Lesson Plan: Coding - CSS Basics

Class Description

Control the appearance of a web page using CSS (Cascading Style Sheets). This class will start by explaining the relationship between HTML and CSS. Followed by a description of the general structure and language of CSS for styling HTML elements.

**Prerequisites:** Capable of using a web browser (i.e. Google Chrome, Internet Explorer, Safari or Firefox).

**Curriculum Track**

Software & Apps

**Audience**

Adults

**Course Length**

90 minutes

**Training Method**

Instructor-led hands-on

**Purpose**

This program will introduce the language of CSS and explain its relationship with a HTML for developing the appearance of a web page.

Equipment Requirements

Projector and projection screen; computers with internet access for the instructor and each participant; laser pointer (recommended)

Software Requirements

One of the following. Windows 7, Linux, OS X, a text editor or an in-browser code editor like Codepen.io

Material Requirements

Pens or pencils, activity sheets, handouts, participant surveys

**Learning Objectives**

At the end of the session, learners will:

* Know what CSS is and understand its relationship to HTML
* Discover what selectors, properties and values are
* Learn the difference between type, class and ID selectors
* Understand cascade, specificity and inheritance

**Assessment Technique(s)**

Successful completion of class activities

Content Outline

**Agenda (3 mins)**

* Outline the following topics that will be covered in class:
  + Terminology & Descriptions
  + CSS & HTML
  + Selectors, Declarations, Properties & Values
  + Type, Class & ID Selectors
  + Cascade, Specificity & Inheritance

**Topics, Talking Points, and Activities (85 mins.)**

* Terminology & Descriptions
  + Define the following terms for participants:
    - **CSS:** (Cascading Style Sheets) a language for describing the presentation of Web pages
    - **Selectors:** indicate which element a rule will be applied to
    - **Declarations:** indicate how the elements referred to in the selector should be styled
    - **Properties:** indicate the aspects of the element you want to change
    - **Values**: specify the settings you want to use for the chosen properties
    - **Type Selectors:** Matches element names
    - **Class Selectors:** Matches an element whose class attribute has a value that matches the one specified after the period symbol
    - **ID Selectors:** Matches an element whose id attribute has a value that matches the one specified after a hash symbol
    - **Cascade:** a top to bottom list of styles, the last written style takes precedence
    - **Inheritance:** allows property values to be applied to an element’s children

**ACTIVITY**: Have participants complete **Activity #1** on the *Activity Sheet*

* What is CSS and how does it relate to HTML
  + CSS is an acronym which stands for Cascading Style Sheet
  + CSS documents are saved with a .css file extension
  + CSS defines the visual style of a Web page
  + CSS is typically independent from an HTML document
  + CSS works by associating rules with HTML elements.
  + The CSS document is referenced in the <head> element of an HTML document
  + Live demo how to add styling to the logo
  1. Confirm the students have their Codepen account open
  2. Open <http://codepen.io/Meggen/pen/KaJJWe>
  3. Demonstrate how to add a <header> tag around the logo, nav list and first 3 lines of text
  4. Demonstrate how to add a background color to the header

Describe hexadecimal colors as a six-digit code that represents the amount of red, green and blue of a color and how they are allows preceded by a hash symbol.

**ACTIVITY**: Have participants complete **Activity #2** on the *Activity Sheet*

* What are selectors, declarations, properties and values
* Every CSS rule contains two parts: a selector and a declaration
* The declaration sits between a set of curly brackets
* Declaration consist of a property and a value
* Properties and values are separated by a colon
* The declaration ends with a semi-colon
  1. Selectors
     + Selectors indicate which element the rule applies to
     + You can apply same rule to more than one element
     + **Example: nav ul li {…}**
  2. Declarations
     + Declarations indicate how the element should be styled
     + They consist of 2 parts: property and value
     + **Example: nav ul li {font-family: Arial;}**
  3. Properties
     + Properties indicate the aspects of the element to be changed
     + **Example: nav ul li {font-family: Arial;}**
  4. Value
     + Values specify the settings for the chosen property
     + **Example:** **nav ul li {font-family: Arial;}**
* Outline the following steps for styling the navigation
  + 1. Open <http://codepen.io/Meggen/pen/KaJJWe>
    2. Illustrate how the opening **<nav>** tag has been moved up to include the logo
    3. Note how the **<li>…</li>** tags now wrap around the logo
    4. Demonstrate the styling of the <nav> element in the CSS box
    5. Click the **Save** button

**ACTIVITY:** Have participants complete **Activity #3** on the *Activity Sheet*

* The difference between type, class and ID selectors
* Define the following selectors
  1. Type Selectors
     + Type selectors target the element name
     + **Examples:** p, h1, h2 and h3
  2. Class Selectors
     + Class selectors are added between the character and right-angle bracket
     + A class in added to the HTML element beginning with the word class followed by and equal sign and a set of quotations
     + A class can be given any name but should make sense in the context
     + **Example: <header class=”logo”**>
     + Within the CSS document class selectors begin with a “.” before the name
     + **Example: .logo {…}**
     + You can apply the same class to multiple elements Class Selectors
  3. ID Selectors
     + ID selectors are added between the character and right-angle bracket
     + ID selectors are added to the HTML element beginning with the word id followed by and equal sign and a set of quotations
     + **Example: <header id=”logo-size”**>
     + ID selectors can be given any name but should make sense in the context
     + Within the CSS document class selectors begin with a “#” before the name
     + **Example: #logo-size{…}**
     + ID selectors can only be used once in an HTML document
* Demonstrate how to adjust the logo size

1. Open <http://codepen.io/Meggen/pen/Lxoyea>
2. Point to the first <li> element nested in <ul> element (on line 4)
3. Note how a *class* has been added to image link just after <a
4. Scroll to the bottom of the CSS panel in Codepen to show how to adjust the size of the logo
5. Inform the students they will be adjusting the size of the logo using CSS  
   (The text is also listed on the activity sheet.)
6. Click the **Save** button

**ACTIVITY:** Have participants complete **Activity #4** on the *Activity Sheet*

* What is a cascade, specificity and inheritance
* Define the following
  1. Cascade
     + Cascade refers to the downward order of rules within a CSS document
     + The last rule usually takes precedence
     + **Examples: p {font-family: Arial;}**

**p {font-family: Times;}**

* 1. Specificity
     + One selector can be more specific than other selectors
     + Specificity within a selector can be accomplished by adding more information
     + **Example: nav ul li a {color: white;} vs. nav a {color: blue;}**

*(The latter selector is ignored even though it is the last rule written in the cascade.)*

* 1. Inheritance
     + Inheritance refers to a family model of descending values
     + Inheritance begins with a parent property, such as a set within a <body> element
     + Child elements – anything nested within the <body> element - inherit the styles set for the parent element
     + A <p> element rests within a <body> element, therefore it is a child of the <body> element
     + **Example: body {font-family; Arial}**
     + The properties for <body> will be inherited by <p> (the child element), therefore the paragraph font will be Arial
* Demonstrate how specificity works

1. With <http://codepen.io/Meggen/pen/ggJROg> already open
2. Point to the first selector referring to nav (beginning on line 4) in the CSS panel
3. Scroll down to next 2 selectors to show how specificity develops within the cascade
4. Demonstrate how the last selector is ignored by adding **nav a {color: blue;}** to the end of the cascade in the CSS panel
5. Click the **Save** button

**ACTIVITY:** Have participants complete **Activity #5** on the *Activity Sheet*

**Wrap Up/Closing (3 mins.)**

* Highlight the upcoming HTML/CSS class and share the types of topics that will be covered
* Ask if there are questions and answer any that were “parked” during the session
* Thank participants for coming and ask them to complete the class survey before leaving