

CSS Layout using Box Model

- ❖ The box model utilizes `<div>` or HTML5 elements to structure the document into 2-D blocks for content placement
- ❖ CSS allows *Absolute, Fixed, or Relative Positioning* of elements on a document

<body>

```
<div id="navBar">
  <h3>
    <a href="#A">
      Slides</a>
    </h3>
    <h3>
      <a href="#B">
        Work</a>
      </h3>
</div>
```

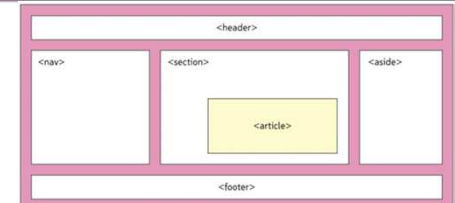
```
<div id="content">
  <h1 id="A">Slides</h1>
  <p>Slides will be here</p>
  <h1 id="B">Work</h1>
  <p>Work will be here</p>
```

</body>

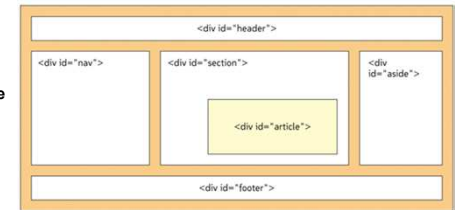
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HTML5 vs. X/HTML Structural Elements

- ❖ **HTML5 only elements**
 - ◆ header
 - ◆ section
 - ◆ article
 - ◆ nav
 - ◆ aside
 - ◆ Footer



- ❖ **XHTML & HTML4**
 - ◆ Only supports div
 - ◆ Use id to indicate the div's structural purpose
 - ◆ Use if older browser support required



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span and div Elements and id Selector

- ❖ **** Inline element with no inherent format
 - ◆ Usually a class attribute is associated with spans to specify similarly formatted inline sections
 - ◆ class attribute allows same format applied to several elements
 - ◆ id attribute could be used to style a single inline element
- ❖ **<div id="?">** Block-level element with no inherent format
 - ◆ Usually an id attribute is associated with div elements to control position and layout for a single occurrence of an element
 - ◆ div element may encapsulate other block level elements
 - ◆ Sometimes referred to as a "super block-level element"
- ❖ **id Selector** used for accessing one element by id

```
#btnBack { position:absolute; left: 30px; top: 40px }
#navLeft h5 { font-size: 16pt; color: #990000; }
```

id Selector

h5 Elements contained in div with id navLeft

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- ```

1. <h1><title>Font Family Example</title>
2. <style type="text/css"> /*<![CDATA[*
3. p { margin-top: 2pt; margin-bottom: 2pt; font-size: 16pt }
4. .Geo { font-family: "Georgia" }
5. .Ver { font-family: "Verdana" }
6. .Imp { font-family: "Impact" }
7. #Arl { font-family: "Arial" }
8. #Wd { font-family: "Wingdings" }
9. #Gree { font-family: "Symbol" }
10. /*]]>*/ </style>
11. </head>
12. <body style="color: #999900">
13. <h2 class="Ver"> Different Font Families</h2>
14. <p>Georgia = abcdef123ABCDEF</p>
15. <p>Verdana = abcdef123ABCDEF</p>
16. <p>Impact = abcdef123ABCDEF</p>
17. <p>Arial = abcdef123ABCDEF</p>
18. <p>Wingdings = abcdef123ABCDEF</p>
19. <p>Symbol = abcdef123ABCDEF</p>
20. </body>

```

## Different Font Families

Georgia = abcdef123ABCDEF  
 Verdana = abcdef123ABCDEF  
 Impact = **abcdef123ABCDEF**  
 Arial = abcdef123ABCDEF  
 Wingdings =   
 Symbol = 

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## span and div Exam

This is a test of setting various text style classes:  
Here is some **Strong** text,  
And some Green Text

This is a test of H3 Bordered Red Text

Back Back

```
<head> <title> Border Example</title>
<style type="text/css"> /*<![CDATA[*/
body { background-color: #FFFFCC; color: #990000; }
p { font-family: Arial; font-size: 12pt; }
h3 { color: #0000FF; }
.MakeGreen { color: #00FF00 }
.MakeRedAndBox { color: #FF0000; border: 8px #FF0000 double; }
#Bck { font-size: 16pt; color: #00CC00; } /*]]> */</style> </head>
<body>
<p>This is a test of setting various text style classes:

Here is some <strong class="MakeGreen">Strong text,

And some Green Text</p>
<h3>This is a test of H3 Bordered
RedText</h3>
<div id="Bck" class="MakeRedAndBox" style="height: 40pt">

Back </div></body>
```

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## Measurement Specification

- ❖ **Absolute Length Measurements**
  - ◆ **12pt** 12 points (1 point = 1/72 inch)
  - ◆ **0.5in** ½ inch
  - ◆ **1.25cm** 1 ¼ centimeters
  - ◆ **16mm** 16 millimeters
- ❖ **Relative Length Measurements**
  - ◆ **152px** 152 pixels
  - ◆ **18em** 18 times the height of uppercase M
  - ◆ **24ex** 24 times the height of lowercase x
  - ◆ **120%** 120 percent of default size
- ❖ **Relative Font Specification**
  - ◆ **xx-small | x-small | medium | large | x-large | xx-large**

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## Border Properties

- ❖ **Border a colored region surrounding element**
  - ◆ **border-width: 4px;**
  - ◆ **border-left-width: 20px;**
  - ◆ **border-top-width: 6pt; /\* border ½ line if 12pt font \*/**
  - ◆ **border-color: #00FF00;**
  - ◆ **border-bottom-color: rgb(0, 255, 0);**
  - ◆ **border-style: none;**  
/\* solid (default), dashed, dotted, double, none, outset, inset, ridge, groove \*/
  - ◆ **border-left-style: double;**
  - ◆ **border-bottom-style: ridge; /\* alternative <hr /> \*/**
- ❖ **Combined form border properties**
  - ◆ **border: width style color**
  - ◆ **border-left: 2px solid #0000CC;**
  - ◆ **border-top: 0; /\* removes top border; If 0 then units not req. \*/**
  - ◆ **border-width: 10px, 0, 20px, 40px; /\* Sets all widths \*/**  
top right bottom left

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## Padding Properties

- ❖ See Appendix B for details
- ❖ **Padding is the transparent region between the border and the element contents**
  - ◆ **padding-top: 0; /\* removes top border \*/**
  - ◆ **padding-right: 10px;**
  - ◆ **padding-bottom: 6pt; /\* border ½ line if 12pt font \*/**
  - ◆ **padding-left: 20px;**
  - ◆ **padding: 0 12pt 15px 0;**  
top right bottom left
- ❖ **Padding can cause problems in older browsers especially IE because interpret top left point interpreted differently**

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## Floating and Aligning Properties

### ❖ Floating elements used for fluid layout

- ◆ **float:** [ left | right ]; /\* position element & float text \*/
- ◆ **clear:** [ left | right | both]; /\* stops floating \*/

### ❖ Vertically Aligning elements

- ◆ **vertical-align:** [ baseline | middle | top | text-top | bottom | text-bottom ];

```

```

This is a classic Face-to-Face class and we meet entirely in person.

```
</p>
```



```
#myMug{ display: inline; float: right; margin: 0.4em 0 0.4em 0.4em;
border: 0.1em solid #0033CC; }
```

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## Reset Style Sheet for All Browsers

displays all structural elements as blocks

```
/* Display HTML5 structural elements as blocks */
article, aside, figure, figcaption, footer, hgroup, header,
section, nav {
 display: block;
}
```

sets the defaults for the Web site

```
/* Set the default page element styles */
body * {
 font-family: Verdana, Geneva, sans-serif;
 font-size: 100%;
 font-weight: inherit;
 line-height: 1.2em;
 list-style: none;
 vertical-align: baseline;
}
```

hides the main sections of the Cycle Pathology home page

```
/* Temporarily hide the page sections */
nav.horizontalNAV, #president, nav.verticalNAV,
#story, header, aside, footer {
 display: none;
}
```

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## CSS Body background Specifications

- ❖ **background-color**  
body { background-color: #FF99CC; }
- ❖ **background-image** (tiled x and y directions)  
body { background-image: url(wpBubbles.jpg); }
- ❖ **background-repeat** [repeat-x | repeat-y | no-repeat]  
body { background-repeat: repeat-y; }
- ❖ **background-attachment** [fixed, scroll]  
body { background-attachment: fixed; }
- ❖ **background-position** [ % | <length> ]  
[top | center | bottom] [left | center | right]  
body { background-position: 10px 20px; }
- ❖ **Combined background property**  
body { background: #FF99CC url(wpBubbles.jpg) repeat-y bottom left fixed; }
- ❖ **HTML 5 new background styles**
  - ◆ background-size: width height; [units | auto (keeps aspect ratio)]
  - ◆ background-clip: box; [content-box | padding-box | border-box (default)]
  - ◆ background-origin: box; [content-box | padding-box (default) | border-box]

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## CSS Body background Example

```
<head>
<title>Selector Test</title>
<style type="text/css">
 body {
 background-image: url(wpBubbles.jpg);
 background-color: #990000;
 color: #009900;
 }
 .important { text-decoration: underline; }
 em.important { color: #FF0000; }
</style>
</head>
<body>
 <h2 class="important">This is a test of CSS
 selectors</h2>
 <p>It is an <em class="important">important
 issue
 if styles will combine.</p> </body>
```

This is a test of CSS selectors  
It is an important issue if styles will combine.

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## Browser Specific Extensions to CSS

Vendor Prefix	Rendering Engine	Browsers
-khtml-	KHTML	Konqueror
-moz-	Mozilla	Firefox, Camino
-ms-	Trident	Internet Explorer
-o-	Presto	Opera, Nintendo Wii browser
-webkit-	WebKit	Android browser, Chrome, Safari

- ❖ Older browsers may not support CSS3, but they may support a browser extension

- ◆ -moz-background-origin: padding-origin;
- ◆ -moz-background-size: 40%;
- ◆ -moz-border-radius: 15px;

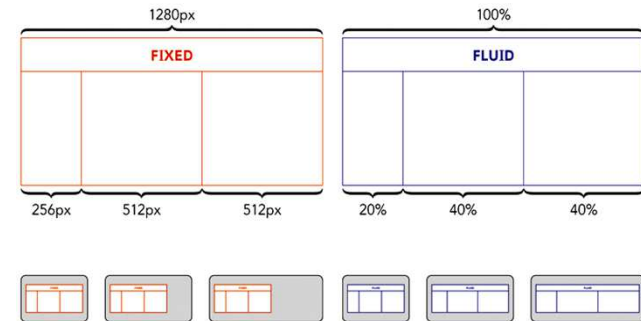
- ❖ Supported CSS3 properties

- ◆ background-origin: padding-origin;
- ◆ background-size: 40%;
- ◆ border-radius: 15px;

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## Fixed, Fluid, and Elastic Layouts

- ❖ Fixed Layout used pixels unit *px*
- ❖ Fluid Layout uses percent unit *%*
- ❖ Elastic Layout uses em units *em*, so size based on font size



Fixed layouts stay the same size regardless of screen resolution.

Fluid layouts change with the screen resolution.

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## Element Structural Properties

- ❖ Element Position property

- ◆ **position:** [ absolute | fixed | relative ] ;

- ❖ Element Placement properties

- ◆ **top: 10px;** /\* distance from window top to div top \*/
- ◆ **left: 20px;** /\* distance from window left to div left \*/

- ❖ Element size properties

- ◆ **height: 400px;** /\* height of div element \*/
- ◆ **width: 500px;** /\* width of div element \*/

- ❖ Element display property

- ◆ **display:** [ inline | block | list-item | inherit | none ] ;

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## CSS - Absolute Positioning

- ❖ **Absolute Positioning** locates the contents of the HTML5 structural or `<div>` elements to the coordinates specified by the top left properties

- ❖ Can define as inline style rule

```
<div style="position: absolute; left: 420px; top: 20px;">
 </div>
```

- ❖ Can define Style Sheet Rule for embedded or external CSS file

```
#Logo { position: absolute; left: 420px; top: 20px; }
```



```
<div id="Logo">
 </div>
```

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## CSS – Fixed Positioning

- ❖ **Fixed Positioning** locates the contents of the HTML5 structural or `<div>` elements to a fixed position in browser is unaffected by scrolling
  - ◆ Excellent replacement for frame layouts

```
#dvContent { position: absolute; top: 0; left: 150px;
width: 500px; z-index: 10;}
#Nav { position: fixed; top: 0; left: 0; width: 130px;
background: #000066 url(wpUMUCMenu.gif) repeat-y;
height: 100%; z-index: 20; }
```

Categories

Card suits

Currency

XHTML/HTML
Special Characters

Name	Code	Number	Code	Glyph	Description
single quote				'	left single quote

## Overflow and Clipping

- ❖ Overflow element overflows beyond height and width
  - `overflow: type;`    `overflow-y: type;`
    - ◆ visible (to expand the element height to match the content)
    - ◆ hidden (to hide the excess content)
    - ◆ scroll (to always display horizontal and vertical scroll bars)
    - ◆ auto (to display scroll bars if needed)
- ❖ Clipping element
  - `clip: rect(top, right, bottom, left);`

visible

box extends to make all of the overflow visible

Upcoming Events  
July 5 Rose Hill Rally  
Start from Canyon View Park and choose the Canyon of Mystery Canyon ride. The \$10 entry fee includes breakfast, support vehicles, and a post-ride meal.

hidden

overflow content is hidden from users

Upcoming Events  
July 5 Rose Hill Rally  
Start from Canyon View Park and choose the Canyon of Mystery Canyon ride. The \$10 entry fee includes breakfast, support vehicles, and a post-ride meal.

scroll

browsers add scroll bars to the box

Upcoming Events  
July 5 Rose Hill Rally  
Start from Canyon View Park and choose the Canyon of Mystery Canyon ride. The \$10 entry fee includes breakfast, support vehicles, and a post-ride meal.

auto

scroll bars are added only where needed

Upcoming Events  
July 5 Rose Hill Rally  
Start from Canyon View Park and choose the Canyon of Mystery Canyon ride. The \$10 entry fee includes breakfast, support vehicles, and a post-ride meal.

Full element

75 pixels

10 pixels

173 pixels

clip: rect(0, 175, 175, 0);

125 pixels

## Stacking and Overflow Properties

- ❖ 3D Stacking element style
  - ◆ `z-index: 40;` /\* highest no. = top \*/
  - ◆ `z-index: 20;` /\* lowest no. = bottom \*/
- ❖ Contents Overflow
  - ◆ `overflow: [ visible | hidden | scroll | auto ];` /\* determines how overflow displayed \*/

```
<head><title>Stacking</title><style type="text/css">
body { font-family: "Verdana"; font-size: 18px; font-weight: bold; }
#dvA { border: 5px solid #FF0000; background-color: #FFCCCC;
top: 40px; left: 40px; position: absolute; z-index: 10; }
#dvB { border: 5px solid #00FF00; background-color: #CCFFCC;
top: 65px; left: 65px; position: absolute; z-index: 5; }
#dvC { border: 5px solid #0000FF; background-color: #CCCCFF;
top: 90px; left: 90px; position: absolute; z-index: 8;
height: 60px; width: 150px; overflow: auto; } </style> </head>
<body><div id="dvA">One</div> <div id="dvB">Two</div>
<div id="dvC">This is the third element with overflow</div> </body>
```

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## Cascade Rules - Location Precedence

- ❖ If highest two style rules have the same level of specificity, then the last style specified determines the appearance of the html document
- ❖ Keep in mind the head of the html document is processed first by the browser followed by the body
  1. Inline Styles (Strongest)
  2. The last style specified has priority for the External and Embedded Specifications
    - ◆ Embedded CSS (Last has priority)
    - ◆ External CSS (Last has priority)

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