HTML Links

HTML Links (**Hyperlinks**) are words or buttons having a link to another page that take the user to that linked page when clicked.

HTML Hyperlinks

A **hyperlink** is a specific type of link that allows users to navigate from one web page or resource to another by clicking on it. You can create hyperlinks using text or images available on a webpage. A hyperlink is created using the HTML Anchor Tag (****).

The Anchor (<a>) Tag

An anchor tag, or **<a>** tag, is a basic element that creates hyperlinks between two pages. Anything which is written between the opening **<a>** and the closing **** tags become clickable and when someone clicks on it, the linked page will be opened.

Syntax

Here is the syntax to create a hyperlinks in HTML:

Link Text

Read more about creating URLs, we recommend to read this chapter: <u>Understanding URL</u>

Creating Hyperlinks (Linking Webpages/Documents)

You can link other webpages or documents by creating the hyperlinking to specific words, images, or any HTML element.

As discussed above, you can create hyperlinks by using the HTML **<a>** tag with the **href** attribute. The **href** attribute specifies the page/document to be linked.

Syntax

Link Text

Example

In this example, we are creating a simple HTML document that demonstrates how to use a hyperlink:

```
<!DOCTYPE html>
<html>
<head>
    <title>Hyperlink Example</title>
```

```
</head>
<body>
  <p>Click following link</p>
  <a href="https://www.tutorialspoint.com/" target="_self">Tutorials Point</a>
</body>
</html>
```

On executing the above example, a link will be displayed. You can click on the link generated to reach to the home page of Tutorials Point.

The "target" Attribute

The **target** attribute specifies the location where linked document is opened. Following are the possible values of **target** attribute:

S.No.	Option & Description
1	**_blank** Opens the linked document in a new window or tab.
2	**_self** Opens the linked document in the same frame.
3	**_parent** Opens the linked document in the parent frame.
4	**_top** Opens the linked document in the full body of the window.
5	**targetframe** Opens the linked document in a named targetframe.

Example

Try following example to understand basic difference in few options given for target attribute.

```
<!DOCTYPE html>
<html>
<head>
  <title>Hyperlink Example</title>
  <base href="https://www.tutorialspoint.com/">
</head>
<body>
  <p>Click any of the following links</p>
  <a href="/html/index.htm" target="_blank">Opens in New</a> | <a href="/html/index.htm"
target="_self">Opens in Self</a> | <a href="/html/index.htm" target="_parent">Opens in
Parent</a> | <a href="/html/index.htm" target="_top">Opens in Body</a>
</body>
</html>
```

This will produce the following result, where you can click on different links to understand the difference between various options given for **target** attribute.

Use of Base Path in Hyperlinks

When you link HTML documents related to the same website, it is not required to give a complete URL for every link. You can get rid of it if you use **<base>** tag in your HTML document header. This tag is used to give a base path for all the links. So your browser will concatenate given relative path to this base path and will make a complete URL.

Example

Following example makes use of **<base>** tag to specify base URL and later we can use relative path to all the links instead of giving complete URL for every link:

```
<!DOCTYPE html>
<html>
<head>
  <title>Hyperlink Example</title>
  <base href="https://www.tutorialspoint.com/">
</head>
<body>
  <p>Click following link</p>
  <a href="/html/index.htm" target="_blank">HTML Tutorial</a>
</body>
</html>
```

This will produce the following result, where you can click on the link generated **HTML Tutorial** to reach to the HTML tutorial.

Linking to a Page Section

Linking to a section on the same page allows users to navigate directly to that section. You can create a link in the same to a specific section by using the **href** attribute with a **#id** value, where the **#id** targets an element on the page with a corresponding id attribute.

Example

In the below code, we demonstrate the usage of the **href** attribute to navigate to a different section within the same page. We provide **#idofsection** inside the href to navigate sections of our need:

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

<head>
  <style>
    div {
      height: 900px;
    }
```

```
    </style>
  </head>

  <body>
    <h2>Ed-Tech</h2>
    <div>
      <p>
        Tutorialspoint: Simply Easy Learning
      </p>
      <a href="#about">Know More</a>
    </div>
    <h2 id="about">Section 2</h2>
    <div>
    <p>
      Tutorials Point is an online learning platform
      providing free tutorials, paid premium courses,
      and eBooks. Learn the latest technologies and
      programming languages SQL, MySQL, Python, C,
      C++, Java, Python, PHP, Machine Learning, data
      science, AI, Prompt Engineering and more.
    </p>
    </div>
  </body>

</html>
```

Styling Hyperlinks (Setting Link Color)

You can set colors of your links, active links and visited links using **link, alink** and **vlink** attributes of <body> tag.

Example

Save the following in test.htm and open it in any web browser to see how **link, alink** and **vlink** attributes work.

```
<html>
<head>
  <title>Hyperlink Example</title>
  <base href="https://www.tutorialspoint.com/">
</head>
<body alink="#54A250" link="#040404" vlink="#F40633">
  <p>Click following link</p>
  <a href="/html/index.htm" target="_blank">HTML Tutorial</a>
</body>
</html>
```

This will produce the following result. Just check color of the link before clicking on it, next check its color when you activate it and when the link has been visited.

Downloadable Links

HTML allows you to create downloadable links where you can create links to make your PDF, DOC, or ZIP files downloadable. To create any link downloadable, you can use the download **attribute** with the **<a>** tag and specify the downloadable file path in the **href** attribute.

Example

The following example demonstrates creating a downloadable link in HTML:

```
<!DOCTYPE html>
<html>
<head>
  <title>Downloadable Link Example</title>
</head>
<body>
  <a href="/html/src/sample.txt" download>Download File</a>
</body>
</html>
```

Custom File Name

You can also specify the filename for the downloaded file. To give a custom filename the file, you need to provide it to the **download** attribute.

Here is an example:

```
<a href="/html/src/sample.txt" download="custom-report.txt">Download File</a>
```

File Download Dialog Box

You can also allow HTML to open a file download dialog box before starting the download so that the user can select the location to download the file. You can do it by using an HTTP header in your HTTP response.

For example, if you want to make a **filename** file downloadable from a given link, then its syntax will be as follows.

Syntax

```
#!/usr/bin/perl
# Additional HTTP Header
print "Content-Type:application/octet-stream; name=\"FileName\"\r\n";
print "Content-Disposition: attachment; filename=\"FileName\"\r\n\n";
# Open the target file and list down its content as follows
open( FILE, "<FileName" );
while(read(FILE, $buffer, 100)){
  print("$buffer")}
```

HTML - Image Links

Images can also be used as links in HTML, which means by clicking the images we can navigate to other web pages or resources. HTML image links are very useful in creating websites like photo galleries, portfolios, online stores, and so on. In this article, we will learn how to use images to create hyperlinks. It is similar to the **HTML - Text Link**.

Creating Image Links

To create an **HTML image link**, we need an **<img>** tag and an **anchor** element. The image element is used to display the image on the web page, and the anchor element is used to specify the destination URL of the link.

Here, the **href** attribute of **<a>** element contains the destination link and **src** attribute of **<img>** tag contains the path of image.

Syntax

Here, the **href** attribute of the **<a>** element contains the destination link, and the **src** attribute of the **<img>** tag contains the path of the image.

```
<a href=" destination URL">
  <img src="image URL" alt="alternative text">
</a>
```

Examples of HTML Image Links

Here are some example codes that explain the usage of image links in HTML:

- Create Hyperlink for an Image
- Image Link with Tooltip
- Mouse-Sensitive Images
- Server-Side Image Maps
- Client-Side Image Maps

Create Hyperlink for an Image

In the following example, we are using an image as a hyperlink. If you execute the below code, an image will be displayed, and if we click on it, the page will redirect to the home page of Tutorials Point.

Example

```
<!DOCTYPE html>
<html>
<head>
  <title>Image Hyperlink Example</title>
```

```
</head>
<body>
  <a href="https://www.tutorialspoint.com">
    <img src="/html/images/logo.png"
      alt="Tutorials Point"
      border="0" />
  </a>
</body>
</html>
```

Image Link with Tooltip

You can also define a tooltip for an image link; when someone moves the mouse over the linked image, it will display a tooltip. To set the tooltip, you can set the **title** attribute of the **<a>** tag.

Example

The following example demonstrates a tooltip to an image link:

```
<!DOCTYPE html>
<html>
<head>
  <title>Image Hyperlink Example</title>
</head>
<body>
  <a href="https://www.tutorialspoint.com" title="Go to TutorialsPoint">
    <img src="/html/images/logo.png"
      alt="Tutorials Point"
      border="0" />
  </a>
</body>
</html>
```

In the above example, hovering over the logo will display the tooltip " Go to TutorialsPoint".

Mouse-Sensitive Images

The HTML and XHTML standards provide a feature that lets us embed several different links inside a single image. We can create different links on the single image based on different coordinates available on the image.

Once the links are attached to all coordinates, clicking on the different parts of the image redirects us to target documents. Such mouse-sensitive images are known as image maps.

There are two ways to create image maps:

- **Server-side image maps:** This is enabled by the **ismap** attribute of the **<img>** tag and requires access to a server and related image-map processing applications.
- **Client-side image maps:** This is created with the **usemap** attribute of the **<img>** tag, along with corresponding **<map>** and **<area>** tags.

Server-Side Image Maps

In the **server-side image maps**, we simply put the image inside a hyperlink and use the **ismap** attribute, which makes it a special image, and when the user clicks some place within the image, the browser passes the coordinates of the mouse pointer along with the URL specified in the **<a>** tag to the web server. The server uses the mouse pointer coordinates to determine which document to deliver back to the browser.

When **ismap** is used, the href attribute of the containing **<a>** tag must contain the URL of a server application like a CGI or PHP script to process the incoming request based on the passed coordinates.

The coordinates of the mouse position are screen pixels counted from the upper-left corner of the image, beginning with (0,0). The coordinates, preceded by a question mark, are added to the end of the URL.

Example

The following code snippet demonstrates the use of server-side image maps.

```
<!DOCTYPE html>
<html>
<head>
  <title>ISMAP Hyperlink Example</title>
</head>
<body>
  <p>
    Click on the Image to get its coordinates.
  </p>
  <a href="#" target="_self">
    <img src="/images/logo.png"
      alt="Tutorials Point"
      ismap/>
  </a>
</body>
</html>
```

On executing the above code, tutorialspoint logo will be displayed. When we click on the logo, the address bar will display the respective coordinates, as shown below:

This way we can assign distinct links to different coordinates of the image, and when those coordinates are clicked, we will be redirected to the linked documents. To learn more about the **ismap** attribute, check How to use Image ismap?

Client-Side Image Maps

Client-side image maps are enabled by the **usemap** attribute of the <img /> tag and defined by special <map> and <area> extension tags. The <map> along with <area> tags define all the

image coordinates and corresponding links. The <area> tag inside the **map** tag specifies the shape and the coordinates to define the boundaries of each clickable hotspot available on the image.

The image that is going to form the map is inserted into the page using the <img /> tag as a normal image, except it carries an extra attribute called **usemap**.

On running the below code, an image with clickable areas will be displayed. If you click on one of the area, you will be redirected to the tutorial of that part.

To know how the value of the **coords** attribute is calculated, you can visit the explanation of **coords** attribute.

Coordinate System in HTML Images

The actual value of **coordinates** is totally dependent on the shape of the clickable area. Let us understand the coordinates of different shapes.

Shape	Coordinates	Description
Rectangle	x_1 , y_1 , x_2 , y_2	Where x_1 and y_1 are the coordinates of the upper left corner of the rectangle; x_2 and y_2 are the coordinates of the lower right corner.
Circle	x_c , y_c , radius	Where x_c and y_c are the coordinates of the center of the circle, and radius is the circle's radius. A circle centred at 200,50 with a radius of 25 would have the attribute coords="200,50,25".
Polygon	x_1 , y_1 , x_2 , y_2 , x_3 , y_3 , ... x_n , y_n	The various x-y pairs define vertices (points) of the polygon, with a "line" being drawn from one point to the next point. A diamond-shaped polygon with its top point at 20,20 and 40 pixels across at its widest points would have the attribute coords="20,20,40,40,20,60,0,40".