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CSS for Styling

The good, the bad and the... ugly!

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```
<p>  
<font face="Arial">Shashdot.</font>  
News for <b>nerds!!</b> You will <i>never</i>, <u>EVER</u>  
be  
<font size="+4" color="red">BORED</font> here!  
</p>
```

HTML

□ Why is this bad?

Cascading Style Sheets (CSS)

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- Describes the appearance, layout, and presentation of information on a web page
 - ▣ HTML describes **the content** of the page
- Describes *how* information is to be displayed, not *what* is being displayed
- Can be embedded in HTML document or placed into separate .css file

Inline styles: the style attribute

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```
<p style="font-family: sans-serif; color: red;">  
This is a paragraph</p>
```

HTML

This is a paragraph

output

- ❑ Higher precedence than embedded or linked styles
- ❑ Used for one-time overrides and styling a particular element
- ❑ *Bad style* and should be avoided when possible (why?)

Basic CSS rule syntax

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```
selector {  
property: value;  
property: value;  
...  
property: value;  
}
```

CSS

```
p {  
font-family: sans-serif;  
color: red;  
}
```

CSS

- A CSS file consists of one or more **rules**
- Each rule starts with a **selector**
- A selector specifies an HTML element(s) and then applies style **properties** to them
 - ▣ a selector of * selects all elements

Embedding style sheets: <style>

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```
<head>
<style type="text/css">
p { font-family: sans-serif; color: red; }
h2 { background-color: yellow; }
</style>
</head>
```

HTML

- ❑ CSS code can be embedded within the head of an HTML page
- ❑ *Bad style* and should be avoided when possible (why?)

Attaching a CSS file <link>

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

HTML

```
<link href="style.css" type="text/css" rel="stylesheet" />
<link href="http://www.google.com/uds/css/gsearch.css"
rel="stylesheet" type="text/css" />
```

HTML

- A page can link to multiple style sheet files
 - ▣ In case of a conflict (two sheets define a style for the same HTML element), the latter sheet's properties will be used

CSS properties for colors

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```
p {  
  color: red;  
  background-color: yellow;  
}
```

CSS

This paragraph uses the style above

output

property	description
color	color of the element's text
background-color	color that will appear behind the element

Specifying colors

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```
p { color: red; }  
h2 { color: rgb(128, 0, 196); }  
h4 { color: #FF8800; }
```

CSS

This paragraph uses the first style above

This h2 uses the second style above.

This h4 uses the third style above.

output

- ❑ color names: aqua, black, blue, fuchsia, gray, green, lime, maroon, navy, olive, purple, red, silver, teal, white (white), yellow
- ❑ RGB codes: red, green, and blue values from 0 (none) to 255 (full)
- ❑ hex codes: RGB values in base-16 from 00 (0, none) to FF (255, full)

Grouping styles

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```
p, h1, h2 {  
  color: green;  
}  
h2 {  
  background-color: yellow;  
}
```

CSS

This paragraph uses the above style.

This h2 uses the above styles.

output

- A style can select multiple elements separated by commas
- The individual elements can also have their own styles

CSS comments `/*...*/`

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```
/* This is a comment.  
It can span many lines in the CSS file. */  
p {  
color: red; background-color: aqua;  
}
```

CSS

- ❑ CSS (like HTML) is usually not commented as rigorously as programming languages such as Java
- ❑ The `//` single-line comment style is NOT supported in CSS
- ❑ The `<!-- ... -->` HTML comment style is also NOT supported in CSS

CSS properties for fonts

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property	description
font-family	which font will be used
font-size	how large the letters will be drawn
font-style	used to enable/disable italic style
font-weight	used to enable/disable bold style

[Complete list of font properties](https://developer.mozilla.org/en-US/docs/Web/CSS/font) (<https://developer.mozilla.org/en-US/docs/Web/CSS/font>)

font-family

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```
p {  
  font-family: Georgia;  
}  
h2 {  
  font-family: "Courier New";  
}
```

CSS

This paragraph uses the first style above.

This h2 uses the second style above.

output

- ❑ Enclose multi-word font names in quotes

More about font-family

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```
p {  
  font-family: Garamond, "Times New Roman", serif;  
}
```

CSS

This paragraph uses the above style.

output

- We can specify multiple fonts from highest to lowest priority
- Generic font names:
 - ▣ serif, sans-serif, cursive, ~~FANTASY~~, monospace
- If the first font is not found on the user's computer, the next is tried
- Placing a generic font name at the end of your font-family value, ensures that every computer will use a valid font

font-size

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```
p {  
    font-size: 24pt;  
}
```

CSS

This paragraph uses the style above.

output

- units: pixels (px) vs. point (pt) vs. m-size (em)

16px, 16pt, 1.16em

- vague font sizes: xx-small, x-small, small, medium, large, x-large, XX-large, smaller, larger

- percentage font sizes, e.g.: 90%, 120%

font-size

16

```
p {  
    font-size: 24pt;  
}
```

CSS

This paragraph uses the style above.

output

- pt specifies number of point, where a point is $1/72$ of an inch onscreen
- px specifies a number of pixels on the screen
- em specifies number of m-widths, where 1 em is equal to the font's current size

font-weight, font-style

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```
p {  
  font-weight: bold;  
  font-style: italic;  
}
```

CSS

This paragraph uses the style above.

output

- Either of the above can be set to normal to turn them off (e.g. headings)

CSS properties for text

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property	description
text-align	alignment of text within its element
text-decoration	decorations such as underlining
line-height, word-spacing, letter-spacing	gaps between the various portions of the text
text-indent	indents the first letter of each paragraph

[Complete list of text properties](https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_text)

(https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_text)

text-align

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```
blockquote { text-align: justify; }  
h2 { text-align: center; }
```

CSS

The Gollum's Quote

We wants it, we needs it. Must have the precious. They stole it from us.
Sneaky little hobbitses. Wicked, tricky, false!

output

- `text-align` can be `left`, `right`, `center`, or `justify`



text-decoration

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```
p {  
  text-decoration: underline;  
}
```

CSS

This paragraph uses the style above.

output

- **can also be** overline, ~~line-through~~, blink, or none
- **effects can be combined:**

```
text-decoration: overline underline;
```

The list-style-type property

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```
ol { list-style-type: lower-roman; }
```

CSS

□ Possible values:

i. none : No marker

ii. disc (default), circle, square

iii. Decimal: 1, 2, 3, etc.

iv. decimal-leading-zero: 01, 02, 03, etc.

v. lower-roman: i, ii, iii, iv, v, etc.

vi. upper-roman: I, II, III, IV, V, etc.

vii. lower-alpha: a, b, c, d, e, etc.

viii. upper-alpha: A, B, C, D, E, etc.

x. lower-greek: alpha, beta, gamma, etc.

others: hebrew, armenian, georgian, cjk-ideographic, hiragana...

Body styles

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```
body {  
  font-size: 16px;  
}
```

CSS

- Applies a style to the entire body of your page
- Saves you from manually applying a style to each element

Cascading Style Sheets

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- Properties of an element cascade together in this order:
 - browser's default styles
 - external style sheet files (in a `<link>` tag)
 - internal style sheets (inside a `<style>` tag in the page's header)
 - inline style (the style attribute of the HTML element)

Inheriting styles

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```
body { font-family: sans-serif; background-color: yellow; }  
p { color: red; background-color: aqua; }  
a { text-decoration: underline; }  
h2 { font-weight: bold; text-align: center; }
```

CSS

This is a heading

A styled paragraph. Previous slides are available on the website.

- A bulleted list

output

- when multiple styles apply to an element, they are inherited
- a more tightly matching rule can override a more general inherited rule

Styles that conflict

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```
p, h1, h2 { color: blue; font-style: italic; }  
h2 { color: red; background-color: yellow; }
```

CSS

This paragraph uses the first style above.

This heading uses both styles above.

output

- when two styles set conflicting values for the same property, the latter style takes precedence

CSS properties for backgrounds

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property	description
background-color	color to fill background
background-image	image to place in background
background-position	placement of bg image within element
background-repeat	whether/how bg image should be repeated
background-attachment	whether bg image scrolls with page
background	shorthand to set all background properties

background-image

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```
body {  
  background-image: url("images/draft.jpg");  
}
```

CSS

This is the first paragraph

This is the second paragraph...

It occupies 2 lines

- background image/color fills the element's content area

background-repeat

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```
body {  
background-image: url("images/draft.jpg");  
background-repeat: repeat-x;  
}
```

CSS

This is the first paragraph

This is the second paragraph...

It occupies 2 lines

- can be repeat (default), repeat-x, repeat-y, or no-repeat

background-position

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```
body {  
  background-image: url("images/draft.jpg");  
  background-repeat: no-repeat;  
  background-position: 370px 20px;  
}
```

CSS

This is the first paragraph

This is the second paragraph...
It occupies 2 lines



- ❑ value consists of two tokens, each of which can be top, left, right, bottom, center, a percentage, or a length value in px, pt, etc.
- ❑ value can be negative to shift left/up by a given amount

Exercise

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- Define styles for tag (e.g., div), class, and id.
- Show the privilege