

HTML5 Basics

Hypertext Markup Language

HTML





HTML - Hypertext Markup Language

Derived from SGML (Standard Generalized Markup Language)

HyperText Markup Language

Clear text, case insensitive

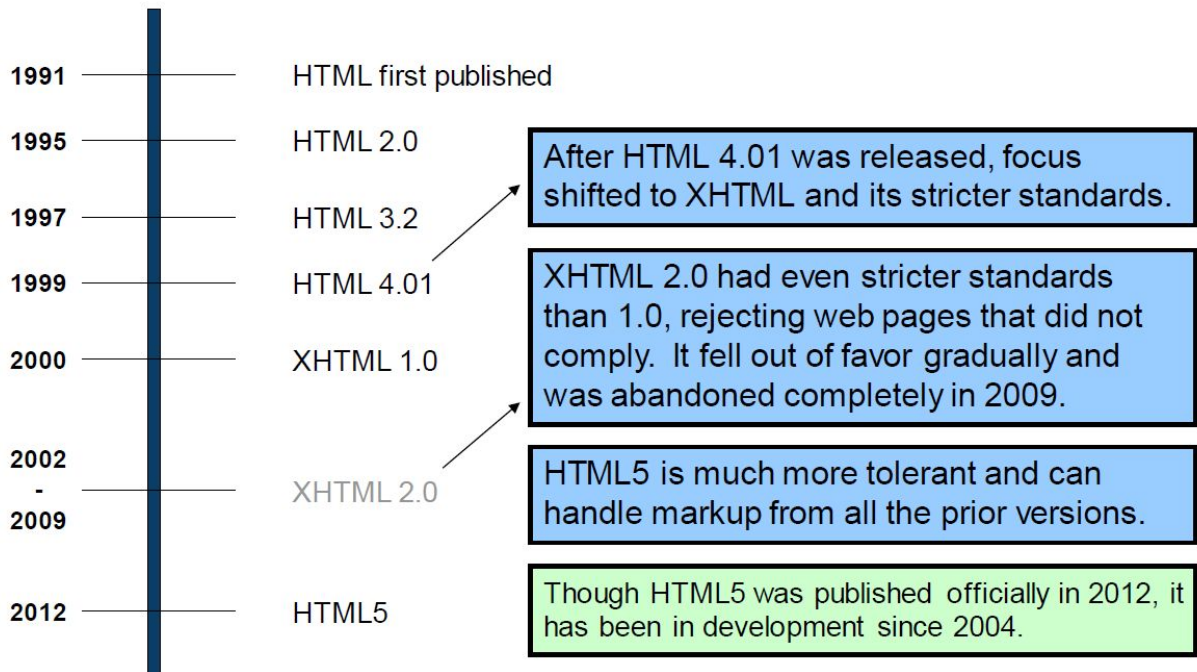
Ignores white space

Comprised of tags `<tag />`

Open tags and closed tags



History of HTML





What is HTML5?

- HTML5 is the newest version of HTML, only recently gaining partial support by the makers of web browsers.
- It incorporates all features from earlier versions of HTML, including the stricter XHTML.
- It adds a diverse set of new tools for the web developer to use.
- It is still a work in progress. No browsers have full HTML5 support. It will be many years – perhaps not
- until 2018 or later - before being fully defined and supported.



HTML - Fundamentals

- Open tags
 - `<name attributes/>`
 - `<hr/>`, `
`
 - ``
- Closed tags
 - `<name attributes> stuff </name>`
 - `text to be bolded`
 - `<h1>level 1 heading text</h1>`
- Comments
 - `<!-- comment text -->`



HTML Syntax

- **Document content** is what the users sees on the page, such as headings and images.
- **Tags** are the HTML codes that control the appearance of the document content.
 - –**tag** is the name of the HTML tag
 - –**attributes** are properties of the tag
 - –**document content** is actual content that appears in the Web page
- Tags can be one-sided or two-sided.
 - –two-sided tags contain an opening tag **** that tells the browser to turn on a feature and apply it to the content that follows, and a closing tag **** that turns off the feature
 - –one-sided tags are used to insert noncharacter data into the Web page, such as a graphic image or video clip **<tag attribute>**
- Tags are not case sensitive. The current standard is to display all tags in lowercase letters.



HTML – Fundamentals

Document Structure

< HTML >

Header

Body

< / HTML >



First Look at HTML5

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

In HTML5, there is just one possible DOCTYPE declaration and it is simpler:

```
<!DOCTYPE html>
```

Just 15 characters!

The DOCTYPE tells the browser which type and version of document to expect. This should be the last time the DOCTYPE is ever changed. From now on, all future versions of HTML will use this same simplified declaration.



The <html> Element

This is what the <html> element looked like in XHTML:

```
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en"
      lang="en">
```

Again, HTML5 simplifies this line:

```
<html lang="en">
```

The **lang** attribute in the <html> element declares which language the page content is in. Though not strictly required, it should always be specified, as it can assist search engines and screen readers.

Each of the world's major languages has a two-character code, e.g. Spanish = "es", French = "fr", German = "de", Chinese = "zh", Arabic = "ar".



The <head> Section

Here is a typical XHTML <head> section:

```
<head>
  <meta http-equiv="Content-type" content="text/html; charset=UTF-8" />
  <title>My First XHTML Page</title>
  <link rel="stylesheet" type="text/css" href="style.css" />
</head>
```

And the HTML5 version:

```
<head>
  <meta charset="utf-8">
  <title>My First HTML5 Page</title>
  <link rel="stylesheet" href="style.css">
</head>
```

Notice the simplified character set declaration, the shorter CSS stylesheet link text, and the removal of the trailing slashes for these two lines.



Basic HTML5 Web Page

Putting the prior sections together, and now adding the `<body>` section and closing tags, we have our first complete web page in HTML5:


```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="utf-8">
  <title>My First HTML5 Page</title>
  <link rel="stylesheet" href="style.css">
</head>
<body>
  <p>HTML5 is fun!</p>
</body>
</html>
```

Let's open this page in a web browser to see how it looks...

Creating an HTML Document

It's always a good idea to plan the appearance of your Web page before you start writing code.

heading 1 → **MR. DUBÉ'S CHEMISTRY CLASSES**

image → 

horizontal line →

paragraph → *Welcome to Mr. Dubé's chemistry class. I hope you will enjoy this class and learn more about chemistry in the world around you.*

list → **Chemistry Classes**
Conceptual Chemistry – an introductory course requiring basic math but no algebra
Chemistry I – an introductory course requiring solid algebra skills
Advanced Placement Chemistry – an advanced course requiring a grade of A or B in Chemistry I and designed for students who want to prepare for the AP Chemistry exam (which can count toward college credits)

heading 3 → **Class Policies**

bold and italic text → **Grading**
Homework will be given daily, is due at the beginning of the period the school day after it was assigned, and will be worth 5 to 10 points. A period quiz consisting of 1 or 2 homework problems from the past week may be given in lieu of collecting homework.
Tests and quizzes will be used to check your understanding of concepts, procedures, and information. Quizzes will be worth 10 to 25 points each and will be given at least once a month. Tests will be worth up to 100 points each and will be given 2 or 3 times per quarter.
Labs will be worth 10 to 30 points and will be graded on safety, participation, and write-up. I expect neat handwritten or typed reports. I'll also assign *small research projects* throughout the semester.
You must *make up* tests and quizzes the day you return, and you must submit missed homework assignments and labs within two days for every day you missed. Failure to make up work within these time frames will result in a 0 for that test or assignment.



Heading Levels

This figure illustrates the general appearance of the six heading styles. Your browser might use slightly different fonts and sizes.

This is an h1 heading

This is an h2 heading

This is an h3 heading

This is an h4 heading

This is an h5 heading

This is an h6 heading



Entering Heading Tags and Text

```
<html>
<head>
<title>Mr. Dube's Chemistry Classes</title>
</head>

<body>
<h1 align="center">Mr. Dube's Chemistry Classes</h1>
<h2 align="center">at Robert Service High School</h2>
<h2>Chemistry Classes</h2>
<h2>Class Policies</h2>
<h3>Grading</h3>
<h3>Appointments</h3>
<h3>Safety</h3>
</body>
</html>
```

heading tags

As of HTML 3.2, the heading tag can contain additional attributes, one of which is the alignment attribute.



Headings As They Appear in the Browser

`<h1>` → **Mr. Dube's Chemistry Classes**

`<h2>` → **at Robert Service High School**

`<h2>` → **Chemistry Classes**

`<h2>` → **Class Policies**

`<h3>` → **Grading**

`<h3>` → **Appointments**

`<h3>` → **Safety**

Entering Paragraph Text

```
<html>
<head>
<title>Mr. Dube's Chemistry Classes</title>
</head>
```

```
<body>
<h1 align="center">Mr. Dube's Chemistry Classes</h1>
<h2 align="center">at Robert Service High School</h2>
```

Welcome to Mr. Dube's web site. I hope you will use this site to learn more about your class, my expectations, and chemistry in the world around you.

```
<h2>Chemistry Classes</h2>
```

```
<h2>Class Policies</h2>
```

```
<h3>Grading</h3>
```

```
<h3>Appointments</h3>
```

```
<h3>Safety</h3>
```

```
</body>
```

```
</html>
```

If you are using a test editor like NotePad, the text might not wrap to the next line automatically.

Selecting the Word Wrap command within NotePad will allow you to see all the text on your screen.



Additional Paragraphs


adding
paragraphs

```
<body>
<h1 align="center">Mr. Dube's Chemistry Classes</h1>
<h2 align="center">at Robert Service High School</h2>
welcome to Mr. Dube's web site. I hope you will use this site to learn more about your class,
my expectations, and chemistry in the world around you.
<h2>Chemistry Classes</h2>
<h2>Class Policies</h2>
<h3>Grading</h3>
Homework will be given daily, is due at the beginning of the period the school day after it was
assigned, and will be worth 5 to 10 points. A periodic quiz consisting of 1 or 2 homework
problems from the past week may be given in lieu of collecting homework.

Tests and quizzes will be used to check your understanding of concepts, procedures, and
information. Quizzes will be worth 10 to 25 points and will be given at least once a month.
Tests will be worth up to 100 points and will be given 2 or 3 times a quarter.


Labs will be worth 10 to 30 points and will be graded on safety, participation, and write-up. I
expect neat handwritten or typed reports. I'll also assign small research projects throughout
the semester.

You must make up missed tests and quizzes the day you return, and you must submit missed
homework assignments and labs within two days for every one day you missed. Failure to make up
work within these time frames will result in a 0 for that test or assignment.
<h3>Appointments</h3>
I can meet with you before or after school. I will also be in my room (H113) during most lunch
hours. Please do not hesitate to stop in if you need extra help -- do not wait! Chemistry is a
building subject, and it is very hard to catch up once you fall behind.
<h3>Safety</h3>
we will be doing lab work nearly every week. Because of the potential danger of any lab
exercise, I will hold you to the highest standards of behavior, and will remove you from the
class if you pose a threat to yourself or other students.
</body>
```



**Remember:
HTML formats
text only through
the use of tags
and ignores such
things as extra
blank spaces,
blank lines, or
tabs.**

**four grading
paragraphs
are not
separated**



Mr. Dube's Chemistry Classes

at Robert Service High School

Welcome to Mr. Dube's Web site. I hope you will use this site to learn more about your class, my expectations, and chemistry in the world around you.

Chemistry Classes

Class Policies

Grading

Homework will be given daily, is due at the beginning of the period the school day after it was assigned, and will be worth 5 to 10 points. A periodic quiz consisting of 1 or 2 homework problems from the past week may be given in lieu of collecting homework. Tests and quizzes will be used to check your understanding of concepts, procedures, and information. Quizzes will be worth 10 to 25 points and will be given at least once a month. Tests will be worth up to 100 points and will be given 2 or 3 times a quarter. Labs will be worth 10 to 30 points and will be graded on safety, participation, and write-up. I expect neat handwritten or typed reports. I'll also assign small research projects throughout the semester. You must make up missed tests and quizzes the day you return, and you must submit missed homework assignments and labs within two days for every one day you missed. Failure to make up work within these time frames will result in a 0 for that test or assignment.



Block Level Elements

A block-level element always starts on a new line and takes up the full width available (stretches out to the left and right as far as it can).

Block level elements in HTML:

[<address>](#)

[<article>](#)

[<aside>](#)

[<blockquote>](#)

[<canvas>](#)

[<dd>](#)

[<div>](#)

[<dl>](#)

[<dt>](#)

[<fieldset>](#)

[<figcaption>](#)

[<figure>](#)

[<footer>](#)

[<form>](#)

[<h1>-<h6>](#)

[<header>](#)

[<hr>](#)

[](#)

[<main>](#)

[<nav>](#)

[<noscript>](#)

[](#)

[<output>](#)

[<p>](#)

[<pre>](#)

[<section>](#)

[<table>](#)

[<tfoot>](#)

[](#)

[<video>](#)



Inline Elements

An inline element does not start on a new line and only takes up as much width as necessary.

`<a>`

`<abbr>`

`<acronym>`

``

`<bdo>`

`<big>`

`
`

`<button>`

`<cite>`

`<code>`

`<dfn>`

``

`<i>`

``

`<input>`

`<kbd>`

`<label>`

`<map>`

`<object>`

`<q>`

`<samp>`

`<script>`

`<select>`

`<small>`

``

``

`<sub>`

`<sup>`

`<textarea>`

`<time>`

`<tt>`

`<var>`



HTML - Unordered List

Unordered list

```
<ul>
```

```
<li>apples</li>
```

```
<li>bananas</li>
```

```
<li>grapes</li>
```

```
<li>strawberries</li>
```

```
</ul>
```

Unordered list - Display on browser

- apples
- bananas
- grapes
- strawberries



HTML - Ordered List

Ordered list

```
<ol type='i' start='2'>
```

```
<li>apples</li>
```

```
<li>bananas</li>
```

```
<li>grapes</li>
```

```
<li>strawberries</li>
```

```
</ol>
```

Ordered list -Display on browser

II. apples

III. bananas

IV. grapes

V. strawberries



List types

Value	Description (Unordered List Types)
disc	Sets the list item marker to a bullet (default)
circle	Sets the list item marker to a circle
square	Sets the list item marker to a square
none	The list items will not be marked

Type	Description(Ordered List Types)
type="1"	The list items will be numbered with numbers (default)
type="A"	The list items will be numbered with uppercase letters
type="a"	The list items will be numbered with lowercase letters
type="I"	The list items will be numbered with uppercase roman numbers
type="i"	The list items will be numbered with lowercase roman numbers



Nested HTML List

```
<ul>
  <li>Coffee</li>
  <li>Tea
    <ul>
      <li>Black tea</li>
      <li>Green tea</li>
    </ul>
  </li>
  <li>Milk</li>
</ul>
```

A Nested List

- Coffee
- Tea
 - Black tea
 - Green tea
- Milk



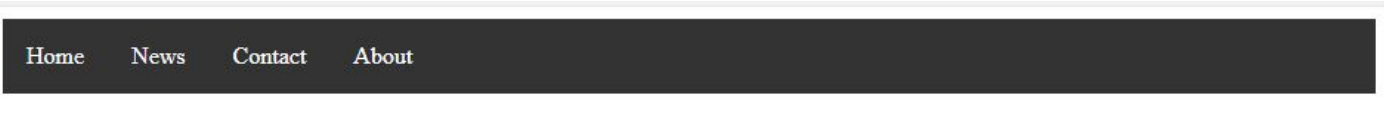
Horizontal HTML List

```
<!DOCTYPE html>
<html>
  <head>
    <style>
      ul { list-style-type: none; margin: 0; padding: 0; overflow: hidden;
        background-color: #333333; }

      li { float: left; }

      li a { display: block; color: white; text-align: center; padding: 16px;
        text-decoration: none; }

      li a:hover { background-color: #111111; }
    </style>
  </head>
  <body>
    <ul>
      <li><a href="#home">Home</a></li>
      <li><a href="#news">News</a></li>
      <li><a href="#contact">Contact</a></li>
      <li><a href="#about">About</a></li>
    </ul>
  </body>
</html>
```

A horizontal navigation bar with a dark gray background and a thin white border. It contains four white text links: "Home", "News", "Contact", and "About", spaced evenly across the bar.

Home News Contact About



HTML Description Lists

HTML also supports description lists.

A description list is a list of terms, with a description of each term.

The **<dl>** tag defines the description list, the **<dt>** tag defines the term (name), and the **<dd>** tag describes each term:

```
<dl>
  <dt>Coffee</dt>
  <dd>- black hot drink</dd>

  <dt>Milk</dt>
  <dd>- white cold drink</dd>
</dl>
```



Tables

```
<TABLE>
  <CAPTION ALIGN="bottom">Class Grades</CAPTION>
  <TR>
    <TH>Student</TH>
    <TH>Grade</TH>
  </TR>
  <TR>
    <TD>Tom</TD>
    <TD>B+</TD>
  </TR>
  <TR>
    <TD>Sue</TD>
    <TD>A-</TD>
  </TR>
</TABLE>
```

Student	Grade
Tom	B+
Sue	A-

Class Grades



Tables cont...

```
<TABLE BORDER=1 WIDTH="50%" CELLPADDING="6"
CELLSPACING="2" ALIGN="RIGHT">
  <CAPTION ALIGN="bottom">Class Grades</CAPTION>
  <TR>
    <TH>Student</TH>
    <TH>Grade</TH>
  </TR>
  <TR>
    <TD>Tom</TD>
    <TD>B+</TD>
  </TR>
  <TR>
    <TD>Sue</TD>
    <TD>A-</TD>
  </TR>
</TABLE>
```

Student	Grade
Tom	B-
Sue	A+

Class Grades



Table - rowspan and colspan

```
<TABLE BORDER=1 WIDTH="50%" CELLPADDING=5 ALIGN="center">
  <TR>
    <TD colspan=2 align='center'>
      <font color="red"><b>Student Grades</b></font>
    </TD>
  </TR>
  <TR>
    <TD><b>Student</b></TD>
    <TD><b>Grade</b></TD>
  </TR>
  <TR>
    <TD>Tom</TD>
    <TD rowspan=2>A</TD>
  </TR>
  <TR>
    <TD>Sue</TD>
  </TR>
</TABLE>
```


Student Grades	
Student	Grade
Tom	A
Sue	



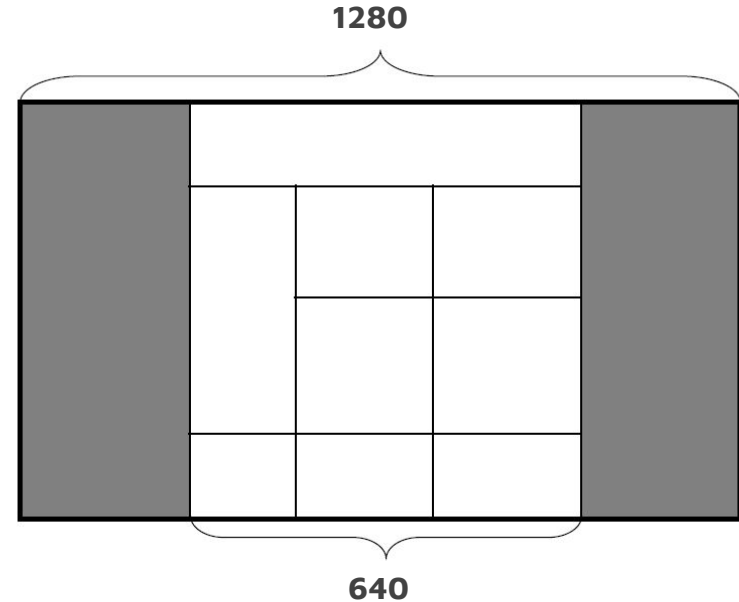
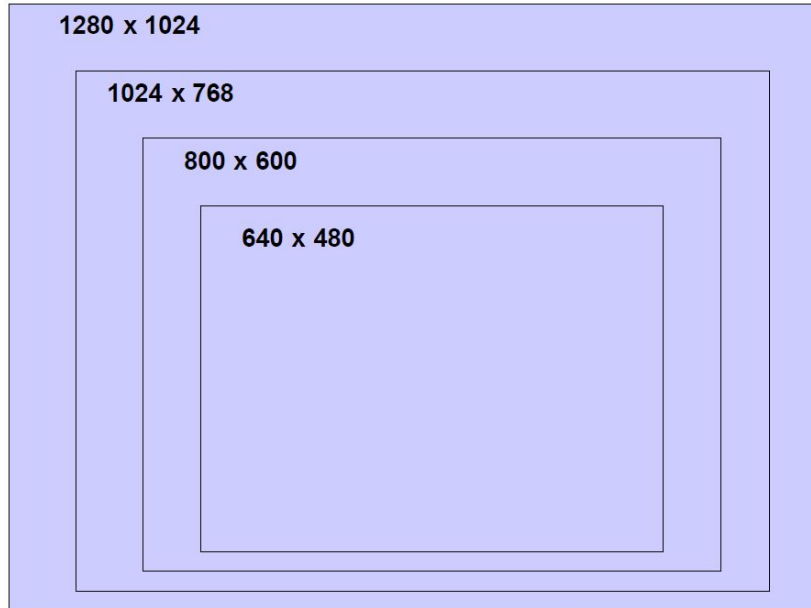
HTML5 Table Elements

HTML Table Tags

Tag	Description
<u><table></u>	Defines a table
<u><th></u>	Defines a header cell in a table
<u><tr></u>	Defines a row in a table
<u><td></u>	Defines a cell in a table
<u><caption></u>	Defines a table caption
<u><colgroup></u>	Specifies a group of one or more columns in a table for formatting
<u><col></u>	Specifies column properties for each column within a <colgroup> element
<u><thead></u>	Groups the header content in a table
<u><tbody></u>	Groups the body content in a table
<u><tfoot></u>	Groups the footer content in a table



Tables For Creating layout the basic web page design.





New Elements in HTML5

<figcaption>

<footer>

<header>

<hgroup>

<mark>

<nav>

<progress>

<section>

<source>

<svg>

<time>

<video>

<article>

<aside>

<audio>

<canvas>

<datalist>

<figure>