

HTML (Hyper Text Markup Language)

- Html 5 (Latest version).
- "Tim berness lee" in the year 1996.
- Links to another document --hypertext.
- Not a case sensitive language.
- Used to create only "static web pages".
- Used to create web pages on the internet.
- HTML is a markup language for describing web documents (web pages).
- A markup language is a set of markup tags.
- HTML documents are described by HTML tags.
- Each HTML tag describes different document content.

WEB PAGES :

- Collection of information vary from text, video, audio and so on

Types of web pages :

1. Static Web Pages

- a. No user interaction
- b. Cannot be changed
- c. Created by using HTML
- d. Does not include scripts

2. Dynamic Web Pages

- a. Provide user interaction
- b. It can be changed
- c. Created by using the combination of html and script languages

E.g. :- JQuery , CSS , JavaScript , Python

Web site

- a. Collection of web pages

E.g.: google.com

Editor: Notepad, Notepad++

Browser: IE, Google, mozilla Firefox.

SCRIPT:

Series of instruction or statements which are used to solve application logic

Types of scripting language

1. Client side scripting

- It is executed on client side web browser
- Can't access the data from DB system

E.g.: java script, query

2. Server -side Scripting

- It is executed on web server
- Can access the data from DB system

E.g.: JSP, PHP, ASP. NET, python

Tags:

Group of instruction are called "Tags"

Types of Tags

1. Paired tags:

should having opening and closing tags

Eg:(.....)

2. Unpaired tags:

(
.....<hr>)

Basic structure

```
<html>
  <head>
    <title> Web pages </title>
  </head>
  <body>
    <!--comment tags--!>
  </body>
</html>
```

EXAMPLES:

```
<html>
<head>
    <title>Page Title</title>
</head>
<body>
    <h1>My First Heading</h1>
    <p>My first paragraph. </p>
</body>
</html>
```

Explanation:

The DOCTYPE declaration defines the document type to be HTML

The text between `<html>` and `</html>` describes an HTML document

The text between `<head>` and `</head>` provides information about the document

The text between `<title>` and `</title>` provides a title for the document

The text between `<body>` and `</body>` describes the visible page content

The text between `<h1>` and `</h1>` describes a heading

The text between `<p>` and `</p>` describes paragraph

HTML Headings

HTML headings are defined with the `<h1>` to `<h6>` tags:

Example

```
<h1>This is a heading</h1>
<h2>This is a heading</h2>
<h3>This is a heading</h3>
<h4>This is a heading</h4>
<h5>This is a heading</h5>
<h6>This is a heading</h6>
```

HTML Formatting Elements:

Formatting elements were designed to display special types of text:

Bold text

Important text

Italic text

Emphasized text

Marked text

Small text

Deleted text

Inserted text

Subscripts

Superscripts

Tag	Description
	Defines bold text
	Defines emphasized text
<i>	Defines italic text
<small>	Defines smaller text
	Defines important text
<sub>	Defines subscripted text
<sup>	Defines superscripted text
<ins>	Defines inserted text
	Defines deleted text
<mark>	Defines marked/highlighted text
<u>	Defines underlined text

Body tag:

```
<body text="blue" bgcolor="yellow">
```

Attributes of <body> tag:

1.text--> specifies the text color of the web page

Eg:

```
text="blue"
text="rgb(100,20,50)"
text="#ff22aa"(1-9,a-f)
```

2.bgcolor--> background color

3.background color--> Background color of the web pages.

For adding image to web page

```

```

Attributes of tag

1.width-->To set postion of width for image

2.height--> To set postion of height for image

Example:

```

```

HTML Paragraphs

The HTML <p> element defines a paragraph.

Example

```
<p>This is a paragraph</p>
```

```
<p>This is another paragraph</p>
```

<p>

This paragraph
contains a lot of lines
in the source code,
but the browser
ignores it.

</p>

preserve whitespace (including spaces and line breaks)

<pre>

This paragraph
contains a lot of spaces
in the source code,
but the browser
ignores it. </pre>

The HTML element defines **emphasized text. The content inside is typically displayed in italic**

Example:

```
<!DOCTYPE html>
<html>
<body>
<p>This text is normal.</p>
<p><em>This text is emphasized.</em></p>
</body>
</html>
```

The HTML <small> element defines smaller text

Example:

```
<!DOCTYPE html>
<html>
<body>

<p>This is some normal text.</p>
<p><small>This is some smaller text.</small></p>

</body>
</html>
```

The HTML <mark> element defines text that should be marked or highlighted

Example:

```
The <!DOCTYPE html>
<html>
<body>
<p>Do not forget to buy <mark>milk</mark> today.</p>
</body>
</html>
```

The HTML element defines text that has been deleted from a document. Browsers will usually strike a line through deleted text:

Example:

```
<!DOCTYPE html>
<html>
<body>

<p>My favorite color is <del>blue</del> red.</p>

</body>
</html>
```

The HTML <ins> element defines a text that has been inserted into a document. Browsers will usually underline inserted text:

Example:

```
<!DOCTYPE html>
<html>
<body>

<p>My favorite color is <del>blue</del> <ins>red</ins>.</p>

</body>
</html>
```

The HTML `<sub>` element defines **subscript text**. Subscript text appears half a character below the normal line, and is sometimes rendered in a smaller font. Subscript text can be used for chemical formulas, like H₂O:

Example:

```
<!DOCTYPE html>
<html>
<body>

<p>This is <sub>subscripted</sub> text.</p>

</body>
</html>
```

The HTML `<sup>` element defines **superscript text**. Superscript text appears half a character above the normal line, and is sometimes rendered in a smaller font. Superscript text can be used for footnotes, like WWW[1]:

Example:

```
<!DOCTYPE html>
<html>
<body>

<p>This is <sup>superscripted</sup> text.</p>

</body>
</html>
```

Lists

Used to order the information on the webpage in any one of the following orders

1. Numbers
2. Roman Letters
3. Alphabets
4. symbol(Disc,Square,Circle)

Types of Lists

- 1.Order List
- 2.Unorder List
- 3.Definition List
- 4.Nested List

1.Order List:-

Used to order in the sequence

- 1.Numbers (Default format)
- 2.Alphabets
3. Roman Letters

syntax:

```
<ol type="value" start="value">  
<li> Item1 </li> .  
</ol>
```

Eg:

```
<ol type ="a">  
<li> red </li>  
<li> green </li>  
</ol>
```

output

- a. red
- b. green

Eg:

```
<ol type ="1" start="5">  
<li> red </li>  
<li> green </li>  
</ol>
```

output

- 5. red
- 6. green

2.UnOrder List:-

- 1.Disc(Default Format)
- 2.Circle
- 3.square

syntax:

```
<ul type="value" start="value">  
  <li> Item1 </li>  
  .  
  .  
  </ul>
```

Eg:

```
<ul type ="square">  
  <li> red </li>  
  <li> green </li>  
  </ul>
```

Output:

red

green

3.Definition list

It used to order the information with its definition description

Syntax:

```
<dl>  
  <dt> Item1 <dd>Item description  
  </dl>
```

Eg:

```
<dl>
<dt> Ram <dd>Random Acces Memory
</dl>
```

<dt> (definition term).
<dd> (definition description).

Ex:

```
<dl>
<dt>ASP<dd>Active Server Pages
<dt>JSP<dd>Java Server pages
</dl>
```

O/P:

ASP
Active Server Pages
JSP
Java Server Pages

4.Nested List

A list within another list is termed as nested list. If you want a bullet list inside a numbered list then such type of list will called as nested list.

Example:

```
<!DOCTYPE html>

<html>

    <head>

        <title>Nested list</title>

    </head>

    <body>

        <p>List of Indian States with thier capital</p>

        <ol>

            <li>Delhi

                <ul>

                    <li>New Delhi</li>

                </ul>

            </li>

            <li>Haryana

                <ul>

                    <li>Chandigarh</li>

                </ul>

            </li>

        </ol>

    </body>


```

Gujarat

Gandhinagar

Rajasthan

Jaipur

Maharashtra

Mumbai

Uttarpradesh

Lucknow

</body>

</html>

<form> tag

It used to create the webform on the web pages

<form>.....</form>

Example

<form>

.

.

.

form elements

.

</form>

Attributes

Name--> specifies the name

method--> how the form data will be send to the server by "get" "post"

action --> specifies the server side script page

<fieldset> tag

used to group the form elements

synatx:

```
<fieldset>.....</fieldset>
```

<legend> tag

Used to provide the title to grouped elements on the form must be placed inside the <fieldset> tag

<input> tag:

Used to create the form elements on the form.

Attributes

1.type--> specifies the type of element to be created on the form

```
input type="text"  
type="password"  
type="radio"  
type="checkbox"  
type="button"  
type="submit"
```

type="file"

type="reset"

2.name--> specifies the name of the control

3.size(text,password)--> no of characters to be allowed

4.MaxLength(text,password)--> no of characters to be allowed

5.checked(radio,checkbox)-->enables the pre-selecting the element

1. Checkboxes

The `<input type="checkbox">` defines a **checkbox**.

Checkboxes let a user select ZERO or MORE options of a limited number of choices.

Example:

```
<!DOCTYPE html>
<html>
<body>

<h2>Checkboxes</h2>
<p>The <strong>input type="checkbox"</strong> defines a checkbox:</p>

<form action="/action_page.php">
<input type="checkbox" id="vehicle1" name="vehicle1" value="Bike">
```

```
<label for="vehicle1"> I have a bike</label><br>
<input type="checkbox" id="vehicle2" name="vehicle2" value="Car">
<label for="vehicle2"> I have a car</label><br>
<input type="checkbox" id="vehicle3" name="vehicle3" value="Boat">
<label for="vehicle3"> I have a boat</label><br><br>
<input type="submit" value="Submit">
</form>

</body>
</html>
```

2.Radio Buttons

The `<input type="radio">` defines a radio button.

Radio buttons let a user select ONE of a limited number of choices.

Example:

```
<!DOCTYPE html>
<html>
<body>

<h2>Radio Buttons</h2>

<p>Choose your favorite Web language:</p>

<form>
<input type="radio" id="html" name="fav_language" value="HTML">
<label for="html">HTML</label><br>
<input type="radio" id="css" name="fav_language" value="CSS">
```

```
<label for="css">CSS</label><br>
<input type="radio" id="javascript" name="fav_language" value="JavaScript">
<label for="javascript">JavaScript</label>
</form>

</body>
</html>
```

6. <embed>...</embed>

used to add video player to web page

7. <option>.....[</option>]

used to add items to choice box

it must be placed inside the <select> tag

```
<option value="1">BCA
<option value="2" selected>MCA
or
<option>BCA</option>
<option>MCA</option>
```

8. Submit Button:

- The <input type="submit"> defines a button for submitting the form data to a form-handler.

- The form-handler is typically a file on the server with a script for processing input data.
- The form-handler is specified in the form's **action** attribute.

Example:

```
<!DOCTYPE html>
<html>
<body>

<h2>HTML Forms</h2>

<form action="/action_page.php">
    <label for="fname">First name:</label><br>
    <input type="text" id="fname" name="fname" value="John"><br>
    <label for="lname">Last name:</label><br>
    <input type="text" id="lname" name="lname" value="Doe"><br><br>
    <input type="submit" value="Submit">
</form>

<p>If you click the "Submit" button, the form-data will be sent to a page called "/action_page.php".</p>

</body>
</html>
```

9. **<input type="file">:**

The <input> element with type "file" is used to select one or more files from user device storage. Once you select the file, and after submission, this file can be uploaded to the server with the help of JS code and file API.

Example:

```
<form>  
  <label>Select file to upload:</label>  
  <input type="file" name="newfile">  
  <input type="submit" value="submit">  
</form>
```

Output:

Input "file" type.

We can choose any type of file until we do not specify it! The selected file will appear at next to "choose file" option

Select file to upload:

10. <input type="image">:

The <input> type "image" is used to represent a submit button in the form of image.

Example:

```
<!DOCTYPE html>  
<html>  
<body>  
<h2>Input "image" type.</h2>
```

```
<p>We can create an image as submit button</p>
<form>
    <label>User id:</label><br>
    <input type="text" name="name"><br><br>
    <input type="image" alt="Submit" src="login.png" width="100px">
</form>

</body>
</html>
```

11. **<input type="date">:**

The `<input>` element of type "date" generates an input field, which allows a user to input the date in a given format. A user can enter the date by text field or by date picker interface.

Example:

```
<form>
    Select Start and End Date: <br><br>
    <input type="date" name="Startdate"> Start date:<br><br>
    <input type="date" name="Enddate"> End date:<br><br>
    <input type="submit">
</form>
```

Output:

Input "date" type				
Select	Start	and	End	Date:
Start				date:

End

date:

12. <input type="datetime-local">:

The <input> element of type "datetime-local" creates input filed which allow a user to select the date as well as local time in the hour and minute without time zone information.

Example:

```
<form>
  <label>
    Select the meeting schedule: <br><br>
    Select date & time: <input type="datetime-local" name="meetingdate"> <br><br>
  </label>
  <input type="submit">
</form>
```

Output:

Input "datetime-local" type

Select the meeting schedule:

Select date & time:

13. <input type="number">:

The <input> element type number creates input filed which allows a user to enter the numeric value. You can also restrict to enter a minimum and maximum value using min and max attribute.

Example:

```
<form>  
    <label>Enter your age: </label>  
    <input type="number" name="num" min="50" max="80">  
    <input type="submit">  
</form>
```

Output:

Input "number" type

Enter your age:

Note: It will allow to enter number in range of 50-80. If you want to enter number other than range, it will show an error.

14. :

The element of type "url" creates an input filed which enables user to enter the URL.

Example:

```
<form>  
    <label>Enter your website URL: </label>  
    <input type="url" name="website" placeholder="http://example.com"><br>  
    <input type="submit" value="send data">  
</form>
```

Output:

Input "url" type

Enter your website URL:

15. <input type="week">:

The <input> type week creates an input field which allows a user to select a week and year from the drop-down calendar without time zone.

Example:

```
<form>
  <label><b>Select your best week of year:</b></label><br><br>
  <input type="week" name="bestweek">
  <input type="submit" value="Send data">
</form>
```

Output:

Input "week" type
Select your best week of year:

16. <input type="search">:

The <input> type "search" creates an input filed which allows a user to enter a search string. These are functionally symmetrical to the text input type, but may be styled differently.

Example:

```
<form>
  <label>Search here:</label>
  <input type="search" name="q">
  <input type="submit" value="search">
</form>
```

Output:

Input "search" type

Search here:

17. <input type="tel">:

The <input> element of type ?tel? creates an input filed to enter the telephone number. The "tel" type does not have default validation such as email, because telephone number pattern can vary worldwide.

Example:

```
<form>  
  <label><b>Enter your Telephone Number(in format of xxx-xxx-xxxx):</b></label>  
  <input type="tel" name="telephone" pattern="[0-9]{3}-[0-9]{3}-[0-9]{4}" required>  
  <input type="submit"><br><br>  
</form>
```

Output:

Input "tel" type

Enter your Telephone Number(in format of xxx-xxx-xxxx):

Note: Here we are using two attributes that are "pattern" and"required" which will allow user to enter the number in given format and it is required to enter the number in input field.

Example

```
<form>
<fieldset>
<legend>Personal information:</legend>
First name:<br>
<input type="text" name="firstname" >
<br>
Last name:<br>
<input type="text" name="lastname" >
<br><br>
<input type="submit" value="Submit">
</fieldset>
</form>
```

OUTPUT:

- **Personal information:**
 - First name: [_____] (text input field)
 - Last name: [_____] (text input field)
 - [Submit] (submit button)

Example:

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8"> (Purpose: This tag specifies the character encoding for the
document. UTF-8 is a widely used encoding that supports a vast range of characters from
different languages and symbols.)
```

<meta name="viewport" content="width=device-width, initial-scale=1.0"> (Purpose: This tag controls the viewport settings, which are crucial for responsive web design. It tells the browser how to adjust the page's dimensions and scaling based on the device's width)

```
<title>Registration Form</title>  
</head>
```

```
<body>  
<h1>Registration Form</h1>  
<form action="/submit-form" method="post">
```

```
<fieldset>
```

```
<legend>Personal Information</legend>
```

```
<label for="name">Name:</label>  
<input type="text" id="name" name="name" required>  
<br><br>
```

```
<label for="email">Email ID:</label>  
<input type="email" id="email" name="email" required>  
<br><br>
```

```
<label for="password">Password:</label>  
<input type="password" id="password" name="password" required>  
<br><br>
```

```
<label for="dob">Date of Birth:</label>  
<input type="date" id="dob" name="dob" required>  
<br><br>
```

```
<label>Gender:</label>
<input type="radio" id="male" name="gender" value="male">
<label for="male">Male</label>
<input type="radio" id="female" name="gender" value="female">
<label for="female">Female</label>

<input type="radio" id="other" name="gender" value="other">
<label for="other">Other</label>
<br><br>

<label for="courses">Courses Interested In:</label>
<select id="courses" name="courses" multiple>
    <option value="web-development">Web Development</option>
    <option value="data-science">Data Science</option>
    <option value="graphic-design">Graphic Design</option>
    <option value="digital-marketing">Digital Marketing</option>
</select>
<br><br>

<label for="phone">Phone Number:</label>
<input type="tel" id="phone" name="phone">
<br><br>

<label for="qualification">Qualification:</label>
<input type="text" id="qualification" name="qualification">
<br><br>
```

```
<label for="address">Address:</label>
<textarea id="address" name="address" rows="4" cols="50"></textarea>
<br><br>

<label for="country">Country:</label>
<select id="country" name="country">

    <option value="usa">United States</option>
    <option value="canada">Canada</option>
    <option value="uk">United Kingdom</option>
    <option value="australia">Australia</option>
    <option value="other">Other</option>
</select>
<br><br>

<input type="submit" value="Submit">
</fieldset>
</form>
</body>
</html>
```

Output:

Registration Form

- Name: [_____]
- Email ID: [_____]

- Password: [_____]
- Date of Birth: [_____] (Date Picker)
- Gender:
 - Male
 - Female
 - Other
- Courses Interested In:
 - [Web Development]
 - [Data Science]
 - [Graphic Design]
 - [Digital Marketing]
- Phone Number: [_____]
- Qualification: [_____]
- Address:
 - [_____]
 - [_____]
- Country:
 - [United States ▼] (Dropdown Menu)
- Submit (Button)

HTML Iframe Syntax

The HTML `<iframe>` tag specifies an inline frame.

An inline frame is used to embed another document within the current HTML document.

Example:

```
<!DOCTYPE html>

<html lang="en">

<head>

<meta charset="UTF-8">

<meta name="viewport" content="width=device-width, initial-scale=1.0">

<title>HTML Iframes Example</title>

</head>

<body>

<h2>HTML Iframes</h2>

<p>You can use the CSS height and width properties to specify the size of the iframe:</p>

<iframe src="demo_iframe.htm" style="height:200px;width:300px" title="Iframe Example">

<!-- Fallback content for browsers that do not support iframes -->

Your browser does not support iframes.

</iframe>

</body>

</html>
```

Output:

HTML Iframes

You can use the CSS height and width properties to specify the size of the iframe:

Note: This image is for illustrative purposes; actual iframe content will be shown in your browser.

The class Attribute

- The **class** attribute is often used to point to a class name in a style sheet. It can also be used by a JavaScript to access and manipulate elements with the specific class name.

- In the following example we have three **<div>** elements with a **class** attribute with the value of "city". All of the three **<div>** elements will be styled equally according to the **.city** style definition in the head section.

Example:

```
<!DOCTYPE html>
<html>
<head>
<style>
.city {
background-color: tomato;
```

```
color: white;  
border: 2px solid black;  
margin: 20px;  
padding: 20px;  
}  
</style>  
</head>  
<body>
```

```
<div class="city">  
<h2>London</h2>  
<p>London is the capital of England.</p>  
</div>
```

```
<div class="city">  
<h2>Paris</h2>  
<p>Paris is the capital of France.</p>  
</div>
```

```
<div class="city">  
<h2>Tokyo</h2>  
<p>Tokyo is the capital of Japan.</p>  
</div>
```

```
</body>  
</html>
```

Output:

London

London is the capital of England.

Paris

Paris is the capital of France.

Tokyo

Tokyo is the capital of Japan.

The id Attribute

- The **id** attribute specifies a unique id for an HTML element. The value of the **id** attribute must be unique within the HTML document.
- The **id** attribute is used to point to a specific style declaration in a style sheet. It is also used by JavaScript to access and manipulate the element with the specific id.
- The syntax for id is: write a hash character (#), followed by an id name. Then, define the CSS properties within curly braces {}.
- In the following example we have an **<h1>** element that points to the id name "myHeader". This **<h1>** element will be styled according to the **#myHeader** style definition in the head section:

Example:

```
<!DOCTYPE html>
<html>
```

```
<head>
<style>
#myHeader {
    background-color: lightblue;
    color: black;
    padding: 40px;
    text-align: center;
}
</style>
</head>
<body>

<h2>The id Attribute</h2>
<p>Use CSS to style an element with the id "myHeader":</p>

<h1 id="myHeader">My Header</h1>

</body>
</html>
```

Output:

The id Attribute

Use CSS to style an element with the id "myHeader":

My Header

Difference Between Class and ID

- A class name can be used by multiple HTML elements, while an id name must only be used by one HTML element within the page:

Example:

```
<!DOCTYPE html>
<html>
<head>
<style>
/* Style the element with the id "myHeader" */
#myHeader {
    background-color: lightblue;
    color: black;
    padding: 40px;
    text-align: center;
}

/* Style all elements with the class name "city" */
.city {
    background-color: tomato;
    color: white;
    padding: 10px;
}
</style>
</head>
```

```
<body>
```

<h2>Difference Between Class and ID</h2>

<p>A class name can be used by multiple HTML elements, while an id name must only be used by one HTML element within the page:</p>

```
<!-- An element with a unique id -->
```

```
<h1 id="myHeader">My Cities</h1>
```

```
<!-- Multiple elements with same class -->
```

```
<h2 class="city">London</h2>
```

```
<p>London is the capital of England.</p>
```

```
<h2 class="city">Paris</h2>
```

```
<p>Paris is the capital of France.</p>
```

```
<h2 class="city">Tokyo</h2>
```

```
<p>Tokyo is the capital of Japan.</p>
```

```
</body>
```

```
</html>
```

Output:

Difference Between Class and ID

A class name can be used by multiple HTML elements, while an id name must only be used by one HTML element within the page:

My Cities

The "My Cities" header will be centered, with a light blue background.

London

London is the capital of England.

Paris

Paris is the capital of France.

Tokyo

Tokyo is the capital of Japan.

Each city header ("London", "Paris", "Tokyo") will have a tomato red background, white text, and padding.

Assignments:

Ex 1:

Add extra importance to the word "degradation" in the paragraph below.

< p >

WWF's mission is to stop the degradation of our planet's natural environment.

< / p >

Ex 2:

Emphasize the word "metropolitan" in the text below.

<h1>Tokyo</h1>

<p>

Tokyo is the capital of Japan, the most populous metropolitan area in the world.

</p>

Ex 3:

Highlight the word "FUN" in the text below.

<p>

HTML is FUN to learn!

</p>

Ex 4

Apply subscript formatting to the number "2" in the text below.

<p>

H....

2....

O is the scientific term for water.

</p>

Ex 5

Add a line through (strikeout) the letters "blue" in the text below.

<p>

My favorite color is

blue.....

red.

</p>

HTML Colors

```
<!DOCTYPE html>
<html>
<body>

<h1 style="background-color:Tomato;">Tomato</h1>
<h1 style="background-color:Orange;">Orange</h1>
<h1 style="background-color:DodgerBlue;">DodgerBlue</h1>
<h1 style="background-color:MediumSeaGreen;">MediumSeaGreen</h1>
<h1 style="background-color:Gray;">Gray</h1>
<h1 style="background-color:SlateBlue;">SlateBlue</h1>
<h1 style="background-color:Violet;">Violet</h1>
<h1 style="background-color:LightGray;">LightGray</h1>

</body>
</html>
```

BACKGROUND COLOR:

```
<!DOCTYPE html>
<html>
<body>

<h1 style="background-color:DodgerBlue;">Hello World</h1>

<p style="background-color:Tomato;">
    Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod
    tincidunt ut laoreet dolore magna aliquam erat volutpat.
</p>
```

Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.

</p>

</body>

</html>

Text Color

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h3 style="color:Tomato;">Hello World</h3>
```

```
<p style="color:DodgerBlue;">Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat.</p>
```

```
<p style="color:MediumSeaGreen;">Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat.</p>
```

```
</body>
```

```
</html>
```

Border Color

```
<!DOCTYPE html>

<html>

<body>

<h1 style="border: 2px solid Tomato;">Hello World</h1>

<h1 style="border: 2px solid DodgerBlue;">Hello World</h1>

<h1 style="border: 2px solid Violet;">Hello World</h1>

</body>

</html>
```

Color Values

In HTML, colors can also be specified using RGB values, HEX values, HSL values, RGBA values, and HSLA values.

The following three `<div>` elements have their background color set with RGB, HEX, and HSL values:

`rgb(255, 99, 71)`

`#ff6347`

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<p>Same as color name "Tomato":</p>
```

```
<h1 style="background-color:rgb(255, 99, 71);">rgb(255, 99, 71)</h1>
```

```
<h1 style="background-color:#ff6347;">#ff6347</h1>
```

```
<h1 style="background-color:hsl(9, 100%, 64%);">hsl(9, 100%, 64%)</h1>
```

```
<p>Same as color name "Tomato", but 50% transparent:</p>
```

```
<h1 style="background-color:rgba(255, 99, 71, 0.5);">rgba(255, 99, 71, 0.5)</h1>
```

```
<h1 style="background-color:hsla(9, 100%, 64%, 0.5);">hsla(9, 100%, 64%, 0.5)</h1>
```

```
<p>In addition to the predefined color names, colors can be specified using RGB, HEX, HSL, or even transparent colors using RGBA or HSLA color values.</p>
```

```
</body>
```

```
</html>
```

HTML RGB and RGBA Colors

An RGB color value represents RED, GREEN, and BLUE light sources.

An RGBA color value is an extension of RGB with an Alpha channel (opacity).

RGB Color Values

In HTML, a color can be specified as an RGB value, using this formula:

rgb(red, green, blue)

Each parameter (red, green, and blue) defines the intensity of the color with a value between 0 and 255.

This means that there are $256 \times 256 \times 256 = 16777216$ possible colors!

For example, `rgb(255, 0, 0)` is displayed as red, because red is set to its highest value (255), and the other two (green and blue) are set to 0.

Another example, `rgb(0, 255, 0)` is displayed as green, because green is set to its highest value (255), and the other two (red and blue) are set to 0.

To display black, set all color parameters to 0, like this: `rgb(0, 0, 0)`.

To display white, set all color parameters to 255, like this: `rgb(255, 255, 255)`.

Example:

```
<!DOCTYPE html>

<html>
  <head>
    <title>RGB Color Values Example</title>
  </head>
  <body>

    <h2>RGB Color Values Example</h2>

    <!-- Red Box -->
    <div style="width: 100px; height: 100px; background-color: rgb(255, 0, 0); color: white; display: inline-block; margin: 10px; text-align: center; line-height: 100px;">
```

Red

</div>

<!-- Green Box -->

```
<div style="width: 100px; height: 100px; background-color: rgb(0, 255, 0); color: white; display: inline-block; margin: 10px; text-align: center; line-height: 100px;">
```

Green

</div>

<!-- Blue Box -->

```
<div style="width: 100px; height: 100px; background-color: rgb(0, 0, 255); color: white; display: inline-block; margin: 10px; text-align: center; line-height: 100px;">
```

Blue

</div>

<!-- Custom Purple Box -->

```
<div style="width: 100px; height: 100px; background-color: rgb(128, 64, 255); color: white; display: inline-block; margin: 10px; text-align: center; line-height: 100px;">
```

Custom

</div>

<!-- Light Grey Box -->

```
<div style="width: 100px; height: 100px; background-color: rgb(211, 211, 211); color: black; display: inline-block; margin: 10px; text-align: center; line-height: 100px;">
```

Light Grey



</div>

<!-- Dark Grey Box -->

```
<div style="width: 100px; height: 100px; background-color: rgb(169, 169, 169); color: black; display: inline-block; margin: 10px; text-align: center; line-height: 100px;">
```

Dark Grey

</div>

</body>

</html>

Table

Define an HTML Table

A table in HTML consists of table cells inside rows and columns.

Example:

```
<!DOCTYPE html>
<html>
<style>
table, th, td {
    border:1px solid black;
}
</style>
<body>

<h2>A basic HTML table</h2>

<table style="width:100%">
<tr>
<th>Company</th>
<th>Contact</th>
<th>Country</th>
</tr>
<tr>
<td>Alfreds Futterkiste</td>
<td>Maria Anders</td>
<td>Germany</td>
</tr>
<tr>
<td>Centro comercial Moctezuma</td>
```

```
<td>Francisco Chang</td>
<td>Mexico</td>
</tr>
</table>
```

<p>To understand the example better, we have added borders to the table.</p>

```
</body>
</html>
```

Table Cells

Each table cell is defined by a `<td>` and a `</td>` tag.

Everything between `<td>` and `</td>` are the content of the table cell.

Example:

```
<!DOCTYPE html>
<html>
<style>
table, th, td {
    border:1px solid black;
}
</style>
<body>
```

<h2>TD elements define table cells</h2>

```
<table style="width:100%">
```

```
<tr>
<td>Emil</td>
<td>Tobias</td>
<td>Linus</td>
</tr>
</table>
```

<p>To understand the example better, we have added borders to the table.</p>

```
</body>
</html>
```

Table Rows

Each table row starts with a `<tr>` and ends with a `</tr>` tag.

Example:

```
<!DOCTYPE html>
<html>
<style>
table, th, td {
    border:1px solid black;
}
</style>
<body>
```

<h2>TR elements define table rows</h2>

```
<table style="width:100%">
```

```
    <tr>
```

```
        <td>Emil</td>
```

```
        <td>Tobias</td>
```

```
        <td>Linus</td>
```

```
    </tr>
```

```
    <tr>
```

```
        <td>16</td>
```

```
        <td>14</td>
```

```
        <td>10</td>
```

```
    </tr>
```

```
</table>
```

<p>To understand the example better, we have added borders to the table.</p>

```
</body>
```

```
</html>
```

Table Headers

Sometimes you want your cells to be table header cells. In those cases use the **<th>** tag instead of the **<td>** tag:

Example:

```
<!DOCTYPE html>
```

```
<html>
```

```
<style>  
table, th, td {  
    border:1px solid black;  
}  
</style>  
<body>
```

<h2>TH elements define table headers</h2>

```
<table style="width:100%">  
    <tr>  
        <th>Person 1</th>  
        <th>Person 2</th>  
        <th>Person 3</th>  
    </tr>  
    <tr>  
        <td>Emil</td>  
        <td>Tobias</td>  
        <td>Linus</td>  
    </tr>  
    <tr>  
        <td>16</td>  
    </table>
```

<p>To understand the example better, we have added borders to the table.</p>

```
</body>  
</html>
```

HTML Table Tags

HTML Table Borders

HTML tables can have borders of different styles and shapes.

How To Add a Border

When you add a border to a table, you also add borders around each table cell:

To add a border, use the CSS border property on table, th, and td elements:

Example:

```
<!DOCTYPE html>
<html>
<head>
<style>
table, th, td {
    border: 1px solid black;
}
</style>
</head>
<body>

<h2>Table With Border</h2>
```

<p>Use the CSS border property to add a border to the table.</p>

```
<table style="width:100%">
```

```
    <tr>
```

```
        <th>Firstname</th>
```

```
        <th>Lastname</th>
```

```
        <th>Age</th>
```

```
    </tr>
```

```
    <tr>
```

```
        <td>Jill</td>
```

```
        <td>Smith</td>
```

```
        <td>50</td>
```

```
    </tr>
```

```
    <tr>
```

```
        <td>Eve</td>
```

```
        <td>Jackson</td>
```

```
        <td>94</td>
```

```
    </tr>
```

```
    <tr>
```

```
        <td>John</td>
```

```
        <td>Doe</td>
```

```
        <td>80</td>
```

```
    </tr>
```

```
</table>
```

```
</body>
```

```
</html>
```

Collapsed Table Borders

To avoid having double borders like in the example above, set the CSS border-collapse property to collapse.

This will make the borders collapse into a single border:

Example

```
<!DOCTYPE html>
<html>
<head>
<style>
table, th, td {
    border: 1px solid black;
    border-collapse: collapse;
}
</style>
</head>
<body>
```

<h2>Collapsed Borders</h2>

<p>If you want the borders to collapse into one border, add the CSS border-collapse property.</p>

```
<table style="width:100%">
<tr>
```

```

<th>Firstname</th>
<th>Lastname</th>
<th>Age</th>
</tr>
<tr>
<td>Jill</td>
<td>Smith</td>
<td>50</td>
</tr>
<tr>
<td>Eve</td>
<td>Jackson</td>
<td>94</td>
</tr>
<tr>
<td>John</td>
<td>Doe</td>
<td>80</td>
</tr>
</table>

</body>
</html>

```

Style Table Borders

If you set a background color of each cell, and give the border a white color (the same as the document background), you get the impression of an invisible border:

Example

```
<!DOCTYPE html>
<html>
<head>
<style>
table, th, td {
    border: 1px solid white;
    border-collapse: collapse;
}
th, td {
    background-color: #96D4D4;
}
</style>
</head>
<body>
```

<h2>Table With Invisible Borders</h2>

<p>Style the table with white borders and a background color of the cells to make the impression of invisible borders.</p>

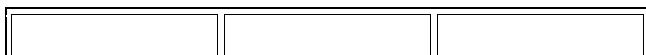
```
<table style="width:100%">
<tr>
<th>Firstname</th>
```

```
<th>Lastname</th>
<th>Age</th>
</tr>
<tr>
<td>Jill</td>
<td>Smith</td>
<td>50</td>
</tr>
<tr>
<td>Eve</td>
<td>Jackson</td>
<td>94</td>
</tr>
<tr>
<td>John</td>
<td>Doe</td>
<td>80</td>
</tr>
</table>

</body>
</html>
```

Round Table Borders

With the border-radius property, the borders get rounded corners:




```
<!DOCTYPE html>
```

```
<html>
```

```
<head>
```

```
<style>
```

```
table, th, td {  
    border: 1px solid black;  
    border-radius: 10px;  
}
```

```
</style>
```

```
</head>
```

```
<body>
```

Table With Rounded Borders

Use the CSS border-radius property to add rounded corners to the borders.

```
<table style="width:100%">
```

```
<tr>
```

```
    <th>Firstname</th>
```

```
    <th>Lastname</th>
```

```
    <th>Age</th>
```

```
</tr>
```

```
<tr>
```

```
    <td>Jill</td>
```

```
    <td>Smith</td>
```

```
    <td>50</td>
```

```

</tr>
<tr>
<td>Eve</td>
<td>Jackson</td>
<td>94</td>
</tr>
<tr>
<td>John</td>
<td>Doe</td>
<td>80</td>
</tr>
</table>
```

```

</body>
</html>
```

Skip the border around the table by leaving out table from the css selector:

Example

```

<!DOCTYPE html>
<html>
<head>
```

```
<style>
th, td {
    border: 1px solid black;
    border-radius: 10px;
}
</style>
</head>
<body>
```

<h2>Table With Rounded Borders</h2>

<p>Use the CSS border-radius property to add rounded corners to the table cells.</p>

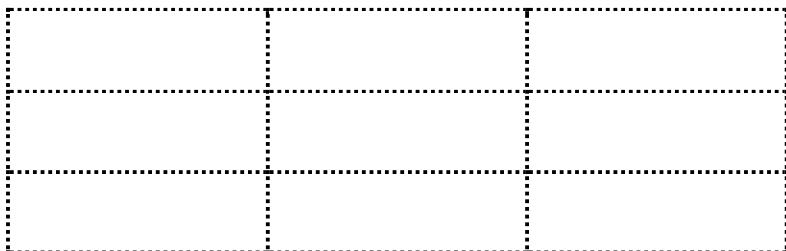
```
<table style="width:100%">
<tr>
<th>Firstname</th>
<th>Lastname</th>
<th>Age</th>
</tr>
<tr>
<td>Jill</td>
<td>Smith</td>
<td>50</td>
</tr>
<tr>
<td>Eve</td>
<td>Jackson</td>
<td>94</td>
```

```
</tr>
<tr>
<td>John</td>
<td>Doe</td>
<td>80</td>
</tr>
</table>

</body>
</html>
```

Dotted Table Borders

With the border-style property, you can set the appearance of the border.



The following values are allowed:

- dotted
- dashed
- solid
- double
- groove
- ridge
- inset
- outset
- none
- hidden

Example

```
th, td {  
    border-style: dotted;  
}
```

Border Color

With the border-color property, you can set the color of the border.

Example

```
<!DOCTYPE html>  
  
<html>  
  
<head>  
  
<style>  
  
th, td {  
  
    border-style:solid;  
  
    border-color: #96D4D4;  
  
}  
  
</style>  
  
</head>  
  
<body>
```

<h2>Table With Border Color</h2>

<p>Use the CSS border-color property to set the color of the borders.</p>

```
<table style="width:100%">
```

```
<tr>
<th>Firstname</th>
<th>Lastname</th>
<th>Age</th>
</tr>
<tr>
<td>Jill</td>
<td>Smith</td>
<td>50</td>
</tr>
<tr>
<td>Eve</td>
<td>Jackson</td>
<td>94</td>
</tr>
<tr>
<td>John</td>
<td>Doe</td>
<td>80</td>
</tr>
</table>

</body>
</html>
```

HTML Table Size

HTML tables can have different sizes for each column, row or the entire table.

Use the style attribute with the width or height properties to specify the size of a table, row or column.

HTML Table Width

To set the width of a table, add the style attribute to the <table> element:

```
<!DOCTYPE html>
<html>
<style>
table, th, td {
    border:1px solid black;
    border-collapse: collapse;
}
</style>

<body>
```

<h2>100% wide HTML Table</h2>

```
<table style="width:100%">
```

```
<tr>
```

```
 <th>Firstname</th>
```

```
 <th>Lastname</th>
```

```
 <th>Age</th>
```

```
</tr>
```

```
<tr>
```

```
 <td>Jill</td>
```

```
 <td>Smith</td>
```

```
 <td>50</td>
```

```
</tr>
```

```
<tr>
```

```
 <td>Eve</td>
```

```
 <td>Jackson</td>
```

```
 <td>94</td>
```

```
</tr>
```

```
<tr>
```

```
 <td>John</td>
```

```
 <td>Doe</td>
```

```
 <td>80</td>
```

```
</tr>
```

```
</table>
```

```
</body>
```

```
</html>
```

HTML Table Column Width

To set the size of a specific column, add the style attribute on a <th> or <td> element:

Example

```
<!DOCTYPE html>
<html>
<style>
table, th, td {
    border:1px solid black;
    border-collapse: collapse;
}
</style>
<body>
```

<h2>Set the first column to 70% of the table width</h2>

```
<table style="width:100%">
<tr>
<th style="width:70%">Firstname</th>
<th>Lastname</th>
<th>Age</th>
</tr>
<tr>
<td>Jill</td>
```

```
<td>Smith</td>
<td>50</td>
</tr>
<tr>
<td>Eve</td>
<td>Jackson</td>
<td>94</td>
</tr>
<tr>
<td>John</td>
<td>Doe</td>
<td>80</td>
</tr>
</table>
```

```
</body>
</html>
```

HTML Table Row Height

To set the height of a specific row, add the style attribute on a table row element:

```
<!DOCTYPE html>
<html>
```

```
<style>  
  
table, th, td {  
    border:1px solid black;  
    border-collapse: collapse;  
}  
  
</style>  
  
<body>
```

<h2>Set the height of the second row to 200 pixels</h2>

```
<table style="width:100%">  
  
<tr>  
    <th>Firstname</th>  
    <th>Lastname</th>  
    <th>Age</th>  
</tr>  
  
<tr style="height:200px">  
    <td>Jill</td>  
    <td>Smith</td>  
    <td>50</td>  
</tr>  
  
<tr>  
    <td>Eve</td>  
    <td>Jackson</td>  
    <td>94</td>  
</tr>  
  
<tr>  
    <td>John</td>
```

```
<td>Doe</td>
<td>80</td>
</tr>
</table>
```

```
</body>
```

```
</html>
```

HTML Table Headers

HTML tables can have headers for each column or row, or for many columns/rows.

EMIL	TOBIAS	LINUS			
8:00					
9:00					
10:00					
11:00					
12:00					
13:00					
	MON	TUE	WED	THU	FRI
8:00					
9:00					

10:00					
11:00					
12:00					

DECEMBER		

A to Z Tag

AREA TAG:

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h1>The map and area elements</h1>
```

```
<p>Click on the computer, the phone, or the cup of coffee to go to a new page and  
read more about the topic:</p>
```

```


<map name="workmap">
  <area shape="rect" coords="34,44,270,350" alt="Computer"
href="computer.htm">
  <area shape="rect" coords="290,172,333,250" alt="Phone" href="phone.htm">
  <area shape="circle" coords="337,300,44" alt="Cup of coffee"
href="coffee.htm">
</map>

</body>
</html>
```

BIG TAG:

```
<!DOCTYPE html>
<html>
<head>
<style>
p.ex1 {
  font-size: 30px;
}
p.ex2 {
```

```
font-size: 50px;  
}  
</style>  
</head>  
<body>  
  
<p>This is a normal paragraph.</p>  
<p class="ex1">This is a bigger paragraph.</p>  
<p class="ex2">This is a much bigger paragraph.</p>  
  
</body>  
</html>
```

COL TAG

```
<!DOCTYPE html>  
<html>  
<head>  
<style>  
table, th, td {  
    border: 1px solid black;  
}  
</style>  
</head>
```

<body>

<h1>The col element</h1>

<table>

<colgroup>

<col span="2" style="background-color:red">

<col style="background-color:yellow">

</colgroup>

<tr>

<th>ISBN</th>

<th>Title</th>

<th>Price</th>

</tr>

<tr>

<td>3476896</td>

<td>My first HTML</td>

<td>\$53</td>

</tr>

<tr>

<td>5869207</td>

<td>My first CSS</td>

<td>\$49</td>

</tr>

</table>

```
</body>
```

```
</html>
```

EMBED TAG

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h1>The embed element</h1>
```

```
<embed type="image/jpg" src="pic_trulli.jpg" width="300" height="200">
```

```
</body>
```

```
</html>
```

Source tag:

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h1>The source element</h1>
```

```
<p>Click on the play button to play a sound:</p>
```

```
<audio controls>
<source src="horse.ogg" type="audio/ogg">
<source src="horse.mp3" type="audio/mpeg">
Your browser does not support the audio element.
</audio>

</body>
</html>
```

Animation:

Example:

```
<!DOCTYPE html>
<html>
<head>
<style>
div {
width: 100px;
height: 100px;
background-color: red;
animation-name: example;
animation-duration: 4s;
}
```

```
@keyframes example {  
    from {background-color: red;}  
    to {background-color: yellow;}  
}  
</style>  
</head>  
<body>  
<h1>CSS Animation</h1>  
<div></div>  
<p><b>Note:</b> When an animation is finished, it goes back to its original style.</p>  
</body>  
</html>
```

Output:

Box color is red and yellow

Key Frames Example:

```
1. @keyframes example {  
    0% {background-color: red;}  
    25% {background-color: yellow;}  
    50% {background-color: blue;}  
    100% {background-color: green;}  
}
```

2. @keyframes example {

```
0% {background-color:red; left:0px; top:0px;}  
  
25% {background-color:yellow; left:200px; top:0px;}  
  
50% {background-color:blue; left:200px; top:200px;}  
  
75% {background-color:green; left:0px; top:200px;}  
  
100% {background-color:red; left:0px; top:0px;}  
}
```

3. div {

```
width: 100px;  
  
height: 100px;  
  
background-color: red;  
  
position: relative;  
  
animation-name: example;  
  
animation-duration: 4s;  
  
animation-delay: 2s;  
}
```

4. div {

```
width: 100px;  
  
height: 100px;  
  
background-color: red;  
  
position: relative;
```

```
animation-name: example;  
  
animation-duration: 4s;  
  
animation-delay: -2s;  
  
}
```

```
5. div {  
  
width: 100px;  
  
height: 100px;  
  
background-color: red;  
  
position: relative;  
  
animation-name: example;  
  
animation-duration: 4s;  
  
animation-iteration-count: 3;  
  
}
```

```
6. div {  
  
width: 100px;  
  
height: 100px;  
  
background-color: red;  
  
position: relative;  
  
animation-name: example;  
  
animation-duration: 4s;  
  
animation-iteration-count: infinite;
```

}

```
7. div {  
    width: 100px;  
    height: 100px;  
    background-color: red;  
    position: relative;  
    animation-name: example;  
    animation-duration: 4s;  
    animation-iteration-count: 2;  
    animation-direction: alternate;  
}
```

Example:

```
<!DOCTYPE html>  
  
<html>  
  
<head>  
  
<style>  
  
div {  
    width: 100px;  
    height: 50px;  
    background-color: red;  
    font-weight: bold;
```

```
position: relative;  
  
animation: mymove 5s;  
  
animation-fill-mode: forwards;  
  
}
```

```
#div1 {animation-timing-function: linear;}  
  
#div2 {animation-timing-function: ease;}  
  
#div3 {animation-timing-function: ease-in;}  
  
#div4 {animation-timing-function: ease-out;}  
  
#div5 {animation-timing-function: ease-in-out;}
```

```
@keyframes mymove {  
  
from {left: 0px;}  
  
to {left: 300px;}  
  
}
```

```
</style>  
  
</head>  
  
<body>
```

```
<h1>CSS Animation</h1>
```

<p>The animation-timing-function property specifies the speed curve of the animation. The following example shows some of the different speed curves that can be used:</p>

```
<div id="div1">linear</div>

<div id="div2">ease</div>

<div id="div3">ease-in</div>

<div id="div4">ease-out</div>

<div id="div5">ease-in-out</div>

</body>

</html>
```

Example:

```
<!DOCTYPE html>

<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Rotating Square Animation</title>
    <style>
        body {
            display: flex;
            justify-content: center;
            align-items: center;
            height: 100vh;
            margin: 0;
        }
    </style>
</head>
<body>
    <div id="div1">linear</div>
    <div id="div2">ease</div>
    <div id="div3">ease-in</div>
    <div id="div4">ease-out</div>
    <div id="div5">ease-in-out</div>
</body>
</html>
```

```
background-color: #282c34;  
}  
  
.square {  
width: 100px;  
height: 100px;  
background-color: #61dafb;  
animation: rotate 3s linear infinite, colorChange 3s linear infinite;  
}  
  
@keyframes rotate {  
0% {  
transform: rotate(0deg);  
}  
100% {  
transform: rotate(360deg);  
}  
}  
  
@keyframes colorChange {  
0% {  
background-color: #61dafb;  
}  
50% {  
background-color: #ff6347;
```

```
        }

    100% {

        background-color: #61dafb;

    }

}

</style>

</head>

<body>

<div class="square"></div>

</body>

</html>
```

Example:

```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Apple Animation</title>
    <style>
        body {
            display: flex;
            justify-content: center;
            align-items: center;
            height: 100vh;
            margin: 0;
        }
    </style>
</head>
<body>
    <div class="square"></div>
</body>
</html>
```

```
background-color: #f0f0f0;  
}  
  
.apple {  
    width: 50px;  
    height: 50px;  
    background-color: #ff4f4f; /* Apple-like red color */  
    border-radius: 10px; /* Slightly rounded corners for a pseudo-apple look */  
    position: relative;  
    animation: move 4s infinite;  
}  
  
@keyframes move {  
    0% {  
        transform: translate(0, 0);  
    }  
    25% {  
        transform: translate(200px, 0);  
    }  
    50% {  
        transform: translate(200px, 200px);  
    }  
    75% {  
        transform: translate(0, 200px);  
    }  
    100% {  
        transform: translate(0, 0);  
    }  
}  
</style>
```

```
</head>
<body>
  <div class="apple"></div>
</body>
</html>
```

Definition:

Animation:

- **@keyframes move:**
 - The move animation moves the apple in a square path:
 - 0% sets the apple at the starting position.
 - 25% moves the apple 200 pixels to the right.
 - 50% moves the apple 200 pixels down and 200 pixels to the right (bottom-right corner).
 - 75% moves the apple 200 pixels to the left (bottom-left corner).
 - 100% returns the apple to the starting position.