CIS 4004: Web Based Information Technology Spring 2011

Basic Page Layouts – Part 4

Instructor :		Dr. Mark Llewellyn
			markl@cs.ucf.edu
			HEC 236, 407-823-2790
		http://www.cs.ucf.edu/courses/cis4004/spr2011

Department of Electrical Engineering and Computer Science
University of Central Florida

A Three-Column Liquid Layout

- Things get more complicated if you want to add a liquid center to a three column layout, where the content area changes width as the browser window is resized, but the side columns remain a fixed size.

- With the two-column liquid layout we basically overlapped the left-column on top of the main liquid content column. This was easy to do since the left column never moves relative to its reference point – the top-left of its container.
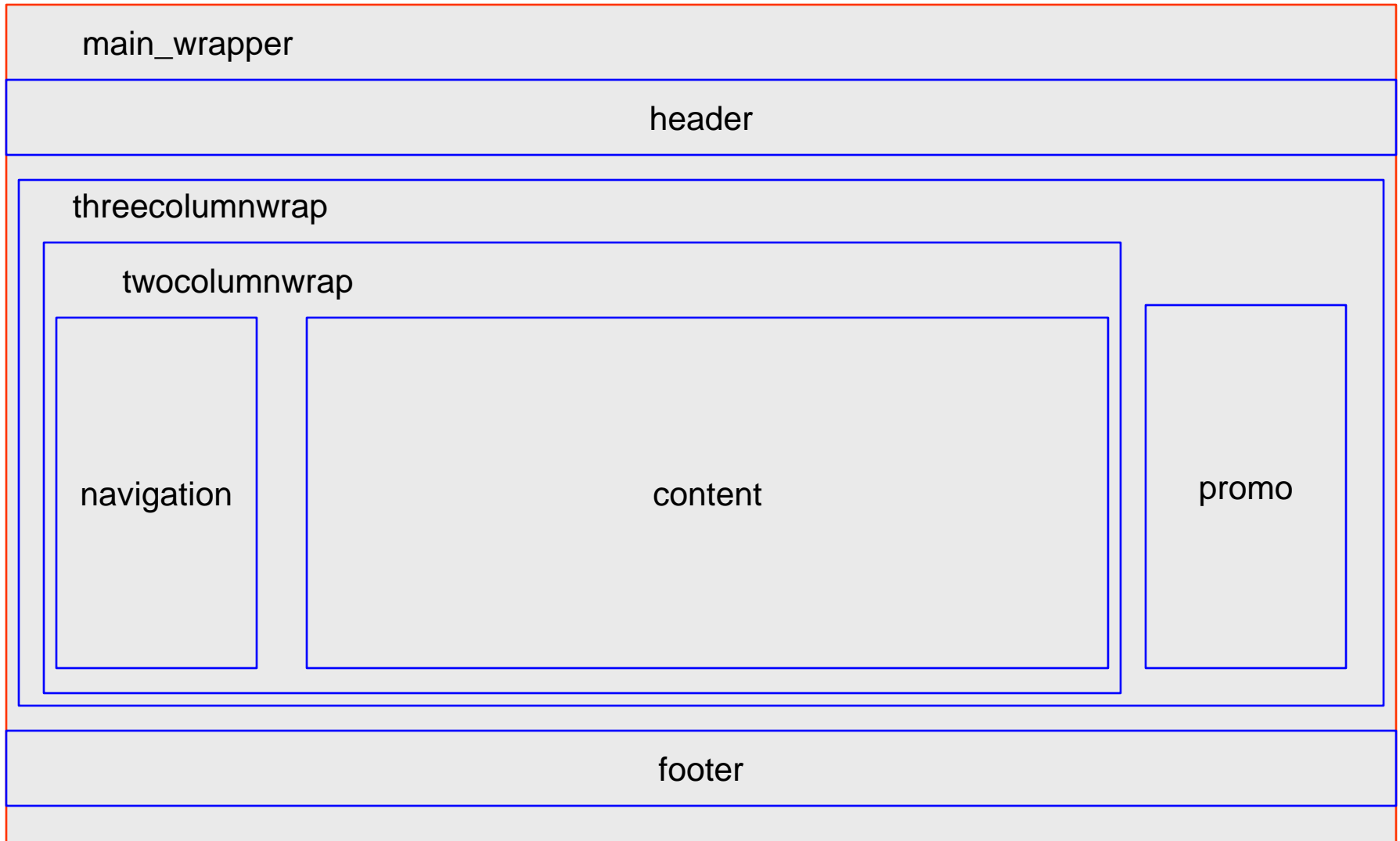
A Three-Column Liquid Layout

- When there is a right column as well, it's a very different story, as the right column must constantly reposition itself as the center column changes width.

- This turns out to be a fairly complex thing to do with CSS.

- The solution, which is a widely used three-column liquid layout technique, is to use negative margins. I'll show you how to apply this technique.

A Three-Column Liquid Layout

main_wrapper

header

threecolumnwrap

twocolumnwrap

navigation

content

promo

footer

A Three-Column Liquid Layout

Nav item 1
Nav item 2
Nav item 3
Nav item 4
Nav item 5

About This Layout
This page is styled with CSS. It uses negative margins create a feature-rich three-column liquid layout.

Key Features
Resize this page to see the following:

1. The center content column changes width as you change the browser width.
2. The `min-width` setting prevents the content being crushed down to nothing; once the content reaches minimum width, the layout gets no narrower.
3. The `max-width` setting prevents the content getting too wide; once it reaches maximum width, the layout gets no wider and the auto margins center the layout in the browser window.
4. The footer sits below whichever column is longest.

If you want this layout to work completely in IE6, you must add some javascript because IE6 does not natively support the `min-width` and `max-width` CSS properties.

The Files
This example uses two CSS files to style the page:

1. three_column_liquidCSS.css
2. text_n_colorsCSS.css

The XHTML markup file is called:

- three column liquid layout.html

Note: Inner <div> elements inside each of the five main <div> elements allow padding and borders to be applied without affecting the width of the main structural <div> elements.

Promo area
This column has a negative margin applied to it to draw it inside of the full width content div. A positive margin on the content div ensures there will be room for it.

© 2011 - a CSS-based three-column layout from *CIS 4004 - Web Based Information Technology - Spring 2011* by Dr. Mark Llewellyn

A Three-Column Liquid Layout

- The first step in creating the three-column liquid layout (starting from the three-column fixed width layout), is to add a couple more `<div>` elements.

- The first one encloses the three columns, and the second one is nested inside it and only encloses the left and center columns.

File   Edit   Search   View   Format   Language   Settings   Macro   Run   TextFX   Plugins   Window   ?   X

three column liquid layout.html | three_column_liquidCSS.css

```
13
14    <div id="header">
15           <div id="header_inner">
16                  <h1>A Three-Column Liquid Layout</h1>
17           </div><!-- end header_inner -->
18    </div><!-- end header -->
19
20    <div id="threecolumnwrap">
21           <div id="twocolumnwrap">
22                  <!-- left column for navigation elements -->
23                  <div id="nav">
24                         <div id="nav_inner">
25                                <ul>
26                                       <li><a href="#">Nav item 1</a></li>
27                                       <li><a href="#">Nav item 2</a></li>
28                                       <li><a href="#">Nav item 3</a></li>
29                                       <li><a href="#">Nav item 4</a></li>
30                                       <li><a href="#">Nav item 5</a></li>
31                                </ul>
32                         </div><!-- end nav_inner -->
33                  </div><!-- end nav -->
```

Add these two `<div>` elements here

Hype nb char : 3919   nb line : 100   Ln : 20   Col : 27   Sel : 0   UNIX   ANSI   INS

File   Edit   Search   View   Format   Language   Settings   Macro   Run   TextFX   Plugins   Window   ?   X

three column liquid layout.html   three_column_liquidCSS.css

```
67                    elements allow padding and borders to be applied without
68                    width of the main structural &lt;div&gt; elements.
69                        </p>
70                    </div><!-- end content_inner -->
71                </div><!-- end content -->
72            </div> <!--end twocolumnwrap -->
73            <!-- promo -->
74            <div id="promo">
75                <div id="promo_inner">
76                    <h3>Promo area</h3>
77                    <cite>This column has a negative margin applied to it to draw
78                        inside of the full width content div. A positive margin on
79                        div ensures there will be room for it.</cite>
80                    <img src="twitter-bird.png" height="100" width="100" alt="fol
81                    <img src="identica-logo.png" alt="follow W3C on identi.ca" hei
82                </div> <!--end promo_inner -->
83            </div><!--end promo -->
84        </div> <!--end threecolumnwrap -->
85        <!-- footer -->
86    <div id="footer">
87        <div id="footer_inner">
88            <p>&copy; 2011 - a CSS-based three-column layout from
89                <a href="http://www.cs.ucf.edu/courses/cis4004/spr2011">
```

End these two <div> elements here

And here

Hype   nb char : 3919   nb line : 100   Ln : 23   Col : 5   Sel : 0   UNIX   ANSI   INS

A Three-Column Liquid Layout

- The additional two `<div>` elements are all the changes that are necessary to the markup, the remaining changes all occur in the stylesheet.

- In the stylesheet we need to style the two new `<div>` elements and reset the margin properties for the three columns used in the layout.

- The next page shows the new styles added to the stylesheet named: `three_column_liquidCSS.css`.

- The following pages illustrate the changes to the margins in the three existing column `id` definitions.

File   Edit   Search   View   Format   Language   Settings   Macro   Run   TextFX   Plugins   Window   ?

three column liquid layout.html | three_column_liquidCSS.css

```css
/* CSS Stylesheet for wThree Column Fixed Width Layout */
/* filename: three_column_fixed_widthCSS.css   */
/*Main Structure Style */
#threecolumnwrap {
     float:left;
     width:100%;
}
#twocolumnwrap {
     float:left;
     width:100%;
     display:inline;
     margin-right:-170px;
}
div#main_wrapper {
     min-width:760px;
     max-width:1000px;
     margin-left:auto;
     margin-right:auto;
}
div#header {
     width:auto;
}
#header {  text-align:  center;
}
```

New `ids` added to the `three_column_liquidCSS` stylesheet.

Notice the negative margin value set for the `twocolumnwrap` identifier.

Casca nb char : 1654   nb line : 67   Ln : 1   Col : 1   Sel : 0   Dos\Windows ANSI   INS

File   Edit   Search   View   Format   Language   Settings   Macro   Run   TextFX   Plugins   Window   ?

three column liquid layout.html   three_column_liquidCSS.css

```css
23    #header { text-align: center;
24    }
25    #nav {
26        width:150px;  /* */
27        float:left;  /* floats on nav, content, and promo divs
28        display:inline;
29    }
30    #content {
31        width:auto;  /* */
32        margin-left:150px;
33        margin-right:170px;
34        top:0px;
35    }
36    #promo {
37        width:170px;  /* */
38        float:left;  /*floats on nav, content, and promo divs make them sit side by side */
39    }
40    #footer {
41        clear:both;  /* makes the footer sit below whichever column is longest */
42        width:100%;  /* set 100% width of window */
43        float:left;  /*push to left side of browser window */
44    }
45
46    /*Inner div styles */
```

New `width` and `margin` properties set for the `nav`, `content`, and `promo` identifiers.

Casc | nb char : 1654   nb line : 67   Ln : 16   Col : 22   Sel : 0   Dos\Windows   ANSI   INS

A Three-Column Liquid Layout

- Notice in the CSS on the previous page that the center column (`id = content`) does not have an explicit width set, rather it is set to `auto`. It would not be able to change sizes with the expansion or contraction of the browser window if it had an explicit width.

- Thus, its natural tendency will be to expand to the width of the layout. However, if we let this happen, there would be no room for the side columns, so we applied margins equal to the width of the side columns to push the content column in on each side.

A Three-Column Liquid Layout

- The problem with this solution is that even after setting the left and right margins, without something additional occurring, the right column would sit with its left edge aligned to the right side of the container and therefore be in the wrong location, or if the browser window was narrow, be off-screen.

- It is the use of the negative right margin value applied to the enclosing `twocolumnwrap` id that does the trick.

A Three-Column Liquid Layout

Nav item 1
Nav item 2
Nav item 3
Nav item 4
Nav item 5

About This Layout

This page is styled with CSS. It uses negative margins create a feature-rich three-column liquid layout.

Key Features

Resize this page to see the following:

1. The center content column changes width as you change the browser width.
2. The `min-width` setting prevents the content being crushed down to nothing; once the content reaches minimum width, the layout gets no narrower.
3. The `max-width` setting prevents the content getting too wide; once it reaches maximum width, the layout gets no wider and the auto margins center the layout in the browser window.
4. The footer sits below whichever column is longest.

If you want this layout to work completely in IE6, you must add some javascript because IE6 does not natively support the `min-width` and `max-width` CSS properties.

The Files

This example uses two CSS files to style the page:

1. three_column_liquidCSS.css
2. text_n_colorsCSS.css

The XHTML markup file is called:

- three column liquid layout.html

Note: Inner <div> elements inside each of the five main <div> elements allow padding and borders to be applied without affecting the width of the main structural <div> elements.

Promo area

This column has a negative margin applied to it to draw it inside of the full width content div. A positive margin on the content div ensures there will be room for it.

© 2011 - a CSS-based three-column layout from *CIS 4004 - Web Based Information Technology - Spring 2011* by Dr. Mark Llewellyn

file:///C:/Courses/CIS%204004%20-%20Web%20Based%20IT/Spring%202011/code/Page%20Layouts/Basic%

A Three-Column Liquid Layout

Nav item 1
Nav item 2
Nav item 3
Nav item 4
Nav item 5

About This Layout

This page is styled with CSS. It uses negative margins create a feature-rich three-column liquid layout.

Key Features

Resize this page to see the following:

1. The center content column changes width as you change the browser width.
2. The `min-width` setting prevents the content being crushed down to nothing; once the content reaches minimum width, the layout gets no narrower.
3. The `max-width` setting prevents the content getting too wide; once it reaches maximum width, the layout gets no wider and the auto margins center the layout in the browser window.
4. The footer sits below whichever column is longest.

If you want this layout to work completely in IE6, you must add some javascript because IE6 does not natively support the `min-width` and `max-width` CSS properties.

The Files

This example uses two CSS files to style the page:

1. three_column_liquidCSS.css
2. text_n_colorsCSS.css

The XHTML markup file is called:

- three column liquid layout.html

Note: Inner <div> elements inside each of the five main <div> elements allow padding and borders to be applied without affecting the width of the main structural <div> elements.

Promo area

This column has a negative margin applied to it to draw it inside of the full width content div. A positive margin on the content div ensures there will be room for it.

© 2011 - a CSS-based three-column layout from _CIS 4004 - Web Based Information Technology - Spring 2011_ by Dr. Mark Llewellyn