

## For Students: Student Resource

### ◆ Computer Languages

Computer languages are ways of communicating with a computer. Just like a spoken or written language, computer languages have semantics (the meaning of the words, expressions, codes) and follow rules of syntax (the correct structure, form, or order of words, expressions, or codes) and grammar.

There are different kinds of computer languages. They include programming language, command language, markup language, and query language. HTML stands for Hypertext Markup Language, and is a kind of markup language.



### ◆ HTML

HTML, Cascading Style Sheets (CSS), and JavaScript are the three languages that together make up the World Wide Web. HTML is the standard markup language for creating web pages and applications. HTML describes the structure of a web page and its content.

### ◆ Elements

HTML is made up of elements, which describe the structure and appearance of a web page. HTML elements are contained in tags, which are written with angle brackets (<element>). Most elements require a pair of tags: a start tag (<element>) and an end tag (</element>). The content contained between the start tag and end tag is what will be affected by the element being used. Some elements, such as <br> (which inserts a line break) and <hr> (which inserts a horizontal line) do not require an end tag.

### ◆ Attributes

Attributes can be added to element tags to add more information to an element. A style attribute can be added to define the placement, color, size, or other characteristic or text or other content. The style attribute is a way to apply a Cascading Style Sheets (CSS) rule to a specific HTML element. Style attributes can be added to an element like this:

```
<tagname style="property:value;">
```

For instance, the <p> tag surrounds a paragraph of text. It defines that text as a paragraph and will create paragraph spacing above and below the text. It would be used like this:

### Writing in HTML

`<p>This is a paragraph. It should be spaced separately from the text above and below. The paragraph needs an opening tag and a closing tag.</p>`

`<p>This is a new paragraph. It is separate from the text above.</p>`

In a web browser, this text would appear like this:

This is a paragraph. It should be spaced separately from the text above and below. The paragraph needs an opening tag and a closing tag.

This is a new paragraph. It is separate from the text above.

Style attributes could be added to this text to change things like the color, size, font, or placement of the text. This would be done like this:

`<p style="color:red;">This is a paragraph. It should be spaced separately from the text above and below.</p>`

`<p style="color:blue;" "font-size:160%;" "text-align:right;" "background-color:yellow;">This is a new paragraph. It is separate from the text above.</p>`

In a web browser, this text would appear like this:

This is a paragraph. It should be spaced separately from the text above and below. The paragraph needs an opening tag and a closing tag.

This is a new paragraph. It is separate from the text above.

## ◆ Starting a Web Page

The basic structure of a web page is described by HTML. Here is the source code for a very basic website containing the website's title (which appears at the top of a web browser window) and some text.

```
<html>
<head> <title>Page Title</title> </head>
<body>
<h1>Header text</h1>
<p>This is a paragraph of text.</p>
<p>This is the next paragraph of text.</p>
</body>
</html>
```

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This basic code would result in this visual:

Page Title
<h1>Header text</h1> <p>This is a paragraph of text.</p> <p>This is the next paragraph of text.</p>

Elements used:

`<html>`: begins and ends an HTML document

`<head>`: the header; contains metadata for the site and is placed between the HTML tag and the BODY tag; contains the TITLE element

`<title>`: the title of the website; appears at the top of a browser window

`<body>`: contains the main content of the webpage

`<h1>`: a level 1 header (the largest size); `<h6>` is the smallest header size. Tags are wrapped around text.

`<p>`: a paragraph of text; separated by other paragraphs by a space above and below

As you can see in the HTML code above, each tag that is opened is closed once it is no longer needed. Some elements are nested inside other elements. The HTML tag contains the entire document. The BODY tag contains all the main content of the site.

If you would like to learn more HTML for future use, you can check out w3schools HTML5 Tutorial at [www.w3schools.com/html/default.asp](http://www.w3schools.com/html/default.asp).



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**For Students:**  
**Student Worksheet**

Deciding how a web site should look requires the web designer to make a lot of decisions. Web designers are often given the content that needs to be included by their client, but where that content goes and what it looks like are all choices for the designer to make. In this activity, you will create your own website design for the content below.

**◆ Design**

You are a web designer. Your client is a local dog walking company that needs a website design that is visually appealing and contains the following:

Text:

Pup Walkers

Serving the community since 2018.

We are a group of responsible, hard-working, dog lovers who are here to help with your pup. We are available seven days a week to walk your dog when you can't.

Call us today to schedule your pup's walk!

Design Elements:

A header title (Pup Walkers)

A logo, a small circle with a dog inside (logo.jpg)

A photo of a happy dog (dog.jpg)

A link around the "Call us today" text to a page file called contact.html

Think about how the content should be organized. What information is the most important? What would look best? How can you make sure visitors to your website get the information they need? You can make decisions about colors, the size and placement of text, and the size and placement of images. Use the following page and the art supplies provided to draw the design for your website.

For tips on good website design, check out the following articles:

[5 Crucial Web Design Tips for a Professional Site \(https://www.wix.com/blog/2017/10/5-design-tips-for-a-professional-site/\)](https://www.wix.com/blog/2017/10/5-design-tips-for-a-professional-site/)

[27 Research-Backed Web Design Tips: How to Design a Website That Works \(https://www.orbitmedia.com/blog/web-design-tips/\)](https://www.orbitmedia.com/blog/web-design-tips/)

[5 Tips for Creating a Beautiful Business Website \(https://www.inc.com/dan-scalco/5-website-design-tips-all-small-business-owners-should-consider.html\)](https://www.inc.com/dan-scalco/5-website-design-tips-all-small-business-owners-should-consider.html)

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***For Students:  
Student Worksheet (continued)***

A large, empty rectangular box with a black border, intended for students to write their answers or work during the lesson.

**Writing in HTML**

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**For Students:**  
**Student Worksheet (continued)**

◆ **Code: Write in HTML**

Choose from the HTML code below to create the source code for your webpage. Read and reference the Student Resource sheet for help in how to write the code. Remember that the basic set up of a webpage is:

```
<html>
<head><title>Page Title</title></head>
<body>
<h1>Header text</h1>
<p>This is a paragraph of text.</p>
<p>This is the next paragraph of text.</p>
</body>
</html>
```

**Additional HTML Elements:**

Bold text: `<b>text</b>`

Center text: `<center>text or image</center>`

Underline text: `<i>text</i>`

Image: ``

Link: `<a href="pagename.html">Name of Page</a>`

**Style Attributes:**

Style attributes are added to HTML element tags in this way: `<tagname style="property:value;">`

**Properties:**

color: (Most common colors can be called out by name: Black, blue, brown, gray, green, orange, pink, purple, white, yellow, etc.)

text-align: (center, left right)

background-color: (Most common colors can be called out by name: Black, blue, brown, gray, green, orange, pink, purple, white, yellow, etc.)

size: (can be designated by percentage)

font-size: (can be designated by percentage)

**Writing in HTML**

***For Students:  
Student Worksheet (continued)***

```
<html>
```

```
</html>
```

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***For Students:  
Student Worksheet (continued)***

◆ **Swap: Read in HTML**

With your partner, swap the code for your website, but don't show them the drawing of your design. Reading through your partner's HTML source code, you will act as a web browser and translate the code into the visual webpage it describes. In the space below, draw what their website looks like based on the code provided. Then, swap sketches with your partner and compare them to the web designer's original sketch.

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***For Students:  
Reflection***

1. How did the sketches you and your partner made from the HTML code compare to the original sketch the web designer made? If there were differences, can you find what caused them? Was there a problem in how the code was written or in how it was read?
  
2. What thoughts or ideas drove the design decisions you made? Did you and your partner make different design decisions?
  
3. Are there elements of your partner's design that you liked? If you were to redesign your page, what would you change?
  
4. HTML is a type of computer language. What does it have in common with a spoken or written language like English?

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