

FUNDAMENTAL PROGRESSIVE ENHANCEMENT

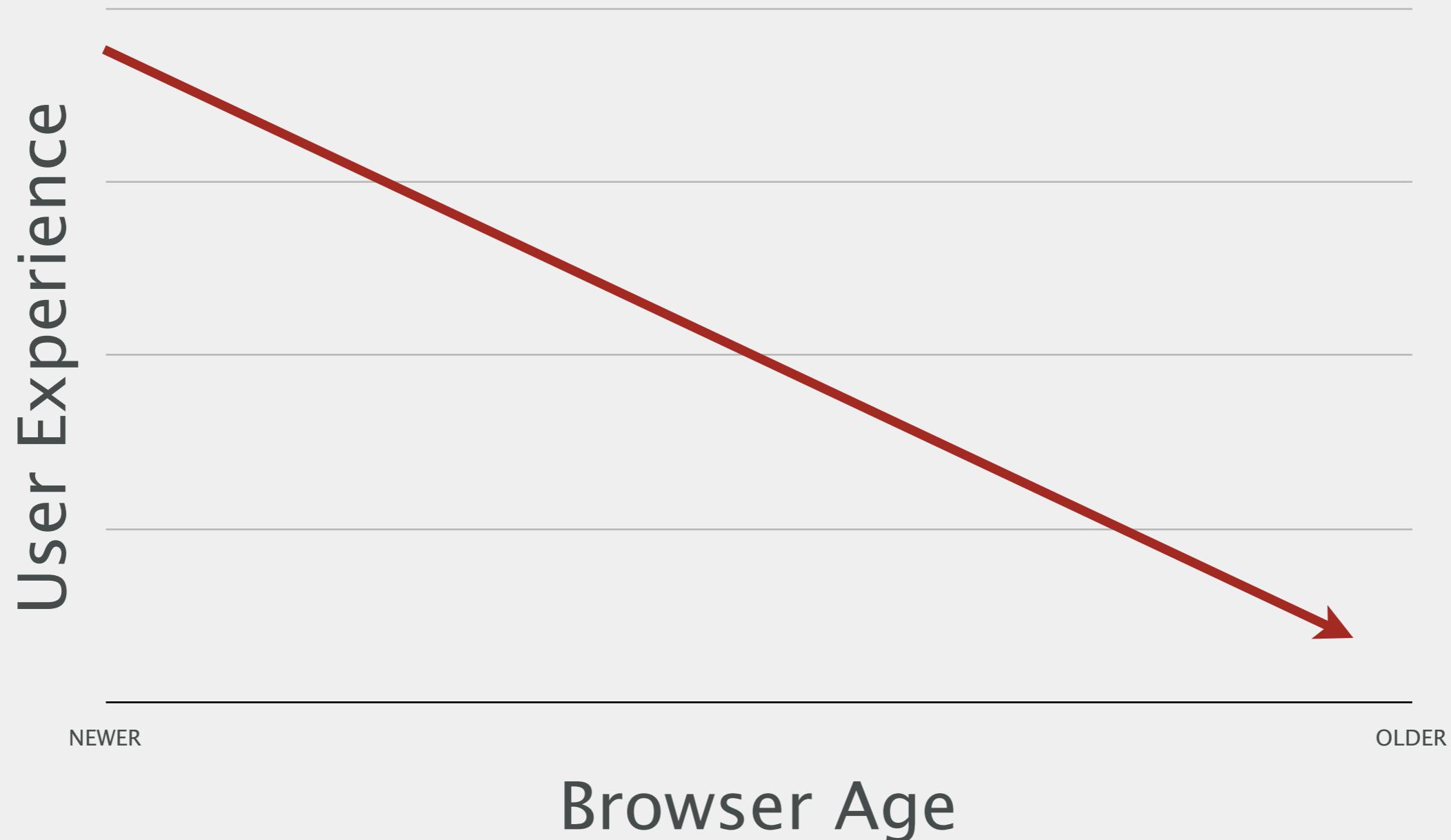
Aaron Gustafson



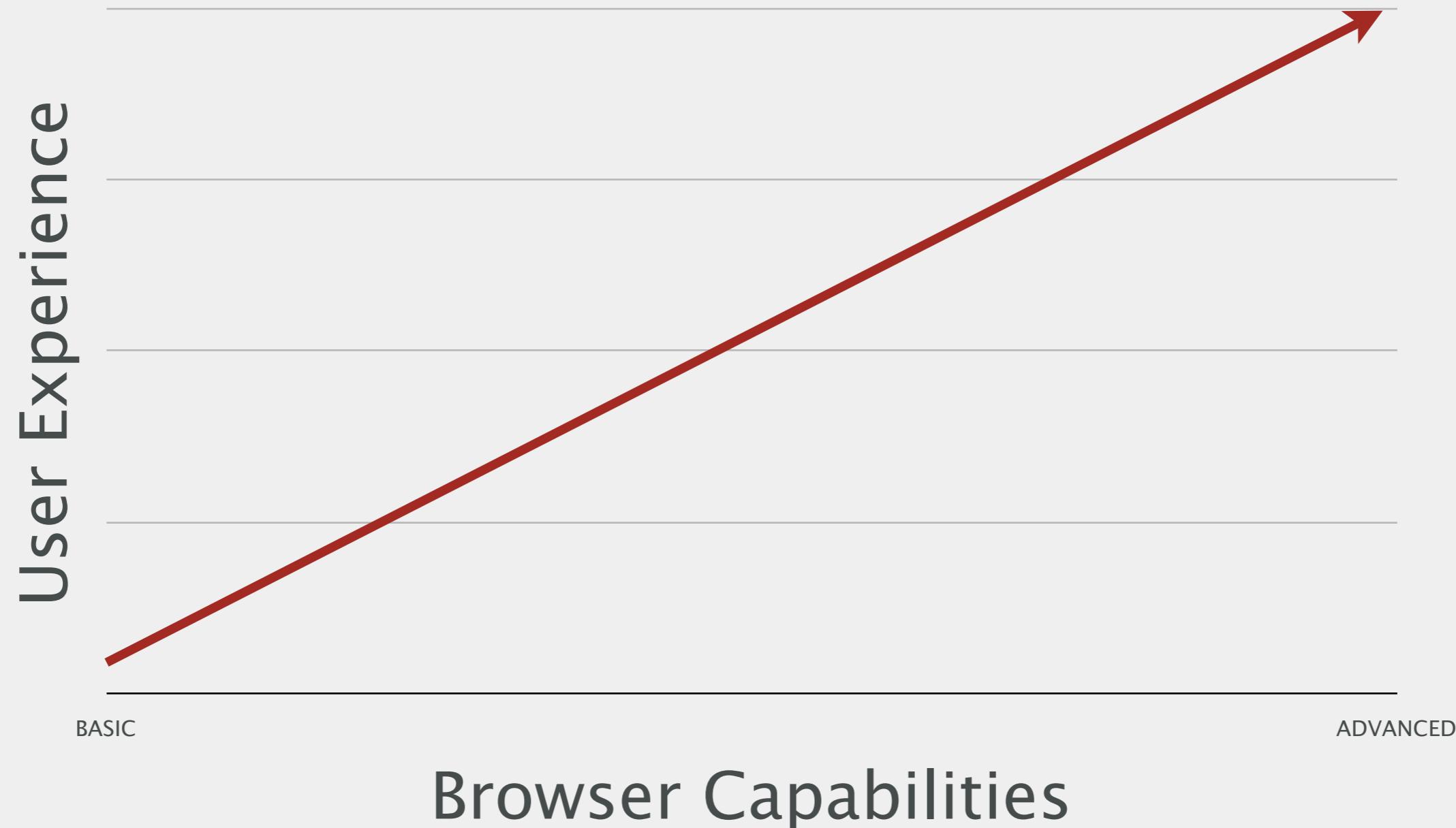
easy designs

**WHAT IS
PROGRESSIVE
ENHANCEMENT?**

Graceful Degradation



Progressive Enhancement





it's about
service

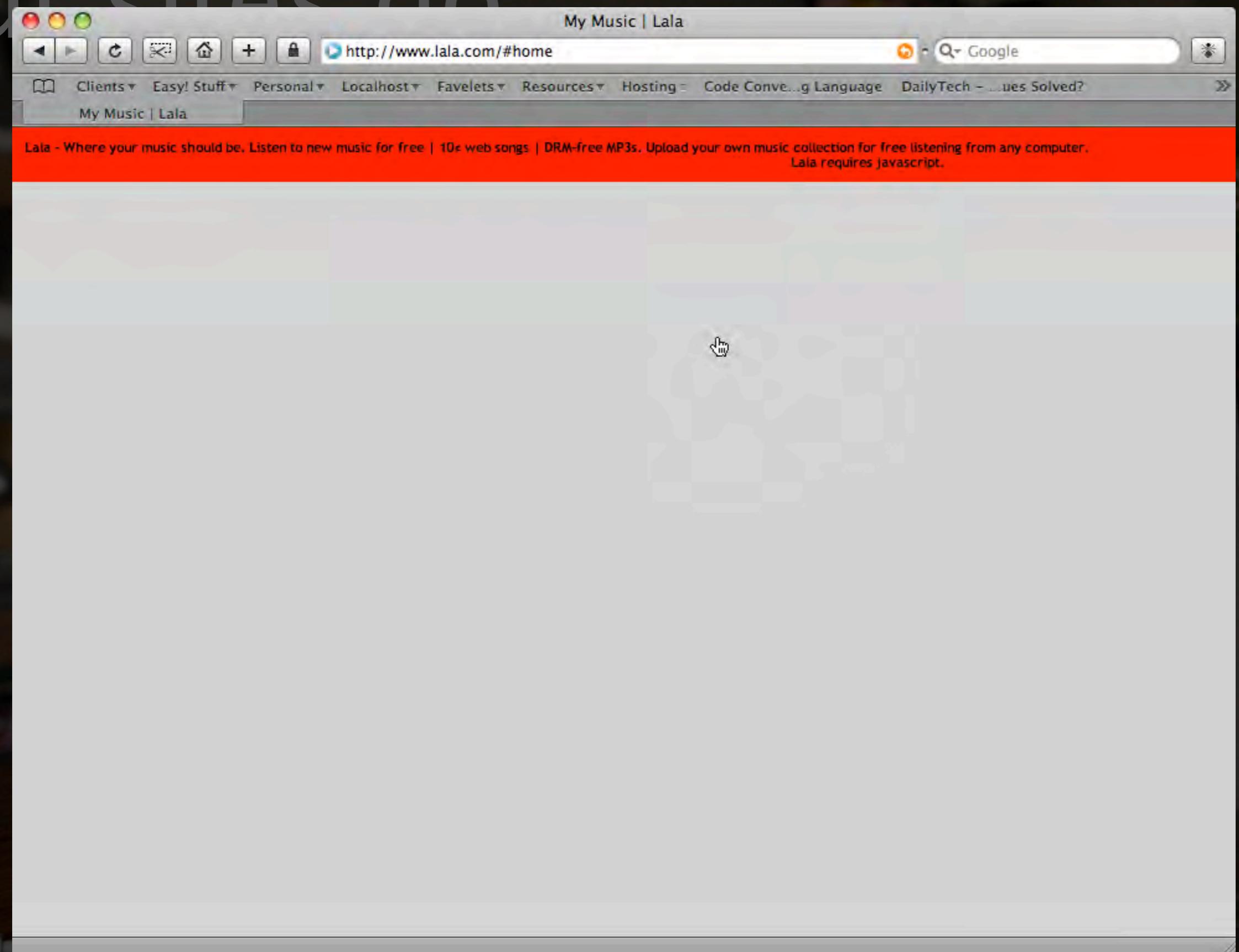


you wouldn't do this...



but sites do...

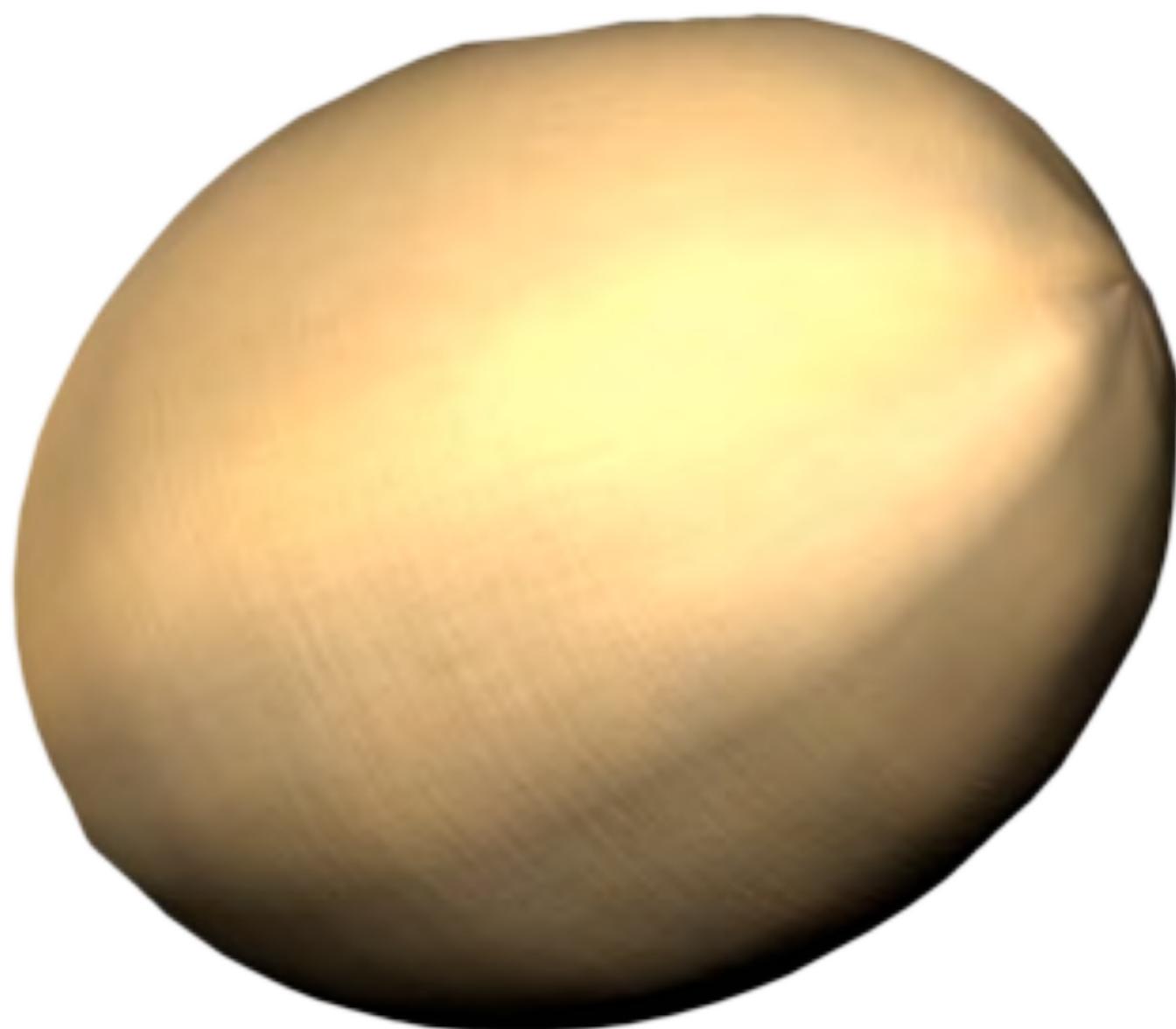




HOW DOES
IT WORK?

a little treat
for everyone











(viewed another way)

JavaScript

CSS

XHTML + HTTP only

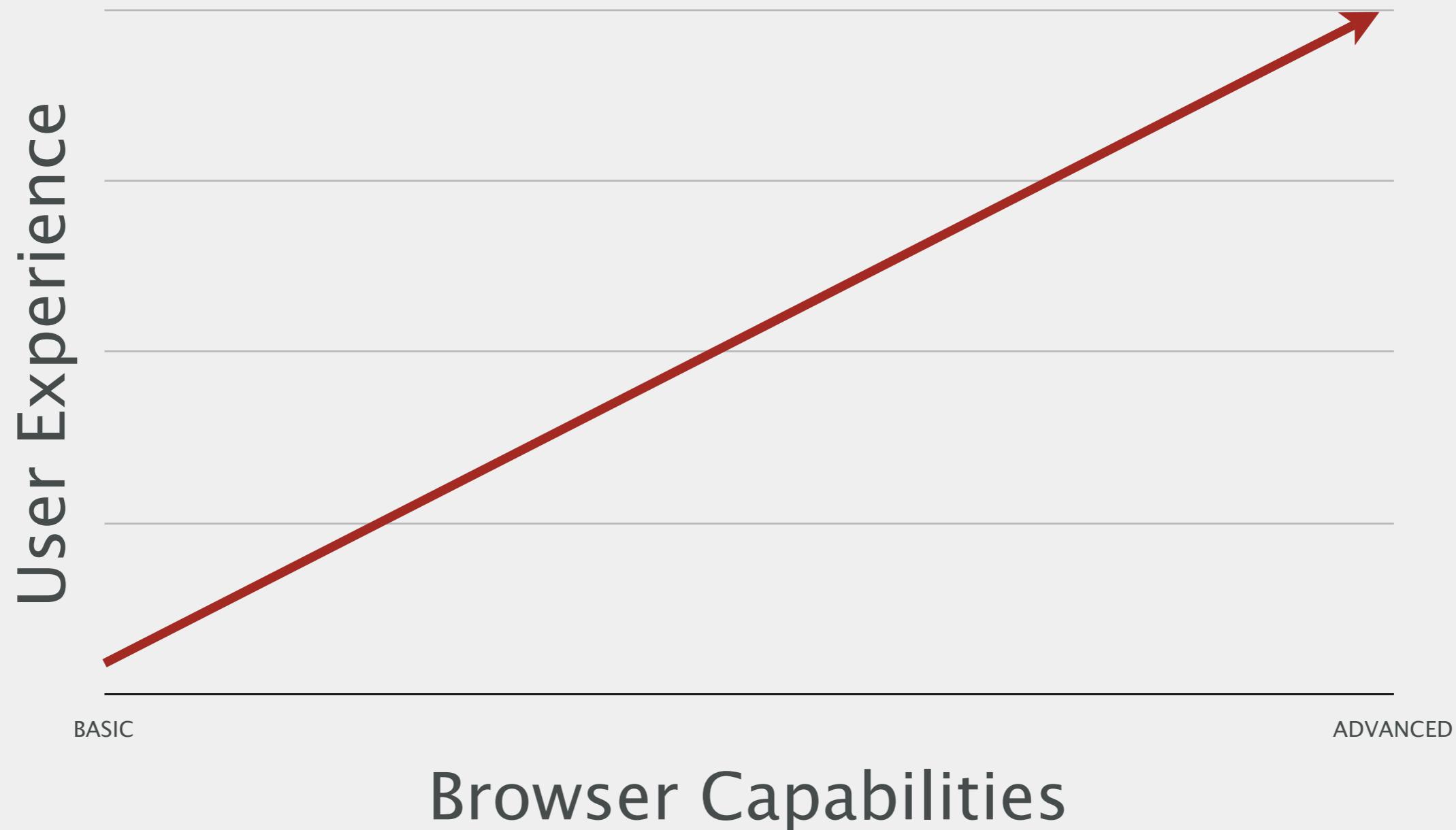
JavaScript

some JavaScript

CSS

some CSS

XHTML + HTTP only



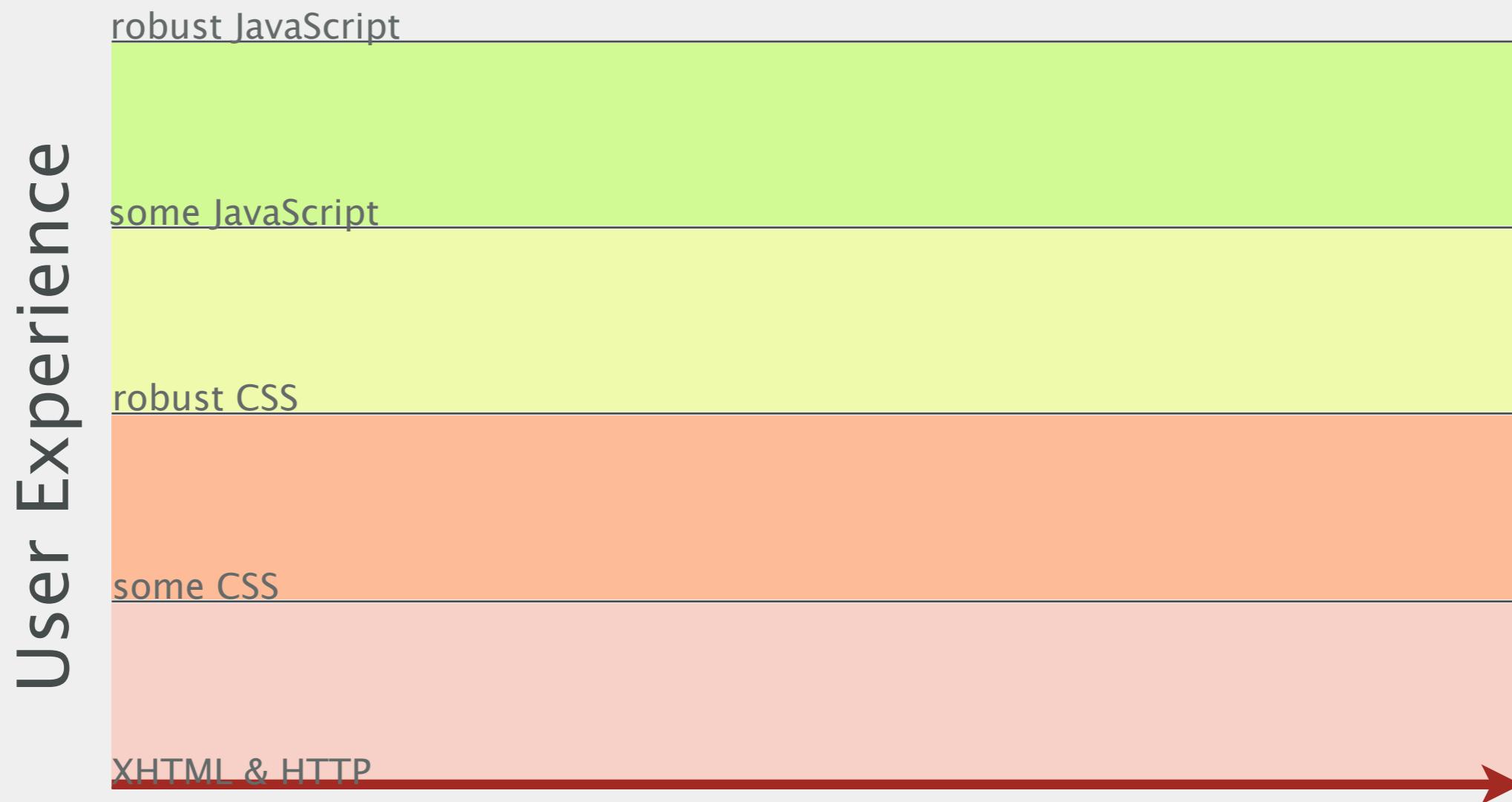
LEVELS OF SERVICE



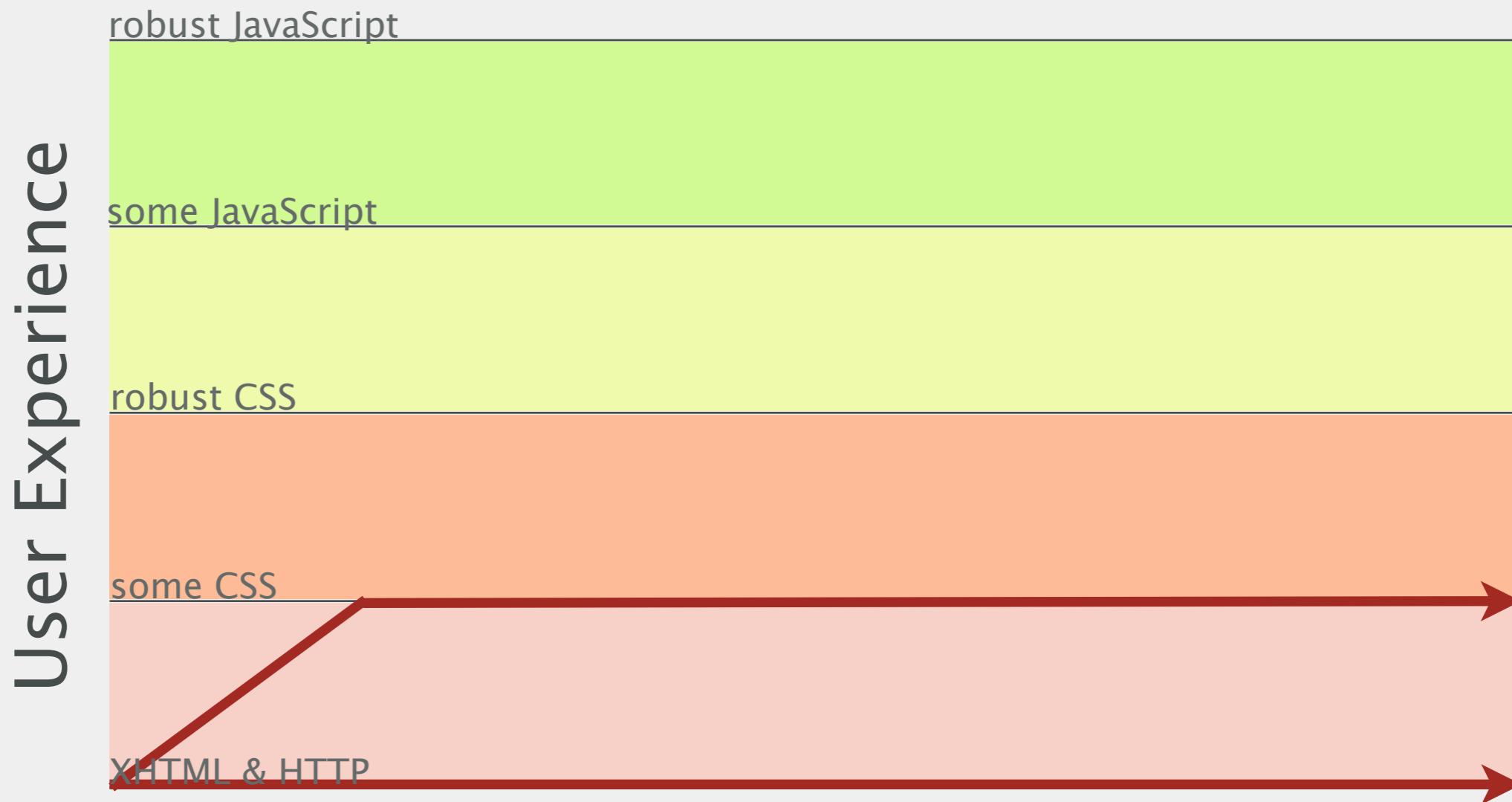
LEVELS OF SUPPORT



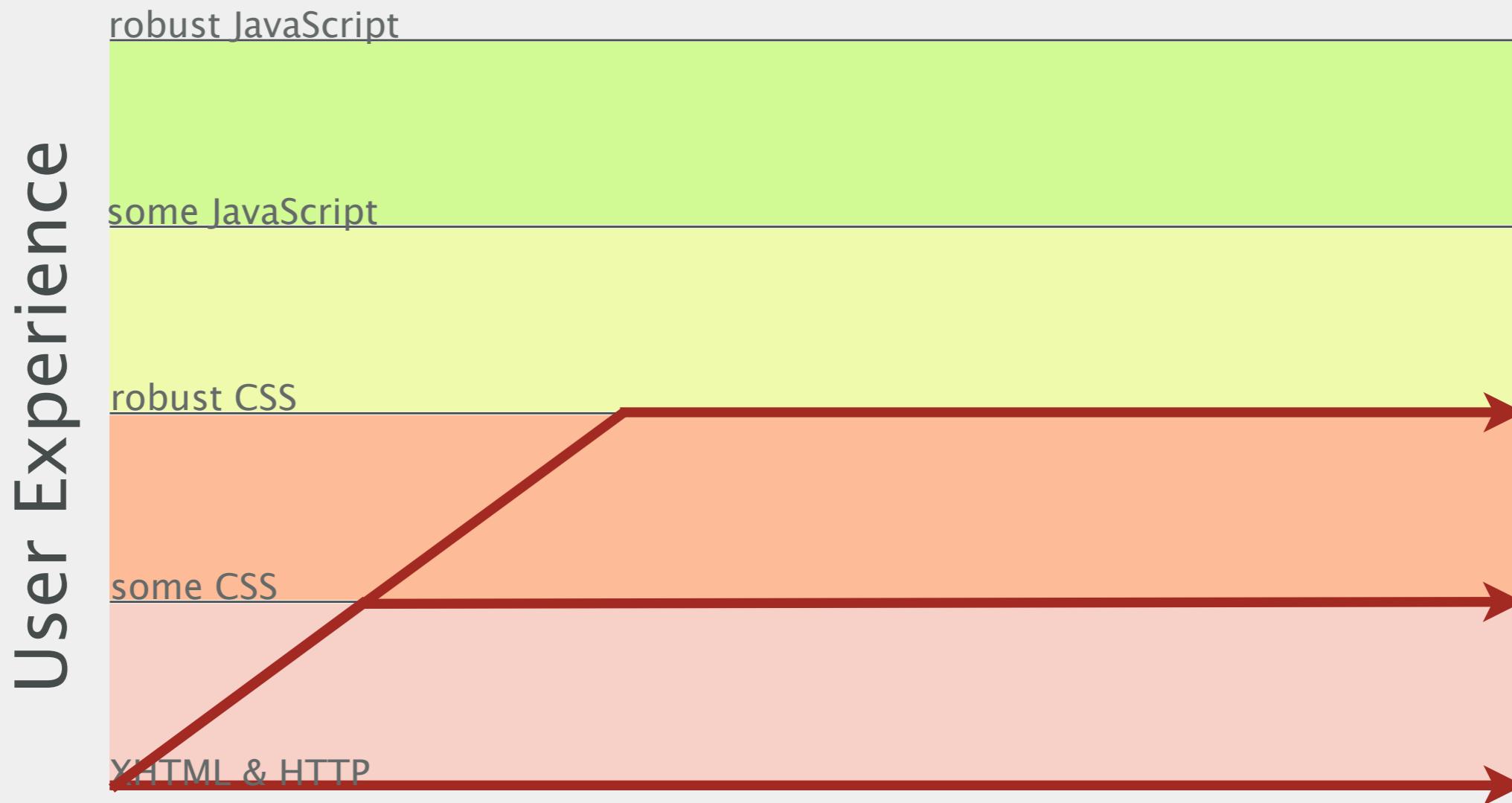
Rise to meet needs



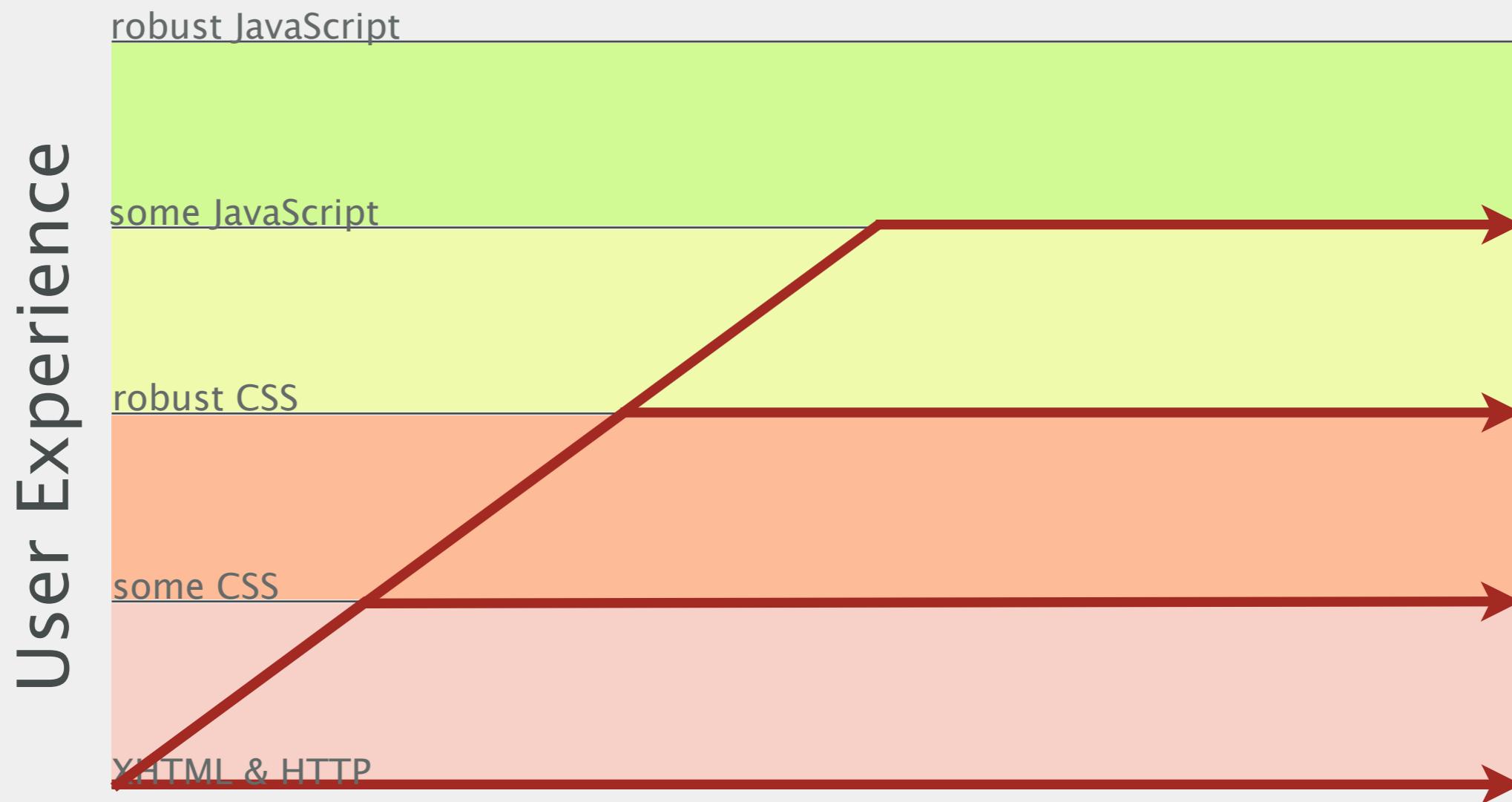
Rise to meet needs



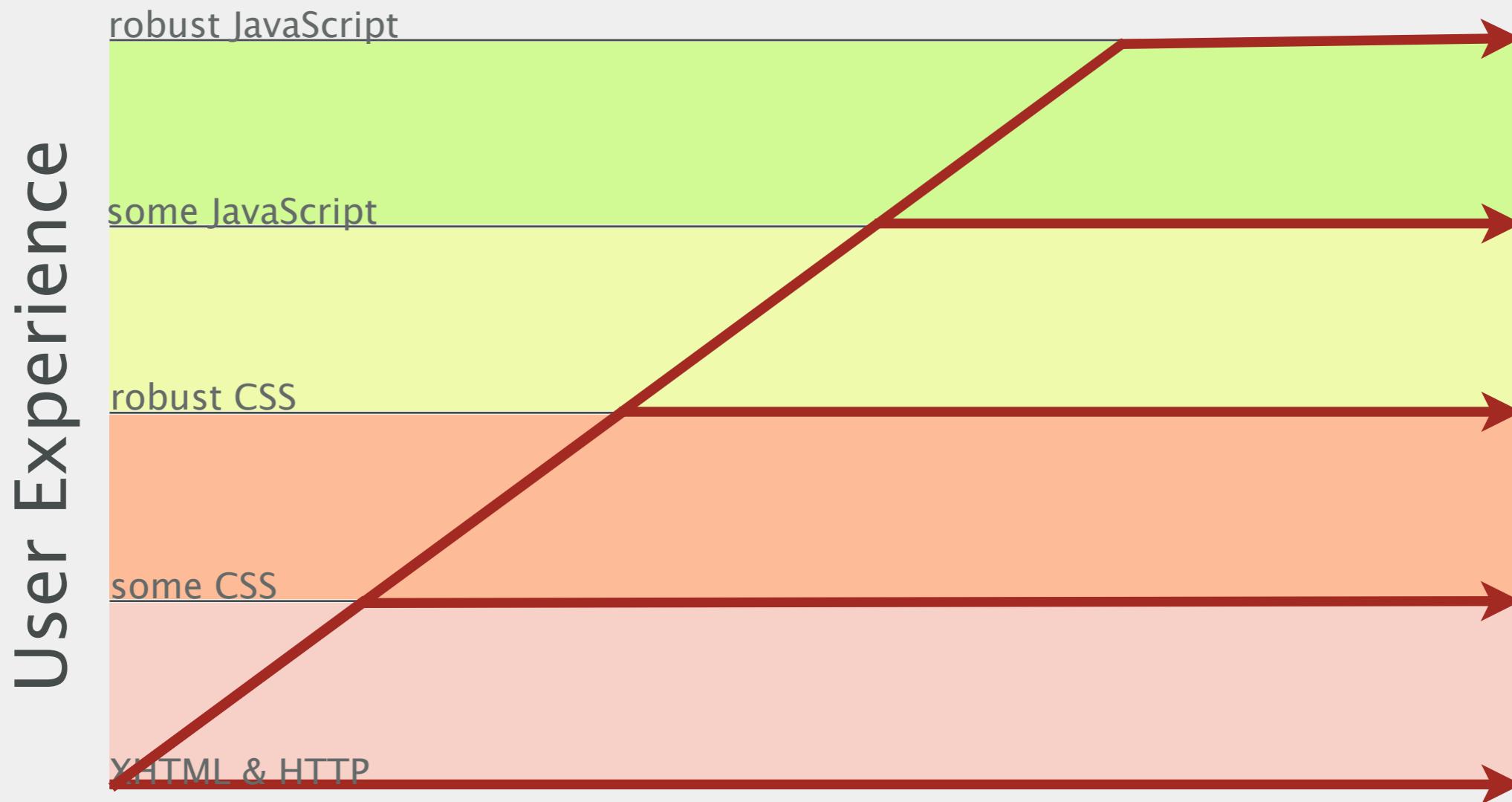
Rise to meet needs



Rise to meet needs



Rise to meet needs



Rely on your baseline



you can
still be

creative



A screenshot of a Windows-based IDE interface. The main window shows C++ code for a 'PostResult' project. The code includes a loop to tokenize query pairs from a file and store them in a map. The build log indicates a successful build with no errors or warnings. The file tree on the right shows the project structure with files like 'PostResult.cpp', 'ResultRep.cpp', and 'ReadMe.txt'. The system tray at the bottom shows various icons.

```
while( !r.eof() )
{
    std::vector<std::string> QuaryPair = tokenize( *itr , "=" );
    if( QuaryPair.size() == 2 )
    {
        QueryMap[ QuaryPair[0] ] = QuaryPair[1];

        printf("<!-- %s : %s -->\n", QuaryPair[0].c_str() , QuaryPair[1].c_str());
    }
}
```

Output

Build

----- Build started: Project: PostResult, Configuration: Debug Win32 -----

Compiling...
PostResult.cpp
Linking...

Build log was saved at "file:///d:/Work/ResultRep/PostResult/Debug/BuildLog.htm"
PostResult - 0 error(s), 0 warning(s)

Task List Output Find Results 1

Ready

Start

Ln 19 Col 2 Ch 2 INS

23:27

iBook G4

every key we press
affects user experience

PROGRESSIVE ENHANCEMENT WITH CSS



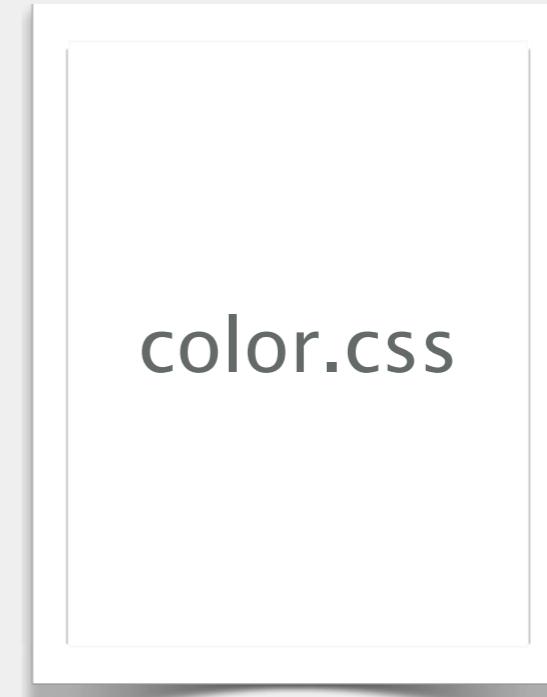
main.css



type.css



layout.css



color.css

```
<link rel="stylesheet" type="text/css" href="main.css" />
```

```
<link rel="stylesheet" type="text/css" href="type.css" />
<link rel="stylesheet" type="text/css" href="layout.css" />
<link rel="stylesheet" type="text/css" href="color.css" />
```

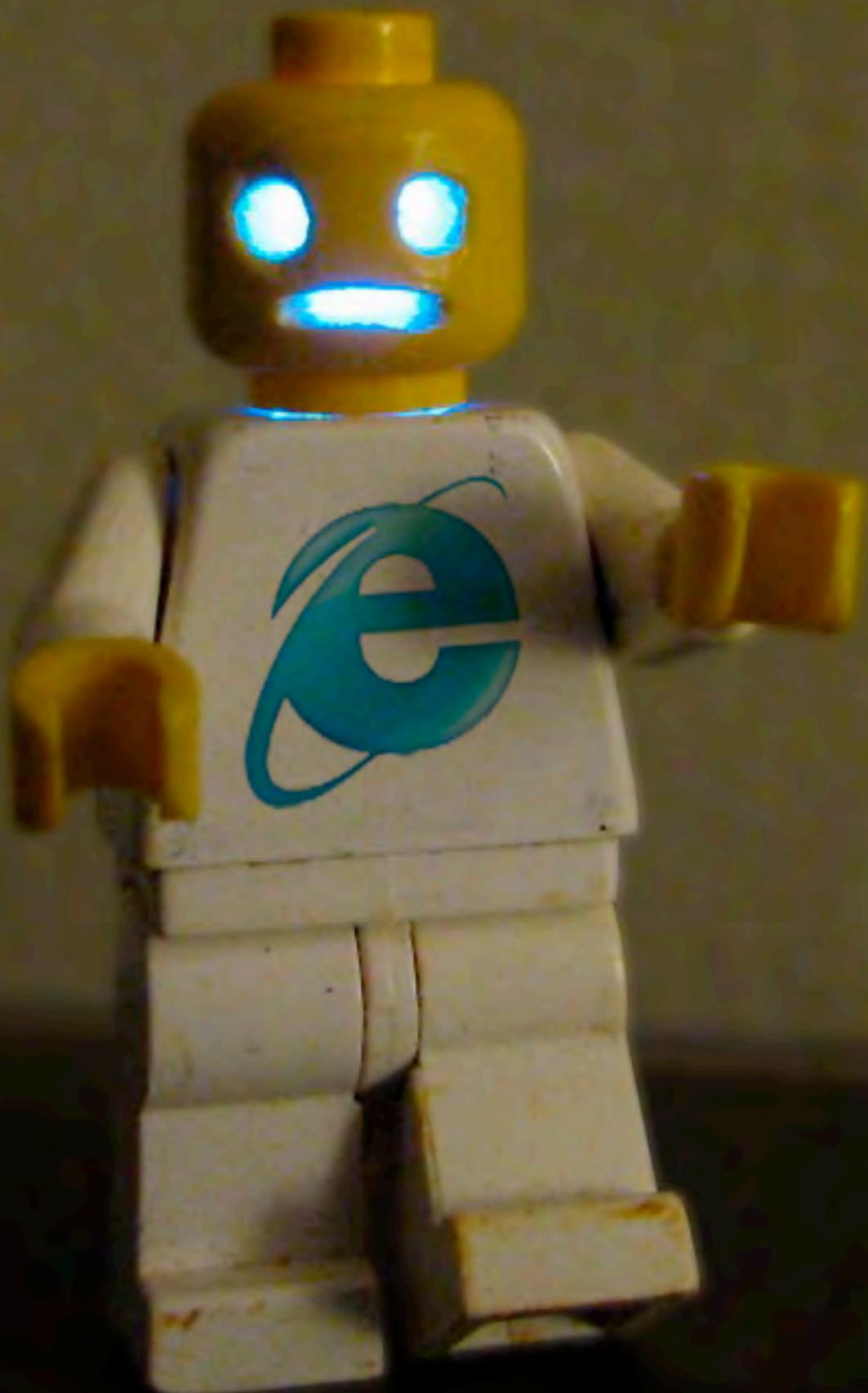
```
<link rel="stylesheet" type="text/css" href="type.css" />
<link rel="stylesheet" type="text/css" href="layout.css" />
<link rel="stylesheet" type="text/css" href="color.css" />
```

```
<link rel="stylesheet" type="text/css" href="type.css" />
<link rel="stylesheet" type="text/css" href="layout.css" />
<link rel="stylesheet" type="text/css" href="color.css" />
<link rel="stylesheet" type="text/css" href="print.css" media="print" />
```

```
<link rel="stylesheet" type="text/css" href="type.css" />
<link rel="stylesheet" type="text/css" href="layout.css" />
<link rel="stylesheet" type="text/css" href="color.css" />
<link rel="stylesheet" type="text/css" href="print.css" media="print" />
```

```
@import 'screen.css';  
  
<link rel="stylesheet" ty  
<link rel="stylesheet" ty  
<link rel="stylesheet" ty  
<link rel="stylesheet" ty  
      type="text/css" media="print" />
```

```
@import 'screen.css' screen;  
@import 'print.css' print;  
@import 'mobile.css' handheld;  
  
<link rel="stylesheet" type="text/css" href="screen.css" media="screen" />  
<link rel="stylesheet" type="text/css" href="print.css" media="print" />  
<link rel="stylesheet" type="text/css" href="mobile.css" media="handheld" />  
<link rel="stylesheet" type="text/css" href="print.css" media="print" />
```



(the browser that wouldn't die)

```
<link rel="stylesheet" type="text/css" href="type.css" />
<link rel="stylesheet" type="text/css" href="layout.css" />
<link rel="stylesheet" type="text/css" href="color.css" />
```

```
<link rel="stylesheet" type="text/css" href="type.css" />
<link rel="stylesheet" type="text/css" href="layout.css" />
<link rel="stylesheet" type="text/css" href="color.css" />
<!--[if IE lte 7]>
<link rel="stylesheet" type="text/css" href="ie7.css" />
<![endif]-->
```

```
<link rel="stylesheet" type="text/css" href="type.css" />
<link rel="stylesheet" type="text/css" href="layout.css" />
<link rel="stylesheet" type="text/css" href="color.css" />
<!--[if IE lte 7]>
<link rel="stylesheet" type="text/css" href="ie7.css" />
<!endif]-->
<!--[if IE lte 6]>
<link rel="stylesheet" type="text/css" href="ie6.css" />
<!endif]-->
```



`p\property. value;`
`_property: value;`
`*`
`-property: value;`
`*:first-child {`
`html {`
`body {`
`html {`
`voice-family: "}\""}\"";`
`voice-family: inherit;`
`html {`

Make smart decisions

Contact Us

Send us a message. All fields are required.

Name:

Email:

Message:

Send It

Make smart decisions

```
<form id="contact-form" action="#" method="post">
  <fieldset>
    <legend>Contact Us</legend>
    <p>Send us a message. All fields are required.</p>
    <ol>
      <li>
        <label for="contact-name">Name</label>
        <input type="text" id="contact-name" name="name" />
      </li>
      <li>
        <label for="contact-email">Email</label>
        <input type="text" id="contact-email" name="email" />
      </li>
      <li>
        <label for="contact-message">Message</label>
        <textarea id="contact-message" name="message" rows="4"
                  cols="30"></textarea>
      </li>
    </ol>
    <button type="submit">Send It</button>
  </fieldset>
</form>
```

Make smart decisions

```
<form id="contact-form" action="#" method="post">
  <fieldset>
    <legend>Contact Us</legend>
    <p>Send us a message. All fields are required.</p>
    <ol>
      <li>
        <label for="contact-name">Name:</label>
        <input type="text" id="contact-name" name="name" required="required" />
      </li>
      <li>
        <label for="contact-email">Email:</label>
        <input type="text" id="contact-email" name="email" required="required" />
      </li>
      <li>
        <label for="contact-message">Message:</label>
        <input type="text" id="contact-message" name="message" rows="4" cols="30" />
      </li>
    </ol>
    <button type="submit">Send It</button>
  </fieldset>
</form>
```

Contact Us

Send us a message. All fields are required.

Name:

Email:

Message:

Make smart decisions

```
<form id="contact-form" action="#" method="post">
  <fieldset>
    <legend>Contact Us</legend>
    <p>Send us a message. All fields are required.</p>
    <ol>
      <li>
        <label for="contact-name">Name</label>
        <input type="text" id="contact-name" name="name" />
      </li>
      <li>
        <label for="contact-email">Email</label>
        <input type="text" id="contact-email" name="email" />
      </li>
      <li>
        <label for="contact-message">Message</label>
        <textarea id="contact-message" name="message" rows="4"
                  cols="30"></textarea>
      </li>
    </ol>
    <button type="submit">Send It</button>
  </fieldset>
</form>
```

Make smart decisions

```
label:after {  
  content: ":";  
}
```

QUESTIONS?



inspired?

PROGRESSIVE ENHANCEMENT WITH JAVASCRIPT

proper planning...



...can keep you from looking
foolish



User Experience



All code needed to understand
& use a page must exist before
any scripts run



Consider lala.com

LALA.COM my music discover trade buy home forums help signin

Search All ▾

Reinvent Your iTunes & Digital Music - Play & Share Online

You can upload your music. Upload your iTunes and My Music folder to the Web.

Say "iPod". Designed to be iPod friendly, easily fill up your iPod from the Web (and any PC) with your favorite music.

The "S" word - share. Don't spend hours on P2P sites and worry about viruses. Safely share music and playlists.

[Sign up](#)


 YouTube
 Featuring "Rich Man" by Ghostland Observatory
 Buy Ghostland Observatory music

Just added playlists

1-25 of 227 >>

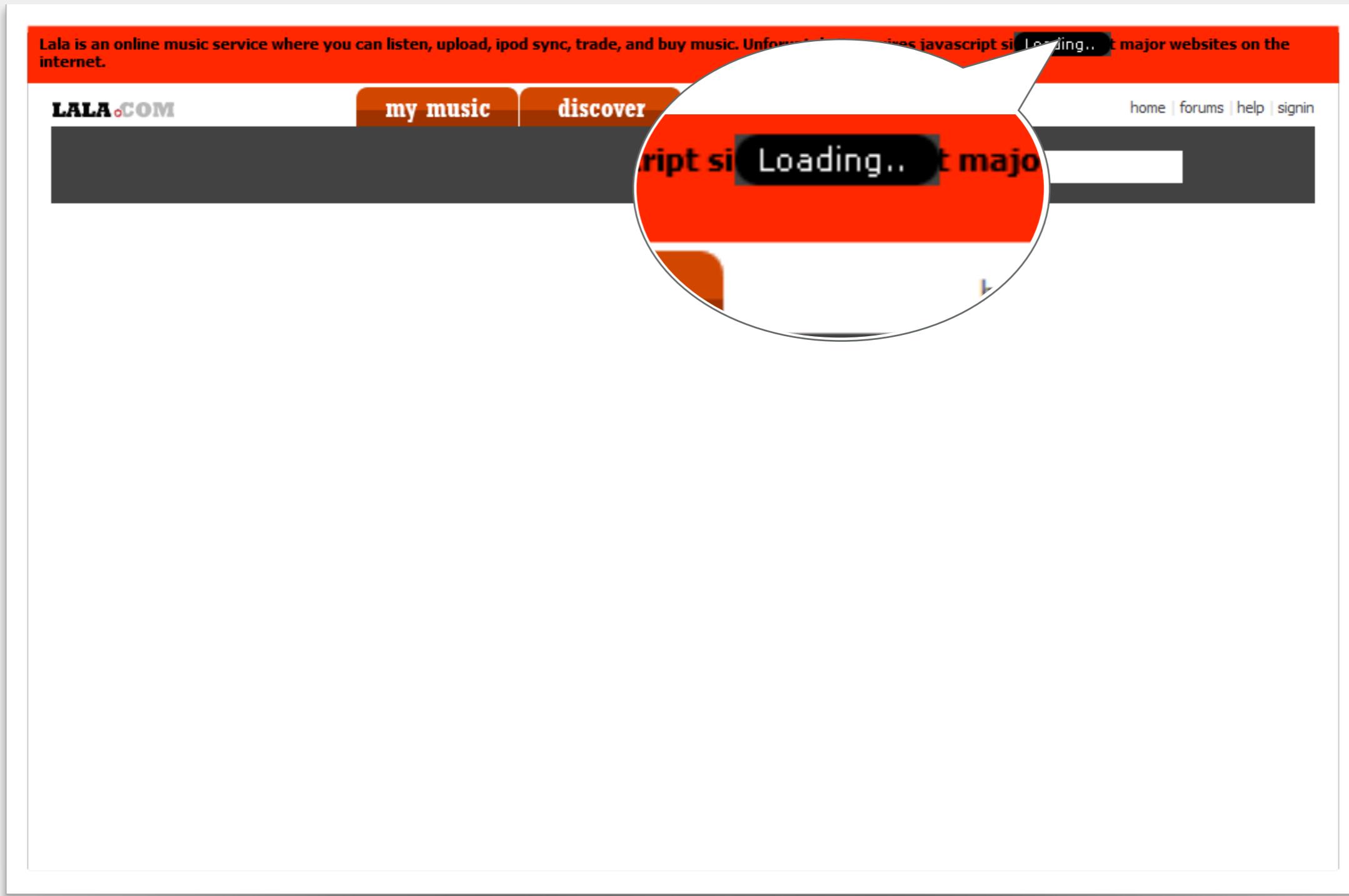
- ▶ The Brainwaves From Manteno
- ▶ Triad
- ▶ Soul Sounds
- ▶ 1986
- ▶ 1988
- ▶ 1970
- ▶ Random Sh*t
- ▶ Lay Down Your Heavy Load
- ▶ yo
- ▶ 1965
- ▶ Songs I Want
- ▶ Girls
- ▶ 1978
- ▶ 1981
- ▶ 1966
- ▶ random musings
- ▶ Marqua
- ▶ The Greatest Ultimate Essential Definition
- ▶ African Discovers

Most popular albums on lala

1-15 of 2065 >>

				
Icky Thump The White Stripes	Boxer The National	Ga Ga Ga Ga Spoon	Back To Black Amy Winehouse	Our Love To Admire Interpol

Without JavaScript



And looking at the markup...



Lala is an online music service where you can listen, upload, ipod sync, trade, and buy music. Unfortunately it requires javascript similar to most major websites on the internet.

LALA.COM

[home](#) | [forums](#) | [help](#) | [signin](#)
[cart \(1\)](#)

Search

[About lala](#) - [Z Foundation](#) - [Contact Us](#)
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iPod and iTunes are registered trademarks of Apple Computer, Inc.
Some content copyright 1948-2007 Muze Inc. For personal non-commercial use only. All rights reserved.

UNOBTRUSIVE JAVASCRIPT



listen?



Event Listening

```
window.onload = handleExternalLinks;

function handleExternalLinks(){
  var server = document.location.hostname;
  var anchors = document.getElementsByTagName("a");
  var i, href;
  for( i=0; i < anchors.length; i++ ){
    href = anchors[i].href;
    if( href.indexOf("http://" + server) == -1 &&
        href.indexOf("https://" + server) == -1 ){
      // HREF is not a file on my server
      anchors[i].onclick = function(){
        newWin( this.href );
      };
    }
  }
}
```



or
delegate?

Event delegation

```
document.getElementsByTagName( 'body' )[0].onclick = ↵
  clickDelegator;

function clickDelegator( e ){
  e = ( e ) ? e : event;
  var el = e.target || e.srcElement;

  // external links
  if( el.nodeName.toLowerCase() == 'a' &&
      el.getAttribute( 'rel' ) == 'external' ){
    newWin( el.href );
  }
}
```

style



can get out of hand

Smart styles

```
ul.TabInterface-tab-list {  
    position: absolute;  
    top: 0;  
    left: 0;  
    width: 100%;  
    border-bottom: 3px solid;  
    margin: 0 0 3px;  
}  
ul.TabInterface- tab-list li {  
    border-left: 1px solid;  
    cursor: pointer;  
    float: left;  
    display: inline;  
    width: 25%;  
    padding-bottom: 1em;  
    margin-right: -1px;  
}
```

No style before its time

```
<div id="main" class="tabbed">
```

becomes

```
<div id="main" class="tabbed-on">
```

No style before its time

	Default	Activated
add “-on” to the class	.tabbed	.tabbed-on
add an activation class	.auto-submit	.auto-submit.active
change the form of the class	.replace-me	.replaced

A fluffy, brown goat with a thick coat of hair stands on a rocky ledge, looking down at a steep, green hillside. The hillside is covered in dense green vegetation and has a rocky path leading down towards the bottom right.

before you
LEAP

Look for methods

```
function someFunction(){  
  if( !document.getElementsByTagName ) return;  
  // code that uses document.getElementsByTagName()  
  ...  
}
```

Look for methods

```
function someFunction(){  
  if( !document.getElementsByTagName ||  
      !document.getElementById ) return;  
  /* code that uses document.getElementsByTagName()  
     and document.getElementById() */  
}
```

Look for elements

```
function someFunction(){  
  if( !document.getElementsByTagName ||  
      !document.getElementsByTagName( 'p' ) ) return;  
  /* code that uses document.getElementsByTagName()  
   and requires the presence of a P element */  
  ...  
}
```

Look for identified elements

```
function someFunction(){  
  if( !document.getElementById ||  
      !document.getElementById( 'content' ) ) return;  
  // code that requires the presence of #content  
  ...  
}
```

Look for objects

```
function someFunction(){  
  if( typeof( Prototype ) == 'undefined' ) return;  
  // code that uses Prototype  
  ...  
}
```

Look for object versions

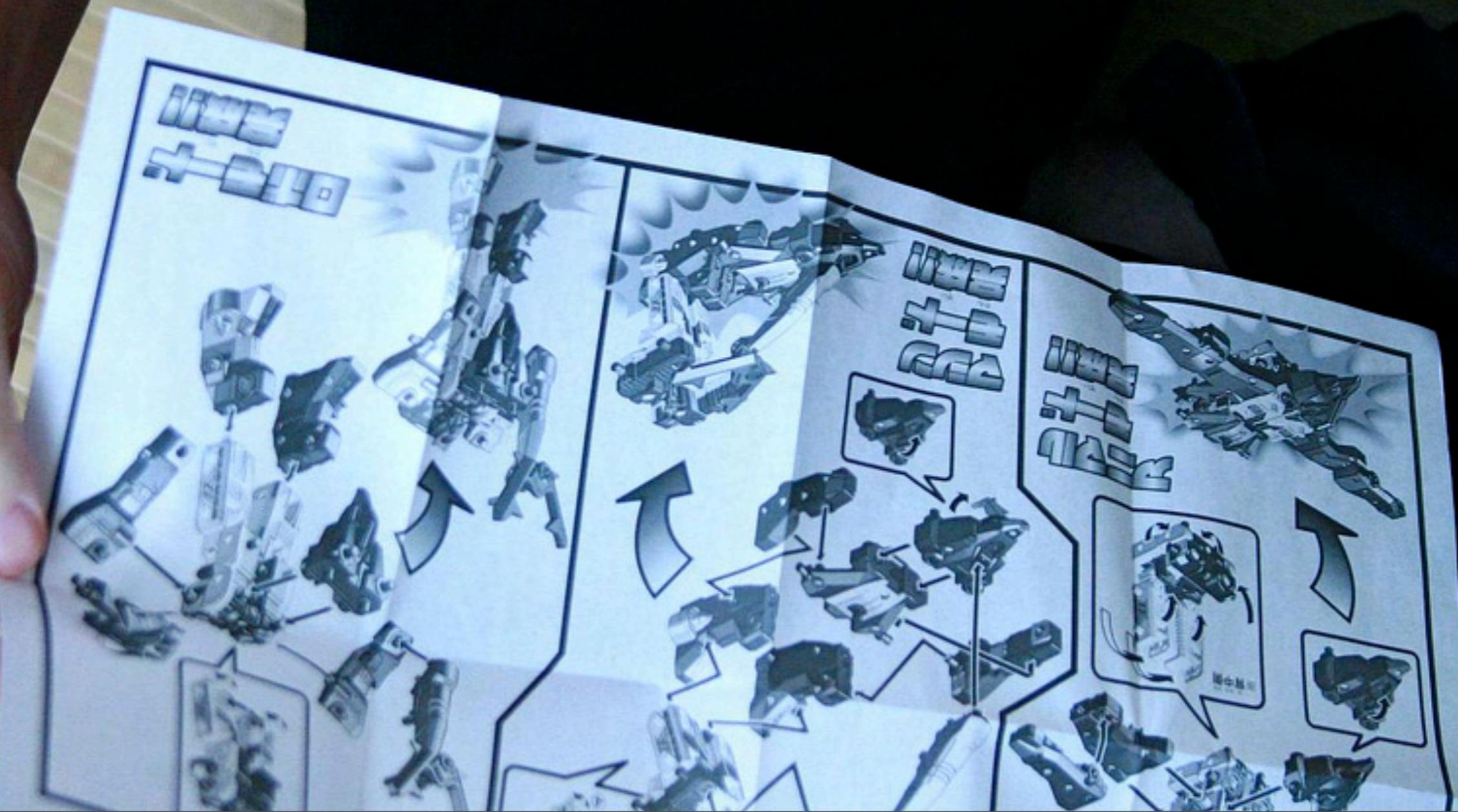
```
function someFunction(){  
  if( typeof( Prototype ) == 'undefined' ||  
      parseFloat( Prototype.Version ) < 1.5 ) return;  
  // code that uses Prototype 1.5 or higher  
  ...  
}
```

Look before you leap

```
window.onload = function(){
  if( document.getElementsByTagName &&
    document.getElementById ){
    someFunction();
  }
};
```

QUESTIONS?

it's easier than this



Example: Tab Interface

Goal: to create a panel-based widget

Pumpkin Pie

OVERVIEW INGREDIENTS DIRECTIONS NUTRITION

Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!

Original recipe yield: 1 x 9-inch deep dish pie

Prep Time: 10min
Cook Time: 1hr
Ready In: 1hr 10min



Traditional approach

```
<h1>Pumpkin Pie</h1>

<div class="container">
  <div class="section">
    <h2>Overview</h2>
    
    <p>Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!</p>
    ...
  </div>
  ...
  <ul class="tabs">
    <li><a href="#">Overview</a></li>
    <li><a href="#">Ingredients</a></li>
    <li><a href="#">Directions</a></li>
    <li><a href="#">Nutrition</a></li>
  </ul>
</div>
```

Static HTML with no style

Pumpkin Pie

Overview



Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!

Original recipe yield

1 x 9-inch deep dish pie

Prep Time

10min

Cook Time

1hr

Ready In

1hr 10min

Ingredients

A little typography

Pumpkin Pie

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Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!

Original recipe yield: 1 x 9-inch deep dish pie

Prep Time: 10min

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Ready In: 1hr 10min



INGREDIENTS

1 (9in) unbaked deep dish pie crust
½ cup white sugar
1 tsp ground cinnamon
½ tsp salt
½ tsp ground ginger
¼ tsp ground cloves
2 eggs
1 can (15oz) pumpkin puree
1 can (12fl oz) evaporated milk

DIRECTIONS

1. Preheat oven to 425°F

Typography and color

Pumpkin Pie

OVERVIEW

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Static HTML with no style

Pumpkin Pie

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Ingredients

Static HTML with no style

Pumpkin Pie

Overview



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Original recipe yield
1 x 9-inch deep dish pie

Prep Time
10min

Cook Time
1hr

Ready In
1hr 10min

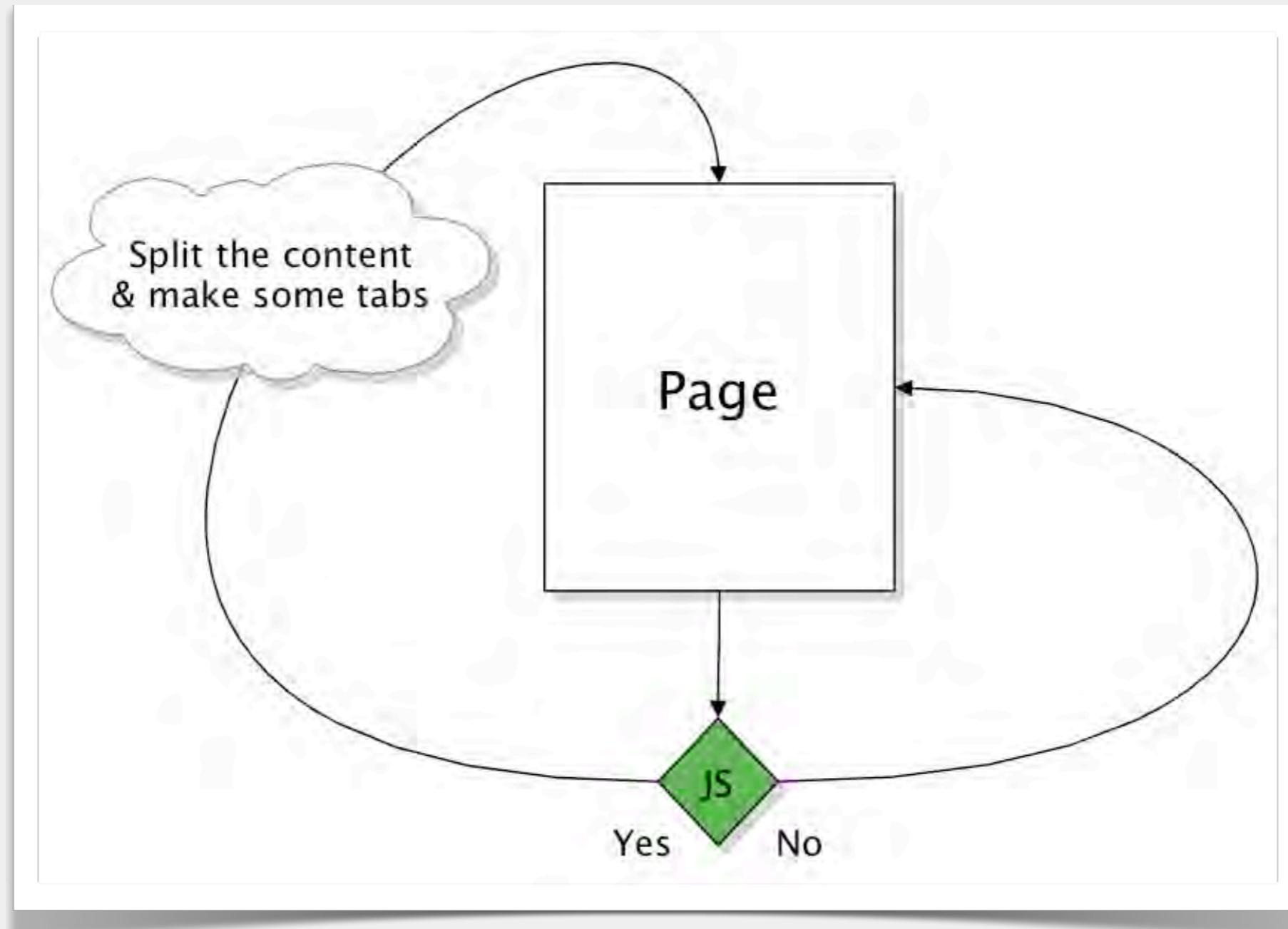
Ingredients . tabbed

The actual source

```
<h1>Pumpkin Pie</h1>

<div class="tabbed">
  <h2>Overview</h2>
  
  <p>Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!</p>
  ...
  <h2>Ingredients</h2>
  <ul>
    <li>1 (9<abbr title="inch">in</abbr>) unbaked deep dish pie crust</li>
    <li>½ cup white sugar</li>
    <li>1 <abbr title="teaspoon">tsp</abbr> ground cinnamon</li>
    ...
  </ul>
  <h2>Directions</h2>
  ...
</div>
```

Understanding the flow



The full experience

Pumpkin Pie

OVERVIEW INGREDIENTS DIRECTIONS NUTRITION

Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!

Original recipe yield: 1 × 9-inch deep dish pie

Prep Time: 10min
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Photo by [Paul Goyette](#), licensed under [Creative Commons](#).

QUESTIONS?

Example: Collapsing Form

Goal: to create a search form with optional advanced filters. By default the optional filters should be hidden, but users should be able to show and hide them as they need to.



Subject

Arts Communications
 Science Technology
 Sports

Keyword

(from program title, organization or location name)

Search [More options](#)

Collapsing Form as HTML

Subject

- Arts
- Communications
- Science
- Technology
- Sports

1.

2. Keyword (*from program title, organization or location name*)

Location

If you enter a zip code and select a school, results from both locations will be displayed.

1. Zip Code

2. ASM Site

Limit to

Narrow your results by level and affiliation.

1. Level

2. Open to

Collapsing Form with CSS

Subject

Arts
 Communications
 Science
 Technology
 Sports

Keyword (from program title, organization or location name)

Location
If you enter a zip code and select a school, results from both locations will be displayed.

Zip Code

ASM Site

Limit to
Narrow your results by level and affiliation.

Level

Open to

Collapsing Form with CSS

Subject

Arts
 Communications
 Science
 Technology
 Sports

Keyword (from program title, organization or location name)

Location
If you enter a zip code and select a school, results from both locations will be displayed.

Zip Code

ASM Site ▾

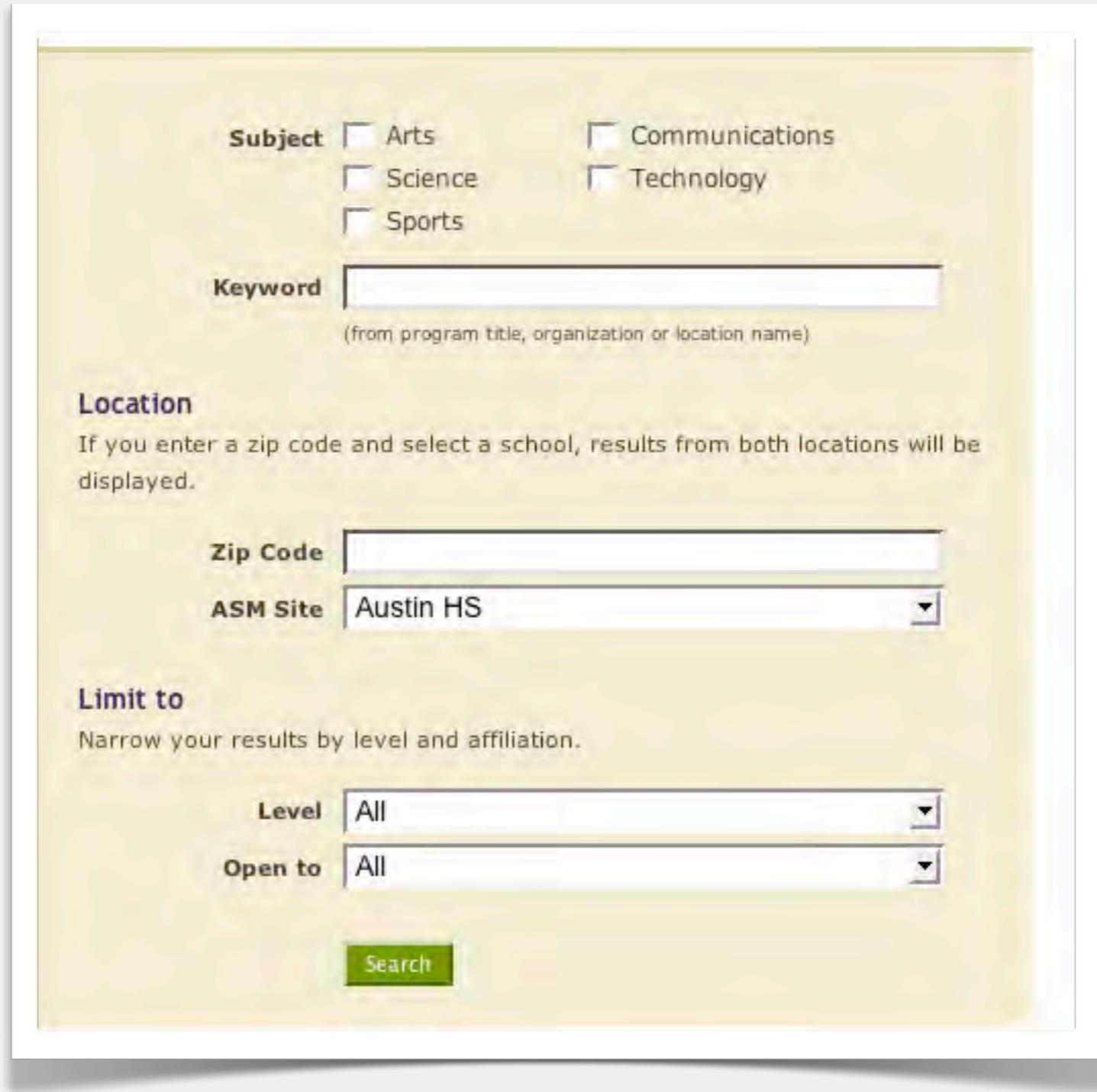
Limit to
Narrow your results by level and affiliation.

Level ▾

Open to ▾

Search

Collapsing Form with CSS



The screenshot shows a web-based search or filtering interface with a light beige background and a white border. It includes sections for 'Subject' (checkboxes for Arts, Communications, Science, Technology, Sports), 'Keyword' (text input field with placeholder '(from program title, organization or location name)'), 'Location' (text input for Zip Code and dropdown for ASM Site set to 'Austin HS'), 'Limit to' (dropdowns for Level and Open to both set to 'All'), and a central 'Search' button.

Subject

Arts Communications
 Science Technology
 Sports

Keyword
(from program title, organization or location name)

Location

If you enter a zip code and select a school, results from both locations will be displayed.

Zip Code

ASM Site

Limit to

Narrow your results by level and affiliation.

Level

Open to

Search

HTML hooks

Subject

- Arts
- Communications
- Science
- Technology
- Sports

1. Keyword (*from program title, organization or location name*)

Location

If you enter a zip code and select a school, results from both locations will be displayed.

1. Zip Code

2. ASM Site

Limit to

Narrow your results by level and affiliation.

1. Level

2. Open to

form.collapsing

HTML hooks

Subject

- Arts
- Communications
- Science
- Technology
- Sports

1. Keyword (*from program title, organization or location name*)

Location

If you enter a zip code and select a school, results from both locations will be displayed.

1. Zip Code

2. ASM Site

Limit to

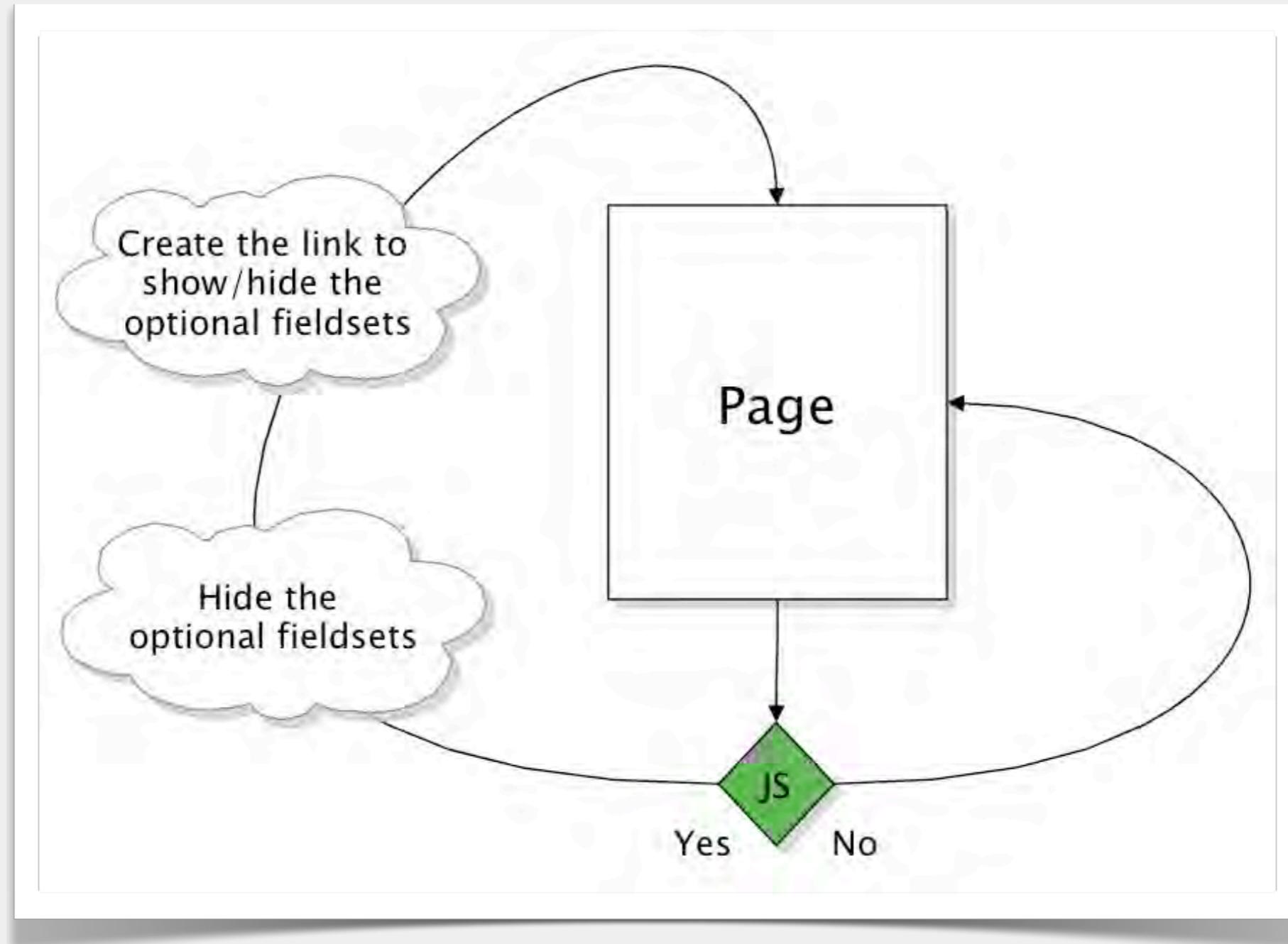
Narrow your results by level and affiliation.

1. Level

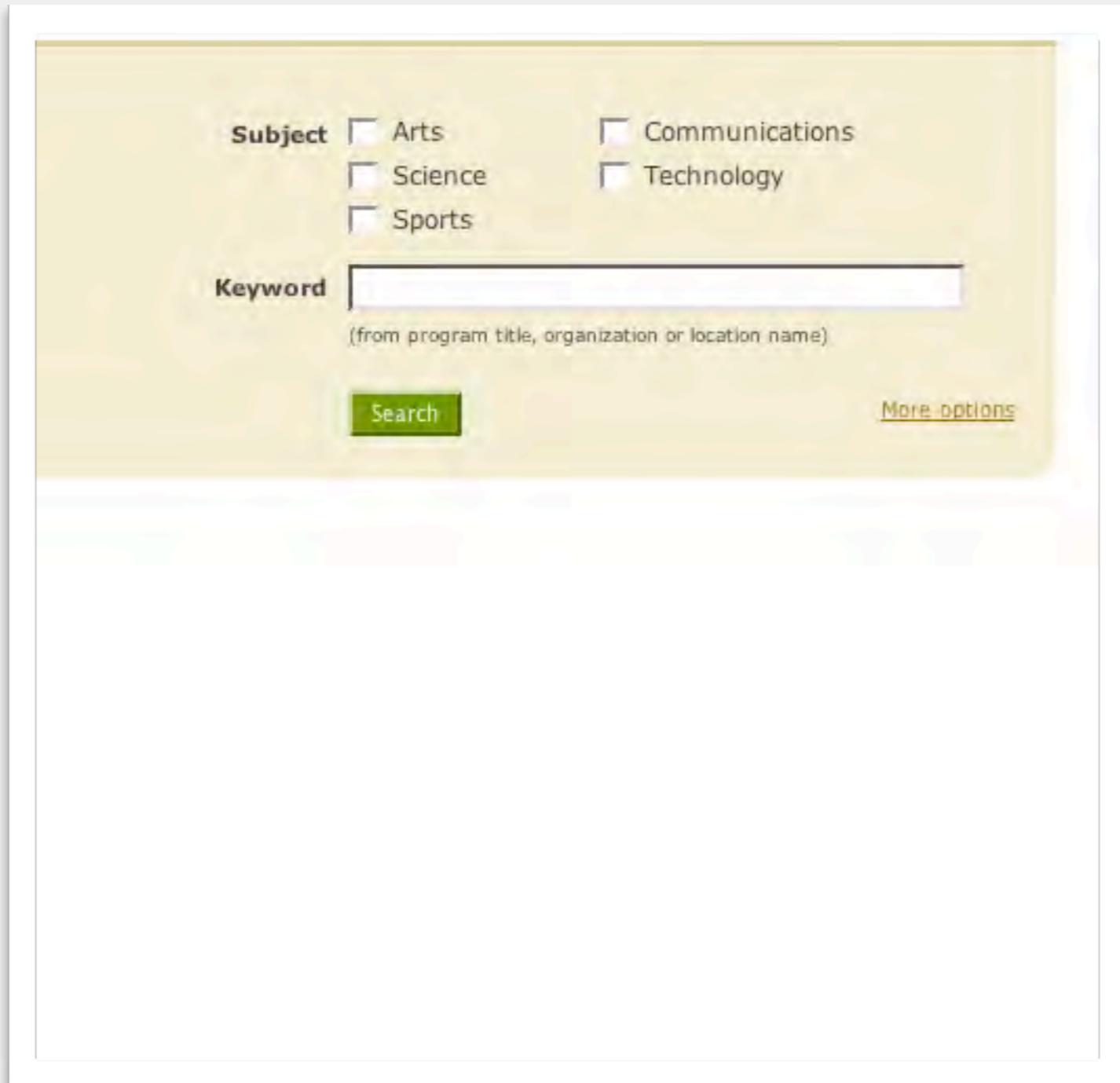
2. Open to

fieldset.optional

Understanding the flow



Collapsing Form with JS



The screenshot shows a search interface with a light yellow header bar. The header contains the following elements:

- Subject**: A group of four checkboxes labeled Arts, Science, Sports, Communications, Technology.
- Keyword**: A text input field with placeholder text "(from program title, organization or location name)".
- Search**: A green button.
- More options**: A link.

The rest of the page is white, showing some blurred background content.

QUESTIONS?

FUNDAMENTAL PROGRESSIVE ENHANCEMENT

Aaron Gustafson



easy designs

Slides available at
<http://slideshare.net/AaronGustafson>

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“Day 486 / 365 – Late Night High Level Coding” by JasonRogers

“Leghoul” by oskay

“Risk” by andyburnfield

“fr tom” by ambery

“CORNERSTONE” by spike55151

“Freedom” by drp

“Headphone” by Giando

“Shout, shout” by hebedesign

“The writing is on the wall” by thus spake drake

“Tiger Leaping Gorge – Ram” by josh-n

“some assembly required” by massdistraction