

CSI 3140 - LECTURE 03

css

OBJECTIVES

- ▶ Chapter 4 and 5
- ▶ Styling a webpage with CSS
- ▶ Style attributes and CSS classes
- ▶ Specifying properties like font, size and colours
- ▶ Understanding the box model (body, padding, border and margin)

MORE CSS CONCEPTS

- ▶ Corners
- ▶ Shadows
- ▶ Gradients
- ▶ Colours
- ▶ Animations
- ▶ Context
- ▶ Browser prefixes

WHAT IS CSS

- ▶ Cascading Style Sheets
- ▶ Separate style from structure
 - ▶ Fonts, borders, colours, dimensions, positions
 - ▶ Use tables for tabular data, do not use styled DIVs

THE PROMISE OF CSS

- ▶ Easily make changes to the look and feel of the page without changing the content
- ▶ Far from perfect

The screenshot shows the Dividends.io homepage. At the top, there's a blue header with the logo "Dividends.io" and a "Login" button. Below the header is a main section with the heading "Track your **payouts** like it's **payday**". It includes a subtext about tracking passive income and a form to "Provide your email to get started". A large blue button below the form says "Email Me An Access Code". At the bottom of this section, a small note says "By clicking this button, you agree to our [Terms of Service](#)". The footer contains several sections: "Fine print?", "Do I have to worry about you selling my email or data?", "Are there any limits?", and "Want more features?". Each of these sections has a brief explanatory text.

The screenshot shows the same Dividends.io homepage but with a white header. The main tracking section and the "Email Me An Access Code" button are identical to the blue version. The footer also contains the same sections: "Fine print?", "Do I have to worry about you selling my email or data?", "Are there any limits?", and "Want more features?". The text in the footer sections is identical to the blue version.

VALIDATING CSS

► <http://jigsaw.w3.org/css-validator/>

Deutsch English Español Français 한국어 Italiano Nederlands 日本語 Polski Po

W3C CSS Validation Service
Check Cascading Style Sheets (CSS) and (X)HTML documents with style sheets

By URI By file upload By direct input

Validate by file upload
Choose the document you would like validated:
Local CSS file: Choose File 03_external.css

More Options

Check

W3C CSS Validator results for 03_external.css (CSS level 3)

Congratulations! No Error Found.

This document validates as [CSS level 3](#) !

To show your readers that you've taken the care to create an interoperable Web page, you m to your Web page:


<p>

</p>


<p>

</p>

CSS VERSION HISTORY

- ▶ CSS 1 - December 17, 1997
- ▶ CSS 2 - May 1998
- ▶ CSS 2.1 - February 25, 2004 (officially June 7, 2011)
- ▶ CSS 3 - Split into 4 modules
 - ▶ Media - June 9, 2012
 - ▶ Namespaces - September 29, 2011
 - ▶ Selectors - September 29, 2011
 - ▶ Color - June 7, 2011

INLINE STYLES

```
<div style="background-color: #bdc3c7;">Hello World</div>
```

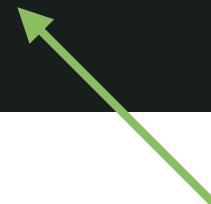
Hello World

- ▶ Avoid this as it mixes style with structure
- ▶ Many style framework exists; but that does not excuse the poor behavior of mixing styles and content
- ▶ Just because you are not using something correctly does not mean it's incorrect to use

CSS-IN-JSS

```
// Abstract this wherever in your build process
// There could be logic here.
var divStyle = {
  background: "#eee",
  padding: "20px",
  margin: "20px"
};

// Inline styles applied in the HTML you build here
var Module = React.createClass({
  render: function() {
    return <div style={divStyle}>Hello {this.props.name}</div>;
  }
});
```



Another approach (like React shown here) manages styles directly on your components

CSS CLASS

```
<head>
  <meta charset="utf-8">
  <title>Welcome</title>
  <style>
    .container { background-color: #bdc3c7; }
  </style>
</head>
<body>
  <div class="container">Hello World</div>
</body>
```

Global classes prefixed
with a dot

Style name, colon, style
value

Can be defined in a style tag

Separate style tag is better than inline
styles, but even better is putting CSS
styles in a separate file.

Hello World

SELECTING BY #ID

```
<html> welcome to class</html>
<head>
  <style>
    #myHeader { color: #bdc3c7; }
  </style>
</head>
<body>
  <header id="myHeader">Hello World</header>
</body>
```

Use a # to identify an element by its ID

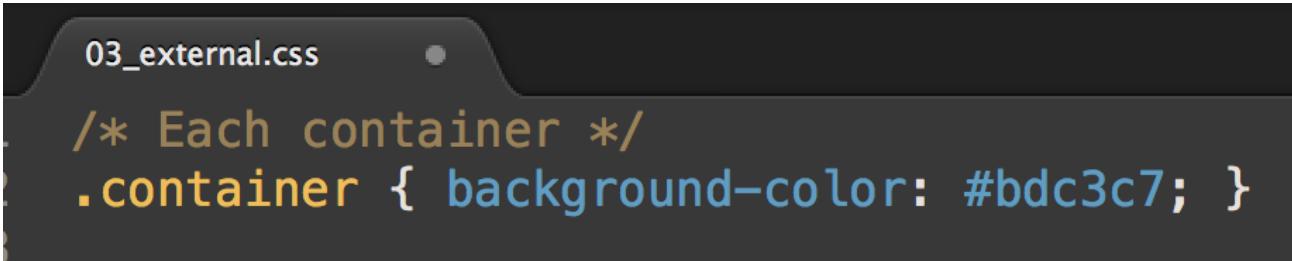
Hello World

Avoid IDs where possible as they should be unique, and it is sometimes hard to know if an element (of the same style) will be re-used on a page.

EXTERNAL CSS FILES

```
<html>
  <head>
    <meta charset="utf-8">
    <title>Welcome</title>
    <link type="text/css" rel="stylesheet" href="03_external.css">
  </head>
  <body>
    <div class="container">Hello World</div>
  </body>
</html>
```

Except in our simple examples, using external files is almost always the right approach.



```
03_external.css
/*
 * Each container *
*/
.container { background-color: #bdc3c7; }
```

FONT-WEIGHT

```
<title>Welcome</title>
<style type="text/css">
    .bold { font-weight: bold; }
    .normal { font-weight: normal; }
    .bolder { font-weight: bolder; }
    .lighter { font-weight: lighter; }
    .bynum900 { font-weight: 900; }
    .bynum0 { font-weight: 0; }
</style>
</head>
<body>
    <p class="bold">Hello World (bold)</p>
    <p class="normal">Hello World (normal)</p>
    <p class="bolder">Hello World (bolder)</p>
    <p class="lighter">Hello World (lighter)</p>
    <p class="bynump900">Hello World (900)</p>
    <p class="bynump0">Hello World (0)</p>
</body>
```

bold, bolder, lighter, or 0 (light) à 900 (dark)

Hello World (bold)

Hello World (normal)

Hello World (bolder)

Hello World (lighter)

Hello World (900)

Hello World (0)

There is not a huge visual difference with "bold", so use other style properties like colour and size to distinguish important elements.

FONT-FAMILY

```
<style type="text/css">
  .serif { font-family: "Times New Roman"; }
  .sans-serif { font-family: Arial; }
  .cursive { font-family: cursive; }
  .fantasy { font-family: fantasy; }
  .monospace { font-family: "Courier New"; }
</style>
</head>
<body>
  <p class="serif">Hello World (serif)</p>
  <p class="sans-serif">Hello World (sans-serif)</p>
  >
  <p class="cursive">Hello World (cursive)</p>
  <p class="fantasy">Hello World (fantasy)</p>
  <p class="monospace">Hello World (monospace)</p>
</body>
```

Hello World (serif)

Hello World (sans-serif)

Hello World (cursive)

Hello World (fantasy)

Hello World (monospace)

Not all fonts are available on all clients, so make sure it is “web safe”.

Text will comprise a huge part of your web application, so choose wisely.

FONT-SIZE

```
<title>Hello World</title>
<style type="text/css">
    .xx-small { font-size: xx-small; }
    .by-percent { font-size: 200%; }
    .by-px { font-size: 16px; }
    .by-pt { font-size: 16pt; }
    .by-em { font-size: 2em; }
</style>
</head>
<body>
    <p class="xx-small">Hello World (xx-small)</p>
    <p class="by-percent">Hello World (200%)</p>
    <p class="by-px">Hello World (16px)</p>
    <p class="by-pt">Hello World (16pt)</p>
    <p class="by-em">Hello World (2em)</p>
</body>
```

Hello World (xx-small)

Hello World (200%)

Hello World (16px)

Hello World (16pt)

Hello World (2em)

Several units of measure
for fonts, but it usually
suffices to use pixels.

WEB UNITS (PT, PX, EM, REM, %)

Name	Type	Details
px	Depends	Size varies based on the screen resolution
em	Relative	Height of upper case letter M
ex	Relative	Height of lower case letter x
%	Relative	% of the default height
in	Absolute	In inches
cm	Absolute	In centimeters
mm	Absolute	In millimeters
pt	Absolute	In points (1pt = 1/72 in)
pc	Absolute	In picas (1 pc = 12 pt)

PIXELS SHOULD SUFFICE

- ▶ A long history of best practices that has changed over time
- ▶ The original problem was that pixels used to a fixed unit
 - ▶ Screen size no longer affects the display of pixels
- ▶ Em/rem are also a nice relative measure, but it's relative to the HTML structure so behavior is not always as expected
- ▶ Start using pixels, and change to something more appropriate if necessary

CSS CLASS DEFINITIONS

```
<style type="text/css">
    h1 { color: #3498db; }
    h1.overwritten { background-color: #ecf0f1; }
    h1.conflict { color: #f39c12 !important; }
    h2.header { color: #2ecc71; }
    h2.footer { color: #e67e22; }
    .container { background-color: #bdc3c7; }
</style>
</head>
<body>
    <h1>The Title</h1>
    <h1 class="overwritten">Also a Title</h1>
    <h1 class="conflict">Conflict Title</h1>
    <h2 class="header">The Header Sub Title</h2>
    <div class="container">First Part.</div>
    <p class="container">Second Part.</p>
    <h2 class="footer">The Footer Sub Title</h2>
</body>
```

Declare in the <head>, using MIME text/css

Applies to all tags

Applies to named H1 tags

Code smell, another example where inheritance can be problematic

Applies to any tag with that name

The Title

Also a Title

Conflict Title

The Header Sub Title

First Part.

Second Part.

The Footer Sub Title

CSS CONFLICTS

- ▶ At least the highest precedence
 - ▶ browser styles
 - ▶ External styles
 - ▶ Internal style (document head)
 - ▶ Inline Styles
 - ▶ Individual user styles
- ▶ Higher specificity also takes precedence

```
<style type="text/css">
    .top p { color: blue; }
    p { color: red; }
</style>
</head>
<body>
    <div class="top">
        <p>The Top Paragraph</p>
    </div>
    <p>Any other paragraph</p>
</body>
```

The Top Paragraph

Any other paragraph

More precise, so it wins

Avoid conflicts by avoiding inheritance (much easier with CSS preprocessors like SASS)

TEXT-DECORATION

```
<style type="text/css">
    .underline { text-decoration: underline; }
    .overline { text-decoration: overline; }
    .line-through { text-decoration: line-through; }
</style>
</head>
<body>
    <p class="underline">Hello World (underline)</p>
    <p class="overline">Hello World (overline)</p>
    <p class="line-through">Hello World (line-through)</p>
</body>
```

Hello World (underline)

Hello World (overline)

~~Hello World (line-through)~~

PSEUDOCLASSES

```
<title>welcome</title>
<style type="text/css">
| a.btn:hover { background: #bdc3c7; cursor: pointer  }
</style>
</head>
<body>
| <a class="btn">Hover over me</a>
</body>
```

Property of an event, once
we "hover" over the item

Hover over me

Hover over me

Lots of UX effects once done in
JavaScript and/or images, now
done with style (e.g. buttons)

POSITION - ABSOLUTE

```
<html>
<head>
<style type="text/css">
  .topright { position: absolute; top: 20px; right: 20px;
    width: 100px; height: 100px; }
  .front { z-index: 3; line-height: 100px; }
  .back { z-index: 2; background-color: #3498db; }
  .offset { position: absolute; top: 10px; right: 30px;
    width: 120px; height: 120px;
    background-color: #f1c40f;
    z-index: 1; }
</style>
</head>
<body>
  <div class="topright front">In the top right</div>
  <div class="topright back"></div>
  <div class="offset"></div>
</body>
```

Define the vertical (top, bottom) and horizontal (left, right) offset

A higher z-index means "on top"



Absolutes are
the enemy of
navigators;
avoid

POSITION – RELATIVE

```
<title>welcome</title>
<style type="text/css">
  .super { position: relative; top: -10px; }
  .sub { position: relative; bottom: -10px; }
  .shiftleft { position: relative; left: -5px; color: blue; }
  .shiftright { position: relative; right: -5px; color: red; }
</style>
</head>
<body>
  <p>3 <span class="super">2</span> = 9</p>
  <p>x <span class="sub">0</span> + x <span class="sub">1</span> = y</p>
  <p>
    I am <span class="shiftleft">a little left</span>
    and you are <span class="shiftright">a little right.</span>
</body>
</>
```

$$3^2 = 9$$

$$x_0 + x_1 = y$$

I am **a little left** and you are **a little right.**

INLINE VS BLOCK

```
<style type="text/css">
    .inline { display: inline; }
    .block { display: block; }
    .spacer { height: 20px; }
</style>
</head>
<body>
    <span>span Defaults</span> <span>to</span> <span>inline</span>
    <div class="spacer"></div>
    <div>div Defaults</div> <div>to</div> <div>block</div>
    <div class="spacer"></div>
    <div class="inline">Can</div>
    <div class="inline">be</div>
    <div class="inline">overwritten</div>
    <div class="spacer"></div>
    <span class="block">So</span>
    <span class="block">can</span>
    <span class="block">inline</span>
</body>
```

span Defaults to **inline**

div Defaults
to
block

Can be overwritten

So
can
inline

BACKGROUND

```
<html><head>
<style type="text/css">
    .fancy { background: #34495e url(sky.png) no-repeat fixed center bottom; }
</style>
</head>
<body class="fancy">
```

Shortcut for specifying
multiple properties at
once

background-color

background-image

background-repeat

Background-position

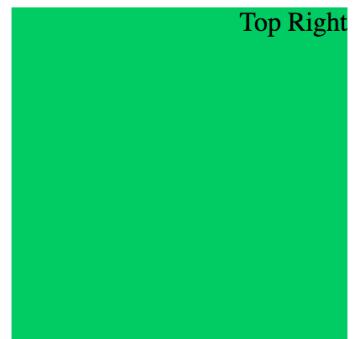
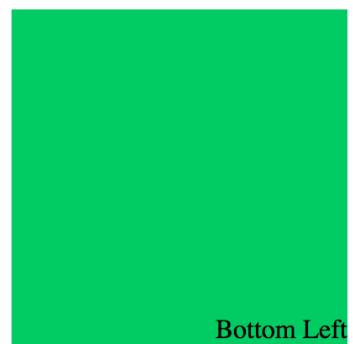


TEXT-ALIGN

```
<head>
  <meta charset="utf-8">
  <title>Welcome</title>
  <style type="text/css">
    .box { width: 200px; height: 200px; margin: 20px; background-color: #2ecc71; }
    .center { text-align: center; line-height: 200px; }
    .left { text-align: left; vertical-align: bottom; position: relative; }
    .bottom { position: absolute; bottom: 0px; right: 0px; }
    .right { text-align: right; vertical-align: middle; }
  </style>
</head>
<body>
  <div class="box center">Center</div>
  <div class="box left"><span class="bottom">Bottom Left</span></div>
  <div class="box right">Top Right</div>
</body>
```

Align in the center in the middle

Still a little
annoying to get
the placement of
the elements as
you want



OVERFLOW

```
<title>welcome</title>
<style type="text/css">
.box { width: 200px; height: 200px; margin: 20px; background-color: #2ecc71; }
.updown { overflow-y: scroll; }
.leftright { overflow-x: auto; white-space: nowrap; }

</style>
</head>
<body>
<div class="box updown">
    Lorem Ipsum is simply dummy text of the printing and typesetting industry.
    Lorem Ipsum has been the industry's standard dummy text ever since the
    1500s, when an unknown printer took a galley of type and scrambled it
    to make a type specimen book. It has survived not only five centuries,
    but also the leap into electronic typesetting, remaining essentially
    unchanged. It was popularised in the 1960s with the release of Letraset
    sheets containing Lorem Ipsum passages, and more recently with desktop
    publishing software like Aldus PageMaker including versions of Lorem Ipsum.
</div>

<div class="box leftright">
    Lorem Ipsum is simply dummy text of the printing and typesetting industry.<br>
    Lorem Ipsum has been the industry's standard dummy text ever since the<br>
    1500s, when an unknown printer took a galley of type and scrambled it <br>
```

Ipsum has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Ipsum is simply dummy text of the printing and typesetting industry. It has been the industry's standard dummy text ever since the 1500s, when an unknown printer took a galley of type and scrambled it to make a type specimen book. It has survived not only five centuries, but also the leap into electronic typesetting, remaining essentially unchanged. It was popularised in the 1960s with the release of Letraset sheets containing Lorem Ipsum passages, and more recently with desktop publishing software like Aldus PageMaker including versions of Lorem Ipsum.

Box Model

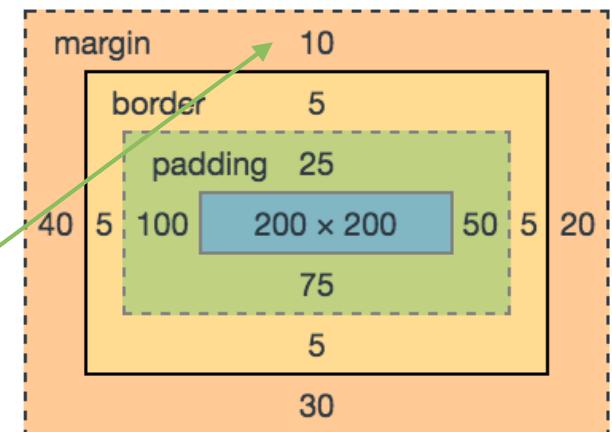
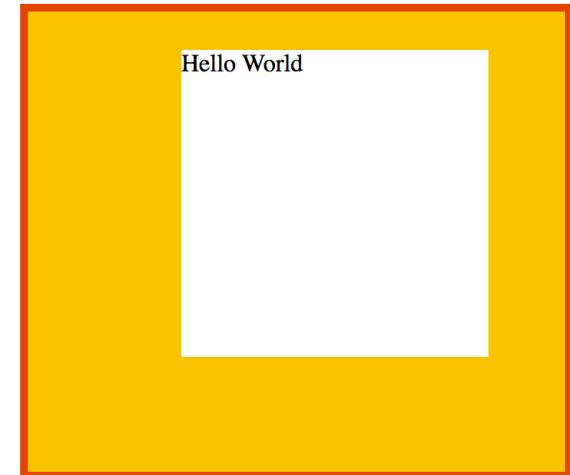
```
<html>
  <head>
    <style type="text/css">
      .box { width: 200px; height: 200px; }
      .outer { background-color: #f1c40f;
                margin: 10px 20px 30px 40px;
                padding: 25px 50px 75px 100px;
                border: 5px solid #d35400; }
      .inner { background-color: white; }
    </style>
  </head>
  <body>
    <div class="box outer">
      <div class="box inner">Hello World</div>
    </div>
  </body>
</html>
```

Outside the
"content"

Inside the
"content"

Between "margin"
and "padding"

"top", "right", "bottom", "left"



FLOATING - WRAP

```
<html>
<head>
<style type="text/css">
    .first-section { width: 450px; }
    .first-section img { float: right; width: 200px; }
    .first-section p { display: inline; }
</style>
</head>
<body>
    <section class="first-section">
        
        <p>It is a long established fact that a reader will be dis-  
content of a page when looking at its layout. The point of  
that it has a more-or-less normal distribution of letters,  
'Content here, content here', making it look like readable  
publishing packages and web page editors now use Lorem Ips  
text, and a search for 'lorem ipsum' will uncover many web  
infancy. Various versions have evolved over the years, som-  
sometimes on purpose (injected humour and the like).</p>
    </div>
</body>
```

It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using 'Content here, content here', making it look like readable English. Many desktop publishing packages and web page editors now use Lorem Ipsum as their default model text, and a search for 'lorem ipsum' will uncover many web sites still in their infancy. Various versions have evolved over the years, sometimes by accident, sometimes on purpose (injected humour and the like).



The image floats on the right, so that the text can surround it

Floating needs to be "inline"

FLOATING - GRID

```
<title>Welcome</title>
<style type="text/css">
  body { margin: 0; padding: 0; background-color: #2c3e50; }
  .nav { background-color: #bdc3c7; overflow: auto; }
  .nav ul { margin: 0; padding: 20px; }
  .nav ul li { display: inline; margin: 0; padding: 20px; }
  .nav ul li:hover { background-color: #34495e; color: #bdc3c7; cursor: pointer; }
  .left { float: left; }
  .right { float: right; }
  .footer { padding: 20px;
    color: #ecf0f1; background-color: #2c3e50; text-align: center; }
  .content:after { display: table; clear: both; }
  .content .left { height: 300px; width: 300px; background-color: #3498db; }
  .content .main { height: 300px; background-color: #9b59b6; }
</style>
</head>
<body>
  <nav class="nav">
    <ul class="left">
      <li>MyApp</li>
    </ul>
    <ul class="right">
      <li>Services</li>
      <li>Pricing</li>
      <li>Login</li>
    </ul>
  </nav>
  <div class="content">
    <div class="left"></div>
    <div class="main"></div>
  </div>
  <footer class="footer">
    © CSI 3540 2017
  </footer>
</body>
```

Forcing a tag full of “relative” element to “clear” at the end of all those relative elements.

Much more complicated CSS for a “reset”, which removes inconsistencies between browsers

Allows alignment of sections in the page

Widely used in CSS frameworks



@MEDIA SCREEN VS PRINT

```
<style type="text/css">
  @media screen {
    body { color: blue }
  }

  @media print {
    body { color: green; }
    nav { display: none; }
  }
</style>
</head>
<body>
  <nav>Screen Only</nav>
  <p>Hello World</p>
</body>
```

Screen Only

Hello World

Print
Total: 1 page

Cancel Save

1/2/2017
Hello World

@MEDIA RESOLUTION

```
<html>
<head>
<style type="text/css">
  @media screen and (min-width: 480px) {
    body {
      background-color: green;
    }
  }
  @media screen and (max-width: 480px) {
    body { background-color: blue; }
  }
</style>
</head>
<body>
  <p>Hello World</p>
</body>
```



Useful in Responsive Design



COLOR (WITHOUT THE “U”)

- ▶ HEX
- ▶ RGBA - Red/Green/Blue/Alpha (opacity)
- ▶ HSLA - Hue/Saturation/Lightness/Alpha
- ▶ HSVA - Hue/Saturation/Value/Alpha
- ▶ Name (only 140 variations)

CSS COLORS

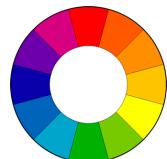
```
<style type="text/css">
  p { margin: 20px; }
  .hex { color: #27ae60; }
  .rgb { color: rgb(255, 0, 0); }
  .rgba { color: rgba(255, 0, 0, 0.5); }
  .hsl { color: hsl(120, 100%, 50%); }
  .hsia { color: hsla(120, 100%, 50%, 0.5); }
</style>
</head>
<body>
  <div class="hex">#27ae60</div>
  <div class="rgb">rgb(255, 0, 0)</div>
  <div class="rgba">rgba(255, 0, 0, 0.5)</div>
  <div class="hsl">hsl(120, 100%, 50%)</div>
  <div class="hsia">hsla(120, 100%, 50%, 0.5)</div>
</body>
```

RGB 0 - 255

Saturation 0 (dull)
to 100% (full)

Lightness 0 (black)
to 100% (white)

Hue 0 - 359 (color wheel)



#27ae60

rgb(255, 0, 0)

rgba(255, 0, 0, 0.5)

hsl(120, 100%, 50%)

hsl(120, 100%, 50%, 0.5)

Alpha 0 (transparent) à 1 (solid)

NAMES OF CSS Couleurs

HTML name	R	G	B	
	Hex	Decimal		
Pink colors				
Pink	FF C0 CB	255	192	203
LightPink	FF B6 C1	255	182	193
HotPink	FF 69 B4	255	105	180
DeepPink	FF 14 93	255	20	147
PaleVioletRed	DB 70 93	219	112	147
MediumVioletRed	C7 15 85	199	21	133

HTML name	R	G	B	
	Hex	Decimal		
Green colors				
DarkOliveGreen	55 6B 2F	85	107	47
Olive	80 80 00	128	128	0
OliveDrab	6B 8E 23	107	142	35
YellowGreen	9A CD 32	154	205	50
LimeGreen	32 CD 32	50	205	50
Lime	00 FF 00	0	255	0
LawnGreen	7C FC 00	124	252	0
Chartreuse	7F FF 00	127	255	0
GreenYellow	AD FF 2F	173	255	47
SpringGreen	00 FF 7F	0	255	127
MediumSpringGreen	00 FA 9A	0	250	154
LightGreen	90 EE 90	144	238	144
PaleGreen	98 FB 98	152	251	152
DarkSeaGreen	8F BC 8F	143	188	143
MediumAquamarine	66 CD AA	102	205	170
MediumSeaGreen	3C B3 71	60	179	113
SeaGreen	2E 8B 57	46	139	87
ForestGreen	22 8B 22	34	139	34
Green	00 80 00	0	128	0
DarkGreen	00 64 00	0	100	0

HTML name	R	G	B	
	Hex	Decimal		
Purple, violet, and magenta colors				
Lavender	E6 E6 FA	230	230	250
Thistle	D8 BF DD	216	191	216
Plum	DD A0 DD	221	160	221
Violet	EE 82 EE	238	130	238
Orchid	DA 70 D6	218	112	214
Fuchsia	FF 00 FF	255	0	255
Magenta	FF 00 FF	255	0	255
MediumOrchid	BA 55 D3	186	85	211
MediumPurple	93 70 D9	147	112	219
SpringGreen	00 FF 7F	0	255	127
BlueViolet	8A 2B E2	138	43	226
DarkViolet	94 00 D3	148	0	211
DarkOrchid	99 32 CC	153	50	204
DarkMagenta	8B 00 8B	139	0	139
Purple	80 00 80	128	0	128
Indigo	4B 00 82	75	0	130
MediumSlateBlue	48 3D 8B	72	61	139
SlateBlue	6A 5A CD	106	90	205
MediumSlateBlue	7B 6B EB	123	104	238

DarkKhaki	BD B7 6B	189	183	107
Gold	FF D7 00	255	215	0
Blue colors				
LightSteelBlue	B0 C4 DE	176	196	222
PowderBlue	B0 E0 E6	176	224	230
LightBlue	AD DB E6	173	216	230
SkyBlue	87 CE EB	135	206	235
NavajoWhite	FF DE AD	255	222	173
Wheat	F5 DE B3	245	222	179
BurlyWood	DE BB 87	222	184	135
Tan	D2 B4 8C	210	180	140
RosyBrown	BC 8F 8F	188	143	143
SandyBrown	F4 A4 60	244	164	96
Goldenrod	DA A5 20	218	165	32
DarkGoldenrod	B8 B6 0B	184	134	11
Peru	CD 85 3F	205	133	63
Chocolate	D2 69 1E	210	105	30
Navy	00 00 80	0	0	128
SaddleBrown	8B 45 13	139	69	19
Sienna	A0 52 2D	160	82	45
Brown	A5 2A 2A	165	42	42
Maroon	80 00 00	128	0	0
MidnightBlue	19 19 70	25	25	112

HTML name	R	G	B	
	Hex	Decimal		
Red colors				
LightSalmon	FF A0 7A	255	160	122
Salmon	FA 80 72	250	128	114
DarkSalmon	E9 96 7A	233	150	122
LightCoral	F0 80 80	240	128	128
IndianRed	CD 5C 5C	205	92	92
Crimson	DC 14 3C	220	20	60
FireBrick	B2 22 22	178	34	34
DarkRed	8B 00 00	139	0	0
Red	FF 00 00	255	0	0

HTML name	R	G	B	
	Hex	Decimal		
Orange colors				
OrangeRed	FF 45 00	255	69	0
Tomato	FF 63 47	255	99	71
Coral	FF 7F 50	255	127	80
DarkOrange	FF 8C 00	255	140	0
Orange	FF A5 00	255	165	0

HTML name	R	G	B	
	Hex	Decimal		
Yellow colors				
Yellow	FF FF 00	255	255	0
LightYellow	FF FF E0	255	255	224
LemonChiffon	FF FA CD	255	250	205
LightGoldenrodYellow	FF FA D2	250	250	210
PapayaWhip	FF EF D5	255	239	213
Moccasin	FF E4 B5	255	228	181
PeachPuff	FF DA B9	255	218	185
PaleGoldenrod	EE E8 A8	238	232	170
Khaki	F0 E6 8C	240	230	140
DarkKhaki	BD B7 6B	189	183	107
Gold	FF D7 00	255	215	0

HTML name	R	G	B	
	Hex	Decimal		
Cyan colors				
Aqua	00 FF FF	0	255	255
Cyan	00 FF FF	0	255	255
LightCyan	E0 FF FF	224	255	255
PaleTurquoise	AF EE EE	175	238	238
Aquamarine	7F FF D4	127	255	212
Turquoise	40 E0 D0	64	224	208
MediumTurquoise	48 D1 CC	72	209	204
DarkTurquoise	00 CE D1	0	206	209
LightSeaGreen	20 B2 AA	32	178	170
CadetBlue	5F 9E A0	95	158	160
DarkCyan	00 8B 8B	0	139	139
Teal	00 80 80	0	128	128

HTML name	R	G	B	
	Hex	Decimal		
Blue colors				
LightSteelBlue	B0 C4 DE	176	196	222
PowderBlue	B0 E0 E6	176	224	230
LightBlue	AD D8 E6	173	216	230
SkyBlue	87 CE EB	135	206	235
LightSkyBlue	87 CE FA	135	206	250
DeepSkyBlue	00 BF FF	0	191	255
DodgerBlue	1E 90 FF	30	144	255
CornflowerBlue	64 95 ED	100	149	237
SteelBlue	46 82 B4	70	130	180

HTML name	R	G	B	
	Hex	Decimal		
Brown colors				
Cornsilk	FF F8 DC	255	248	220
BlanchedAlmond	FF EB CD	255	235	205
Bisque	FF E4 C4	255	228	196
NavajoWhite	FF DE AD	255	222	173
Wheat	F5 DE B3	245	222	179
BurlyWood	DE BB 87	222	184	135
Tan	D2 B4 8C	210	180	140
DarkBrown	80 00 00	100	143	142

DarkKhaki	BD B7 6B	189	183	107
Gold	FF D7 00	255	215	0
Blue colors				
LightSteelBlue	B0 C4 DE	176	196	222
PowderBlue	B0 E0 E6	176	224	230
LightBlue	AD DB E6	173	216	230
SkyBlue	87 CE EB	135	206	235
LightSkyBlue	87 CE FA	135	206	250
DeepSkyBlue	00 BF FF	0	191	255
DodgerBlue	1E 90 FF	30	144	255
CornflowerBlue	64 95 ED	100	149	237
SteelBlue	46 82 B4	70	130	180

DarkKhaki	BD B7 6B	189	183	107
Gold	FF D7 00	255	215	0
Blue colors				
LightSteelBlue	B0 C4 DE	176	196	222
PowderBlue	B0 E0 E6	176	224	230
LightBlue	AD DB E6	173	216	230
SkyBlue	87 CE EB	135	206	235
LightSkyBlue	87 CE FA	135	206	250
DeepSkyBlue	00 BF FF	0	191	255
DodgerBlue	1E 90 FF	30	144	255
CornflowerBlue	64 95 ED	100	149	237
SteelBlue	46 82 B4	70	130	180

DarkKhaki	BD B7 6B	189	183	107</td
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TEXT-SHADOW

```
.my-style { text-shadow: 4px 5px 6px #2ecc71; }
```

horizontal offset

vertical offset

Blur radius (higher
number means
more blur)

Colour

Hello World

BORDER-RADIUS (ROUNDED CORNERS)

```
<style type="text/css">
  body { margin: 50px; }
  .btn {
    border: 3px solid #27ae60;
    background-color: #2ecc71;
    padding: 5px 20px;
    width: 200px;
    height: 40px;
    border-radius: 15px;
    text-align: center;
    line-height: 40px;
  }
</style>
</head>
<body>
  <div class="btn">Hello World</div>
</body>
```

Hello World

Box-Shadow

```
.my-style { box-shadow: 4px 5px 6px #2ecc71; }
```

horizontal offset
vertical offset
Blur radius (higher number means more blur)
Colour

Hello World

LINEAR GRADIENTS

- ▶ Transition from one colour to another
 - ▶ Horizontal or vertical
- ▶ Transition to any number of colours
 - ▶ Using *color-stops*

VERTICAL GRADIENT

```
<style>
  body { margin: 0; border: 0; }
  body.vertical {
    height: 100vh;
    background: red; /* For browsers that do not support gradients */
    background: -webkit-linear-gradient(red, yellow); /* For Safari 5.1 to 6.0 */
    background: -o-linear-gradient(red, yellow); /* For Opera 11.1 to 12.0 */
    background: -moz-linear-gradient(red, yellow); /* For Firefox 3.6 to 15 */
    background: linear-gradient(red, yellow); /* Standard syntax */
  }
</style>
</head>
<body class="vertical">

</body>
```

Most new features start as browser extensions

viewpoint percentage size

And if popular enough, it becomes the standard



HORIZONTAL GRADIENT

```
<style>
  body { margin: 0; border: 0; }
  body.horizontal {
    height: 100vh;
    background: red; /* For browsers that do not support gradients */
    background: -webkit-linear-gradient(left, red , yellow); /* For Safari 5.1 to 6.0 */
    background: -o-linear-gradient(right, red, yellow); /* For Opera 11.1 to 12.0 */
    background: -moz-linear-gradient(right, red, yellow); /* For Firefox 3.6 to 15 */
    background: linear-gradient(to right, red , yellow); /* Standard syntax */
  }
</style>
</head>
<body class="horizontal">
</body>
```

Starting direction (for example go right)



GRADIENT ON MANY COLOURS

```
body { margin: 0; border: 0; }
body.horizontal {
  height: 100vh;
  background: red; /* For browsers that do not support gradients */
  /* For Safari 5.1 to 6.0 */
  background: -webkit-linear-gradient(top left, red, orange, yellow, green, blue, indigo, violet);
  /* For Opera 11.1 to 12.0 */
  background: -o-linear-gradient(top left, red, orange, yellow, green, blue, indigo, violet);
  /* For Fx 3.6 to 15 */
  background: -moz-linear-gradient(top left, red, orange, yellow, green, blue, indigo, violet);
  /* Standard syntax */
  background: linear-gradient(to bottom right, red, orange, yellow, green, blue, indigo, violet);
}
</style>
</head>
<body class="horizontal">
</body>
```



For diagonals add "to top" / "to bottom" (for example "to bottom right")



VENDOR (OR BROWSER) PREFIXES

- ▶ Used for CSS properties that are not yet standardized, but are popular enough to make available
- ▶ Available prefixes
 - ▶ Firefox: -moz-
 - ▶ Internet Explorer: -ms-
 - ▶ Android: -webkit-
 - ▶ Chrome: -webkit-
 - ▶ iOS: -webkit-

RADIAL GRADIENT

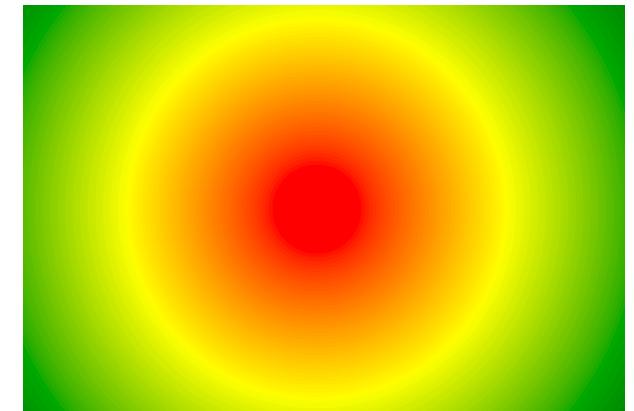
Unsupported style first

Extensions next

```
<style>
  body { margin: 0; border: 0; }
  body.vertical {
    height: 100vh;
    background: red; /* For browsers that do not support gradients */
    background: -webkit-radial-gradient(circle, red, yellow, green); /* Safari */
    background: -o-radial-gradient(circle, red, yellow, green); /* Opera 11.6 to 12.0 */
    background: -moz-radial-gradient(circle, red, yellow, green); /* Firefox 3.6 to 15 */
    background: radial-gradient(circle, red, yellow, green); /* Standard syntax */
  }
</style>
</head>
<body class="vertical">
</body>
```

A large number of variations available, read the specifications for more information

Standard last



ANIMATION

```
style.css
div {
    width: 100px; height: 100px; background-color: red;
    position: relative;
    -webkit-animation-name: example; /* Safari 4.0 - 8.0 */
    -webkit-animation-duration: 4s; /* Safari 4.0 - 8.0 */
    animation-name: example;
    animation-duration: 4s;
}

/* Safari 4.0 - 8.0 */
@-webkit-keyframes example {
    0%   {background-color:red; left:0px; top:0px;}
    25%  {background-color:yellow; left:200px; top:0px;}
    50%  {background-color:blue; left:200px; top:200px;}
    75%  {background-color:green; left:0px; top:200px;}
    100% {background-color:red; left:0px; top:0px;}
}

/* Standard syntax */
@keyframes example {
    0%   {background-color:red; left:0px; top:0px;}
    25%  {background-color:yellow; left:200px; top:0px;}
    50%  {background-color:blue; left:200px; top:200px;}
    75%  {background-color:green; left:0px; top:200px;}
    100% {background-color:red; left:0px; top:0px;}
}
```



WEB FONTS

```
<title>Welcome</title>
<link href="https://fonts.googleapis.com/css?family=Arima+Madurai" rel="stylesheet">
<style>
  .fancy { font-family: 'Arima Madurai', cursive; }
</style>
</head>
<body>
  <p>Welcome to HTML5</p>
  <p class="fancy">Now featuring fancy fonts</p>
</body>
```

Be careful, because the fonts can add significant weight to your page

Welcome to HTML5

Now featuring fancy fonts

Name	Status	Type	Initiator	Size	Time	Timeline – Start Time	
08_webfonts.html	Finished	document	Other	0B	3ms	400.00ms	
css?family=Arima+Madurai	200	stylesheet	08_webfonts.html:6	756B	216ms		
8fNfThKRw_pr7MwgNdcHiRbke1jeBh3dr...	200	font	08_webfonts.html:-In...	11.9KB	112ms		

OTHER CSS CONCEPTS

- ▶ Text Stroke
- ▶ Many “background”s
- ▶ Using images for the border
- ▶ Animation selectors
- ▶ Transition / transform
- ▶ Skew
- ▶ Flexbox
- ▶ Grid
- ▶ Multi-column

DO NOT ABUSE

The screenshot displays a website with several design flaws:

- Header:** The title "The World's Worst Website" is displayed in a large, bold, red font against a solid yellow background.
- Left Sidebar:** A vertical sidebar on the left contains text in a bright green color, which is difficult to read against the dark background. It includes:
 - "ous use of frames is a n mistake of web rs."
 - "rowers do not support They disrupt the flow ebsite and can be to anticipate where a y appear when a link d."
 - "ust use frames, use the se target=_blank"> i <head> and </head> e links will open in a window.
 - "ut these links to s whose opinions about is self evident:
 - [Hate Frames](#)
 - [I Hate Frames Page](#)
 - [International I Hate Club](#)
 - [ames Suck \(Most of the](#)
- Middle Content:** The main content area features a blue header with the MuleSoft logo and the text "Design your APIs to last." Below it is a green banner with the text "Give the Gift of Code" and a "SAVE 46%" offer from Code School. The central text "Welcome To My Website!" and "Welcome to the World's Worst Website!" are displayed in large, bold, red and yellow fonts respectively.
- Bottom Footer:** A teal footer bar contains the text "Where am I and where are the links to other pages?" and "An easy to use navigation structure is essential to any well designed website! Important information never be more than 2 clicks away." Below this, a small image of an eye is followed by the text: "As you can see, this text is difficult to read. There needs to more contrast between the background and the text color. Here's another example of a poor choice of a background/ text color and size."

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- ▶ <http://web.mit.edu/jmorzins/www/fonts.html>
- ▶ <https://benfrain.com/just-use-pixels/>
- ▶ http://www.w3schools.com/Css/css_pseudo_classes.asp

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