

# FUNDAMENTAL PROGRESSIVE ENHANCEMENT

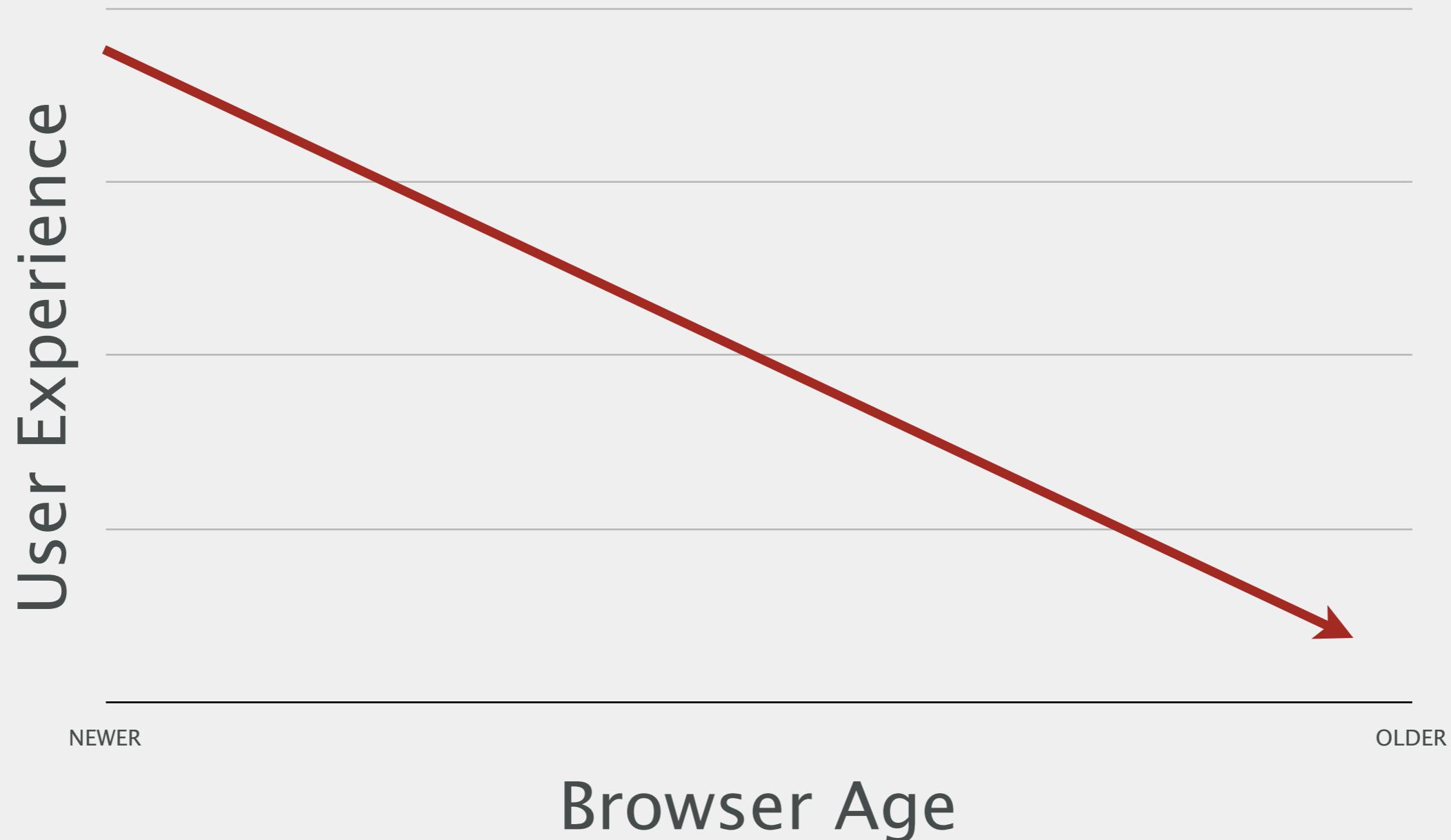
Aaron Gustafson



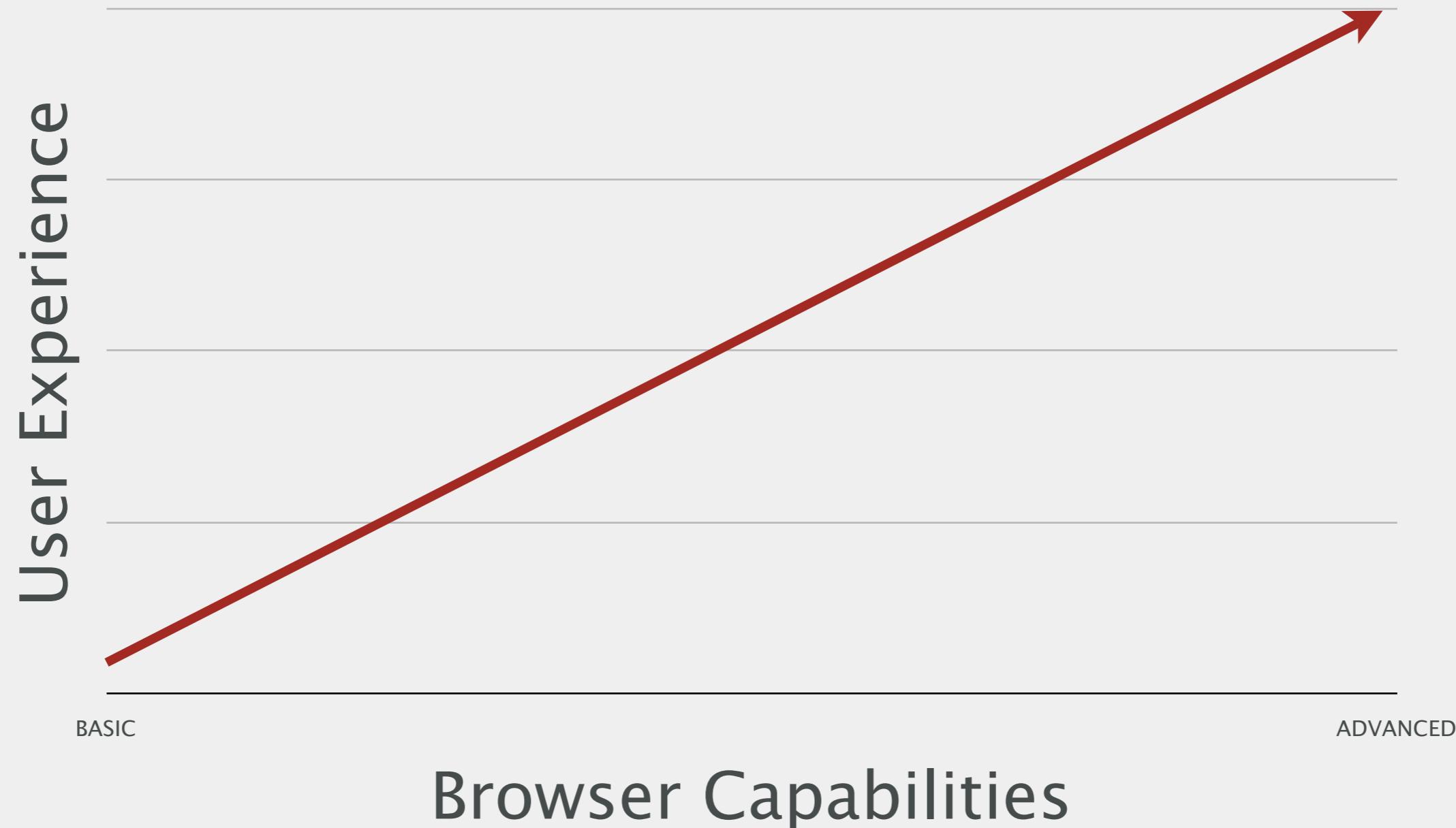
easy designs

**WHAT IS  
PROGRESSIVE  
ENHANCEMENT?**

# Graceful Degradation



# Progressive Enhancement





it's about  
service

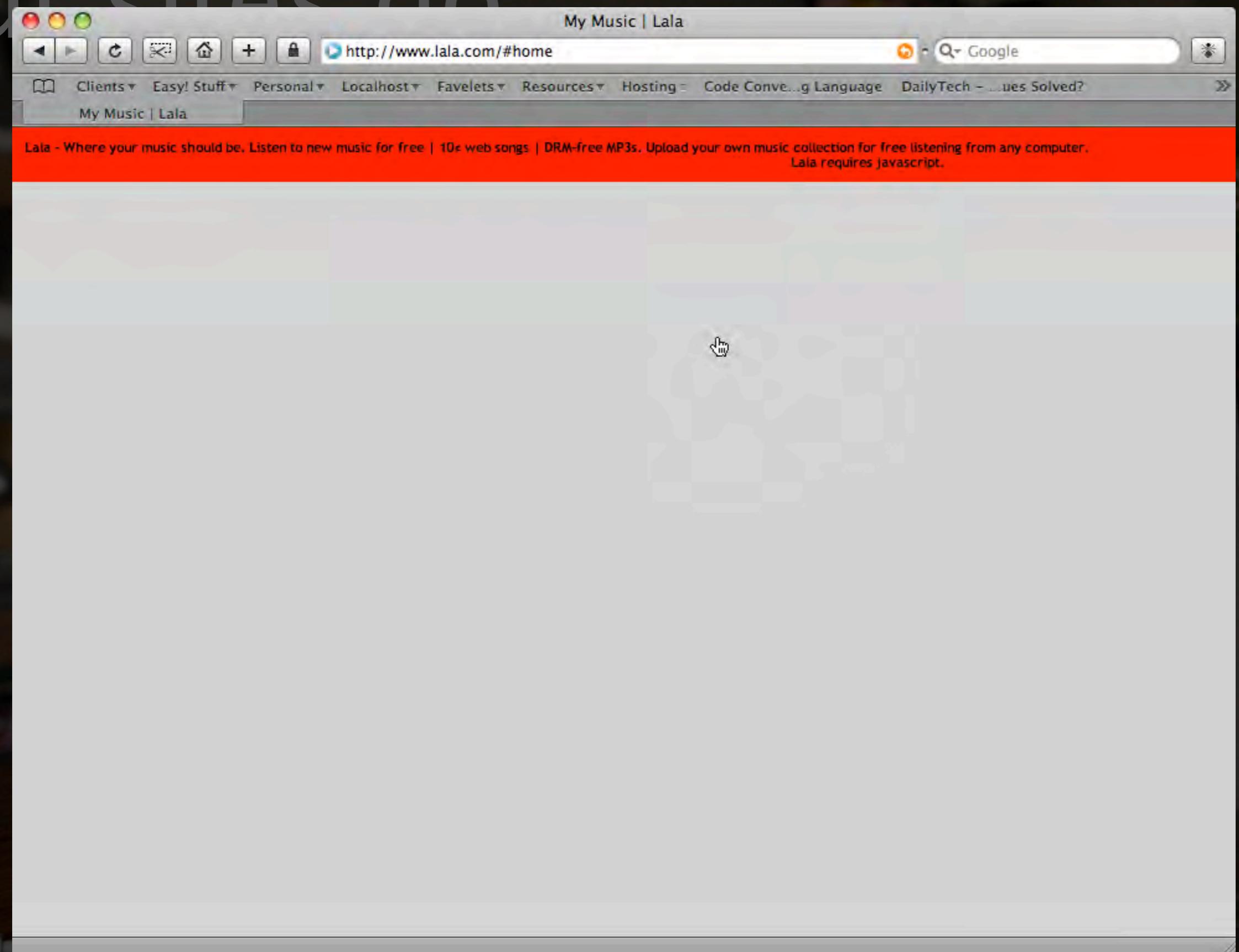


# you wouldn't do this...



# but sites do...

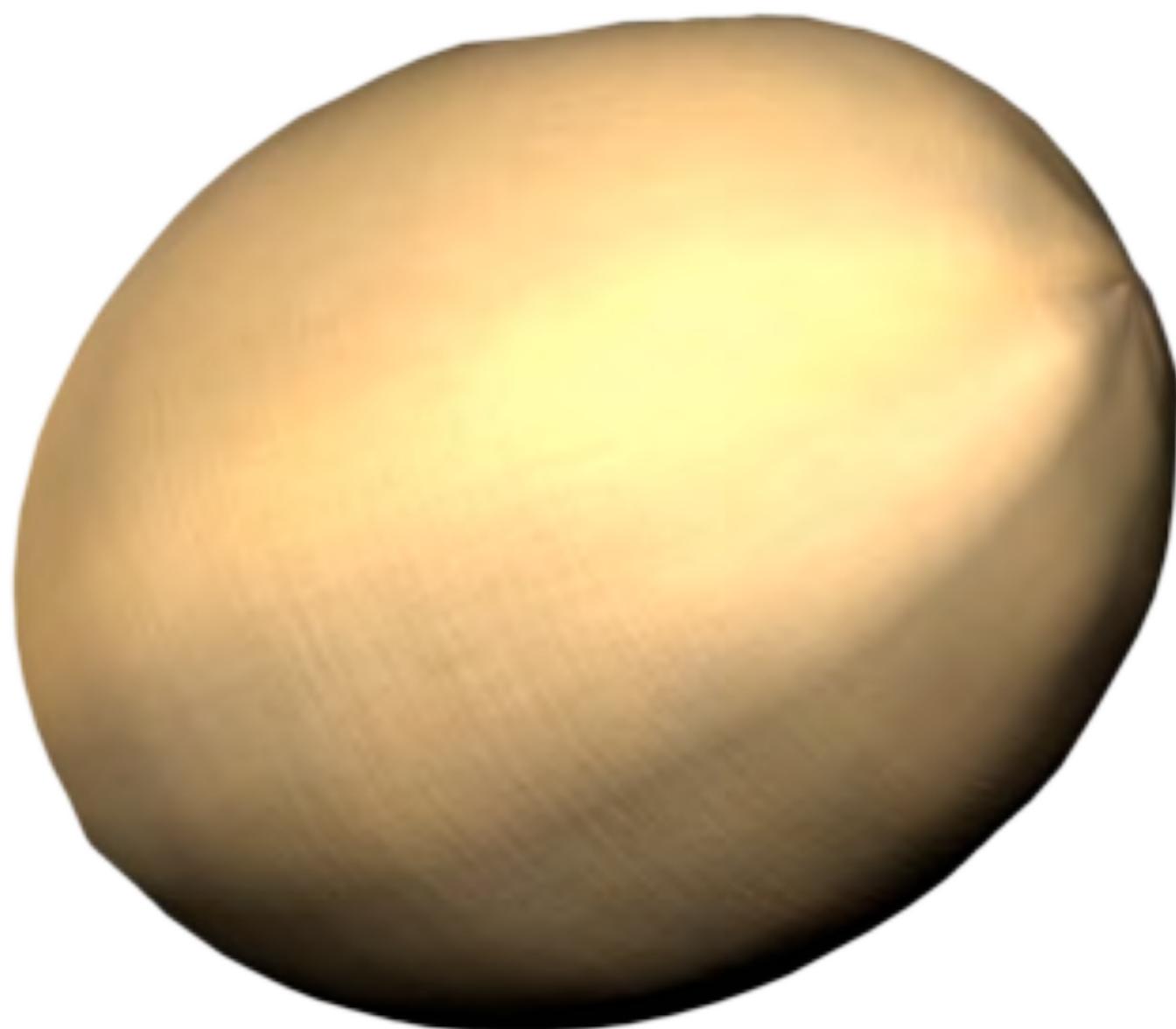




HOW DOES  
IT WORK?

a little treat  
for everyone











(viewed another way)

# XHTML + HTTP only

CSS

XHTML + HTTP only

# JavaScript

## CSS

## XHTML + HTTP only

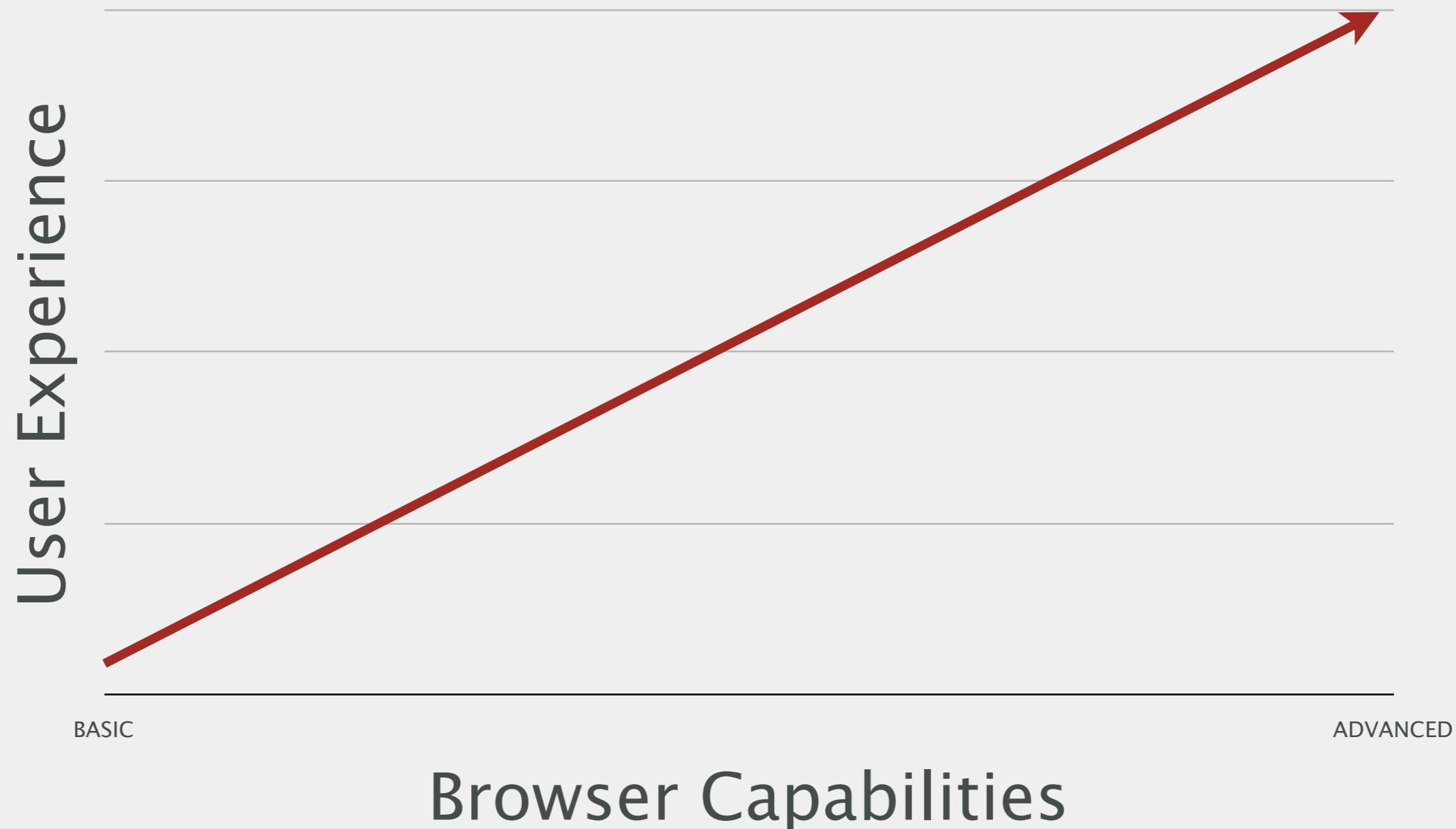
# JavaScript

## some JavaScript

# CSS

## some CSS

# XHTML + HTTP only



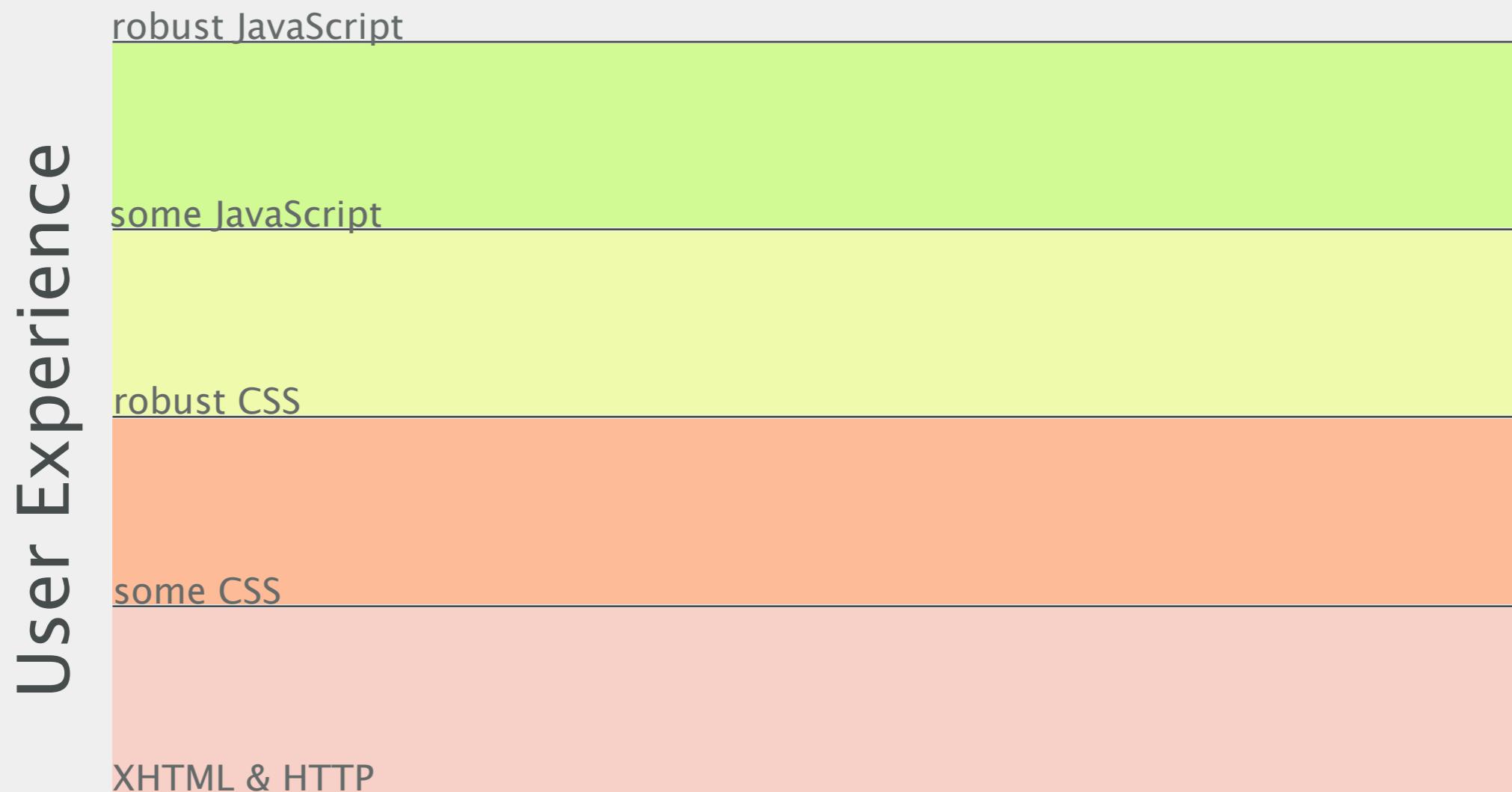
# LEVELS OF SERVICE



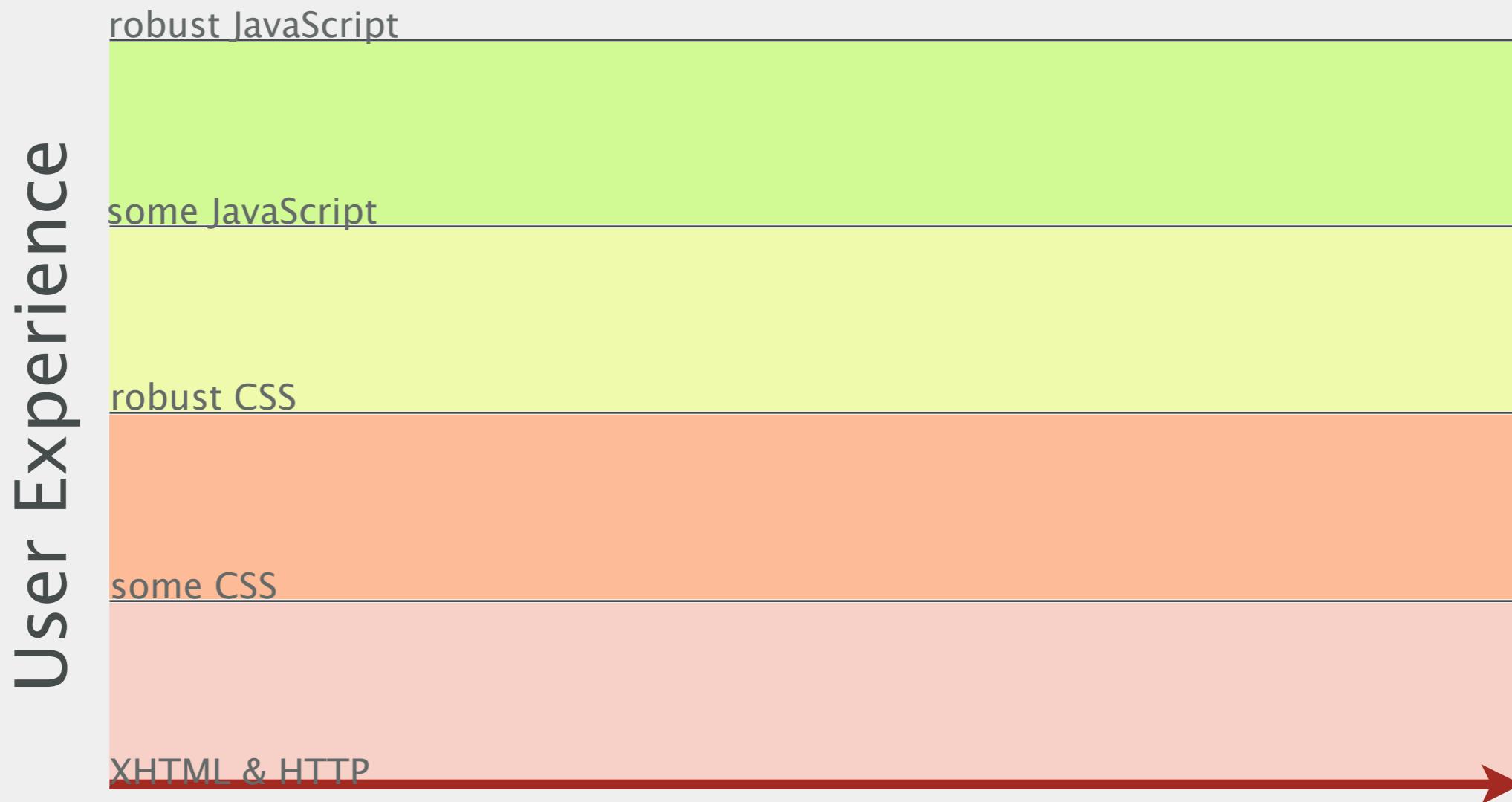
# LEVELS OF SUPPORT



# Rise to meet needs



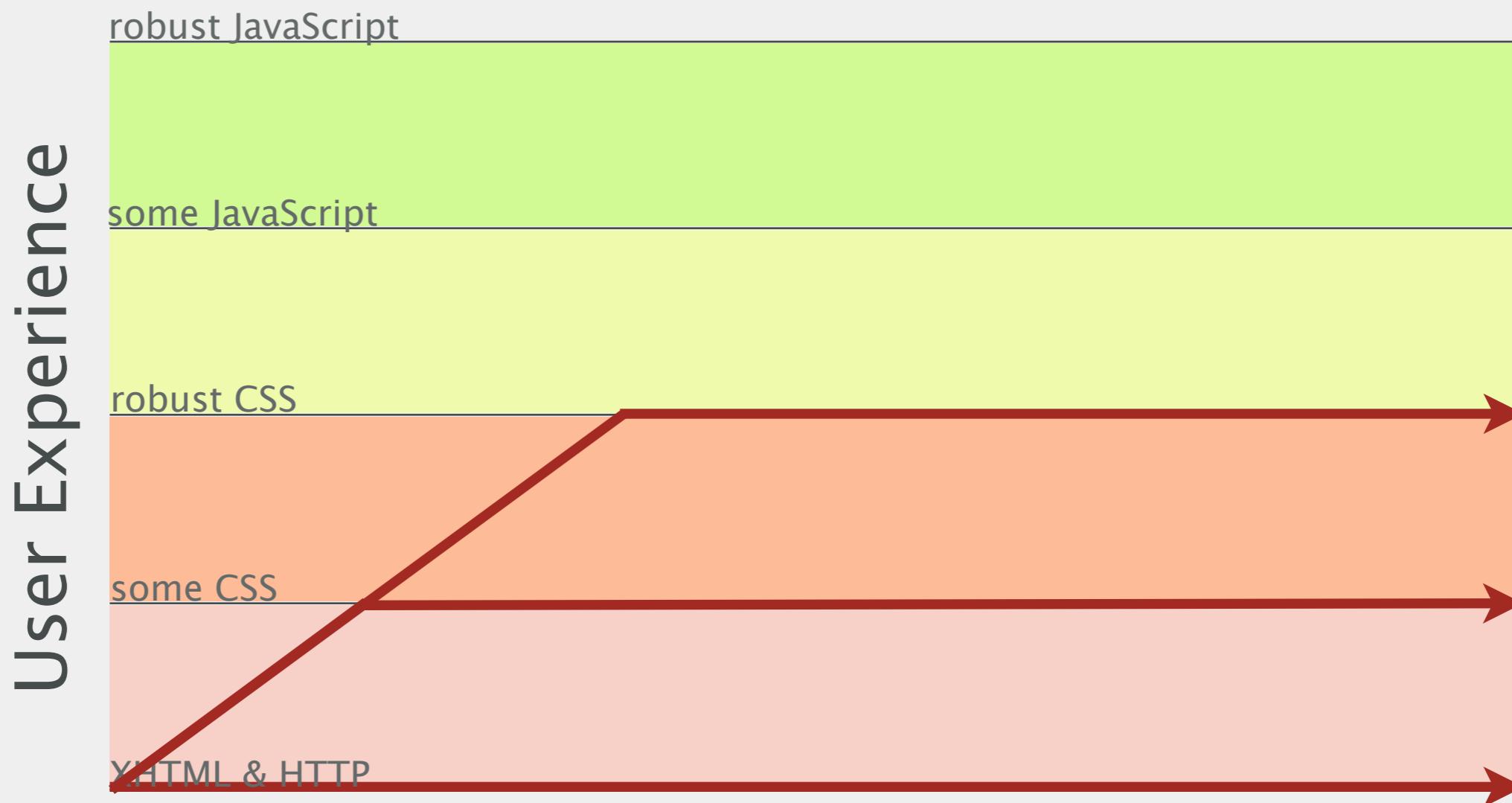
# Rise to meet needs



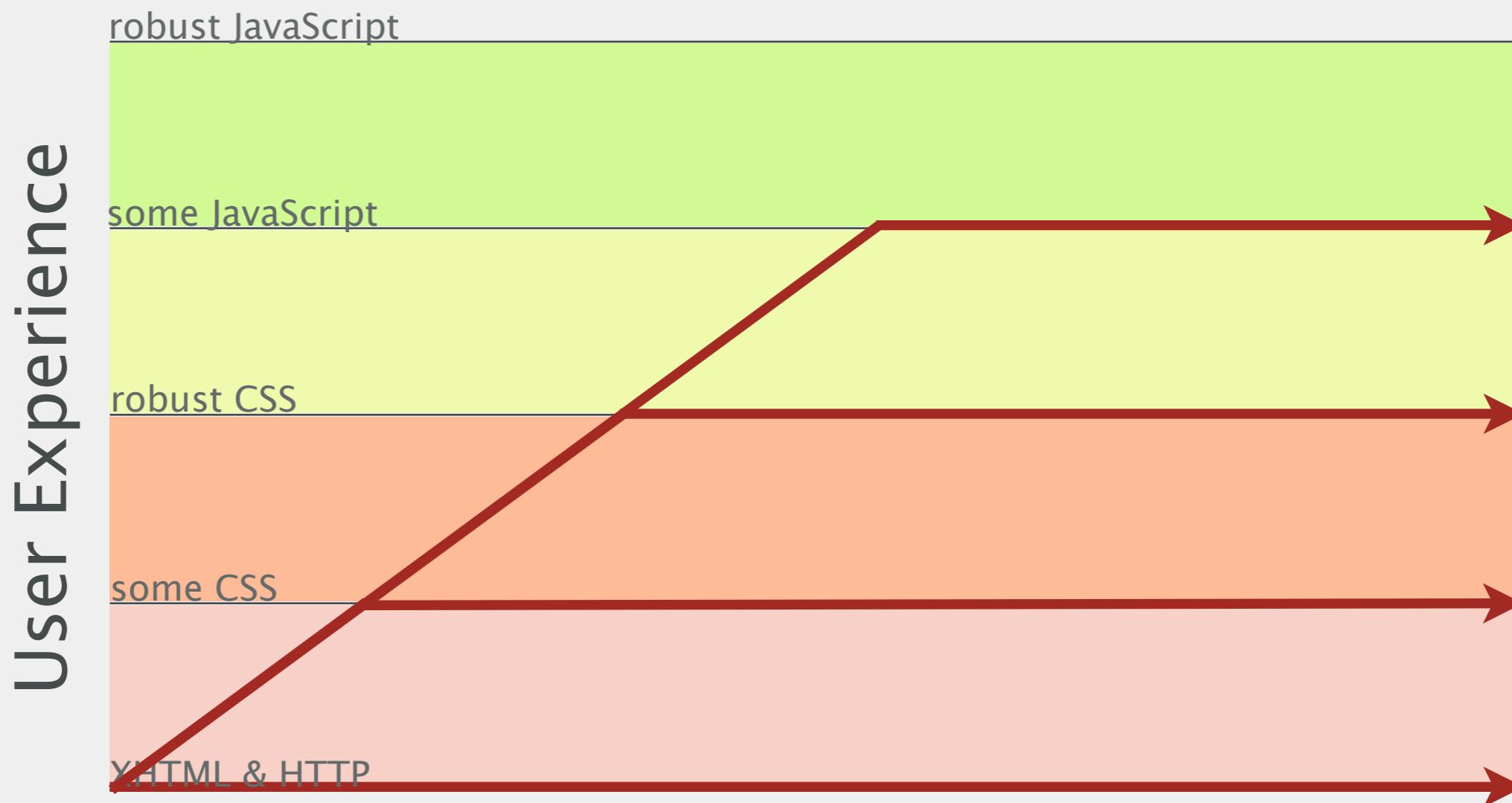
# Rise to meet needs



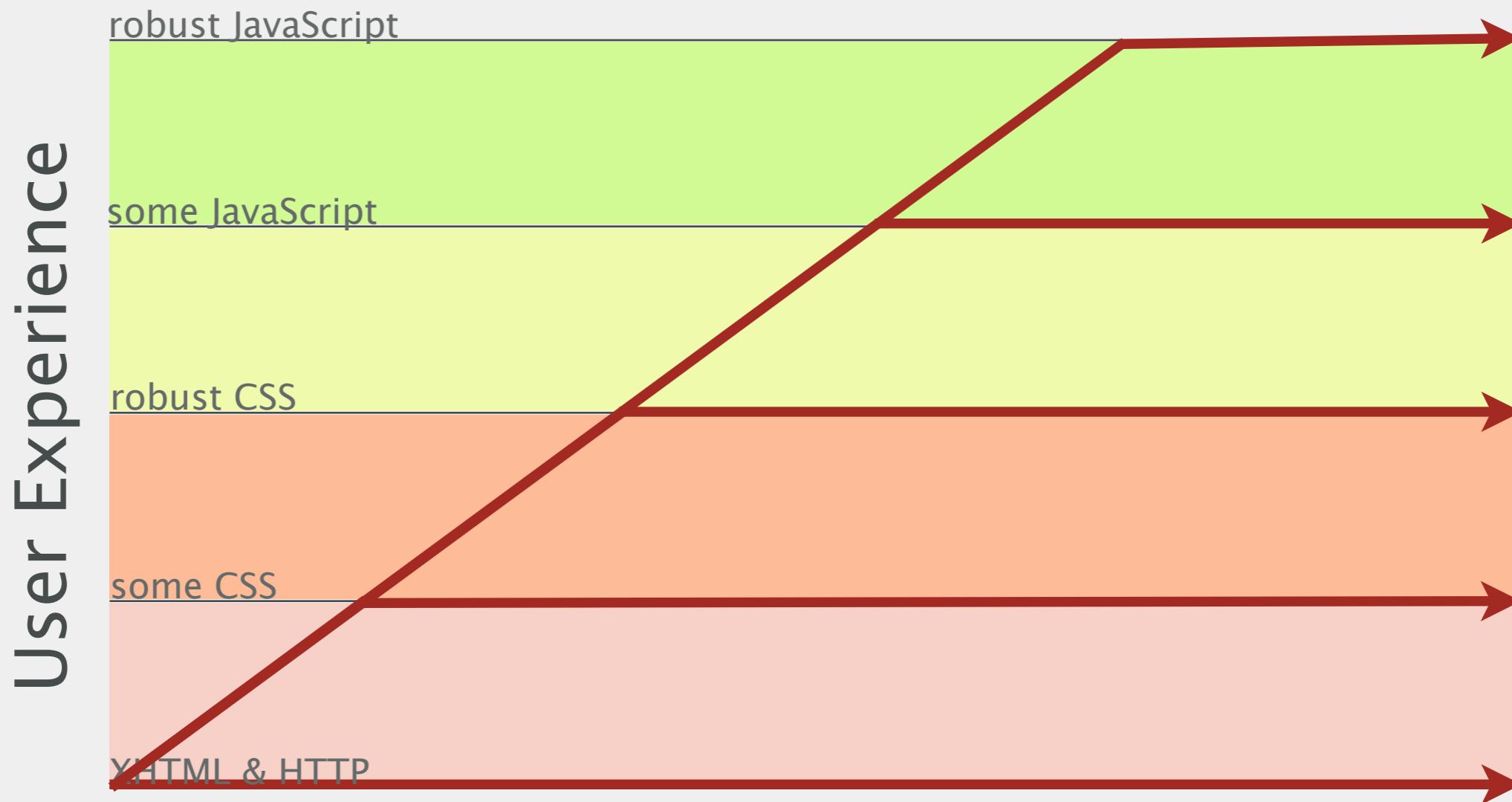
# Rise to meet needs



# Rise to meet needs



# 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" />
```

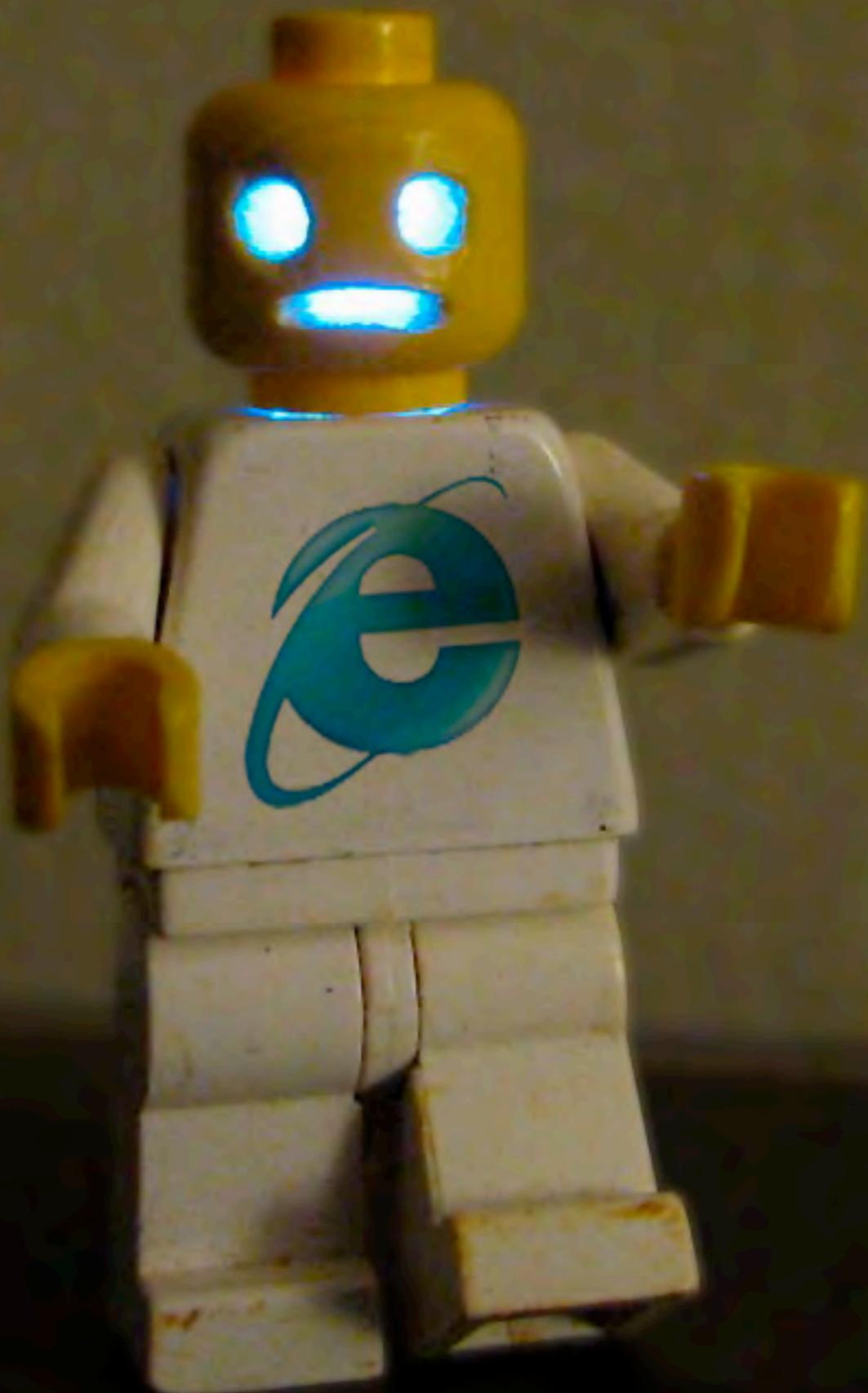
```
<link rel="stylesheet" type="text/css" href="type.css" />
<link rel="stylesheet" type="text/css" href="layout.css" />
<link rel="stylesheet" type="text/css" href="color.css" />
```

```
<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;`

# 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:

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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: ":";  
}
```

# PROGRESSIVE ENHANCEMENT WITH CSS

# QUESTIONS?



inspired?

# PROGRESSIVE ENHANCEMENT WITH JAVASCRIPT

# proper planning...



...can keep you from looking  
**foolish**



# 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](#)



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

**Just added playlists**

1-25 of 227 >>

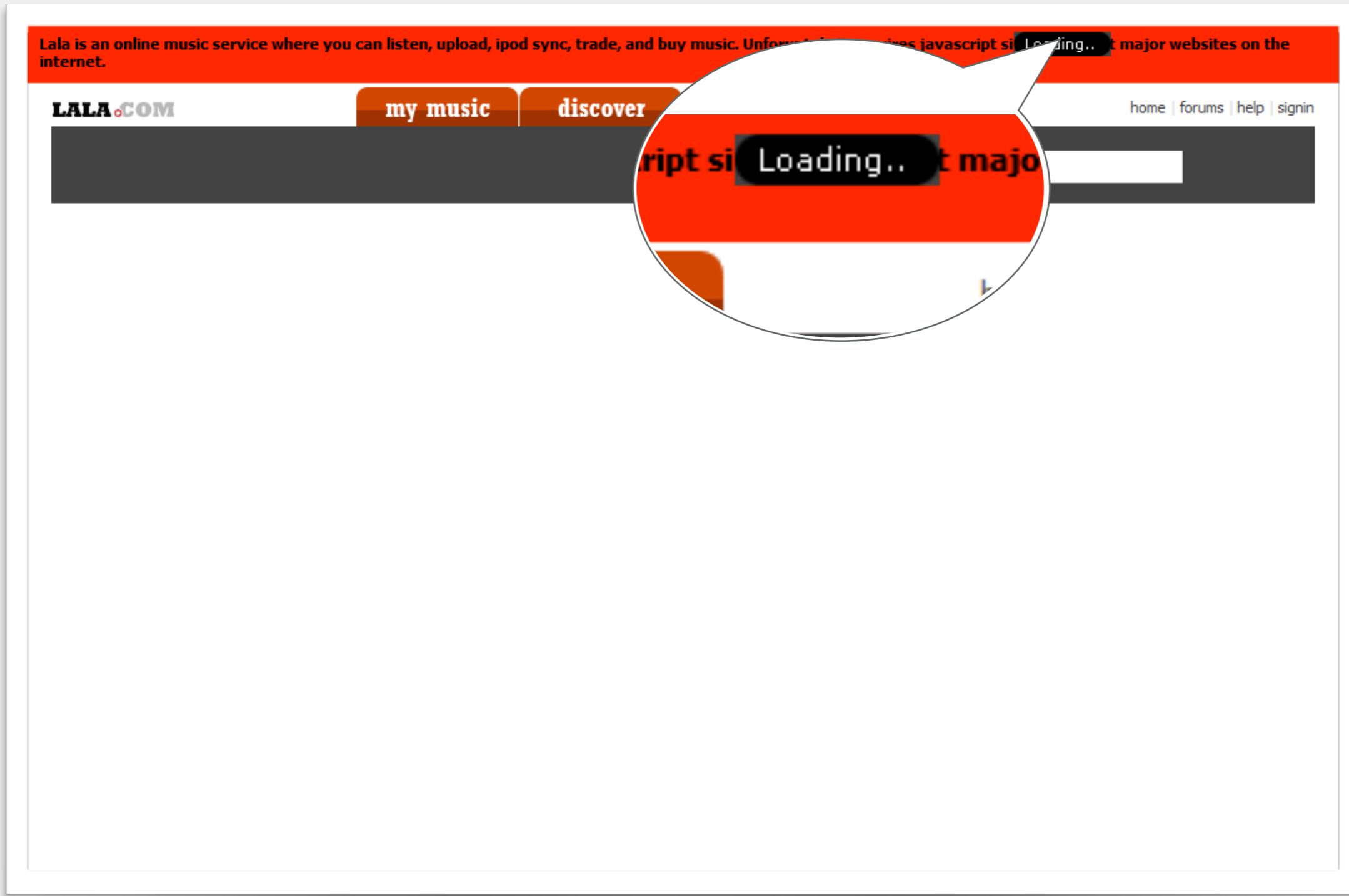
- ▶ The Brainwaves From Manteno
- ▶ Triad
- ▶ Soul Sounds
- ▶ 1986
- ▶ 1988
- ▶ 1970
- ▶ Random Sh\*t
- ▶ Lay Down Your Heavy Load
- ▶ yo
- ▶ 1965
- ▶ Songs I Want
- ▶ Girls
- ▶ 1978
- ▶ 1981
- ▶ 1966
- ▶ random musings
- ▶ Marqua
- ▶ The Greatest Ultimate Essential Definition
- ▶ African Dissonors

**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



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  
  ...  
}
```

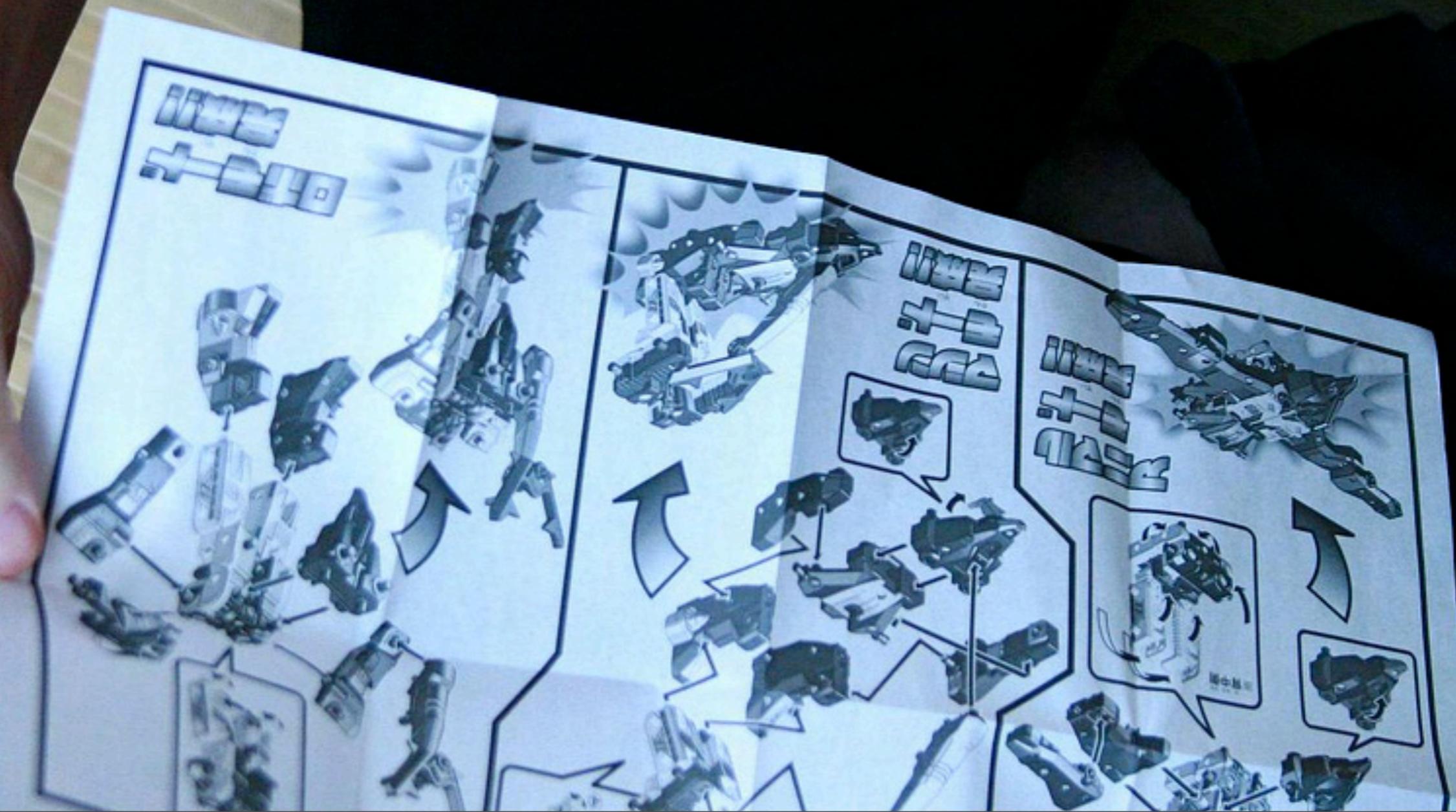
# Look before you leap

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

# PROGRESSIVE ENHANCEMENT WITH JAVASCRIPT

# 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>
```

# 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>
```

# 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>
```

# Traditional approach

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

<div class="container">
  <div class="section">
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    <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

### 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

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

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

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### INGREDIENTS

1 (9in) unbaked deep dish pie crust  
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2 eggs  
1 can (15oz) pumpkin puree  
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### DIRECTIONS

1. Preheat oven to 425°F

# 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

# 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** . tabbed

# The actual source

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

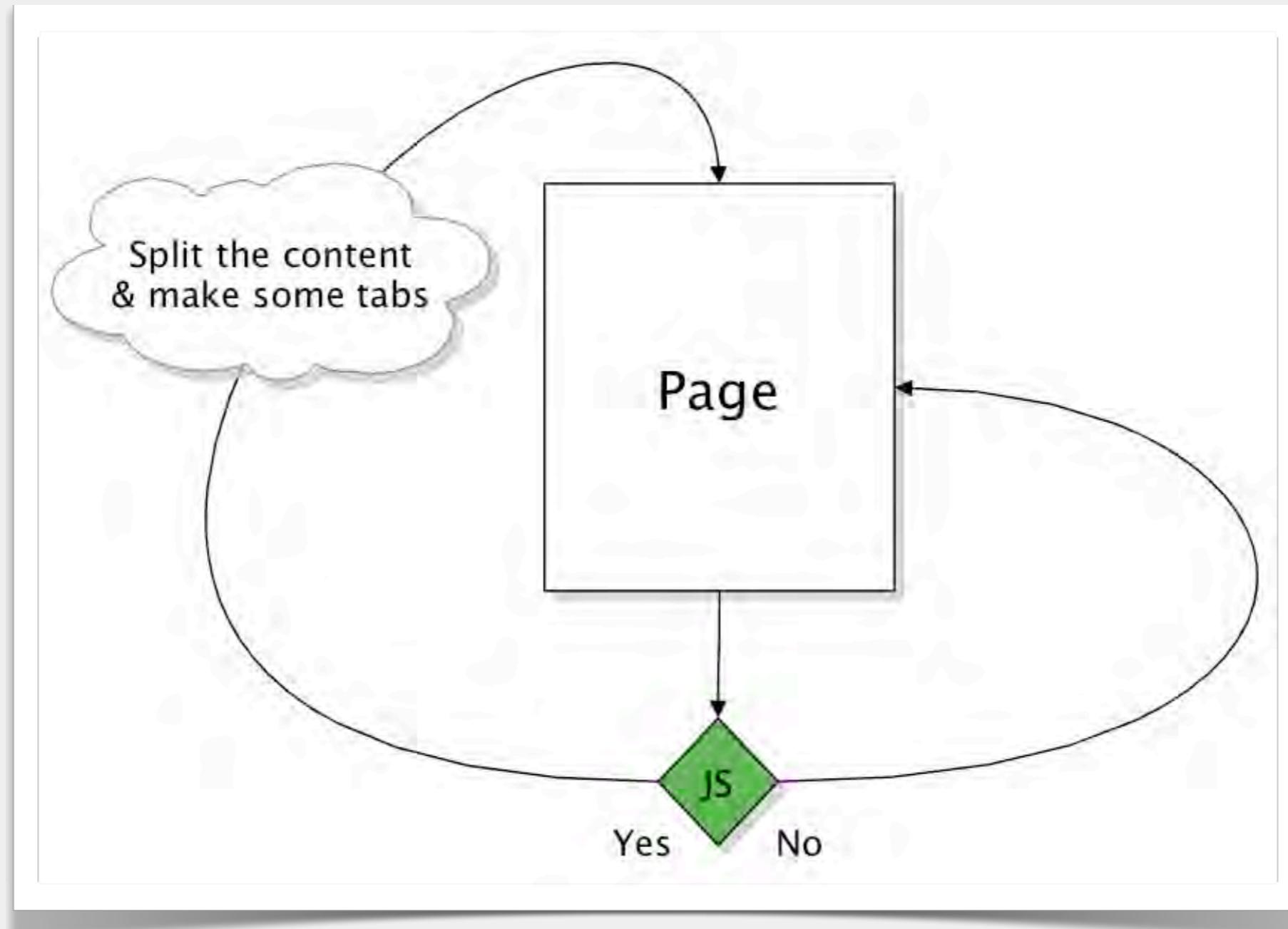
<div class="tabbed">
  <h2>Overview</h2>
  
  <p>Whether you're hosting a festive party or a casual get-together with friends, our Pumpkin Pie will make entertaining easy!</p>
  ...
  <h2>Ingredients</h2>
  <ul>
    <li>1 (9<abbr title="inch">in</abbr>) unbaked deep dish pie crust</li>
    <li>½ cup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

# 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

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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.



The image shows a search interface with a light beige background. At the top left, there is a section labeled "Subject" with four checkboxes: "Arts", "Science", "Sports", "Communications", "Technology". Below this is a "Keyword" input field with placeholder text "(from program title, organization or location name)". At the bottom left is a green "Search" button, and at the bottom right is a link "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**  ▾

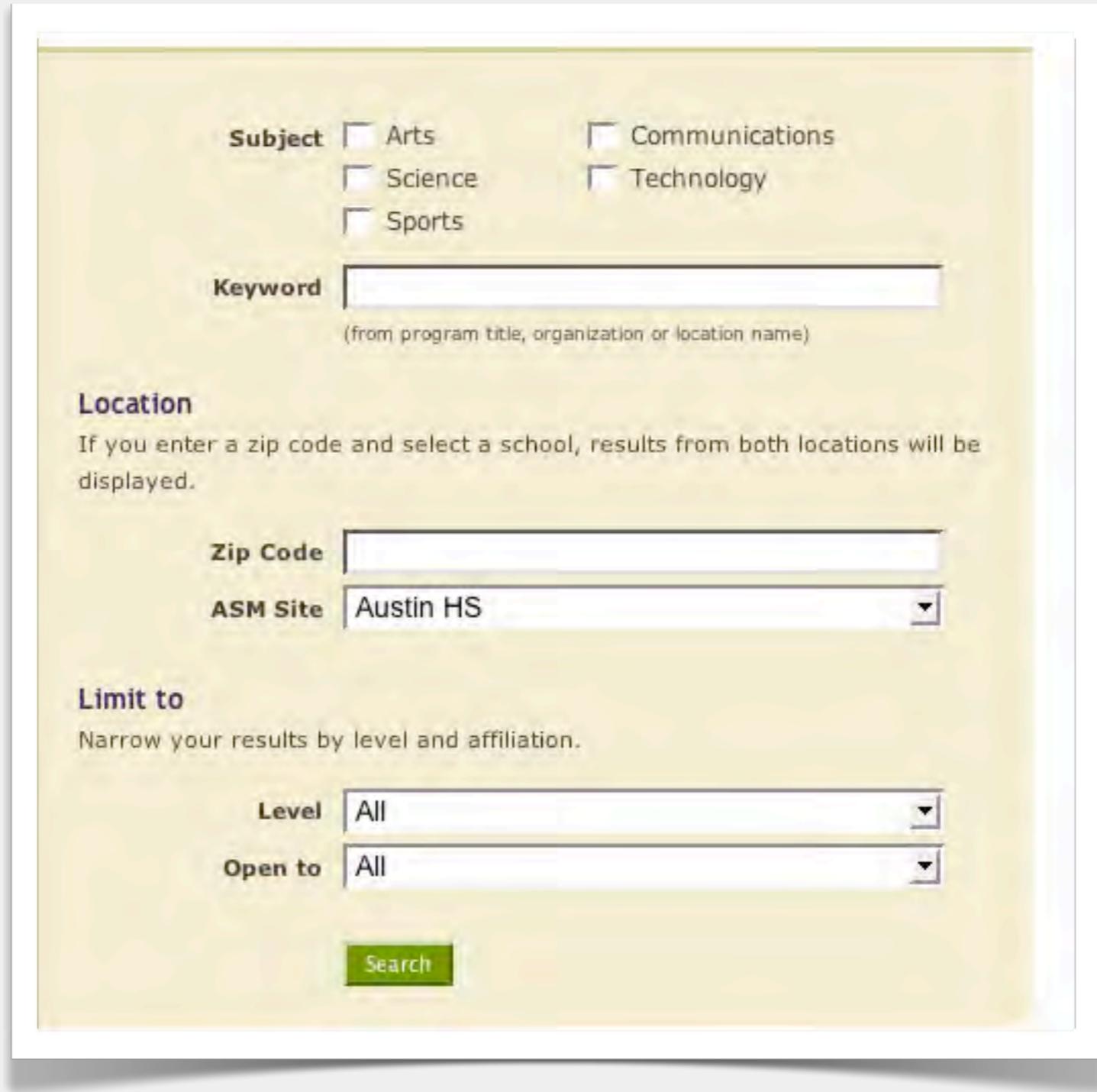
**Limit to**  
Narrow your results by level and affiliation.

**Level**  ▾

**Open to**  ▾

**Search**

# Collapsing Form with CSS



The screenshot shows a web-based search or filtering interface with several sections:

- Subject**: A group of four checkboxes labeled Arts, Communications, Science, and Technology. Below them is a checkbox for Sports.
- Keyword**: A text input field with placeholder text: "(from program title, organization or location name)".
- Location**: A section containing a Zip Code input field and an ASM Site dropdown menu set to "Austin HS".
- Limit to**: A section containing two dropdown menus: "Level" set to "All" and "Open to" also set to "All".
- Search**: A green rectangular button at the bottom center.

The entire form is styled with a light beige background and a white border. The sections are separated by thin horizontal lines. The "Level" and "Open to" dropdowns have a subtle shadow effect.

# 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

# 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

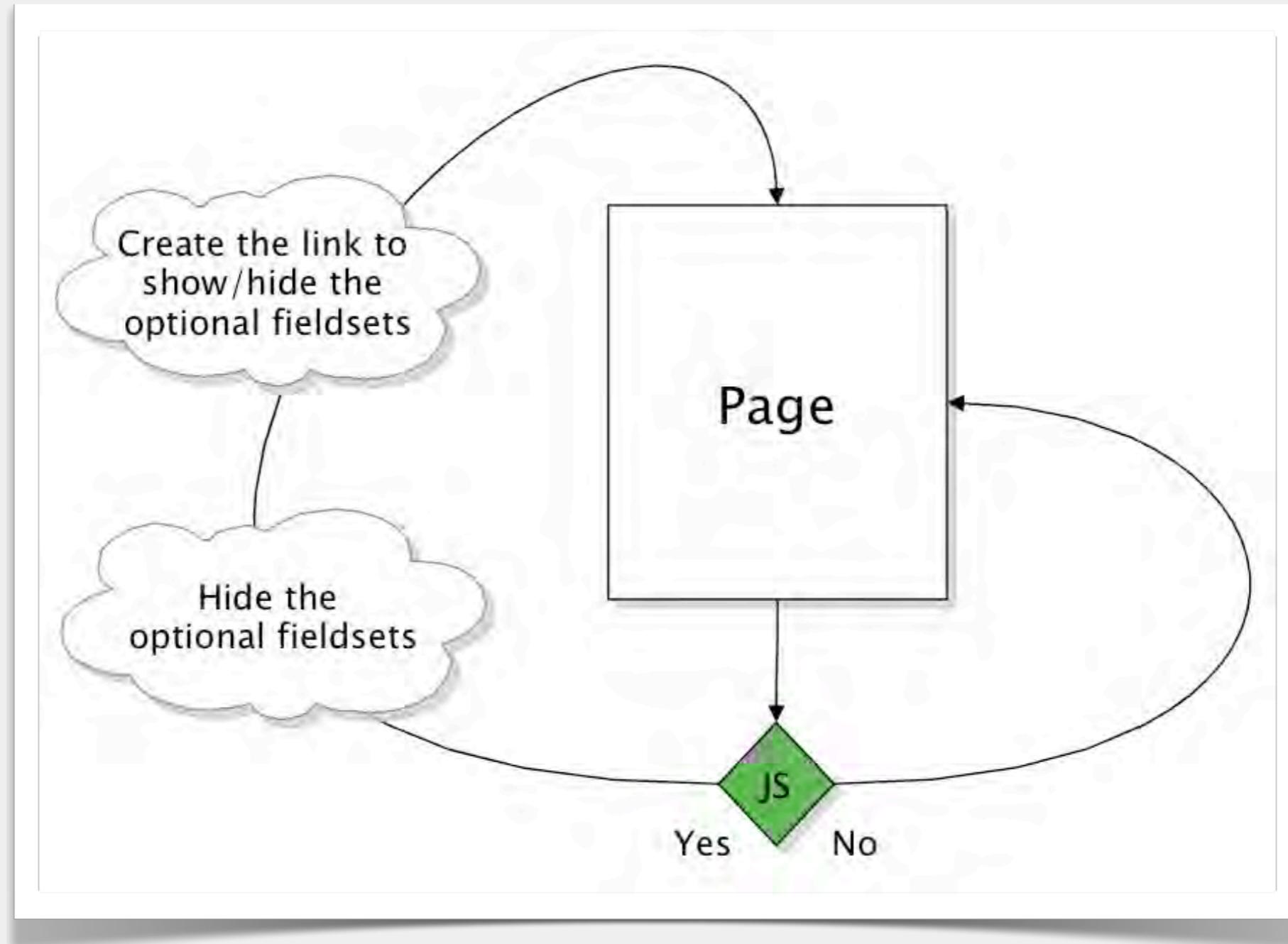
Narrow your results by level and affiliation.

1. Level

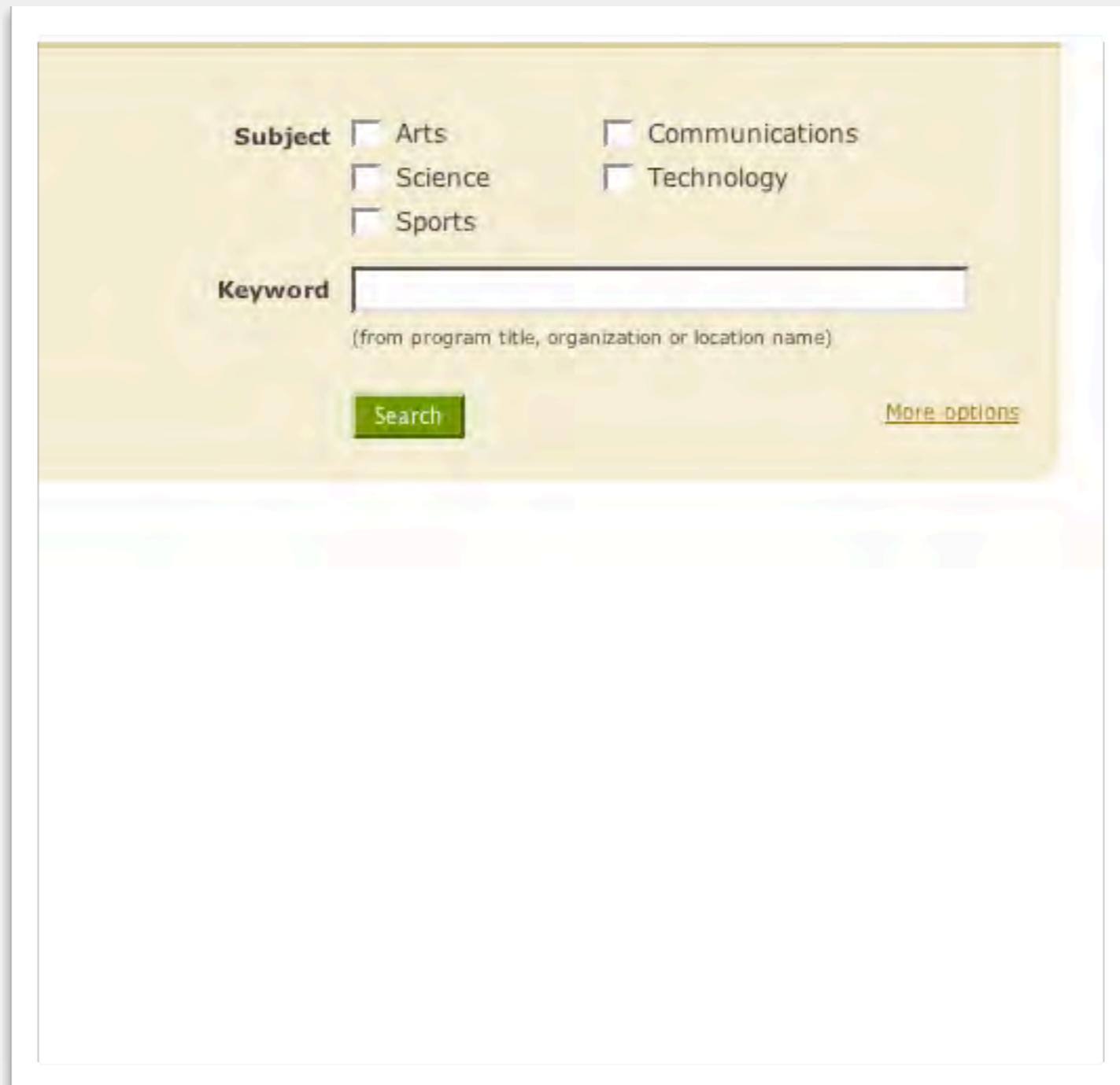
2. Open to

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 with white text.
- More options**: A link with underlined blue text.

The rest of the page is a plain white background.

# QUESTIONS?

# FUNDAMENTAL PROGRESSIVE ENHANCEMENT

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easy designs

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

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“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