Basics of the Web

* The Web
* HTML
* URLs
* HTTP
* Web Applications

# Key Points

**1 - What a Web Page is**

A web page is a text document written in a language called HTML. Web browsers read these documents, and then interpret and display them.

**2 - How Coding Works**

Coding happens when programmers write text in a language that a computer can understand. The computer can then follow the instructions the programmer wrote.

**3 - Computers are Stupid**

Programmers need to write exactly the way a computer understands (also known as writing with correct "syntax").

For example, if you forget to close a <b> tag, the computer won't be able to figure out what you had intended to make bold. This "stupidity" can be very frustrating, but it also gives programmers incredible power: if you know how to talk to a computer than you can tell it to do anything you want.

**4 - Programmers Can't Remember Everything**

There are too many details to keep everything in your head. And that's okay. If you forget how to make text italic in HTML, you can always just look it up.

**5 - Basic HTML Vocabulary**

You will be using HTML in the next few lessons, so it will be helpful if you're comfortable with the jargon.

* **Tag**: An HTML tag is always contained within angled brackets. Most tags have an opening tag (<p> for example) and a closing tag, (</p>). Some tags (called "void" tags) do not require a closing tag (like the <br> tag).
* **Element**: An HTML element refers to everything within a set of opening and closing tags.
* **Attribute**: This is a property of an HTML element. For example, to set the hrefattribute of an anchor tag to the Udacity URL, you would write<a href="www.udacity.com">

# The World Wide Web

HTML – HyperText Markup Language

Hyper Links – connects pages

Internet invented in 1990s

# Major Pieces of the Web

You > PC + Browser > The Internet > Servers

# HTML

Text content: what you see

Markup: What it looks like

References to other documents: images, videos, etc.

Links to other pages

# HTML Markup

Tags: <stuff> </stuff>

Element: <name> Contents </name>

<b> **bold** </b>

<em> *emphasis* </em>

# HTML Attributes

<TAG ATTR=”value”> contents </TAG>

Anchor (makes links): <a href=”www.reddit.com”> derp </a>

Images: <img src=”url” alt=”text”>

Void tags (like img) do not have content so they don’t have closing tags.

Line Break (inline): <br>

Paragraph (block): <p> content </p>

# HTML Documents

<!DOCTYPE HTML> - this is what the page is

<html> - surrounds entire document

<head> - includes metadata, Java, CSS, etc

<title>Title!</title> - Appears in top of browser

</head>

<body> - actual stuff in the document

<b>content</b>

</body>

</html>

# Important Concepts

**How the Web Works**

The web is a bunch of computers that communicate with each other. When a person goes to a web page like www.google.com, their computer sends a HTTP Request to a server. The server finds the appropriate HTML document and sends it back to the user's computer where a web browser interprets the page and displays it on the user's screen. [This video](https://www.udacity.com/course/viewer#!/c-nd000/l-3873828673/e-48329854/m-48480496)does a good job of explaining.

**HTML**

HTML stands for Hypertext Markup Language. HTML documents form the majority of the content on the web. HTML documents contain text content which describes "what you see" and markup which describes "how it looks". [This video](https://www.udacity.com/course/viewer#!/c-nd000/l-3873828673/m-48724340) gives a good overview.

**Tags and Elements**

HTML documents are made of HTML **elements**. When writing HTML, we tell browsers the type of each element by using HTML **tags**. [This video](https://www.udacity.com/course/viewer#!/c-nd000/l-3873828673/m-48723444) explains the distinction well.

**Why Computers are Stupid**

Computers are stupid because they interpret instructions literally. This makes them very unforgiving since a small mistake by a programmer can cause huge problems in a program.

**Inline vs Block Elements**

HTML elements are either **inline** or **block**. Block elements form an "invisible box" around the content inside of them.