# HTML for D3

Visweek d3 workshop
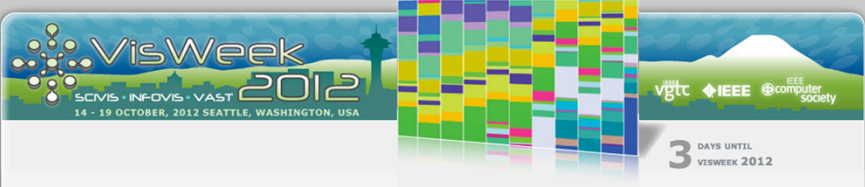
# What is HTML

HTML is the language in which the web pages are encoded.

# What is HTML?

# HTML can be complicated

```html
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
   "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en" dir="ltr">
  <head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
    <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<link rel="shortcut icon" href="/sites/default/files/favicon.png" type="image/x-icon" />
            <title>VisWeek 2012</title>
    <!--<title>Welcome | VisWeek 2012</title>
    <link type="text/css" rel="stylesheet" media="all" href="/modules/node/node.css?t
<link type="text/css" rel="stylesheet" media="all" href="/modules/system/defaults.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/modules/system/system.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/modules/system/system-menus.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/modules/user/user.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/www.visweek.org/modules/cck/theme/content-module.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/www.visweek.org/modules/ctools/css/ctools.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/www.visweek.org/modules/date/date.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/www.visweek.org/modules/date/date_popup/themes/datepicker.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/www.visweek.org/modules/date/date_popup/themes/timeentry.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/www.visweek.org/modules/filefield/filefield.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/misc/farbtastic/farbtastic.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/www.visweek.org/modules/cck/modules/fieldgroup/fieldgroup.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/visweek.org/themes/visweek/style.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/visweek.org/themes/visweek/menutree.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/visweek.org/themes/visweek/visweek.year.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/visweek.org/themes/visweek/visweek.week.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/visweek.org/themes/visweek/visweek.day.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/visweek.org/themes/visweek/visweek.popup.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/visweek.org/themes/visweek/visweek.login.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/visweek.org/themes/visweek/visweek.twig.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/visweek.org/themes/visweek/visweek.gowri.css?t" />
<link type="text/css" rel="stylesheet" media="all" href="/sites/visweek.org/themes/visweek/visweek.session.css?t" />
<link type="text/css" rel="stylesheet" media="print" href="/sites/visweek.org/themes/visweek/print.css?t" />
    <script type="text/javascript" src="/misc/jquery.js?t"></script>
<script type="text/javascript" src="/misc/drupal.js?t"></script>
<script type="text/javascript" src="/sites/visweek.org/themes/visweek/js/slide.js?t"></script>
<script type="text/javascript">
<!--//--><![CDATA[//><!--
jQuery.extend(Drupal.settings, { "basePath": "/" });
//--><!]]>
</script>
<script type="text/javascript">
<!--//--><![CDATA[//><!--
if (Drupal.jsEnabled) { $(document).ready(function() { $('body').addClass('yui-skin-sam'); } ); };
//--><!]]>
</script>
            <script type="text/javascript" src="http://visweek.org/sites/all/themes/visweek/js/jquery_cookie_plugin.js"></script>
    <script type="text/javascript" src="http://visweek.org/sites/all/themes/visweek/js/leftsidebar.js"></script>
    <script> jQuery(function(){
        jQuery('#left-nav').collapsibleNav();
        });
    </script>
    <!--[if lt IE 7]>
      <link type="text/css" rel="stylesheet" media="all" href="/sites/visweek.org/themes/visweek/fix-ie.css" />
    <![endif]-->
  </head>
  <body onload="init()" class="sidebars" >
<!--[if IE]><div id="IEroot"><![endif]-->
<!-- Layout -->
            <!-- Panel credit goes to Web-Kreation -->
        <div id="toppanel"><div id="panel">
        <div class="header_topmost">
            <div id="block-block-18" class="clear-block block block-block">
<!--
-->
    <div class="content"><div id="login-form" class=""><form action="/"  accept-charset="UTF-8" method="post" id="user-login">
<div><div class="form-item" id="edit-name-wrapper">
    <label for="edit-name">Username: <span class="form-required" title="This field is required.">*</span></label>
    <input type="text" maxlength="60" name="name" id="edit-name" size="60" value="" class="form-text required" />
```

# But it doesn't have to be.

```
<!DOCTYPE html>
<meta charset UTF-8>
<body>
Hello, world!
```

(first 3 lines optional)

This is a perfectly valid HTML file

# Do you need to know a lot of HTML to do d3?

- **NO.** (although it does no harm)
- What you do need to know is these 3 things:
  - General principle and hierarchy.
  - A few HTML elements
  - And that elements have attributes.

# HTML: general principle and hierarchy

- When you write HTML, you are really adding *elements* to *containers*.

# So let's suppose I want to build a webpage like this one.

## Welcome

"Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in

Link 1

Link 2

# Welcome

"Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Link 1

Link 2

```
<!DOCTYPE html>
<meta charset utf-8>
<body>
  <div id="header">
    <img src="logo.png"/>
    <h1>Welcome</h1>
  </div>
  <div id="main">
    <p>Lorem ipsum…</p>
  </div>
  <div id="side">
    <a href="link1.html">Link 1</a>
    <a href="link2.html">Link 2</a>
  </div>
```

# Welcome

"Lorem ipsum dolor sit amet, consectetur adipisicing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

Link 1

Link 2

body

div #header
img
h1

div #main
p

div #side
a
a
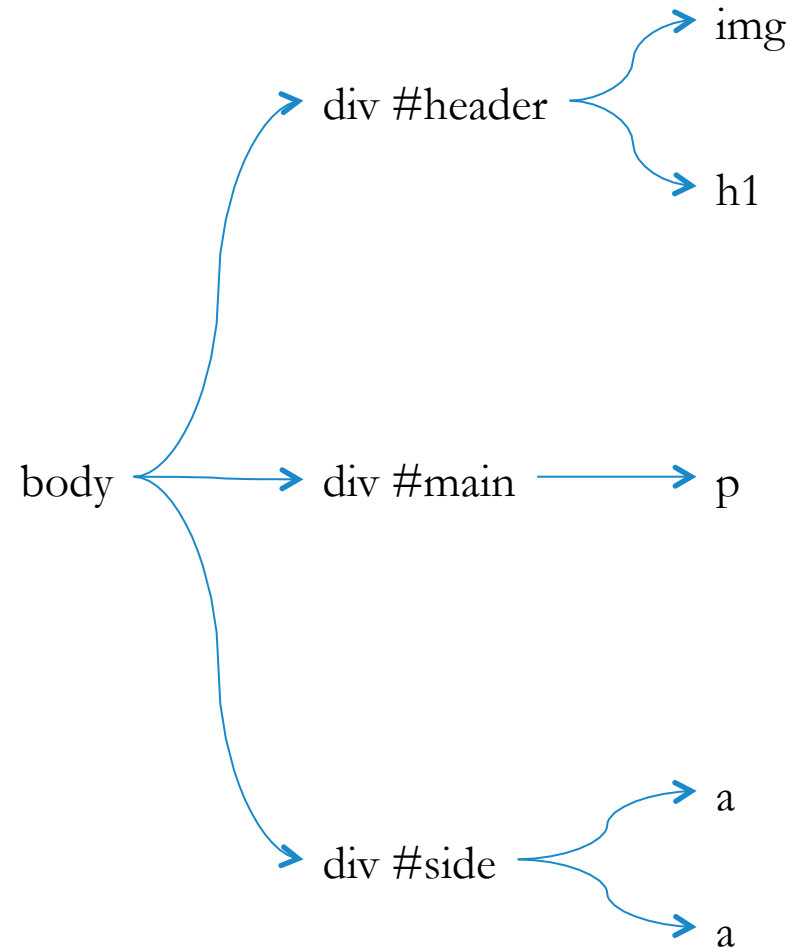
# HTML: general principle and hierarchy wrap-up

- Some elements are *containers,* and can hold other elements.

- In HTML, it is done by writing a new element in between the tags of an existing element:
```
<div>
 <p>p inside a div</p>
</div>
```

- But in practice, with d3, you are never really *writing* HTML. So it may help to think of it as a hierarchy.

## HTML Elements

# A few HTML elements

WATCH    EDIT

The following list is a reference to all HTML elements, including the new ones introduced in HTML5.

**HTML elements** are components that specify how HTML documents should be built, and what kind of content should be placed in what part of an HTML document. Element names are enclosed within angle brackets: <elementname>, which is called a *tag*. If the element contains other content, it ends with a *closing tag*, where the element name is preceded by a slash: </elementname>. Some elements have no content; these are self-closing. Others are paired with a closing tag. Each tag name represents an element, and elements form a tree of these elements. Each tag name represents an element. For example, the <body> element represents the body of the document. Below is an alphabetical list of the HTML Elements.

- As of this writing, there are some 110 current HTML elements.

- But you really need to know but a few of them.

### A

- <a> (Anchor or Hyperlink)
- <abbr> (Abbreviation)
- <acronym> Obsolete since HTML5 — use <abbr> instead
- <address> (Address or Contact Information)
- <applet> Deprecated since HTML4 Obsolete since HTML5 — use <object> instead
- <area> (Image-map Hyperlink)
- <article> (Independent Article) HTML5
- <aside> (Tangential Content) HTML5
- <audio> (Embedded Audio Stream) HTML5

### B

- <b> (B, formerly known as Bold)
- <base> (Base URL)
- <basefont> Deprecated since HTML4 Obsolete since HTML5
- <bdi> (Bi-directional Isolate) HTML5
- <bdo> (Bi-directional Override)
- <bgsound> (Background Sound) Non-standard
- <big> Obsolete since HTML5
- <blink> Non-standard
- <blockquote> (Block Quotation)
- <body> (Document Body)
- <br> (Line Break)
- <button> (Interactive Button)

### C

- <canvas> (Dynamic Graphics Drawing Area) HTML5
- <caption> (Table Caption)
- <center> Deprecated since HTML4
- <cite> (Work Title)
- <code> (Code Fragment)
- <col> (Table Column)

# A few HTML elements

`<body>`

This is the top-level container of a web page.

Other elements are added to it.

# A few HTML elements

`<div>`

Div are the main container-type elements.

If you need to separate a page into components, (which is almost always the case), you will need `<div>`s to do the job.

(and those 2 cover 90% of what we need for d3)

# Some other HTML elements

`<a>`

This is a hyper-text link.

`<a href="mylink.html">a link</a>`

What's between quotes after href is the destination of the link, what's between the tags is the text that appears.

# Some other HTML elements

`<p> some text </p>`

This is a paragraph of text. There is a line break after that.

`<h1> a title </h1>`

This is a heading, which behaves the same.

`<span> some text </span>`

This is just some text, without a line break.

# Some other HTML elements

```
<ul>
 <li>bullet 1</li>
 <li>bullet 2</li>
 <li>bullet 3</li>
</ul>
```

This is a bullet-point list (actually often used for menus and navigation).

# Some other HTML elements

`<form>`

Forms, useful to interact with pages

`<img src="file.png" />`

Images

# Attributes, values and properties

HTML elements have many characteristics that can be controlled to change their appearance or their behavior.

They fall in 4 categories:

- Content,
- Attributes,
- Style,
- Properties.

# Content

This is my paragraph text.

`<p>`This is my paragraph text.`</p>`

Content is what is between the tags. This can be, as in this example, the text of this paragraph.

# Attributes

`<a `<span style="color:orange">`href="mylink.html"`</span>`>`<span style="color:blue">`link`</span>`</a>`

`<img `<span style="color:orange">`src="image.png"`</span>`/>`

Attributes control the behavior of an element. This can be, for instance, the destination of a link, or the source file of an image.

# Style

```
<div style="background:black;">
  some text
</div>
```

Style controls the *appearance* of an element.

Style can be set through a specific attribute, style, or through other means.

# Raw properties

```
<form>

  <input type="checkbox" checked>
Check me out

</form>
```

Properties are values that can be changed by the user during interaction with a page, like the values in a form.

# Summary

- HTML is how web pages are coded.

- It is a hiearchical language: elements are added to containers. Those elements can be containers themselves, such as `<div>`.

- Elements may have characteristics: content, attributes that control their behavior, style that affect their appearance, and properties that reflect interaction.