HTML5 and JavaScript Games Programming

Week 2

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Design

Web Design

Design is about communication and audience

Watrall and Siarto (2009, p.110)

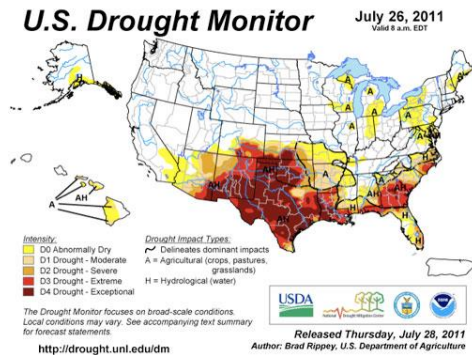# Web Design - Preproduction

- Web design is all about communication and users
  - Preproduction : Using information architecture and storyboards to build a blueprint for your site so that you are as efficient an focuses as possible when you go online
  - Navigation: base on the IO. Its more than just linking pages together. Navigation helps your users find information
  - Layout uses html and CSS to build the sites interface
  - Writing 'fills' the design up with the scannable content that your visitors come to the site for

Web Design - Preproduction

Gather all the content, brainstorm a theme and visual metaphor idea and write a storyboard.
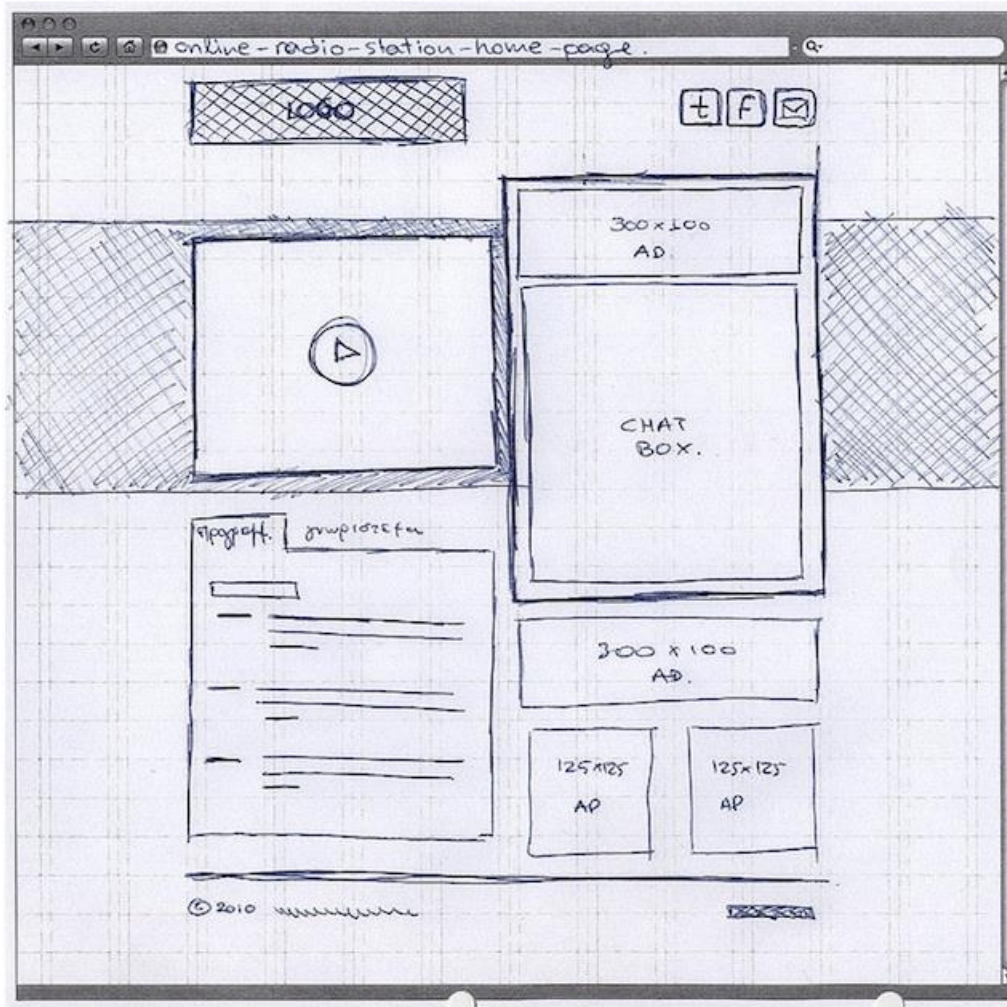
A visual metaphor is the representation of a person, place, thing, or idea by means of a visual image that suggests a particular association or point of similarity. Also knows as pictorial metaphor and analogical juxtaposition. Modern advertising relies heavily on visual metaphors.
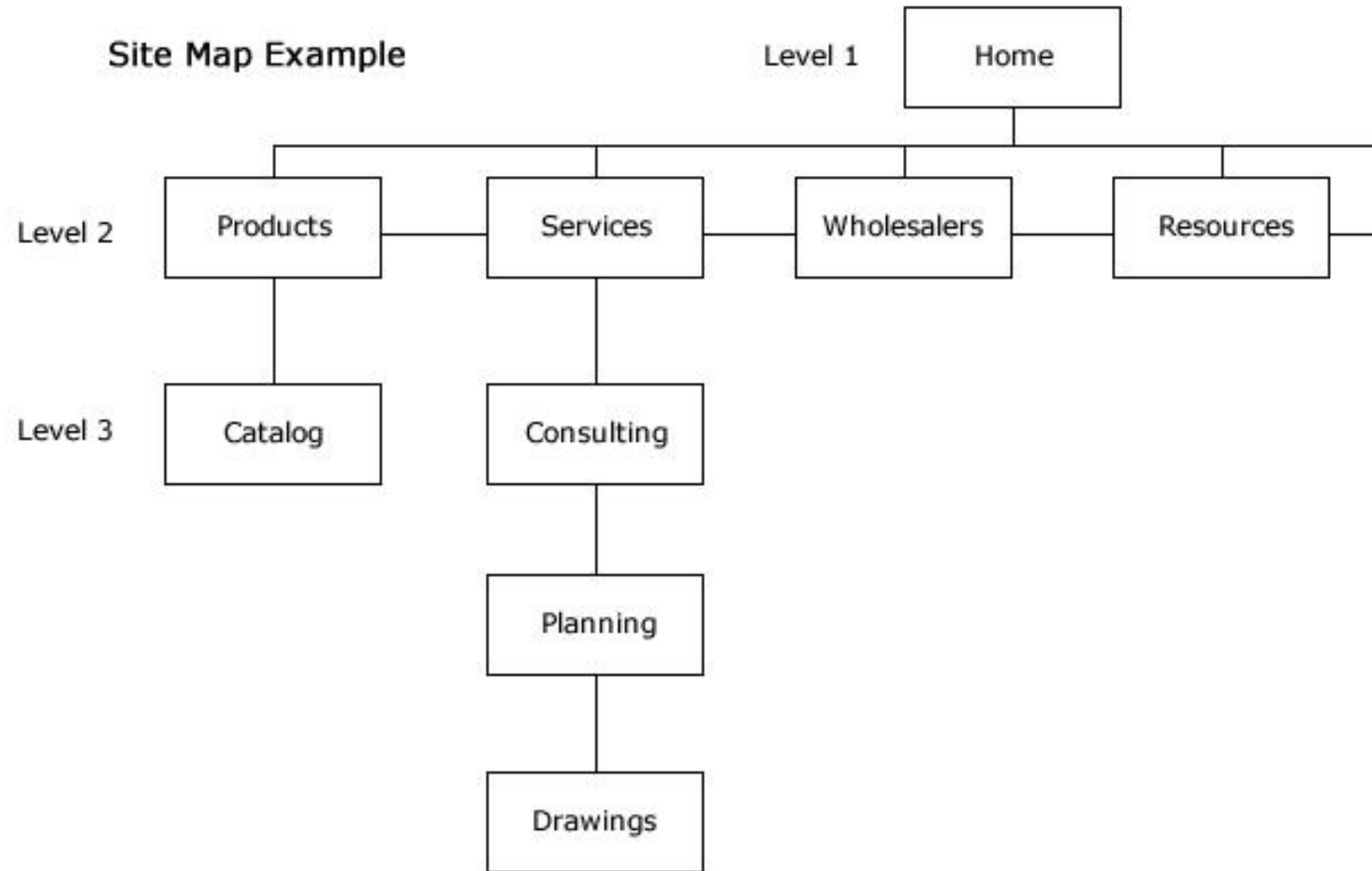

Melting Away

Web Design - Preproduction

Draw up a blueprint

Web Design - Navigation

Determine level navigation

Site Map Example

Level 1	Home
Level 2	Products	Services	Wholesalers	Resources
Level 3	Catalog	Consulting
		Planning
		Drawings

Web Design - Layout

Put it all in context

Web Design Principles

- Visual Hierarchy

- https://conversionxl.com/universal-web-design-principles/
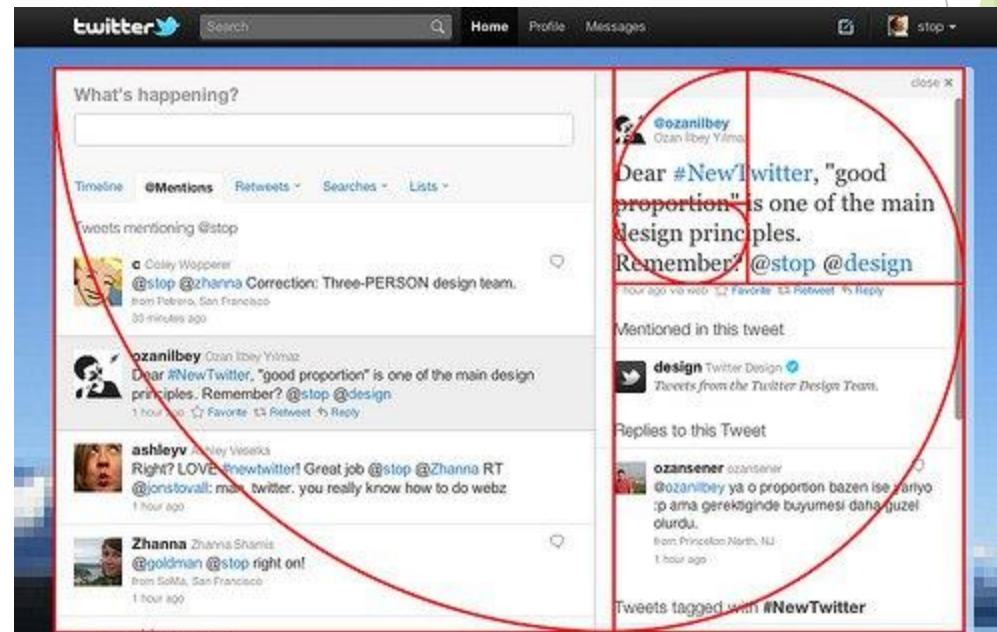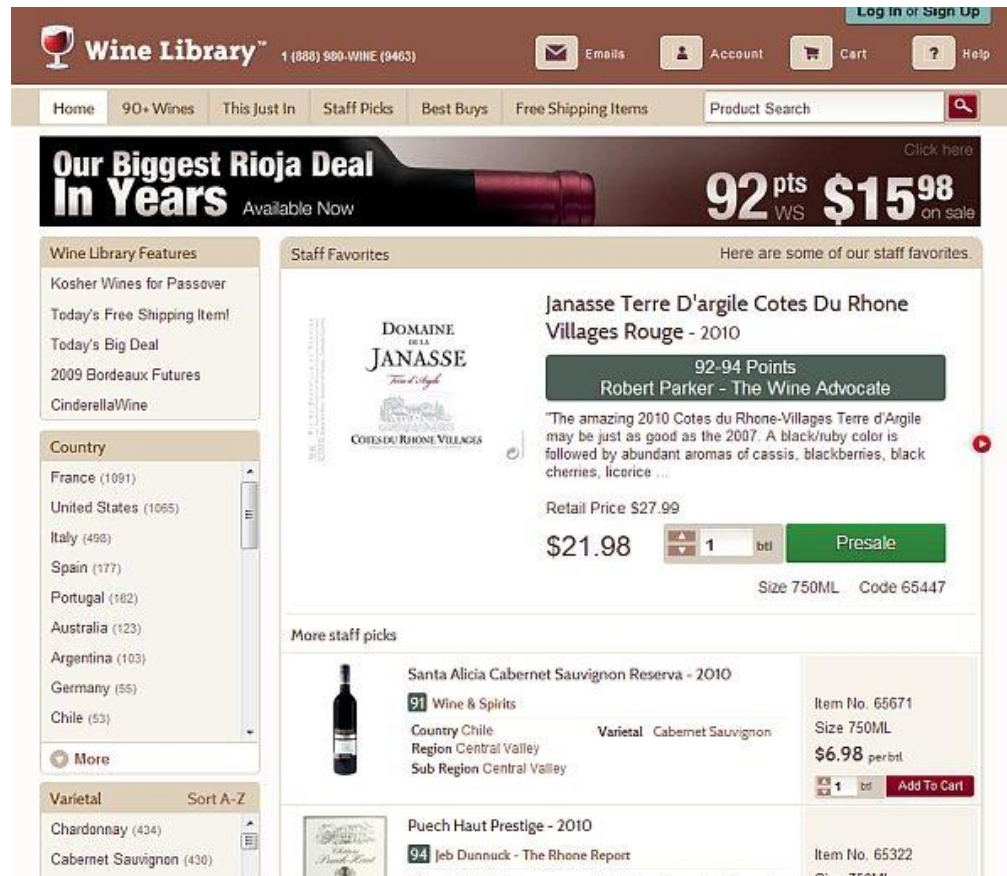
Web Design Principles

▶ Divine Proportions (Golden Ratio)

▶ Golden ratio is a magical number 1.618 () that makes all things proportioned to it aesthetically pleasing (or so it is believed). Then there is also the Fibonacci sequence where each term is defined as the sum of the two previous terms: 0, 1, 1, 2, 3, 5, 8, 13, 21 and so on. The interesting thing is that we have two seemingly unrelated topics producing the same exact number. https://conversionxl.com/universal-web-design-principles/

Web Design Principles

▶ Hick's Law (every additional choice increases the time required to take a decision)

Web Design Principles

▶ Fitt's Law (Fitt's law stipulates that the time required to move to a target area (e.g. click a button) is a function of the distance to the target and the size of the target. In other words, the bigger an object and the closer it is to us, the easier it is to use it.)

Web Design Principles

▶ The rule of thirds: an image should be imagined as divided into nine equal parts by two equally-spaced horizontal lines and two equally-spaced vertical lines, and that important compositional elements should be placed along these lines or their intersections.
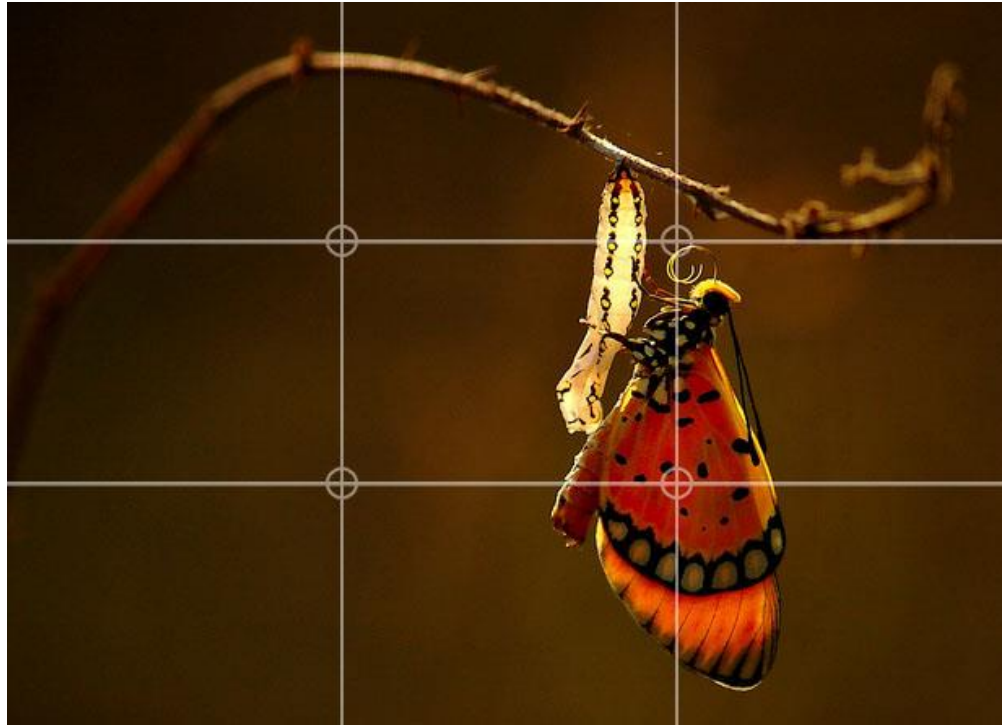
Web Design Principles

▶ Gestalt Design Laws: Gestalt psychology is a theory of mind and brain. Its principle is that the human eye sees objects in their entirety before perceiving their individual parts.


World Wide Fund For Nature designed by Sir Peter Scott in 1961

Web Design Principles

▶ While Space and Clean Design

▶ White space (also called 'negative space') is the portion of a page left "empty". It's the space between graphics, margins, gutters, space between columns, space between lines of type or visuals. It should not be considered merely 'blank' space — it is an important element of design. It enables the objects in it to exist at all. White space is all about the use of hierarchy. The hierarchy of information, be it type, colour or images.

▶ A page without white space, crammed full of text or graphics, runs the risk of appearing busy, cluttered, and is typically difficult to read (people won't even bother). This is why simple websites are scientifically better.

▶ Enough white space makes a website look 'clean'. While clean design is crucial to communicating a clear message, it doesn't just mean less content. Clean design means a design that makes the best use of the space it is in. To make a clean design, you have to know how to communicate clearly by using white space wisely.

Web Design Principles

▶ Occam's Razor: is a principle urging one to select among competing hypotheses that which makes the fewest assumptions and thereby offers the simplest explanation of the effect. To put it in the design context, Occam's Razor states that the simplest solution is usually best.

Homepage before..   .. and after
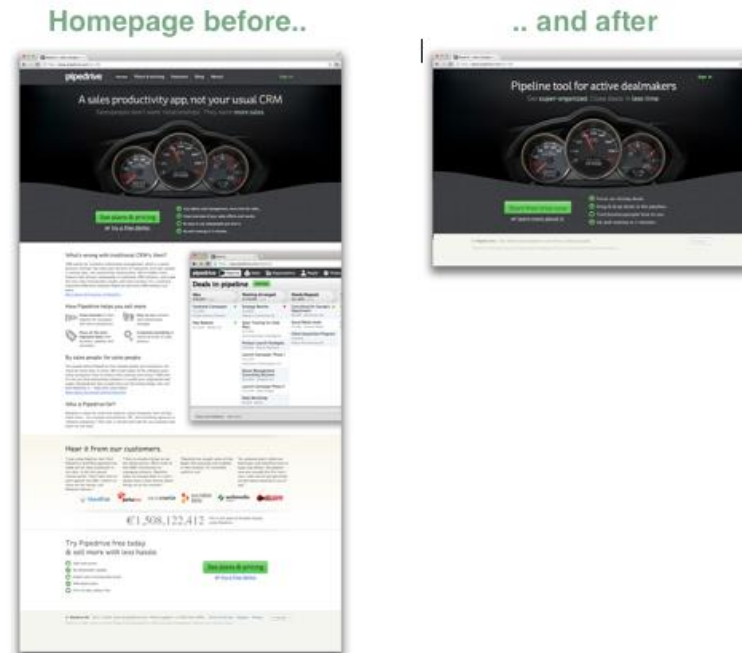
Web Design - Problems

- Irrelevant design
- Inaccessibility
- Poor Readability
- Unorganised Content Layout
- Bad Navigation
- Inconsistent Interface Design
- Too many images and contents in one page

Web Design - Sample

Web Design - Sample

Web Design - Sample

Web Design - Sample

Phaser - Sample

HTML5

- The <!DOCTYPE html> declaration defines this document to be HTML5
- The <html> element is the root element of an HTML page
- The <head> element contains meta information about the document
- The <title> element specifies a title for the document
- The <body> element contains the visible page content
- The <h1> element defines a large heading
- The <p> element defines a paragraph
- HTML tags normally come in pairs like <p> and </p>

HTML5

```
<!-- Write your comments here -->

<a href="https://www.w3schools.com/html/">Visit our HTML tutorial</a>

<img src="pic_mountain.jpg" alt="Mountain View" style="width:304px;height:228px;">

<p>This is a paragraph.</p>
<p>This is another paragraph.</p>

<h1>This is heading 1</h1>
<h2>This is heading 2</h2>
<h3>This is heading 3</h3>
```

```
<ul style="list-style-type:square">
   <li>Coffee</li>
   <li>Tea</li>
   <li>Milk</li>
</ul>
```

```
<ol type="1">
   <li>Coffee</li>
   <li>Tea</li>
   <li>Milk</li>
</ol>
```

HTMl5

- Linking Pages

```
<!DOCTYPE html>
<html>
  <head>
    <script>
      function myFunction() {
          window.location = "https:// www.w3schools.com";
      }
    </script>
  </head>
<body>
    <a href="https://www.w3schools.com">Visit W3Schools</a>
    <a href="game.html">Play Now</a>
    <button onclick="myFunction()">Visit W3Schools </button>
</body>
</html>
```

CSS

▶ **CSS** stands for **C**ascading **S**tyle **S**heets

▶ CSS describes **how HTML elements are to be displayed on screen, paper, or in other media**

▶ CSS **saves a lot of work**. It can control the layout of multiple web pages all at once

▶ External stylesheets are stored in **CSS files**

CSS

- A CSS rule-set consists of a selector and a declaration block
- The selector points to the HTML element you want to style.
- The declaration block contains one or more declarations separated by semicolons.
- Each declaration includes a CSS property name and a value, separated by a colon.
- A CSS declaration always ends with a semicolon, and declaration blocks are surrounded by curly braces.
- In the following example all <p> elements will be center-aligned, with a red text color:

Selector   Declaration   Declaration

h1   { color:blue; font-size:12px;}

      Property   Value   Property   Value
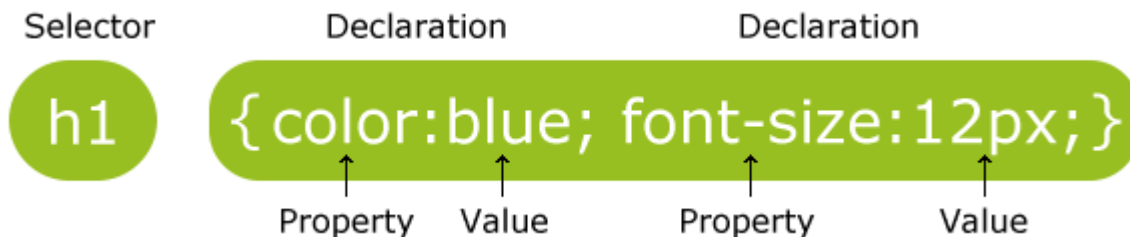
CSS

.class	.intro	Selects all elements with class="intro"
#id	#firstname	Selects the element with id="firstname"
*	*	Selects all elements
element	p	Selects all <p> elements
element,element	div, p	Selects all <div> elements and all <p> elements
element element	div p	Selects all <p> elements inside <div> elements

CSS – External Style Sheet

```
<head>
<link rel="stylesheet" type="text/css" href="my
style.css">
</head>


body {
    background-color: lightblue;
}

h1 {
    color: navy;
    margin-left: 20px;
}
```

CSS – Internal Style Sheet

```
<head>
<style>
body {
    background-color: linen;
}

h1 {
    color: maroon;
    margin-left: 40px;
}
</style>
</head>
```

CSS – Inline Sheet

```html
<h1 style="color:blue;margin-left:30px;">This is a heading</h1>
```

CSS – Inline Sheet

What style will be used when there is more than one style specified for an HTML element?

Generally speaking we can say that all the styles will "cascade" into a new "virtual" style sheet by the following rules, where number one has the highest priority:

1. Inline style (inside an HTML element)
2. External and internal style sheets (in the head section)
3. Browser default

CSS – Background

The CSS background properties are used to define the background effects for elements.

CSS background properties:
- background-color
- background-image
- background-repeat
- background-attachment
- background-position

```css
div {
    background-color: lightblue;
}


body {
    background-image: url("img_tree.png");
    background-repeat: no-repeat;
    background-position: right top;
    background-attachment: fixed;
}
```

CSS - Borders

```
p.dotted {border-style: dotted;}
p.dashed {border-style: dashed;}
p.solid {border-style: solid;}
p.double {border-style: double;}
p.groove {border-style: groove;}
p.ridge {border-style: ridge;}
p.inset {border-style: inset;}
p.outset {border-style: outset;}
p.none {border-style: none;}
p.hidden {border-style: hidden;}
p.mix {border-style: dotted dashed solid double;}
```

The border-style property specifies what kind of border to display.
The following values are allowed:
- dotted - Defines a dotted border
- dashed - Defines a dashed border
- solid - Defines a solid border
- double - Defines a double border
- groove - Defines a 3D grooved border. The effect depends on the border-color value
- ridge - Defines a 3D ridged border. The effect depends on the border-color value
- inset - Defines a 3D inset border. The effect depends on the border-color value
- outset - Defines a 3D outset border. The effect depends on the border-color value
- none - Defines no border
- hidden - Defines a hidden border

CSS - Text

```
h1 {
        font-family: "Times New Roman", Times, serif;
        /* font-family: myFirstFont; */
        font-style: italic;
        font-size: 30px;
        /* font-size: 100%; */
        font-weight: bold;

        color: green;
        text-align: center;
        text-decoration: underline;
        text-transform: capitalize;
        letter-spacing: 3px;


}
```

```
@font-face {
    font-family: myFirstFont;
    src: url(sansation_light.woff);
}
```

CSS - Link

```css
a:link, a:visited {
    background-color: #f44336;
    color: white;
    padding: 14px 25px;
    text-align: center;
    text-decoration: none;
    display: inline-block;
}

a:hover, a:active {
    background-color: red;
}
```

CSS - Images


```
img {
    border-radius: 8px;
}
```

```
img {
    border-radius: 50%;
}
```

CSS - Button

```
<style>
.button {
  display: inline-block;
  padding: 15px 25px;
  font-size: 24px;
  cursor: pointer;
  text-align: center;
  text-decoration: none;
  outline: none;
  color: #fff;
  background-color: #4CAF50;
  border: none;
  border-radius: 15px;
  box-shadow: 0 9px #999;
}

.button:hover {background-color: #3e8e41}

.button:active {
  background-color: #3e8e41;
  box-shadow: 0 5px #666;
  transform: translateY(4px);
}
</style>
```

References

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