

 THE POWER TO KNOW.




CSSSTYLE: Stylish Output with ODS and SAS 9.2

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SAS Global Forum 2009

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Today's Topics

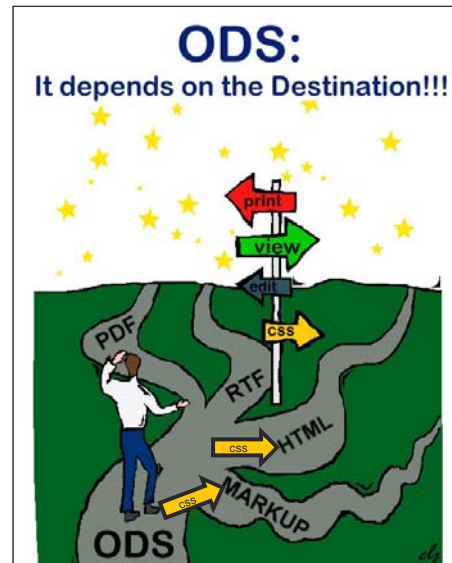
- CSS Intro (Brief)
- ODS and simple CSSSTYLE= Option
- Using @MEDIA Rules with CSSSTYLE= Option

This paper will be available for download at:

<http://support.sas.com/rnd/papers>

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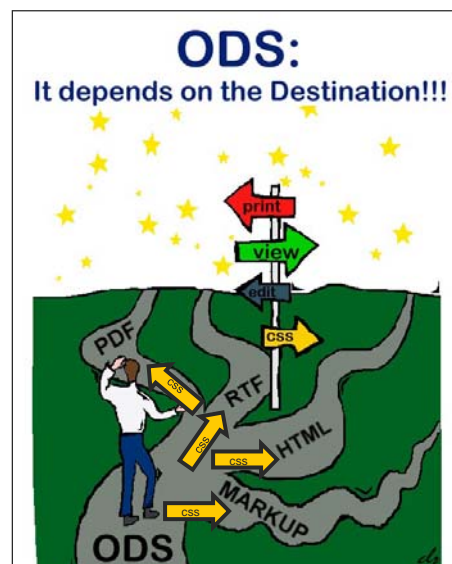
In the past, if you used Cascading Style Sheets (CSS), you were on the HTML path with ODS.



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In the past, if you used Cascading Style Sheets (CSS), you were on the HTML path with ODS.

Now, with the `CSSSTYLE=` option, you can use CSS files on the RTF and PDF paths, too.



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Overview

Companies use CSS because they want to

- standardize corporate web site "look and feel".

Knowing more about CSS, beyond the basics

- will enable your output to be stylish and your ODS output more consistent with company standards.

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Cascading Style Sheets

A cascading style sheet

- is a text file with a .CSS extension
- consists of simple syntax that gives stylistic information for an HTML file.

File:
mystyle.css

```
.Body
{ font-family: Arial, Helvetica, sans-serif;
  font-size: x-small;
  font-weight: normal;
  font-style: normal;
  color: #003399;
  background-color: #FFFFFF;
  margin-left: 8px;
  margin-right: 8px; }
```

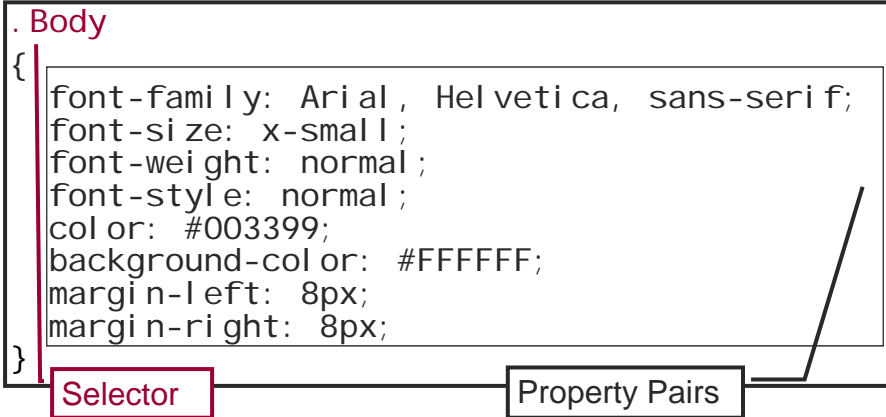
**Cascading
Style
Sheets
(CSS)**



W3C WORLD WIDE WEB
consortium
Leading the Web to Its Full Potential...

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Partial CSS Syntax



Identifies formatting to be applied to the <BODY> tag if class attribute = "Body"

Controls, within curly braces, the set of style properties or declaration of style properties for the browser to apply to one portion of the HTML file.

CSS Rules

Selector {*property-1: value-1;*
property-n: value-n}

- **Selector:** the part of the document or class to which the style is applied
- property:value known as a declaration.
 - Declarations are made up of property pairs.
 - Declarations are enclosed in { }.
 - Each property pair has a colon that separates the property and its value.
 - Multiple property pairs are separated by semicolons.

Compare HTML and CSS



demo1_basicHTML.sas

Why Use CSS?

- The purpose of a CSS file is to separate content (information on the page) from appearance (how the information looks).

```
<th class="Header">Name</th>
<td class="Data">Al fred</td>
<td class="Data">Al i ce</td>
<td class="Data">Barbara</td>
```

```
<th class="Header">Hei ght</th>
<td class="Data">69. 0</td>
<td class="Data">56. 5</td>
<td class="Data">65. 3</td>
```

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What is Content?

- Content, within the context of HTML output created with SAS, is any piece of information that comes from the SAS dataset or procedure analysis.

```
<th class="Header">Name</th>
<td class="Data">Al fred</td>
<td class="Data">Al i ce</td>
<td class="Data">Barbara</td>

<th class="Header">Hei ght</th>
<td class="Data">69. 0</td>
<td class="Data">56. 5</td>
<td class="Data">65. 3</td>
```

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What is Presentation?

- The HTML tags <th> and <td> tell the browser how to arrange the content in header cells or data cells. In addition, this table would need <table> and <tr> tags for the table definition to be complete.

```
<th class="Header">Name</th>
<td class="Data">Al fred</td>
<td class="Data">Al i ce</td>
<td class="Data">Barbara</td>

<th class="Header">Hei ght</th>
<td class="Data">69. 0</td>
<td class="Data">56. 5</td>
<td class="Data">65. 3</td>
```

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Linking Content to Presentation

- The HTML CLASS= attribute links the content within the page to the presentation formatting defined with CSS syntax.

```
<th class="Header">Name</th>
<td class="Data">Alfred</td>
<td class="Data">Barbara</td>

<th class="Header">Height</th>
<td class="Data">59.0</td>
<td class="Data">56.5</td>
<td class="Data">65.3</td>
```

```
.Header
{ font-family: Arial, Helvetica, sans-serif;
  font-size: x-small;
  font-weight: bold;
  font-style: normal;
  color: #FFFFFF;
  background-color: #6495ED;
}
```

```
.Data
{ font-family: Arial, Helvetica, sans-serif;
  font-size: x-small;
  font-weight: normal;
  font-style: normal;
  color: #000000;
  background-color: #FFFFFF;
}
```

In the CLASS= attribute, refer to the class selector by name. In the CSS file, use a dot (.) in front of the class selector name.

Cascading Style Sheets

For ODS output files, you can use cascading style sheets to control

- font color, font face, size
- background color
- borders
- mouse appearance
- +more

```
.Header
{ font-family: Arial, Helvetica, sans-serif;
  font-size: x-small;
  font-weight: bold;
  font-style: normal;
  color: #FFFFFF;
  background-color: #6495ED; }
```

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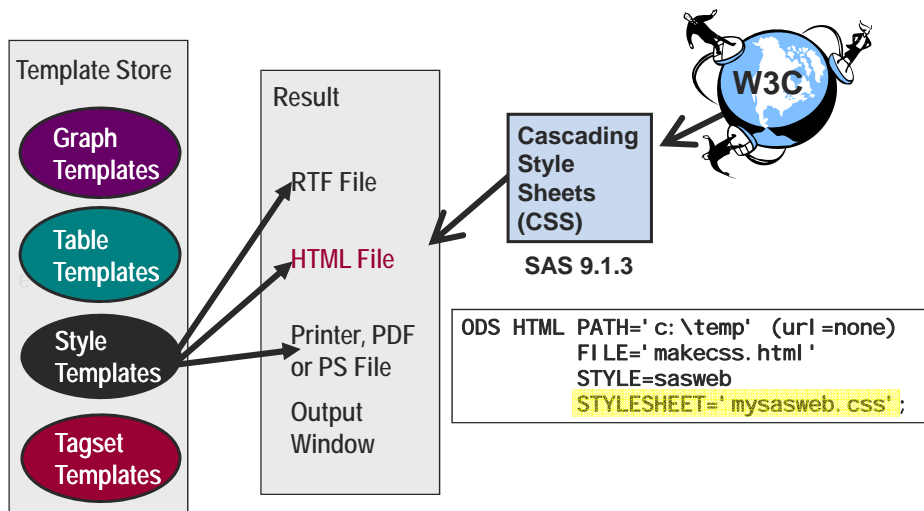
HTML and CSS Files

- There are two methods for specifying how CSS information is provided to the browser for an HTML page:
 - 1 Place CSS information as an in-line <STYLE> section inside the HTML file.
 - 2 Specify CSS information in an external file and point to the external file with a <LINK> tag.

ODS HTML supports either method.

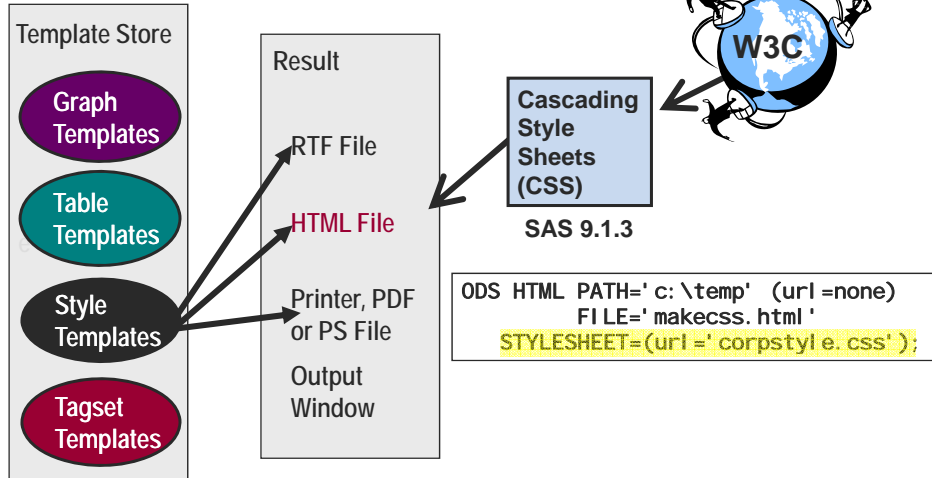
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ODS Makes and Uses CSS File



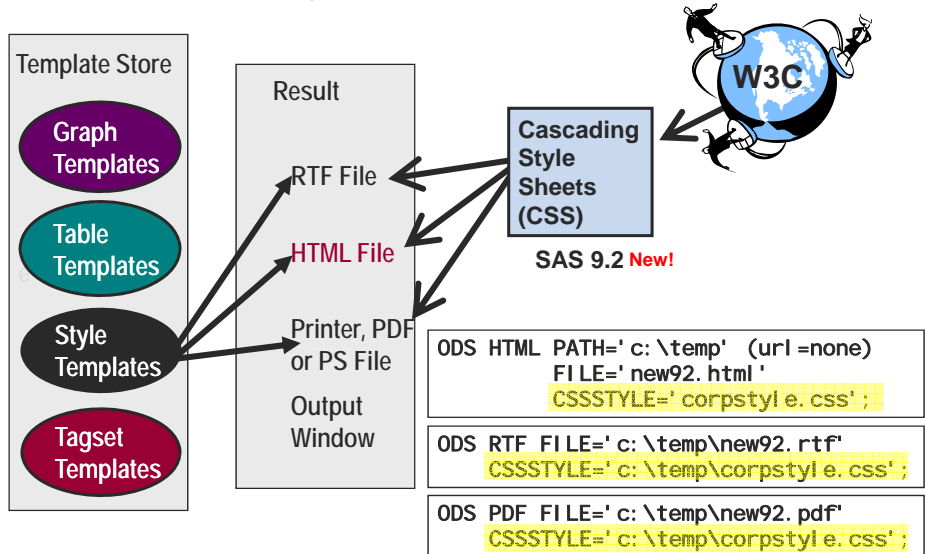
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ODS Uses Existing CSS File



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ODS and Style Specifications



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Spelling Counts!

```
ODS HTML PATH=' c: \temp' (url =none)
FILE=' new92. html '
CSSTYLE=' corpstyl e. css' ;
```

ERROR: Failed to import CSS file: corpstyle.css
 NOTE: Writing HTML Body file: new92.html
 WARNING 1-322: Assuming the symbol CSSTYLE was misspelled as CSSTYLE.

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Spelling Counts!

```
ODS HTML PATH=' c: \temp' (url =none)
FILE=' new92. html '
CSSTYLE=' corpstyl e. css' ;
```

ERROR: Failed to import CSS file: corpstyle.css
 NOTE: Writing HTML Body file: new92.html
 WARNING 1-322: Assuming the symbol CSSTYLE was misspelled as CSSTYLE.



YeSSS...
 It'sss true: the number of eSSSeSSS is 3 in the
CSSTYLE option!

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1) Make or Get a CSS File

- In order to USE a CSS file, we must get or make a CSS file. The ODS STYLEHEET= option will make an external CSS file. In this instance, you are only using ODS HTML for its ability to make a CSS file.

```
ods html path='c:\temp' (url=none)
      file='make_css.html'
      style=sasweb
      stylesheet='sasweb_demo.css';
proc print data=sashelp.class(obs=3);
  title '1) Creating and Using a CSS file';
run;
ods _all_ close;
```

demo2_original_method.sas

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2) Use the CSS File

- You may want to make changes to the CSS file or you can use it as SAS created it.

```
ods pdf file='c:\temp\demo3_cssstyle.pdf'
      cssstyle='c:\temp\sasweb_demo.css';
ods rtf file='c:\temp\demo3_cssstyle.rtf'
      cssstyle='c:\temp\sasweb_demo.css';
ods html path='c:\temp' (url=none)
      file='demo3_cssstyle.html'
      cssstyle='sasweb_demo.css';
proc print data=sashelp.class(obs=3);
  title 'Using the CSSSTYLE Option';
run;
ods _all_ close;
```

demo3_simple_cssstyle.sas

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Reviewing Results

Using the CSSSTYLE Option

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0

PDF Output
(viewed in Acrobat Reader)

Using the CSSSTYLE Option

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0

RTF Output
(viewed in Word Print Preview mode)

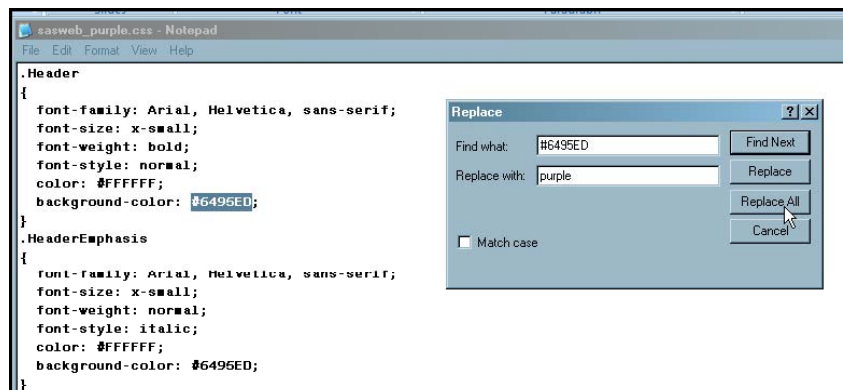
Using the CSSSTYLE Option

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0

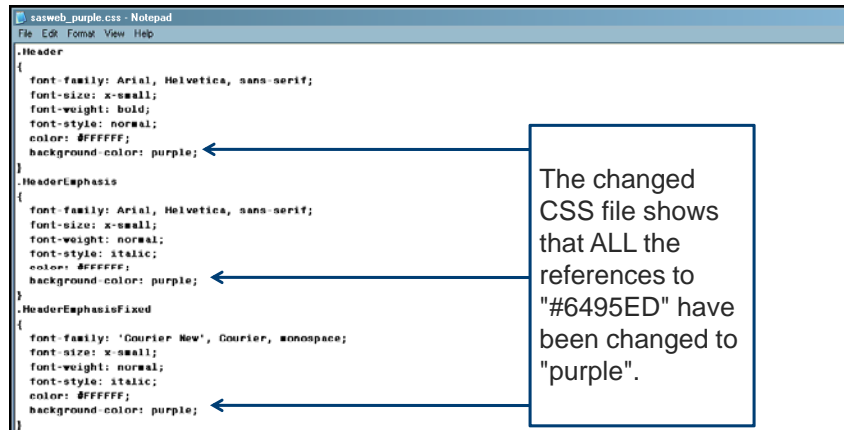
HTML Output
(viewed in Internet Explorer)

demo3_simple_cssstyle.sas

3) Change CSS File with Notepad



After Manually Changing the CSS File



```

sasweb_purple.css - Notepad
File Edit Format View Help

.Header
{
    font-family: Arial, Helvetica, sans-serif;
    font-size: x-small;
    font-weight: bold;
    font-style: normal;
    color: #FFFFFF;
    background-color: purple;
}

.HeaderEmphasis
{
    font-family: Arial, Helvetica, sans-serif;
    font-size: x-small;
    font-weight: normal;
    font-style: italic;
    color: #FFFFFF;
    background-color: purple;
}

.HeaderEmphasisFixed
{
    font-family: 'Courier New', Courier, monospace;
    font-size: x-small;
    font-weight: normal;
    font-style: italic;
    color: #FFFFFF;
    background-color: purple;
}
    
```

The changed CSS file shows that ALL the references to "#6495ED" have been changed to "purple".

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3) Using the Changed CSS File

```

ods pdf file='c:\temp\demo3_purple.pdf'
    cssstyle='c:\temp\sasweb_purple.css';
ods rtf file='c:\temp\demo3_purple.rtf'
    cssstyle='c:\temp\sasweb_purple.css';
ods html path='c:\temp' (url=none)
    file='demo3_purple.html'
    cssstyle='sasweb_purple.css';
proc print data=sashelp.class(obs=3);
    title '3b) Using a CHANGED CSS File with CSSSTYLE Option';
run;
ods _all_ close;
    
```

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demo3_simple_cssstyle.sas

Reviewing the Results

3b) Changing a CSS File and Using It

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0

PDF Output
(viewed in Acrobat Reader)

3b) Changing a CSS File and Using It

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0

RTF Output
(viewed in Word Print Preview mode)

HTML Output
(viewed in Internet Explorer)

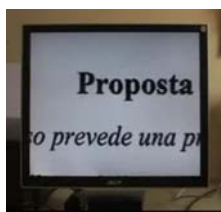
3b) Changing a CSS File and Using It

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0

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demo3_simple_cssstyle.sas

Different Media for Different Purposes



Text ZOOMed on a Screen



Braille-enabled keyboard



TTY with screen and keyboard



TTY with acoustic coupler



Braille-embossed content



TTY with Braille interface

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What Is an @MEDIA Rule?

- "One of the most important features of style sheets is that they specify how a document is to be presented on different media: on the screen, on paper, with a speech synthesizer, with a braille device, and so on."
--- <http://www.w3.org/TR/CSS2/media.html>
- Different media types may benefit from different settings for the same style property:
 - Sans-serif fonts are easier to read on screen.
 - Serif fonts are easier to read on paper.
- In the CSS specification, the valid media types belong to media groups.

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About Media Groups

- The definition of "media" in a CSS context means how consumers will view or display the content:
 - screen
 - print
 - aural
 - Braille
 - embossed
 - handheld
 - projection
 - TTY
 - TV

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Looking at CSS @Media Rule: Demo4.CSS

```

body {background-color: white;
      color: black;
      font-family: serif}
.header, .rowheader, .footer, .rowfooter, .data
{border: 1px black solid;
 margin-left: 2pt;
 margin-right: 2pt;
 color: black;
 padding: 5px;
 font-family: serif}
.header, .rowheader, .footer, .rowfooter
{background-color: #eeeeee;}
table {background-color: #eeeeee;
       border-spacing: 0;
       padding: 7px;
       border: 1px black solid;}
.proctitle {font-size: large;
            font-family: Arial, Helvetica, sans-serif;
            font-weight: normal;
            color: green;}
.systemtitle {font-size: large;
              font-family: Arial, Helvetica, sans-serif;
              font-weight: bold;
              color: purple;}

@media screen {
.header, .rowheader, .footer, .rowfooter
{color: white;
 font-weight: bold;
 font-size: medium;
 font-family: Arial, Helvetica, sans-serif;
 background-color: purple;}
.data
{font-size: small;
 font-family: Arial, Helvetica, sans-serif;
 background-color: #ffccff;}
}

@media print {
.header, .rowheader, .footer, .rowfooter
{color: black;
 font-size: 11pt;
 font-family: Courier New, Courier, serif;
 background-color: #aaaaaa;}
.data
{font-size: 9pt;
 font-family: Courier New, Courier, serif;
 background-color: white;}
}

```

demo4.css

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Using Demo4.CSS

```

ods html path='c:\temp\' (url=none)
      file="demo4_scr.html" cssstyle='demo4.css'(screen);

ods rtf file="c:\temp\demo4_scr.rtf" startpage=no
      cssstyle='c:\temp\demo4.css'(screen);

ods pdf file="c:\temp\demo4_scr.pdf" startpage=no
      cssstyle='c:\temp\demo4.css'(screen);

<Proc Print and Proc Contents steps>

ods _all_ close;

```

Without an @MEDIA rule specified, the default rule is SCREEN.

demo4_media_rule.sas

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Use @MEDIA Rules for SCREEN

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0

The CONTENTS Procedure

Alphabetic List of Variables and Attributes

#	Variable	Type	Len
3	Age	Num	8
4	Height	Num	8
1	Name	Char	8
2	Sex	Char	1
5	Weight	Num	8

Use @MEDIA Rules for SCREEN

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0

The CONTENTS Procedure

Alphabetic List of Variables and Attributes

#	Variable	Type	Len
3	Age	Num	8
4	Height	Num	8
1	Name	Char	8
2	Sex	Char	1
5	Weight	Num	8

PDF Output
(viewed in Acrobat Reader)

RTF Output
(viewed in Word Print Preview mode)

HTML Output
(viewed in the browser)

demo4_media_rule.sas

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Using Demo4.CSS

```
ods html path='c:\temp\' (url=none)
  file="demo4_pr.html" csstype='demo4.css'(print);

ods rtf file="c:\temp\demo4_pr.rtf" startpage=no
  csstype='c:\temp\demo4.css'(print);

ods pdf file="c:\temp\demo4_pr.pdf" startpage=no
  csstype='c:\temp\demo4.css'(print);

<Proc Print and Proc Contents steps>

ods _all_ close;
```

Note that only the @MEDIA rule changed the procedure steps were the same as the previous example.

demo4_media_rule.sas

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Use @MEDIA Rules for PRINT

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0

PDF Output
(viewed in Acrobat Reader)

The CONTENTS Procedure

Alphabetic List of Variables and Attributes

#	Variable	Type	Len
3	Age	Num	8
4	Height	Num	8
1	Name	Char	8
2	Sex	Char	1
5	Weight	Num	8

Use @MEDIA Rules for PRINT

RTF Output
(viewed in Word Print Preview mode)

The CONTENTS Procedure

Alphabetic List of Variables and Attributes

#	Variable	Type	Len
3	Age	Num	8
4	Height	Num	8
1	Name	Char	8
2	Sex	Char	1
5	Weight	Num	8

Use @MEDIA Rules for PRINT

HTML Output
(viewed in the browser)

List of Variables

The CONTENTS Procedure

#	Variable	Type	Len
3	Age	Num	8
4	Height	Num	8
1	Name	Char	8
2	Sex	Char	1
5	Weight	Num	8

SystemTitle and ProcTitle are the same as previous example but all other style properties come from the PRINT @MEDIA rule.

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Mix and Match Output

```
ods html path='c:\temp\' (url=none)
    file="demo4_diff.html" cssstyle='demo4.css'(screen);

ods rtf file="c:\temp\demo4_diff.rtf" startpage=no
    cssstyle='c:\temp\demo4.css'(print);

ods pdf file="c:\temp\demo4_diff.pdf" startpage=no
    cssstyle='c:\temp\demo4.css'(print);

    <Proc Print and Proc Contents steps>

ods _all_ close;
```

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Reviewing Results

HTML Output

Mix and Match CSS to Destination

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0

List of Variables

The CONTENTS Procedure

Alphabetic List of Variables and Attributes			
#	Variable	Type	Len
3	Age	Num	8
4	Height	Num	8
1	Name	Char	8
2	Sex	Char	1
5	Weight	Num	8

Screen @MEDIA Rule

PDF Output

Mix and Match CSS to Destination

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0

RTF Output

Mix and Match CSS to Destination

Obs	Name	Sex	Age	Height	Weight
1	Alfred	M	14	69.0	112.5
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0

The CONTENTS Procedure

Alphabetic List of Variables and Attributes			
#	Variable	Type	Len
3	Age	Num	8
4	Height	Num	8
1	Name	Char	8
2	Sex	Char	1
5	Weight	Num	8

Print @MEDIA Rule

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demo4_media_rule.sas

The Plan: Need to Use Multiple CSS Files

In order to reference multiple CSS files. . .

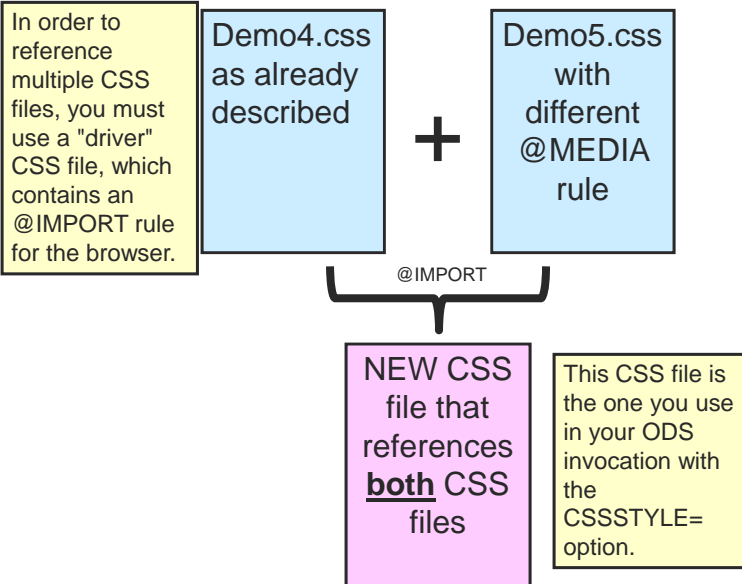
Demo4.css as already described

+

Demo5.css with different @MEDIA rule

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The Plan: Need to Use Multiple CSS Files



Using Two CSS Files

```
@media tty{
table{background-color: #eeeeee;
border-spacing: 0;
padding: 7px;
border: 1px black solid;}
.proctitle
{font-family: Courier New, Courier, serif;
font-size: large;
font-weight: 12pt;
color: black;}
.systemtitle{color: black;
{font-family: Courier New, Courier, serif;
font-size: large;
font-weight: 14pt;}}
.header, .rowheader, .footer, .rowfooter
{color: black;
font-size: 11pt;
font-family: Courier New, Courier, serif;
background-color: #ddddd;}
.data{font-size: 9pt;
font-family: Courier New, Courier, serif;
background-color: cyan;}
}
```

DEMO5.CSS

```
<style type="text/css">
<!--
@import "demo4.css";
@import "demo5.css";
-->
</style>
```

DEMO5_IMP.CSS

Reference @IMPORT CSS File

demo5_use_two.sas

```
ods html path='c:\temp\' (url=none)
      file="demo5_two.html"
      cssstyle='demo5_imp.css'(tty);

ods rtf file="c:\temp\demo5_two.rtf" startpage=no
      cssstyle='c:\temp\demo5_imp.css'(tty);

ods pdf file="c:\temp\demo5_two.pdf" startpage=no
      cssstyle='c:\temp\demo5_imp.css'(tty);

<Proc Print step>

ods _all_ close;
```

```
<style type="text/css">
<!--
@import "demo4.css";
@import "demo5.css";
-->
</style>
```

demo5_imp.css

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Reviewing Results

```
@media tty{
  .table{background-color: #eeeeee;
    border-spacing: 0;
    padding: 7px;
    border: 1px black solid;}
  .proctitle
  {font-family: Courier New, Courier, serif;
    font-size: large;
    font-weight: 12pt;
    color: black;}
  .systemtitle{color: black;
    {font-family: Courier New, Courier, serif;
      font-size: large;
      font-weight: 14pt;}}
  .header, .rowheader, .footer, .rowfooter
  {color: black;
    font-size: 11pt;
    font-family: Courier New, Courier, serif;
    background-color: #dddddd;}
  .data{font-size: 9pt;
    font-family: Courier New, Courier, serif;
    background-color: cyan;}
}
```

Use Two CSS Files

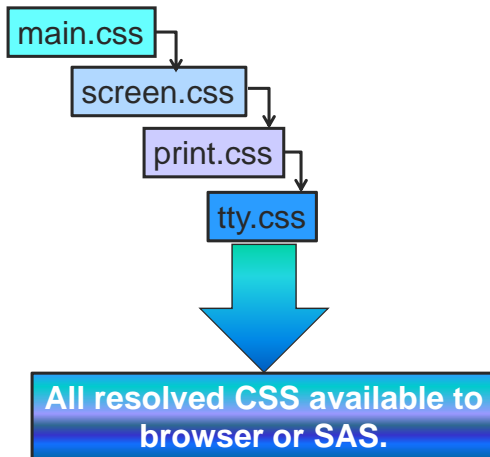
Obs	Name	Sex	Age	Height	Weight
1	Alice	F	13	56.5	84.0
2	Alice	F	13	56.5	84.0
3	Barbara	F	13	65.3	98.0

Note that, in production, CYAN is **not** a good choice for a TTY device.

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IF You Know CSS. . .

. . .the CSSSTYLE option will be even MORE powerful if you learn how the CSS "cascade" works, especially if you have same-named selectors in multiple @MEDIA rules.



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IF You Know CSS. . .

. . .the CSSSTYLE option will be even MORE powerful, as you learn the kinds of style properties that you can change and the correct property values.

Learning CSS - Windows Internet Explorer provided by SAS

http://www.w3.org/Style/CSS/learn

W3C

(Languages: [be](#) [bg](#) [de](#) [el](#) [en](#) [es](#) [fi](#) [fr](#) [id](#) [ja](#) [kk](#) [ko](#) [nl](#) [pl](#) [pt](#) [ro-1](#) [ro-2](#) [ru](#) [sv](#) [tl](#) [tr](#) [uk](#) [zh-hans](#) [zh-hant](#))

CASCADING STYLE SHEETS LEARNING CSS

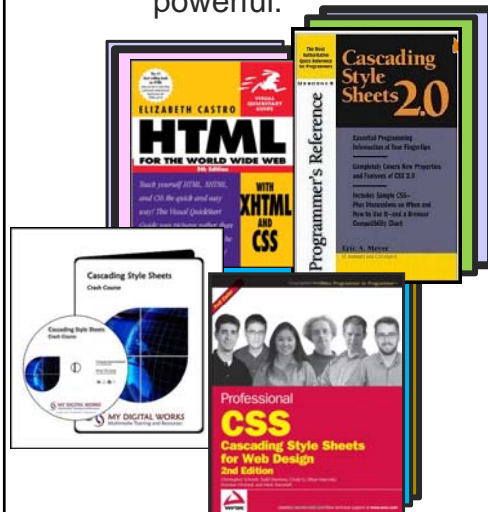
For beginners, [Starting with HTML + CSS](#) teaches how to create a style sheet. For a quick introduction to CSS, try [chapter 2 of Lie & Bos](#) or [Dave Raggett's intro to CSS](#). Or see examples of [styling XML](#) and [CSS tips & tricks](#).

W3C WORLD WIDE WEB consortium
Leading the Web to Its Full Potential...

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IF You Know CSS. . .

. . .the CSSSTYLE option will be even MORE powerful.



**Education
is
experience,
and
the essence of
experience
is
self-reliance.**

--T.H. White

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Your Turn



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This paper and all programs will be available for download at:

<http://support.sas.com/rnd/papers>

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References/Hyperlinks

<http://www.sas.com/rnd/base/index.html>
<http://www.sas.com/rnd/base/topics/templateFAQ/repooption.html>
http://www.w3schools.com/css/css_reference.asp#list

To download the documentation for Microsoft specific style properties, go to:

<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dnoffxml/html/ofxml2k.asp?frame=true>

and click on the link to download the **ofhtml9.exe** file.

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