

# avionschool

**Lesson 2 HTML + CSS Fundamentals**

BATCH 4

NOVEMBER 10, 2020

Pitch

# Where do you see yourself in the web development spectrum?

<https://roadmap.sh/>

# What's the meaning of Semantics?

In JavaScript, consider your a function that takes a string parameter, and returns an <li> element with that string as its textContent. Would you need to look at the code to understand what the function did if it was called build('Peach'), or createLiWithContent('Peach')? (**naming, syntax**)

In CSS, consider styling a list with li elements representing different types of fruits. Would you know what part of the DOM is being selected with div > ul > li, or .fruits\_\_item? (**presentation, specificity**)



In HTML, for example, the <h1> element is a semantic element, which treats the text it wraps around as "a top level heading on your page." (**role, purpose**)

# **Semantics is meaning.**

When people say they want to make something more semantic, they simply want to make that thing more meaningful.

HTML is a *markup* language that gives *web content* structure and meaning.  
And naturally, *semantics* is a part of it by design.

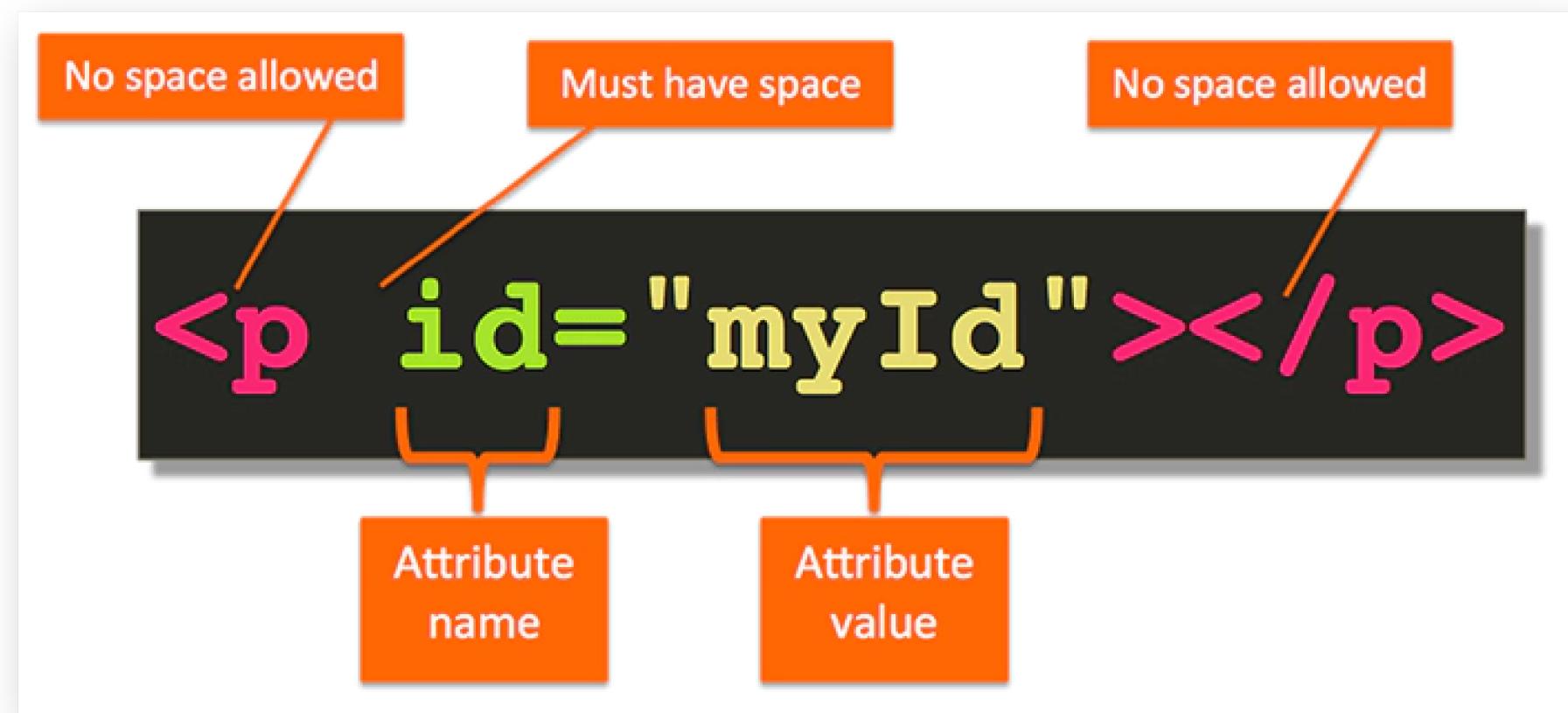
It's about using tags, class names, and ids that reinforce the meaning of the content within the tags.

How something looks has nothing to do with what it means. It's why we separate HTML and CSS. The former is for structure and meaning, while the latter is for how we present that structure and meaning.

*Semantic HTML* is about using tags in the right way.

# Anatomy of the HTML Element

- An element consists of the opening tag, closing tag, and content.



# Overview of Elements

<https://developer.mozilla.org/en-US/docs/Web/HTML/Element>

# Overview of Attributes

<https://developer.mozilla.org/en-US/docs/Web/HTML/Attributes>

# Anatomy of the HTML Page



```
<!DOCTYPE html>
<html>
<head>
  <meta charset='utf-8'>
  <meta http-equiv='X-UA-Compatible' content='IE=edge'>
  <title>Page Title</title>
  <meta name='viewport' content='width=device-width, initial-scale=1'>
  <link rel='stylesheet' type='text/css' media='screen' href='main.css'>
  <script src='main.js'></script>
</head>
<body>

</body>
</html>
```

<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">

# Why Semantic HTML?

- **Unambiguous, shared meaning within content, Development Experience**
- **Search and globalization, Search Engine Optimization(SEO)**
- **Accessibility, Accessible Rich Internet Applications (ARIA)**

You're not just giving someone a favor, it's your job.

... because *Divitis*

# Activity: HTML... email?

- For this project, your task is to mark up a letter that needs to be hosted on a university intranet. The letter is a response from a research fellow to a prospective PhD student concerning their application to the university.
- Get the letter here: <https://github.com/mdn/learning-area/blob/master/html/introduction-to-html/markup-a-letter-start/letter-text.txt>
- Get the css here: <https://github.com/mdn/learning-area/blob/master/html/introduction-to-html/markup-a-letter-start/css.txt>
- Using my email address: **maurus@avionschool.com**, send it to me here: <https://putsmail.com/tests/new>

# Activity: HTML... email?

## Block/structural semantics

- Use appropriate document structure including doctype, and `<html>`, `<head>` and `<body>` elements.
- In general, the letter should be marked up as an organization of headings and paragraphs, with the following exception. There is one top level heading (the "Re:" line) and three second level headings.
- Use an appropriate list type to mark up the semester start dates, study subjects, and exotic dances.
- Put the two addresses inside `<address>` elements. Each line of the address should sit on a new line, but not be in a new paragraph.

## Inline semantics

- The names of the sender and receiver (and *Tel* and *Email*) should be marked up with strong importance.
- The four dates in the document should have appropriate elements containing machine-readable dates.
- The first address and first date in the letter should have a class attribute value of *sender-column*. The CSS you'll add later will cause these to be right aligned, as it should be in the case in a classic letter layout.
- Mark up the five acronyms/abbreviations in the main text of the letter to provide expansions of each acronym/abbreviation.
- The six sub/superscripts should be marked up appropriately — in the chemical formulae, and the numbers 103 and 104 (they should be 10 to the power of 3 and 4, respectively).
- Try to mark up at least two appropriate words in the text with strong importance/emphasis.
- There are two places where the letter should have a hyperlink. Add appropriate links with titles. For the location that the links point to, you may use <http://example.com> as the URL.
- Mark up the university motto quote and citation with appropriate elements.

## The head of the document

- The character set of the document should be set as utf-8 using the appropriate meta tag.
- The author of the letter should be specified in an appropriate meta tag.
- The provided CSS should be included inside an appropriate tag.

# Activity: HTML... email?

## Example

The following screenshot shows an example of what the letter might look like after being marked up.

*Dr. Eleanor Gaye*  
Awesome Science faculty  
University of Awesome  
Bobtown, CA 99999,  
USA  
*Tel: 123-456-7890*  
*Email: no\_reply@example.com*

20 January 2016

*Miss Eileen Dover*  
4321 Cliff Top Edge  
Dover, CT9 XXX  
UK

### Re: Eileen Dover university application

Dear Eileen,

Thank you for your recent application to join us at the University of Awesome's science faculty to study as part of your PhD next year. I will answer your questions one by one, in the following sections.

#### Starting dates

We are happy to accommodate you starting your study with us at any time, however it would suit us better if you could start at the beginning of a semester; the start dates for each one are as follows:

- First semester: 9 September 2016
- Second semester: 15 January 2017
- Third semester: 2 May 2017

Please let me know if this is ok, and if so which start date you would prefer.

You can find more information about [important university dates](#) on our website.

#### Subjects of study

At the Awesome Science Faculty, we have a pretty open-minded research facility — as long as the subjects fall somewhere in the realm of science and technology. You seem like an intelligent, dedicated researcher, and just the kind of person we'd like to have on our team. Saying that, of the ideas you submitted we were most intrigued by are as follows, in order of priority:

#### Subjects of study

At the Awesome Science Faculty, we have a pretty open-minded research facility — as long as the subjects fall somewhere in the realm of science and technology. You seem like an intelligent, dedicated researcher, and just the kind of person we'd like to have on our team. Saying that, of the ideas you submitted we were most intrigued by are as follows, in order of priority:

1. Turning H<sub>2</sub>O into wine, and the health benefits of Resveratrol (C<sub>14</sub>H<sub>12</sub>O<sub>3</sub>.)
2. Measuring the effect on performance of funk bassplayers at temperatures exceeding 30°C (86°F), when the audience size exponentially increases (effect of 3 × 10<sup>3</sup> increasing to 3 × 10<sup>4</sup>.)
3. HTML and CSS constructs for representing musical scores.

So please can you provide more information on each of these subjects, including how long you'd expect the research to take, required staff and other resources, and anything else you think we'd need to know? Thanks.

#### Exotic dance moves

Yes, you are right! As part of my post-doctorate work, I *did* study exotic tribal dances. To answer your question, my favourite dances are as follows, with definitions:

##### Polynesian chicken dance

A little known but *very* influential dance dating back as far as 300BC, a whole village would dance around in a circle like chickens, to encourage their livestock to be "fruitful".

##### Icelandic brownian shuffle

Before the Icelanders developed fire as a means of getting warm, they used to practice this dance, which involved huddling close together in a circle on the floor, and shuffling their bodies around in imperceptibly tiny, very rapid movements. One of my fellow students used to say that he thought this dance inspired modern styles such as Twerking.

##### Arctic robot dance

An interesting example of historic misinformation, English explorers in the 1960s believed to have discovered a new dance style characterised by "robotic", stilted movements, being practiced by inhabitants of Northern Alaska and Canada. Later on however it was discovered that they were just moving like this because they were really cold.

For more of my research, see my [exotic dance research page](#).

Yours sincerely,

Dr Eleanor Gaye

University of Awesome motto: "Be awesome to each other." -- *The memoirs of Bill S Preston, Esq*

# CSS: Thinking Inside the Box



HTML

Think of it like the structure and foundation of the house



HTML WITH CSS

Now we're starting to add the paint, better furniture, new material

# CSS

## DEFINITION

- Cascading Style Sheets
- Create rules to specify content design

## EXAMPLES

- Making background blue
- Paragraphs should be in gray, Helvetica typeface
- h1 headings should be in blue, italic, Times typeface

# Box Model

## KEY TO UNDERSTANDING

- Imagine every HTML element has an invisible box

### The Cottage Garden

The *cottage garden* is a distinct style of garden that uses an informal design, dense plantings, and a mixture of ornamental and edible plants.

The Cottage Garden originated in [England](#) and its history can be traced back for centuries, although they were re-invented in 1870's England, when stylized versions were formed as a reaction to the more structured and rigorously maintained [English estate gardens](#).

The earliest cottage gardens were more practical than their modern descendants, with an emphasis on vegetables and herbs, along with some fruit trees.

### The Cottage Garden

The [cottage garden](#) is a distinct style of garden that uses an informal design, dense plantings, and a mixture of ornamental and edible plants.

The Cottage Garden originated in [England](#) and its history can be traced back for centuries, although they were re-invented in 1870's England, when stylized versions were formed as a reaction to the more structured and rigorously maintained [English estate gardens](#).

The earliest cottage gardens were more practical than their modern descendants, with an emphasis on vegetables and herbs, along with some fruit trees.

# Anatomy of CSS Selector

## SELECTORS

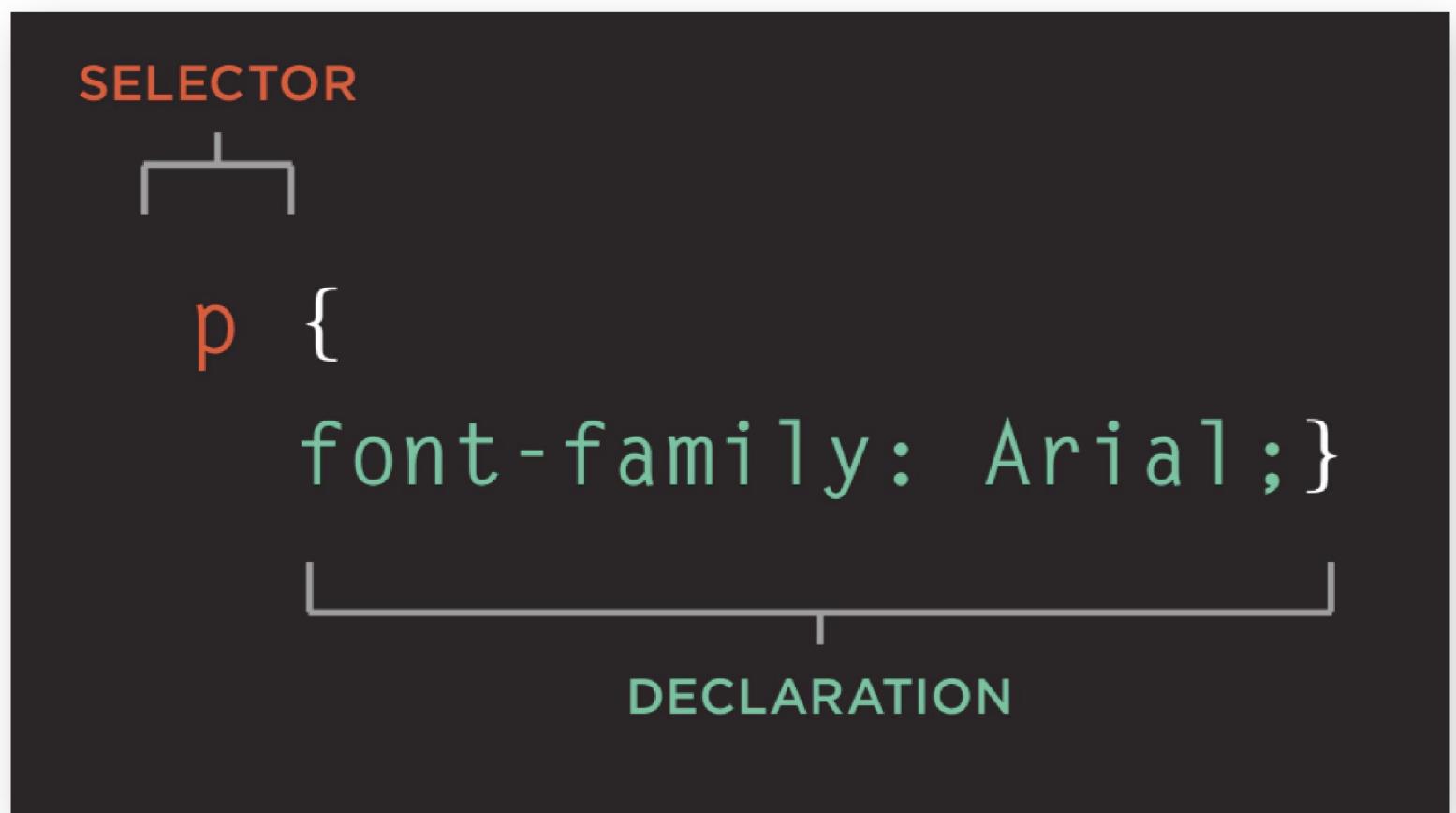
- Which element the rule applies to

Note:

- The same rule can apply to multiple elements if you comma separate element names

## DECLARATIONS

- How the elements referred to in the selector should be styled
- Split into two:
  - Property
  - Value



# Block & Inline Elements

## BLOCK LEVEL ELEMENTS (RED)

- Starting on a new line
- Examples:
  - <h1>-<h6>
  - <p>
  - <div>

## INLINE ELEMENTS (GREEN)

- Flow within text
- Does not start a new line
- Examples:
  - <b>
  - <i>
  - <img>
  - <span>

### The Cottage Garden

The *cottage garden* is a distinct style of garden that uses an informal design, dense plantings, and a mixture of ornamental and edible plants.

The Cottage Garden originated in [England](#) and its history can be traced back for centuries, although they were re-invented in 1870's England, when stylized versions were formed as a reaction to the more structured and rigorously maintained [English estate gardens](#).

The earliest cottage gardens were more practical than their modern descendants, with an emphasis on vegetables and herbs, along with some fruit trees.

# Properties & Values

## PROPERTIES

- The aspects of the element you want to change
- i.e, color, font, width, height

## VALUES

- Specify the settings for your design
- i.e, specifying the color values

```
h1, h2, h3 {  
    font-family: Arial;  
    color: yellow;}
```



# Using External CSS

- □ ×

```
1 <!DOCTYPE html>
2 <html>
3   <head>
4     <title>Using External CSS</title>
5     <link href="css/styles.css" type="text/css" rel="stylesheet" />
6   </head>
7   <body>
8     <h1>Potatoes</h1>
9     <p>
10       There are dozens of different potato varieties.
11       They are usually described as early, second early and maincrop.
12     </p>
13   </body>
14 </html>
```

# CSS Selectors

- □ ×

```
1 /* 1. Universal Selector - Applies to all elements in document*/
2 *
3
4 }
5
6 /* 2. Type Selector - Matches element name*/
7 h1 {
8
9 }
10
11 /* 3. Class Selector - Matches class attribute*/
12 .class {
13
14 }
15
16 /* 4. ID Selector - Matches id attribute*/
17 #id {
18
19 }
```