 200 OK

Date: Wed, 20 Apr 2016 17:02:26 GMT

Server: Apache

X-Frame-Options: SAMEORIGIN

Vary: User-Agent,Accept-Encoding

Expires: Thu, 19 Nov 1981 08:52:00 GMT

Cache-Control: no-store, no-cache, must-revalidate,
post-check=0, pre-check=0

Pragma: no-cache

Content-Encoding: gzip

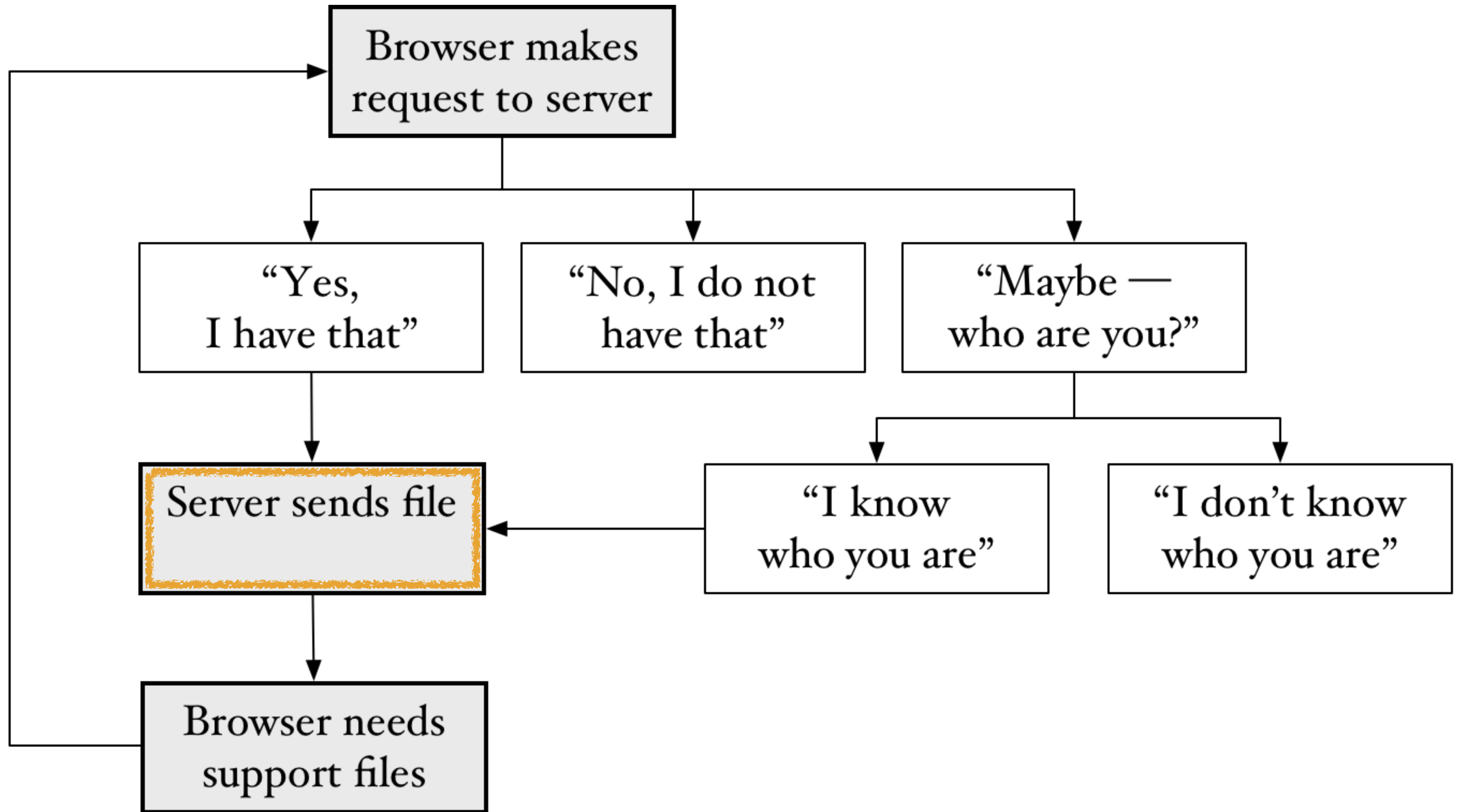
Content-Length: 4031

Keep-Alive: timeout=2, max=100

Connection: Keep-Alive

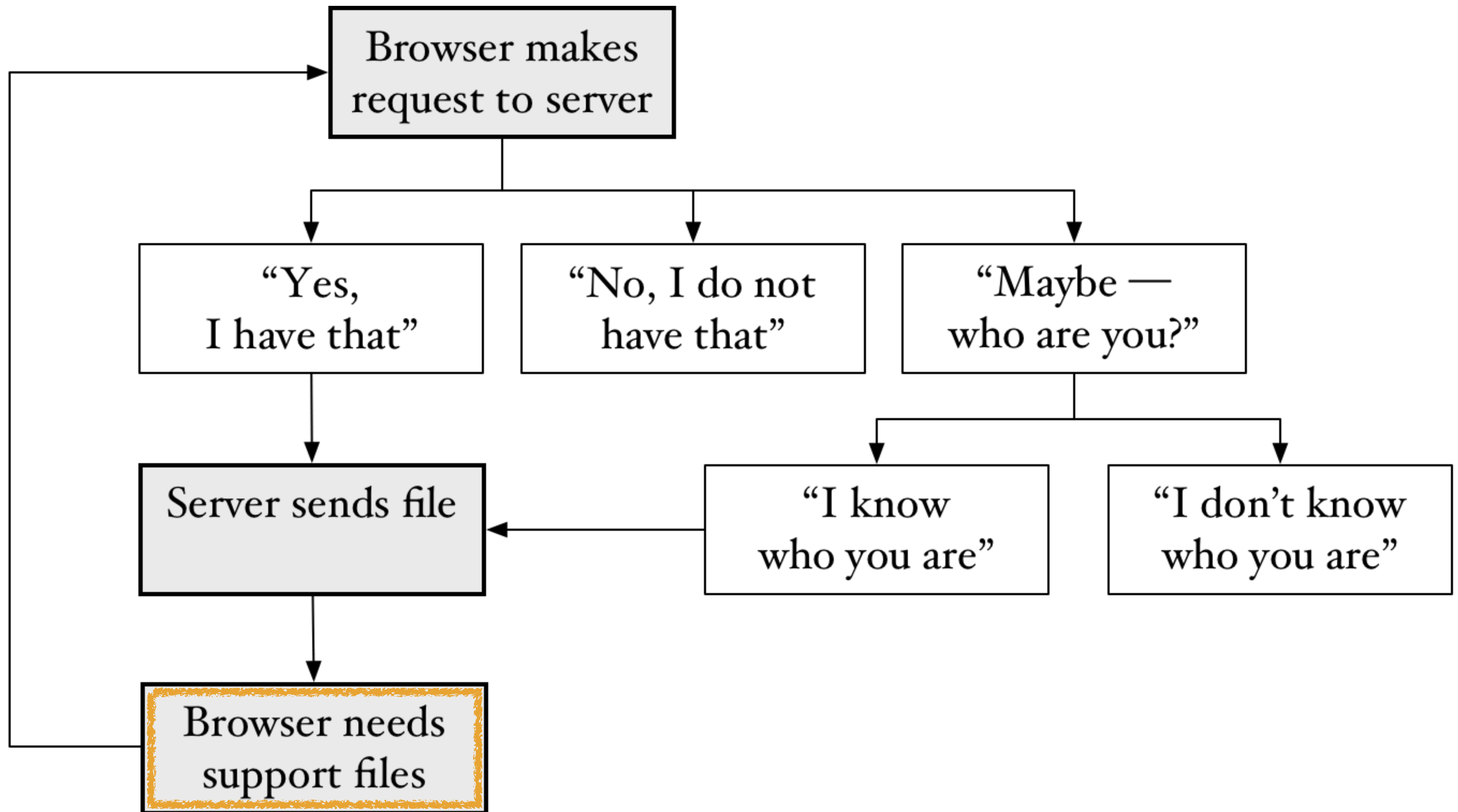
Content-Type: text/html; charset=UTF-8

The web server sends the webpage HTML to your web browser




```
<!DOCTYPE html>
<html lang="en" class="cID-95">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-
width, initial-scale=1.0">
  <title>Writing :: Scott Granneman</title>
  <meta name="description" content="Scott
Granneman's work as a professional writer.">
  <link rel="stylesheet" href="/themes/
bootstrap/css/main.css">
```

...



Your web browser asks the web server for the 1st linked content (e.g., JavaScript or CSS) it sees in the webpage's HTML

Header info about the 1st linked content is sent by the web server to the browser

The web server sends the 1st linked content to your web browser

Repeat the above for each linked content item (including images & videos) until complete

GET /themes/bootstrap/css/main.css HTTP/1.1
Host: www.granneman.com
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.11; rv:45.0) Gecko/20100101 Firefox/45.0
Accept: text/css,*/*;q=0.1
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
DNT: 1
Referer: http://www.granneman.com/writing/
Cookie: CONCRETE5=6h8714bfr5m4g33p4mawxple93
Connection: keep-alive
If-Modified-Since: Sat, 16 Apr 2016 21:11:23 GMT
If-None-Match: "3434-530a091d50037-gzip"
Cache-Control: max-age=0

GET /themes/bootstrap/css/main.css HTTP/1.1

Host: www.granneman.com

User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.11; rv:45.0) Gecko/20100101 Firefox/45.0

Accept: text/css,*/*;q=0.1

Accept-Language: en-US,en;q=0.5

Accept-Encoding: gzip, deflate

DNT: 1

Referer: http://www.granneman.com/writing/

Cookie: CONCRETE5=6h8714bfr5m4g33p4mawxple93

Connection: keep-alive

If-Modified-Since: Sat, 16 Apr 2016 21:11:23 GMT

If-None-Match: "3434-530a091d50037-gzip"

Cache-Control: max-age=0

HTTP/1.1 200 OK

Date: Wed, 20 Apr 2016 17:02:27 GMT

Server: Apache

X-Frame-Options: SAMEORIGIN

Vary: User-Agent,Accept-Encoding

Last-Modified: Sat, 16 Apr 2016 21:11:23 GMT

Etag: "3434-530a091d50037-gzip"

Accept-Ranges: bytes

Content-Encoding: gzip

Content-Length: 3253

Keep-Alive: timeout=2, max=100

Connection: Keep-Alive

Content-Type: text/css

HTTP/1.1 200 OK

Date: Wed, 20 Apr 2016 17:02:27 GMT

Server: Apache

X-Frame-Options: SAMEORIGIN

Vary: User-Agent,Accept-Encoding

Last-Modified: Sat, 16 Apr 2016 21:11:23 GMT

Etag: "3434-530a091d50037-gzip"

Accept-Ranges: bytes

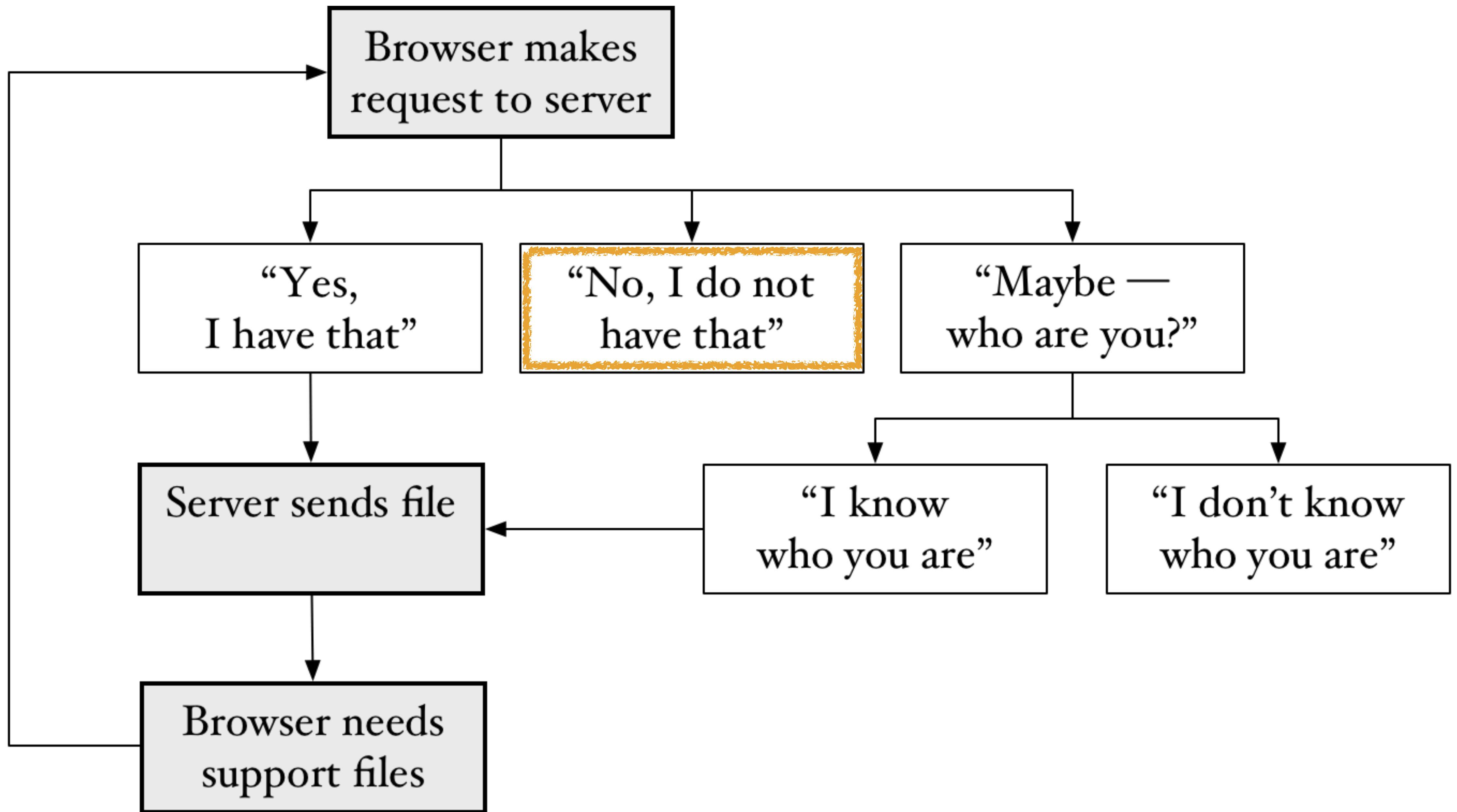
Content-Encoding: gzip

Content-Length: 3253

Keep-Alive: timeout=2, max=100

Connection: Keep-Alive

Content-Type: text/css



GET /writings/ HTTP/1.1

Host: www.granneman.com

User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10.11; rv:45.0) Gecko/20100101 Firefox/45.0

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8

Accept-Language: en-US,en;q=0.5

Accept-Encoding: gzip, deflate

DNT: 1

Cookie: CONCRETE5=6h8714bfr5m4g33p4mawxple93

Connection: keep-alive

Cache-Control: max-age=0

HTTP/1.0 404 Not Found

Date: Wed, 20 Apr 2016 17:46:03 GMT

Server: Apache

X-Frame-Options: SAMEORIGIN

Vary: User-Agent

Expires: Thu, 19 Nov 1981 08:52:00 GMT

Cache-Control: no-store, no-cache, must-revalidate, post-check=0, pre-check=0

Pragma: no-cache

Connection: close

Content-Type: text/html; charset=UTF-8

HTTP/1.0 404 Not Found

Date: Wed, 20 Apr 2016 17:46:03 GMT

Server: Apache

X-Frame-Options: SAMEORIGIN

Vary: User-Agent

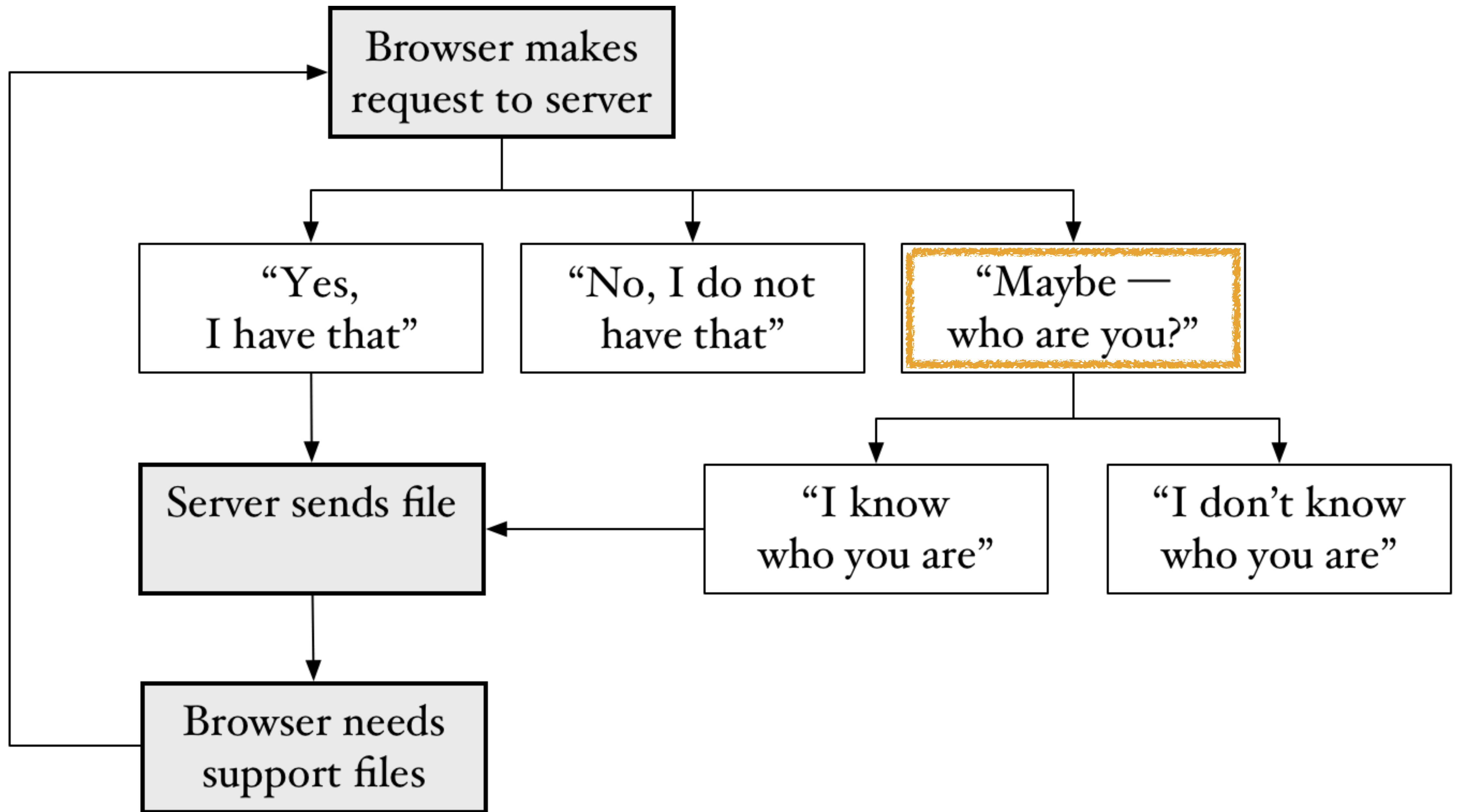
Expires: Thu, 19 Nov 1981 08:52:00 GMT

Cache-Control: no-store, no-cache, must-revalidate, post-check=0, pre-check=0

Pragma: no-cache

Connection: close

Content-Type: text/html; charset=UTF-8



GET / HTTP/1.1

Host: secret.granneman.com

User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS
X 10.11; rv:45.0) Gecko/20100101 Firefox/45.0

Accept: text/html,application/
xhtml+xml,application/xml;q=0.9,*/*;q=0.8

Accept-Language: en-US,en;q=0.5

Accept-Encoding: gzip, deflate, br

DNT: 1

Cookie:

admin=h=698765b7653426q22110079g2b476ba9&id=scott
@granneman.com

Connection: keep-alive

GET / HTTP/1.1

Host: secret.granneman.com

User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS
X 10.11; rv:45.0) Gecko/20100101 Firefox/45.0

Accept: text/html,application/
xhtml+xml,application/xml;q=0.9,*/*;q=0.8

Accept-Language: en-US,en;q=0.5

Accept-Encoding: gzip, deflate, br

DNT: 1

Cookie:

admin=h=698765b7653426q22110079g2b476ba9&id=scott
@granneman.com

Connection: keep-alive

HTTP/1.1 401 Unauthorized
Date: Wed, 20 Apr 2016 17:49:28 GMT
Server: Apache
X-Frame-Options: SAMEORIGIN
WWW-Authenticate: Basic realm="Scott Only"
Content-Length: 381
Keep-Alive: timeout=2, max=100
Connection: Keep-Alive
Content-Type: text/html; charset=iso-8859-1

HTTP/1.1 401 Unauthorized

Date: Wed, 20 Apr 2016 17:49:28 GMT

Server: Apache

X-Frame-Options: SAMEORIGIN

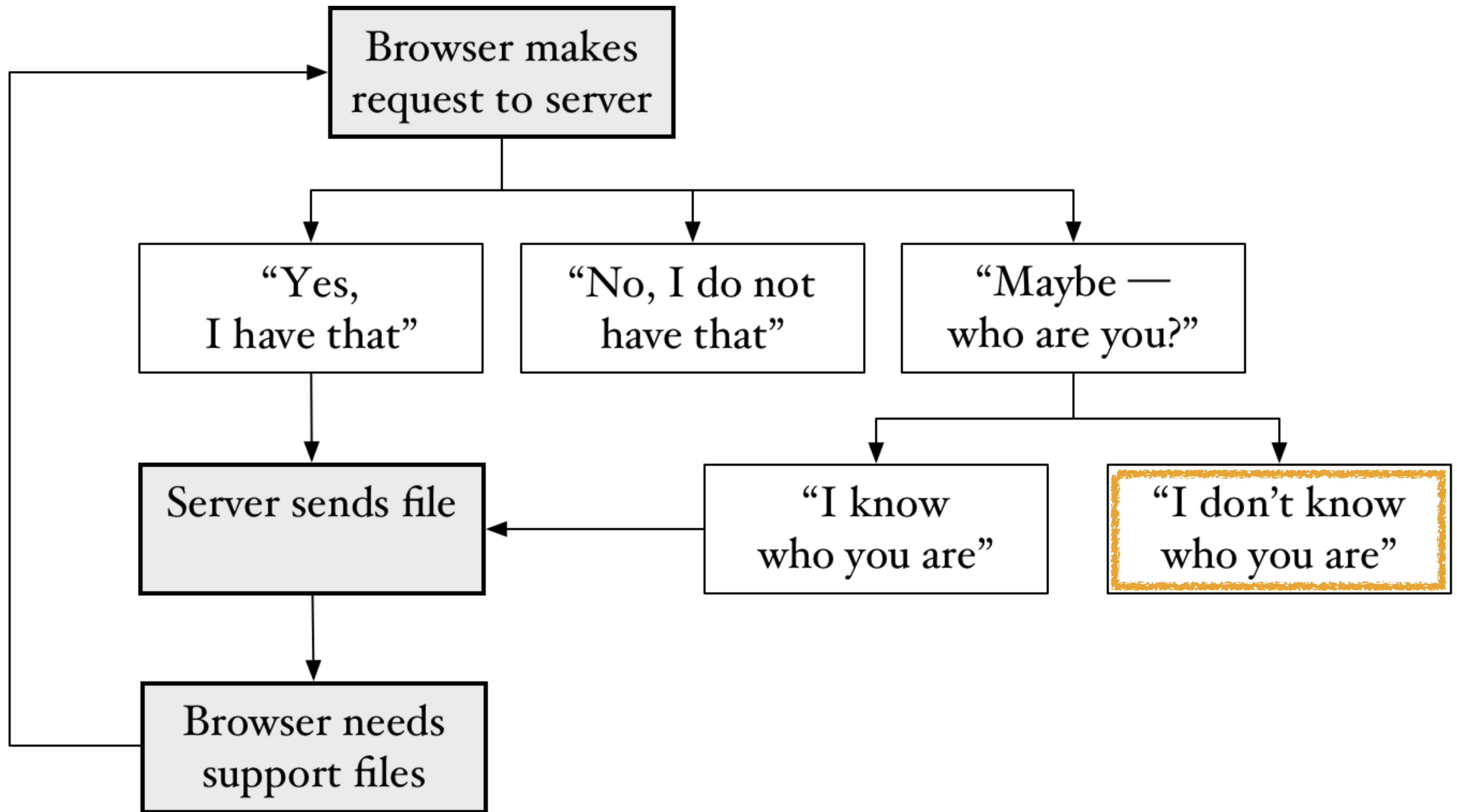
WWW-Authenticate: Basic realm="Scott Only"

Content-Length: 381

Keep-Alive: timeout=2, max=100

Connection: Keep-Alive

Content-Type: text/html; charset=iso-8859-1



HTTP/1.1 401 Unauthorized
Date: Wed, 20 Apr 2016 17:52:58 GMT
Server: Apache
X-Frame-Options: SAMEORIGIN
WWW-Authenticate: Basic realm="Scott Only"
Content-Length: 381
Keep-Alive: timeout=2, max=100
Connection: Keep-Alive
Content-Type: text/html; charset=iso-8859-1

HTTP/1.1 401 Unauthorized

Date: Wed, 20 Apr 2016 17:52:58 GMT

Server: Apache

X-Frame-Options: SAMEORIGIN

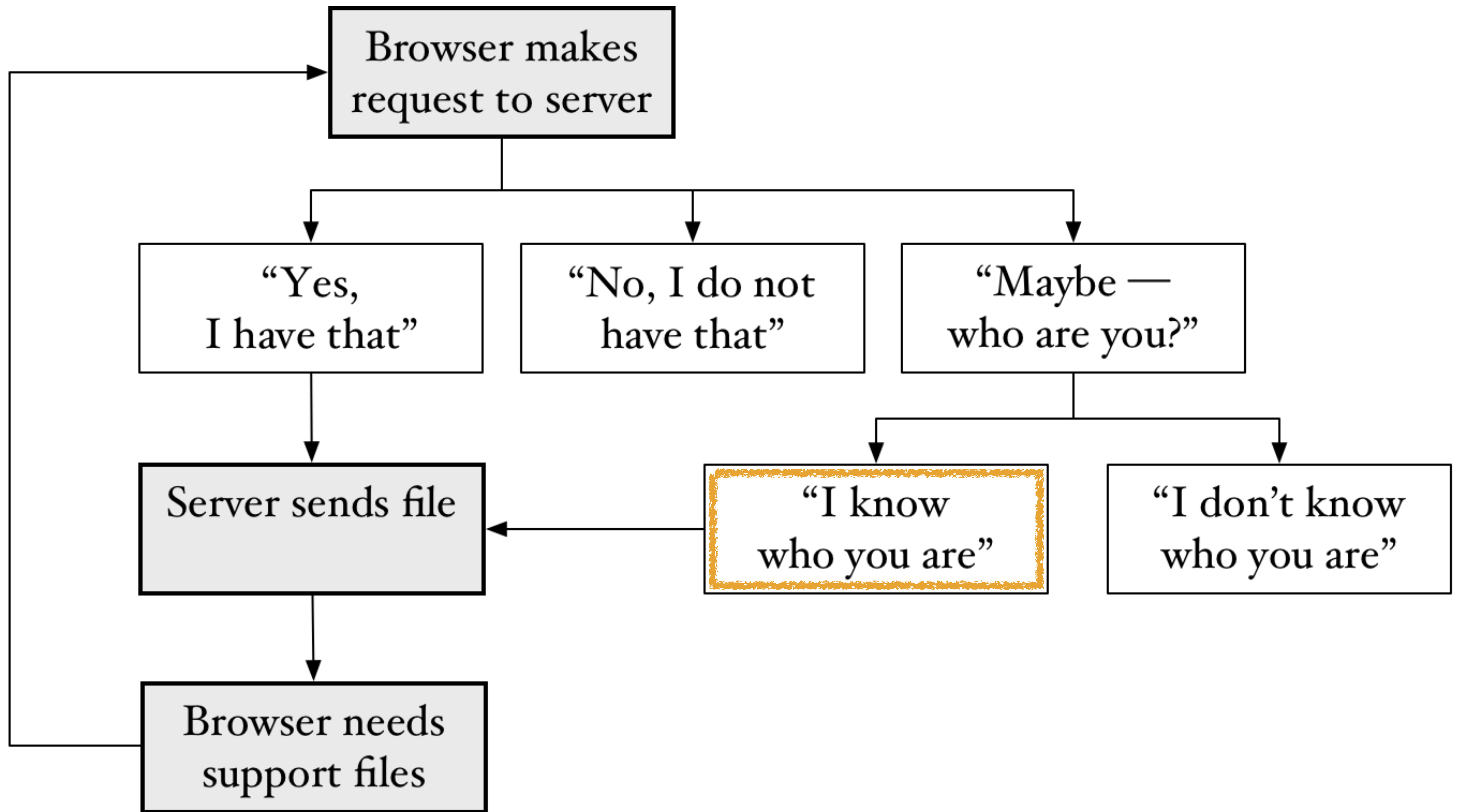
WWW-Authenticate: Basic realm="Scott Only"

Content-Length: 381

Keep-Alive: timeout=2, max=100

Connection: Keep-Alive

Content-Type: text/html; charset=iso-8859-1



HTTP/1.1 200 OK

Date: Wed, 20 Apr 2016 17:54:08 GMT

Server: Apache

X-Frame-Options: SAMEORIGIN

Vary: User-Agent,Accept-Encoding

Last-Modified: Sun, 27 Jul 2014 03:01:36 GMT

Etag: "242-4ff73294e061a-gzip"

Accept-Ranges: bytes

Content-Encoding: gzip

Strict-Transport-Security: max-age=15768000

Content-Length: 360

Keep-Alive: timeout=2, max=100

Connection: Keep-Alive

Content-Type: text/html

HTTP/1.1 200 OK

Date: Wed, 20 Apr 2016 17:54:08 GMT

Server: Apache

X-Frame-Options: SAMEORIGIN

Vary: User-Agent,Accept-Encoding

Last-Modified: Sun, 27 Jul 2014 03:01:36 GMT

Etag: "242-4ff73294e061a-gzip"

Accept-Ranges: bytes

Content-Encoding: gzip

Strict-Transport-Security: max-age=15768000

Content-Length: 360

Keep-Alive: timeout=2, max=100

Connection: Keep-Alive

Content-Type: text/html

3 Languages

Web browsers support only 3 languages

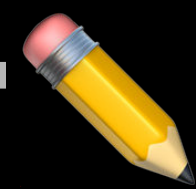
HTML provides structure & meaning for the webpage document

CSS defines style rules for presentation & layout

JavaScript is a programming language that alters the document & styles when an *event* (e.g., page loads, clicks, scrolls, form submission) occurs

HTML (1993) existed before JavaScript (1995) & CSS (1996)

HTML is *required* to make a webpage, while the others provide enhancements (though almost every webpage uses CSS & most use JavaScript)



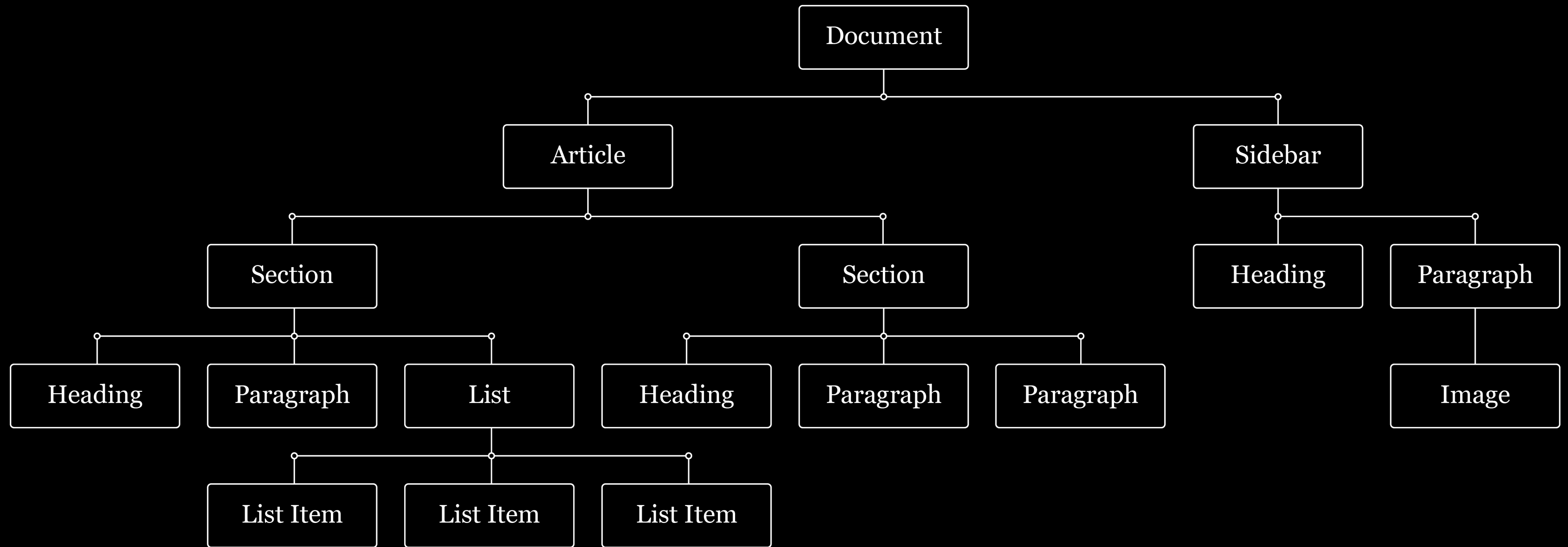
SIDE NOTE

JavaScript is *not* Java!

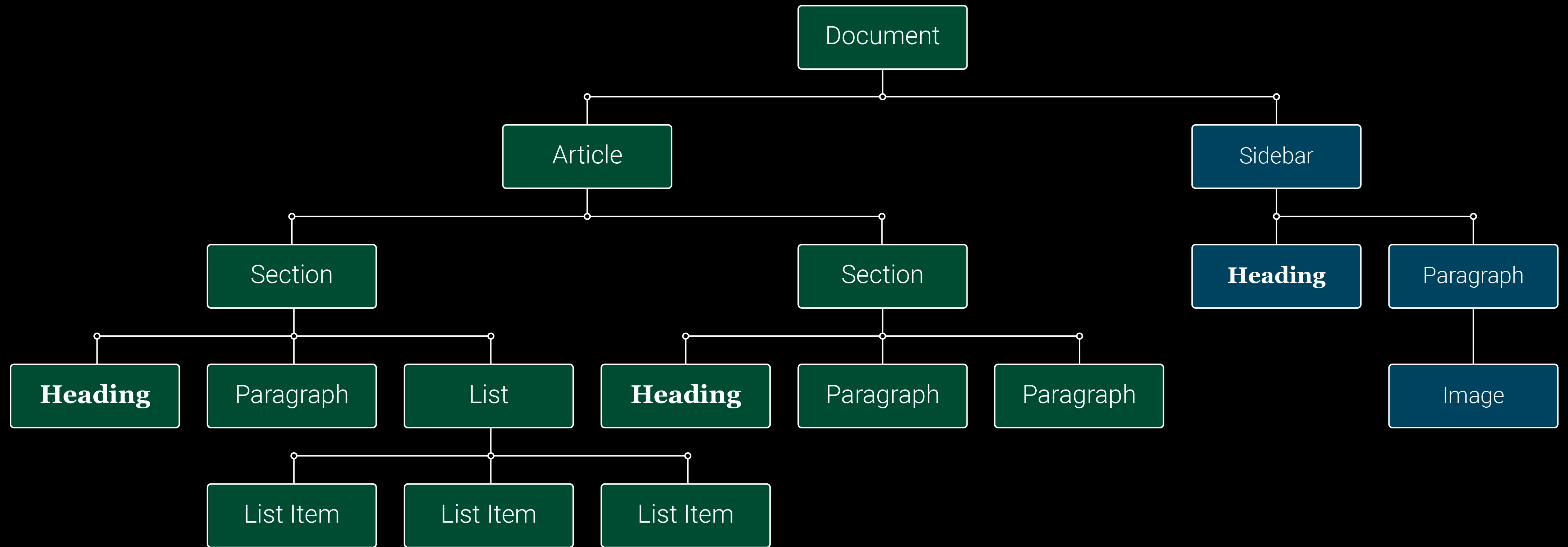
Java is a popular programming language that was developed at Sun Microsystems & released on May 23, 1995

It has nothing to do with the Web

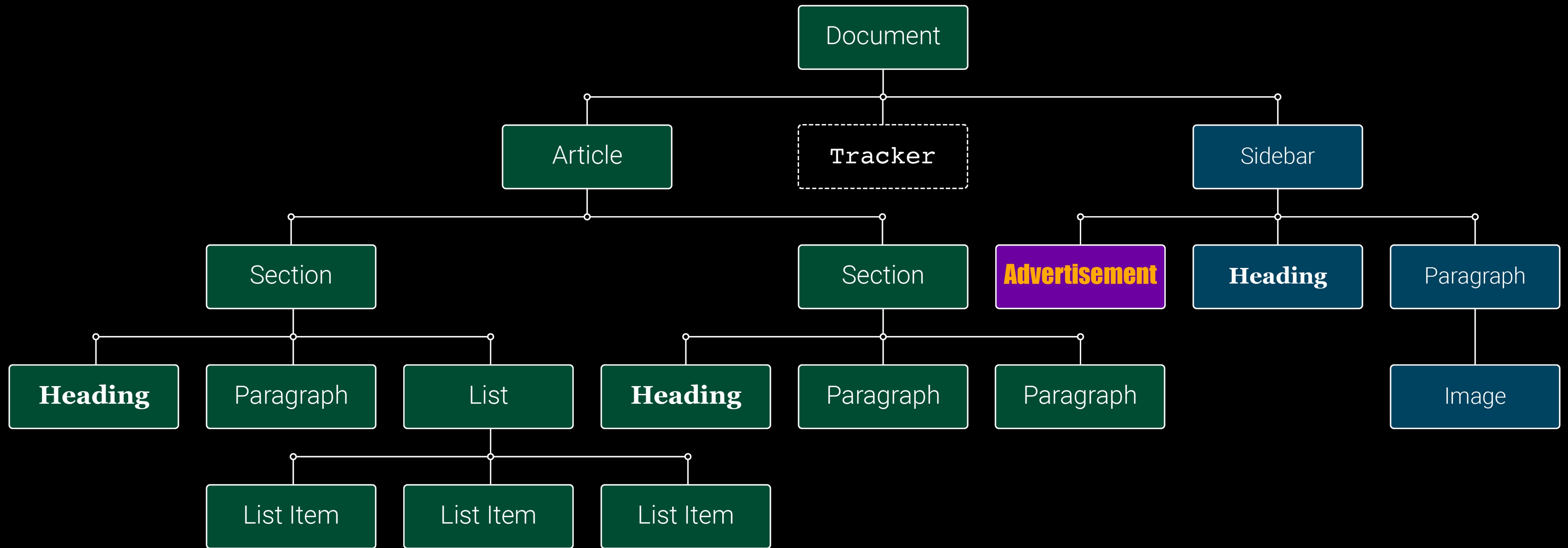
JavaScript is a programming language for the Web that was developed at Netscape & released on December 4, 1995



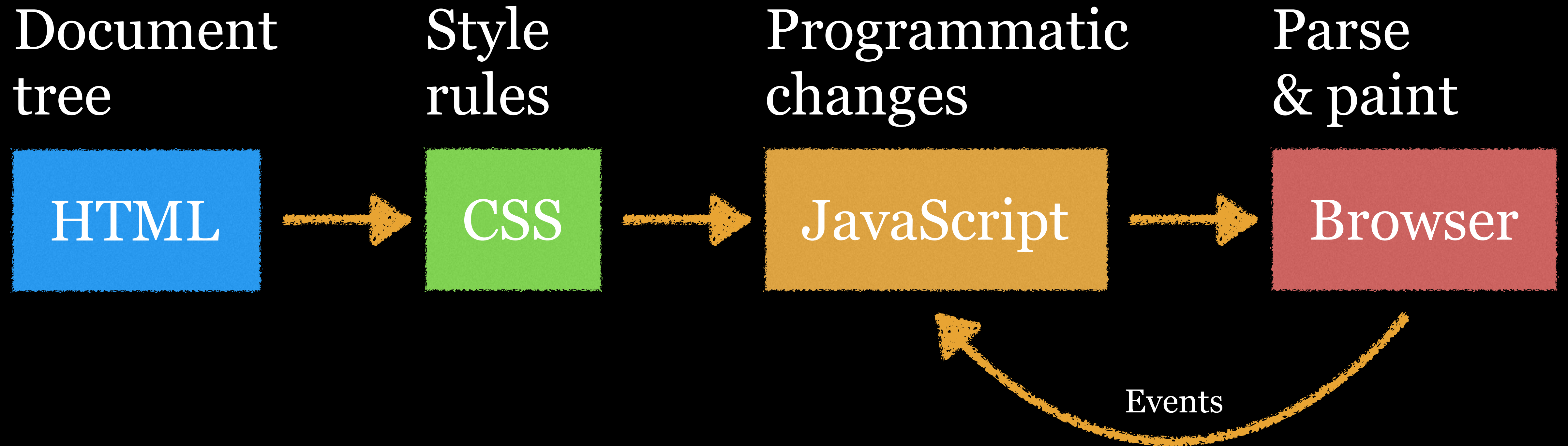
HTML creates a tree structure that defines what's in the document & how it's organized



CSS defines the styles for the nodes in the tree structure



JavaScript alters the tree & the styles when events happen, e.g., a tracker & an ad are added on the fly



The browser processing pipeline (simplified)

Separation of Concerns

Divide computer program into separate *concerns*, each focusing on a specific resource

Structure & meaning: HTML

Presentation: CSS

Behavior: JavaScript

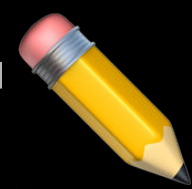
Note: there are exceptions to each of these!

The Simplest Webpage Ever

What is a webpage?

Just a text (`.txt`) file that ends with `.htm` or `.html`

Nowadays, `.html` is the usual extension



SIDE NOTE


Virtually all coding is done in TXT files

CSS is just a TXT file with `.css` at the end

JavaScript is just a TXT file with `.js` at the end

And so on with pretty every programming language too

The Web was designed from the beginning so that you can inspect the HTML of any webpage

| | | |
|--|---|--------|
|  | ⌘: Alt > Tools > Web Developer > Page Source | ⌘: ^+U |
| | ⌘: Tools > Web Developer > Page Source | ⌘: ⌘U |
|  | ... > F12 Developer Tools | ⌘: ^+U |
|  | ⌘: Right-click in the page > View Page Source | ⌘: ^+U |
|  | ⌘: Right-click in the page > View Page Source | ⌘: ^+U |
| | ⌘: View > Developer > View Source | ⌘: ⌘U |
|  | Develop > Show Page Source | ⌘: ⌘U |



In the mid-1990s, I learned how to code by viewing the HTML of webpages

You can't do this now — webpages are much too complex!



SEARCH

GO

ENGLISH

ESPAÑOL

中文

GIVE THE TIMES

Account ▾

The New York Times

Saturday, July 27, 2019

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Amanda Seyfried reads an essay about a lost first love.



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S&P 500+0.74% ↑

The Roots of Boeing's 737 Max Crisis: A Regulator Relaxes Its Oversight

- The safety of the jet was seriously compromised by flawed supervision from the Federal Aviation Administration, a Times investigation found.
- Regulators came to a troubling realization after the first 737 Max crash killed 189 people: They barely understood the control system that helped cause it.

5h ago [687 comments](#)



The Boeing 737 Max certification was the culmination of a decades-long effort shifting

Opinion >



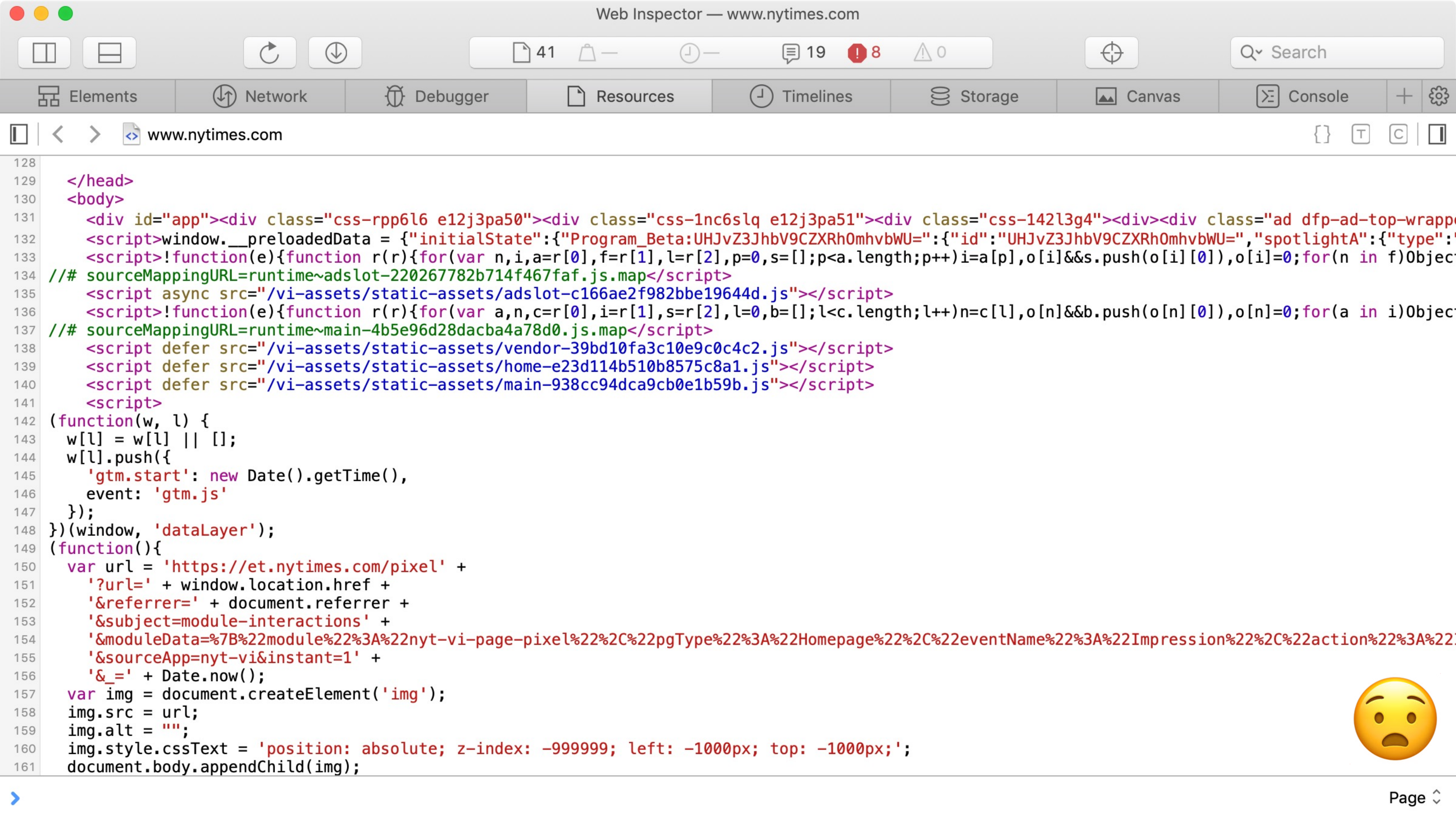
Sarah Vowell



This Guy Got Republicans to Vote for a Democrat

Steve Bullock may not be the most charismatic candidate, but he can teach his party how to get conservatives to do liberal things.





⚙ HTML ▾

1 ▾ <html>

2 ▾ <head>

3 ▾ <title>Simple Web Page</title>

4 </head>

5 ▾ <body>

6 ▾ <h1 align="center">

7 From H. P. Lovecraft's

8
"The Whisperer in Darkness"

9 </h1>

10 ▾ <p>

11 I cannot do better than transcribe in full, so far as is possible, the long letter in which Akeley introduced himself, and which formed such an important landmark in my own intellectual history. It is no longer in my possession, but my memory holds almost every word of its portentous message...

12 </p>

13 </body>

14 </html>

⚙ CSS ▾

⚙ JS ▾

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<html> ... </html>

Root of the HTML document that tells browsers where HTML starts & ends

HTML

1<html>

2<head>

3<title>Simple Web Page</title>

4</head>

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<head> ... </head>

Information & metadata primarily
for browsers, computers, & bots,
including links to CSS & JavaScript

HTML

1<html>

2<head>

3<title>Simple Web Page</title>

4</head>

5<body>

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8
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<title> ... </title>

Title of the webpage for browsers, computers, & bots, although humans see that title on tabs

⚙ HTML ▾

1 ▾ <html>

2 ▾ <head>

3 ▾ <title>Simple Web Page</title>

4 </head>

5 ▾ <body>

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⚙ CSS ▾

⚙ JS ▾

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I cannot do better than transcribe in full, so far as is possible, the long letter in which Akeley introduced himself, and which formed such an important landmark in my own intellectual history. It is no longer in my possession, but my memory holds almost every word of its portentous message...

<body> ... </body>

Content that appears in the
viewport for humans to see & use



If you need help remembering...

HTML

1<html>

2<head>

3<title>Simple Web Page</title>

4</head>

5<body>

6<h1 align="center">

7From H. P. Lovecraft's

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<h1> ... </h1>

Heading level 1, which acts as the title of the webpage for humans to see

HTML

1<html>

2<head>

3<title>Simple Web Page</title>

4</head>

5<body>

6<h1 align="center">

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<p> ... </p>

Paragraph

Very common element

HTML

1<html>

2<head>

3<title>Simple Web Page</title>

4</head>

5<body>

6<h1 align="center">

7From H. P. Lovecraft's

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"The Whisperer in Darkness"

9</h1>

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I cannot do better than transcribe in full, so far as is possible, the long letter in which Akeley introduced himself, and which formed such an important landmark in my own intellectual history. It is no longer in my possession, but my memory holds almost every word of its portentous message...

Line break that looks like single spacing, with very limited uses

Elements,
Attributes,
Values


```
<h1 align="center">  
    Ph'nglui mglw'nafh Cthulhu R'lyeh  
</h1>
```

`<h1 align="center">` is an *opening* or *start tag*

`</h1>` is a *closing* or *end tag*


```
<h1 align="center">  
  Ph'nenglui mglw'nafh Cthulhu R'lyeh:  
  <br>Cultists in <i>The Call of Cthulhu</i>  
</h1>
```

`
` does not have an end tag or content, because it is a *void element*

There are 14 of these *void elements*, including `<hr>`,
``, & `<meta>`


```
<h1 align="center">  
    Ph'nglui mglw'nafh Cthulhu R'lyeh  
</h1>
```

Ph'nglui mglw'nafh Cthulhu R'lyeh is the *content*

Strictly speaking, all of it, from `<h1` on line 1 to `/h1>` on line 3 is an *element*


```
<h1 align="center"> ... </h1>
```

`h1` is an *tag name* (but some people call it an *element*)

`align` is an *attribute*

`center` is a *value*

`align="center"` is an *attribute-value pair*

You can have more than 1 attribute-value pair in an opening tag

```
<h1 align="center" title="Page title">
```

How many?

As many as the specification allows for!

4.7 Embedded content

4.7.1 The `img` element

Categories:

[Flow content](#).

[Phrasing content](#).

[Embedded content](#).

[Form-associated element](#).

If the element has a `usemap` attribute: [Interactive content](#).

[Palpable content](#).

Contexts in which this element can be used:

Where [embedded content](#) is expected.

Content model:

Empty.

Content attributes:

[Global attributes](#)

`alt` - Replacement text for use when images are not available

`src` - Address of the resource

`crossorigin` - How the element handles crossorigin requests

`usemap` - Name of [image map](#) to use

`ismap` - Whether the image is a server-side image map

`width` - Horizontal dimension

`height` - Vertical dimension

Tag omission in text/html:

No end tag.

``

4.5 Text-level semantics

4.5.1 The **a** element

Categories:

Flow content.

Phrasing content.

Interactive content.

Palpable content.

Contexts in which this element can be used:

Where phrasing content is expected.

Content model:

Transparent, but there must be no interactive content descendant.

Content attributes:

Global attributes

href - Address of the hyperlink

target - Default browsing context for hyperlink navigation and form submission

download - Whether to download the resource instead of navigating to it, and its file name if so

rel - Relationship between the document containing the hyperlink and the destination resource

hreflang - Language of the linked resource

type - Hint for the type of the referenced resource

<a>

Tag omission in text/html:

Neither tag is omissible

Allowed ARIA role attribute values:

link (default - do not set), button, checkbox, menuitem, menuitemcheckbox, menuitemradio, tab Or treeitem

Allowed ARIA state and property attributes:

4.10.5 The **input** element

Categories:

[Flow content](#).

[Phrasing content](#).

If the **type** attribute is *not* in the [Hidden](#) state: [Interactive content](#).

If the **type** attribute is *not* in the [Hidden](#) state: [Listed](#), [labelable](#), [submittable](#), [resettable](#), and [reassociateable form-associated element](#).

If the **type** attribute is in the [Hidden](#) state: [Listed](#), [submittable](#), [resettable](#), and [reassociateable form-associated element](#).

If the **type** attribute is *not* in the [Hidden](#) state: [Palpable content](#).

Contexts in which this element can be used:

Where [phrasing content](#) is expected.

Content model:

Empty.

Content attributes:

[Global attributes](#)

accept - Hint for expected file type in [file upload controls](#)

alt - Replacement text for use when images are not available

autocomplete - Hint for form autofill feature

autofocus - Automatically focus the form control when the page is loaded

checked - Whether the command or control is checked

dirname - Name of form field to use for sending the element's [directionality](#) in [form submission](#)

disabled - Whether the form control is disabled

form - Associates the control with a [form](#) element

formaction - URL to use for [form submission](#)

formenctype - Form data set encoding type to use for [form submission](#)

<input>

<input>

form - Associates the control with a form element

formaction - URL to use for form submission

formenctype - Form data set encoding type to use for form submission

formmethod - HTTP method to use for form submission

formnovalidate - Bypass form control validation for form submission

formtarget - Browsing context for form submission

height - Vertical dimension

inputmode - Hint for selecting an input modality

list - List of autocomplete options

max - Maximum value

maxlength - Maximum length of value

min - Minimum value

minlength - Minimum length of value

multiple - Whether to allow multiple values

name - Name of form control to use for form submission and in the form.elements API

pattern - Pattern to be matched by the form control's value

placeholder - User-visible label to be placed within the form control

readonly - Whether to allow the value to be edited by the user

required - Whether the control is required for form submission

size - Size of the control

src - Address of the resource

step - Granularity to be matched by the form control's value

type - Type of form control

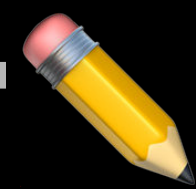
value - Value of the form control

width - Horizontal dimension

Also, the title attribute has special semantics on this element when used in conjunction with the pattern attribute.

You cannot repeat attributes in a tag

`<p class="foo" class="bar">`  

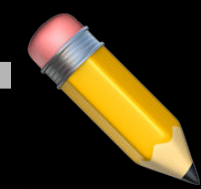


SIDE NOTE

The order of attributes doesn't matter to browsers

All of the following are equivalent (that said, the 1st is definitely the most common!):

- » ``
- » ``
- » ``



SIDE NOTE

I just used `align="center"` as an example

Never use that!

The `align` attribute was deprecated in HTML 4.01

Deprecated means that developers shouldn't use a feature because support for it will be removed in future versions of HTML

Sure enough, `align` is gone from HTML5

DTD

When we looked at `<html>`, I said that it's “Always the very 1st thing in a webpage”

I lied 

The 1st thing is always a *DTD*: a *Document Type Definition*

The DTD is vitally important to a webpage

Required at the beginning of every HTML document

Tells rendering engines & validators...

- » that HTML is being used, not some other markup language
- » which version of HTML to use
- » whether to render in *quirks* or *standards mode*

Quirks mode?!

If you use a really old, or an incorrect, DTD, then all modern browsers go into quirks mode

In quirks mode, modern browsers render HTML like browsers from a decade or more (back to 2000!)

You do *not* want quirks mode

There's also an *almost quirks mode*, but you can look that one up on your own

HTML 4.01 Transitional DTD

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01  
Transitional//EN" "http://www.w3.org/TR/html4/  
loose.dtd">
```


HTML5 DTD

```
<!DOCTYPE html>
```

OR

```
<!doctype html>
```

Actually, this DTD triggers standards mode in every browser back to IE 6!

For more info, see “Everything You Need to Know About DTDs” at www.granneman.com/webdev/coding/dtds/

Character Encoding

Character encoding tells rendering engines what language, writing system, & characters you're using in the document

Communication

Definition

- [Wikipedia on Communication](#)
The collaborative encyclopedia defines Communication. â† Only read if you want a basic overview

Characteristics

- ["Human Communication: What and Why" from Understanding Human Communication](#)
Some fundamentals of communication.

History

- [As We May Think](#)
Note the date this was written. Think about how prescient the author was. Notice also what he missed. (If you donâ€™t have time to read Bushâ€™s famous essay, read a summary at [As We May Think: A 1945 Essay on Information Overload, ~ Curation, and Open-Access Science](#))
- [Alan Kay: Transforming the Computer into a Communication Medium](#)
Alan Kayâ€™s ideas contributed to the transformation of the computer from a calculating machine to a communication medium.

Technology

- [Wikipedia on Technology](#)
The Internet encyclopedia defines Technology. â† Only read if you want a basic overview

Characteristics

- Addiction
- Advertising
- Advice
- Aggregation
- Algorithms
- Amazon
- Anonymity
- Apple
- Architecture
- Archiving
- Art
- Assignments
- Audio
- Audio Resource
- Automobiles
- Banking
- Biometrics
- Biotechnology
- BitTorrent
- Blogging
- Bookmarks
- Branding
- BRIC
- Broadband
- Broadcast Flag
- Bullying
- Business-Education Partnerships
- Business Intelligence
- Business School
- Cameras
- Capitalism
- Cartels
- CBOTPA

2 character encodings you must know

» ASCII

» UTF-8

ASCII

American Standard Code for Information Interchange

1960

128 characters

- » 94 printable characters (A, a, 1, +)
- » 33 non-printing control characters (mostly obsolete)
- » 1 space

ASCII Code Chart

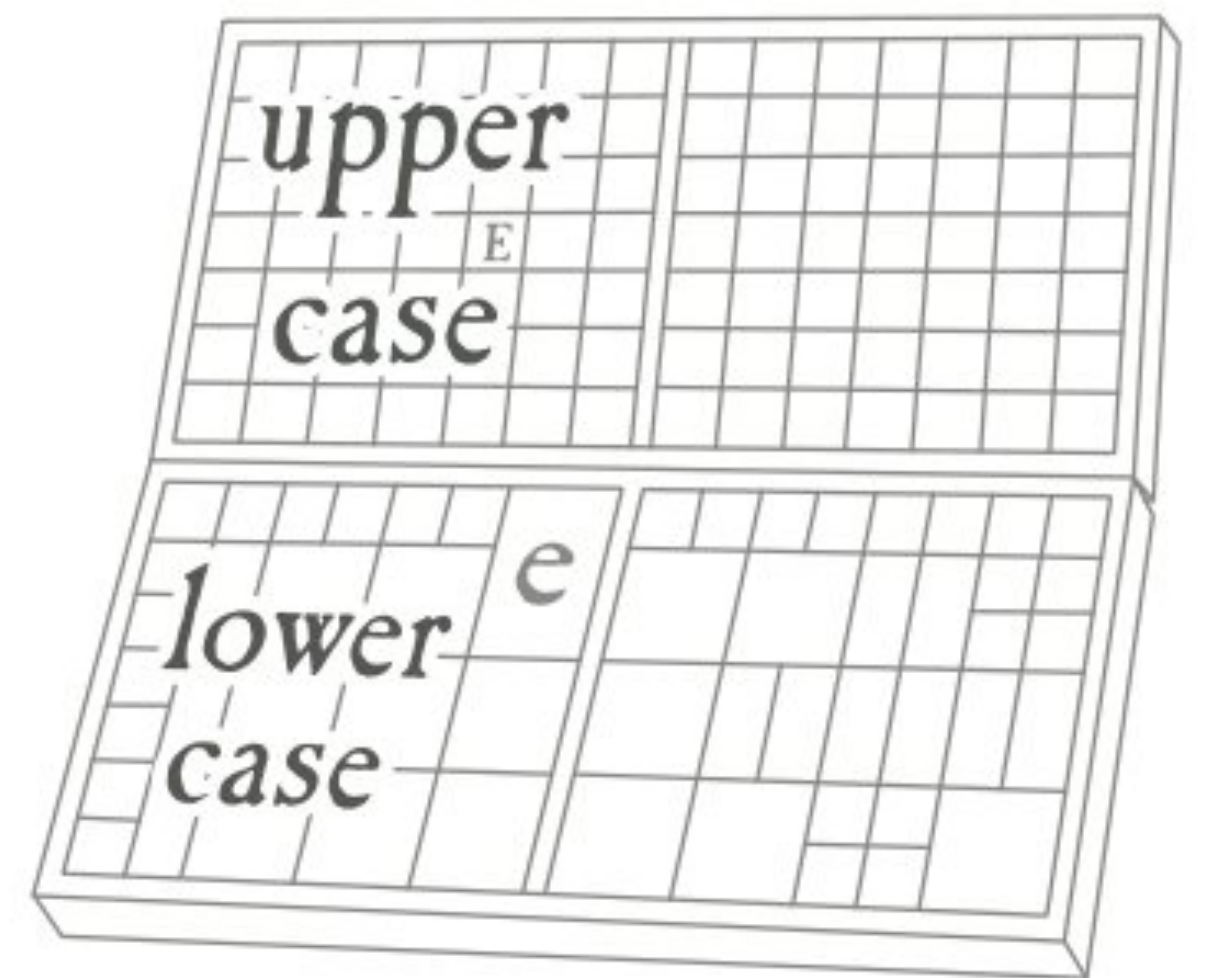
| | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|----|----|----|-----|
| 0 | NUL | SOH | STX | ETX | EOT | ENQ | ACK | BEL | BS | HT | LF | VT | FF | CR | SO | SI |
| 1 | DLE | DC1 | DC2 | DC3 | DC4 | NAK | SYN | ETB | CAN | EM | SUB | ESC | FS | GS | RS | US |
| 2 | | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / |
| 3 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? |
| 4 | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O |
| 5 | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ |
| 6 | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o |
| 7 | p | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | DEL |

| | -0 | -1 | -2 | -3 | -4 | -5 | -6 | -7 | -8 | -9 | -A | -B | -C | -D | -E | -F | |
|----|--|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|
| 0- | NUL SOH STX ETX EOT ENQ ACK BEL BS TAB LF VT FF CR SO SI | | | | | | | | | | | | | | | | 0- |
| 1- | DLE DC1 DC2 DC3 DC4 NAK SYN ETB CAN EM SUB ESC FS GS RS US | | | | | | | | | | | | | | | | 1- |
| 2- | SP | ! | " | # | \$ | % | & | ' | (|) | * | + | , | - | . | / | 2- |
| 3- | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | : | ; | < | = | > | ? | 3- |
| 4- | @ | A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | 4- |
| 5- | P | Q | R | S | T | U | V | W | X | Y | Z | [| \ |] | ^ | _ | 5- |
| 6- | ` | a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | 6- |
| 7- | p | q | r | s | t | u | v | w | x | y | z | { | | } | ~ | DEL | 7- |
| | -0 | -1 | -2 | -3 | -4 | -5 | -6 | -7 | -8 | -9 | -A | -B | -C | -D | -E | -F | |

+Control
 NUL ↔ Ctrl-@
 BEL ↔ Ctrl-G
 US ↔ Ctrl-_

+Shift

American Standard Code for Information Interchange



UTF-8

8-bit Unicode Transformation Format

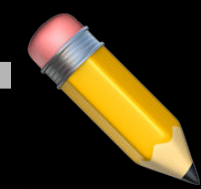
Original standard dates back to October 1991

Encompasses every character in every language in the world: version 13 includes 143,859 characters found in 154 modern & historic writing systems, plus symbols & formatting characters

UTF-8 can support up to 1,112,064 characters!



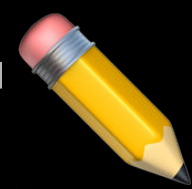
All 1,404 emoji characters are part of Unicode!



SIDE NOTE

Japanese kaomoji (顔文字, lit. “face characters”) 1st appeared in 1986 on ASCII NET, an early Japanese online service

(*_*) (-_-;) (^.^) [o_o] (`Д´) ∫°ǎ°] ㊄_㊄ >.<



SIDE NOTE

Other emoticons

ò_ó ã_o t(-_-t) <(^.^)> <(^.^)> - ㄥ - ({^})



(°J°) “Lenny”

ㄟ(ツ)ㄟ

(ノ °□°)ノ ㄣ Table flip!

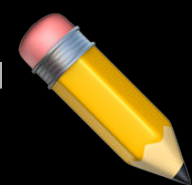


| | | | |
|---|---|--|----|
| □ | □ | | / |
| □ | □ | | /) |


$$\begin{array}{|c|c|c|} \hline \top & \top & | \\ \hline \mid & \mid & | \\ \hline \bot & \bot & | \backslash \bigcirc / \\ \hline \end{array}$$
$$\begin{array}{cc|c} \square & \square & | \quad / \\ \square & \square & | \quad /) \end{array}$$


Unicode consists of *blocks*, groups of related characters, such as

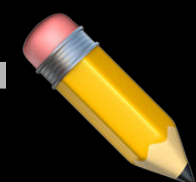
Basic Latin • Latin-1 Supplement • Hebrew • Arabic •
Currency Symbols • Arrows • Braille Patterns •
Bopomofo • CJK Strokes • Phoenician • Cuneiform •
Playing Cards • Alchemical Symbols • 308 in all!



SIDE NOTE

In 1978 a standard was created for 6879 kanji characters used in Japanese

Later used in Unicode

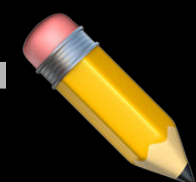


SIDE NOTE

1 year later, people noticed that there were 63 (now pared down to 12) kanji characters that were ...
strange

- » nobody knew where they came from
- » nobody knew what they meant
- » nobody knew how to pronounce them

These are now known as the *ghost characters* (幽霊文字).

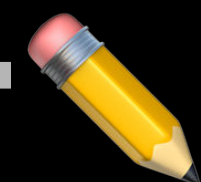


SIDE NOTE

𪛗𪛙𪛚𪛛𪛜𪛝

𪛞𪛟𪛠𪛡𪛢𪛣

Core ghost characters

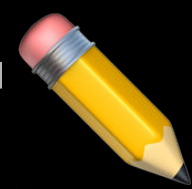


SIDE NOTE

Investigators think most of the ghosts were caused by folds & wrinkles because they were using paper back in 1978

𡗗: printers trying to create 𡗗 by pasting 山 over 女

弼: misreading of 疆 — maybe?



SIDE NOTE

“The errors went undiscovered just long enough to be set in stone, and now these ghosts are, at least in potential, a part of every computer on the planet, lurking in the dark corners of character tables. At this rate they’ll presumably be with humanity forever.”

—Paul McCann

Since 2009, UTF-8 is the most common encoding for HTML files

95% of all webpages are encoded with UTF-8 as of 2020

Also the standard way to represent text in files, email, & software

Use UTF-8!

Everywhere!

In everything!

Webpages, text editors, IDEs, web browsers, email programs, programming, APIs, operating systems...

Noto Serif

Noto Sans

Aa Gg Yy

Aa Gg Yy

a

Ankunft

a b c d e f g h i j k l m

n o p q r s t u v w x y z

0 1 2 3 4 5 6 7 8

“Noto is a font family designed to cover all the scripts encoded in the Unicode standard” — Wikipedia

As of 2018, 64,000 characters out of 137,000

Noto is short for *no tofu*

Huh?

Tofu: empty white boxes that appear when a character isn't supported in a typeface

Aa

I

i

+

Search

F

All Fonts

Computer

User

Smart Collection

F

English

Fixed Width

Collection

A

Fun

A

iOS Fantasy

A

iOS Handwriting

A

iOS Monospace

A

iOS Sans Serif

A

iOS Serif

A

Logos

A

Modern

A

PDF

A

Traditional

A

Web

Anonymous Pro

Artisan12

Audiowide

Caxton Light Italic

Caxton Roman Bold

Plain

Caxton Roman Book

Caxton Roman Light

CCEXtraExtra

CCEXtraExtraEngraved

CMU Classical Serif

CMU Serif

Roman

Italic

Bold

BoldItalic

Courier Prime

Creepster

DejaVu Sans

DejaVu Sans Mono

DejaVu Serif

devicons

Regular

Fira Mono

Fira Sans

Frutiger LT Std

Futura Std

Georgia Pro

Regular

Italic

Bold

GLYPHICONS Halflings

Regular

Iconic

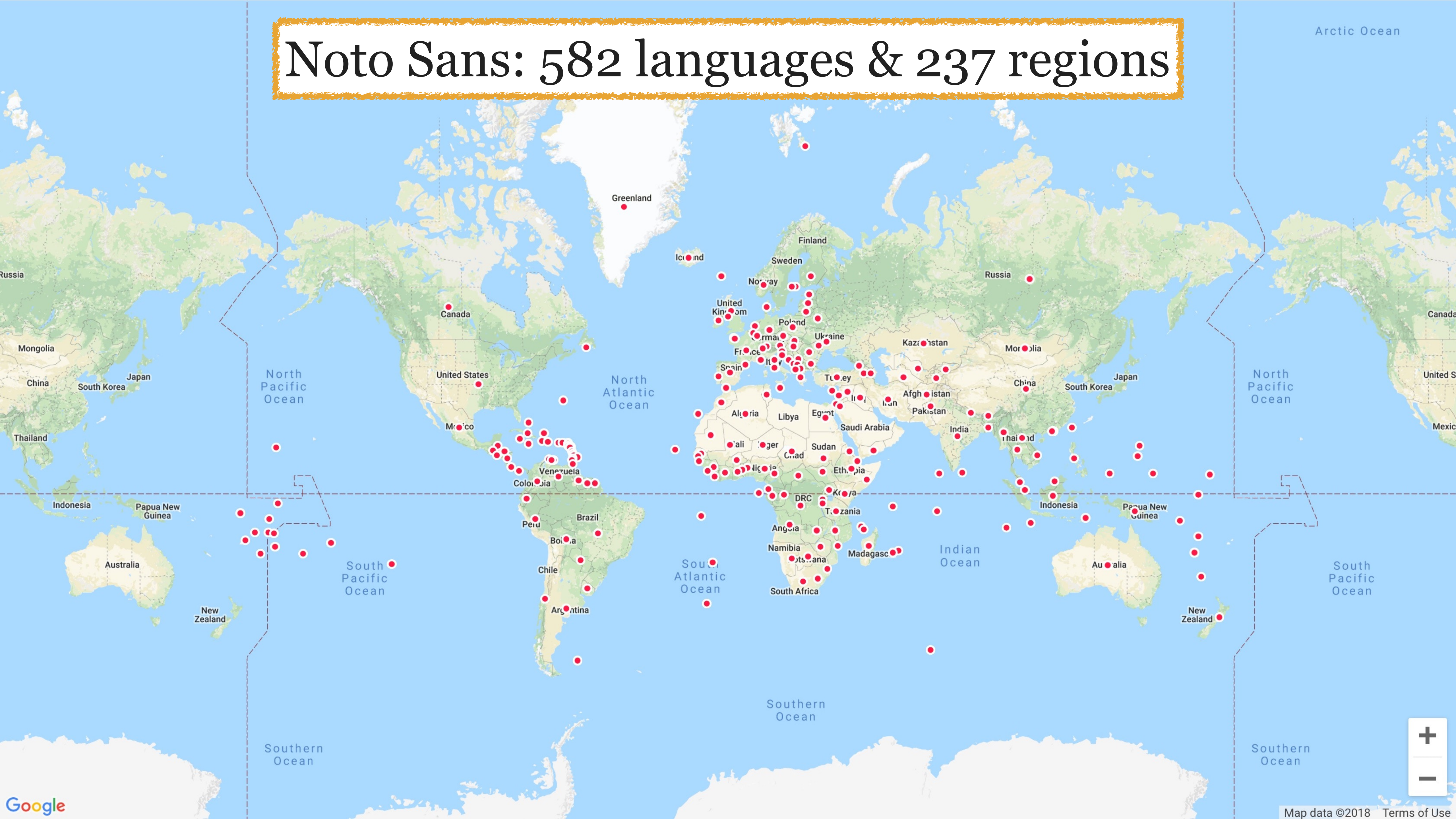
Illustrate IT

Caxton Roman Bold Plain

Size: 36

| | | | | | | |
|-----|---|----|----|---|---|---|
| n | o | p | q | r | s | t |
| u | v | w | x | y | z | |
| | | | i | ç | £ | / |
| ¥ | f | | | ı | “ | « |
| < | > | fi | fl | — | | |
| • | | • | | ” | ” | » |
| ... | ‰ | ¿ | ` | ´ | ^ | ~ |
| | | | •• | ° | | |

Noto Sans: 582 languages & 237 regions



Setting Character Encoding

Two methods

1. Web server provides HTTP Content-Type header
2. <meta> element in the <head>

Your web server admins should correctly set the **HTTP Content-Type** *header* (hidden information transferred back & forth between a web browser & a web server)

Content-Type: text/html; charset=UTF-8

Only works if your web server is configured correctly

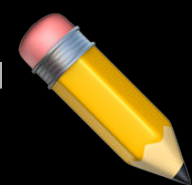
This always works: insert a `<meta>` element inside the `<head>` element:

```
<meta charset="utf-8">
```


Actually, `<meta charset="utf-8">` works in all browsers back to IE 6!

The `<meta>` for character encoding must be the 1st thing after `<head>`

Why? Because all text after it needs to have character encoding set



SIDE NOTE

In fact, character encoding must be specified & completed within the first 1024 bytes of your document

HTML5

<!DOCTYPE html>

<html>

<head>

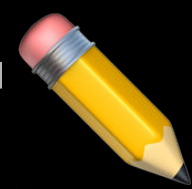
```
<meta charset="UTF-8">
```

<title>0۞ƒуПЅقٲصꣳᱯᰄሐ୪୨೦€</title>

</head>

<body>

● ● ●



SIDE NOTE

Sometimes you might have to work on old webpages

In HTML 4.01, this is how you declared that you were using UTF-8:

```
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
```

(Remember, now you just use: `<meta charset="utf-8">`)

For more info, see “Everything You Need to Know About Character Encoding” at www.granneman.com/webdev/coding/characterencoding/

The Simplest
Webpage Ever,
Corrected

⚙ HTML ▾

1 ▾ <html>

2 ▾ <head>

3 ▾ <title>Simple Web Page</title>

4 </head>

5 ▾ <body>

6 ▾ <h1 align="center">

7 From H. P. Lovecraft's

8
"The Whisperer in Darkness"

9 </h1>

10 ▾ <p>

11 I cannot do better than transcribe in full, so far as is possible, the long letter in which Akeley introduced himself, and which formed such an important landmark in my own intellectual history. It is no longer in my possession, but my memory holds almost every word of its portentous message...

12 </p>

13 </body>

14 </html>

⚙ CSS ▾

⚙ JS ▾

From H. P. Lovecraft's "The Whisperer in Darkness"

I cannot do better than transcribe in full, so far as is possible, the long letter in which Akeley introduced himself, and which formed such an important landmark in my own intellectual history. It is no longer in my possession, but my memory holds almost every word of its portentous message...

Let's add the DTD & character encoding...

HTML

```
1 <!doctype html>
2 <html>
3   <head>
4     <meta charset="UTF-8">
5     <title>Simple Web Page</title>
6   </head>
7   <body>
8     <h1 align="center">
9       From H. P. Lovecraft's
10      <br>"The Whisperer in Darkness"
11    </h1>
12    <p>
13      I cannot do better than transcribe in
14      full, so far as is possible, the long
15      letter in which Akeley introduced himself,
16      and which formed such an important landmark
17      in my own intellectual history. It is no
18      longer in my possession, but my memory
19      holds almost every word of its portentous
20      message...
21    </p>
22  </body>
```

CSS

JS

From H. P. Lovecraft's "The Whisperer in Darkness"

I cannot do better than transcribe in full, so far as is possible, the long letter in which Akeley introduced himself, and which formed such an important landmark in my own intellectual history. It is no longer in my possession, but my memory holds almost every word of its portentous message...

HTML

1<html>

2<head>

3<title>Simple Web Page</title>

4</head>

5<body>

6<h1 align="center">

7From H. P. Lovecraft's

8
"The Whisperer in Darkness"

9</h1>

10<p>

11I cannot do better than transcribe in full, so far as is possible, the long letter in which Akeley introduced himself, and which formed such an important landmark in my own intellectual history. It is no longer in my possession, but my memory holds almost every word of its portentous message...

12</p>

13</body>

14</html>

CSS

JS

From H. P. Lovecraft's "The Whisperer in Darkness"

I cannot do better than transcribe in full, so far as is possible, the long letter in which Akeley introduced himself, and which formed such an important landmark in my own intellectual history. It is no longer in my possession, but my memory holds almost every word of its portentous message...

This is "wrong" one — look at the previous slide for any differences you can spot in the rendered webpage on the right

It looked the same, even when the code was “wrong”

Why? Because rendering engines “fix” your errors as best they can

Is that a license to be sloppy or careless? No!

Comments

Comments tell the rendering engine to ignore the
commented out code & text

HTML comments on a single line

```
<!-- ... -->
```

Can also be multi-line

```
<!--  
...  
...  
...  
-->
```


⚙ HTML

1 <p>

2 Cthulhu

3 </p>

4 <!--<p>

5 Yog-Sothoth

6 </p>

7 <p>

8 Shub-Niggurath

9 </p>-->

10 <p>

11 Nyarlathep

12 </p>

⚙ CSS

👁

⌵ ⌵ ⌵

⚙ JS

⌵ ⌵ ⌵

Cthulhu

Nyarlathep

Why use comments?

Notes for you & your co-workers

```
<!-- Solution found at http://www.granneman.com/webdev/coding/dtds/ -->
```

```
<!-- Do not edit below here -->
```

```
<!-- Google Analytics -->
```


Do not be cute & leave “funny” comments in your code

```
<!-- Stupid solution to satisfy the client's  
stupid request for a stupid feature -->
```

You *will* forget to remove them before your work goes live



A journalist once asked a developer, “What makes code bad?”

The developer replied, “No comment.”



A journalist once asked a developer, “What makes code bad?”

The developer replied, “No comment.”

Editing

Remember, a webpage is just a text file that ends with `.htm` or `.html`

You can create & edit webpages using a variety of tools

Never use spaces in webpage folder or file names!

This is wrong: `contact info.html`

These are right:

- » `contactinfo.html`
- » `contactInfo.html`
- » `contact_info.html`
- » `contact-info.html` ← what most developers use



PRO TIP

Never capitalize webpage folder or file names!

Don't do this: `About-Us/Contact-Info.html`

Do this instead: `about-us/contact-info.html`

Why?

- » You won't have to remember when you capitalized & when you didn't
- » Consistency

Ways to create & edit websites, from oldest to newest

- » Text editor
- » WYSIWYG (*What You See Is What You Get*)
- » Template-based Content Management Systems

New technologies don't mean we stop using the old ones

When we started using cars, we didn't kill all the horses...



New technologies don't mean we stop using the old ones

When we started using cars, we didn't kill all the horses...

Text editor

Create & edit HTML (& CSS, & JavaScript) by hand

OPEN FILES

* Snowden Revelations Timeline.html
● index.html

```
1  <!DOCTYPE html>
2  <html>
3
4  <head>
5      <meta charset="utf-8">
6      <meta http-equiv="X-UA-Compatible" content="IE=edge">
7      <title>WebSanity's Terms & Conditions</title>
8      <meta name="viewport" content="width=device-width">
9      <meta name="description" content="WebSanity standard contract terms and conditions for
website development, CMS hosting services, and any related services that WebSanity
provides.">
10     <link rel="canonical" href="http://legal.websanity.com/">
11     <!-- Custom CSS -->
12     <link rel="stylesheet" href="/css/main.css">
13 </head>
14
15 <body>
16     <header class="site-header">
17         <div class="wrap">
18             <a class="site-title" href="/">WebSanity's Terms & Conditions</a>
19             <nav class="site-nav">
20                 <a href="#" class="menu-icon"> ☰
29                 </a>
30                 <div class="trigger">
31                     <a class="page-link" href="/feed.xml"></a>
32                     <a class="page-link" href="/changes/">Changes</a>
```


Allows for the most control, but can be tedious & error-prone

These problems can be somewhat mitigated by automation, but not fully



FORMATTING GUIDE

You could put your code on one line

```
<!DOCTYPE html><html><head><meta  
charset="utf-8"><title>The Call of Cthulhu</  
title></head><body><h1>A Story by H.P.  
Lovecraft</h1></body></html>
```

: Rendering engines wouldn't care

 : Hard to read! Hard to parse! Collaborators 
you!



FORMATTING GUIDE

You could break things up randomly

```
<!DOCTYPE html><html><head><meta  
charset="utf-8"><title>The  
Call of  
Cthulhu  
</title></head><body><h1>A Story  
by H.P. Lovecraft</h1>  
</body></html>
```

: Rendering engines wouldn't care

 : Hard to read! Hard to parse! Collaborators  you!

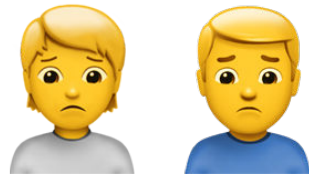


FORMATTING GUIDE

You should indent (*nest*) your code

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="utf-8">
    <title>The Call of Cthulhu</title>
  </head>
  <body>
    <h1>A Story by H.P. Lovecraft</h1>
  </body>
</html>
```

: Rendering engines wouldn't care

: Easy to read!
Easy to parse!
Collaborators ❤️
you!



FORMATTING GUIDE

Always nest (indent) your code!

You will learn the details as we go through the course



FORMATTING GUIDE

Sometimes nesting might seem a little excessive...



Stefán Jökull Sigurðarson - CCP Ghost rider

@stebets



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DevTools - twitter.com/stebets/status/1456040940053860353

Elements

Console

Sources

Network

Performance

Memory

Application

Security

Lighthouse

CSS Overview

8

2

1

<body style="background-color: #FFFFFF;">

<noscript>...</noscript>

<div id="react-root" style="height:100%;display:flex;"> flex

<div class="css-1dbjc4n r-13awgt0 r-12vffkv"> flex

<div class="css-1dbjc4n r-13awgt0 r-12vffkv"> flex

<div id="layers" class="r-1d2f490 r-u8s1d r-zchlnj r-ipm5af r-184en5c" style>...</div>

<div class="css-1dbjc4n r-18u37iz r-13qz1uu r-417010" style="min-height: 866px;" aria-hidden="f

<div aria-label="Skip to recommended content" role="button" tabindex="0" class="css-18t94o4 cs

<div aria-label="Skip to secondary content" role="button" tabindex="0" class="css-18t94o4 css-

<header role="banner" class="css-1dbjc4n r-obd0qt r-16y2uox r-lrvibr r-1g40b8q">...</header> fle

<main role="main" class="css-1dbjc4n r-1habvwh r-16y2uox r-1wbh5a2"> flex

<div class="css-1dbjc4n r-150rngu r-16y2uox r-1wbh5a2 r-rthrr5"> flex

<div class="css-1dbjc4n r-aqfbo4 r-16y2uox"> flex

<div class="css-1dbjc4n r-1oszu61 r-1niwhzg r-18u37iz r-16y2uox r-1wtj0ep r-2llsf r-13qz1u

<div class="css-1dbjc4n r-14lw9ot r-jxzhtn r-1lj8xs r-13l2t4g r-1phboty r-1jgb5lz r-11w

<div class="css-1dbjc4n"> flex

<div class="css-1dbjc4n r-aqfbo4 r-gtdqiz r-1gn8etr r-1g40b8q" sticky-ducky-type="hea

<div class="css-1dbjc4n"> flex

<div class="css-1dbjc4n"> flex

<section aria-labelledby="accessible-list-0" role="region" class="css-1dbjc4n"> fl

<h1 dir="auto" aria-level="1" role="heading" class="css-4rbku5 css-901oao r-4iw3l

<div aria-label="Timeline: Conversation" class="css-1dbjc4n"> flex

<div style="position: relative; min-height: 1335.2px;">

<div style="transform: translateY(0px); position: absolute; width: 100%; trans

<div style="transform: translateY(217.6px); position: absolute; width: 100%; t

<div style="transform: translateY(395.2px); position: absolute; width: 100%; t

<div class="css-1dbjc4n r-j5o65s r-qklmqi r-1adg3ll r-1ny4l3l">

<div class="css-1dbjc4n"> flex

<article aria-labelledby="id__lj0oy2h18mr id__mp0gc9r4tcn id__pmojpe4xhco

<div class="css-1dbic4n r-eqz5dr r-16v2uox r-1wbh5a2"> flex

Styles

Computed

Layout

>>

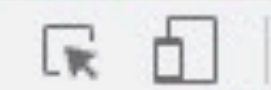
Filter

:hov .cls +

element.style {width: 100%;height: 100%;position: absolute;background-color: black;top: 0%;left: 0%;transform: rotate(0deg) scale(1.005);}

video { user agent stylesheetobject-fit: contain;}

Inherited from div.css-1dbjc4n.r-1a...<style>.css-1dbjc4n {-ms-flex-align: stretch;-ms-flex-direction: column;-ms-flex-negative: 0;-ms-flex-preferred-size: auto;-webkit-align-items: stretch;-webkit-box-align: stretch;-webkit-box-direction: normal;-webkit-box-orient: vertical;-webkit-flex-basis: auto;-webkit-flex-direction: column;-webkit-flex-shrink: 0;align-items: stretch;border: 0 solid black;box-sizing: border-box;display: webkit-box;display: moz-box;display: ms-flexbox;display: webkit-flex;display: flex;}



Elements

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1



... <div class="css-1dbjc4n r-eqz5dr r-16y2uox r-1wbh5a2"> flex == \$0

<div class="css-1dbjc4n r-16y2uox r-1wbh5a2 r-1ny4l3l"> flex

<div class="css-1dbjc4n"> flex

> <div class="css-1dbjc4n">...</div> flex

> <div class="css-1dbjc4n r-18u37iz r-15zivkp">...</div> flex

> <div class="css-1dbjc4n"> flex

> <div class="css-1dbjc4n r-4qtp9 r-plpxzi r-1s2b4r4">...</div>

> <div class="css-1dbjc4n">...</div> flex

> <div class="css-1dbjc4n"> flex

> <div aria-labelledby="id__6p4534zy04q id__zi43ddw8vu" class="css-

> <div class="css-1db

> <div class="css-1d

> <div class="css-

> <div class="r-1

> <div class="r-1

> <div class="cs

> <div class="

> <div class="

> <div class="r-1adg3ll r-13qz1uu" style="padding-bottom

> <div class="r-1p0dtai r-1pi2tsx r-1d2f490 r-u8s1d r-ip

> <div style="height: 100%; position: relative; transfo

> <div style="height: 100%; position: absolute; width

> <div style="position: relative; width: 100%; heigh

> <video preload="auto" playsinline aria-label="No

</div>

</div>

> <div tabindex="0" class="css-1dbjc4n r-1p0dtai r-1d

</div>

</div>

</div>

</div>

37 levels of
nesting from
<body> to <video>

Styles Computed Layout >>

Filter :hov .cls +, <|

element.style {
}

.r-eqz5dr { <style>
-webkit-box-direction: normal;
-webkit-box-orient: vertical;
flex-direction: column;
}

.r-1wbh5a2 { <style>
flex-shrink: 1;
}

.r-16y2uox { <style>
-webkit-box-flex: 1;
flex-grow: 1;
}

.css-1dbjc4n { <style>
~~ms-flex-align: stretch;~~
~~ms-flex-direction: column;~~
~~ms-flex-negative: 0;~~
~~ms-flex-preferred-size: auto;~~
~~webkit-align-items: stretch;~~
~~webkit-box-align: stretch;~~
~~webkit-box-direction: normal;~~
~~webkit-box-orient: vertical;~~
~~webkit-flex-basis: auto;~~
~~webkit-flex-direction: column;~~
~~webkit-flex-shrink: 0;~~
align-items: stretch;
border: 0 solid black;
box-sizing: border-box;
display: webkit-box;
display: moz-box;
display: ms-flexbox;
display: webkit-flex;

WYSIWYG

What You See Is What You Get

“...a system in which content (text and graphics) onscreen during editing appears in a form closely corresponding to its appearance when printed or displayed as a finished product” —Wikipedia

F1 Help. Push■JustOff. 99% Free. 0% Thru. Edit "work.doc"

The Quick Brown Fox Jumps Over The Lazy Dog

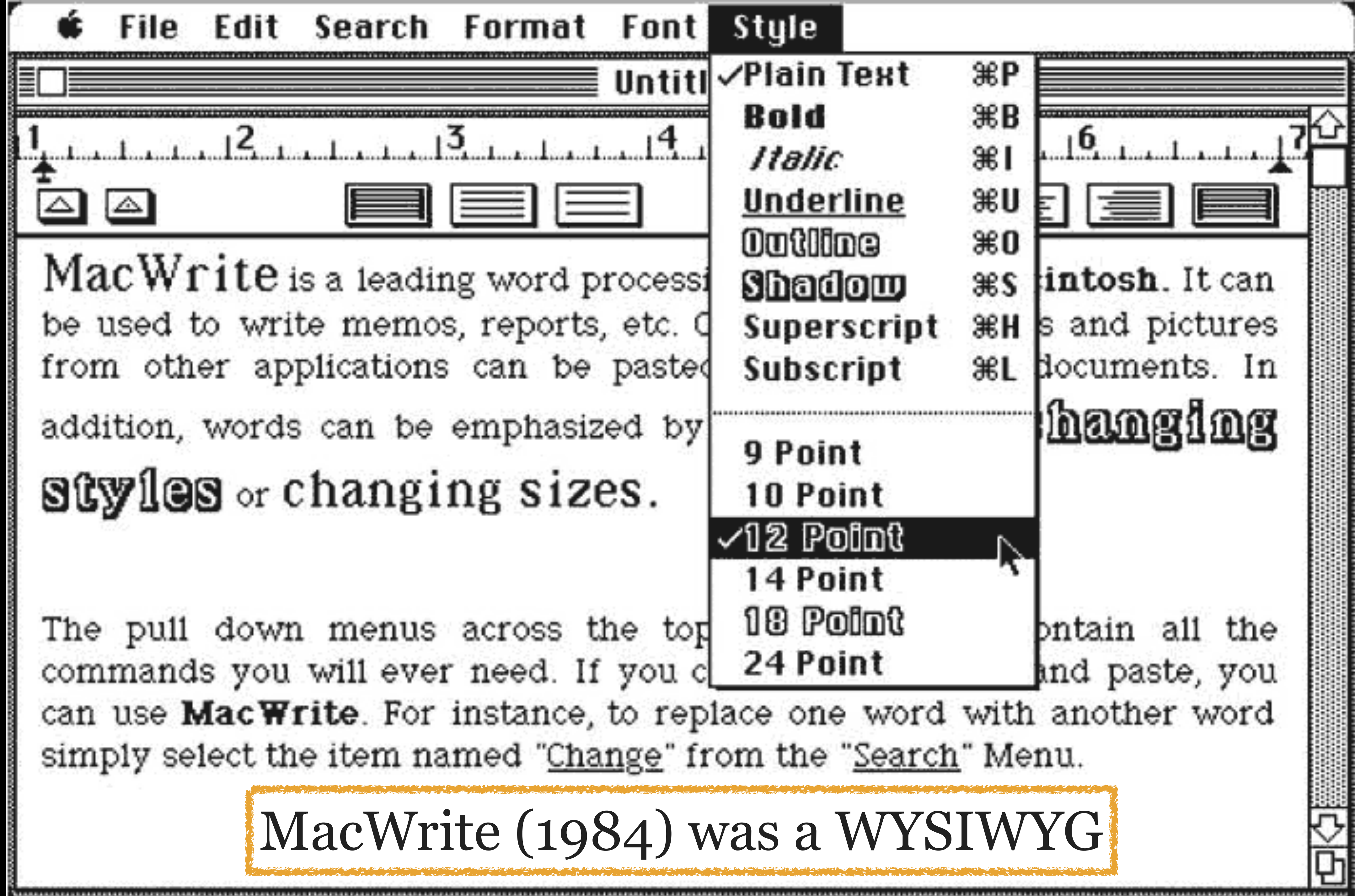
ⓈThis is some bold textⓈ

ⓈThis is some underlined textⓈ

PC-Write (1985) was not a
WYSIWYG

Ctrl+B or Alt+B toggles Bold

.R:letter sets font to setting
coded by Alt+letter
(e.g., .R:B for bold)

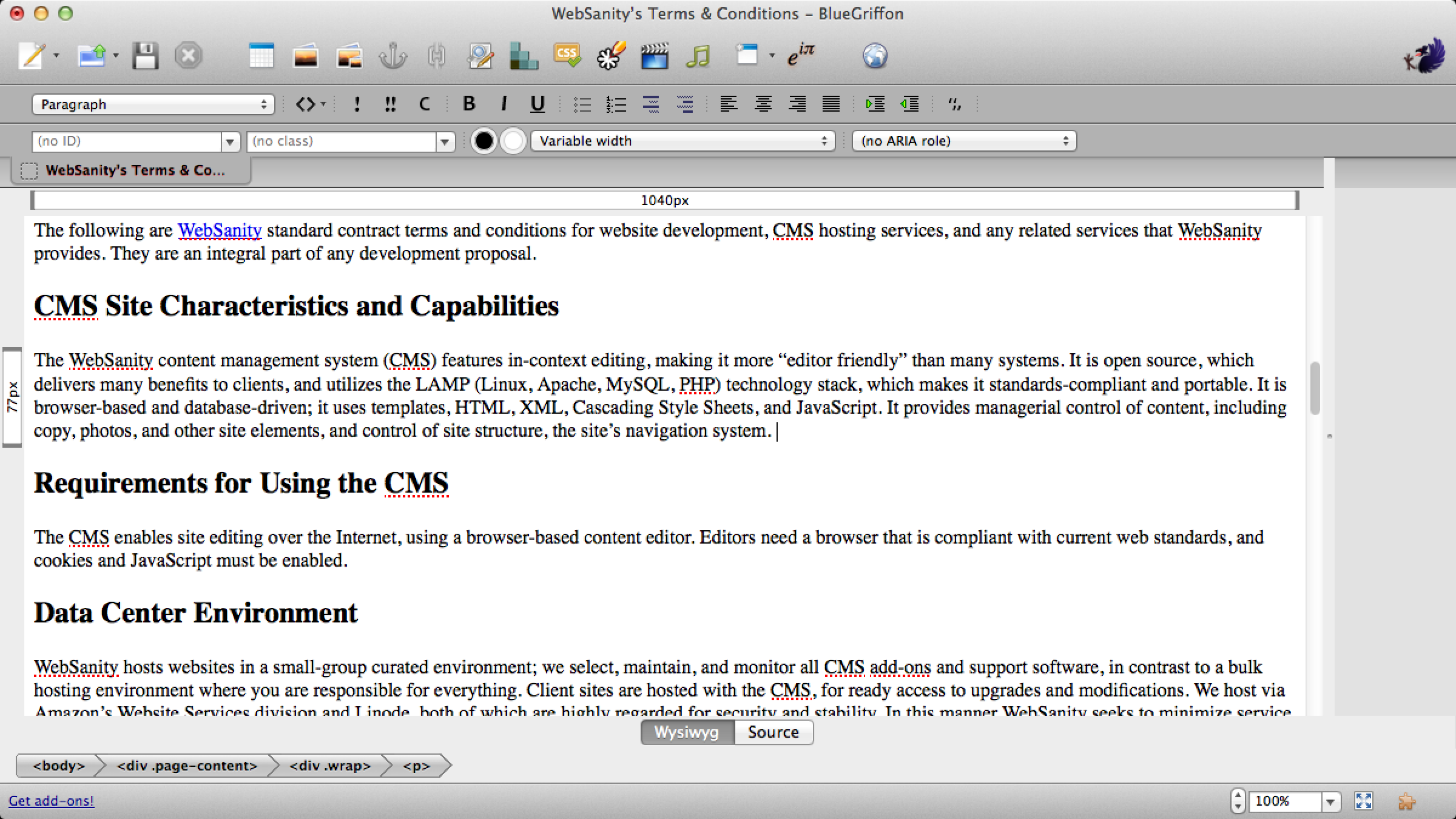


MacWrite (1984) was a WYSIWYG

WYSIWYG webpage editors use a GUI (*Graphical User Interface*) to automatically generate HTML (often incorrect) that is hidden from user

Main WYSIWYG editors

- » Adobe Dreamweaver
- » Microsoft ~~FrontPage~~ Expression
- » ~~Nvu~~ Kompozer BlueGriffon





Paragraph

(no ID)

(no class)

Variable width

(no ARIA role)

WebSanity's Terms & Co...

```
33 <div class="page-content">
34   <div class="wrap">
35     <p> The following are <a href="http://www.websanity.com">WebSanity</a>
36     standard contract terms and conditions for website development, CMS
37     hosting services, and any related services that WebSanity provides.
38     They are an integral part of any development proposal. </p>
39     <h2 id="cms-site-characteristics-and-capabilities">CMS Site
40     Characteristics and Capabilities</h2>
41     <p> The WebSanity content management system (CMS) features in-context
42     editing, making it more "editor friendly" than many systems. It is
43     open source, which delivers many benefits to clients, and utilizes the
44     LAMP (Linux, Apache, MySQL, PHP) technology stack, which makes it
45     standards-compliant and portable. It is browser-based and
46     database-driven; it uses templates, HTML, XML, Cascading Style Sheets,
47     and JavaScript. It provides managerial control of content, including
48     copy, photos, and other site elements, and control of site structure,
49     the site's navigation system. </p>
50     <h2 id="requirements-for-using-the-cms">Requirements for Using the CMS</h2>
51     <p> The CMS enables site editing over the Internet, using a
52     browser-based content editor. Editors need a browser that is compliant
53     with current web standards, and cookies and JavaScript must be
54     enabled. </p>
55     <h2 id="data-center-environment">Data Center Environment</h2>
56     <p> WebSanity hosts websites in a small-group curated environment; we
57     select, maintain, and monitor all CMS add-ons and support software, in
58     contrast to a bulk hosting environment where you are responsible for
59     everything. Client sites are hosted with the CMS, for ready access to
60     upgrades and modifications. We host via Amazon's Website Services
61     division and Linode, both of which are highly regarded for security
62     and stability. In this manner WebSanity seeks to minimize service
63     interruptions and provide a secure, stable environment for client
```

Wysiwyg

Source



Creating & editing websites using both text editors & WYSIWYGs share similar problems

- » Scalability
- » Maintainability

Scalability

With both solutions, a website of 1000 pages is just that: 1000 HTML pages

Change the logo's location? Change the background color? Alter the footer's text?

You have to change 1000 pages

Maintainability

Specialized technical knowledge is required to edit & maintain the website 🧐

A template-based Content Management System solves
both scalability & maintainability

With a CMS, all content—templates, text, images, scripts—is stored & managed in a database

Need to make a change?

Do it once, to the item in the database, & it's fixed for the entire site

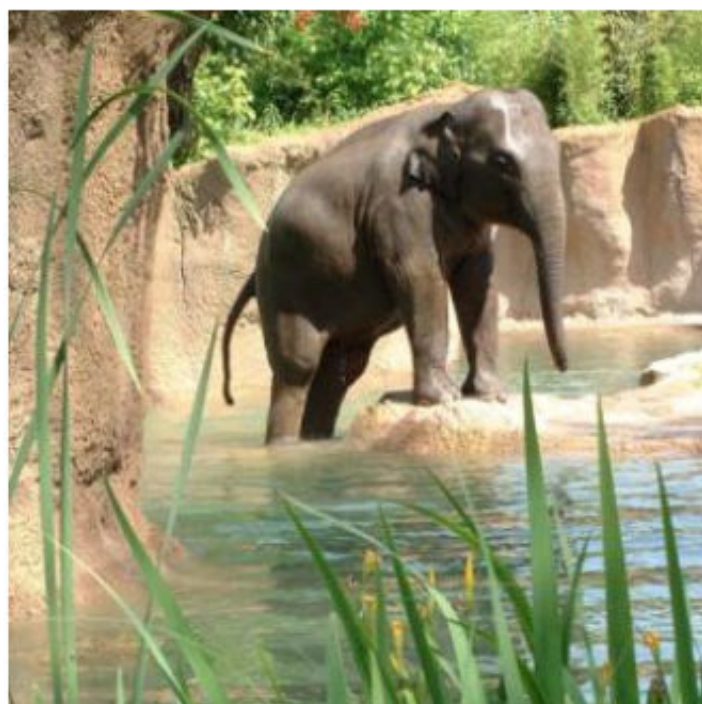
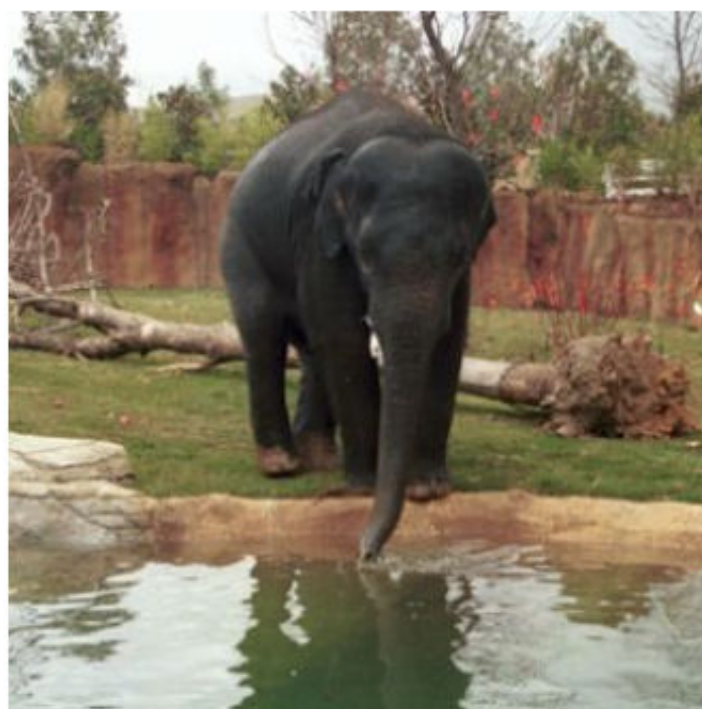
A good CMS also makes it easy for non-technical users to edit the website by incorporating a WYSIWYG editor into the website

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Asian Elephant

ANIMALS



Geographical Range India, Sri Lanka, Southeast Asia

Habitat Scrub forests, adjoining grasslands, jungles where remaining

Scientific Name *Elephas maximus*

Conservation Status Endangered

Elephants and Us

Asian elephants have long been important to humans. Whether it's their key role in the Hindu religion and culture, their longstanding use as beasts of burden, their slaughter for the ivory trade, or their current conflicts with the exploding human population -- elephants have always fascinated us.

Elephants have been domesticated in Asia for centuries, bred to move people and cargo. In the past, wealthy Indians and royalty owned elephants, riding on

World Elephant Day

Tuesday, August 12, 2014
Activities at River's Edge
10 a.m. to 3 p.m.

World Elephant Day is celebrated across the globe every year and is designed to bring attention to the plight of elephants in the wild.

Stop by the elephant habitats at River's Edge to meet the Zoo's three-generation family of Asian elephants, talk with keepers, see and touch elephant biofacts, learn about elephants through family activities and take home a souvenir.

[Edit](#)

Powered by concrete5.

[Dashboard](#)[Sign Out](#) 

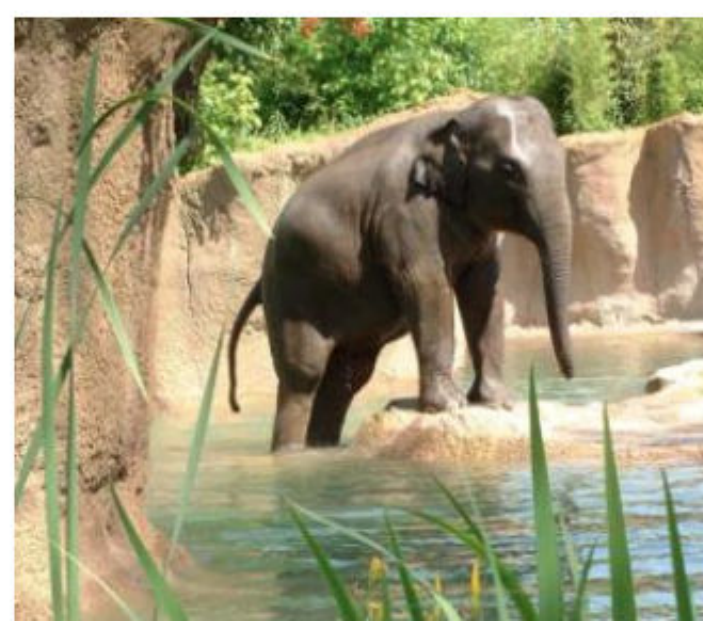
Saint Louis Zoo

Animals Always®

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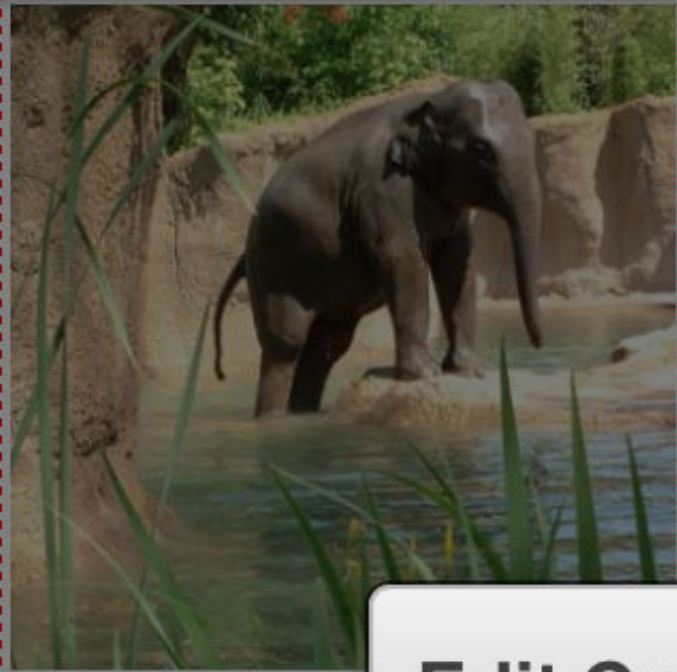
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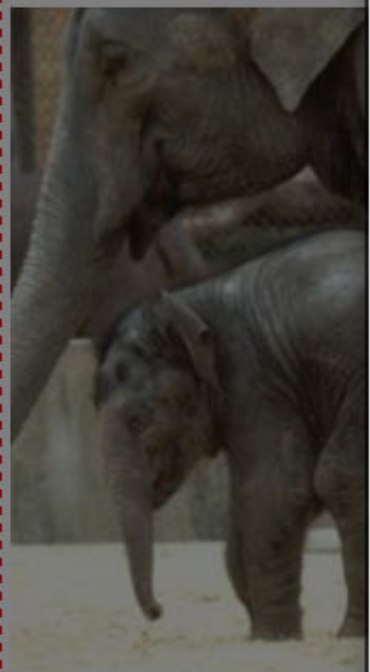
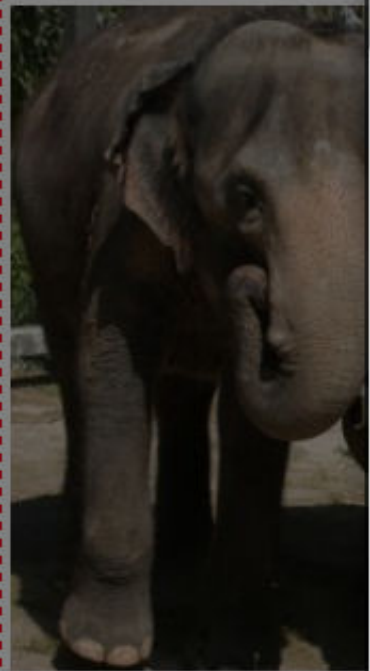
Elephants and Us

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Stop by the elephant habitats at River's Edge to meet the Zoo's three-generation family of Asian elephants, talk with keepers, see

much elephant biofacts, about elephants through activities and take home a



Edit Content

▼ Link to File ▼ Link to Page Use the **Image Block** to insert images!

B *I* x^2 x_2 Styles                           

Jans creates the templates using Visual Studio Code, a text editor

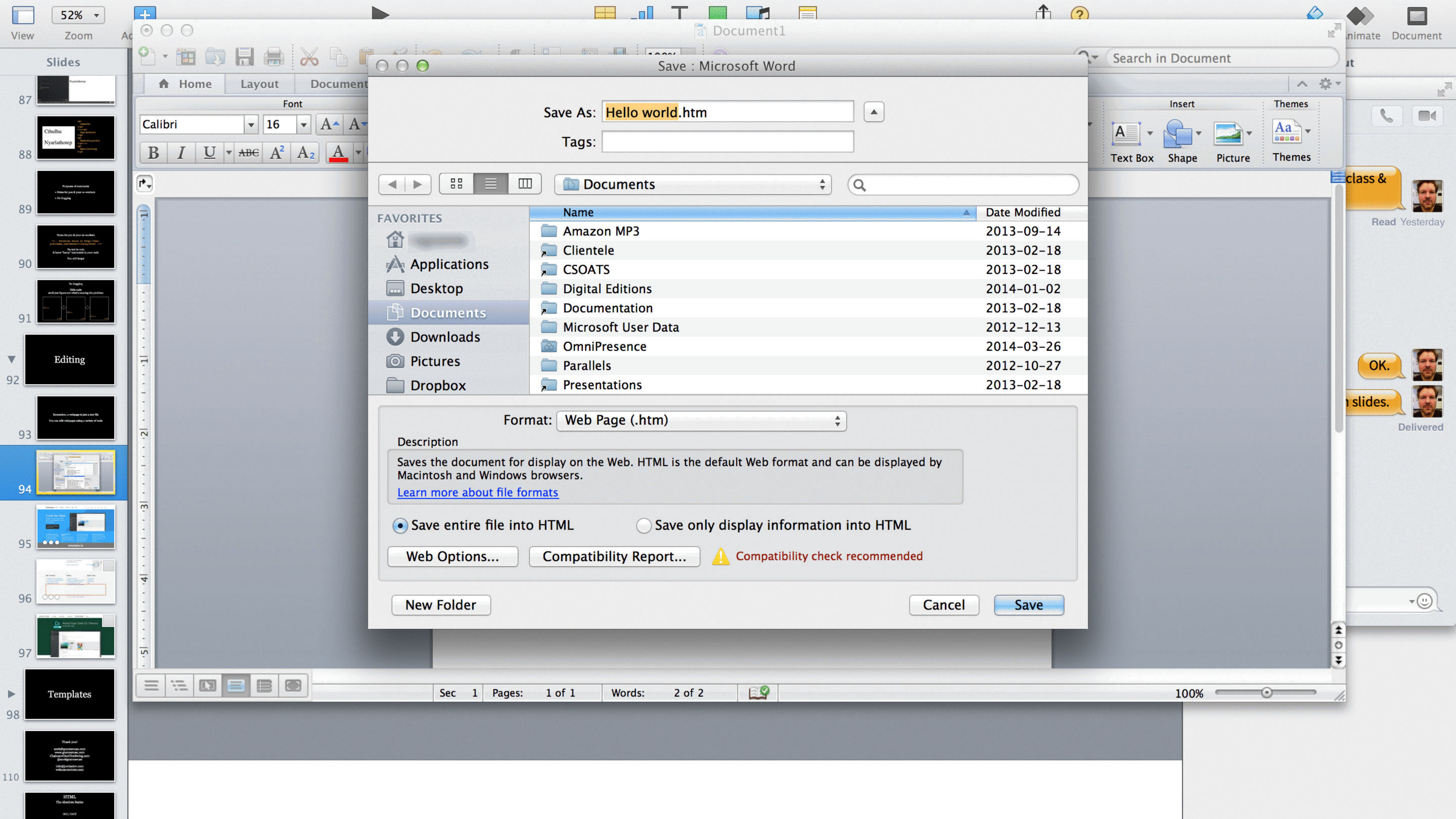
Clients edit content using a WYSIWYG

Everything is managed by a CMS & stored in a database

So what do professionals use to develop webpages?



Do not use Word



The screenshot shows a Mac OS X desktop environment. A Finder window titled "Word to HTML" is open, displaying a folder named "Hello world_files" containing three files: "filelist.xml" (165 bytes, XML), "themedata.xml" (3 KB, XML), and "Hello world.htm" (22 KB, HTML). The "Hello world.htm" file is selected. A file information popup is open for "Hello world.htm", showing its size (22 KB), modification date (Today, 9:48 AM), and various metadata including its kind (HTML document), size on disk (25 KB), and location (/Users/rsgranne/Desktop/Word to HTML). The popup also shows creation and modification dates (Today, 9:48 AM) and options for "Stationery pad" and "Locked". The background shows a sidebar with "FAVORITES" and "DEVICES" sections, and a list of files in the background.

Working Files



Hello world.htm

Word to HTML ▾

▾ Hello world_files

filelist.xml

themedata.xml

Hello world.htm

```
1 <html xmlns:o="urn:schemas-microsoft-com:office:office"
2   xmlns:w="urn:schemas-microsoft-com:office:word"
3   xmlns:m="http://schemas.microsoft.com/office/2004/12/omml"
4   xmlns="http://www.w3.org/TR/REC-html40">
5
6 <head>
7   <meta name=Title content="">
8   <meta name=Keywords content="">
9   <meta http-equiv=Content-Type content="text/html; charset=macintosh">
10  <meta name=ProgId content=Word.Document>
11  <meta name=Generator content="Microsoft Word 14">
12  <meta name=Originator content="Microsoft Word 14">
13  <link rel=File-List href="Hello%20world_files/filelist.xml">
14  <!--[if gte mso 9]><xml>
15    <o:DocumentProperties>
16      <o:Author>Scott Granneman</o:Author>
17      <o:LastAuthor>Scott Granneman</o:LastAuthor>
18      <o:Revision>1</o:Revision>
19      <o:TotalTime>3</o:TotalTime>
20      <o:Created>2014-04-17T14:34:00Z</o:Created>
21      <o:LastSaved>2014-04-17T14:48:00Z</o:LastSaved>
22      <o:Pages>1</o:Pages>
23      <o:Words>1</o:Words>
24      <o:Characters>12</o:Characters>
25      <o:Company>Washington University in St. Louis</o:Company>
26      <o:Lines>1</o:Lines>
27      <o:Paragraphs>1</o:Paragraphs>
28      <o:CharactersWithSpaces>12</o:CharactersWithSpaces>
```



Working Files

- Hello world.htm

Word to HTML ▾

▼ Hello world_files

- filelist.xml
- themedata.xml
- Hello world.htm

```

435 mso-style-parent:"";
436 mso-padding-alt:0in 5.4pt 0in 5.4pt;
437 mso-para-margin:0in;
438 mso-para-margin-bottom:.0001pt;
439 mso-pagination:widow-orphan;
440 font-size:12.0pt;
441 font-family:Cambria;
442 mso-ascii-font-family:Cambria;
443 mso-ascii-theme-font:minor-latin;
444 mso-hansi-font-family:Cambria;
445 mso-hansi-theme-font:minor-latin;}
446 </style>
447 <![endif]-->
448 </head>
449
450 <body bgcolor=white lang=EN-US style='tab-interval:.5in'>
451
452 <div class=WordSection1>
453
454 <p class=MsoNormal><span style='font-size:16.0pt;font-family:Calibri'>Hello
455 world!<o:p></o:p></span></p>
456
457 </div>
458
459 </body>
460
461 </html>
462

```




File Edit Format View Help

Sample document|

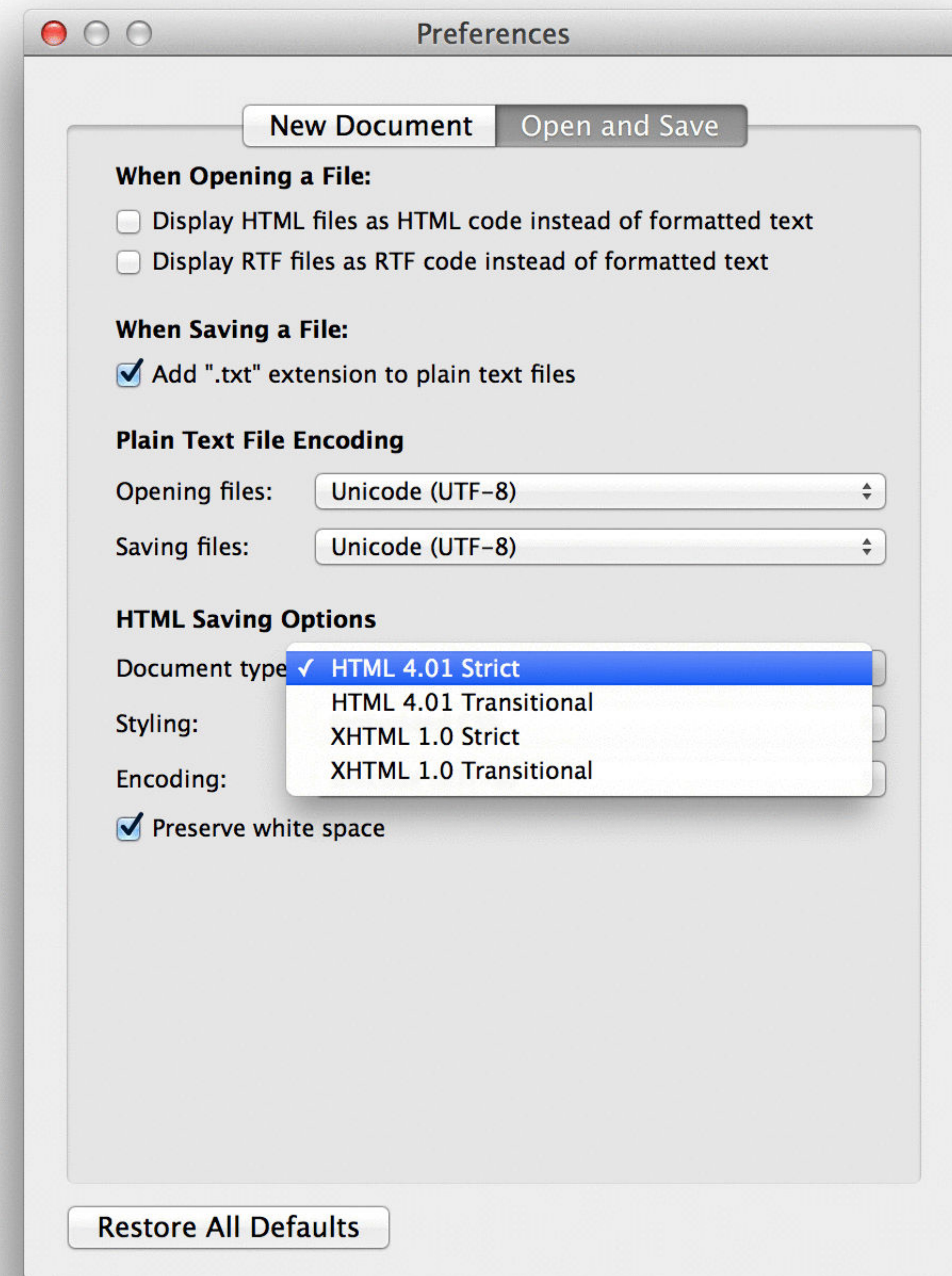
Do not use Notepad on Windows

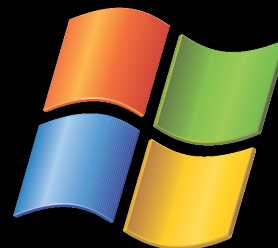
There are *many* better options
(& it just sucks in general)

Do not use TextEdit on macOS

It's actually an RTF editor

Still doesn't support HTML5!





| | | |
|--------------------|--------------------|--------------------|
| BBEdit | Notepad++ | Kate |
| Sublime Text | Sublime Text | Sublime Text |
| TextMate | UltraEdit | gedit |
| Coda | Visual Studio | Bluefish |
| Eclipse | Eclipse | Eclipse |
| MacVim | Vim | vim |
| JetBrains PhpStorm | JetBrains PhpStorm | JetBrains PhpStorm |
| Visual Studio Code | Visual Studio Code | Visual Studio Code |
| ... | ... | ... |

Version 1.26 is now available! Read about the new features and fixes from July.

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Free. Open source. Runs everywhere.

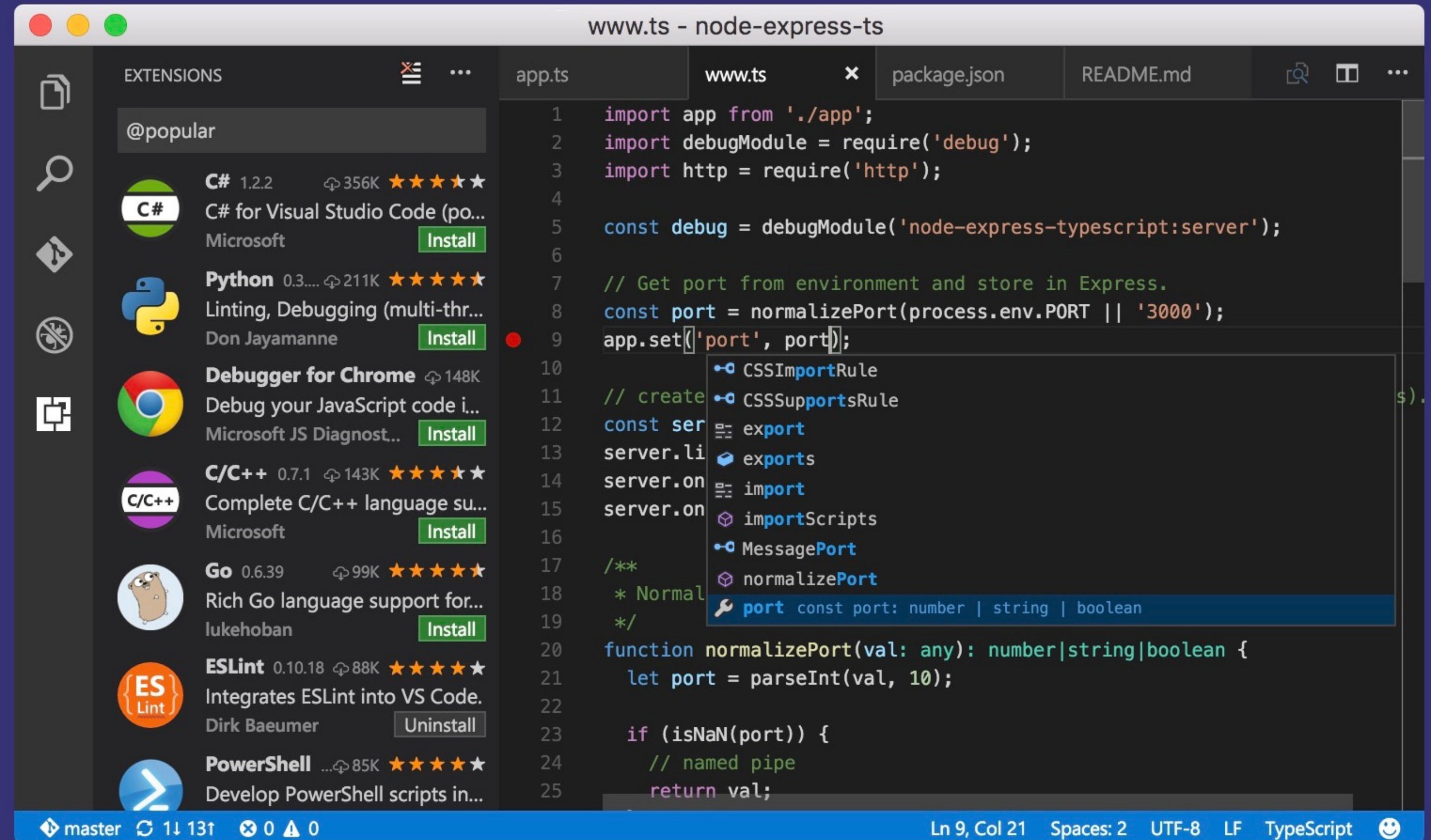
Download for Mac

Stable Build

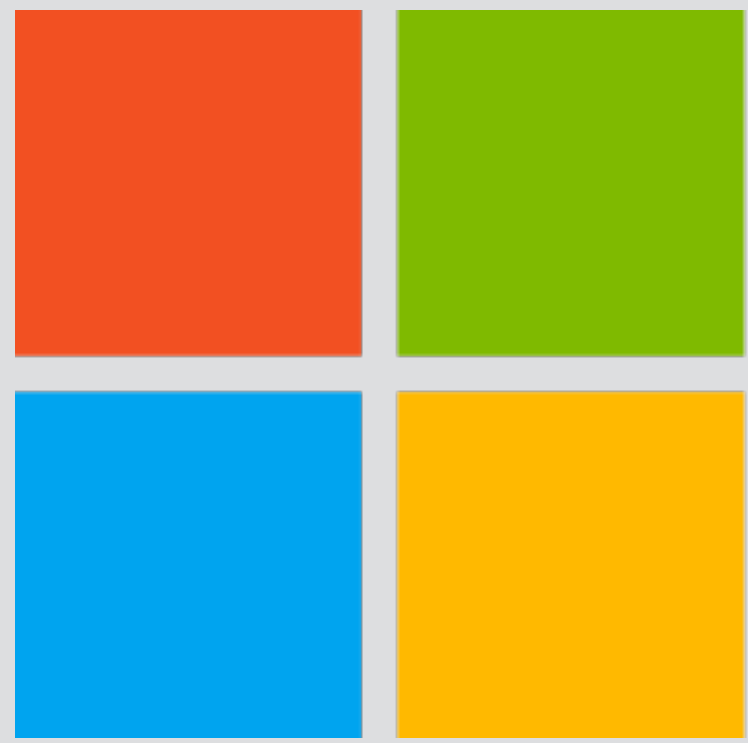


Other platforms and Insiders Edition

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code.visualstudio.com



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[joaomoreno](#) fix line endings

12ab70d on Mar 5



3 contributors

24 lines (18 sloc) | 1.08 KB

Raw

Blame

History



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3

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- ✗ Warranty

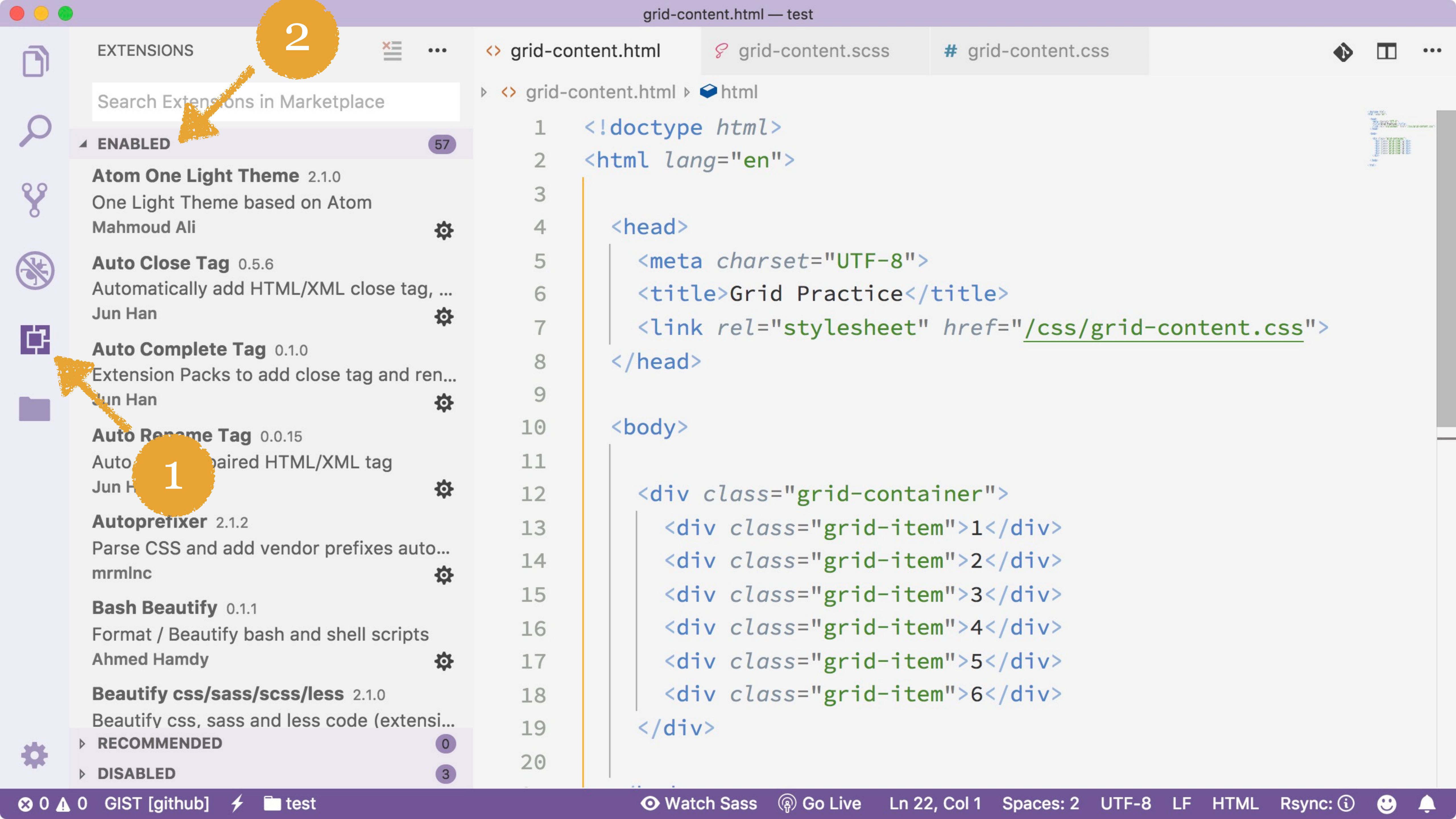
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Common features found in VS Code

- » Cross-platform
- » Project-based
- » Syntax highlighting
- » Robust find & replace, with regex
- » Linting & debugging
- » Autocompletion
- » LESS & SCSS (CSS preprocessor) support
- » Multiple cursors & selections
- » Inline help

If VS Code doesn't do something you want it to do, you can probably find it in an *extension*—an add-on that extends the capability of VS Code



EXTENSIONS: MARKETPLACE

CSS

Pranay Prakash

CSS Formatter 1.0.1

Formatter for CSS

Martin Aeschlimann

Install

CSS Modules 0.2.3

Visual Studio Code extension for CSS Mo...

clinyong

Install

JS-CSS-HTML Formatter 0.2.3

Format ,prettify and beautify JS, CSS, H...

lonely

Install

VS Code CSS Comments 1.0.5

Visual Studio CSS Comment Snippets

Ash Hitchcock

Install

CSS Compressor 0.0.2

Minify or Compact your CSS files

bestvow

Install

VS Code Idiomatic CSS Comments 0.1.2

CSS and Sass style comments for Visual ...

Ryan Belisle

Install

JS & CSS Minifier 2.0.3

Easily Minify ES5/ES6/ES7/ES8 and CSS

olback

Install

grid-content.html

Extension: JS & CSS

grid-content.scss

grid-content.css

JS & CSS Minifier

olback.es6-css-minify

olback | 15,590 | 5 stars | Repository | License

Easily Minify ES5/ES6/ES7/ES8 and CSS

Install

Details

Contributions

Changelog

JS & CSS Minifier

installs 15.59K

rating 5 stars

Visual Studio Marketplace v2.0.3

Github (This branch) v2.0.3

build passing

A simple Javascript & CSS minifier.

A **Minify** button should appear in the status bar when opening a **.js** or a **.css** file. You can also run **Minify document** by clicking **F1**.

Loading custom configs

By default the extension will look for **.uglifyrc** and **.cleancssrc**.

You can change the paths in settings. After changing settings in any of the config files, make sure to

0 0

GIST [github]

test

Watch Sass

Go Live

Rsync: i

Visual Studio Code has a lot of great aspects

Updated every month

Good documentation

Supports almost any language, but aimed at Web developers

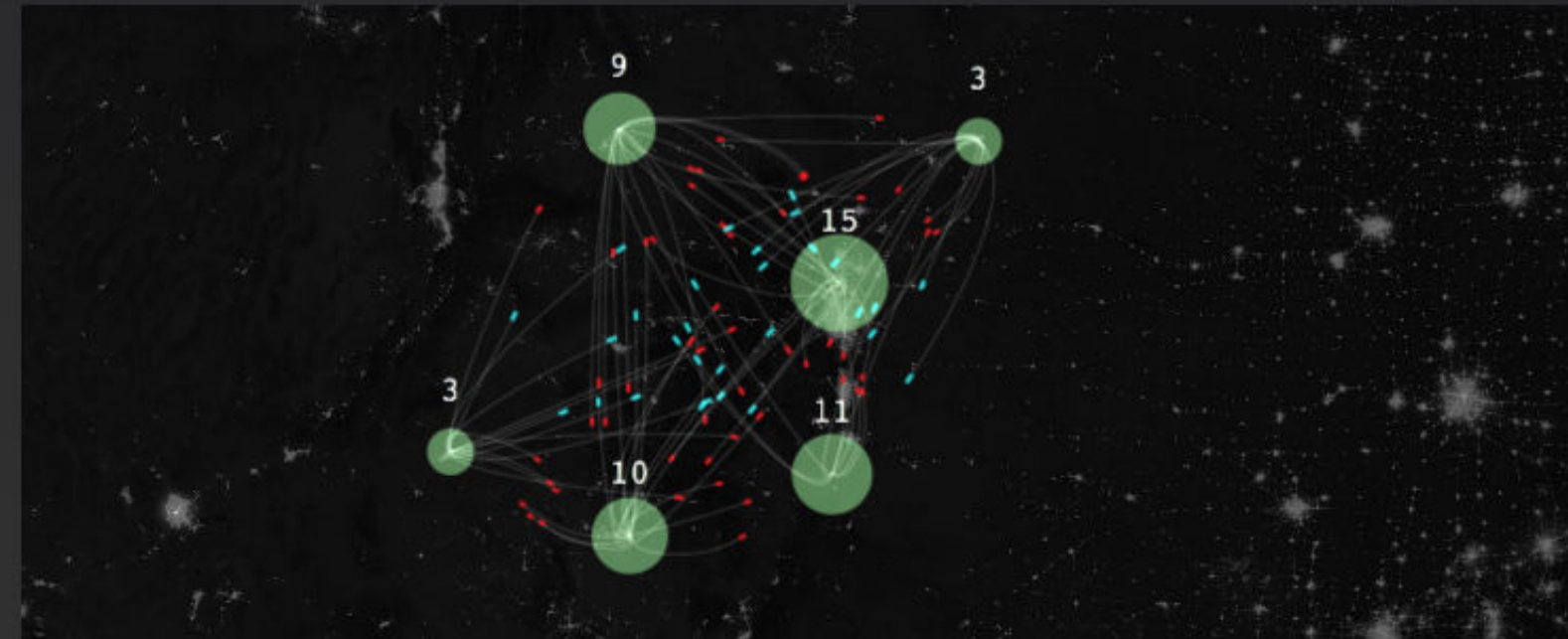
Very performant

PICKED PENS

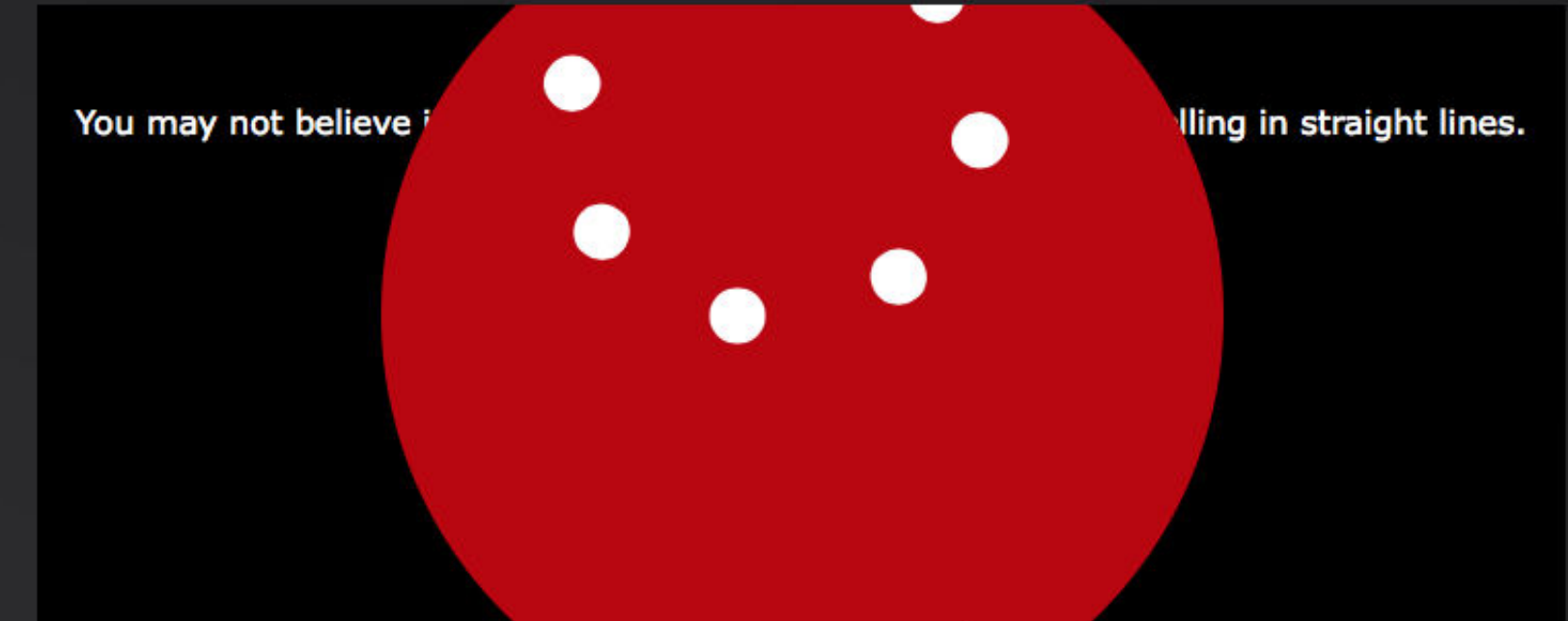
Picks Popular Recent



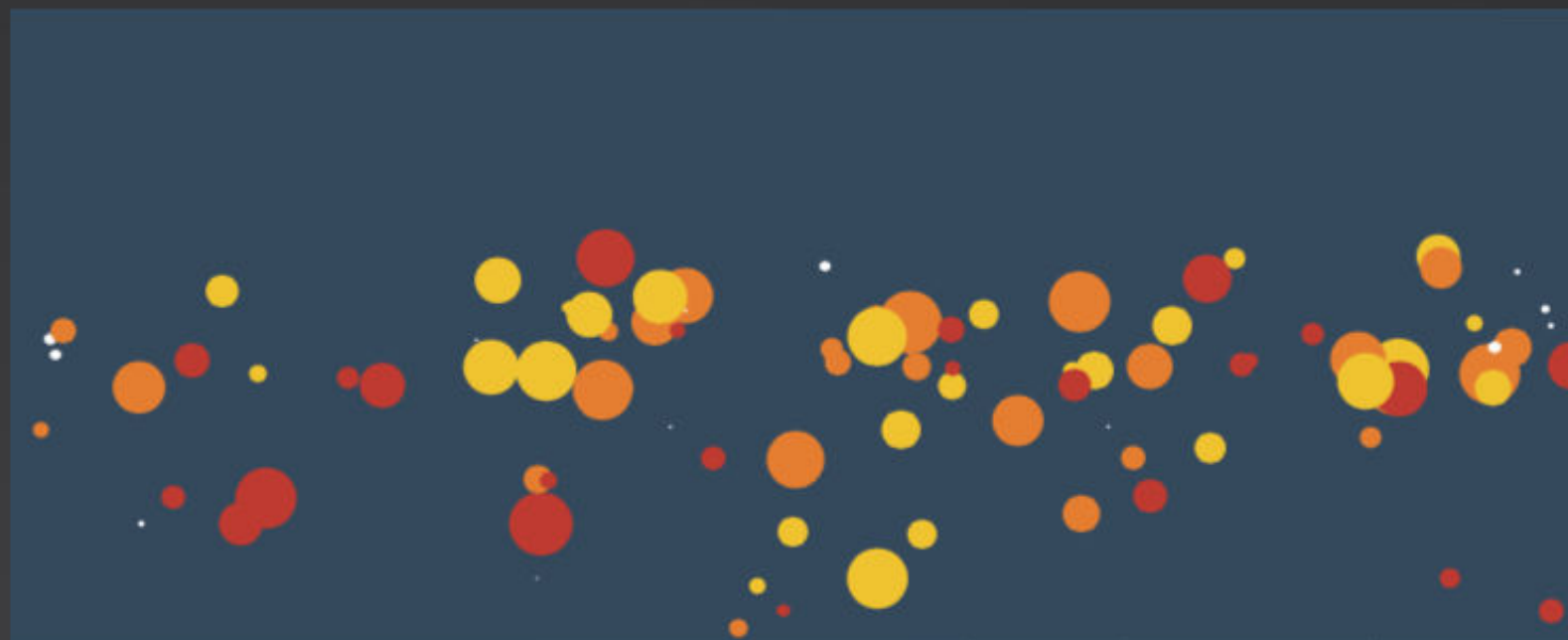
Kai Waddington 0 109 3



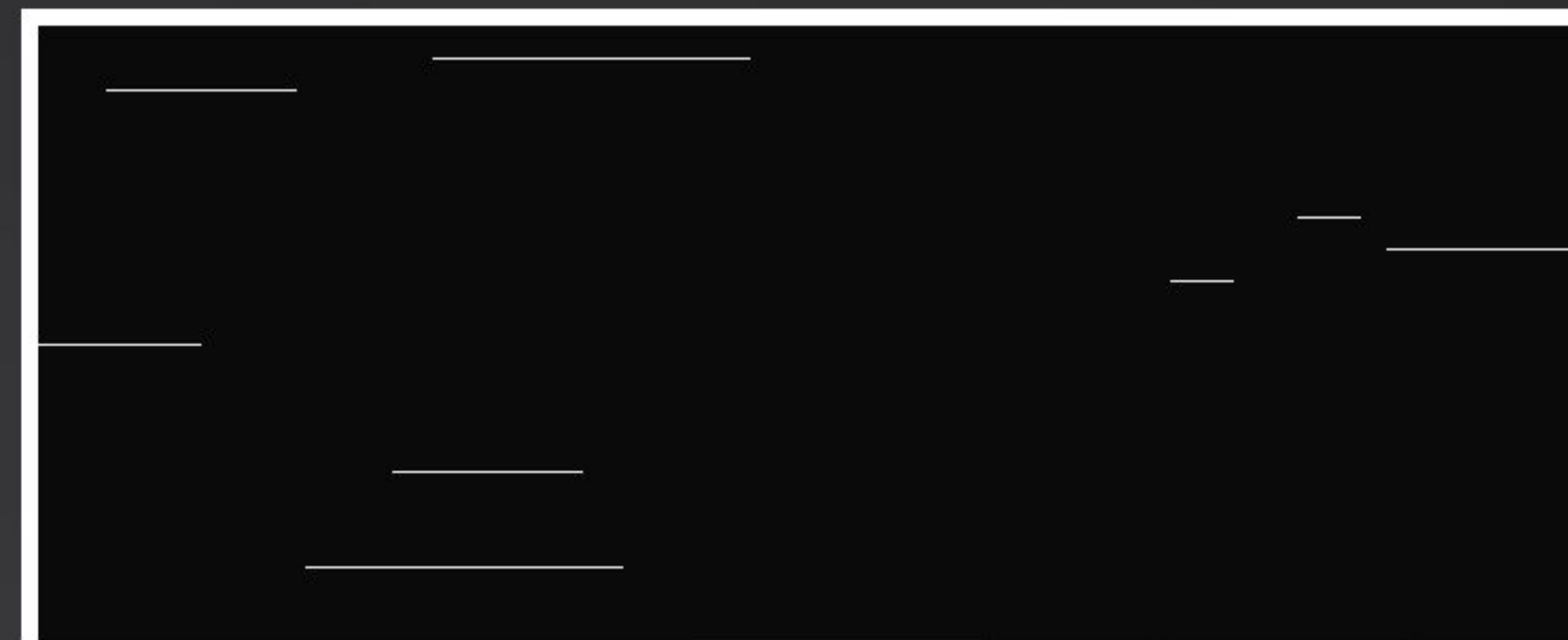
Jack Rugile PRO 0 408 13



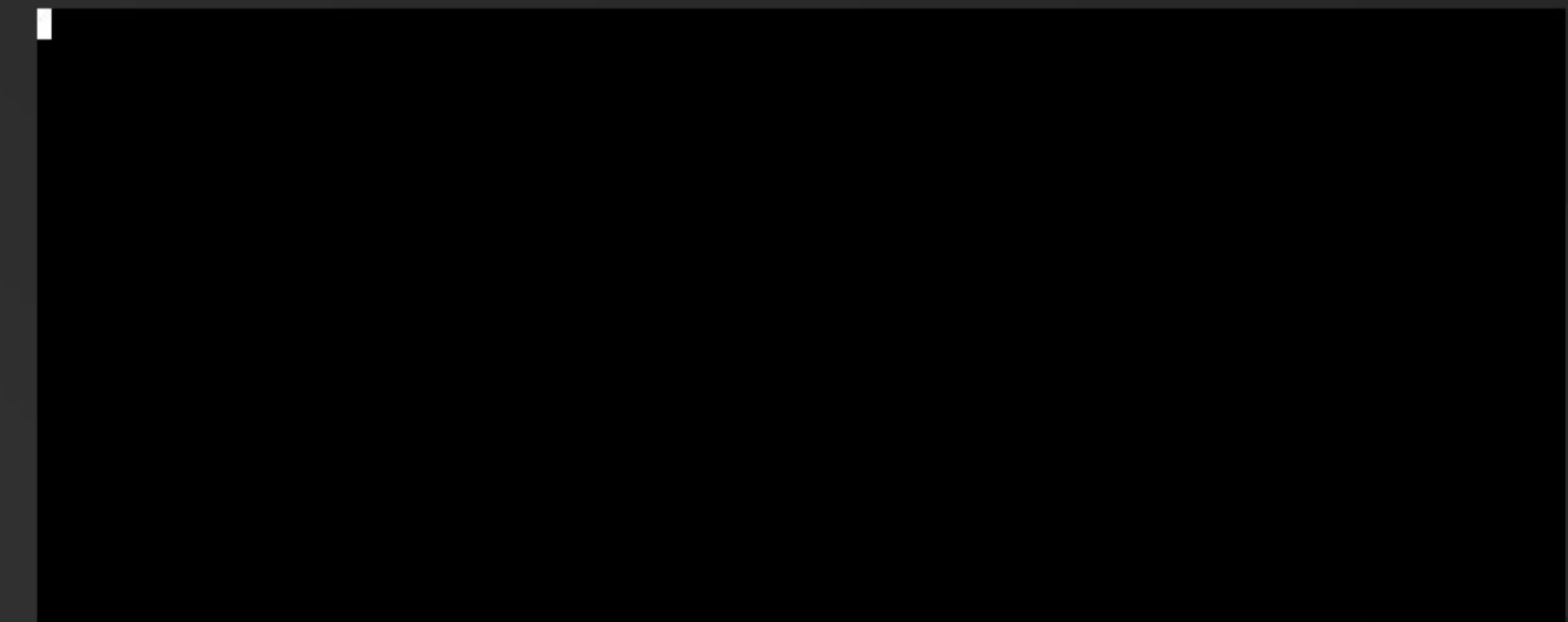
Adam Doherty PRO 4 757 19



Alex Safayan 1 994 22



Muhan 0 492 4



Nate Wiley PRO 0 815 25





WEBSANITY

PRO

9

Followers

0

Following

codepen.io/websanity/

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+ New Collection

[CSS Sandboxes](#) 20 PENS[Tools & Cheat Sheets](#) 7 PENS[Presentation: HTML Overview](#) 1 PEN[Assignments](#) 4 PENS

D&D BASIC RULES

The Dungeons & Dragons roleplaying game is about storytelling in worlds of swords and sorcery. It shares elements with childhood games of make-believe. Like those games, D&D is driven by imagination. It's about picturing the towering castle beneath the stormy night sky and imagining how a fantasy adventurer might react to the challenges that scene presents.

Dungeon Master (DM): After passing through the craggy peaks, the road takes a sudden turn to the east and Castle Ravenloft towers before you. Crumbling towers of stone keep a silent watch

0



19



1



H. P. Lovecraft was an American author who achieved posthumous fame through his influential works of horror fiction.

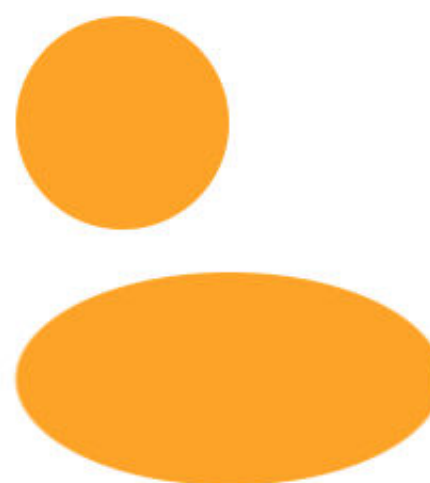
Virtually unknown and only published...

The most merciful thing in the world, I

0



0



0



2



CAMPING COSTS

| | |
|-----------|---------------|
| Item: | Tent |
| Quantity: | 1 |
| Price: | \$279.00 |
| Total: | \$279.00 |
| Item: | Sleeping Bags |
| Quantity: | 2 |
| Price: | \$159.95 |

[Cthulhu](#) invites you to join the [MISKATONIC EXPEDITION](#) to the Antarctic! Flights available on Gol Transportes Aéreos & [Cthulhu Airlines](#).

[Cthulhu](#) invites you to join the [Miskatonic Expedition](#) to the Antarctic! Flights available on *Gol Transportes Aéreos* & [Cthulhu Airlines](#).

CodePen is like YouTube for developers

Developers publish their work so others can view & learn

All open source

HTML

whether they danced often upon
Lerion; but the farmer and his wife
would only make the Elder Sign and
tell him the way to Nir and Ulthar.

</p>

<p>

At noon he walked through the one
broad high street of Nir, which he
had once visited and which marked his
farthest former travels in this

CSS

img {

float: left;

}

/* Beautification (not part of lesson) */

img {

margin: .2em 1em .5em .5em;

}

JS

Carter detoured at the proper place, and heard behind him the frightened fluttering of some of the more timid Zoogs. He had known they would follow him, so he was not disturbed; for one grows accustomed to the anomalies of these prying creatures. It was twilight when he came to the edge of the wood, and the strengthening glow told him it was the twilight of morning. Over fertile plains rolling down to the Skai he saw the smoke of cottage chimneys, and on every hand were the hedges and ploughed fields and thatched roofs of a peaceful land. Once he stopped at a farmhouse well for a cup of water, and all the dogs barked affrightedly at the inconspicuous Zoogs that crept through the grass behind. At another house, where people were stirring, he asked questions about the gods, and whether they danced often upon Lerion; but the farmer and his wife would only make the Elder Sign and tell him the way to Nir and Ulthar.



At noon he walked through the one broad high street of Nir, which he had once visited and which marked his farthest former travels in this direction; and soon afterward he came to the great stone bridge across the Skai, into whose central piece the masons had sealed a living human sacrifice when they built it thirteen-hundred years before. Once on the other side, the frequent presence of cats (who all arched their backs at the trailing Zoogs) revealed the near neighborhood of Ulthar; for in Ulthar, according to an ancient and significant law, no man may kill a cat. Very pleasant were the suburbs of Ulthar, with their little green cottages and neatly fenced farms; and still pleasanter was the quaint town itself, with its old peaked roofs and

overhanging upper stories and numberless chimney-pots and narrow hill streets where one can see old cobbles whenever the graceful cats afford space enough. Carter, the cats being somewhat dispersed by the half-seen Zoogs, picked his way directly to the modest Temple of the Elder Ones where the priests and old records were said to be; and once within that venerable circular tower of ivied stone—which crowns Ulthar's highest hill—he sought out the patriarch Atal, who had been up the forbidden peak Hatheg-Kia in the stony desert and had come down again alive.

Atal, seated on an ivory dais in a festooned shrine at the top of the temple, was fully three centuries old; but still very keen of mind and memory. From him Carter learned many things about the gods, but mainly that they are indeed only Earth's gods, ruling feebly our own dreamland and having no power or habitation elsewhere. They might, Atal said, heed a man's prayer if in good humour; but one must not think of climbing to their onyx stronghold atop Kadath in the cold waste. It was lucky that no man knew where Kadath towers, for the fruits of ascending it would be very grave. Atal's companion Banni the Wise had been drawn screaming into the sky for climbing merely the known peak of Hatheg-Kia. With unknown Kadath, if ever found, matters would be much worse; for although Earth's gods may sometimes be surpassed by a wise mortal, they are protected by the Other Gods from Outside, whom it is better not to discuss. At least twice in the world's history the Other Gods set their seal upon Earth's primal granite; once

HTML

```
1 <canvas id=c></canvas>
2 <div id=stats><span
  id=score>0</span><span
  id=outOf>0</span></div>
3 <div id=rules>Click anywhere to make an
  explosion. If any of the squares will
  bump into your explosion they'll explode
```

CSS

```
1 canvas{
2   position:absolute;
3   top:0px; left:0px;
4 }
5 #stats{
6   color:white;
7   background-color:rgba(255, 255, 255,
```

JS

```
1 var w=window.innerWidth,
2     h=window.innerHeight,
3     amount=((w*h)/10000)|0;
4 outOf.textContent=amount+1;
5 c.width=w;
6 c.height=h;
7 var ctx=c.getContext('2d');
```

27/47



Thank you!

scott@granneman.com

www.granneman.com

ChainsawOnATireSwing.com

@scottgranneman

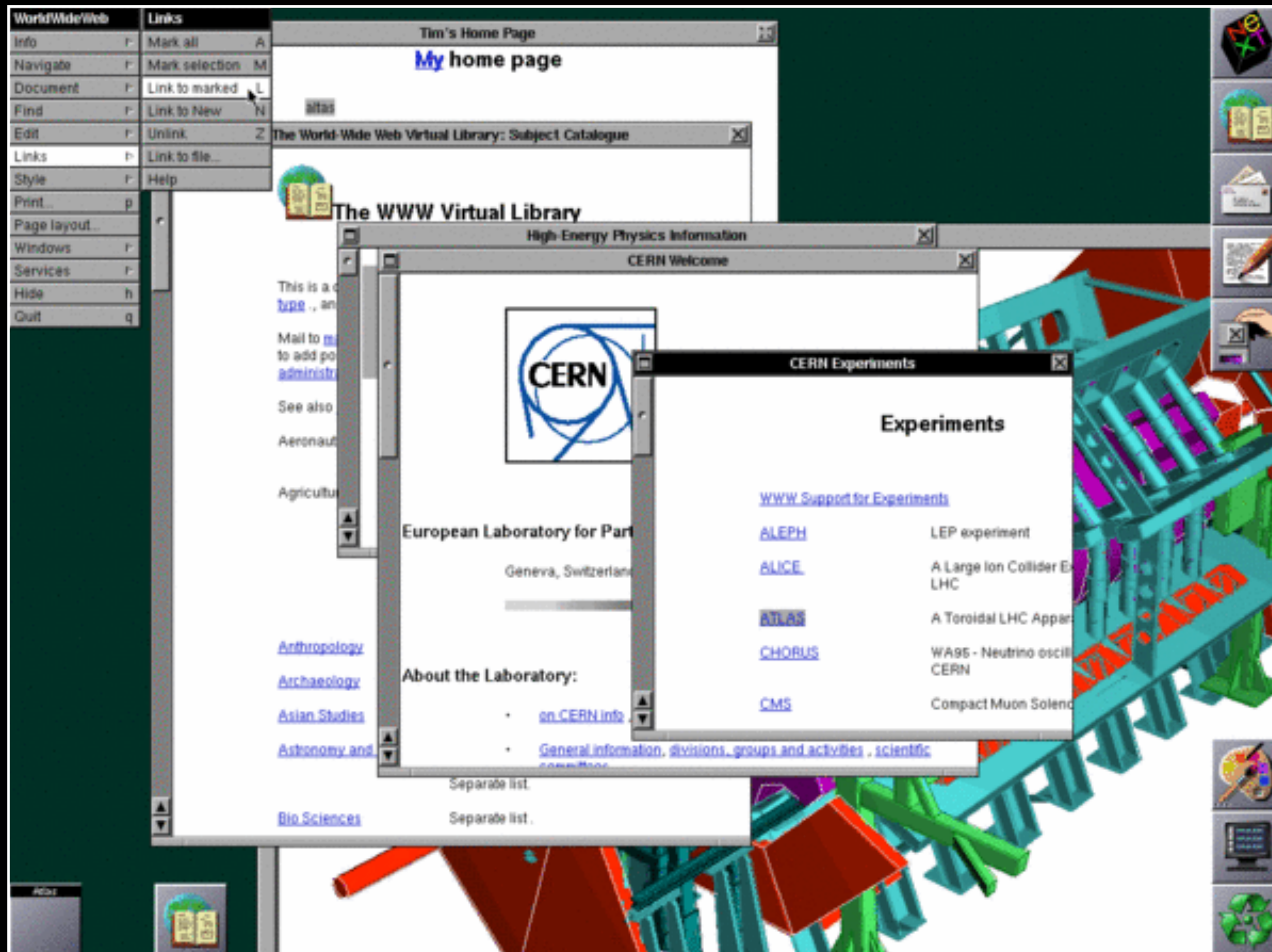
jans@websanity.com

websanity.com

Bonus

History

AOL Explorer • Arena • Arora • Avant • AWeb •
BlackBerry Browser • Camino • Canary • Cello • Chrome
• Chromium • Cruz • Dolphin • ELinks • Epiphany •
Firebird • Firefox • Flock • Galeon • HotJava • iCab •
Internet Explorer • K-Meleon • Konqueror • Links •
Lunascape • Lynx • Maxthon • Mercury • Minimo • Miro
• Mosaic • Navigator • NetPositive • Netscape •
OmniWeb • Opera • Phoenix • PocketWeb • ReKonq •
RockMelt • Safari • SeaMonkey • Shiira • Sleipner •
Stainless • Sunrise • Teashark • Tor Browser • UdiWWW
• Viola • WebExplorer • WebKit • WorldWideWeb • w3m



1990: WorldWideWeb, the 1st GUI Web browser

Main Page

From Wikipedia, the free encyclopedia.

Welcome[1] to Wikipedia[2], a free-content[3] encyclopedia in many languages[4]. In this English edition, started in January 2001, we are working on 396548 articles[5]. Visit our Community Portal[6] to find out how you can edit any article[7], or experiment in the sandbox[8].[9] (http://en.wikipedia.org/wiki.php?title=Main_Page&action=purge)

Other languages[10]

Sister projects[11]

No tables[12]

FAQ[13]

Browse[14]: Culture[15] | Geography[16] | History[17] | Life[18]

| Mathematics[19] | Science[20] | Society[21] | Technology[22]

1-260, Top, Up, Bottom, Down or <RETURN> for more,

Quit, or Help: █

1991: CERN line-mode browser, the 1st text-only Web browser


```
Terminal — lynx — 100x40
#<<< Scott Granneman's Classes (p1 of 11)
#Scott Granneman's Classes RSS Feed Scott Granneman's Classes Atom Feed Scott Granneman's
Classes » Home Comments Feed Scott Granneman's Classes

* Home
* About
* Syllabi
  + Technology in Our Changing Society Syllabus
  + Web Site Management Syllabus
  + Technology and the Law Syllabus
  + Using Everyday Technology Syllabus
  + From Blogs to Wikis Syllabus
  + Technology for Managers Syllabus
  + Practical Security Syllabus
  + Search Engines Syllabus
  + Historical Syllabi

Scott Granneman's Classes

Scott Granneman's Classes

Syllabi, Readings, and Research
CommentsPosts

Tags & Categories

* Abandoned Purchases
* Absurdity
* Addiction
* Advertising
* Advice
* Aggregation
* Amazon
(NORMAL LINK) Use right-arrow or <return> to activate.
Arrow keys: Up and Down to move. Right to follow a link; Left to go back.
H)elp O)ptions P)rint G)o M)ain screen Q)uit /=search [delete]=history list
```

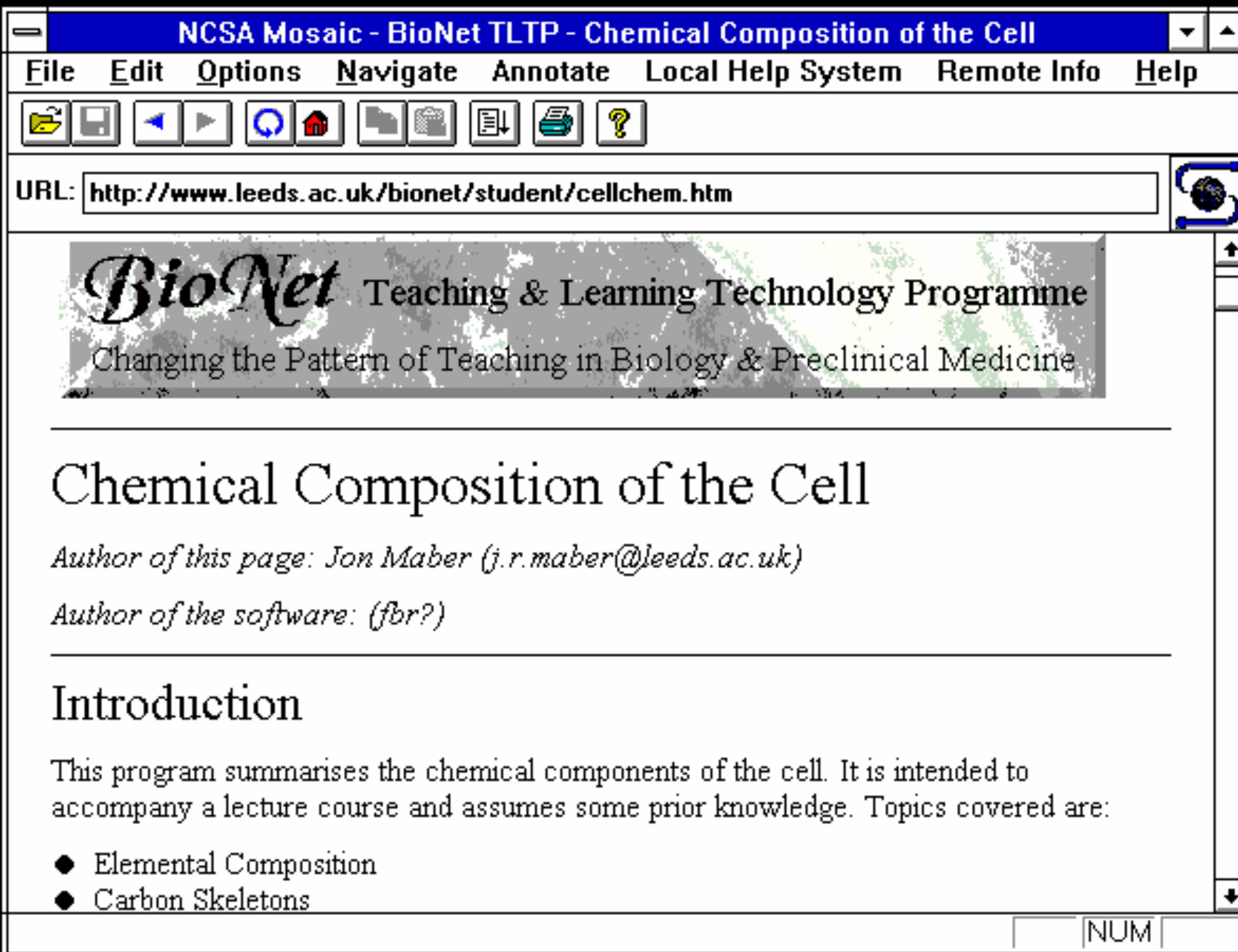
1992: Lynx, the oldest browser still in use & developed



Late 1992: Marc Andreessen, a computer science undergrad at University of Illinois at Urbana–Champaign, develops the Mosaic browser along with Eric Bina while working at the NCSA (*National Center for Super-computing Applications*)



1993: Tim Berners-Lee convinces CERN to release the World Wide Web (idea & code) into the public domain



1993: NCSA
Mosaic makes
the Web popular
& introduces
lots of still-
common
features

1994: Jim Clark & Marc Andreessen...

- » found Mosaic Communications Corporation
- » release 1st beta of Mosaic Netscape (\$99 for businesses, free for individuals)
- » rename company to Netscape Communications



... & release
Netscape
Navigator 1.0
for Windows,
Mac OS, Linux,
OS/2, Solaris,
BSD, IRIX, AIX,
& HP-UX

August 1995: Netscape's IPO begins dot-com boom of the late 1990s

90% market share for Netscape Navigator

1994: Windows 95 still in development, with no Web browser planned

Early 1995: Microsoft licenses Spyglass (which was acting as a licensor for NCSA Mosaic) & re-names it *Internet Explorer*

Microsoft was to pay Spyglass a quarterly fee + a % of revenues Microsoft received from selling IE





For Windows 95-BASED PCs WITH 486 OR PENTIUM PROCESSORS

Microsoft

Have a Great-Looking, Self-Tuning PC!

Surf the
Internet for
20 hours at
no charge.

(See details on back.)*

Microsoft
Plus!

Companion for Windows 95

June 1995: Microsoft still plans to include IE separately from Windows 95, as part of “Microsoft Plus! Companion for Windows 95”

Late June 1995: Microsoft sees Netscape as a threat & decides to give away IE for free & bundle IE with Windows

Since Microsoft gave IE away freely, Spyglass ended up making around \$400,000

Spyglass sued in 1997 & Microsoft settled for \$8 million

Microsoft changes license to PC OEMs

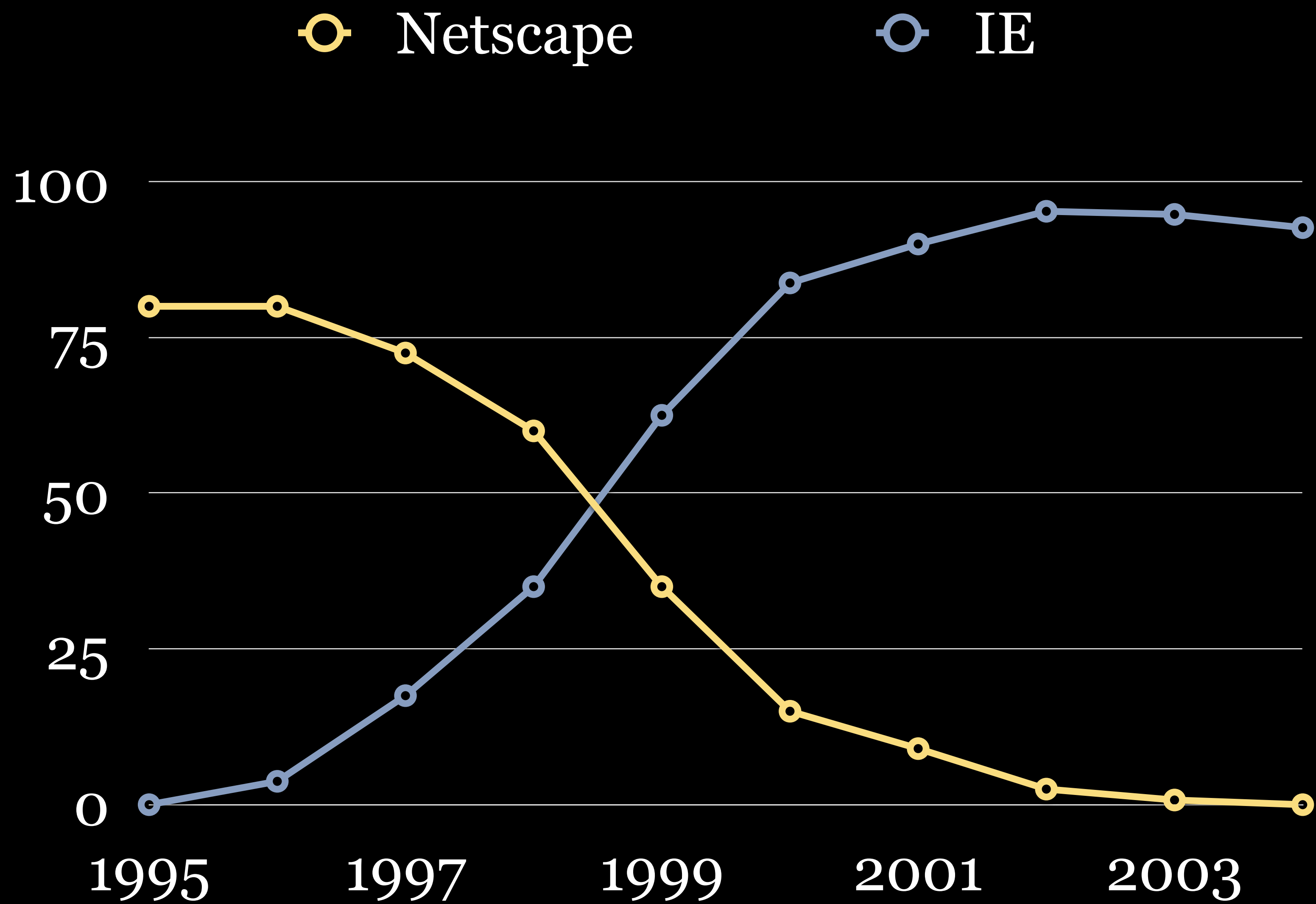
- » Can't remove IE from desktop or Start menu
- » Can't give consumers choice of 3rd party browsers

If they don't obey Microsoft, it will revoke their Windows license

If they complain, Microsoft charges them more



August 1995:
Windows 95
ships with
Internet
Explorer 1.0





mozilla.org

January 1998: Netscape open sources its browser code as the Mozilla Project

- **The Mozilla Organization**

- [Our Mission](#)
- [Who We Are](#)
- [Getting Involved](#)
- [Community](#)
- [Editorials](#)
- [What's New](#)

- **[Development](#)**

- [Roadmap](#)
- [Module Owners](#)
- [Blue Sky](#)
- [Projects](#)
- [Status](#)
- [Tools](#)



Developers around the world are invited to collaborate on a new & better browser



IE stagnated once Microsoft “won” the browser wars

| IE Version | Release Date |
|------------|---------------|
| 1 | August 1995 |
| 2 | November 1995 |
| 3 | August 1996 |
| 4 | October 1997 |
| 5 | March 1999 |
| 5.5 | July 2000 |
| 6 | October 2001 |
| 7 | October 2006 |

IE 1: 6 programmers at Microsoft

IE 3: 100 programmers

IE 5: 1,000 programmers

After IE 6 came out, what was the number of full-time programmers working on IE at Microsoft?

0

7 May 2003: Microsoft announces that “there will be no future standalone installations. IE6 SP1 is the final standalone installation.”



To update IE, you will need to buy the new version of Windows



June 16, 2003: Microsoft
cancels IE for Mac

Apple – Safari

http://www.apple.com/safari/ Google

Dev. Resources Mac Stuff News Entertainment Food & Drink Bookmarklets Ace Project Clients Banking

Store iPod + iTunes .Mac QuickTime Support Mac OS X

Hot News Switch Hardware Software Made4Mac Education Pro Business Developer Where to Buy

Safari

The fastest browser on the Mac – the best browser on any platform.



Download Safari 1.2

Safari, the Mac OS X default web browser, offers you a superior web experience with outstanding performance. Even the most complex of pages load at breakneck speed. In fact, Safari loads pages more quickly than any other Mac web browser. But that's not all. Safari uses the advanced interface technologies underlying Mac OS X to offer you an all-new view of the web, one that's much easier to use.



Sneak preview
Mac OS X v10.4 Tiger

Learn More About Safari

New in Safari 1.2


- Improved compatibility with websites and web applications
- Support for personal certificate authentication

Bookmarks View Favorites Tabs Naming Sheet Google SnapBack

Amazon.com: Books: Start and Run Your Own Record Label

Type a name for the bookmark, and choose where to keep it.

June 23, 2003:
One week later,
Steve Jobs
releases Safari
for Mac OS X



1998: Mozilla Project developers realize that Netscape's code is a complete mess & decide to re-write from scratch



June 5, 2002:
Mozilla 1.0
released

Mozilla was based on Netscape Communicator, which is actually a suite of programs

- » *Navigator*: Web browser
- » *Mail*: Email
- » *Composer*: webpage editor
- » *Address Book*
- » & several other programs

Slow! Bloated!

2002

Phoenix 0.1 released, Mozilla's web browser component

2003

Phoenix → Firebird 0.6

February 2004

Firebird → Firefox 0.8



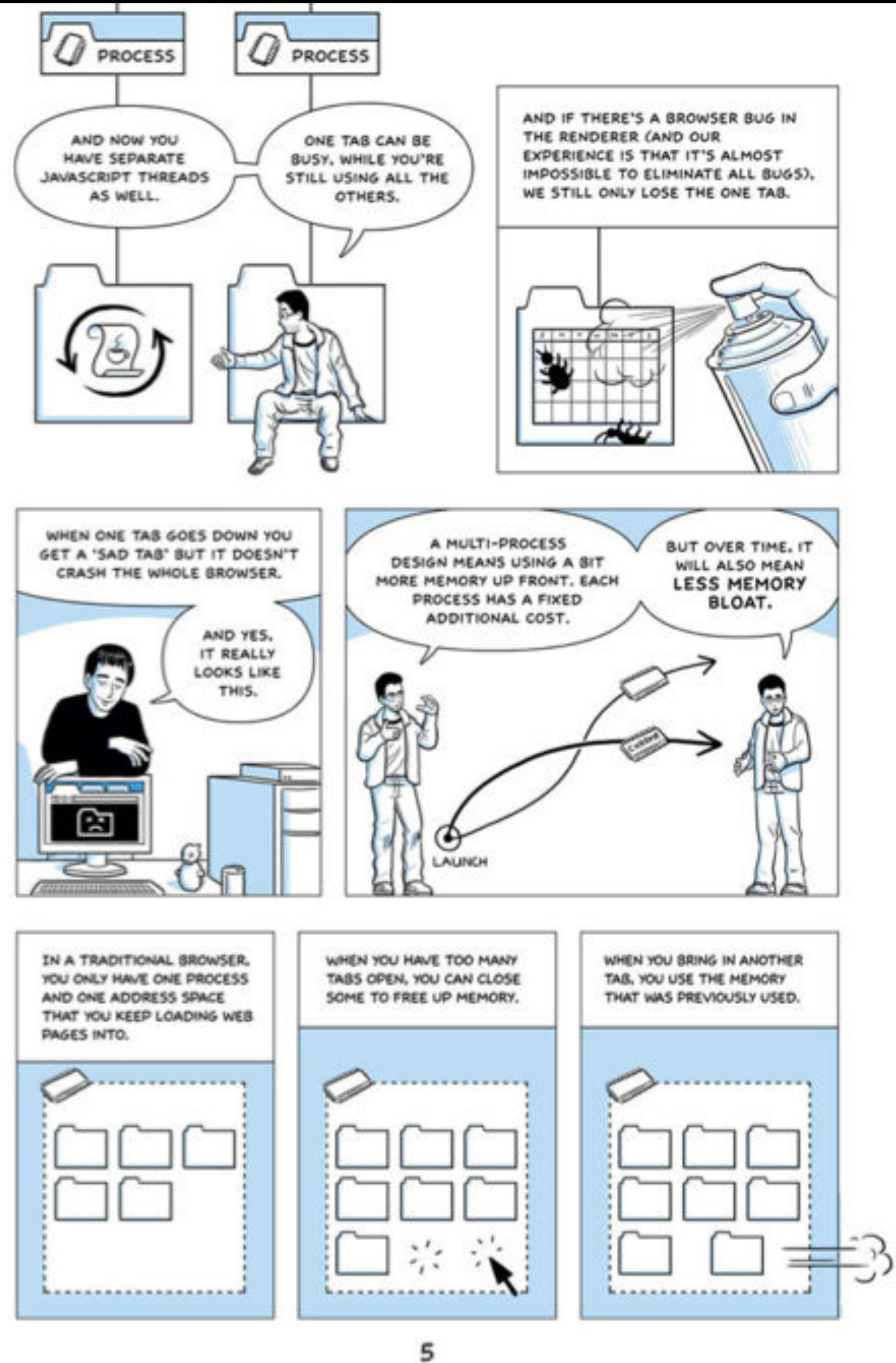
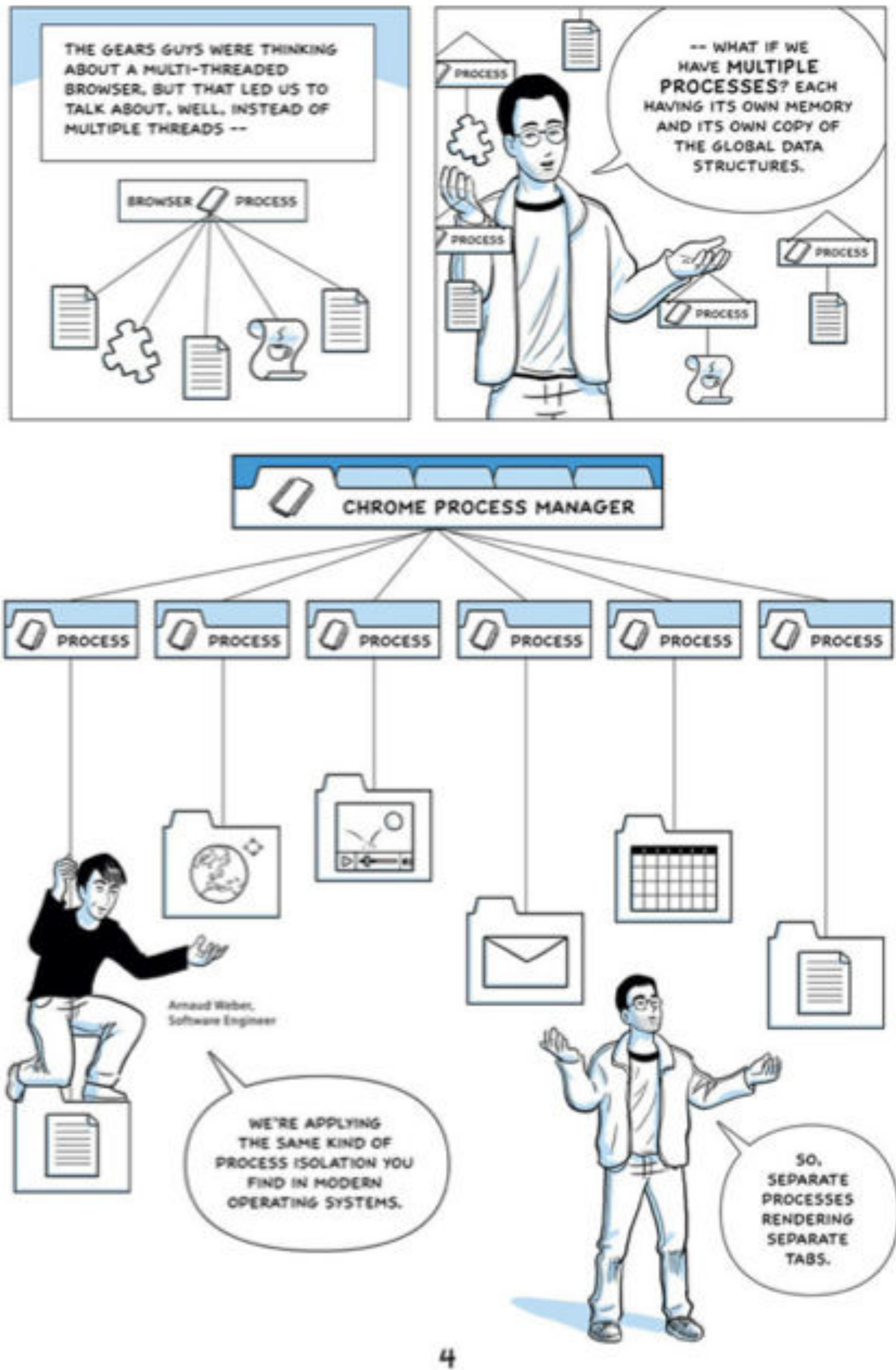
November
2004: Firefox
1.0 released



Microsoft changed its mind about browser upgrades requiring OS upgrades

Why? Firefox became popular

Result? IE 7 was available for download for XP SP 2 users & was in Vista



September 2008: Google announces Chrome with a 38-page comic book

SIDE NOTE

[webcomics](#)[print comics](#)[home](#)[inventions](#)[about](#)[presentations](#)[consulting](#)

[Zot! The Complete Black and White Collection](#)

[Making Comics](#)

[Reinventing Comics](#)

[Understanding Comics](#)


[The Original Zot!](#)

[Destroy!!](#)

[Writing Superman](#)

[The New Adventures of Abraham Lincoln](#)

[The Big List](#)



Understanding Comics

1993

224 pages. Black and White with 8-page color section.

A 215-page comic book about comics that explains the inner workings of the medium and examines many aspects of visual communication. *Understanding Comics* has been translated into 16 languages, excerpted in textbooks, and its ideas applied in other fields such as game design, animation, web development, and interface design.

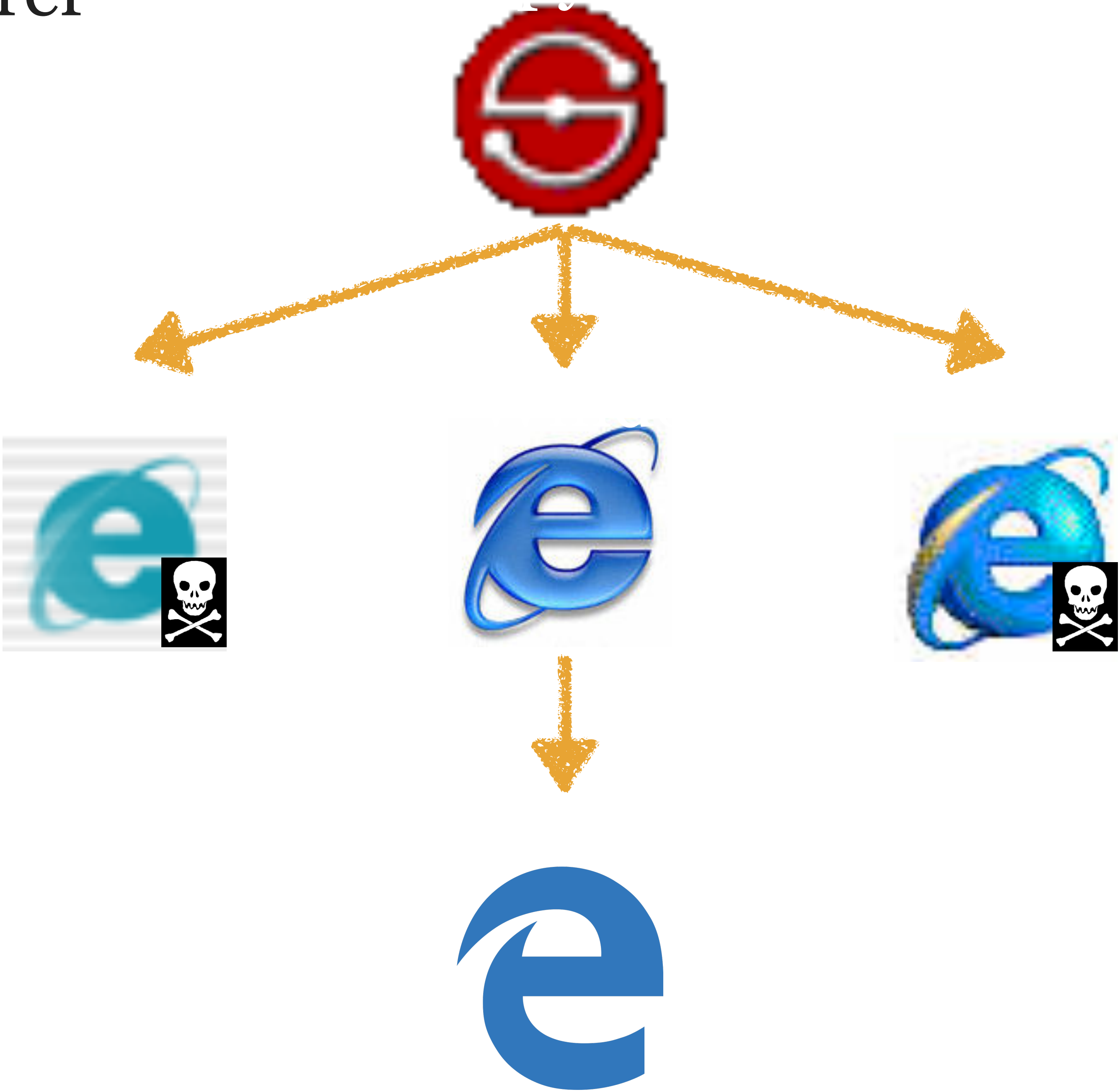
Winner of the Harvey and Eisner Award, the Alph'art Award at Angoulême, and a *New York Times* Notable Book for 1994 (mass market edition).

Topics include:

- Definitions, history, and potential.
- Visual Iconography and its Effects.
- Closure, reader participation between the panels.
- Word-picture dynamics.
- Time and motion.
- The psychology of line styles and color.
- Comics and the artistic process.

"With Scott McCloud's *Understanding Comics* the dialogue on and about what comics are and, more importantly, what comics can be has begun. If you read, write, teach or draw comics; if you want to; or if you simply want to watch a master explainer at work, you must read this book."

Internet Explorer Family Tree





Problems with IE

- » Security
- » Ridiculously complex settings
- » Poor support for Web standards
- » Slowest in terms of overall performance 🐢

Complexity



Internet Properties



General

Security

Privacy

Content

Connections

Programs

Advanced

Home page



To create home page tabs, type each address on its own line.

<http://go.microsoft.com/fwlink/?LinkId=69157>

Use current

Use default

Use new tab

Startup

☐ Start with tabs from the last session

☒ Start with home page

Tabs

Change how webpages are displayed in tabs.

Tabs

Browsing history

Delete temporary files, history, cookies, saved passwords, and web form information.

☐ Delete browsing history on exit

Delete...

Settings

Appearance

Colors

Languages

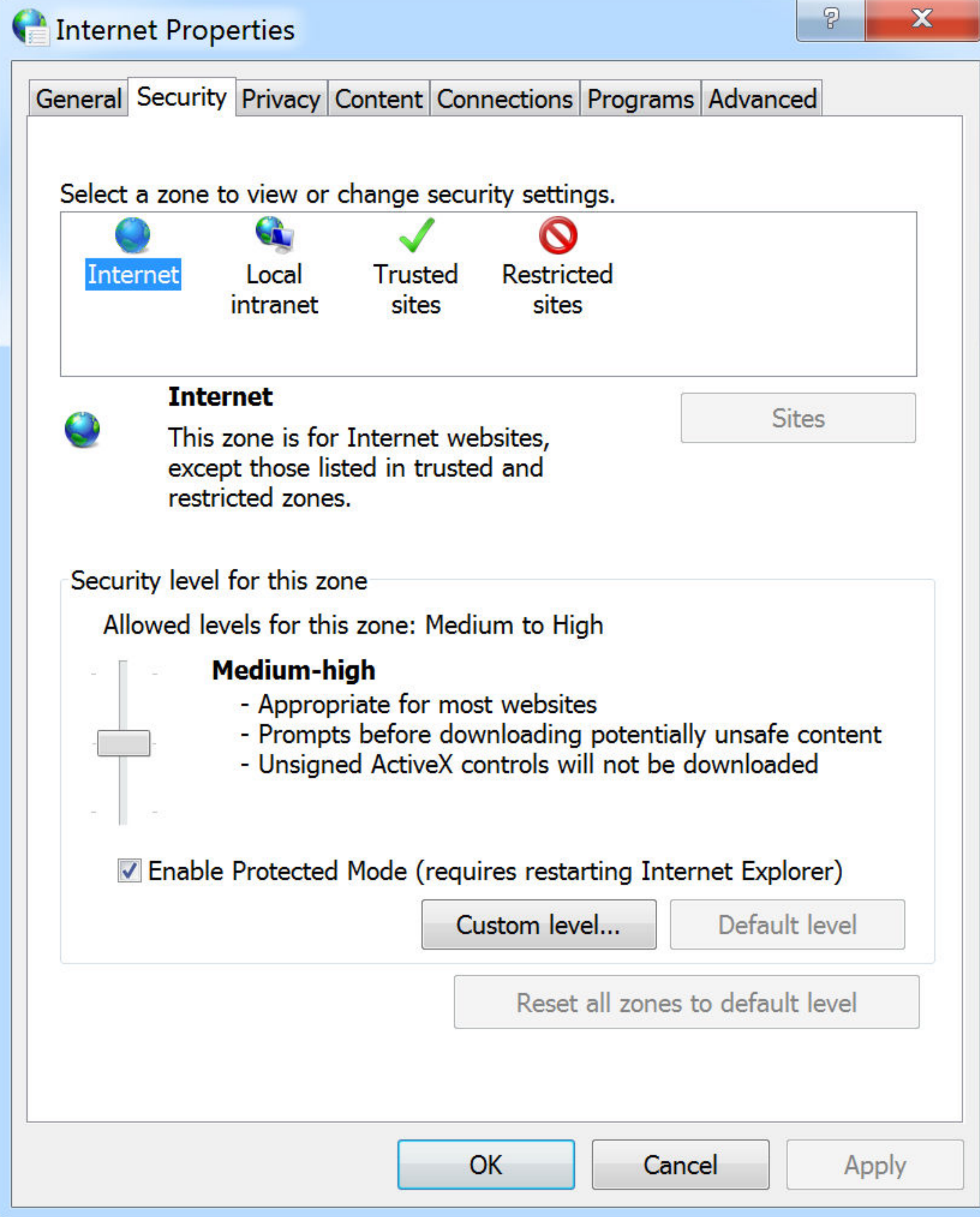
Fonts

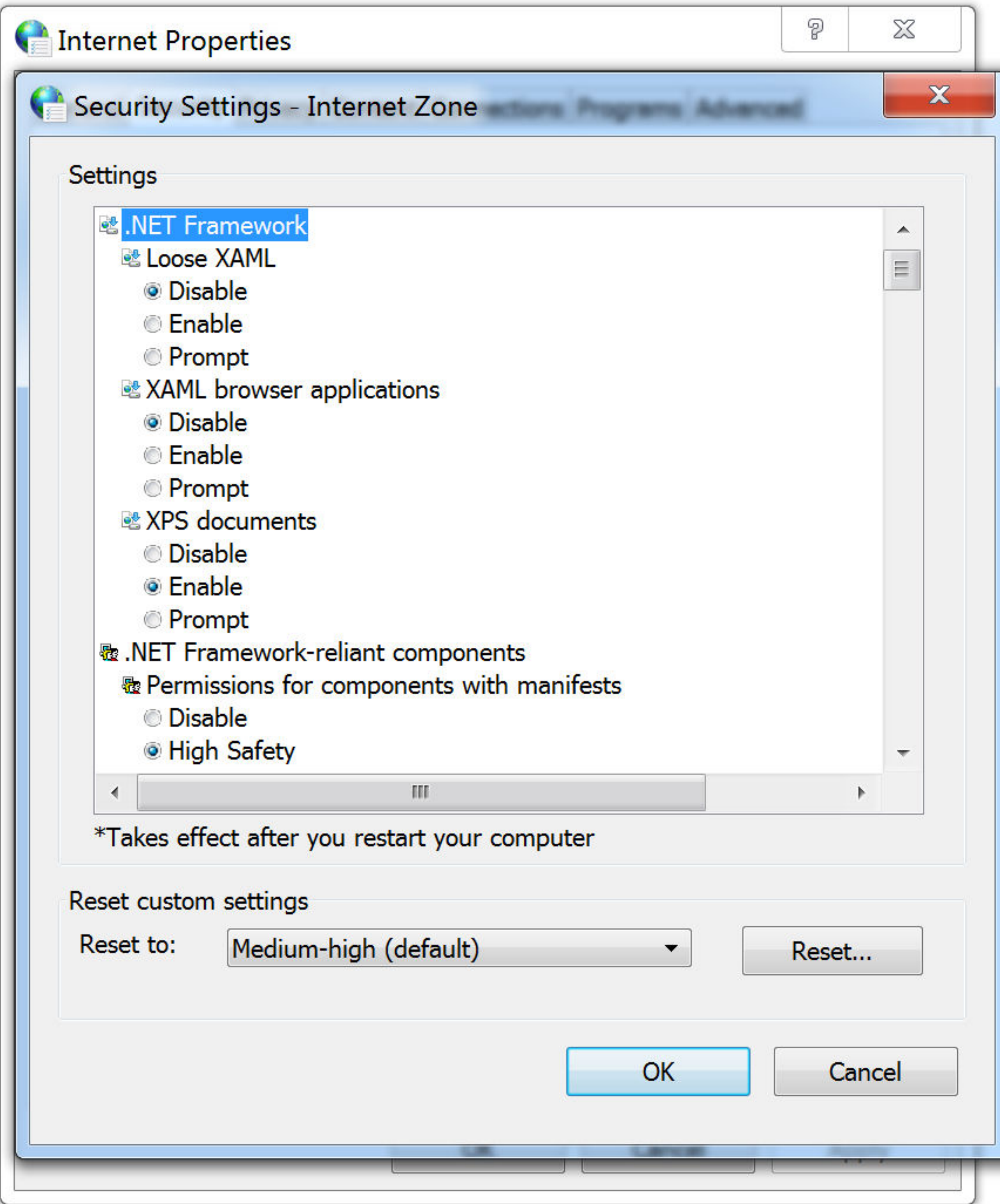
Accessibility

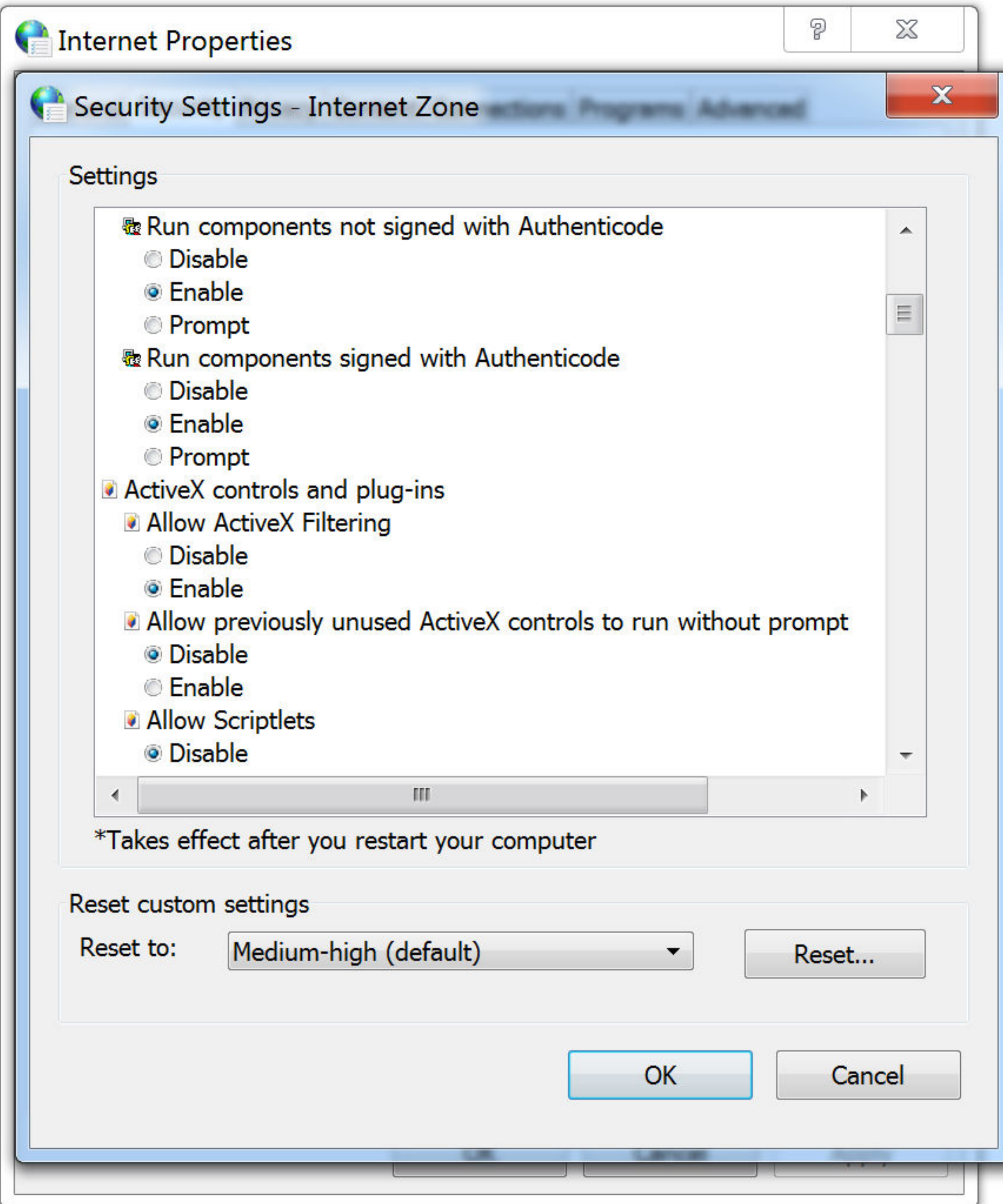
OK

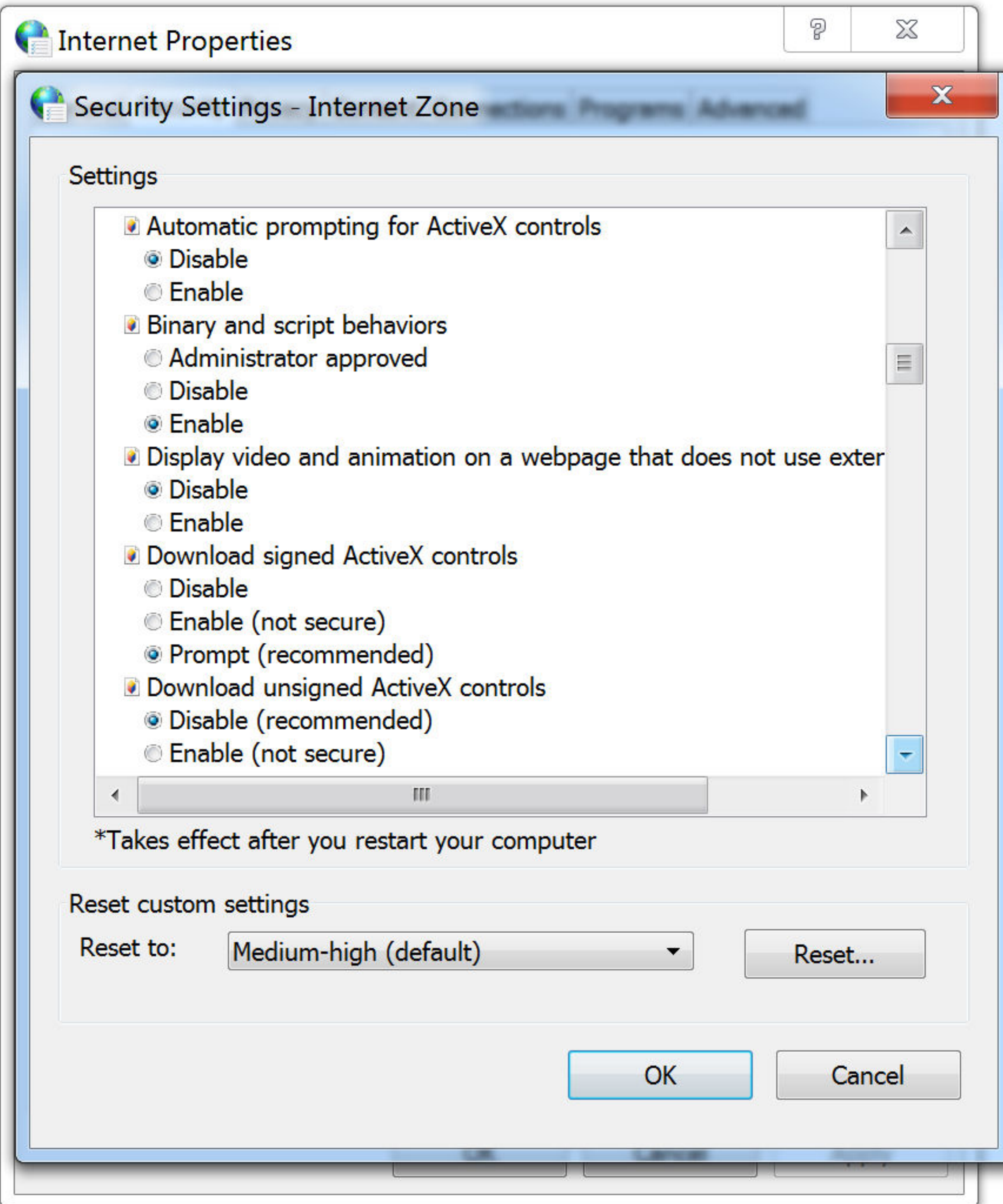
Cancel

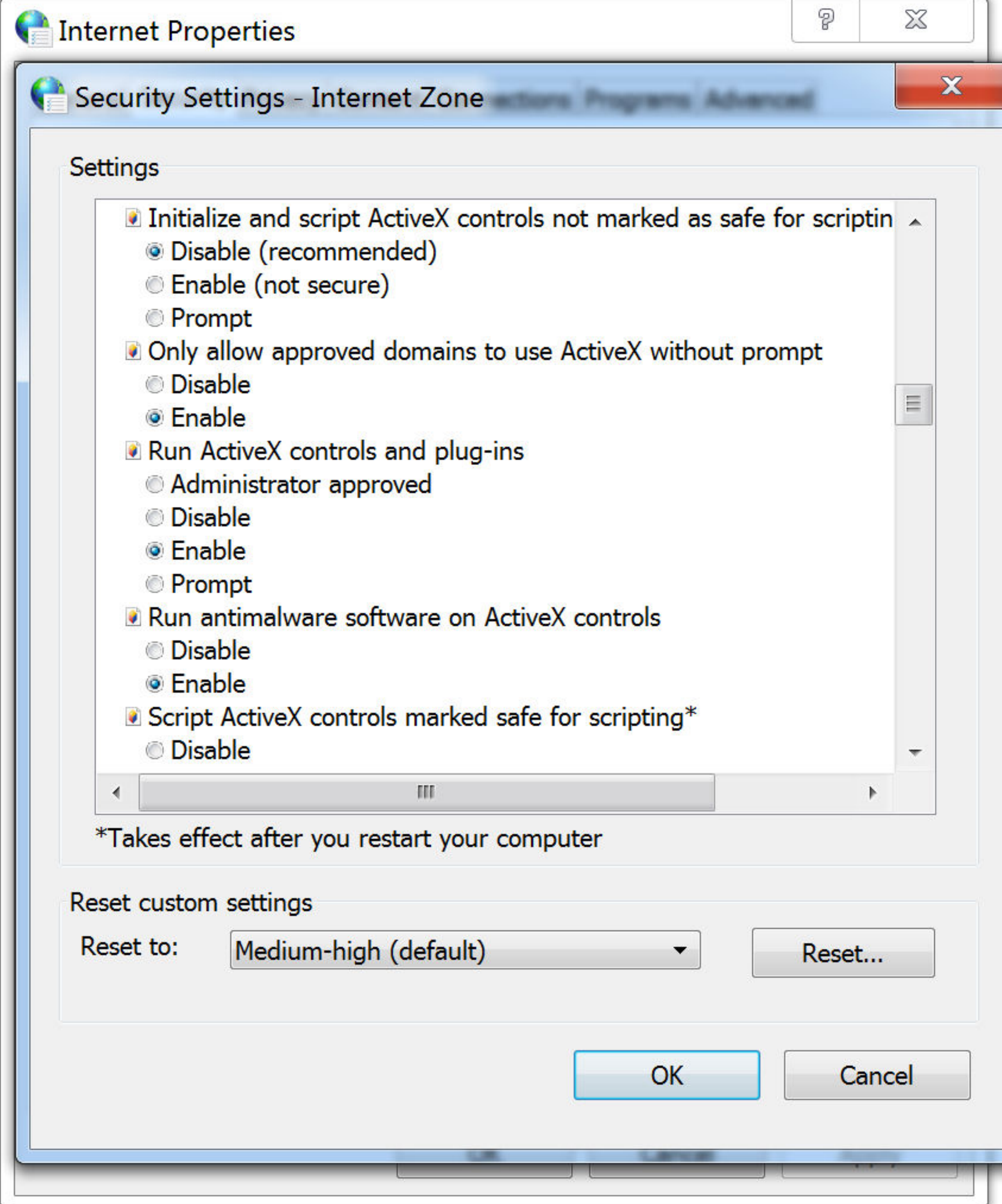
Apply

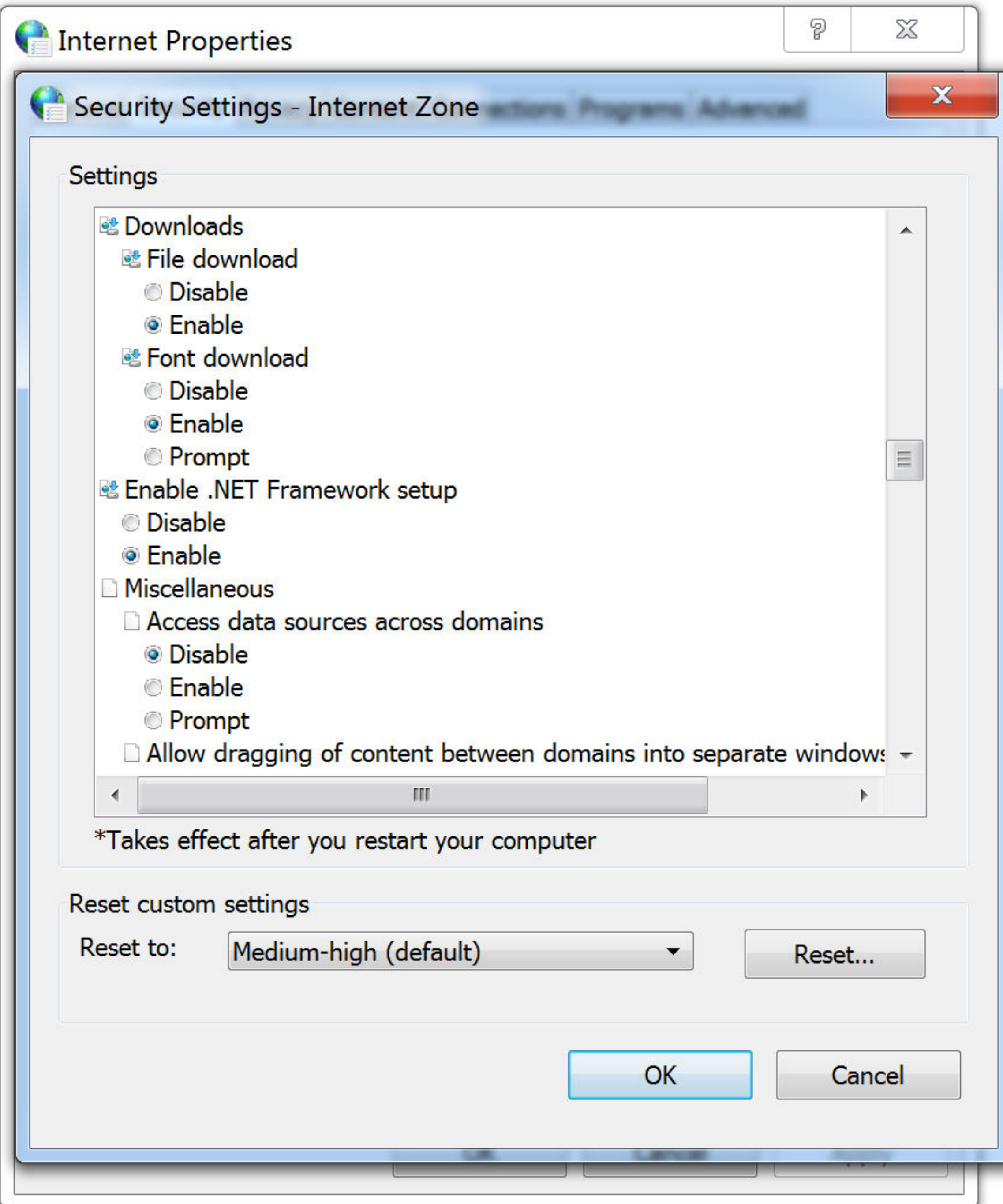


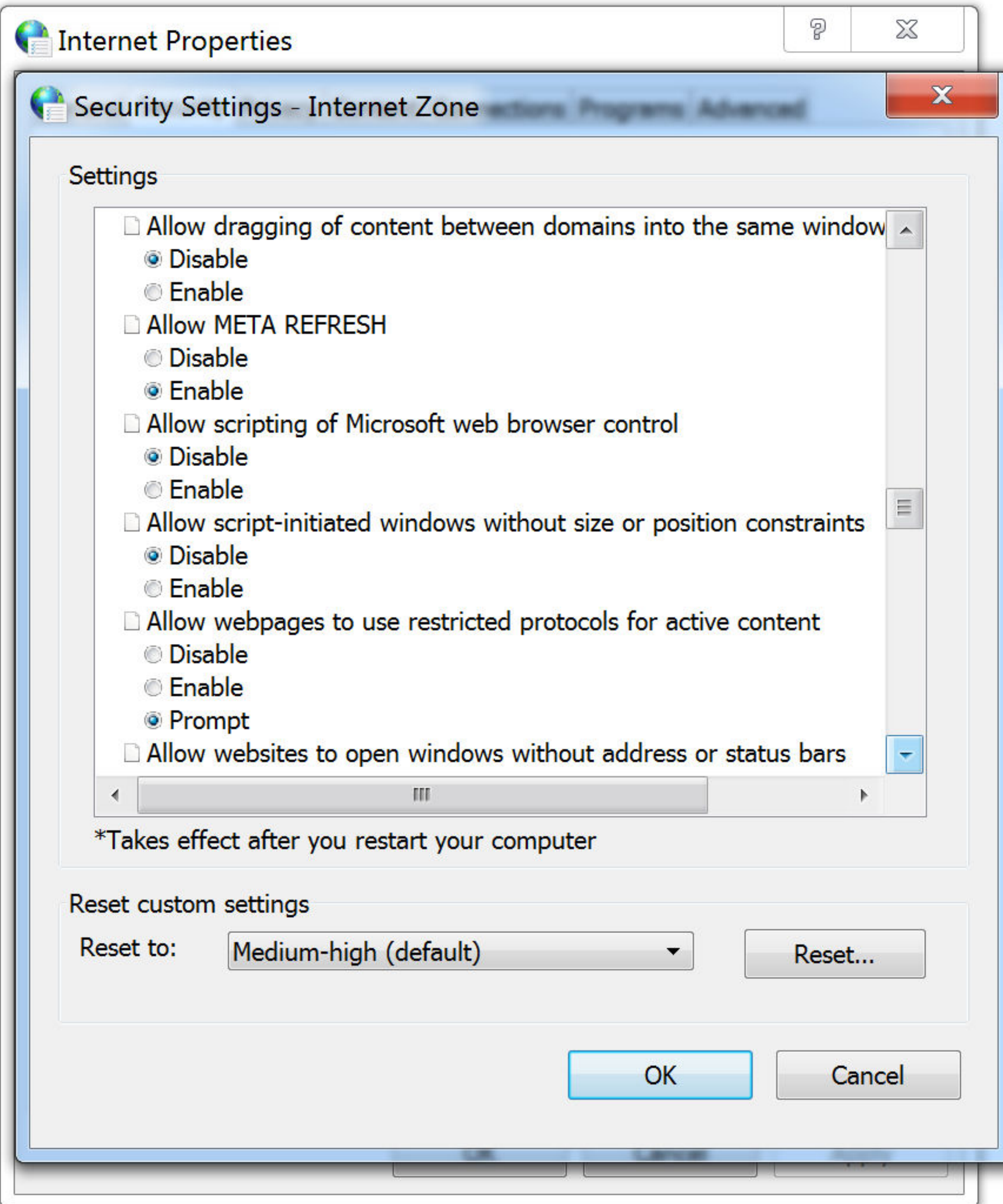


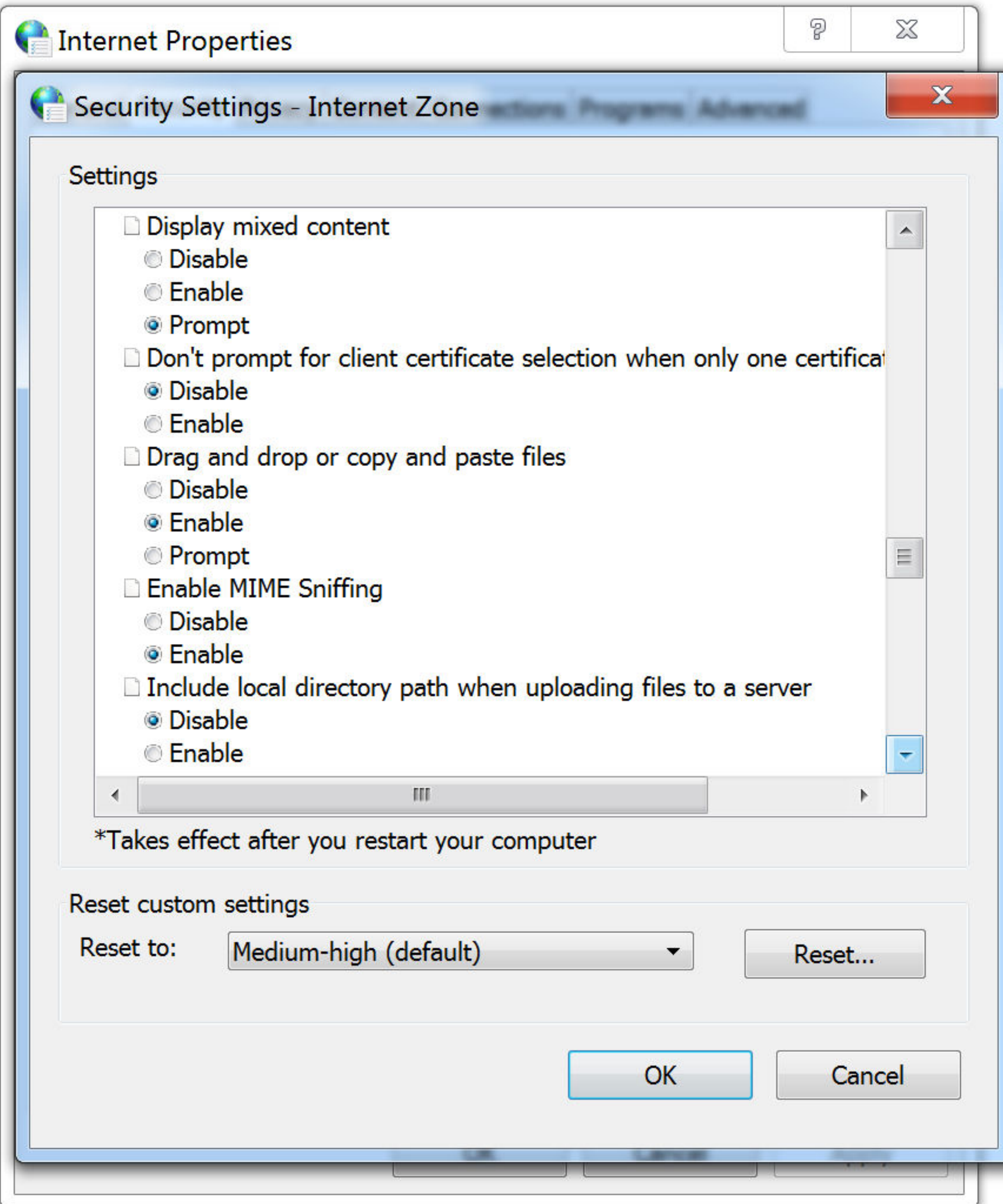


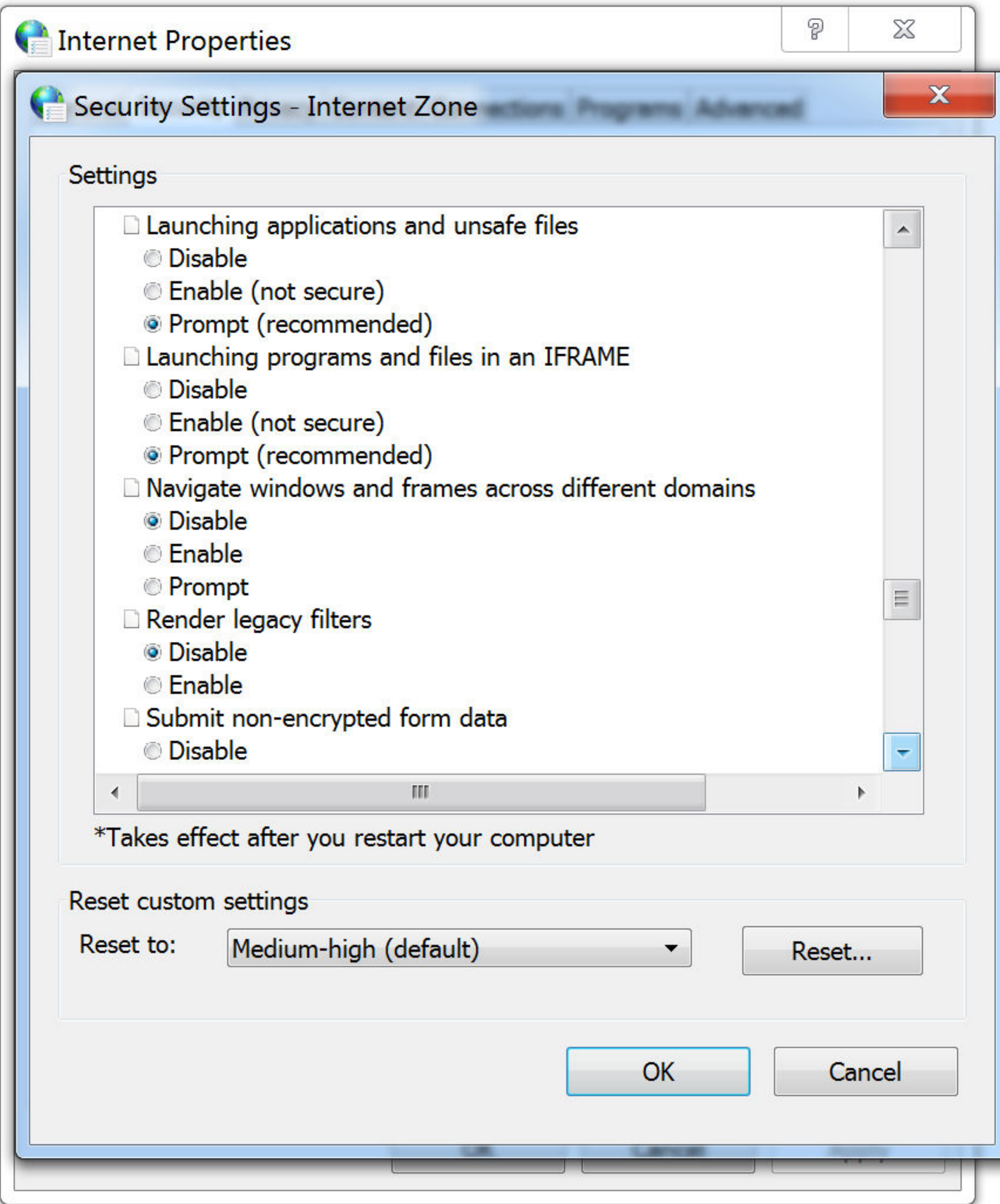


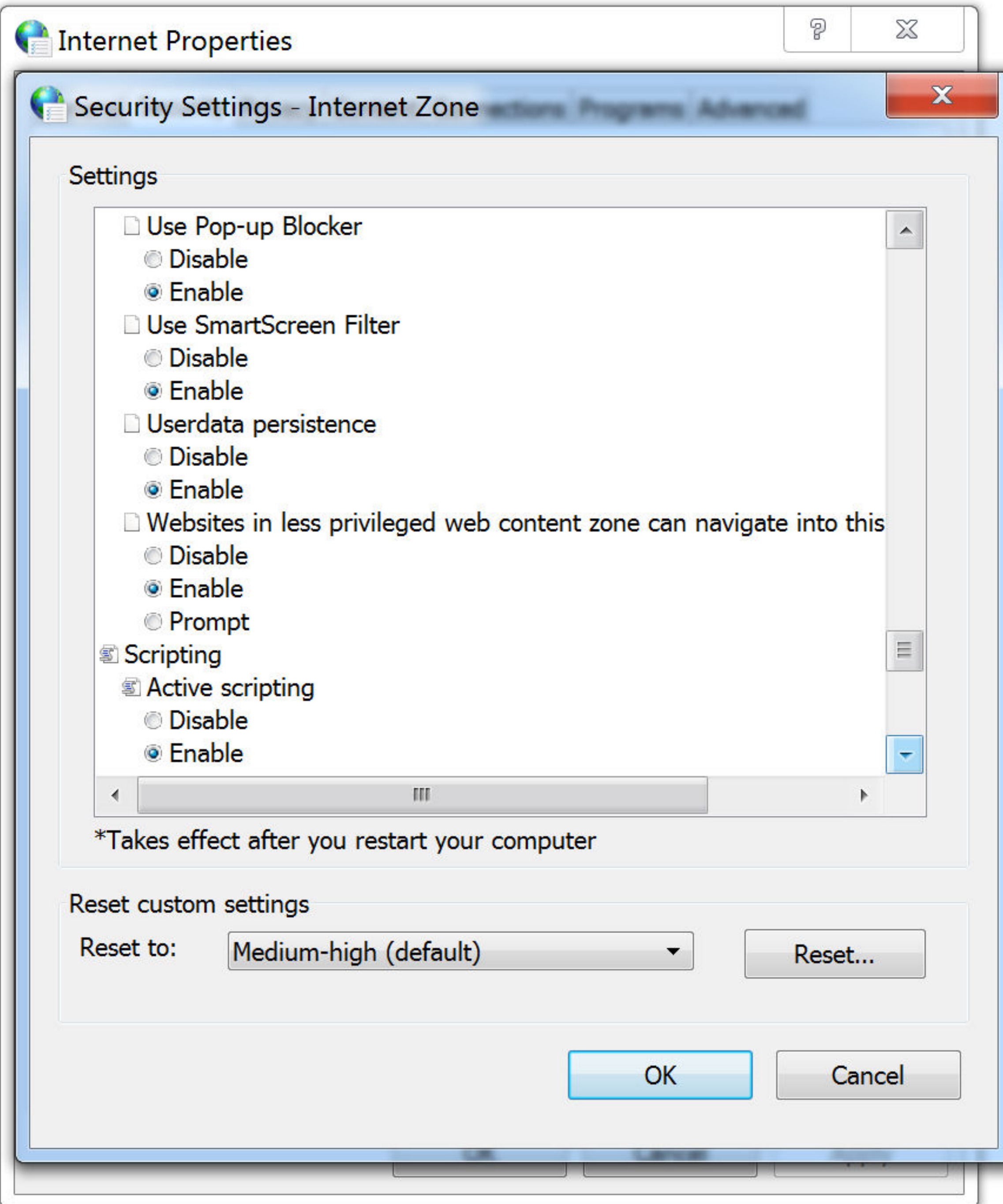


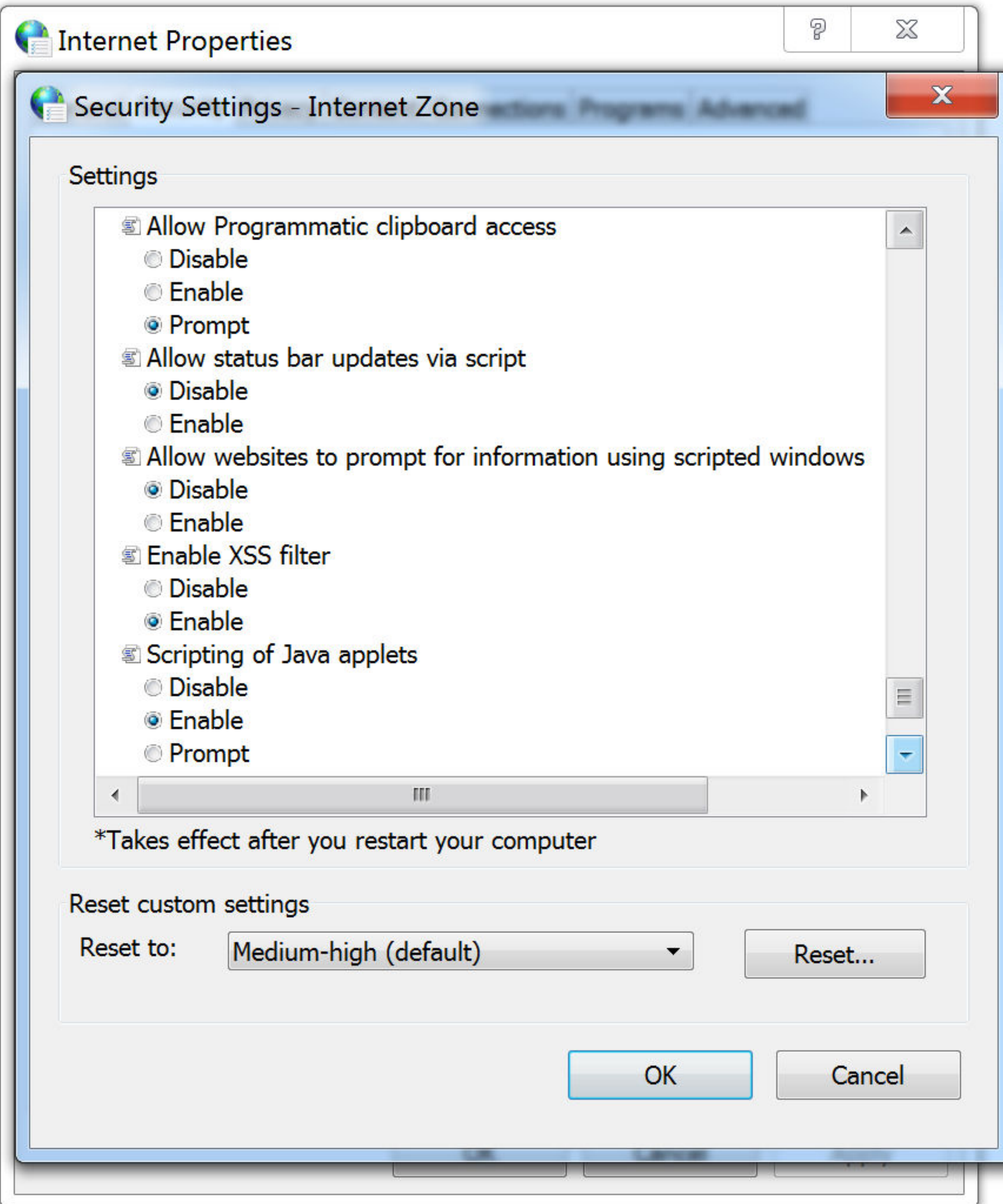


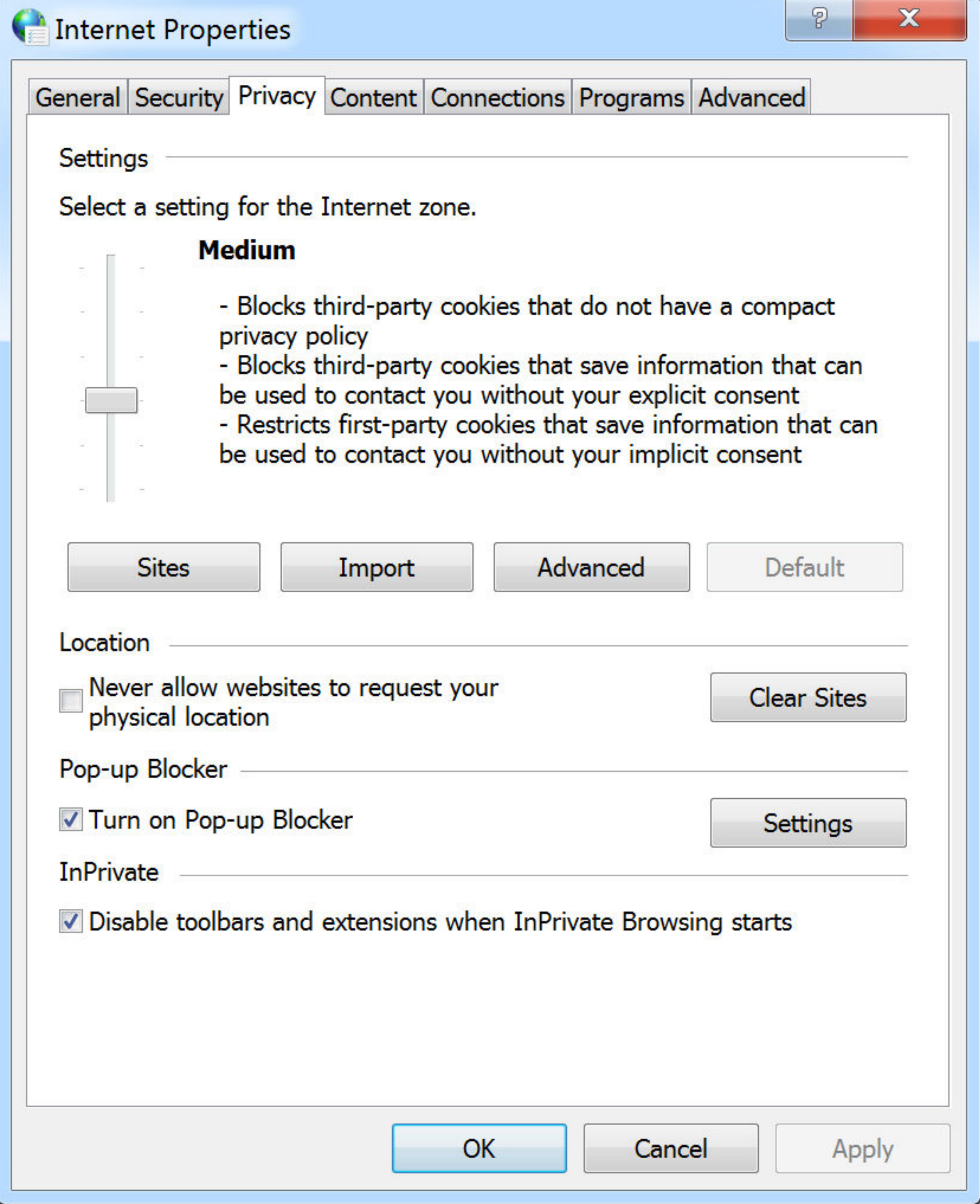














 Internet Properties


?

X


GeneralSecurityPrivacyContentConnectionsProgramsAdvanced

Family Safety

 Control the Internet content that can be viewed.

 Family Safety

Certificates


 Use certificates for encrypted connections and identification.

Clear SSL state

Certificates


Publishers

AutoComplete

 AutoComplete stores previous entries on webpages and suggests matches for you.

Settings

Feeds and Web Slices


 Feeds and Web Slices provide updated content from websites that can be read in Internet Explorer and other programs.

Settings

OK

Cancel


Apply

 Internet Properties

?

X

GeneralSecurityPrivacyContentConnectionsProgramsAdvanced



To set up an Internet connection, click Setup.

Setup

Dial-up and Virtual Private Network settings

Add...

Add VPN...

Remove...

Settings

Choose Settings if you need to configure a proxy server for a connection.

Local Area Network (LAN) settings


LAN Settings do not apply to dial-up connections.
Choose Settings above for dial-up settings.

LAN settings

OK

Cancel

Apply

 Internet Properties

?

X

General

Security

Privacy


Content

Connections

Programs

Advanced

Default web browser




Internet Explorer is not currently the default web browser.

Make default

☒ Tell me if Internet Explorer is not the default web browser.


Manage add-ons



Enable or disable browser add-ons installed in your system.

Manage add-ons

HTML editing



Choose the program that you want Internet Explorer to use for editing HTML files.

HTML editor:

Internet programs

Choose the programs you want to use for other Internet services, such as e-mail.

Set programs

OK

Cancel

Apply



Internet Properties



General Security Privacy Content Connections Programs **Advanced**

Settings

Accelerated graphics

☐ Use software rendering instead of GPU rendering*

Accessibility

☐ Always expand ALT text for images

☐ Enable Caret Browsing for new windows and tabs

☐ Move system caret with focus/selection changes

☐ Play system sounds

☐ Reset text size to medium for new windows and tabs

☐ Reset zoom level for new windows and tabs

Browsing

☐ Always record developer console messages

☐ Close unused folders in History and Favorites*

☒ Disable script debugging (Internet Explorer)

☒ Disable script debugging (Other)

☐ Display a notification about every script error

*Takes effect after you restart your computer

Restore advanced settings

Reset Internet Explorer settings

Resets Internet Explorer's settings to their default condition.

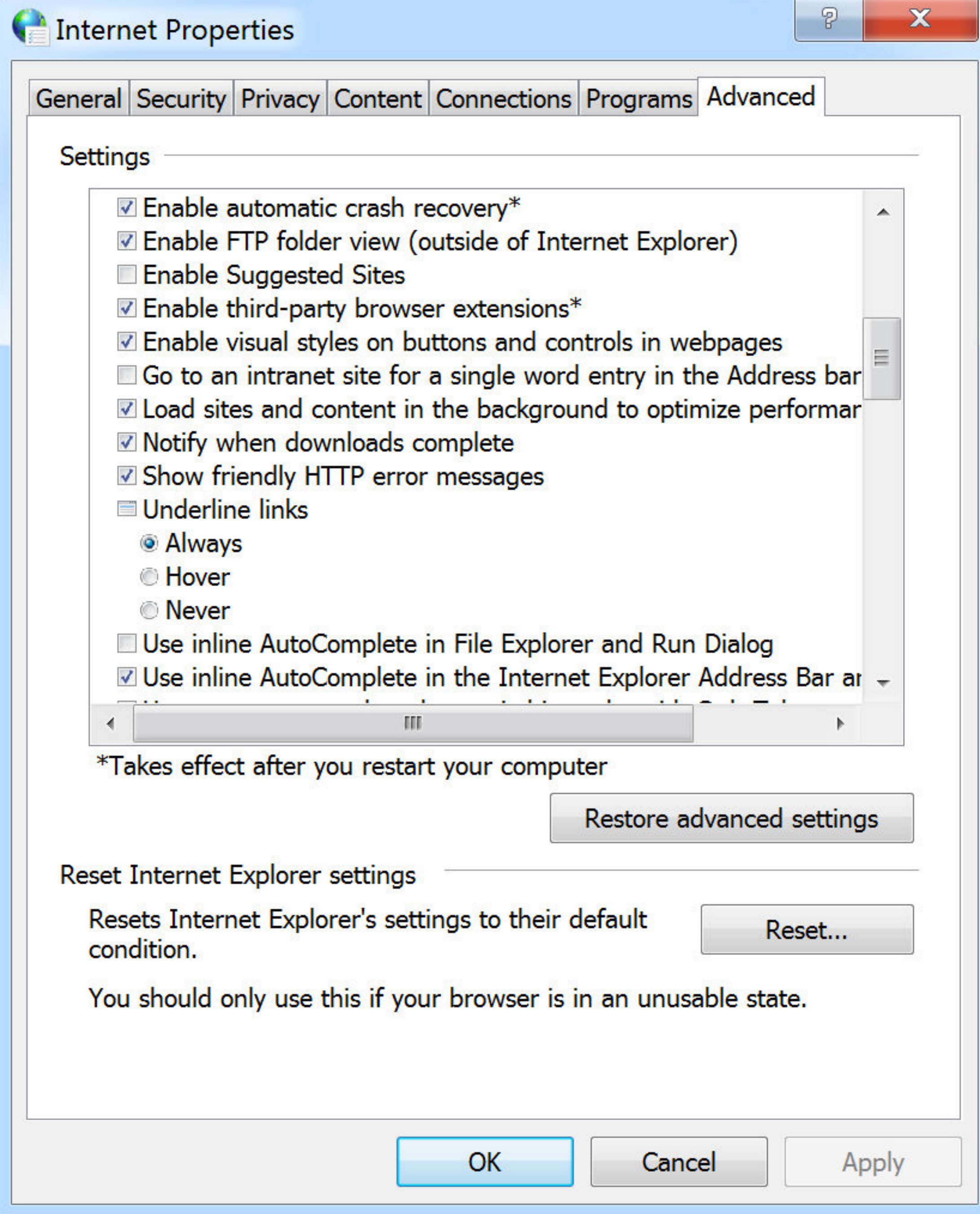
Reset...

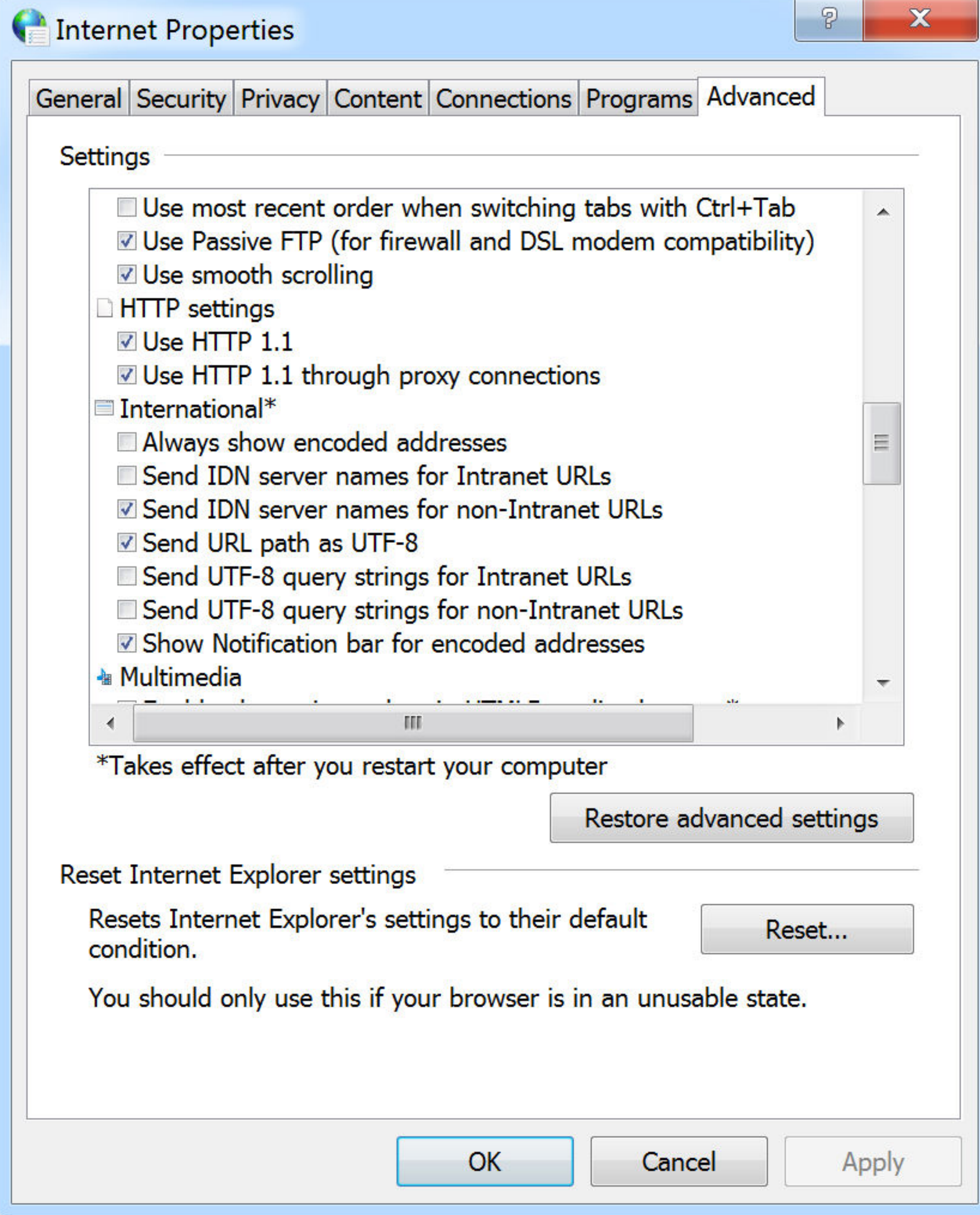
You should only use this if your browser is in an unusable state.

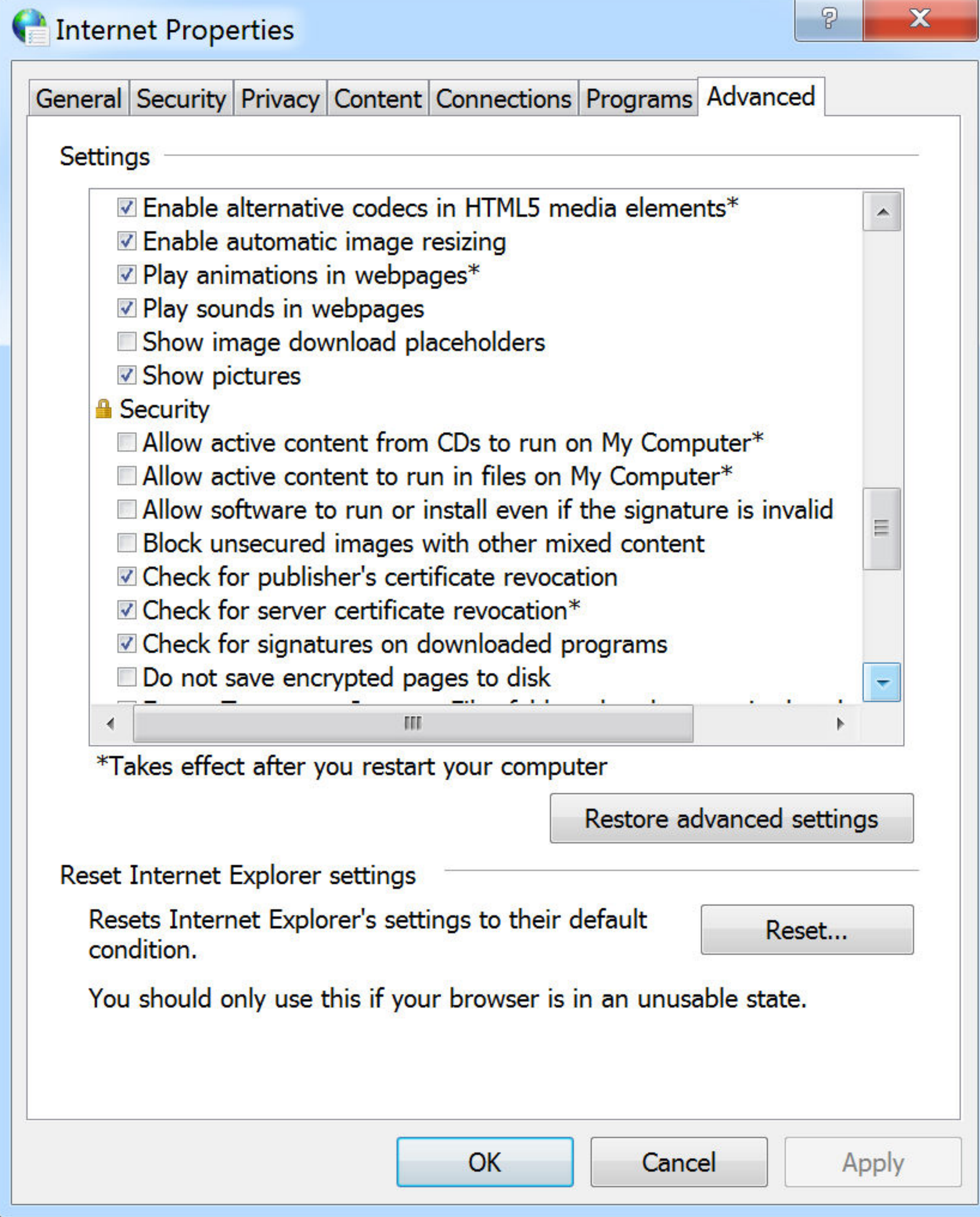
OK

Cancel

Apply








Internet Properties

General Security Privacy Content Connections Programs Advanced

Settings

- ☒ Enable alternative codecs in HTML5 media elements*
- ☒ Enable automatic image resizing
- ☒ Play animations in webpages*
- ☒ Play sounds in webpages
- ☐ Show image download placeholders
- ☒ Show pictures
-  Security
 - ☐ Allow active content from CDs to run on My Computer*
 - ☐ Allow active content to run in files on My Computer*
 - ☐ Allow software to run or install even if the signature is invalid
 - ☐ Block unsecured images with other mixed content
 - ☒ Check for publisher's certificate revocation
 - ☒ Check for server certificate revocation*
 - ☒ Check for signatures on downloaded programs
 - ☐ Do not save encrypted pages to disk

*Takes effect after you restart your computer

Restore advanced settings

Reset Internet Explorer settings

Resets Internet Explorer's settings to their default condition.

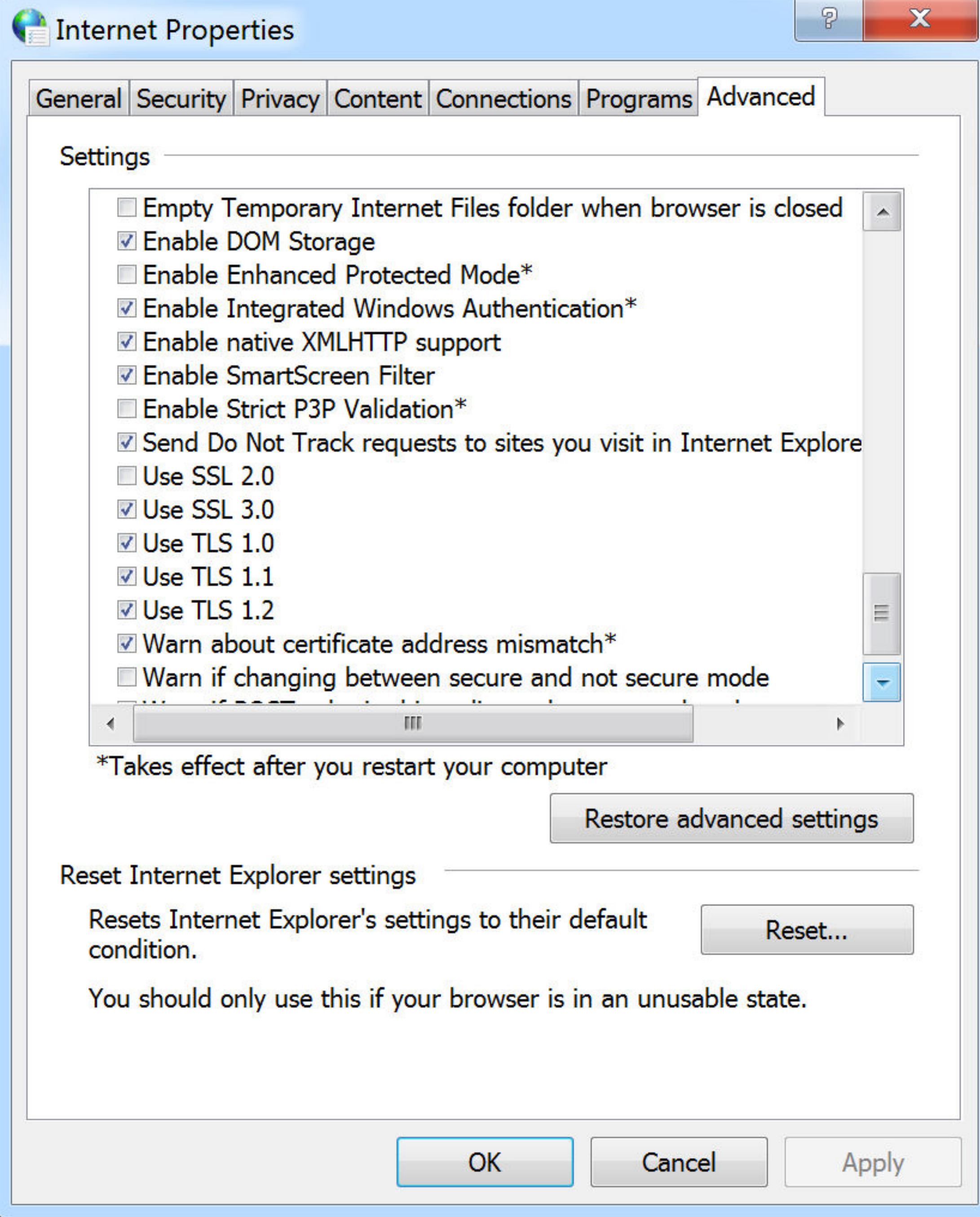
Reset...

You should only use this if your browser is in an unusable state.

OK

Cancel

Apply



Conversation Between Browsers

What are we?



Browsers!



...



Browsers! Browsers!



What do we want?



Faster!



...



Faster!



Faster!



When do we want it?



Now!



...



Now!



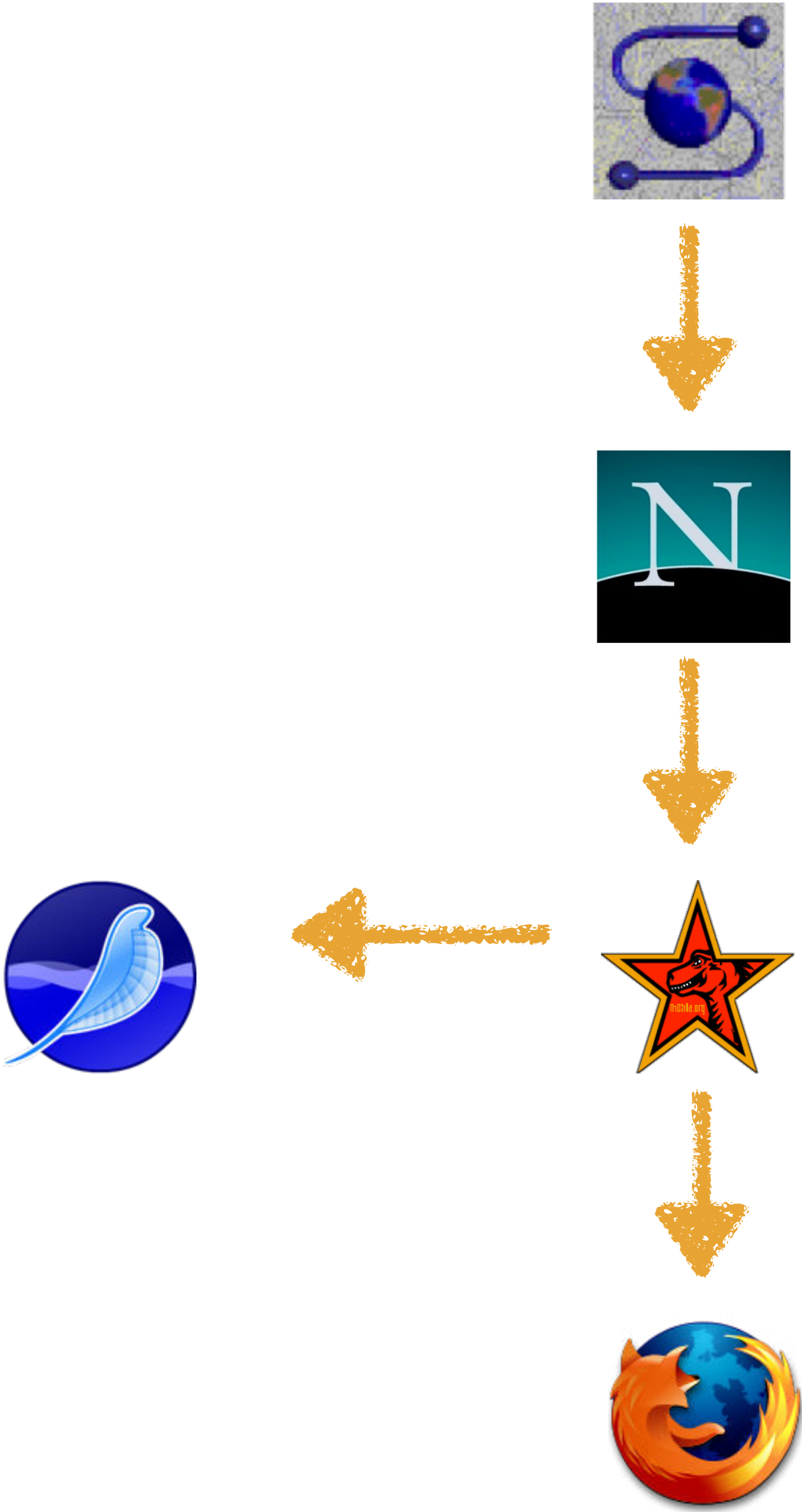
Now!

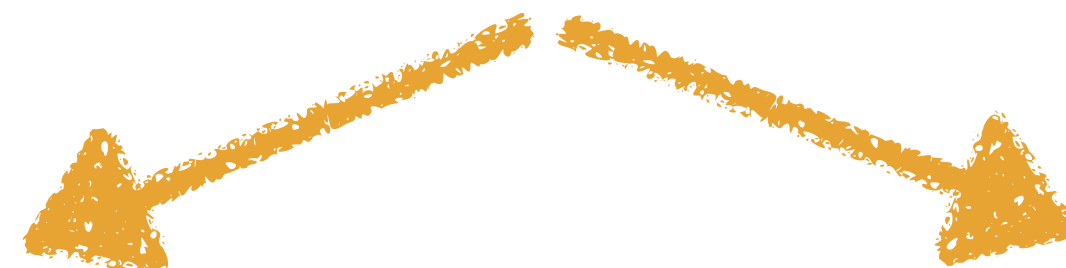
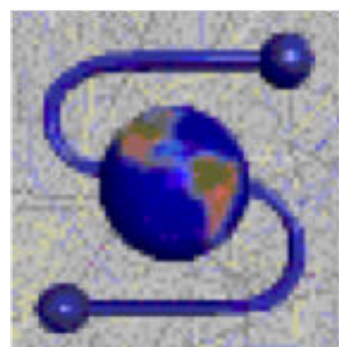


Browsers!



Firefox Family Tree





Session Restore

Firefox was the 1st major browser to support *session restore*: the browser remembers what you were doing if it closes or crashes, & re-opens windows & tabs

Now supported by Chrome, Safari, & Opera

General

General Tabs Content Applications Privacy Security Sync Advanced

Startup

When Firefox starts: Show my home page

Home Page: Mozilla

- ✓ Show my home page
- Show a blank page
- Show my windows and tabs from last time

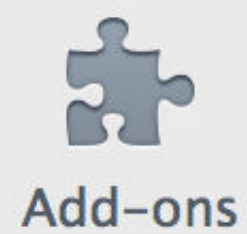
Restore to Default

Downloads

Save files to Downloads Choose...

Always ask me where to save files

?



Restore Previous Session

Profiles

Firefox stores important settings & data in a *profile folder*

You can create as many profiles as you'd like

You can switch between profiles when you start Firefox



Firefox – Choose User Profile

Firefox stores information about your settings, preferences, and other user items in your user profile.

Create Profile...

Rename Profile...

Delete Profile...



Default



Multimedia



WebDev



Research



Testing

☐ Work offline

☐ Use the selected profile
without asking at startup

Exit

Start Firefox

Bookmarks

Downloads

Browsing History

Passwords

Site-Specific Preferences

Search Engines

Personal Dictionary

Autocomplete History

Cookies

Security Certificate Settings

Security Device Settings

Download Actions

Plugin MIME Type

Stored Session

Toolbar Customization

User Styles

Extensions & Themes

Hundreds of thousands of add-ons for Firefox



ADD-ONS

EXTENSIONS | THEMES | COLLECTIONS | MORE...

➔

EXPLORE

- Featured >
- Most Popular >
- Top Rated >

CATEGORIES

- Alerts & Updates >
- Appearance >
- Bookmarks >
- Download Management >
- Feeds, News & Blogging >
- Games & Entertainment >
- Language Support >
- Photos, Music & Videos >
- Privacy & Security >
- Search Tools >
- Shopping >
- Social & Communication >

⏪

Idderall
A tool to keep you off distracting websites when you really need to get something done. Follow on twitter for n...

Awesome Screens...
Capture the whole page or any portion, annotate it with rectangles, circles, arrows, lines and text, blur sensitive...

Copy As Plain Text
Removes formatting from copied text.

⏩

Featured Extensions [See all »](#)



YouTube Anywhere Player
Games & Entertainment
★★★★★ (45)



Converter
Shopping
★★★★★ (53)



WebRank SEO Toolbar
Alerts & Updates
★★★★★ (56)



TinyURL Generator
Social & Communication
★★★★★ (62)



Classic Toolbar Buttons
Appearance
★★★★★ (100)



Google Translator, Web T...
Social & Communication
★★★★★ (378)

MOST POPULAR [All »](#)

- Adblock Plus**
19,221,263 users
- Video DownloadHelper**
5,926,179 users
- Firebug**
2,939,471 users
- NoScript Security Suite**
2,193,669 users
- Greasemonkey**
1,621,873 users
- DownThemAll!**



ADD-ONS

EXTENSIONS | THEMES | COLLECTIONS | MORE...

→

EXPLORE

- Featured >
- Most Popular >
- Top Rated >

CATEGORIES

- Alerts & Updates >
- Appearance >
- Bookmarks >
- Download Management >
- Feeds, News & Blogging >
- Games & Entertainment >
- Language Support >
- Photos, Music & Videos >
- Privacy & Security >
- Search Tools >
- Shopping >
- Social & Communication >
- Tabs >

Home >> Extensions

Featured Extensions

Sort by: **Featured** | Most Users | Top Rated | Newest | More ▾

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Stylish **FEATURED**

Restyle the web with Stylish, a user styles manager. Stylish lets you easily install themes and skins for Google, Facebook, YouTube, Orkut, and many, many other sites. You can even customize Firefox and other programs themselves.

★★★★★ (614) · 700,154 users



CookieKeeper **NO RESTART** **FEATURED**

Extended Cookie Manager - Keep only wanted cookies.

★★★★★ (12) · 8,658 users



FireFTP **FEATURED**

FireFTP is a free, secure, cross-platform FTP/SFTP client for Mozilla Firefox which provides easy and intuitive access to FTP/SFTP servers.

Check out my new project, [FireSSH!](#)

★★★★★ (839) · 707,677 users



Free Memory **NO RESTART** **FEATURED**



ADD-ONS

EXTENSIONS | THEMES | COLLECTIONS | MORE...



Themes

Up & Coming
Most Popular
Top Rated
Recently Added

Abstract
Causes
Fashion
Film and TV
Firefox
Foxkeh
Holiday
Music
Nature
Other
Scenery
Seasonal
Solid
Sports
Websites

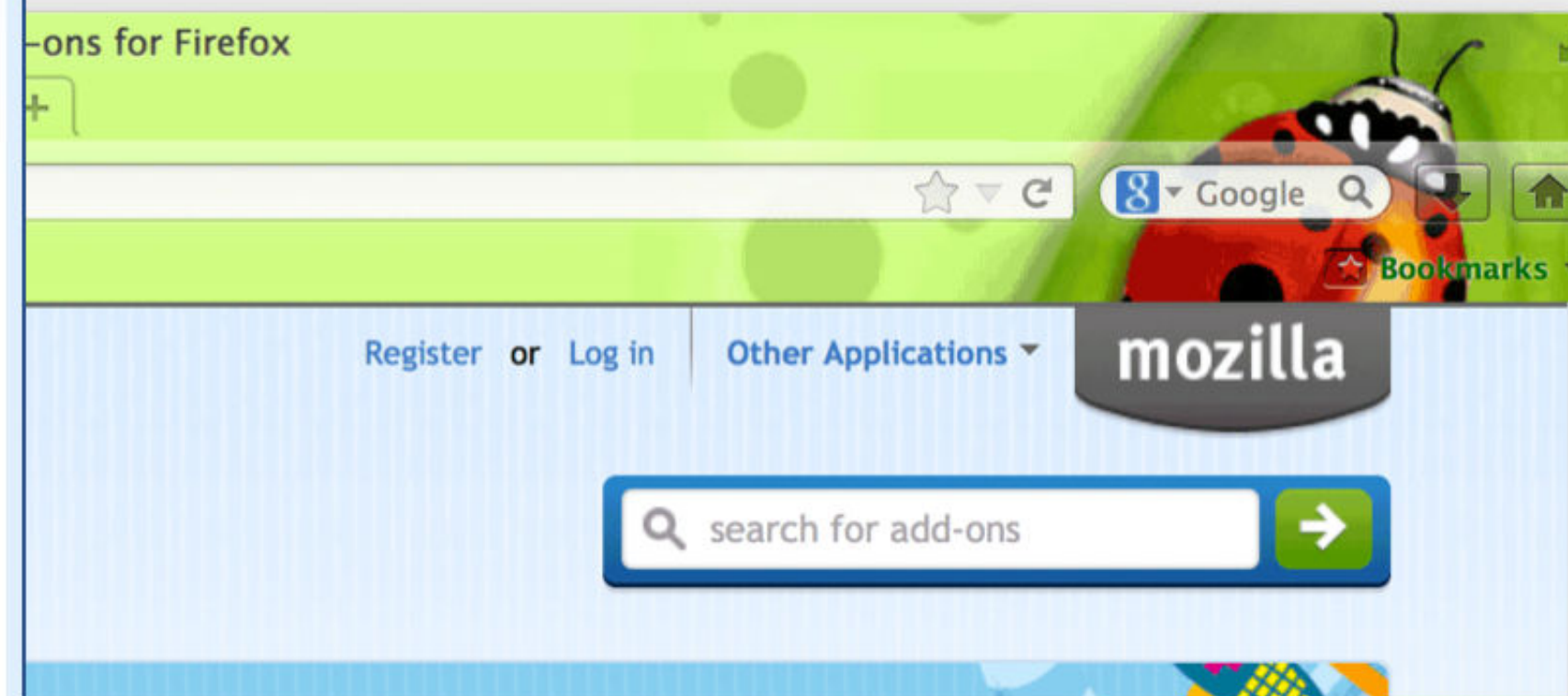
Create Your Own Theme

Your browser, your

Add-ons for Firefox > Themes

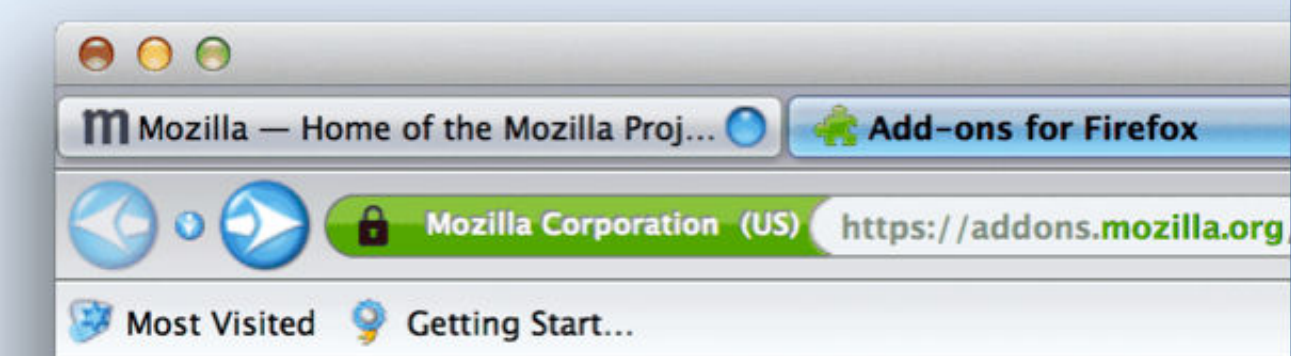
Themes

Over 300,000 designs to personalize your browser! Move your mouse over a Background Theme to try it on. **Start exploring** ▶



Want more personalization?

Complete Themes transform the look of your browser with styles for the window frame, address bar, buttons, tabs, and



Get Add-ons

Extensions


User Scripts

Appearance

Plugins

User Styles

Services



1Password


4.1.0

Password and identity manager for Mac, Windows, iOS and Android.

[More](#)

Disable

Remove



Clip to DEVONthink


1.2.3

Clip selected web content to your DEVONthink database directly from Firefox.

[More](#)

Disable

Remove



Downloads in Tab

1.00


Opens "Downloads" manager in tab from Tools menu or automatically when a download start...

[More](#)

Preferences

Disable

Remove



FEBE

7.3.0.1


Backup your Firefox data

[More](#)

Preferences

Disable

Remove



Greasemonkey

1.15


A User Script Manager for Firefox

[More](#)

Preferences

Disable

Remove



It's All Text!

1.8.1


Edit text using your favorite editor!

[More](#)

Preferences

Disable

Remove



LastPass

3.1.1


Last Password you will ever need

[More](#)

Preferences

Disable

Remove



Lazarus: Form Recovery

2.3

Recover lost forms with a single click

[More](#)

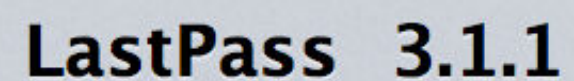
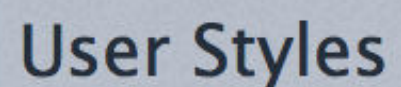
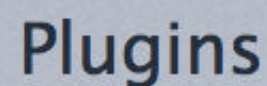
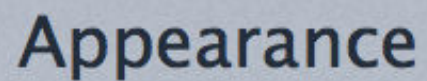
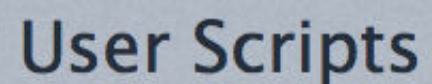
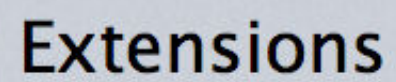
Preferences

Disable

Remove

Search all add-ons

Get Add-ons

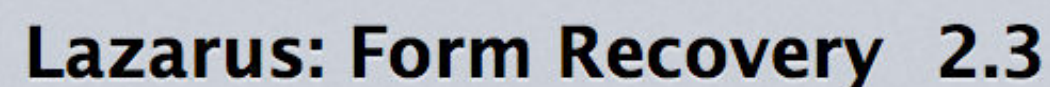


Last Password you will ever need [More](#)

Preferences

Disable

Remove

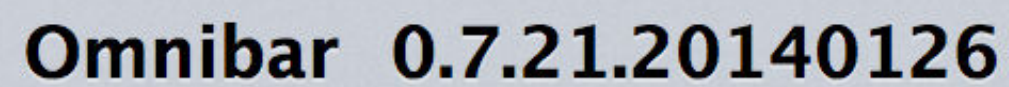


Recover lost forms with a single click [More](#)

Preferences

Disable

Remove



Integrates search bar to the location bar. [More](#)

Preferences

Disable

Remove

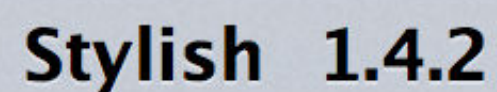


Enhance Google search results and remove ads and spam [More](#)

Preferences

Disable

Remove

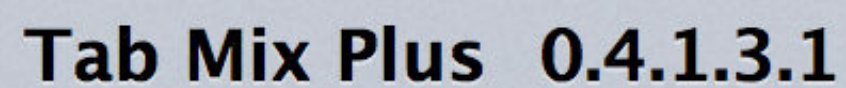


Restyle the web with Stylish, a user styles manager. [More](#)

Preferences

Disable

Remove

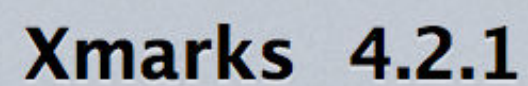


Tab browsing with an added boost. [More](#)

Preferences

Disable

Remove



Bookmark Sync and Web Discovery [More](#)

Preferences

Disable


Remove




Ads were yesterday! [More](#)

Enable

Remove

- 
- Services

 **Firefogg 2.9.19**
video encoding and uploading for Firefox [More](#) Disable Remove

- 
- Services

 **Xmarks 4.2.1**

Bookmark Sync and Web Discovery [More](#)

Preferences

Disable

Remove

cybernetnews.com - Google Search - Mozilla Firefox

Menu File Edit View History Bookmarks Tools Help

http:// cybernetnews.com

Documents Tools Validation Styles Transformations Views Stats S.O.A. Authoring Help

Wizz RSS 2.1.6 Feed Search Help etc. Options etc. Watch List Weather

Playful Cams cybernetnews.com Search Live Webcams Join Free! Hot! Archives

Disable Cookies CSS Forms Images Information Miscellaneous Outline Resize Tools View Source Options

Home Profile Messages Comments Blog View User Contact User AutoLogin (Off)

..torrentTools.. cybernetnews.com Search feeds [44 new] torrents [61 new] trends link group forum E-mail Notifier Privacy

cybernetnews.com Search RSS : [642 new] : [435 new] E-mail Notifier Weather cybernetnews com

cybernetnews.com Search RSS Torrents [260 new] Links : [880 new] E-mail Notifier Weather cybernetnews com

en Check Random email History Temporary Forwarding Help

Proxy: None Apply Edit Remove Add Status: Using No Proxy Preferences

Start Stumbling...

Reel New Media cybernetnews.com Search Fun TV Go! Shop E-mail Notifier Privacy Javascript must l

Radioman cybernetnews.com Search Javascript must l Google Pack Privacy cybernetnews com

cybernetnews.com Search Featured [15 new] New [15 new] cybernetnews com

W cybernetnews.com Search Google Pack Featured [2 new] Random Links Privacy cybernetnews com

MailMan cybernetnews.com Search E-mail Notifier Google Pack Weather cybernetnews com

Google cybernetnews.com Search Site Images News Froogle Blog Trends Email amazon.com

FoxLingo Webpage Text Services AutoTrans Search

Forecaster cybernetnews.com Search Google Pack Weather Weather Player E-mail Notifier cybernetnews com

Search Facebook Quick Links Share Login to Facebook

cybernetnews.com Search E-mail Notifier Weather cybernetnews com

Sign-in My bookmarks Update cybernetnews.com Web Options cybernetnews com

AllPeers Home Share Add a Contact Transfers Preferences Support Hide Toolbar

Download Roboform Close

Add-ons - undefined [0] File Tools Options Links

Install... Find Updates Ski

reddit.com eBay Loading... Loading... (Untitled) Loading...

ecnnorati, Feedster, wikipedia, Biogines, Altavista, A9

New SeoQuake version available. Quick Or install from www.seoquake.com

REQUEST PARAMETERS SAVE TO FILE APPEND TO FILE

Sort: G PR: G I: Y L: Y LD: I: L: Rank: Age: I:

[Image] loading preview... CyberNet News: Keeping you plugged in! CyberNet News: Hardware, Downloads, Gadgets...Technology Done Right! Whether you're looking for news on Windows Vista, Firefox, iPods, Dell, computers, ... tech.cybernetnews.com/ - 87k - Cached - Similar pages - Filter

SeoQuake: G PR: 2 G I: 2 Y L: 2 Y LD: 2 I: 2 L: 2 Rank: 2 Age: 2 I: 2 source

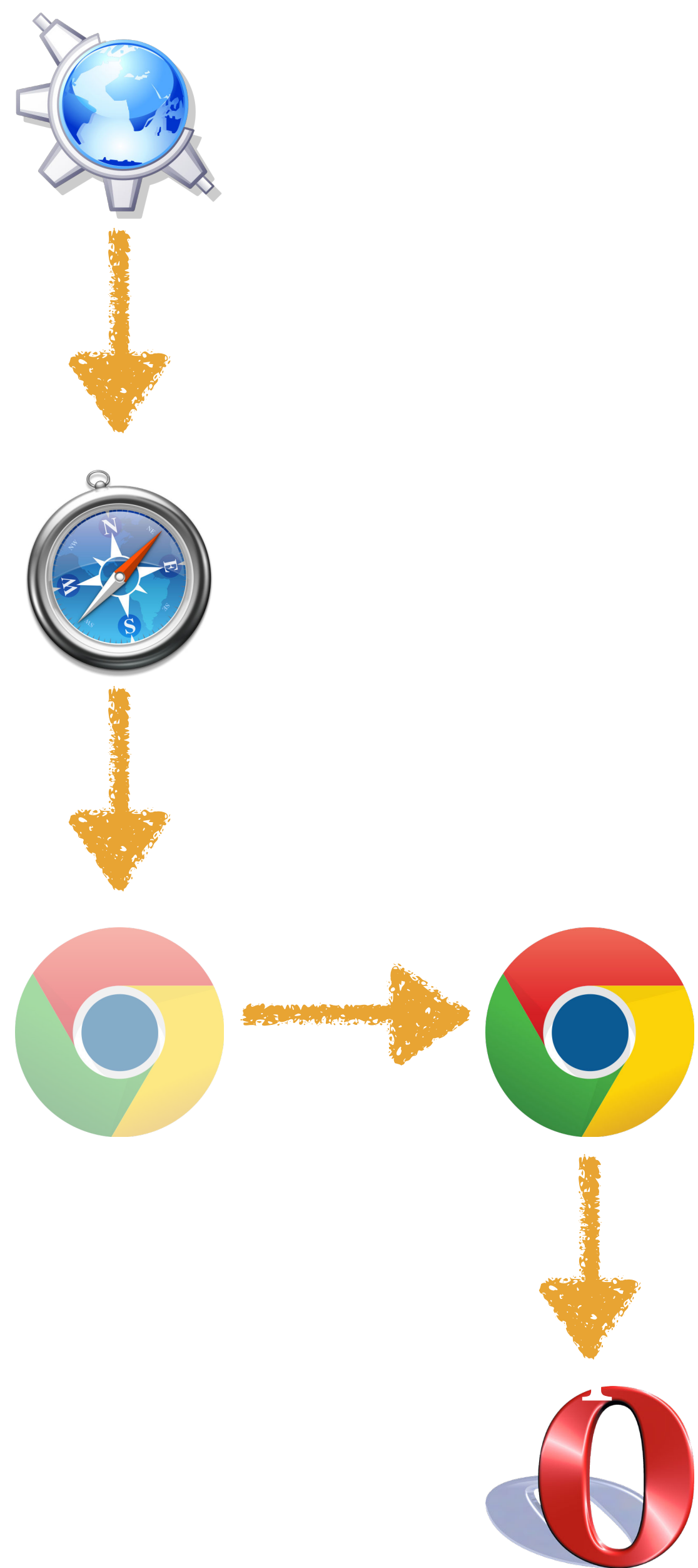
Scripts Partially Allowed [<script>: 6] [J+F+P: 0] Options...

UK: Tue 23:06 US Pacific: Tue 15:06 Hong Kong: Wed 07:06 GMT/UTC: Tue 23:06 You are now Unmasked Images: 117/117 Loaded: 106 KB 161.83 KB/s Time: 0:00

Other reasons Firefox is cool

- » Multi-platform support: Windows, OS X, Linux
- » Excellent support for Web standards
- » Best-of-breed developer tools

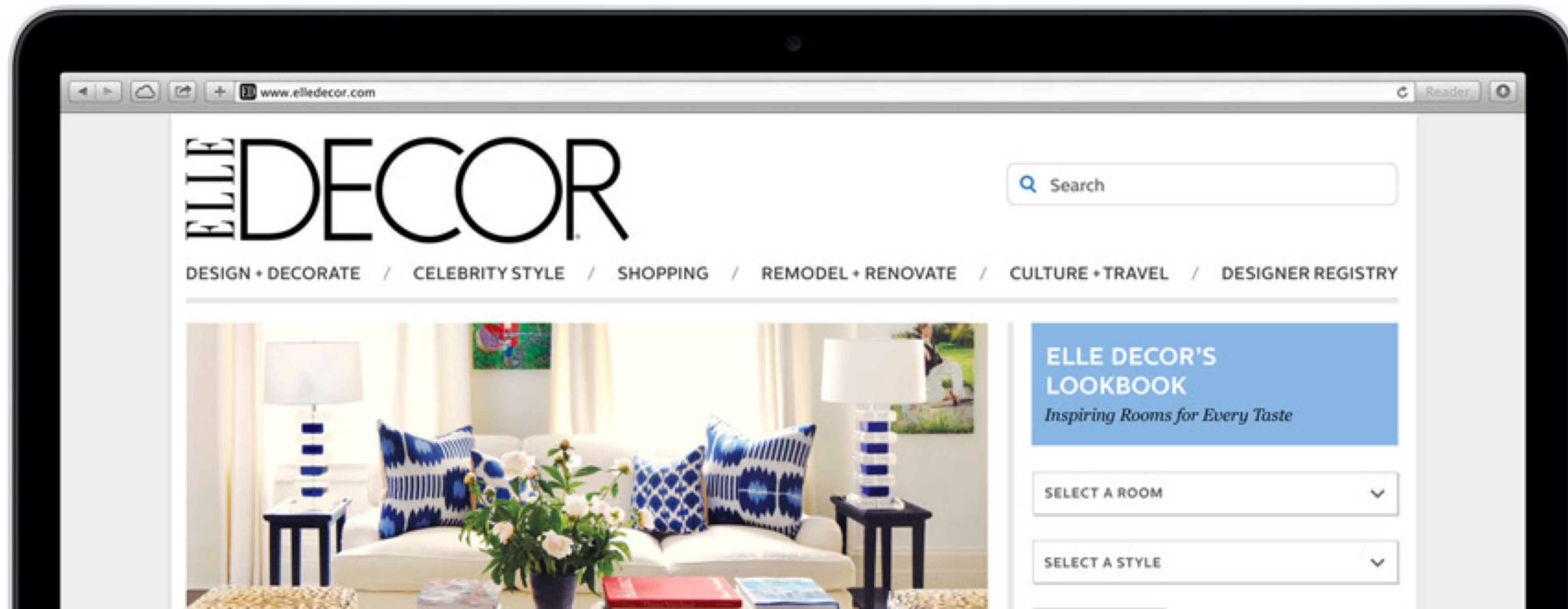
Safari/Chrome/Opera Family Tree



[Store](#)[Mac](#)[iPod](#)[iPhone](#)[iPad](#)[iTunes](#)[Support](#)

Safari

The smartest way to surf.



iCloud Keychain syncs your user names, passwords, & credit card info between Safari on your Mac & Mobile Safari on your iOS devices

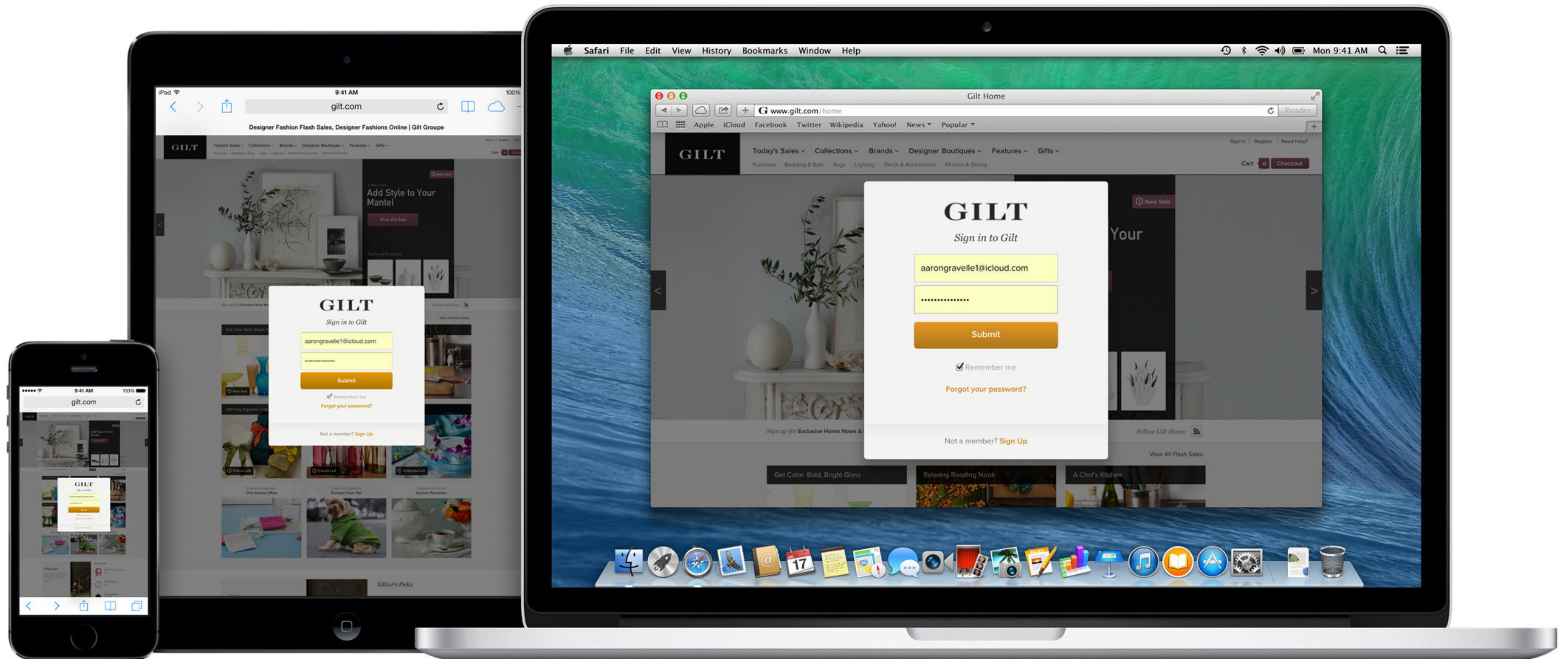
Everything is encrypted with 256-bit AES

iCloud Keychain

iCloud Bookmarks

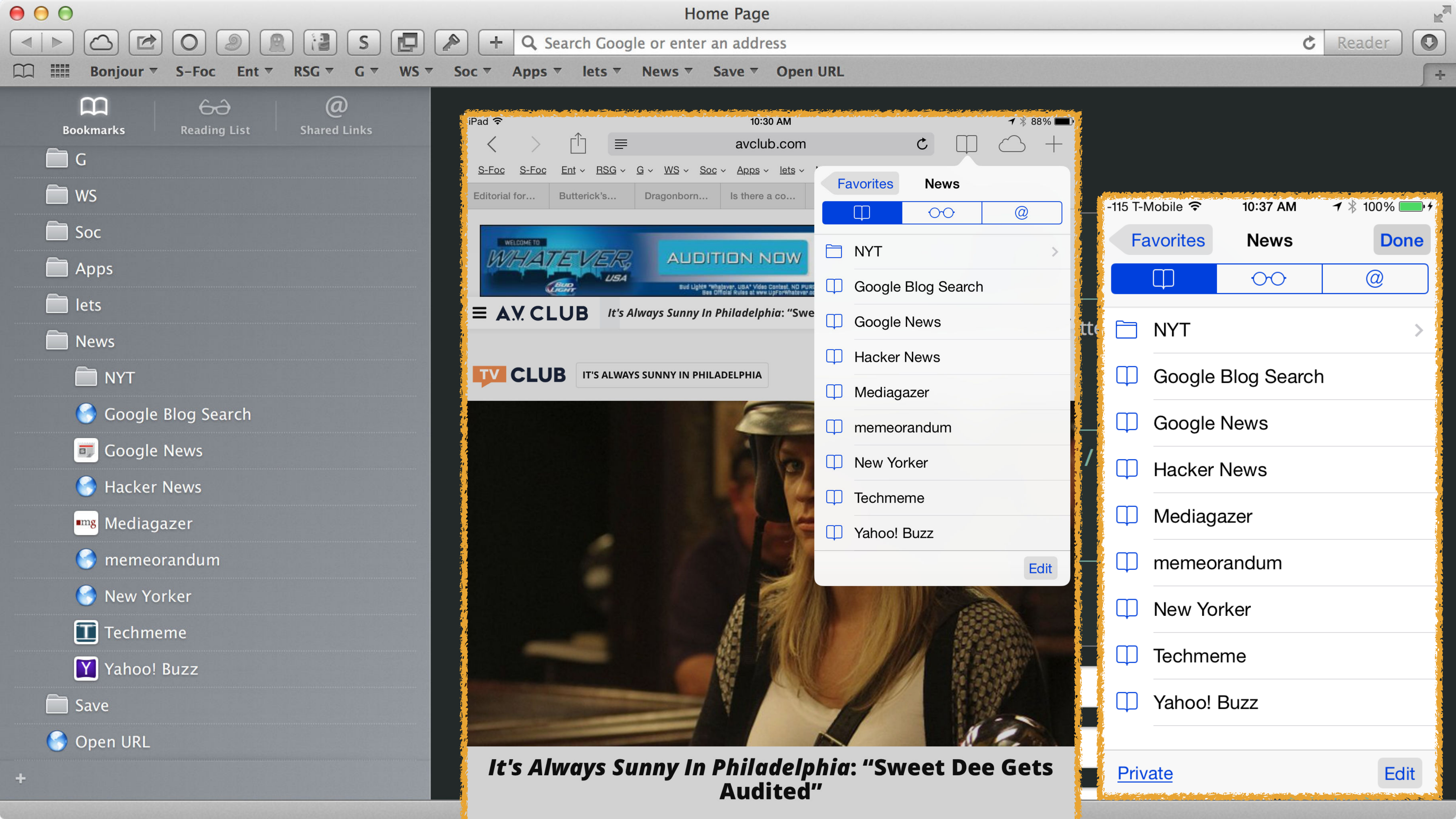
iCloud Tabs

Reading List



iCloud Keychain securely stores your user names, passwords, and credit card numbers and keeps them up to date on your other approved devices. So you can easily sign in to your favorite websites and quickly make online purchases. And everything is protected with robust 256-bit AES encryption.

iCloud Bookmarks sync bookmarks between Safari on your Mac & Mobile Safari on your iOS devices



Bookmarks

Reading List

Shared Links

G

WS

Soc

Apps

lets

News

NYT

Google Blog Search

Google News

Hacker News

Mediagazer

memeorandum

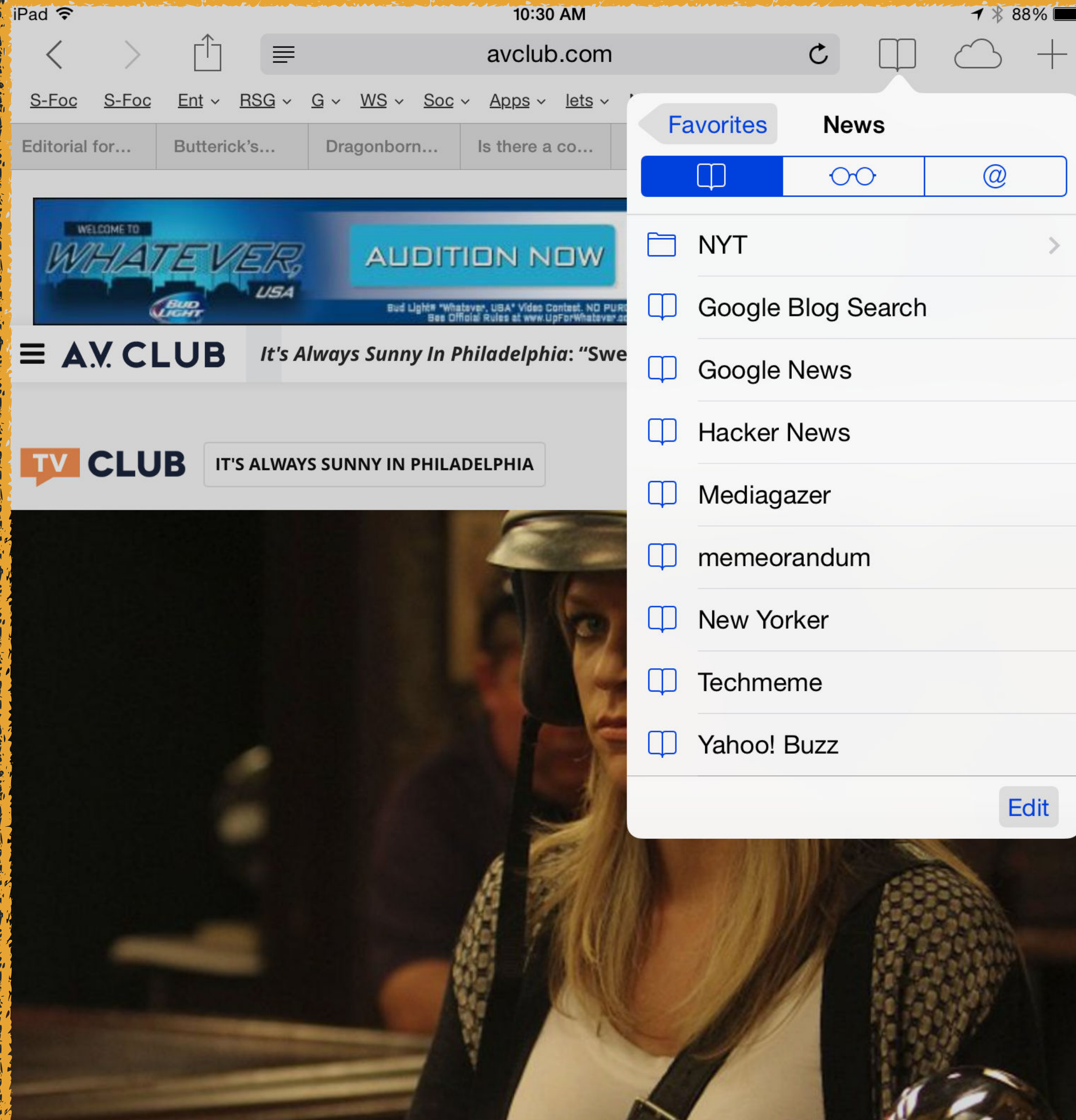
New Yorker

Techmeme

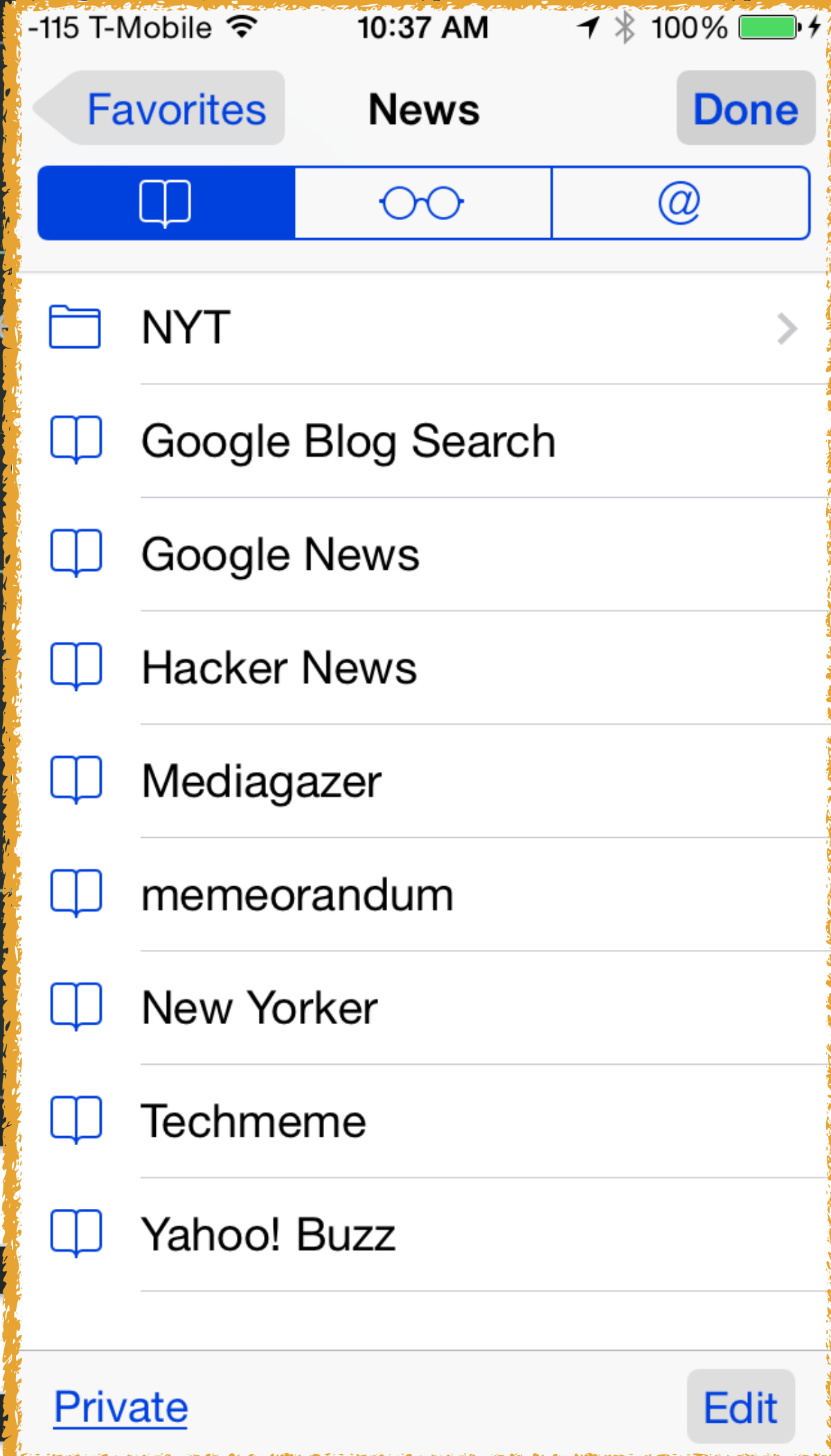
Yahoo! Buzz

Save

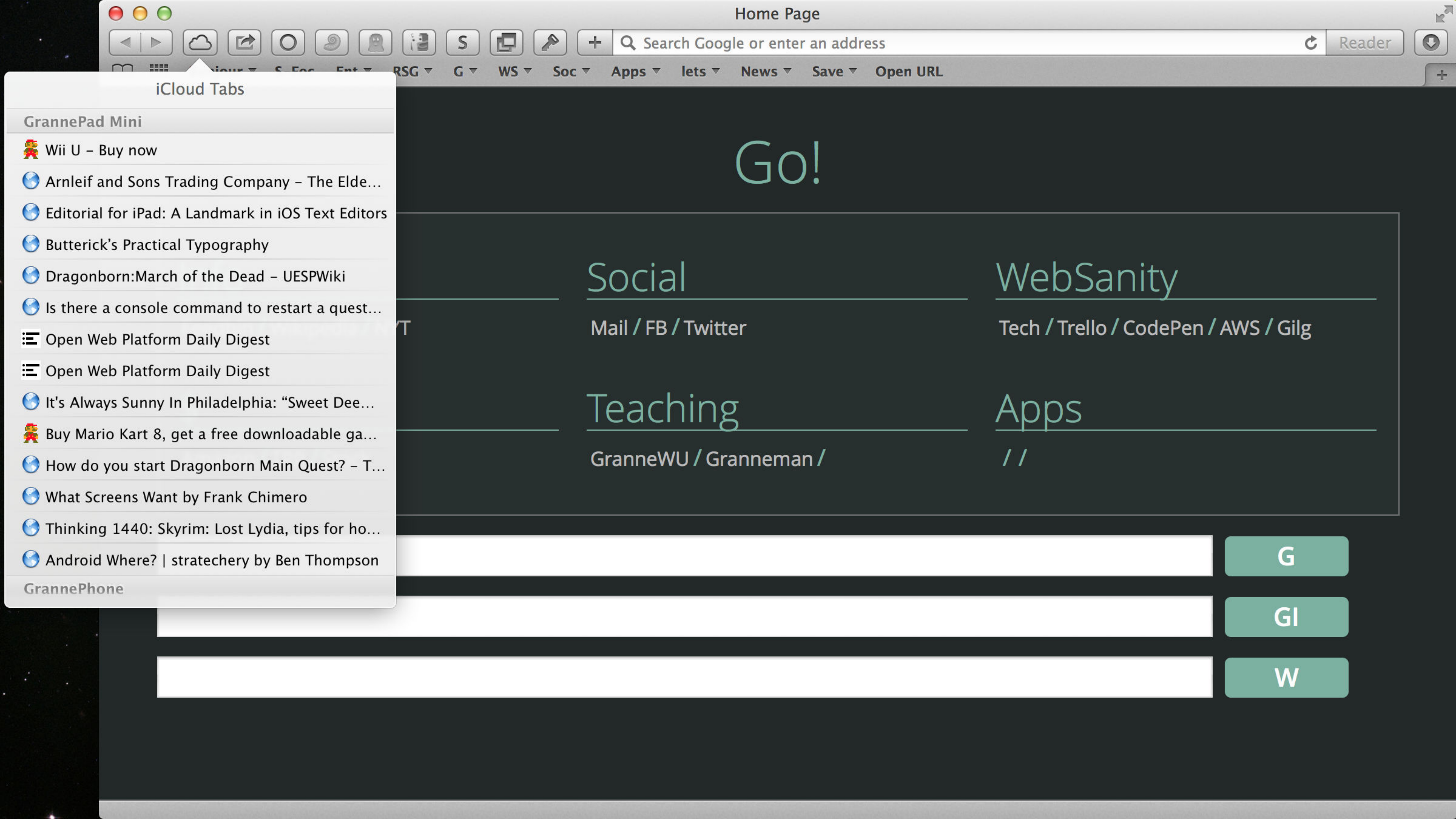
Open URL



It's Always Sunny In Philadelphia: "Sweet Dee Gets Audited"



iCloud Tabs syncs tabs between Safari on your Mac & Mobile Safari on your iPhone & iPad



iCloud Tabs

- GrannePad Mini
- Wii U – Buy now
- Arnleif and Sons Trading Company – The Elde...
- Editorial for iPad: A Landmark in iOS Text Editors
- Butterick's Practical Typography
- Dragonborn:March of the Dead – UESPWiki
- Is there a console command to restart a quest...
- Open Web Platform Daily Digest
- Open Web Platform Daily Digest
- It's Always Sunny In Philadelphia: "Sweet Dee..."
- Buy Mario Kart 8, get a free downloadable ga...
- How do you start Dragonborn Main Quest? – T...
- What Screens Want by Frank Chimero
- Thinking 1440: Skyrim: Lost Lydia, tips for ho...
- Android Where? | stratechery by Ben Thompson

GrannePhone

Go!

Social

Mail / FB / Twitter

WebSanity

Tech / Trello / CodePen / AWS / Gilg

Teaching

GranneWU / Granneman /

Apps

//

G

GI

W

SECTIONS

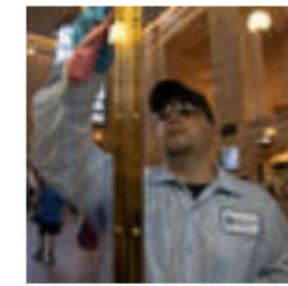
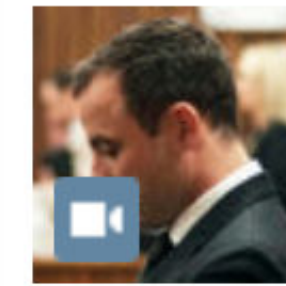
HOME

SEARCH

The New York Times

TRY TIMES PREMIER

rsgranne

Formula for
on and[Before Shooting in Iraq, a
Warning on Blackwater](#)[Andy Coulson to Face
Retrial in Royal Phone
Hacking Case](#)[CITY ROOM
New York Today: Behind
Grand Central's Shine](#)[Pistorius Was Not
Mentally Ill at Time of
Shooting, Psychiatrists
Report](#)[North
India
Defies
Balli](#)

U.S.

213 COMMENTS

Before Shooting in Iraq, a Warning on Blackwater

By JAMES RISEN JUNE 29, 2014

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SAVE

MORE

WASHINGTON — Just weeks before [Blackwater](#) guards [fatally shot 17](#) civilians at Baghdad's Nisour Square in 2007, the State Department began investigating the security contractor's operations in [Iraq](#). But the inquiry was abandoned after Blackwater's top manager there issued a threat: "that he could kill" the government's chief



A | A

Before Shooting in Iraq, a Warning on Blackwater

Photo



Blackwater personnel escorting Paul Bremer, an American civil administrator, upon his

WASHINGTON — Just weeks before [Blackwater](#) guards [fatally shot 17](#) civilians at Baghdad's Nisour Square in 2007, the State Department began investigating the security contractor's operations in [Iraq](#). But the inquiry was abandoned after Blackwater's top manager there issued a threat: "that he could kill" the government's chief investigator and "no one could or would do anything about it as we were in Iraq," according to department reports.

American Embassy officials in Baghdad sided with Blackwater rather than the State Department investigators as a dispute over the probe escalated in August 2007, the previously undisclosed documents show. The officials told the investigators that they had disrupted the embassy's relationship with the security contractor and ordered them to leave the country, according to the reports.

After returning to Washington, the chief investigator wrote a scathing report to State Department officials documenting misconduct by Blackwater employees and warning that lax oversight of the company, which had a contract worth more than \$1 billion to protect American diplomats, had created "an environment full of liability and negligence."

Continue reading the main story



"The management structures in place to manage and monitor our contracts in Iraq have become subservient to the contractors themselves," the investigator, Jean C.

I have 7 web browsers on my Mac—Safari, Firefox, Brave, Brave Browser Beta, & TorBrowser — but I often use Safari

Why?

- » Private: Apple isn't collecting data on my browsing
- » Fast: always in the top 3
- » Extensions: the ones I want
- » Secure: good security record
- » Scriptable: great for the automation tools I use
- » Development: good Web developer tools
- » Printing: excellent support for generating PDFs

Specific Safari features

- » Reader
- » iCloud Keychain
- » iCloud Bookmarks
- » iCloud Tabs



Google Chrome has lots of advantages

- » Fast
- » Advanced
- » Gazillions of extensions
- » Good security (but not privacy)
- » Syncing of data

Google Chrome has bad disadvantages

- » Google spying so Google knows even more about you
- » Strange UI decisions
- » Extensions at Chrome Web Store often not policed well

Web Development

The Absolute Basics

R. Scott Granneman & Jans Carton

© 2010 R. Scott Granneman
Last updated 2022-01-23

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For full licensing information, please see the last slide/page.

Changelog

2022-01-23 3.0: Changed to Web Dev Intro to Students; removed lots of stuff that is really only for Professionals; reversed Chrome & Viewport; rearranged a few things, added some stuff, & clarified things that weren't clear; bumped to 3.0 because of the big changes

Changelog

2021-11-28 2.8: Changed wording slightly explaining an *element*; added example from Twitter of 37 levels of nesting

2021-06-10 2.7: Removed 1 kaomoji because it was really an emoticon; better examples of *hypertext*, *markup*, & *language*; added hidden slide re W3C charter for HTML5

Changelog

2021-04-14 2.6: Updated theme to Granneman 1.7; cleaned up *lots* of minor formatting issues; added section on kaomoji

2020-09-08 2.5: Cleaned up *lots* of little stuff; added slides describing node.js, Electron, great features of VSCode; updated CanIUse screenshots; updated Web server marketshare; added summary note about JavaScript's name; updated *Bonus > History* section to make it a lot better; clarified void elements in *Elements, Attributes, Values*

Changelog

2020-08-19 2.4: Added slide re Microsoft ending support for IE 11 & Edge Legacy

2020-08-06 2.3: Added number of emoji & a few details re UTF-8 in *Character Encoding*

2020-07-13 2.2: Added details re: ECMAScript (JavaScript) & ECMA; fixed caniuse.com screenshots; minor wording changes; added history of JavaScript

Changelog

2020-07-05 2.1: Added other specs overseen by WHATWG & that W3C still oversees CSS; minor fixes

2020-06-26 2.0: Combined *Browsers, Web Servers, & HTTP* into a new section: *How the Web Works*; added *3 Languages* section; reorganized sections to make more sense; added kick-ass diagrams to *3 Languages*; added details re: DTD & quirks mode; minor wording fixes; bumped up to version 2 because of the large changes & restructuring

Changelog

2020-06-10 1.29: Minor fixes & updates; hid tips from *Pragmatic Programmer*; added stats & tables to Rendering Engines; updated web server marketshare

2020-02-05 1.28: Added `</head><body>` tattoo photo; added details about Chromium-based browsers; added release date for new Edge; fixed all browser logos to be historically accurate; fixed family trees in Choices

Changelog

2019-09-14 1.27: Added info re: WHATWG hosting living HTML spec; moved Choices last under Browsers; added info re: Chromium; minor fixes

2019-08-28 1.26: Added info re: supporting browsers; added how the Web was designed to view source code; added *closing tags & void elements*; replaced Microsoft logo; added Formatting Guide pages re: nesting code under Text Editor; changed colors of Development Venn diagram; added *HTML Tags* to history of HTML

Changelog

2018-12-24 1.25: Updated UTF-8 & Noto info; added Emoji slide to *UTF-8*; added that CodePen is like YouTube; order of attributes doesn't matter; cannot repeat attributes; added note re: character encoding in 1st 1024 characters; added details on Noto; added rendering engine slides re: Edge moving to `<blink>`, added JavaScript engines; added *ghost characters* to UTF-8; added neat ASCII chart

2018-10-01 1.24: Minor formatting fixes; fixed images for Simplest Webpage; updated theme to Granneman 1.5

Changelog

2018-08-22 1.23: Added new Windows-1252 diagram; fixed ISO-8859-1 page; changed font in Markup Venn diagram; updated web server marketshare; added section on *Visual Studio Code* & hid *Brackets*; re-formatted table of editors; hid *Templates* section; several more slides on Can I Use; better image for Outlook rendering engines

Changelog

2018-05-07 1.22: Changed theme to Granneman 1.4; lots of formatting fixes; additional notes re: Notepad & TextEdit; added how to set character encoding in browsers; added instructions for setting Chrome's character encoding to UTF-8; moved tofu under Noto; changed wording on Notepad; updated HTML Templates; updated installation screenshots

Changelog

2017-11-03 1.21: Added Visual Studio Code to list of editors; added *HTTP & Web Servers* sections

2017-10-23 1.20: In *Background*, better ordered slides, hid a few, added Can I Use, & improved HTML versions slide; added browser marketshare in Browsers; in *DTD*, hid older DTDs; added Noto to UTF-8 in *Character Encoding*; linked to my version of HTML Templates extension for Brackets; new link & examples for Brackets HTML Templates extension

Changelog

2017-09-15 1.19: Updated HTML Templates slides; hid Outlook's rendering engine; added tips from *Pragmatic Programmer*; added more attribute examples; updated View Source instructions; replaced HTML5 Taxonomy & Status image; hid Opera Mini; more detail on browser family trees; hid some browser parts to focus on chrome & viewport

2016-09-07 1.18: Many small changes & fixes; added slide showing status of W3C HTML5 & related techs; updated theme to Granneman 1.2

2016-08-23 1.17: Removed centering on W3C slide

Changelog

2016-01-10 1.16: Added slide re: feature phones

2016-01-10 1.15: Added slide re: capitalizing files & folders; updated info on browser support for *DTD* & *Character Encoding*

2015-08-31 1.14: Changed theme to Georgia Pro, so I had to fix a lot of things; made versions of DTD with versions of HTML clearer; clarified & cleaned up *Character Encoding*; clarified IE Edge Mode; minor edits to *Editing*; better explained WYSIWYGs; took out 1 CodePen slide

Changelog

2015-08-27 1.13: Removed 6-week release cycle for Brackets; shortened WebSanity CodePen URL; debugging not a good reason for comments; added EdgeHTML to rendering engines; improved deprecation slide; minor changes & fixes

2015-08-26 1.12: Removed slide showing Edge; put Opera on same line as Chrome; added browser family trees; updated *Browser Parts* from Safari to Chrome; updated Brackets features provided via extensions

Changelog

2015-06-13 1.11: Made the Tim Berners-Lee slides a lot cooler; added info about font tofu & Noto; changed name of Spartan to Edge

2015-02-02 1.10: Removed HTML5 REC; added info about Spartan & EdgeHTML; added info re: Outlook's rendering engine; added slide about original purpose of the Web (documents); added year of WHATWG's founding; added dates of HTML releases & Flash

2015-01-24 1.9: Added Mojibake term & example to *Character Encoding*

Changelog

2015-01-12 1.8: Removed ? after 2014 for HTML5; removed Adobe Edge Code; added preprocessing support to Brackets

2014-09-06 1.7: Removed Frameworks slide from *Templates*; rearranged W3C & WHATWG pages; moved side note about IE Edge Mode to *Character Encoding*; added examples to comments; various small tweaks & fixes

2014-09-02 1.6: Added slide on spaces in file names; strikethroughs on certain Brackets extensions because they were added to the program; added screenshots of CodePen

Changelog

2014-08-28 1.5: Changed “web browser” to “rendering engine” where appropriate; re-ordered a few slides; added Scott McCloud

2014-08-27 1.4: Moved *History* to *Bonus*

2014-08-26 1.3: Cleaned up *Browser History*

Changelog

2014-08-26 1.2: Minor fixes; added images for text editors & WYSIWYG; added *Browser History* & *Browser Choices* sections

2014-07-28 1.1.3: Added better WYSIWYG slides

2014-07-28 1.1.2: Added CodePen slides

2014-07-01 1.1.1: Added slides to *Rendering Engines* showing support for HTML5 & CSS

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