



# Certified CSS3 Designer Sample Material

**V-Skills Certifications**

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## 1. CSS BASICS

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### 1.1. Introduction

Cascading Style Sheets (CSS) is a language specifically made for illustrating the appearance of various parts of a web page. CSS gives option to control the text color, fonts style, inter-paragraph spacing, columns sizing and layout, background images or colors and many other visual effects. CSS is used to style web pages, developed in HTML or XHTML

The major advantage of CSS is to customize the style of an entire website without changing each page individually.

W3C laid out details for a style sheet language to separate the visual appearance of a web page from its content and in 1994, Cascading HTML Style Sheets was proposed. CHSS became CSS and in December 1996 the CSS level 1 Recommendation was published. Three more CSS specifications have been published by the W3C of which CSS 2 became a recommendation followed by CSS 2.1 and CSS 3 is an upcoming recommendation.

### 1.2. CSS3 Evolution

CSS was first proposed by Håkon Wium Lie on October 10, 1994. At the time, Lie was working with Tim Berners-Lee at CERN. Several other style sheet languages for the web were proposed around the same time, and discussions on public mailing lists and inside W3C resulted in the first W3C CSS Recommendation (CSS1) being released in 1996. In particular, Bert Bos' proposal was influential; he became co-author of CSS1 and is regarded as co-creator of CSS.

Style sheets have existed in one form or another since the beginnings of Standard Generalized Markup Language (SGML) in the 1980s, and CSS was developed to provide style sheets for the web. One requirement for a web style sheet language was for style sheets to come from different sources on the web. Therefore, existing style sheet languages like DSSSL and FOSI were not suitable. CSS, on the other hand, allowed a document's style to be influenced by multiple style sheets by way of "cascading".

Improving web presentation capabilities was a topic of interest to many in the web community and nine different style sheet languages were proposed on the www-style mailing list. Of these nine proposals, two were especially influential on what became CSS: Cascading HTML Style Sheets and Stream-based Style Sheet Proposal (SSP). Two browsers served as testbeds for the initial proposals; Lie worked with Yves Lafon to implement CSS in Dave Raggett's Arena browser. Bert Bos implemented his own SSP proposal in the Argo browser. Thereafter, Lie and Bos worked together to develop the CSS standard (the 'H' was removed from the name because these style sheets could also be applied to other markup languages besides HTML).

Lie's proposal was presented at the "Mosaic and the Web" conference (later called WWW2) in Chicago, Illinois in 1994, and again with Bert Bos in 1995. Around this time the W3C was already being established, and took an interest in the development of CSS. It organized a workshop toward that end chaired by Steven Pemberton. This resulted in W3C adding work on CSS to the deliverables of the HTML editorial review board (ERB). Lie and Bos were the primary technical

staff on this aspect of the project, with additional members, including Thomas Reardon of Microsoft, participating as well. In August 1996 Netscape Communication Corporation presented an alternative style sheet language called JavaScript Style Sheets (JSSS). The spec was never finished and is deprecated. By the end of 1996, CSS was ready to become official, and the CSS level 1 Recommendation was published in December.

Development of HTML, CSS, and the DOM had all been taking place in one group, the HTML Editorial Review Board (ERB). Early in 1997, the ERB was split into three working groups: HTML Working group, chaired by Dan Connolly of W3C; DOM Working group, chaired by Lauren Wood of SoftQuad; and CSS Working group, chaired by Chris Lilley of W3C.

The CSS Working Group began tackling issues that had not been addressed with CSS level 1, resulting in the creation of CSS level 2 on November 4, 1997. It was published as a W3C Recommendation on May 12, 1998. CSS level 3, which was started in 1998, is still under development as of 2014.

In 2005 the CSS Working Groups decided to enforce the requirements for standards more strictly. This meant that already published standards like CSS 2.1, CSS 3 Selectors and CSS 3 Text were pulled back from Candidate Recommendation to Working Draft level.

### Variations

CSS has various levels and profiles. Each level of CSS builds upon the last, typically adding new features and typically denoted as CSS 1, CSS 2, CSS 3, and CSS 4. Profiles are typically a subset of one or more levels of CSS built for a particular device or user interface. Currently there are profiles for mobile devices, printers, and television sets. Profiles should not be confused with media types, which were added in CSS 2.

**CSS 1** - The first CSS specification to become an official W3C Recommendation is CSS level 1, published on December 17, 1996. Håkon Wium Lie and Bert Bos are credited as the original developers. Among its capabilities are support for

- ✓ Font properties such as typeface and emphasis
- ✓ Color of text, backgrounds, and other elements
- ✓ Text attributes such as spacing between words, letters, and lines of text
- ✓ Alignment of text, images, tables and other elements
- ✓ Margin, border, padding, and positioning for most elements
- ✓ Unique identification and generic classification of groups of attributes

The W3C no longer maintains the CSS 1 Recommendation.

**CSS 2** - CSS level 2 specification was developed by the W3C and published as a recommendation in May 1998. A superset of CSS 1, CSS 2 includes a number of new capabilities like absolute, relative, and fixed positioning of elements and z-index, the concept of media types, support for aural style sheets (which were later replaced by the CSS 3 speech modules) and bidirectional text,

and new font properties such as shadows. The W3C no longer maintains the CSS 2 recommendation.

**CSS 2.1** - CSS level 2 revision 1, often referred to as "CSS 2.1", fixes errors in CSS 2, removes poorly supported or not fully interoperable features and adds already-implemented browser extensions to the specification. To comply with the W3C Process for standardizing technical specifications, CSS 2.1 went back and forth between Working Draft status and Candidate Recommendation status for many years. CSS 2.1 first became a Candidate Recommendation on February 25, 2004, but it was reverted to a Working Draft on June 13, 2005 for further review. It returned to Candidate Recommendation on 19 July 2007 and then updated twice in 2009. However, since changes and clarifications were made, it again went back to Last Call Working Draft on 7 December 2010.

CSS 2.1 went to Proposed Recommendation on 12 April 2011. After being reviewed by the W3C Advisory Committee, it was finally published as a W3C Recommendation on 7 June 2011.

**CSS 3** - Unlike CSS 2, which is a large single specification defining various features, CSS 3 is divided into several separate documents called "modules". Each module adds new capabilities or extends features defined in CSS 2, preserving backward compatibility. Work on CSS level 3 started around the time of publication of the original CSS 2 recommendation. The earliest CSS 3 drafts were published in June 1999.

Due to the modularization, different modules have different stability and statuses. As of June 2012, there are over fifty CSS modules published from the CSS Working Group., and four of these have been published as formal recommendations:

- ✓ 19-06-2012: Media Queries
- ✓ 29-09-2011: Namespaces
- ✓ 29-09-2011: Selectors Level 3
- ✓ 07-06-2011: Color

Some modules (including Backgrounds and Borders and Multi-column Layout among others) have Candidate Recommendation (CR) status and are considered moderately stable. At CR stage, implementations are advised to drop vendor prefixes. Summary of all module-specifications:

Module	Specification title	Status, date
css3-background	CSS Backgrounds and Borders Module Level 3	Candidate Recommendation, September 2014
css3-box	CSS basic box model	Working Draft, August 2007
css3-cascade-3	CSS Cascading and Inheritance Level 3	Candidate Recommendation, October 2013
css3-color	CSS Color Module Level 3	Recommendation, June 2011
css3-content	CSS3 Generated and Replaced	Working Draft, May 2003

Module	Specification title	Status, date
	Content Module	
css-fonts-3	CSS Fonts Module Level 3	Candidate Recommendation, October 2013
css3-gcpm	CSS Generated Content for Paged Media Module	Working Draft, May 2014
css3-layout	CSS Template Layout Module	Working Draft, November 2011
css3-mediaqueries	Media Queries	Recommendation, June 2012
css3-page	CSS Paged Media Module Level 3	Working Draft, March 2013
css3-selectors	Selectors Level 3	Recommendation, September 2011
css3-ui	CSS Basic User Interface Module Level 3 (CSS3 UI)	Working Draft, January 2012

### 1.3. Why to use CSS

HTML and XHTML is the base for all web pages on internet. CSS prevents repurposing of HTML tags to get certain visual effects.

CSS-driven web design makes writing HTML easier. The HTML-only approach requires a lot more code to achieve the same visual effects compared with CSS version.

#### Background

HTML was developed to structure information for easy comprehension like the <h1> tag indicates an important headline and the <h2> tag for a subheading of the <h1> tag.

But soon HTML tags were used to control appearance rather than structure information like the <blockquote> tag. The <table> tag was used to create columns of text and accurately place pictures and text on a page. But sometimes nesting a table within a table within a table was used making it very difficult to comprehend and maintain.

Hence, browser came out with new tags and attributes for making a page look better like <font> tag has specification for font color and typeface. Graphics were also used to achieve desired visual effects.

With introduction of CSS by W3C, HTML is used to structure and organize the content and CSS to make that content visually appealing thus, separating presentation of content from the structure and organization of content.

#### Advantages

**Effort and Time Reduction:** CSS substantially reduces the time and effort to compose not only a single document but for the whole website.

**Bandwidth and Space Reduction:** CSS is more versatile than HTML styling tags as its cascading property reduces the disk space for styling a website and also the bandwidth required.

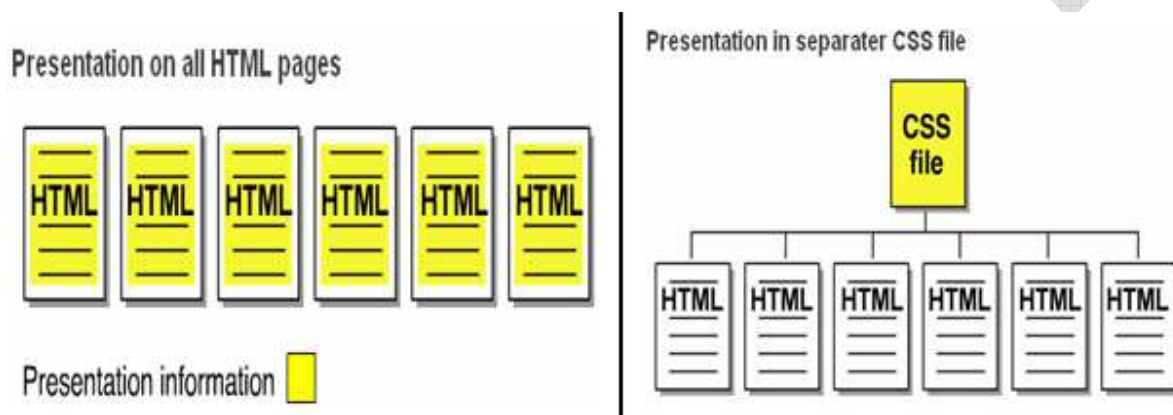
**Centralized Update** - Presentation and visual effects of a website can be centralized by using CSS.

**Independent:** CSS can be written independently of HTML.

**Multiple Device Support:** CSS allows content to be optimized for different devices like printer, mobile devices, screen, etc using the same HTML document.

**Caching:** CSS downloaded by browsers are cached hence, CSS file is downloaded only once fast performance of website.

Advantages are illustrated as



#### 1.4. [CSS Editors](#)

CSS can be written with a plain text editor like notepad but advanced text editors do useful things like code coloring or syntax highlighting, automatically completing the code and some editors are

**Notepad++:** It is open source editor which is free.

**Crimson Editor:** It is also a free editor.

**HTML-kit:** It is also a free editor.

**Adobe Dreamweaver:** It is commercial paid software.

#### 1.5. [A CSS Example](#)

This example introduces CSS and for which the HTML document is needed is given first and then followed by the CSS file.

**Webpage.htm:**

In your text editor of choice, enter the following markup

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1-strict.dtd">
```

```
<html lang="en">
<head>
<title>Vskills Example </title>
<link rel="stylesheet" type="text/css" href="style.css" />
</head>
<body>
<h1>Vskills Certification </h1>
<div class="list1">
<h2>CSS Designer</h2>
<p>CSS designer certification is used to impart CSS certification.</p>
</div>
<div class="list1">
<h2>HTML Certification</h2>
<p>HTML certification is used to impart HTML certification.</p>
</div>
</body>
</html>
```

**Style.css:**

```
body {
width: 650px;
margin: 0 auto;
background: #FFF;
font: 12px sans-serif;
}

h1 {
font-size: 20px;
}

h2 {
font-size: 16px;
margin-top: 0;
}

.list1 {
margin: 10px 10px;
padding: 20px 20px;
border: 1px solid #F00;
}
```

**Output:**

## Vskills Certification

### CSS Designer

CSS designer certification is used to impart CSS certification.

### HTML Certification

HTML certification is used to impart HTML certification.

As the figure shows that CSS can be used to stylize the various HTML elements on a web page thus simplifying the process of styling the same.

### 1.6. Custom CSS

Web browsers in which CSS works, is not same as different browsers are installed in different computers and each has different versions of same browser as well. Browser and their respective versions support different levels of CSS styling and for achieving the visual effects of CSS across all of them, work-around are used to get over the patchy support. Different browsers are

Browser	Rendering Engine	CSS 2.1 support
Google Chrome	WebKit	Full
Mozilla Firefox	Gecko	Full
Apple Safari	WebKit	Full
Internet Explorer	Trident	Full from IE 7
Opera	Presto	Full

### 1.7. Cross Browser Testing

There are a lot of web browsers for different operating systems and cross browser testing on some is discussed

**Windows-** It can only run one version of IE hence can test only in installed version like IE 6, IE 7 or IE 8 but IETester program can display a web page for different versions like in IE 5.5, IE 6, IE 7 and IE 8. Install other browsers like Firefox, Safari, Opera or Chrome.

**Mac -** Safari web browser is provided but for other web browser use a virtualization software like VMWare.

Many cross-browser testing services websites are on internet for doing this task.



## 1.8. Including CSS

CSS can be included in a web page in following four ways

**Embedded Style Sheets** - Embedded style sheets are included between `<style>` and `</style>` tags in an web page's head section as

```
<style type="text/css">
body { font: 12px sans-serif; }
</ style >
```

**External Style Sheets** - In it CSS is in a separate document which is linked to an web page by the `<link>` element with "rel" attribute having "stylesheet" as its value, "type" attribute having "text/css" as its value and "href" attribute having the path to CSS file. It is used as

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

- ✓ rel="stylesheet" tells the link type—in this case, a link to a style sheet.
- ✓ type="text/css" lets web browser know the type of data to get—a text file, having CSS.
- ✓ href points to the location of the external CSS file and has the value of a URL similar to the src attribute in an `<image>` tag.

**Import Rule** - It is similar to external style sheet but instead of `<link>` element, it uses "@import" with "url" attribute storing the path to the CSS file. It is used as

```
<style type="text/css">
@import url(style.css);
</ style >
```

It can attach external style sheets to an external style sheet but the `<link>` tag can't.

**Direct Style** - Inline styles with the style attribute are used to apply CSS rules directly to an element in an web as

```
<body style="font: 12px sans-serif;">
```

**What to choose** - External style sheets are preferred because it collects all style information in a single file that is link to a web page with just a single line of code. You can attach the same external style sheet to every page in your website, providing a unified design. It also makes a complete site makeover as easy as editing a single text file.

It also help web pages load faster as no byte-hogging HTML tables or `<font>` tags or internal CSS style code is used also, it is stored in cache or temporary space on computer for quick and repeated access.

Internal CSS usage is explained in the figure

```

<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN" "http://ww
<html xmlns="http://www.w3.org/1999/xhtml">

<head>
<meta http-equiv="Content-Type" content="text/html; charset=iso-8859-1" /
<title>demol.htm for CSS Discussion</title>
<style type="text/css">
<!--
body {
    background-color: #CEDCE3;
}
-->
</style>
</head>

<body>
<h2>Three paragraphs -- Heading 2 </h2>

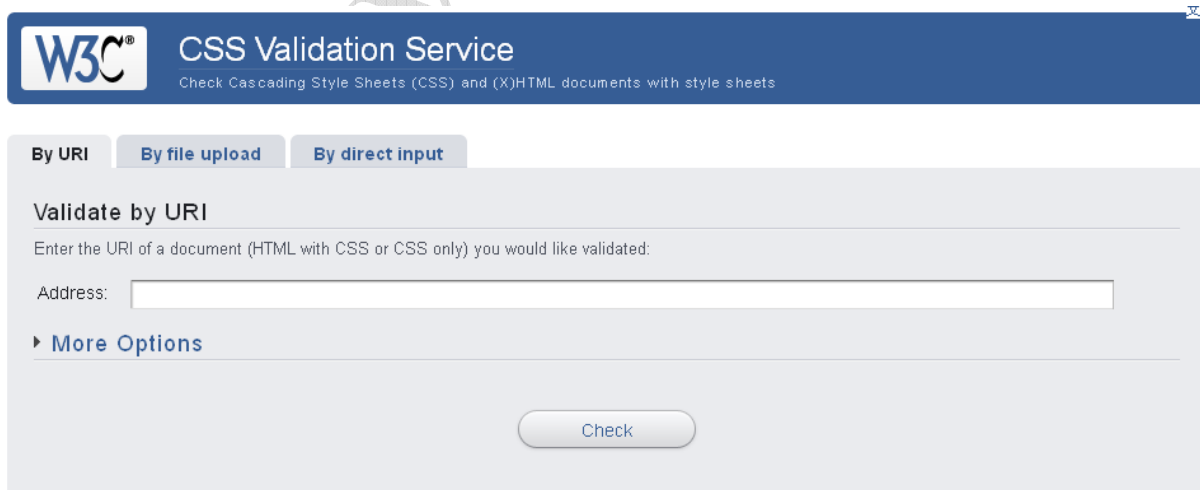
```

### 1.9. Validating CSS

CSS can be validated similar to HTML by CSS validator tool (<http://jigsaw.w3.org/css-validator/>) provided by W3C by typing the URL of a web page (or the address to an external CSS file), or uploading a CSS file or copy and pasting CSS code into a web form and submit it for validation.

Web browsers also have built-in error checking tools for examining CSS like in Mozilla Firefox click Error Console option in Tools menu to open CSS errors.

It is shown in the figure.



## 1.10. Browser-Specific Prefixes

CSS

[www.vskills.in](http://www.vskills.in)

### Self Assessment Questions

Q.1 CSS is used for

- A. Content Development
- B. Content tagging
- C. Content Styling
- D. None

Q.2 Only external CSS files can be used for styling a web page

- A. True
- B. False
- C. Can not say
- D. None

Q.3 CSS should be validated

- A. True
- B. False
- C. Can not say
- D. None

**Answers :** 1-C, 2-B,3-A