

TECHNOLOGY



HTML

TECHNOLOGY



Caltech | **Center for Technology &
Management Education**

Full Stack Java Developer

Understanding HTML



Learning Objectives

By the end of this lesson, you will be able to:

- 👁️ Get familiarized with the basics of HTML to design web page content
- 👁️ Identify the elements that define an HTML page
- 👁️ Learn how tags help to define document titles and character sets to provide information



Learning Objectives

By the end of this lesson, you will be able to:

- 👁 Use lists to organize information
- 👁 Analyze the process of embedding media in a web page
- 👁 Use file paths and links while creating a web page



A Day in the Life of a Full Stack Developer

You have been hired as a full-stack developer in an organization and assigned to a web application development project with your fellow juniors. The juniors are new to the technology and need your guidance to understand and work on it.

Explain the basics of HTML, elements in HTML, HTML tags, and everything else required for a basic understanding. This will help them comprehend the technology and begin working on it.



What Is HTML?

What Is HTML?

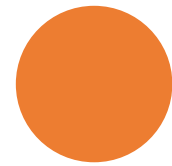
Hyper Text Markup Language (HTML) is used to design web page content.



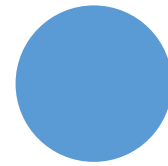
It is used to create web pages and online applications.

Elements

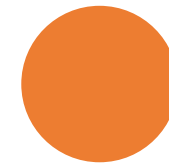
Elements define how the web page content is displayed.



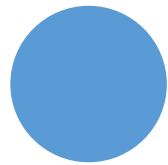
Heading



Paragraphs



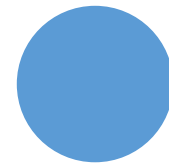
Bullet Points



Images



Videos



Forms



Tables



HTML Page Structure

HTML tags and elements are crucial to an HTML page.



Web Pages and Tags

Web Pages

A web page is a document written in HTML and viewed on a browser.



Web Pages

The web page is accessed by Uniform Resource Locator (URL).



The information displayed on the web browser is placed within the HTML tags.

Tag

A tag is assigned to information inserted into the page's source code.

Represents the root of an HTML document

Defines the document's body

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
<h1>My First Heading </h1>
```

```
<p>My First Paragraph</p>
```

```
</body>
```

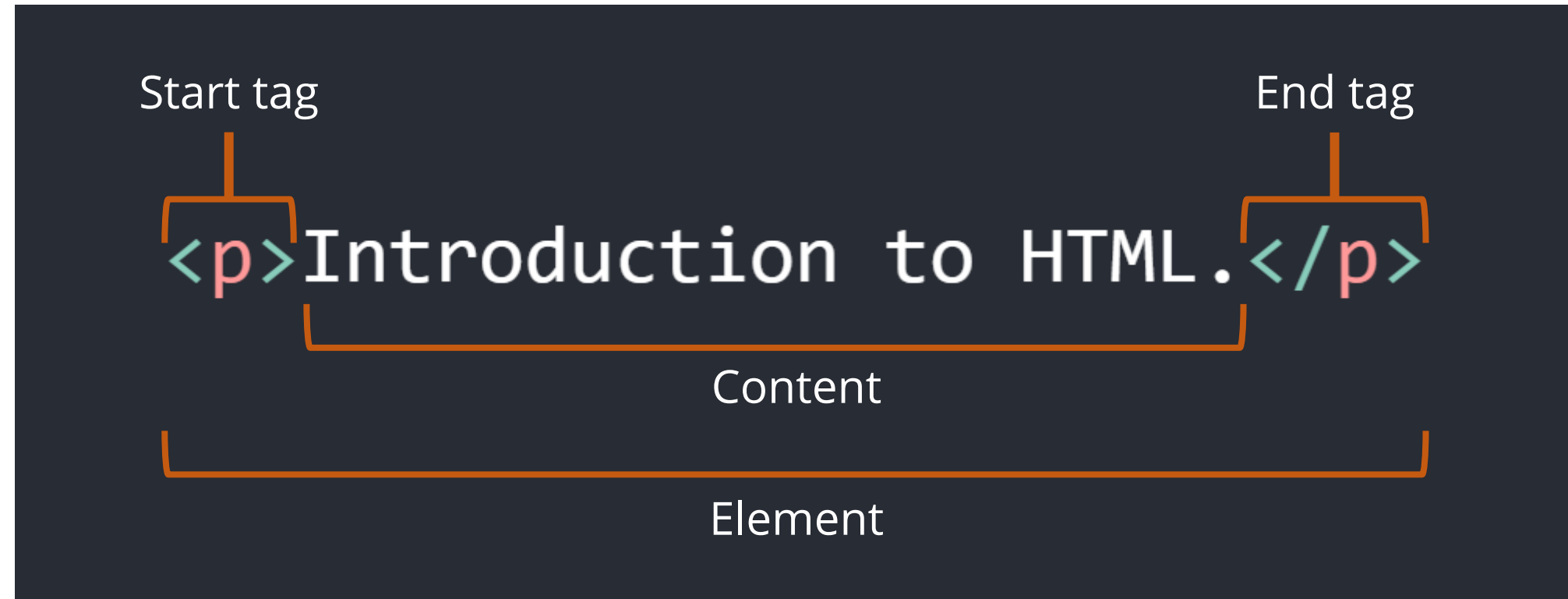
```
</html>
```



Elements

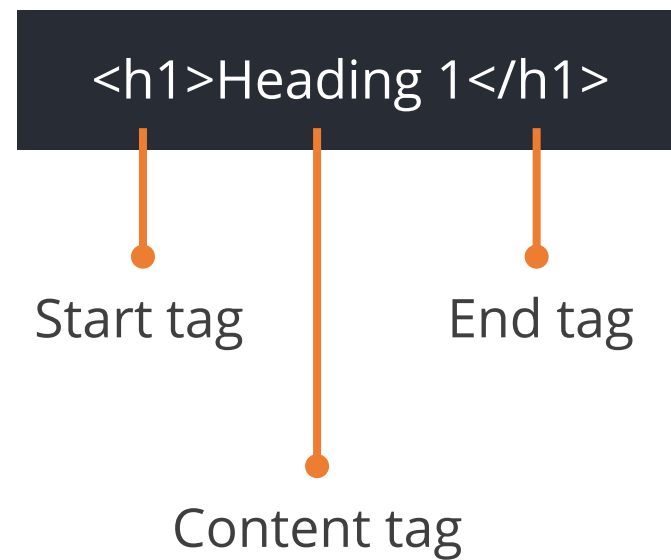
Elements

Elements define the whole HTML document.

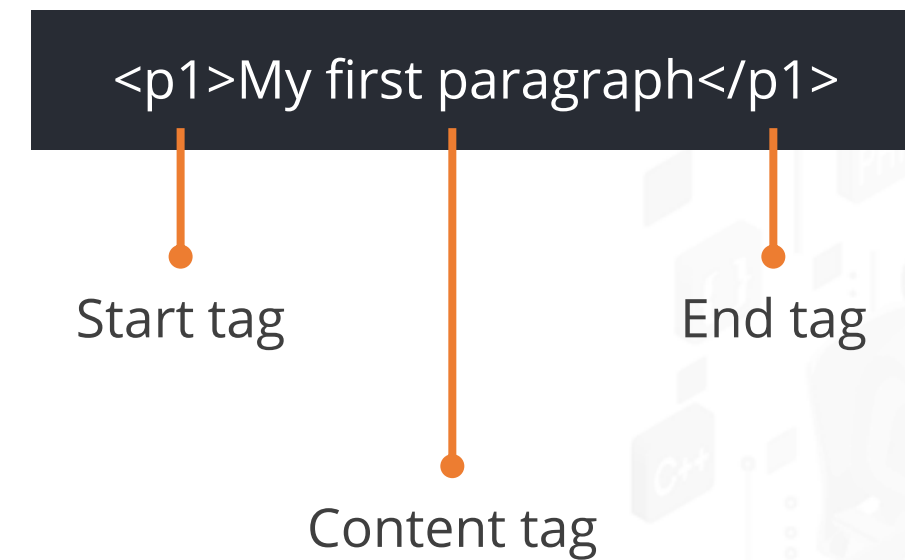


Elements: Example

Heading element:



Paragraph element:



The empty element `
` neither has content nor an end tag.

Nested Elements

A nested element is a part that contains other elements within the start and end tags.

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>My new project website</title>
<meta name="description" content="New project">
<meta name="author" content="John Doe">
<link rel="stylesheet" href="css/styles.css?v=1.0">
  <script>
    function myFunction() {
      document.getElementById("demo").innerHTML = "This is super script";
    }
  </script>
</head>
  <body>
    <script src="js/scripts.js"></script>
  </body >
</html>
```

Nested Elements: Example

<html> is the root element that contains three other elements.

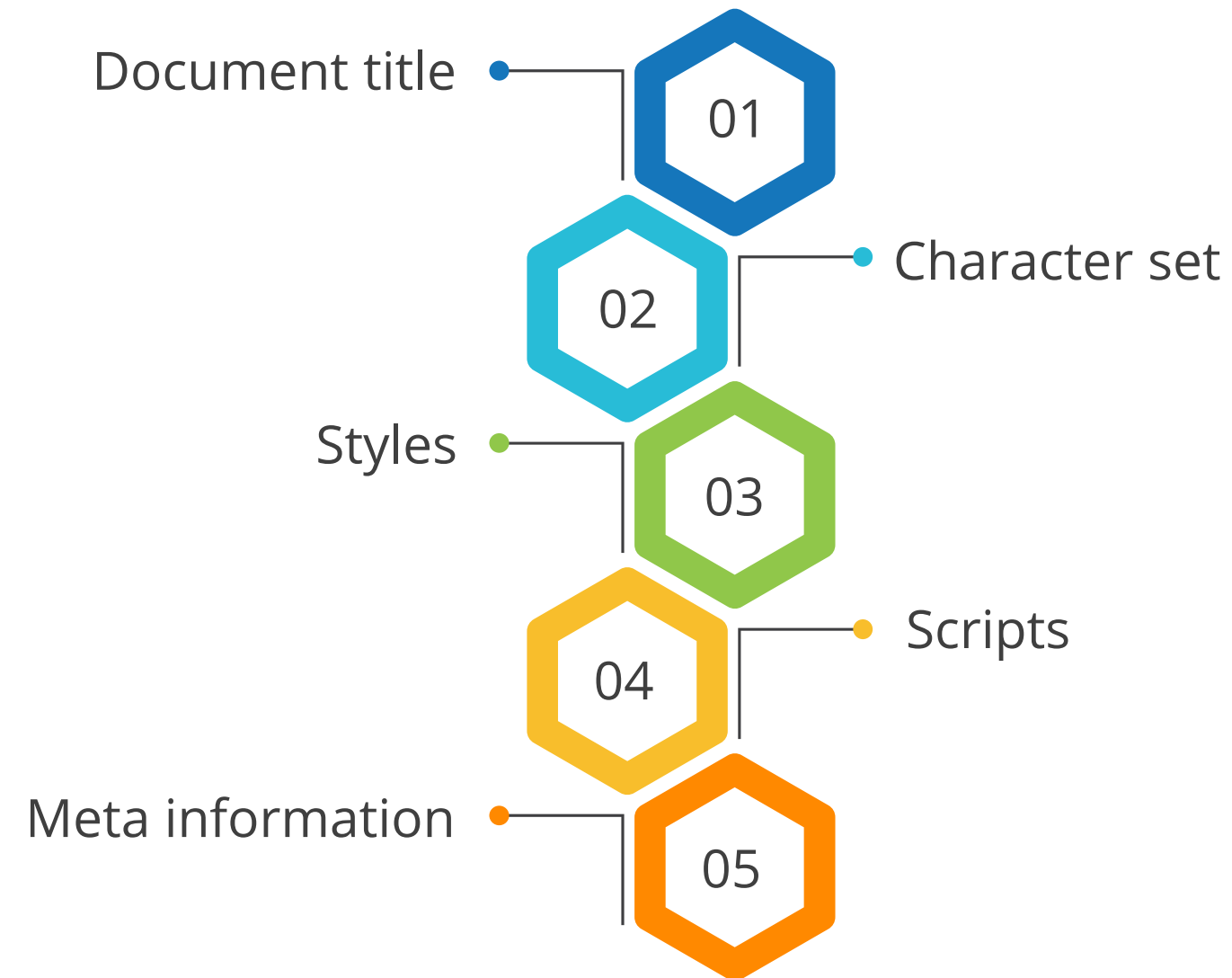
```
<!DOCTYPE html>
<html>
<body>
<h1> My First Heading </h1>
<p> My First Paragraph </p>
</body>
</html>
```



Types of Tags

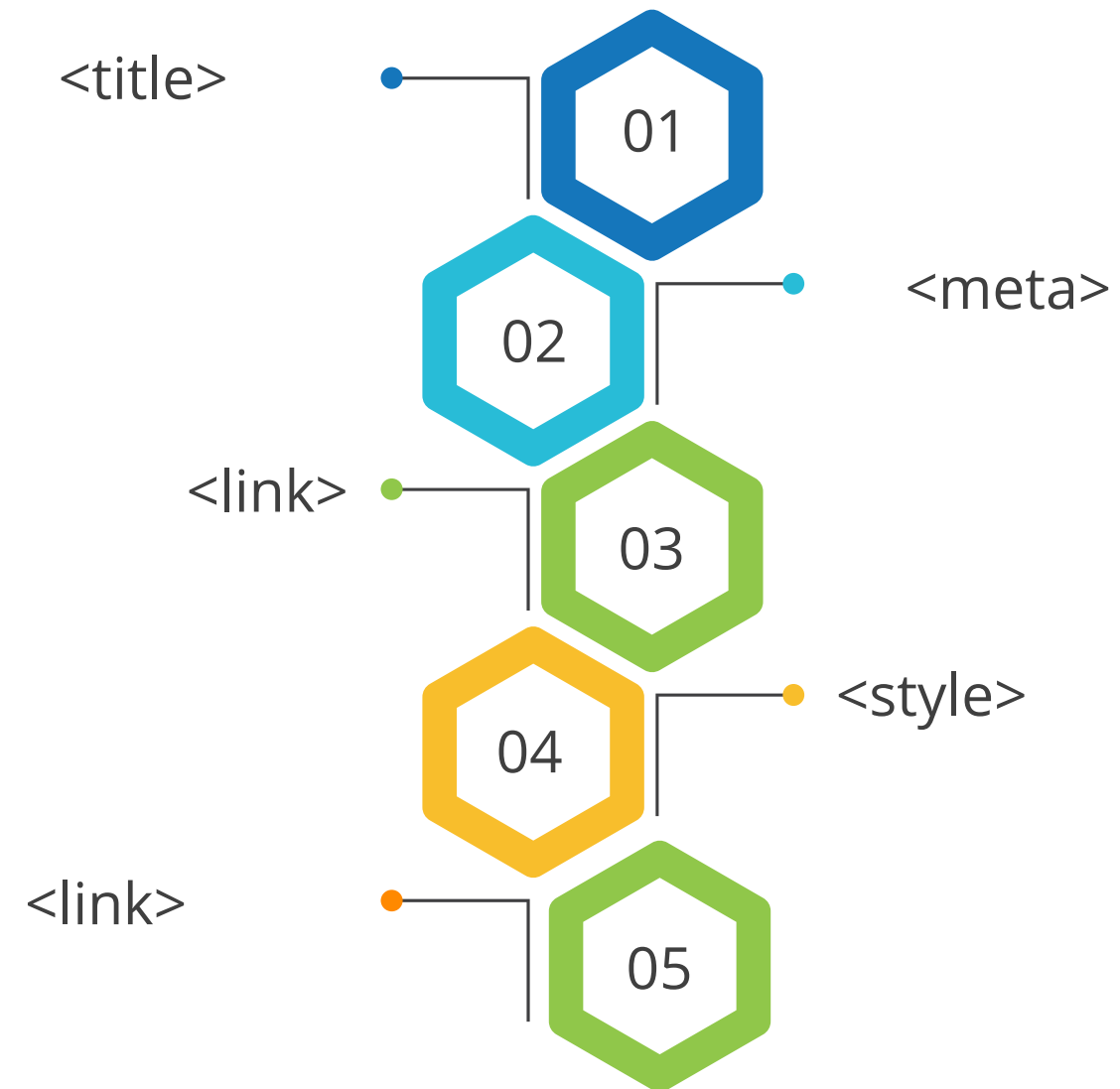
Head Tag

The <head> tag is placed between the <html> tag and the <body> tag.



Head Tag

The <head> tag contains other elements such as:



Head Tag: Example

HTML code

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Title of the document</title>
</head>
<body>

<h1>Greetings</h1>
<p>Welcome to our company website. </p>

</body>
</html>
```



Output

Greetings
Welcome to our company website.

Body Tag

The body element is one of the most important elements when creating a webpage.

All content should be placed between the opening and closing tags.

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

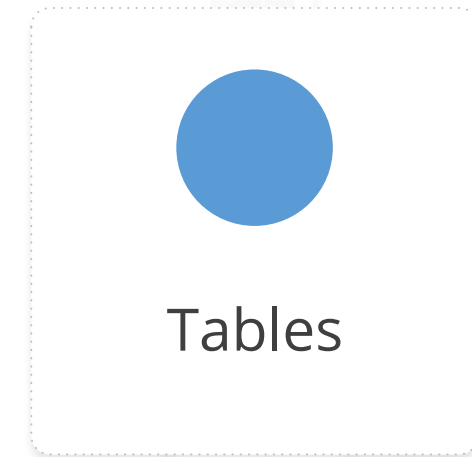
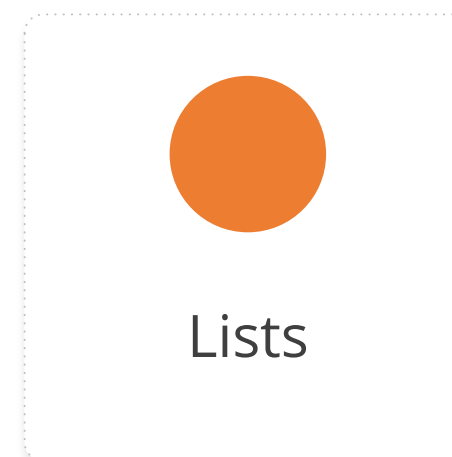
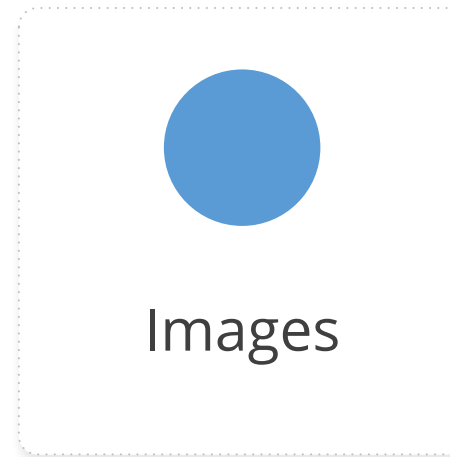
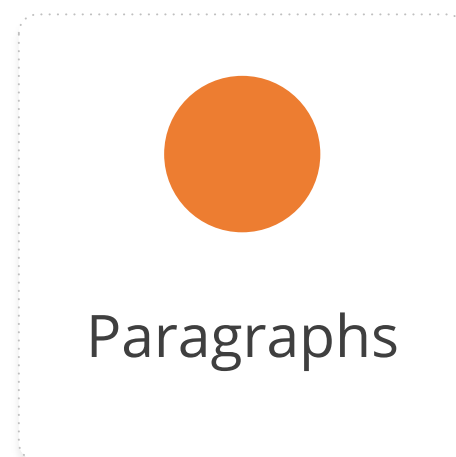
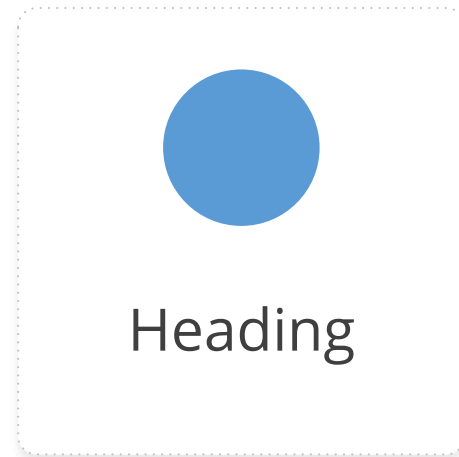
<h1>Heading</h1>
<p>Content</p>

</body>
</html>
```



Body Tag

The <body> tag contains:



The content outside the opening and closing tags is not displayed on the screen.

Body Tag: Example

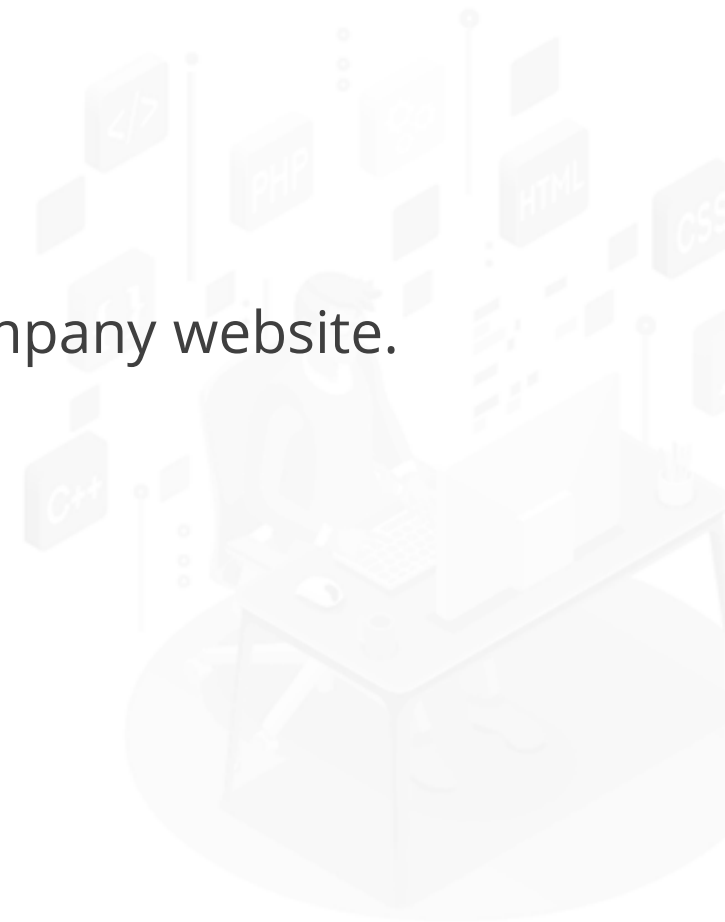
HTML code

```
<!DOCTYPE html>
<html>
<head>
  <title>Welcome</title>
</head>
<body>
  <h1>Greetings</h1>
  <p>Welcome to our company website. </p>
  <p>Hello, I am John</p>
</body>
</html>
```



Output

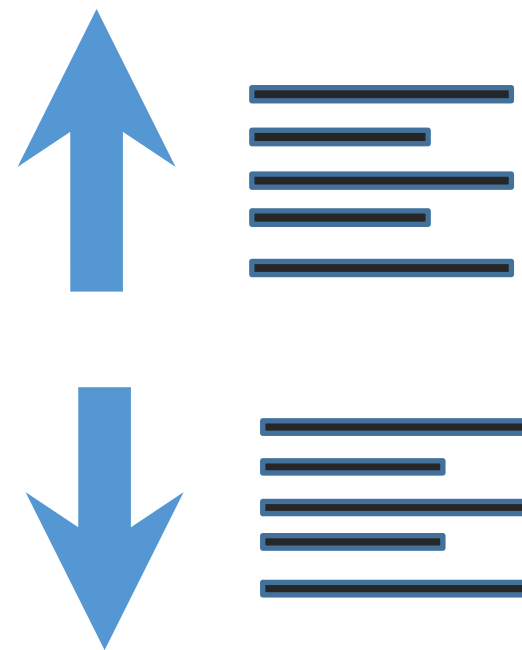
Greetings
Welcome to our company website.
I am John.



Paragraph Spacing Tag

Line spacing is a space between the lines of text within a paragraph.

Its property is set by line height in the code.



Line Breaks Tag

A paragraph always begins on a new line.



To start a new line, create a line break.



Line Breaks Tag

The
 tag creates a line break.

A line break is a point at which two lines of text are divided.

HTML Code

```
<!DOCTYPE html>
<html>
<head>
<title>Welcome</title>
</head>
<body>
<p>Hello,<br> I am<br> John<br> </p>
</body>
</html>
```



Output

Hello,
I am
John



Non-Breaking Spacing Tag

To add space between two words without breaking a line, use a non-breaking space.




It is a character entity.

To insert a non-breaking space, ** ** can be used

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Output



This has appeared in the movie "12 Angry Men."

Header Tags

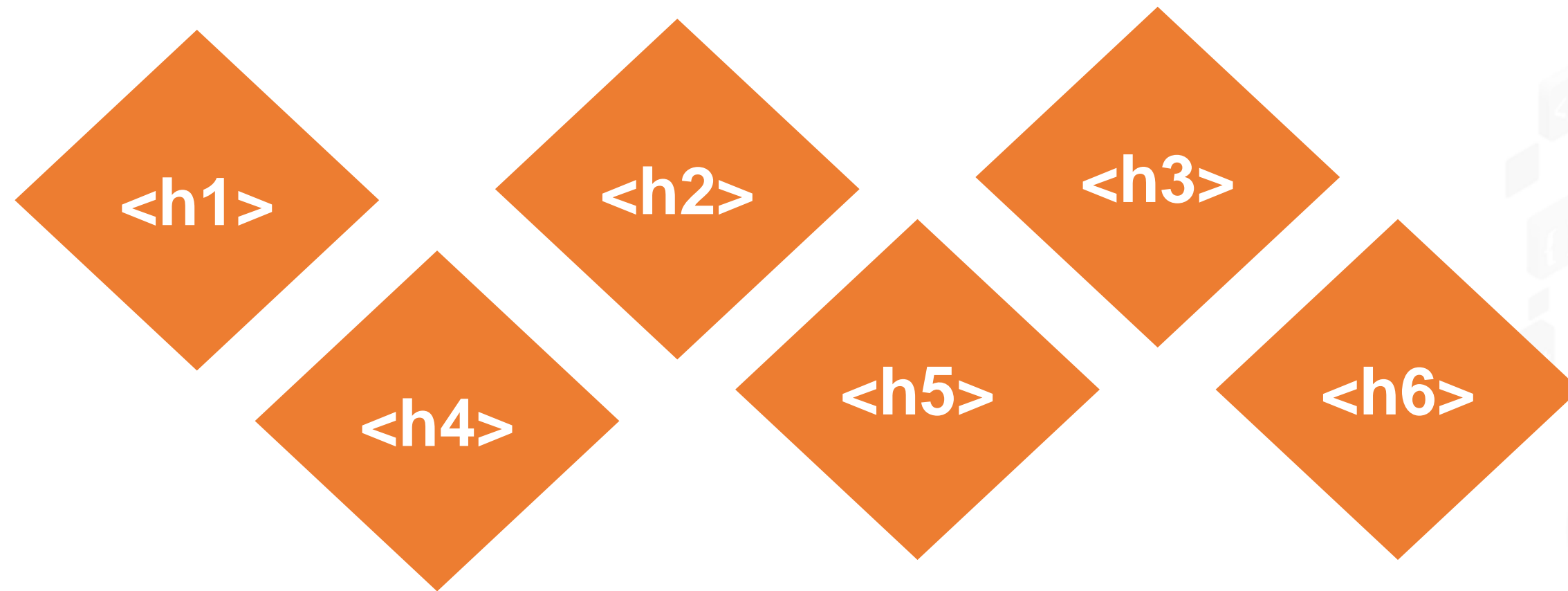
The heading is used to grab a reader's attention.

Headings describe the content, such as the title of a film or an article.



Heading Elements

The list of heading elements accessible in HTML is as follows:



They are arranged according to size in descending order.

Example

HTML code

```
<!DOCTYPE html>
<html>
<body>
  <h1>Blue</h1>
  <h2>Green</h2>
  <h3>Yellow</h3>
  <h4>White</h4>
  <h5>Red</h5>
  <h6>Orange</h6>
</body>
</html>
```



Output

Blue

Green

Yellow

White

Red

Orange

HTML offers various inline text formatting options.

Text Formatting

Text Formatting

Text formatting provides a better look and feel to the text.

Formatting tags are used to make the text:

B

Bold

I

Italicized

U

Underlined



Categories of Formatting Tabs

The formatting tag has two major categories:

Physical tags

Adds visual appearance
to the text

Logical tags

Adds logical or semantic
values to the text

Categories of Formatting Tabs

Here are the tags that HTML offers to format text:

Tag	Description
	Bold the text between it
	Help the browser identify whether the text is important
<i>	Italicize the text
	Display italicized content
<mark>	Highlight text
<u>	Underline text written between it
<tt>	Make the text appear in teletype



Categories of Formatting Tabs

Here are the tags that HTML offers to format text:

Tag	Description
<strike>	Draw a strikethrough on a section of text
<sup>	Display the content slightly above the normal line
<sub>	Specify the inline text that needs to be represented as subscript
	Display the deleted content
<ins>	Display the content which is added
<big>	Increase the font size by one conventional unit
<small>	Decrease the font size by one unit from the base font size



Categories of Formatting Tabs

Take the following code:

HTML code

```
<!DOCTYPE>
<html>
<head>
<title>HTMLTextFormatting</title>
</head>
<body>
<p><b>This is bold text</b></p>
<p><strong>This is a</strong> strong text</p>
<p><i>This is a italic text</i></p>
<p><em>This is a em </em>text</p>
<p>This is a <mark>mark tag</mark></p>
<p>This is a <u>underline text</u></p>
<p><strike>This is a strike text</strike></p>
<p>Hiii<tt>This paragraph in the monospaced font</tt></p>
<p>Hello<sub>This is a superscript text</sub>
<p>Hiii<del>Delete this paragraph</del></p>
<p><del>Hello</del><ins>How are you!</ins></p>
<p>Hello<big>This is a larger font</big></p>
<p>Hiii<small>This is a small font</small></p>
</body>
</html>
```

Output

This is bold text

This is a strong text

This is a italic text

This is a em text

This is a **mark tag**

This is a underline text

~~This is a strike text~~

HiiiThis paragraph in the monospaced font

Hello^{This is a superscript text}

Hiii~~Delete this paragraph~~

Hello~~Hello~~How are you!

HelloThis is a larger font

HiiiThis is a small font

Text Decoration

Text Decoration

Text decoration refers to decorating the text in different ways.

None

Does not decorate the text; the text looks normal

Syntax:

`text-decoration:none;`

Overline

Adds a line on the top of the text with a 1px size

Syntax:

`text-decoration:overline;`

Text Decoration

Text decoration refers to decorating the text in different ways.

Line-through

Adds a line from the middle of the text with the 1px size

Syntax:

text-decoration: line-through;

Underline

Adds a line at the bottom of the text with the 1px size

Syntax:

text-decoration: underline;

Text Decoration

Text decoration refers to decorating the text in different ways.

Blink

Makes the text blink with different colors with an opacity ranging from 0% to 100%

Syntax:

text-decoration: blink;



Text Decoration: Example

HTML Code

```
<!DOCTYPE>
<html>
<head>
<title>HTMLTextFormatting</title>
</head>
<body>
<p><b>This is bold text</b></p>
<p><strong>This is a</strong> strong text</p>
<p><i>This is a italic text</i></p>
<p><em>This is a em </em>text</p>
<p>This is a <mark>mark tag</mark></p>
<p>This is a <u>underline text</u></p>
<p><strike>This is a strike text</strike></p>
<p>Hiii<tt>This paragraph in the monospaced font</tt></p>
<p>Hello<sub>This is a superscript text</sub>
<p>Hiii<del>Delete this paragraph</del></p>
<p><del>Hello</del><ins>How are you!</ins></p>
<p>Hello<big>This is a larger font<big></p>
<p>Hiii<small>This is a small font</small></p>
</body>
</html>
```

Output

Example of overline property

This is a first paragraph

Example of line-through property

~~This is a second paragraph~~

Example of underline

This is a third paragraph

Inline Text Formatting

Inline Text Formatting

The inline text formatting option allows designing any text element differently.

Bold

*I*talize

 Link



Text Formatting: Purpose

Formatted text can be used for a variety of purposes.

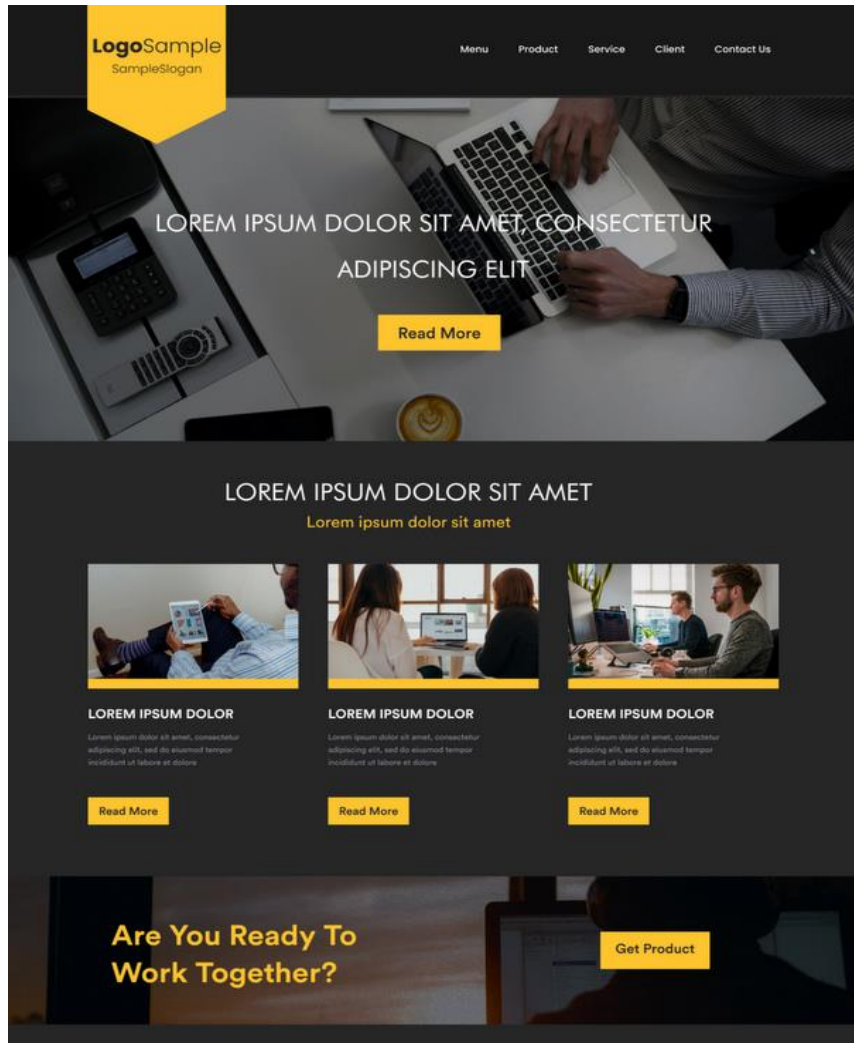


- Draws the reader's attention to specific areas of a document
- Emphasizes important information
- Sets certain words apart, such as:
 - Title
 - Keyword
 - Thought
 - Phrase



Text Formatting: Tags

HTML provides the ability to format text without using CSS.



Formatting tags:

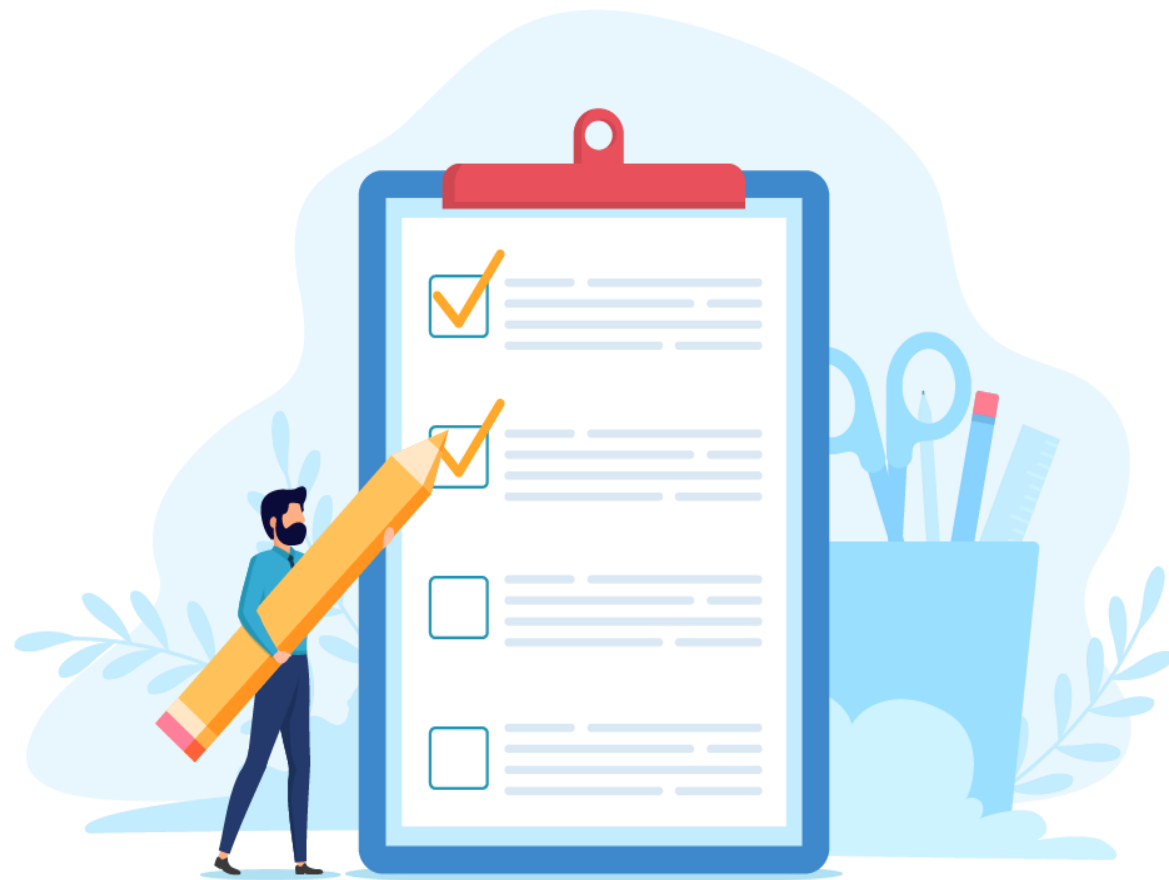
- `` - Bold text
- `` - Important text
- `<i>` - Italic text
- `` - Emphasized text
- `<mark>` - Marked text
- `<small>` - Smaller text
- `` - Deleted text
- `<ins>` - Inserted text
- `<sub>` - Subscript text
- `<sup>` - Superscript text



Lists

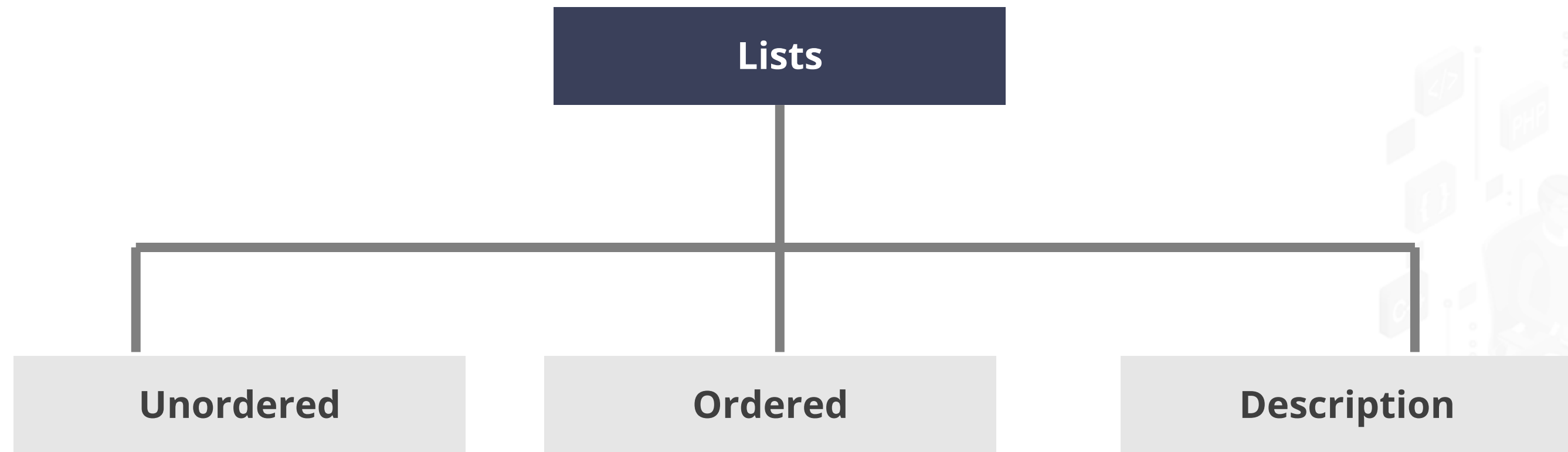
Uses of list:

- Organize relevant information
- Used for navigation and general content
- Helps in creating:
 - Well-structured
 - More accessible
 - Easy-to-maintain text



List Types

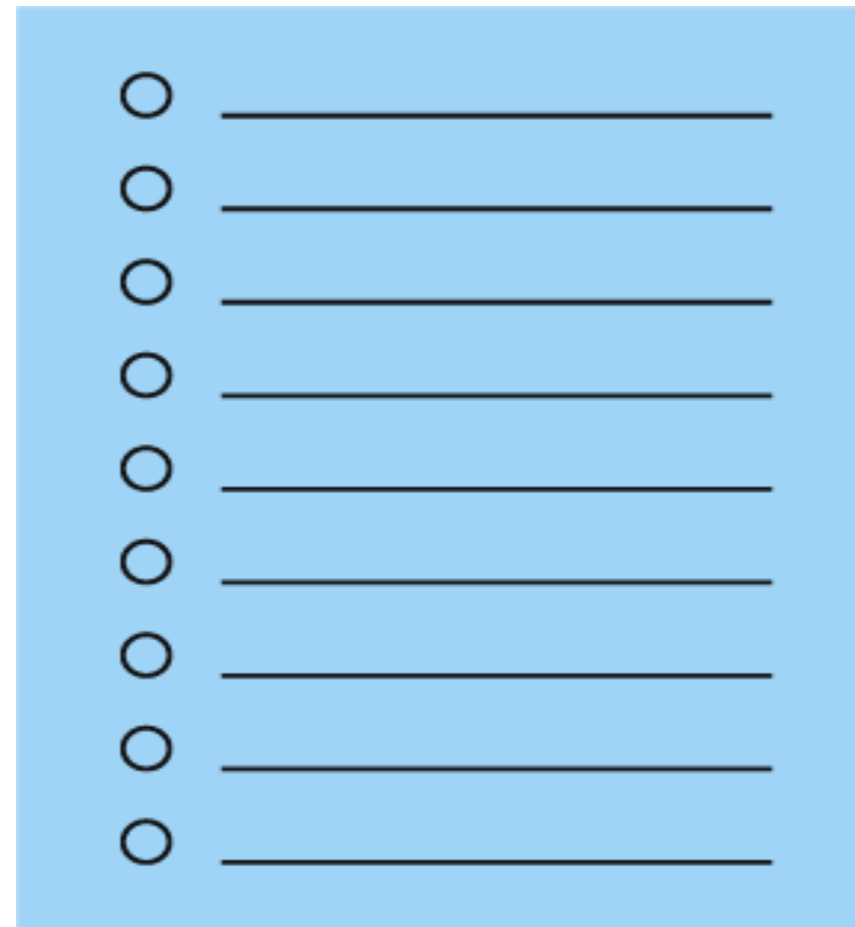
In HTML, there are three types of lists:



Unordered List

Unordered lists are collections of objects which don't have to be in any particular order.

**** tag defines an unordered list.



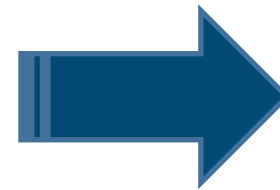
An unordered listing starts with the **** tag, and the list item begins with the **** tag.

Example

Example of an unordered list:

HTML code

```
<!DOCTYPE html>
<html>
<body>
  <h1>An unordered list</h1>
  <ul>
    <li>Apple</li>
    <li>Orange</li>
    <li>Grapes</li>
  </ul>
</body>
</html>
```



Output

An unordered list

- Apple
- Orange
- Grapes

Ordered List

An ordered list is a collection of objects denoted by numbers or some other form of notation.

a. _____ b. _____ c. _____	1. _____ 2. _____ 3. _____	1) _____ 2) _____ 3) _____
I. _____ II. _____ III. _____	A. _____ B. _____ C. _____	a) _____ b) _____ c) _____



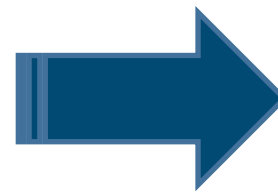
An ordered listing starts with the **** tag, and the list item starts with the **** tag.

Example

Here is an ordered list with the names of fruits:

HTML code

```
<!DOCTYPE html>
<html>
<body>
  <h1>An ordered list</h1>
  <ol>
    <li>Apple</li>
    <li>Orange</li>
    <li>Grapes</li>
  </ol>
</body>
</html>
```



Output

An ordered list

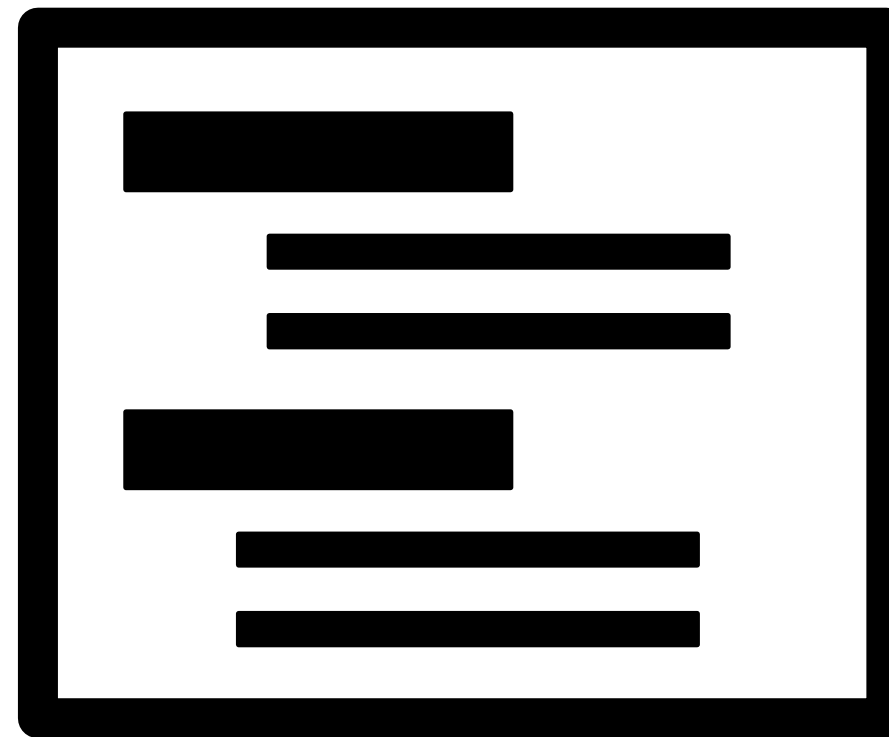
1. Apple
2. Orange
3. Grapes



Description List

A descriptive list is not used often.

The **<dl>** tag element can be used to create a description list.



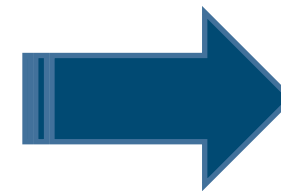
The **<dt>** tag defines a descriptive word inside the **dl>../dl>** tag.



Description List: Example

HTML Code

```
<dl>
  <dt>Coding</dt>
  <dd>An activity to keep you
happy.</dd>
  <dt>Gossiping</dt>
  <dd>Can't live without
it.</dd>
  <dt>Sleeping</dt>
  <dd>My all-time
favourite.</dd>
</dl>
```



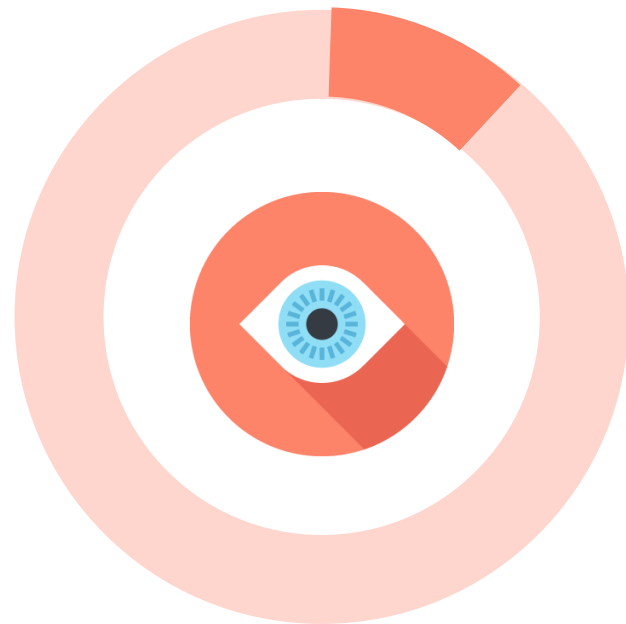
Output

Coding
An activity to keep you happy
Gossiping
Can't live without it.
Sleeping
My all-time favorite.

Embedding Media

Embedding Media

According to a recent survey:



20%
of what they read



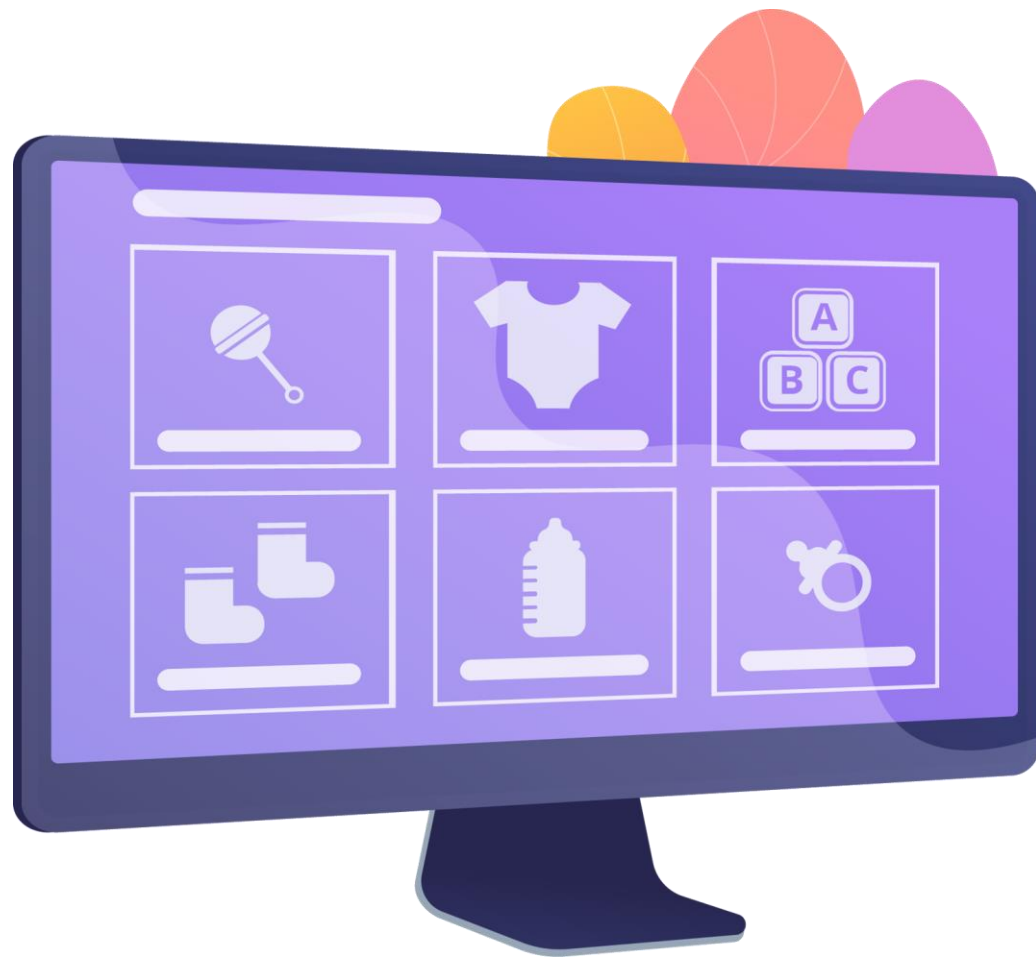
80%
of what they see

People absorb and digest information when the information is presented visually.



Embedding Media: Images

Images enhance the informative, engaging, and memorable qualities of the content.



Images:

- Help to raise organic search traffic
- Improve the visitor experience
- Make the content more alluring and attractive



Image Tag

The `` tag is used to insert an image on the web page.

An image is linked to a web page.



Image Tag: Attributes

The tag creates a holding space for the referenced image.

 tag has two attributes.



Syntax:

```

```

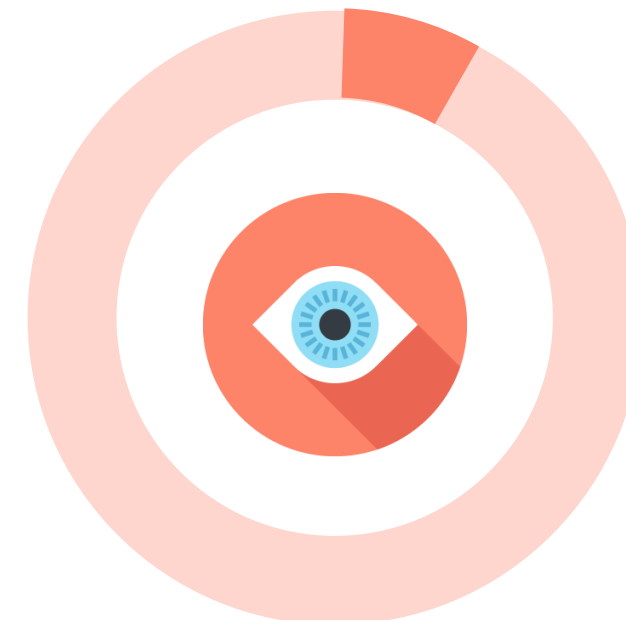


Embedding Media: Videos

A video provides value to the website.



95%
of what they see



10%
of what they read

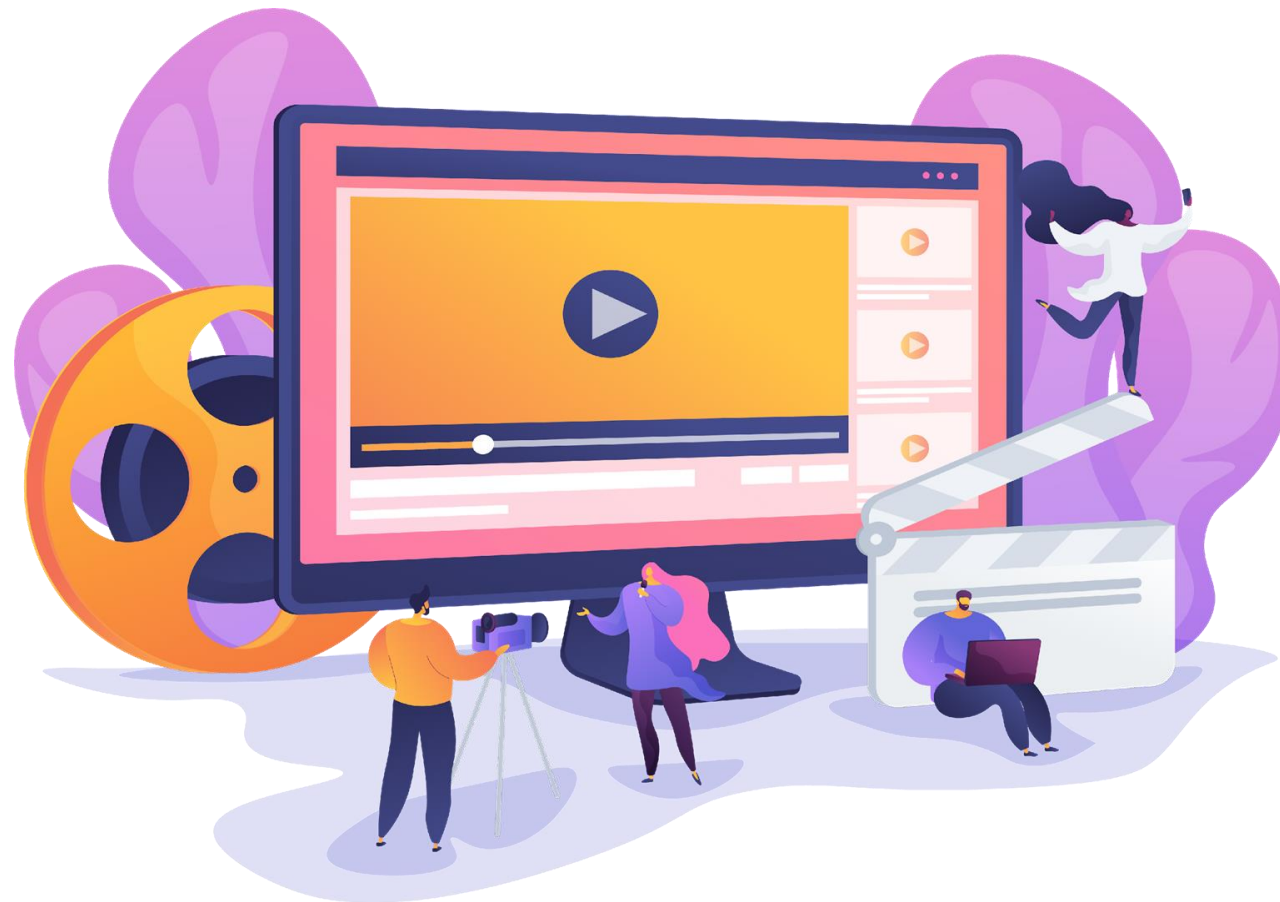
The video is an excellent place to connect with potential clients.



Video Tag

`<iframe>` is used to embed a video.

The source attribute includes the URL of the video.



It has attributes frame borders.

Video Tag: Example

Here is an example of how to insert a video:

HTML code

```
<!DOCTYPE html>
<html>
<head>
  <title>Embed Video</title>
</head>
<body>
  <p>Here is our video</p>
  <br>
  <iframe width="500" height="300"
src="https://www.youtube.com/embed/3o1M
-9vcd4M" frameborder="0"
allowfullscreen>
  </iframe>
</body>
</html>
```



Output

Here is our video

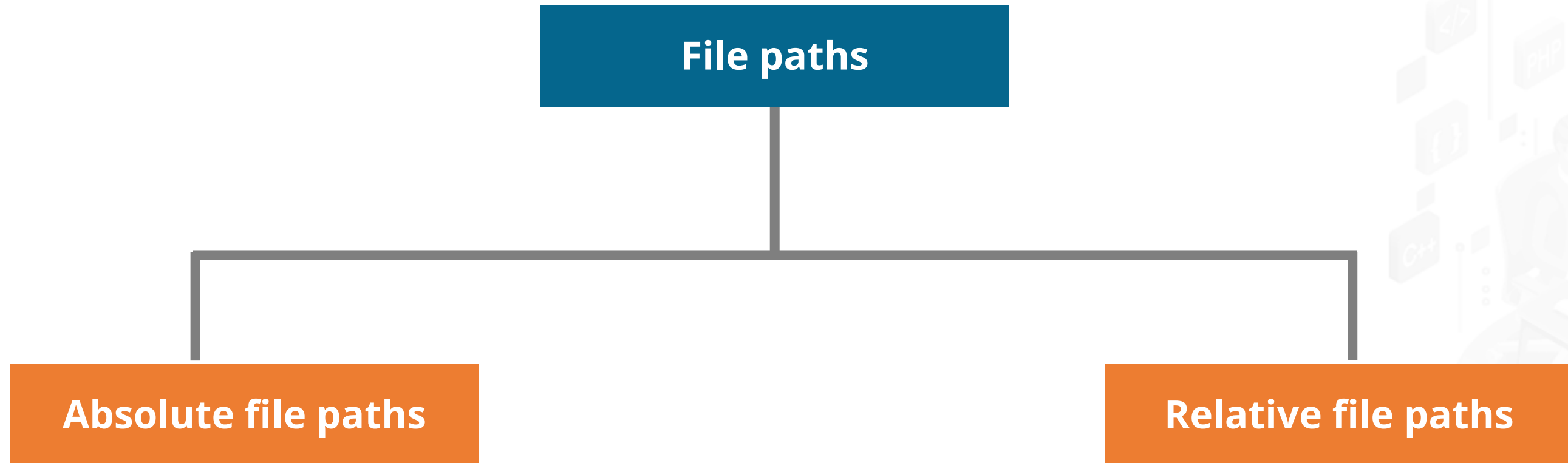


File Paths

File Paths

The location of a file is specified by a file path.

It allows the web browser to access the files.



Types of File Paths

Here is the syntax of absolute and relative file paths:

An absolute file path is defined as the full URL to a file.

Syntax:

```

```

A relative file path refers to a file located relative to the current file's location.

Syntax:

```

```

TECHNOLOGY

Links

Links

Links allow quick movement from one document to another.

A link's primary purpose is to refer an HTML document to a resource or another document.



Anchor Tag

Anchor Tag

It provides information to users on what they should expect when they click a link.

Anchor tag:

- Helps to create a hyperlink on the webpage that links it to other webpages
- Has a label that indicates what's on the other side of the linked page

Syntax:

```
<a href="url" >text</a>
```



Anchor Tag: Attributes

The anchor tag contains many attributes to link these web pages.

Attribute	Description	HTML5 Support
<a> charset	Specifies the character set	No
<a> download	Specifies the target link to download when the user clicks on it	
<a> hreflang	Indicates the language of the linked document	
<a> media	Mentions the linked media	
<a> coords	Specifies the coordination of the links	No
<a> name	Specifies the anchor name	No

Anchor Tag: Attributes

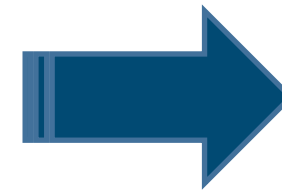
The anchor tag contains many attributes to link these web pages.

Attribute	Description	HTML5 Support
<a> rel	Specifies the relationship between the current document and the linked document	
<a> shape	Specifies the shape of the link	No
<a> type	Specifies the type of the links	
<a> target	Specifies the target of the links	
<a> rev	Establishes the relationship between the linked document and the current document	No

Anchor Tag: Example

HTML code

```
<!DOCTYPE html>
<html>
<head></head>
<body>
<h3>Anchor tag</h3>
<a
href="https://mail.google.com/">Click
Here</a>
</body>
</html>
```



Output

Anchor tag

[Click Here](https://mail.google.com/)

Key Takeaways

- Hyper Text Markup Language (HTML) is used to design web page content.
- A web page is a document written in HTML and viewed on a browser.
- A nested element is a part that contains other elements within the start and end tags.
- The body element is one of the most important elements when creating a webpage.
- Text formatting provides a better look and feel to the text.
- Text decoration refers to decorating the text in different ways.



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Thank You