

# Cascading Style Sheets

# The first web pages were used for scientific papers



The world's first web server at CERN

- Scientific papers are generally well structured and organized
- The content was mostly text
- The logical structure of the document was coded with `<h1><h2>` and other tags

# Fancy layouts

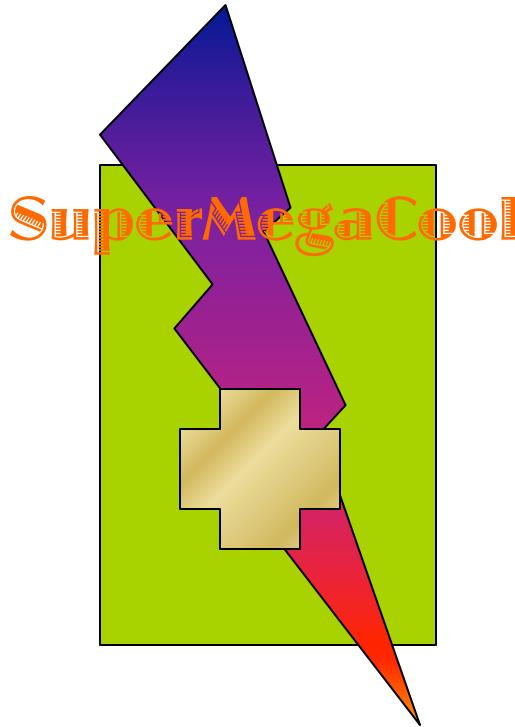
PimpMyPage



- Only later did webpage designers demand more control over the look of the pages
- Extensions to HTML, like font tags, added bells and whistles, but the logical structure of documents was lost in the process
- The content of the page and the design of the page became intertwined

# Cascading Style Sheets

My wonderful page has lots of interesting information about very interesting things. You can e-mail me about these interesting things if you like or [click here](#) to buy books about these interesting things



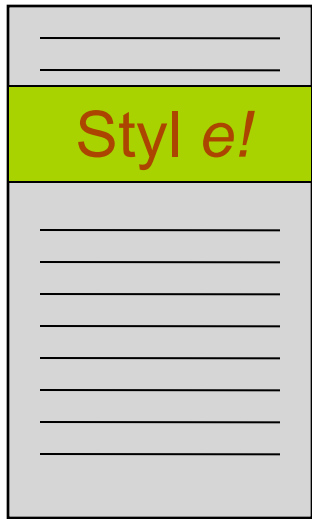
- Cascading Style Sheets (CSS) keep the content of the page and the layout (color, fonts, etc) separate
- Often they are even in separate files

# CSS separates style from content

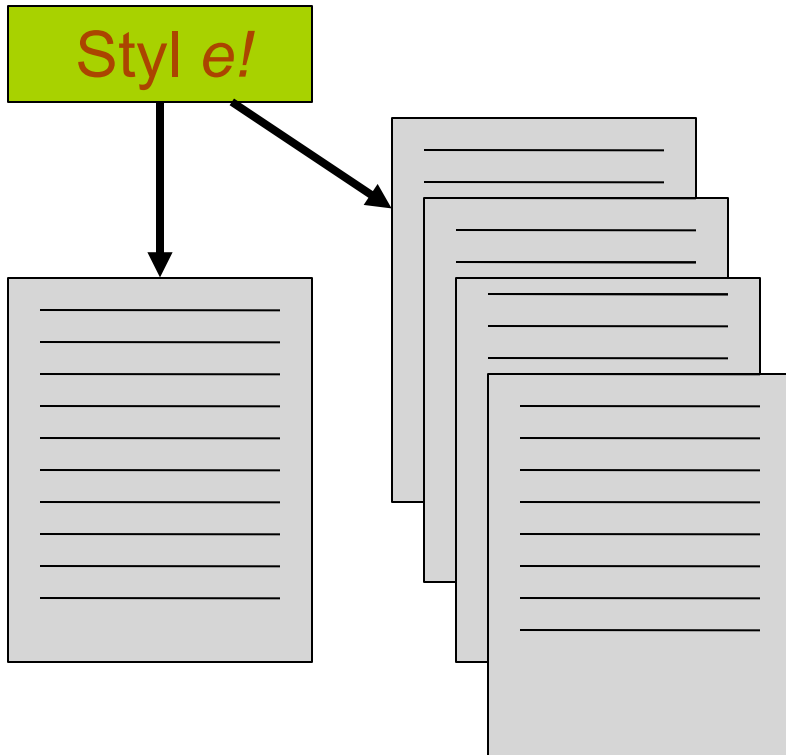
- HTML file contains the content of the page
- All the text and links to the images
- CSS file contains all the information about how the page looks
- Font size and color of the text
- Position of text and images on the page
- Size of the images

# CSS makes web development neater

- Content is in one place and easier to read
- Style of all pages on a site is consistent
- Style can be changed easily
- Style can adapt content to different situations

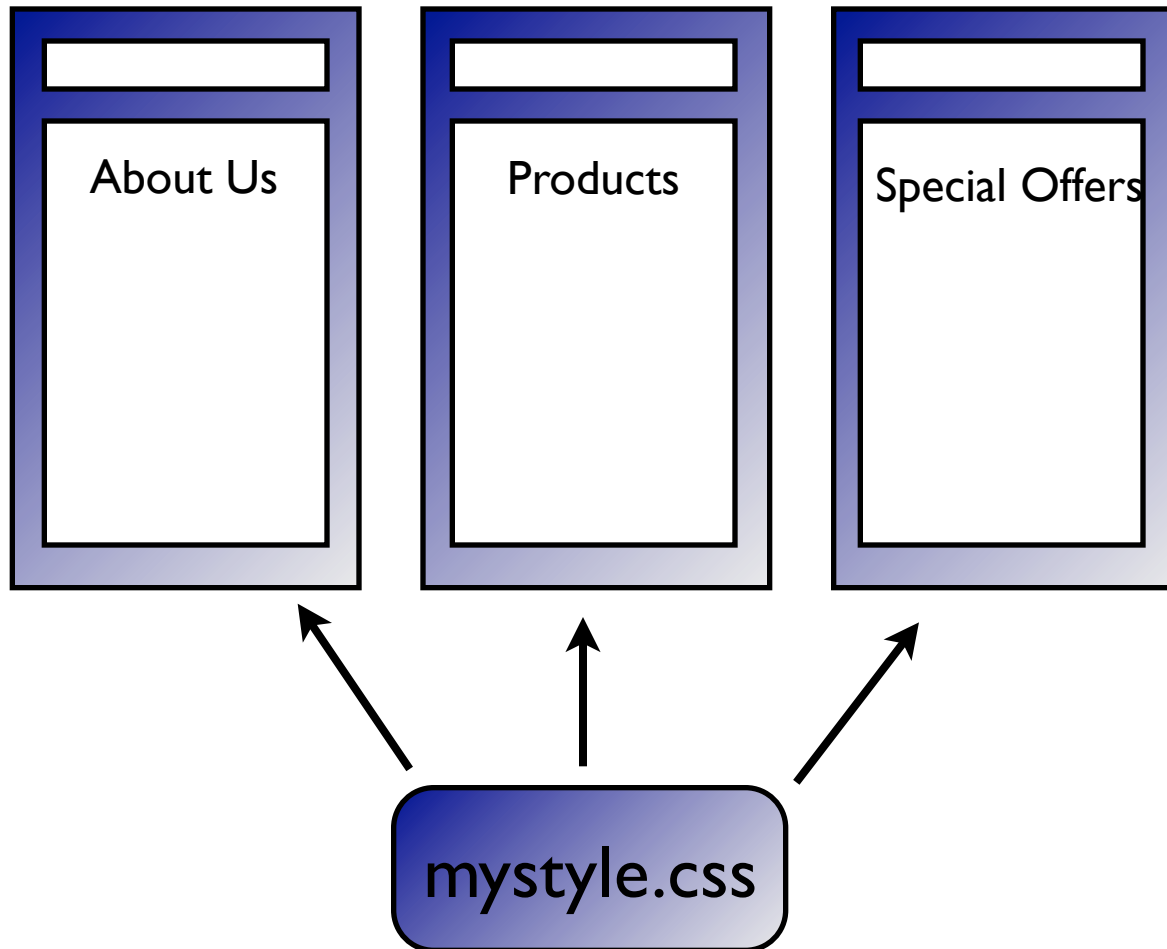


# Embedded Style Sheets



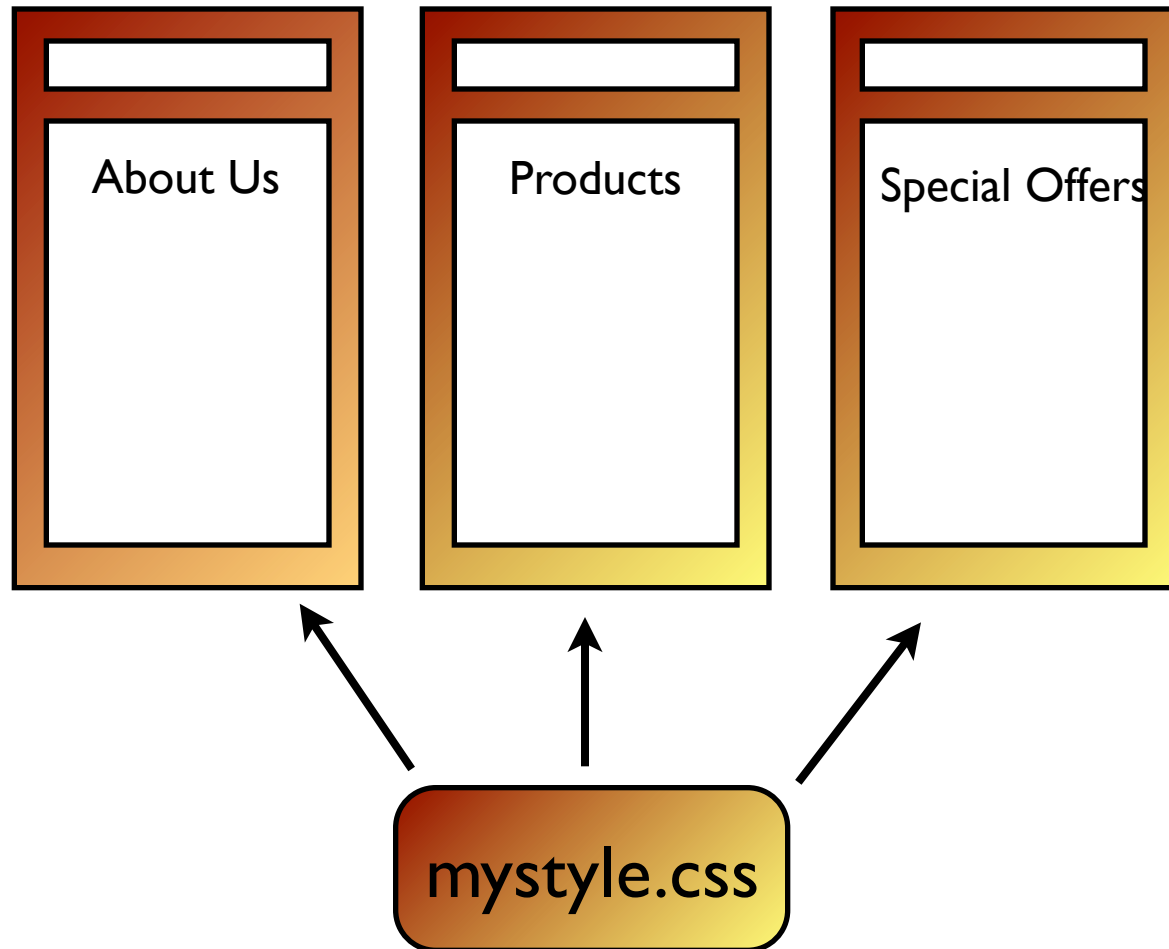
- Style sheets can be embedded in the html file for a page
- Or they can be separate
- Storing the style sheet externally allows several pages to use the same style.
- If the site has many pages, updates to the style can be very efficient

# Many webpages can use a common style sheet





# Changes in style can be easily applied across the entire site



```
<html><head><title>My Lovely Horse</title>
```

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

```
</head>
```

```
<body>
```

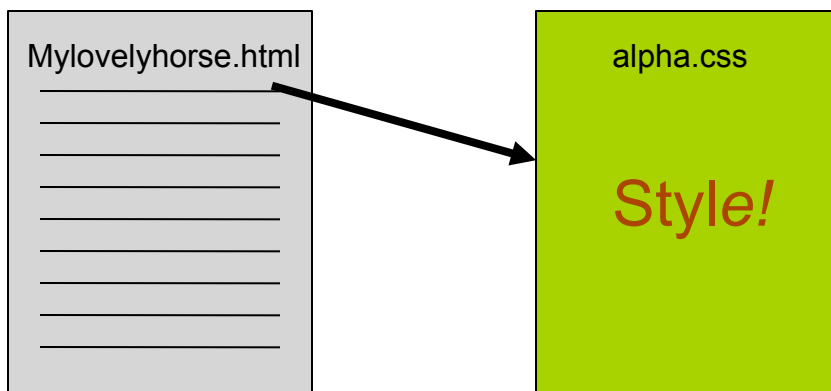
```
<h1>My Lovely Horse</h1>
```

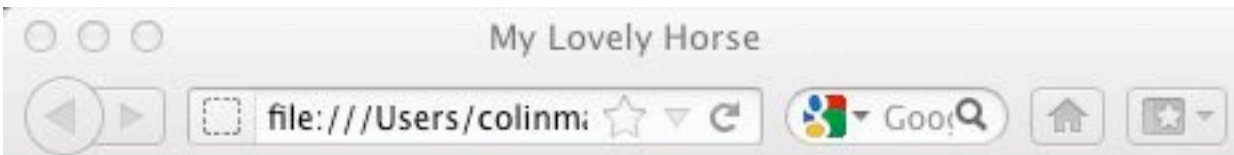
```
<h2>Lyrics: McGuire, Crilly</h2><h2>Music: The Dead Norwegians</h2>
```

My lovely horse running through the field,<br />Where are you going with your  
fetlocks blowing in the wind?<br/>I want to shower you with sugarlumps,<br/  
>And ride you over fences, <br/>Polish your hooves every single day,<br/>And  
bring you to the horse dentist,<br/> ,<br/>

My lovely horse, <br/>You're a pony no more,<br/>Running around with a man on  
your back,<br/>Like a train in the night,<br/>Like a train in the night.<br/>

```
</body>
```





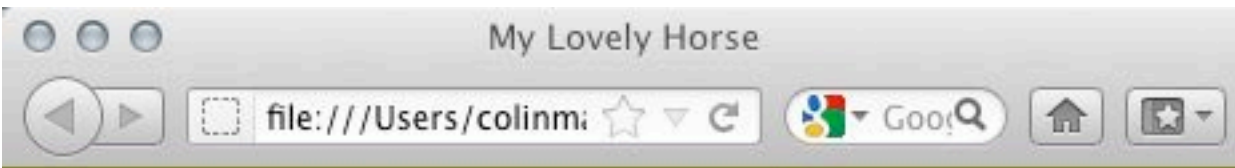
# My Lovely Horse

**Lyrics: McGuire, Crilly**

**Music: The Dead Norwegians**

My lovely horse running through the field  
Where are you going with your fetlocks  
I want to shower you with sugarlumps,  
And ride you over fences,  
Polish your hooves every single day,  
And bring you to the horse dentist  
My lovely horse,  
You're a pony no more,  
Running around with a man on your back  
Like a train in the night,  
Like a train in the night.

```
body {background:#ff0066;  
font-family:helvetica, impact, sans-  
serif;}  
h1 {color:#0000ff; font-family:  
helvetica, impact, sans-serif;}  
h2 {color:#ffff33;  
text-indent:60px; font-  
family:courier, monospace;}
```



## MY LOVELY HORSE

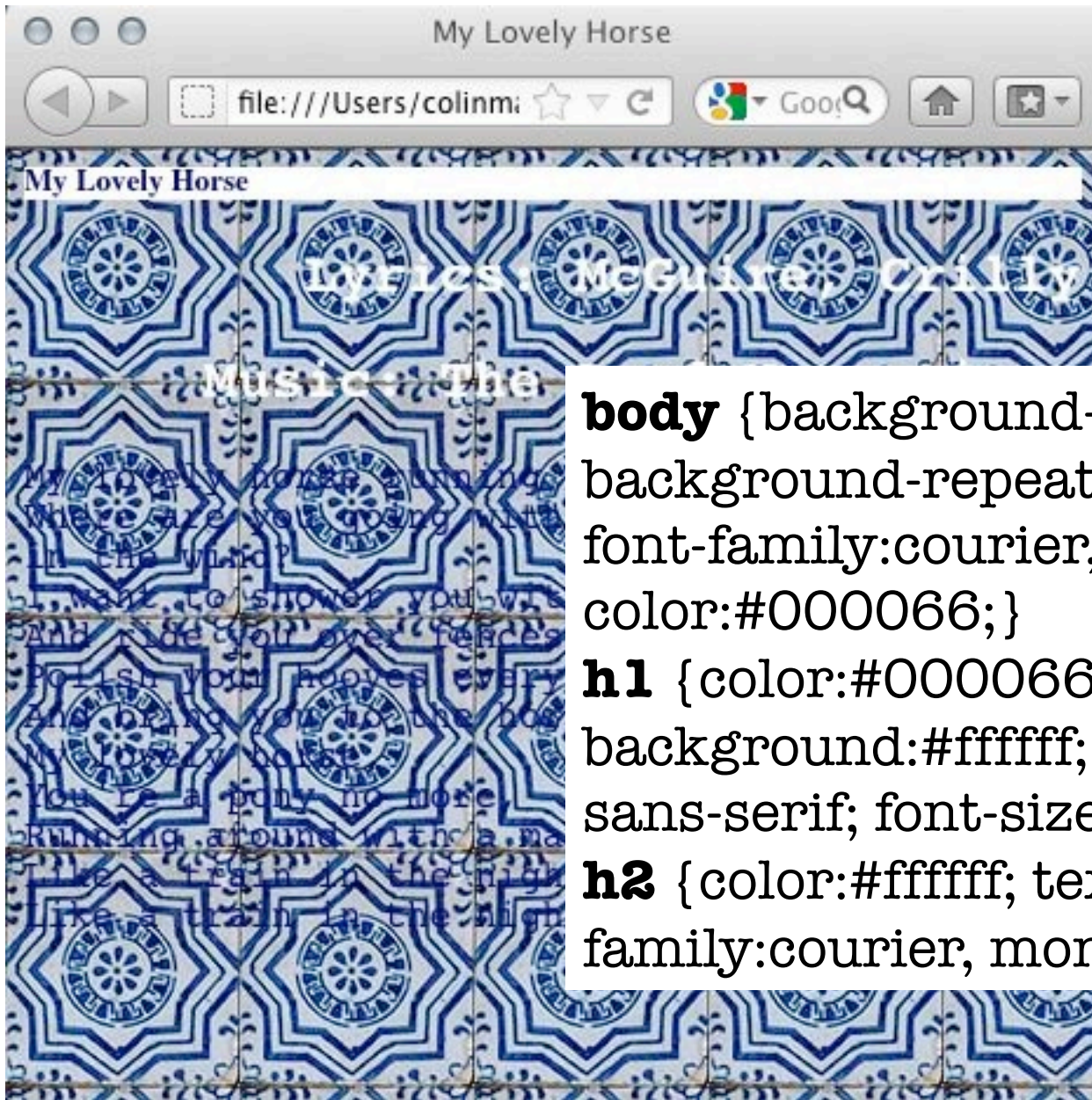
**LYRICS: MCGUIRE, CRILLY**

**MUSIC: THE DEAD NORWEGIANS**

MY LOVELY HORSE RUNNING THROUGH THE FIELD,  
WHERE ARE YOU GOING WITH YOUR FETLOCKS BLOWING  
IN THE WIND?

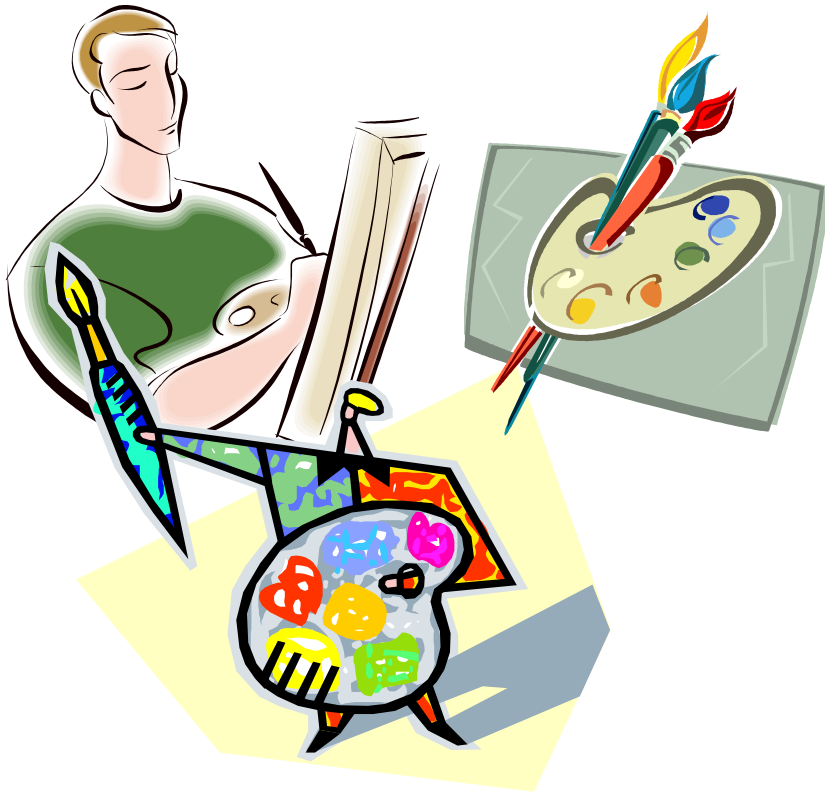
I WANT TO SHOWER YOU WITH S  
AND RIDE YOU OVER FENCES,  
POLISH YOUR HOOVES EVERY SI  
AND BRING YOU TO THE HORSE  
MY LOVELY HORSE,  
YOU'RE A PONY NO MORE,  
RUNNING AROUND WITH A MAN O  
LIKE A TRAIN IN THE NIGHT,  
LIKE A TRAIN IN THE NIGHT.

```
body {background:#ffff66;  
font-family:courier, monospace;  
text-transform:uppercase;}  
h1 {color:#000000;  
background:#00ff66;  
font-family: times, sans-serif; font-  
size:small}  
h2 {color:#ff0000; text-align:right;  
font-family:courier, monospace;}
```



```
body {background-image:url(tile.jpg);  
background-repeat:yes;  
font-family:courier, monospace;  
color:#000066;}  
h1 {color:#000066;  
background:#ffffff; font-family: times,  
sans-serif; font-size:small}  
h2 {color:#ffffff; text-align:right; font-  
family:courier, monospace;}
```

# There are 3 ways to style



- Cascading style sheets can be
  - Inline
  - Embedded
  - Linked

# Inline Styles

- appear inside in tags in the body of the xhtml document

```
<div>This text appears in the browser's default style</div>
```

```
<div style="font-size: 25pt; font-weight:bold;">Adding inline CSS overrides the browser's default</div>
```

# Inline Styles are for emergency use only

- Inline styles give you very few of the advantages of CSS
- Using them is not a whole lot better than using FONT tags
- They should be avoided. But they can get you out of the occasional tight spot



# Embedded Styles

- appear in the head of the xhtml document
- are limited in scope to the page they're on

```
<head>
```

```
...
```

```
<style type="text/css">
```

```
h1 {font-size:20pt; color:black;}
```

```
div {color:red;}
```

```
</style>
```

```
</head>
```

# Embedded Styles

- Embedded styles are useful when developing the style for a site.
- You can work with the embedded style in the xhtml page and avoid switching between the page and the style.
- When you are happy with the style, you can put it in a linked style

# Embedded Styles are not very useful

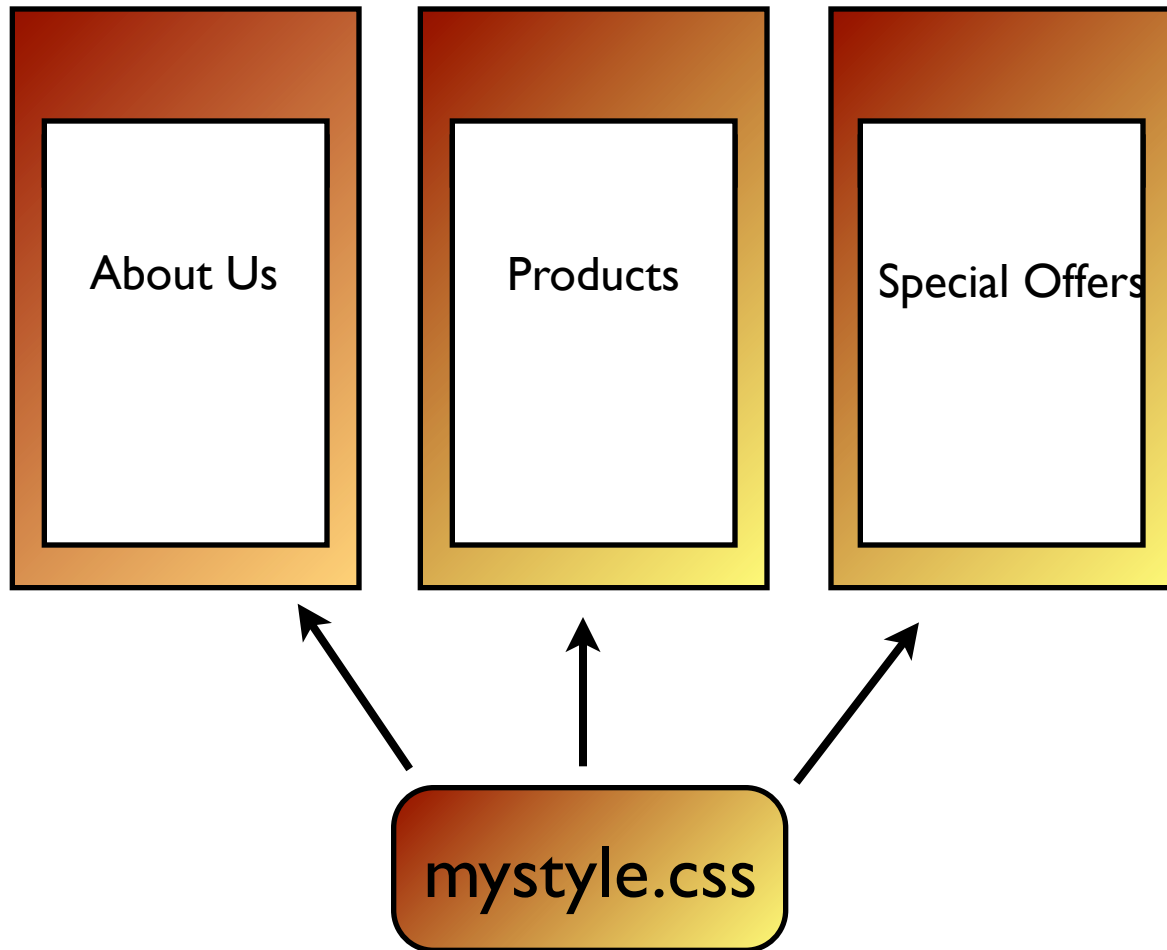
- Since Embedded Styles apply only to the page they are on they are not as useful as linked styles
- But if you want to make an exception for a particular page, they can be handy

# Linked Styles

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

- A Linked style sheet saved in a separate CSS file with a .css extension
- A link in the XHTML file directs the browser to the location of the style sheet
- Several pages can use the same CSS file. This can save a lot of time when updating a large site

# Linked Style Sheets



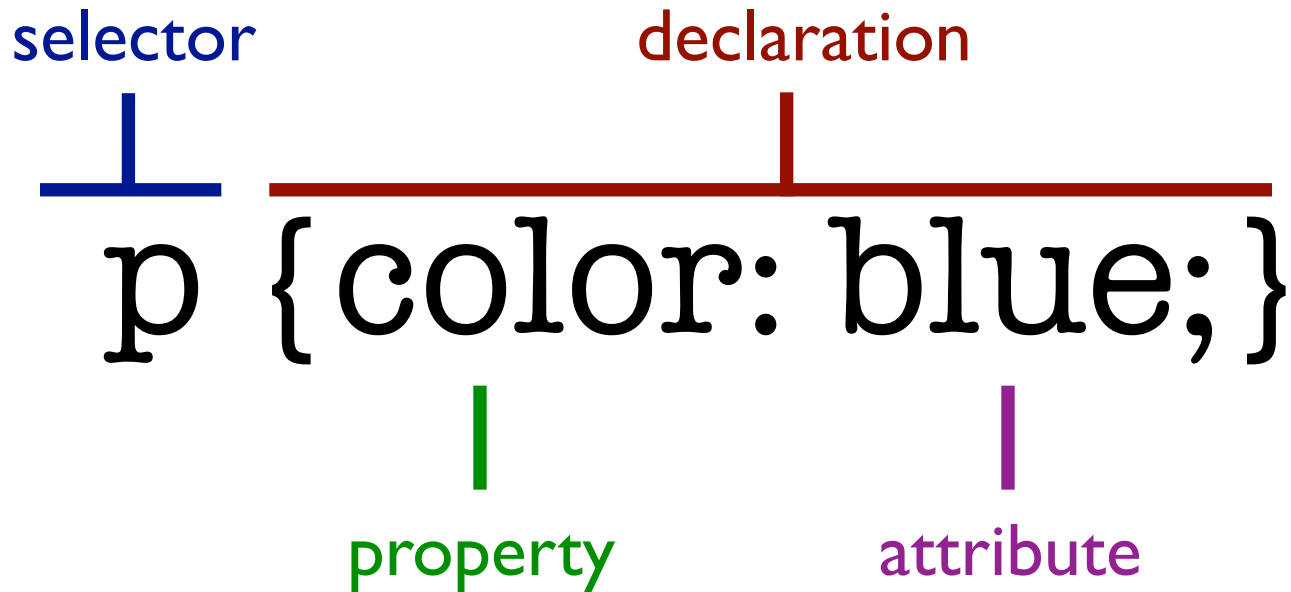
# The Cascade

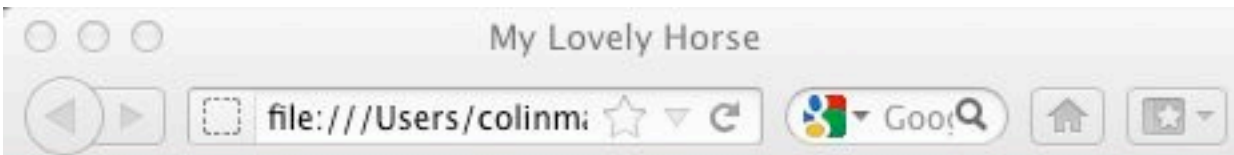
## Higher Priority

- Inline Styles
- Embedded Styles
- Linked Styles
- User Styles
- Browser Styles

## Lower Priority

# CSS Rules





# My Lovely Horse

**Lyrics: McGuire, Crilly**

**Music: The Dead Norwegians**

My lovely horse running through the field  
Where are you going with your fetlocks  
I want to shower you with sugarlumps,  
And ride you over fences,  
Polish your hooves every single day,  
And bring you to the horse dentist  
My lovely horse,  
You're a pony no more,  
Running around with a man on your back  
Like a train in the night,  
Like a train in the night.

```
body {background:#ff0066;  
font-family:helvetica, impact, sans-  
serif;}  
h1 {color:#0000ff; font-family:  
helvetica, impact, sans-serif;}  
h2 {color:#ffff33;  
text-indent:60px; font-  
family:courier, monospace;}
```



```
h1 {color:#0000ff; font-family:  
helvetica, impact, sans-serif;}
```



- Web pages can be displayed only with fonts that are installed on the user's machine
- The font you specify may not be available
- CSS allows you to specify a list of fonts in order of preference. If the first preference is unavailable, the next available is used
- Lists should always end with a generic font collection

# Multiple declarations can be in a rule

```
p {color:red; font-size:14px;  
line-height:20px;}
```

# Multiple selectors can be grouped

```
h1 {color:red;}
```

```
h2 {color:red;}
```

```
h3 {color:red;}
```

```
h1, h2, h3 {color:red;}
```

# Generic Font Collections

serif

**fantasy**

sans-serif

*cursive*

mono-space

The actual font chosen by the browser for each collection, varies with platforms and browsers.

# CSS Sizes

- Absolute values
  - in** inches
  - cm** centimetres
  - mm** millimetres
  - pt** points
  - pc** picas
  - px** pixels
- Relative Values
  - em** An Em is a value equal to the height of the characters in a font. It is the height of M
  - ex** is the x-height of a font. The height without ascenders and descenders
  - %** percentage

Tijuana, México

ex

em

**em** and **ex** are useful values because they change with the size of the text.

# font-style property

```
h3 {font-style:italic;}  
div {font-style:oblique;}  
h2 {font-style:normal;}
```

- The font-style property can make text appear in italics or not. Oblique is similar to italics, but it not supported by many browsers, so is best avoided.

# font-weight property

```
h3 {font-weight:normal;}  
div {font-weight:bold;}  
h2 {font-weight:bolder;}  
h4 {font-weight:lighter;}  
div {font-weight:200;}
```

- The font-weight property can make text bold, and the degree of boldness can be set.
- Lighter is relative.
- Numerical values don't work very well with current browsers.



# font-variant property

```
div {font-variant:normal;}
```

```
div {font-variant:small-caps;}
```

Munster Technical University    MUNSTER TECHNICAL UNIVERSITY

- The font-variant property can make text appear in small caps.

# font property shorthand

```
p {font: oblique small-caps 8pt arial, sans-serif;}
```

- The font properties can be set all at once to save time.
- Font-size and font-family must always be declared
- First font-weight, font-style, font-variant, in any order; followed by font-size and then font-family

# CSS Text Properties

- There are eight text properties in CSS

`text-indent`

`letter-spacing`

`word-spacing`

`text-decoration`

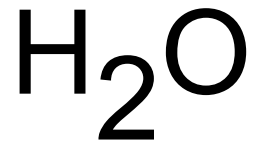
`text-align`

`line-height`

`text-transform`

`vertical-align`

$$E=mc^2$$



# vertical-align property

- Vertical-align alters the position of text relative to its baseline moves the start of the first line of text

# Contextual Selectors

```
b {color:blue;}
```

This makes all content bounded by `b` tags display in blue

```
p b {color:red;}
```

This is more selective and applies only to `b` tags are are inside `p` tags

```
span p b {color:green;}
```

Green is applied only to any `b` that is inside a `p` that is inside a `span`

# Child Selectors

```
p>b {color:green}
```

- In this case green will be applied to any b that is a child of p.
- It is not enough that b be a descendant of p. It must be only one level deep.

# Classes and IDs

- Classes and IDs can operate independently of the document hierarchy
- A class attribute can be added to the tag in the XHTML document and the style sheet can target those classes of tags

# Classes

```
<h1 class="important">My Lovely Page</h1>
```

```
<div>Once upon a time</div>
```

```
<div class="important">in a land far far away</div>
```

**My Lovely Page**

Once upon a time

**In a land far far away**

```
div {font-family: sans-serif;}
```

```
.important {font-weight:bold; color:red;}
```

Applied to all tags with this class



# Classes

```
<h1 class="important">My Lovely Page</h1>
```

```
<div>Once upon a time</div>
```

```
<div class="important">in a land far far away</div>
```

**My Lovely Page**

Once upon a time

**In a land far far away**

```
div {font-family: sans-serif;}
```

```
div.important {font-weight:bold; color:red;}
```

Applied to all p tags with this class

# IDs

```
<h1>My Lovely Page</h1>
```

```
<div id="start">Once upon a time</div>
```

```
<div>in a land far far away</div>
```

**My Lovely Page**


*Once upon a time*

In a land far far away

Sans-serif applied to  
both p tags



```
p {font-family: sans-serif;}  
#start {font-style:italic; color:green;}
```



Applied to all tag called "start"

# Classes

```
<div class="special">Mary had a little lamb</div>
```

```
<div>Its fleece was white as snow</div>
```

```
<div class="special">and everywhere that Mary went</div>
```

```
the lamb was sure to go
```

---

```
div .special {color:red;}
```

---

Mary had a little lamb

Its fleece was white as snow

and everywhere that Mary went

the lamb was sure to go

# Classes

```
<div class="special">Mary had a little lamb</div>
```

```
<div>Its fleece was white as snow</div>
```

```
<div class="special">and everywhere that Mary went</div>
```

```
the lamb was sure to go
```

---

```
div {color:blue;}
```

```
.special {color:red;}
```

---

Mary had a little lamb

Its fleece was white as snow

and everywhere that Mary went

the lamb was sure to go

# IDs

```
<div id="topline">Mary had a little lamb</div>
```

```
<div>Its fleece was white as snow</div>
```

```
<div class="special">and everywhere that Mary went</div>
```

```
the lamb was sure to go
```

---

```
#topline {color:red;}
```

---

**Mary had a little lamb**

Its fleece was white as snow

and everywhere that Mary went

the lamb was sure to go

# Classes

```
<div class="special">Mary had a little lamb</div>
```

```
<div>Its fleece was white as snow</div>
```

```
<div class="special">and everywhere that Mary went</div>
```

```
the lamb was sure to go
```

---

```
div {color:blue;}
```

```
.special {color:red;}
```

---

Mary had a little lamb

Its fleece was white as snow

and everywhere that Mary went

the lamb was sure to go

# Pseudo Classes

:hover

applies while the user designates an element with a pointing device. Cursor and mouse. Some devices can't support this. (iPhone)

:active

element is being activated between when user presses mouse button and releases it

:focus

applies when an element has the focus. e.g. forms

# Pseudo Classes

`:link`

pseudo-class that applies to links that have not yet been visited

`:visited`

pseudo-class that applies to links that have been visited



# Classes & IDs

- Don't go mad
- Using too many classes and IDs will result in markup that is not much better than old style html without CSS
- Selectors can be very specific. Maybe you don't need as many classes and IDs as you think