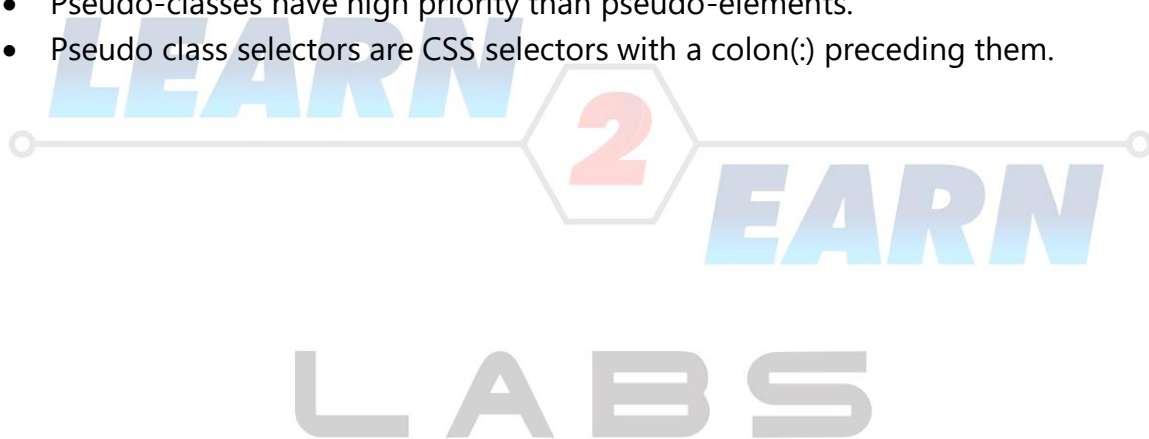


## d) Pseudo-Classes & Pseudo Elements

### 1) Pseudo-Classes

- A CSS pseudo-class is a keyword added to a selector that specifies a special state of the selected element.
- A Pseudo class in CSS is used to define the special state of an element. It can be combined with a CSS selector to add an effect to existing elements based on their states.
- CSS pseudo-classes are used to add special effects to some selectors. We don't need to use JavaScript or any other script to use these effects.
- Pseudo-class names are not case-sensitive.
- Pseudo-class are different from CSS classes but they can be combined.
- Pseudo-classes have high priority than pseudo-elements.
- Pseudo class selectors are CSS selectors with a colon(:) preceding them.



## 1.1) :first-child

The **:first-child** CSS pseudo-class represents the first element among a group of sibling elements.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    li:first-child
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>

  <ul class="list">
    <li>Hello 1</li>
    <li>Hello 2</li>
    <li>Hello 3</li>
    <li>Hello 4</li>
    <li>Hello 5</li>
  </ul>

</body>
</html>
```

## Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    p:first-child
    {
      color: blue;
      font-size: 30px;
    }
  </style>
</head>
<body>
  <div>
    <p>Lorem ipsum, dolor sit amet consectetur adipisicing elit. Non
    repudiandae incidunt quae, placeat illo omnis! Aliquid quidem quisquam
    excepturi at, culpa id ad, adipisci quasi aut ab sint. Architecto, animi!</p>

    <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Temporibus,
    fuga atque. Rem, sequi quam tempora maxime recusandae harum optio,
    magnam dignissimos ad voluptatum aut a ea! Voluptas minus minima eius?</p>
  </div>

</body>
</html>
```

## 1.2) :last-child

The **:last-child** CSS pseudo-class represents the last element among a group of sibling elements.

Example

-----

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    li:last-child
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>

  <ul class="list">
    <li>Hello 1</li>
    <li>Hello 2</li>
    <li>Hello 3</li>
    <li>Hello 4</li>
    <li>Hello 5</li>
  </ul>

</body>
</html>
```

### 1.3) :nth-child(n)

- The **:nth-child()** CSS pseudo-class matches elements based on their position in a group of siblings.
- Selects the "nth" number of child element from starting inside the parent.
- Where n = 0,1,2,...,so on.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    li:nth-child(2)
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>

  <ul class="list">
    <li>Hello 1</li>
    <li>Hello 2</li>
    <li>Hello 3</li>
    <li>Hello 4</li>
    <li>Hello 5</li>
  </ul>

</body>
</html>
```

## Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    li:nth-child(2n)
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>
  <ul class="list">
    <li>Hello 1</li>
    <li>Hello 2</li>
    <li>Hello 3</li>
    <li>Hello 4</li>
    <li>Hello 5</li>
  </ul>
</body>
</html>
```



## Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    li:nth-child(2n + 1)
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>
  <ul class="list">
    <li>Hello 1</li>
    <li>Hello 2</li>
    <li>Hello 3</li>
    <li>Hello 4</li>
    <li>Hello 5</li>
  </ul>
</body>
</html>
```



## Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    li:nth-child(3n-1)
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>
  <ul class="list">
    <li>Hello 1</li>
    <li>Hello 2</li>
    <li>Hello 3</li>
    <li>Hello 4</li>
    <li>Hello 5</li>
  </ul>
</body>
</html>
```





## Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    li:nth-child(even)
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>
  <ul class="list">
    <li>Hello 1</li>
    <li>Hello 2</li>
    <li>Hello 3</li>
    <li>Hello 4</li>
    <li>Hello 5</li>
  </ul>
</body>
</html>
```



## Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    li:nth-child(odd)
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>
  <ul class="list">
    <li>Hello 1</li>
    <li>Hello 2</li>
    <li>Hello 3</li>
    <li>Hello 4</li>
    <li>Hello 5</li>
  </ul>
</body>
</html>
```



### 1.5) :nth-last-child()

- The **:nth-last-child()** CSS pseudo-class matches elements based on their position among a group of siblings, counting from the end.
- Selects the "nth" number of child element inside the parent and starts from last child.
- Where n = 0,1,2...,so on.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    li:nth-last-child(2n)
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>

  <ul class="list">
    <li>Hello 1</li>
    <li>Hello 2</li>
    <li>Hello 3</li>
    <li>Hello 4</li>
    <li>Hello 5</li>
  </ul>

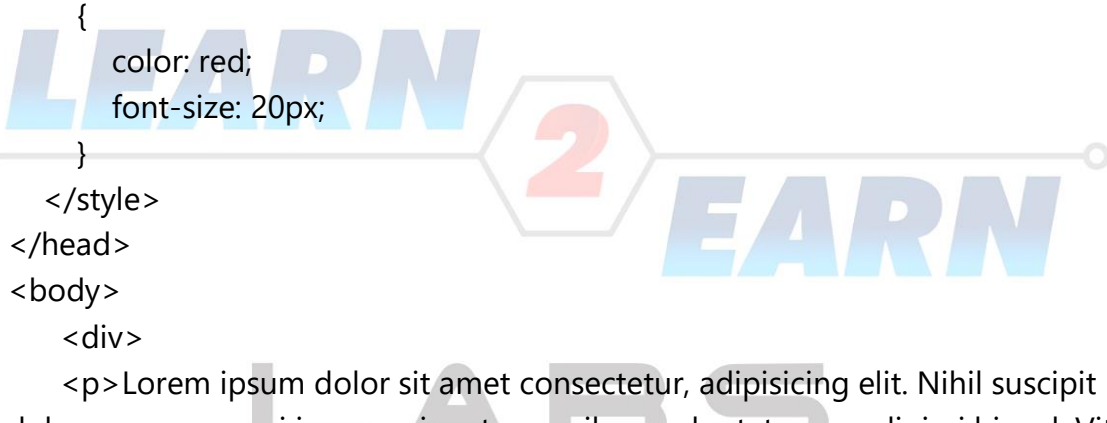
</body>
</html>
```

## 1.6) :nth-of-type(n)

- The **:nth-of-type()** CSS pseudo-class matches elements of a given type, based on their position among a group of siblings.
- This selector targets child elements as well as non-child elements and count starts from top.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>  <title>Document</title>
  <style>
    p:nth-of-type(2)
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>
  <div>
    <p>Lorem ipsum dolor sit amet consectetur, adipisicing elit. Nihil suscipit
dolores saepe sequi ipsa maxime temporibus, voluptates ex, adipisci hic ad. Vitae,
magni at perspiciatis error modi soluta voluptas culpa.</p>
    <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Facere reiciendis
delectus repellat temporibus aperiam quidem ratione deleniti unde, maiores
quod? Rem, excepturi. Unde deserunt vero nesciunt officiis rem quisquam
temporibus?</p>
  </div>
  <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Repellat dolores id
voluptatem deleniti quam nemo illum nesciunt a totam iusto ea exercitationem
qui velit commodi, repudiandae eos enim! Molestiae, voluptas!</p>
  <p>Lorem ipsum, dolor sit amet consectetur adipisicing elit. Ex quod excepturi
officia reiciendis sequi. Quos, provident rerum eum nihil quidem aliquam nesciunt
itaque earum excepturi? Ut ad at molestiae ex.</p>
</body> </html>
```



## 1.7) :nth-last-of-type(n)

- The **:nth-last-of-type()** CSS pseudo-class matches elements of a given type, based on their position among a group of siblings, counting from the end.
- This selector targets child elements as well as non-child elements and start count from last.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>   <title>Document</title>
  <style>
    p:nth-last-of-type(2)
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>
  <div>
    <p>Lorem ipsum dolor sit amet consectetur, adipisicing elit. Nihil suscipit dolores
saepe sequi ipsa maxime temporibus, voluptates ex, adipisci hic ad. Vitae, magni at
perspiciatis error modi soluta voluptas culpa.</p>
    <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Facere reiciendis
delectus repellat temporibus aperiam quidem ratione deleniti unde, maiores quod?
Rem, excepturi. Unde deserunt vero nesciunt officiis rem quisquam temporibus?</p>
  </div>
  <p>Lorem ipsum dolor sit amet consectetur adipisicing elit. Repellat dolores id
voluptatem deleniti quam nemo illum nesciunt a totam iusto ea exercitationem qui velit
commodi, repudiandae eos enim! Molestiae, voluptas!</p>
  <p>Lorem ipsum, dolor sit amet consectetur adipisicing elit. Ex quod excepturi officia
reiciendis sequi. Quos, provident rerum eum nihil quidem aliquam nesciunt itaque
earum excepturi? Ut ad at molestiae ex.</p>
</body> </html>
```

### 1.8) :only-child

- The **:only-child** CSS pseudo-class represents an element without any siblings.
- This is the same as :first-child:last-child or :nth-child(1):nth-last-child(1), but with a lower specificity.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    p:only-child
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>

  <div>
    <p>Para 1</p>
    <p>Para 2</p>
    <p>Para 3</p>
  </div>

  <div>
    <p>Para 4</p>
  </div>

</body>
</html>
```



### 1.9) :only-of-type

- The **:only-of-type** CSS pseudo-class represents an element that has no siblings of the same type.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    p:only-of-type
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>

  <div>
    <p>Para 1</p>
    <p>Para 2</p>
    <p>Para 3</p>
  </div>

  <div>
    <p>Para 4</p>
  </div>

</body>
</html>
```

## Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    p:only-of-type
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>
  <div>
    <p>Paragraph Child</p>
    <p>Paragraph Child</p>
    <p>Paragraph Child</p>
  </div>

  <div>
    <p>Paragraph Child -- cause it is only of type "p" in this div</p>
    <h1>Heading Child</h1>
    <b>Bold Child</b>
  </div>

</body>
</html>
```



### 1.10) :first-of-type

- The **:first-of-type** CSS pseudo-class represents the first element of its type among a group of sibling elements.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    p:first-of-type
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>

  <p>First Paragraph Without Parent</p>

  <div>
    <p>First Paragraph With Parent</p>
    <p>Paragraph Child</p>
    <p>Paragraph Child</p>
  </div>

</body>
</html>
```

### 1.11) :last-of-type

- The :last-of-type CSS pseudo-class represents the last element of its type among a group of sibling elements.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    p:last-of-type
    {
      color: red;
      font-size: 20px;
    }
  </style>
</head>
<body>

  <p>First Paragraph Without Parent</p>

  <div>
    <p>First Paragraph With Parent</p>
    <p>Paragraph Child</p>
    <p>Paragraph Child</p>
  </div>

</body>
</html>
```

### 1.12) :empty

- The :empty CSS pseudo-class represents any element that has no children.
- Children can be either element nodes or text (including whitespace).
- Comments, processing instructions, and CSS content do not affect whether an element is considered empty.

#### Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    div:empty
    {
      border: 3px solid red;
    }
  </style>
</head>
<body>

  <div></div>

  <div> </div>

  <div>Div contains text</div>

  <div>
    <p>Child Paragraph</p>
  </div>

</body>
</html>
```



### 1.13) :not()

- The **:not()** CSS pseudo-class represents elements that do not match a list of selectors.
- Since it prevents specific items from being selected, it is known as the negation pseudo-class.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    p:not(.hello)
    {
      color: red;
    }
  </style>
</head>
<body>

  <p class="hello">Paragraph 1</p>
  <p>Paragraph 1</p>
  <p>Paragraph 1</p>

</body>
</html>
```

### 1.14) :lang()

- The **:lang()** CSS pseudo-class matches elements based on the language they are determined to be in.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    p:lang(en)
    {
      color: blue;
      font-size: 40px;
    }
  </style>
</head>
<body>

  <p lang="en">Paragraph 1</p>
  <p lang="fr">Paragraph 1</p>
  <p lang="de">Paragraph 1</p>

</body>
</html>
```

### 1.15) :link

- The **:link** CSS pseudo-class represents an element that has not yet been visited.
- It matches every unvisited <a>, <area>, or <link> element that has an href attribute.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    ul a:link
    {
      color: green;
    }
  </style>
</head>
<body>

  <ul>
    <li><a href="#bach">Home</a></li>
    <li><a href="#bach">About</a></li>
    <li><a href="#bach">Gallery</a></li>
    <li><a href="#bach">Contact Us</a></li>
  </ul>

</body>
</html>
```

### 1.16) :hover

- The **:hover** CSS pseudo-class matches when the user interacts with an element with a pointing device, but does not necessarily activate it.
- It is generally triggered when the user hovers over an element with the cursor (mouse pointer).

#### Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    ul a:hover
    {
      color: yellowgreen;
    }
  </style>
</head>
<body>

  <ul>
    <li><a href="#bach">Home</a></li>
    <li><a href="#bach">About</a></li>
    <li><a href="#bach">Gallery</a></li>
    <li><a href="#bach">Contact Us</a></li>
  </ul>

</body>
</html>
```

### 1.17) :visited

- The **:visited** CSS pseudo-class represents links that the user has already visited.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    ul a:visited
    {
      color: yellow;
    }
  </style>
</head>
<body>

  <ul>
    <li><a href="#bach">Home</a> </li>
    <li><a href="#bach">About</a> </li>
    <li><a href="#bach">Gallery</a> </li>
    <li><a href="#bach">Contact Us</a> </li>
  </ul>

</body>
</html>
```



### 1.18) :active

- The **:active** CSS pseudo-class represents an element (such as a button) that is being activated by the user.
- When using a mouse, "activation" typically starts when the user presses down the primary mouse button.

#### Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    ul a:active
    {
      color: yellow;
    }
  </style>
</head>
<body>

  <ul>
    <li><a href="#bach">Home</a></li>
    <li><a href="#bach">About</a></li>
    <li><a href="#bach">Gallery</a></li>
    <li><a href="#bach">Contact Us</a></li>
  </ul>

</body>
</html>
```

### 1.19) :target

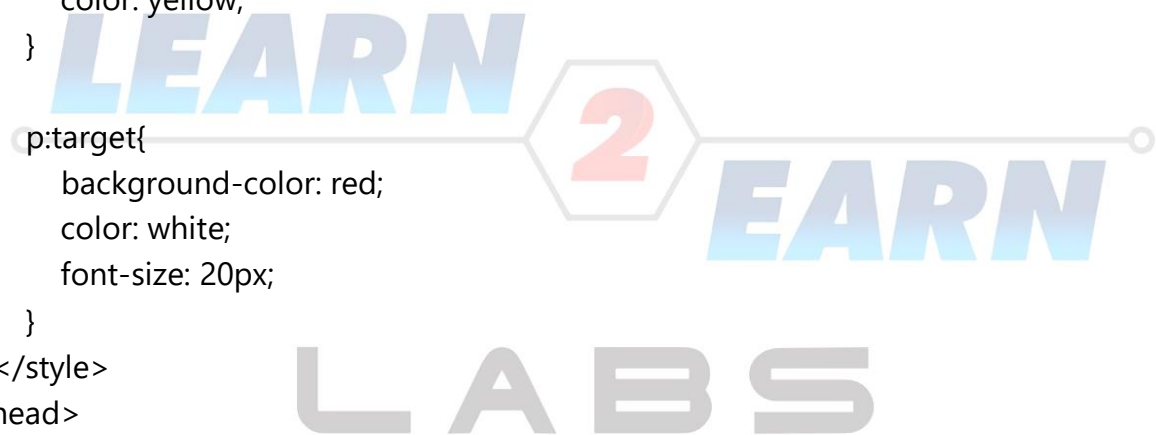
- The :target CSS pseudo-class represents a unique element (the target element) with an id matching the URL's fragment.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    ul a:active
    {
      color: yellow;
    }
    p:target{
      background-color: red;
      color: white;
      font-size: 20px;
    }
  </style>
</head>
<body>

<ul>
  <li><a href="#html">What is HTML ?</a> </li>
  <li><a href="#css">What is CSS ?</a> </li>
  <li><a href="#js">What is JavaScript > </a> </li>
  <li><a href="#php">What is PHP ?</a> </li>
</ul>

<h1>All Answers :</h1>
```



<p id="html">HTML : Lorem ipsum, dolor sit amet consectetur adipisicing elit. Vero odio inventore distinctio at impedit laborum molestiae libero doloribus debitis et, velit aspernatur, consequuntur sint assumenda corrupti facilis ducimus facere nesciunt.</p>

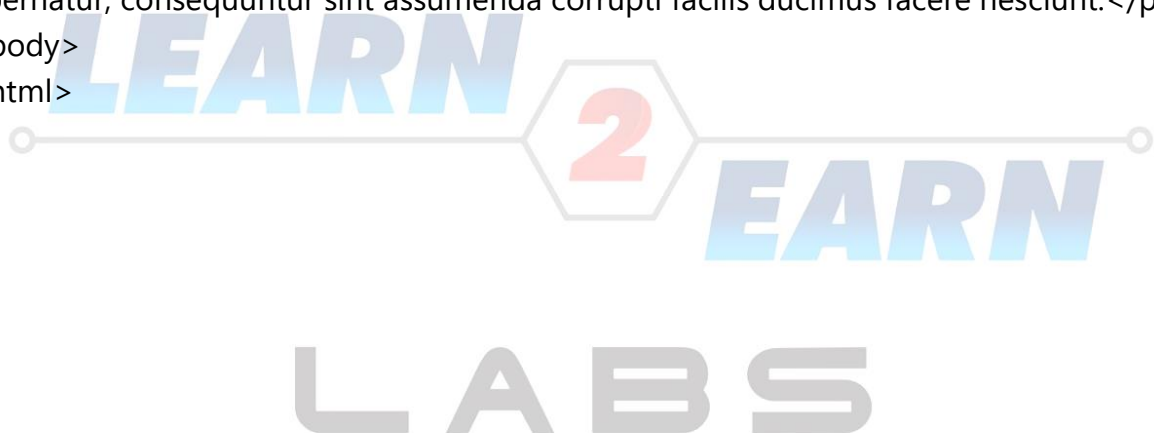
<p id="css">CSS : Lorem ipsum, dolor sit amet consectetur adipisicing elit. Vero odio inventore distinctio at impedit laborum molestiae libero doloribus debitis et, velit aspernatur, consequuntur sint assumenda corrupti facilis ducimus facere nesciunt.</p>

<p id="js">JavaScript : Lorem ipsum, dolor sit amet consectetur adipisicing elit. Vero odio inventore distinctio at impedit laborum molestiae libero doloribus debitis et, velit aspernatur, consequuntur sint assumenda corrupti facilis ducimus facere nesciunt.</p>

<p id="php">PHP : Lorem ipsum, dolor sit amet consectetur adipisicing elit. Vero odio inventore distinctio at impedit laborum molestiae libero doloribus debitis et, velit aspernatur, consequuntur sint assumenda corrupti facilis ducimus facere nesciunt.</p>

</body>

</html>



## 1.20) :focus

- The :focus CSS pseudo-class represents an element (such as a form input) that has received focus.
- It is generally triggered when the user clicks or taps on an element or selects it with the keyboard's "tab" key.

### Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input:focus
    {
      border: 2px solid red;
    }
  </style>
</head>
<body>

  <h1>HTML Form</h1>

  <form action="">
    <label>Firstname</label>
    <input type="text" required> <br> <br>

    <label>Lastname</label>
    <input type="text" required> <br> <br>

    <label>Your Age</label>
    <input type="number" min="0" max="20" required > <br> <br>

    <label>Email Id</label>
    <input type="email" required> <br> <br>
```

<label>Your Hobbies</label>

<input type="checkbox" name="hobby"> <label>Sports</label>

<input type="checkbox" name="hobby"> <label>Music</label>

<input type="checkbox" name="hobby"> <label>Travel</label>

<input type="checkbox" name="hobby"> <label>Books Reading</label>

<br> <br>

<label>Your Gender</label>

<input type="checkbox" name="gender"> <label>Male</label>

<input type="checkbox" name="gender"> <label>Female</label>

<br> <br>

<label>Country</label>

<select>

<option value="India">India</option>

<option value="Nepal">Nepal</option>

<option value="London">London</option>

<option value="USA">USA</option>

</select>

<br> <br>

<button>Submit</button>

</form>

</body>

</html>

### 1.21) :checked

- The :checked CSS pseudo-class selector represents any radio (<input type="radio">), checkbox (<input type="checkbox">), or option (<option> in a <select>) element that is checked or toggled to an on state.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input[type="checkbox"]:checked
    {
      box-shadow: 0 0 0 3px red;
    }
  </style>
</head>
<body>

  <h1>HTML Form</h1>

  <form action="">
    <label>Firstname</label>
    <input type="text" required> <br> <br>

    <label>Lastname</label>
    <input type="text" required> <br> <br>

    <label>Your Age</label>
    <input type="number" min="0" max="20" required > <br> <br>

    <label>Email Id</label>
    <input type="email" required> <br> <br>

    <label>Your Hobbies</label>
```

```
<input type="checkbox" name="hobby"> <label>Sports</label>
```

```
<input type="checkbox" name="hobby"> <label>Music</label>
```

```
<input type="checkbox" name="hobby"> <label>Travel</label>
```

```
<input type="checkbox" name="hobby"> <label>Books Reading</label>
```

```
<br> <br>
```

```
<label>Your Gender</label>
```

```
<input type="radio" name="gender"> <label>Male</label>
```

```
<input type="radio" name="gender"> <label>Female</label>
```

```
<br> <br>
```

```
<label>Country</label>
```

```
<select>
```

```
  <option value="India">India</option>
```

```
  <option value="Nepal">Nepal</option>
```

```
  <option value="London">London</option>
```

```
  <option value="USA">USA</option>
```

```
</select>
```

```
<br> <br>
```

```
<button>Submit</button>
```

```
</form>
```

```
</body>
```

```
</html>
```

## Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input[type="radio"]:checked
    {
      box-shadow: 0 0 0 3px red;
    }
  </style>
</head>
<body>

  <h1>HTML Form</h1>

  <form action="">
    <label>Firstname</label>
    <input type="text" required> <br> <br>

    <label>Lastname</label>
    <input type="text" required> <br> <br>

    <label>Your Age</label>
    <input type="number" min="0" max="20" required > <br> <br>

    <label>Email Id</label>
    <input type="email" required> <br> <br>

    <label>Your Hobbies</label>

    <input type="checkbox" name="hobby"> <label>Sports</label>

    <input type="checkbox" name="hobby"> <label>Music</label>

    <input type="checkbox" name="hobby"> <label>Travel</label>
```



```
<input type="checkbox" name="hobby"> <label> Books Reading</label>

<br> <br>


<label>Your Gender</label>
<input type="radio" name="gender"> <label> Male</label>

<input type="radio" name="gender"> <label> Female</label>

<br> <br>

<label>Country</label>
<select>
  <option value="India">India</option>
  <option value="Nepal">Nepal</option>
  <option value="London">London</option>
  <option value="USA">USA</option>
</select>
<br> <br>
<button>Submit</button>
</form>

</body>
</html>
```

The logo for 'Learn 2 Earn Labs' is centered in the background. It features the word 'LEARN' in blue, a large red '2' inside a hexagon, the word 'EARN' in blue, and 'LABS' in large grey letters below. A horizontal line with circles at both ends passes behind the '2' and 'EARN'.

## Example

-----

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input[type="radio"]:checked + label
    {
      color: red;
    }
  </style>
</head>
<body>

  <h1>HTML Form</h1>

  <form action="">
    <label>Firstname</label>
    <input type="text" required> <br> <br>

    <label>Lastname</label>
    <input type="text" required> <br> <br>

    <label>Your Age</label>
    <input type="number" min="0" max="20" required > <br> <br>

    <label>Email Id</label>
    <input type="email" required> <br> <br>

    <label>Your Hobbies</label>

    <input type="checkbox" name="hobby"> <label>Sports</label>

    <input type="checkbox" name="hobby"> <label>Music</label>
```

```
<input type="checkbox" name="hobby"> <label>Travel </label>
```

```
<input type="checkbox" name="hobby"> <label>Books Reading </label>
```

```
<br> <br>
```

```
<label>Your Gender</label>
```

```
<input type="radio" name="gender"> <label>Male</label>
```

```
<input type="radio" name="gender"> <label>Female</label>
```

```
<br> <br>
```

```
<label>Country</label>
```

```
<select>
```

```
  <option value="India">India</option>
```

```
  <option value="Nepal">Nepal</option>
```

```
  <option value="London">London</option>
```

```
  <option value="USA">USA</option>
```

```
</select>
```

```
<br> <br>
```

```
<button>Submit</button>
```

```
</form>
```

```
</body>
```

```
</html>
```

## 1.22) :disabled

- The **:disabled** CSS pseudo-class represents any disabled element.
- An element is disabled if it can't be activated (selected, clicked on, typed into, etc.) or accept focus.
- The element also has an enabled state, in which it can be activated or accept focus.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input[type="text"]:disabled
    {
      border: 2px solid greenyellow;
    }
  </style>
</head>
<body>

  <h1>HTML Form</h1>

  <form action="">
    <label>Firstname</label>
    <input type="text" disabled> <br> <br>

    <label>Lastname</label>
    <input type="text" required> <br> <br>

    <label>Your Age</label>
    <input type="number" min="0" max="20" required > <br> <br>

    <label>Email Id</label>
    <input type="email" required> <br> <br>
```

```
<label>Your Hobbies</label>
```

```
<input type="checkbox" name="hobby"> <label>Sports</label>
```

```
<input type="checkbox" name="hobby"> <label>Music</label>
```

```
<input type="checkbox" name="hobby"> <label>Travel</label>
```

```
<input type="checkbox" name="hobby"> <label>Books Reading</label>
```

```
<br> <br>
```

```
<label>Your Gender</label>
```

```
<input type="radio" name="gender"> <label>Male</label>
```

```
<input type="radio" name="gender"> <label>Female</label>
```

```
<br> <br>
```

```
<label>Country</label>
```

```
<select>
```

```
  <option value="India">India</option>
```

```
  <option value="Nepal">Nepal</option>
```

```
  <option value="London">London</option>
```

```
  <option value="USA">USA</option>
```

```
</select>
```

```
<br> <br>
```

```
<button>Submit</button>
```

```
</form>
```

```
</body>
```

```
</html>
```

### 1.23) :enabled

- The **:enabled** CSS pseudo-class represents any enabled element.
- An element is enabled if it can be activated (selected, clicked on, typed into, etc.) or accept focus.
- The element also has a disabled state, in which it can't be activated or accept focus.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input[type="text"]:enabled
    {
      border: 2px solid greenyellow;
    }
  </style>
</head>
<body>

  <h1>HTML Form</h1>

  <form action="">
    <label>Firstname</label>
    <input type="text" disabled> <br> <br>

    <label>Lastname</label>
    <input type="text" required> <br> <br>

    <label>Your Age</label>
    <input type="number" min="0" max="20" required > <br> <br>

    <label>Email Id</label>
    <input type="email" required> <br> <br>
```

<label>Your Hobbies</label>

<input type="checkbox" name="hobby"> <label>Sports</label>

<input type="checkbox" name="hobby"> <label>Music</label>

<input type="checkbox" name="hobby"> <label>Travel</label>

<input type="checkbox" name="hobby"> <label>Books Reading</label>

<br> <br>

<label>Your Gender</label>

<input type="radio" name="gender"> <label>Male</label>

<input type="radio" name="gender"> <label>Female</label>

<br> <br>

<label>Country</label>

<select>

<option value="India">India</option>

<option value="Nepal">Nepal</option>

<option value="London">London</option>

<option value="USA">USA</option>

</select>

<br> <br>

<button>Submit</button>

</form>

</body>

</html>

## 1.24) :required

- The **:required** CSS pseudo-class represents any <input>, <select>, or <textarea> element that has the required attribute set on it.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input:required
    {
      border: 2px solid green;
      background-color: red;
      color: white;
    }
  </style>
</head>
<body>

  <h1>HTML Form</h1>

  <form action="">
    <label>Firstname</label>
    <input type="text" required> <br> <br>

    <label>Lastname</label>
    <input type="text" > <br> <br>

    <label>Your Age</label>
    <input type="number" min="0" max="20" > <br> <br>

    <label>Email Id</label>
    <input type="email" required> <br> <br>
```



<label>Your Hobbies</label>

<input type="checkbox" name="hobby"> <label>Sports</label>

<input type="checkbox" name="hobby"> <label>Music</label>

<input type="checkbox" name="hobby"> <label>Travel</label>

<input type="checkbox" name="hobby"> <label>Books Reading</label>

<br> <br>

<label>Your Gender</label>

<input type="radio" name="gender"> <label>Male</label>

<input type="radio" name="gender"> <label>Female</label>

<br> <br>

<label>Country</label>

<select>

<option value="India">India</option>

<option value="Nepal">Nepal</option>

<option value="London">London</option>

<option value="USA">USA</option>

</select>

<br> <br>

<button>Submit</button>

</form>

</body>

</html>

## 1.25) :optional

- The **:optional** CSS pseudo-class represents any <input>, <select>, or <textarea> element that does not have the required attribute set on it.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input:optional
    {
      border: 2px solid green;
      background-color: green;
      color: white;
    }
  </style>
</head>
<body>

  <h1>HTML Form</h1>

  <form action="">
    <label>Firstname</label>
    <input type="text" required> <br> <br>

    <label>Lastname</label>
    <input type="text" > <br> <br>

    <label>Your Age</label>
    <input type="number" min="0" max="20" > <br> <br>

    <label>Email Id</label>
    <input type="email" required> <br> <br>
```

<label>Your Hobbies</label>

<input type="checkbox" name="hobby"> <label>Sports</label>

<input type="checkbox" name="hobby"> <label>Music</label>

<input type="checkbox" name="hobby"> <label>Travel</label>

<input type="checkbox" name="hobby"> <label>Books Reading</label>

<br> <br>

<label>Your Gender</label>

<input type="radio" name="gender"> <label>Male</label>

<input type="radio" name="gender"> <label>Female</label>

<br> <br>

<label>Country</label>

<select>

<option value="India">India</option>

<option value="Nepal">Nepal</option>

<option value="London">London</option>

<option value="USA">USA</option>

</select>

<br> <br>

<button>Submit</button>

</form>

</body>

</html>

## d) Pseudo-Classes & Pseudo Elements (contd...)

### 1.26) :in-range

The :in-range CSS pseudo-class represents an <input> element whose current value is within the range limits specified by the min and max attributes.

#### Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input[type="number"]:in-range
    {
      border: 2px solid green;
    }
  </style>
</head>
<body>
  <h1>HTML Form</h1>
  <form action="">
    <label>Firstname</label>
    <input type="text" required> <br> <br>
    <label>Lastname</label>
    <input type="text" > <br> <br>
    <label>Your Age</label>
    <input type="number" min="0" max="20" > <br> <br>
    <label>Email Id</label>
    <input type="email" required> <br> <br>
    <label>Your Hobbies</label>
    <input type="checkbox" name="hobby"> <label>Sports</label>
    <input type="checkbox" name="hobby"> <label>Music</label>
    <input type="checkbox" name="hobby"> <label>Travel</label>
    <input type="checkbox" name="hobby"> <label>Books Reading</label>
```

```
<br> <br>
```

```
<label>Your Gender</label>
```

```
<input type="radio" name="gender"> <label>Male</label>
```

```
<input type="radio" name="gender"> <label>Female</label>
```

```
<br> <br>
```

```
<label>Country</label>
```

```
<select>
```

```
  <option value="India">India</option>
```

```
  <option value="Nepal">Nepal</option>
```

```
  <option value="London">London</option>
```

```
  <option value="USA">USA</option>
```

```
</select>
```

```
<br> <br>
```

```
<button>Submit</button>
```

```
</form>
```

```
</body>
```

```
</html>
```

LEARN 2 EARN  
LABS

## 1.27) :out-of-range

The :out-of-range CSS pseudo-class represents an <input> element whose current value is outside the range limits specified by the min and max attributes.

### Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input[type="number"]:out-of-range
    {
      border: 2px solid red;
    }
  </style>
</head>
<body>
  <h1>HTML Form</h1>
  <form action="">
    <label>Firstname</label>
    <input type="text" required> <br> <br>
    <label>Lastname</label>
    <input type="text" > <br> <br>
    <label>Your Age</label>
    <input type="number" min="0" max="20" > <br> <br>
    <label>Email Id</label>
    <input type="email" required> <br> <br>
    <label>Your Hobbies</label>
    <input type="checkbox" name="hobby"> <label>Sports</label>
    <input type="checkbox" name="hobby"> <label>Music</label>
    <input type="checkbox" name="hobby"> <label>Travel</label>
    <input type="checkbox" name="hobby"> <label>Books Reading</label>
    <br> <br>
    <label>Your Gender</label>
    <input type="radio" name="gender"> <label>Male</label>
```

```
<input type="radio" name="gender"> <label>Female</label>
<br> <br>
<label>Country</label>
<select>
  <option value="India">India</option>
  <option value="Nepal">Nepal</option>
  <option value="London">London</option>
  <option value="USA">USA</option>
</select>
<br> <br>
<button>Submit</button>
</form>

</body>
</html>
```



**1.28) :read-only**

The :read-only CSS pseudo-class represents an element (such as input or textarea) that is not editable by the user.

**Example**

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input[type="text"]:read-only
    {
      border: 2px solid red;
    }
  </style>
</head>
<body>
  <h1>HTML Form</h1>
  <form action="">
    <label>Firstname</label>
    <input type="text" required > <br> <br>
    <label>Lastname</label>
    <input type="text" readonly value="Read Only Input"> <br> <br>
    <label>Your Age</label>
    <input type="number" min="0" max="20" > <br> <br>
    <label>Email Id</label>
    <input type="email" required> <br> <br>
    <label>Your Hobbies</label>
    <input type="checkbox" name="hobby"> <label>Sports</label>
    <input type="checkbox" name="hobby"> <label>Music</label>
    <input type="checkbox" name="hobby"> <label>Travel</label>
    <input type="checkbox" name="hobby"> <label>Books Reading</label>
    <br> <br>
    <label>Your Gender</label>
    <input type="radio" name="gender"> <label>Male</label>
```



```
<input type="radio" name="gender"> <label>Female</label>
<br> <br>
<label>Country</label>
<select>
  <option value="India">India</option>
  <option value="Nepal">Nepal</option>
  <option value="London">London</option>
  <option value="USA">USA</option>
</select>
<br> <br>
<button>Submit</button>
</form>

</body>
</html>
```



## 1.29) :read-write

The :read-write CSS pseudo-class represents an element (such as input or textarea) that is editable by the user.

### Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input[type="text"]:read-write
    {
      border: 2px solid green;
    }
  </style>
</head>
<body>
  <h1>HTML Form</h1>
  <form action="">
    <label>Firstname</label>
    <input type="text" required > <br> <br>
    <label>Lastname</label>
    <input type="text" readonly value="Read Only Input"> <br> <br>
    <label>Your Age</label>
    <input type="number" min="0" max="20" > <br> <br>
    <label>Email Id</label>
    <input type="email" required> <br> <br>
    <label>Your Hobbies</label>
    <input type="checkbox" name="hobby"> <label>Sports</label>
    <input type="checkbox" name="hobby"> <label>Music</label>
    <input type="checkbox" name="hobby"> <label>Travel</label>
    <input type="checkbox" name="hobby"> <label>Books Reading</label>
    <br> <br>
    <label>Your Gender</label>
    <input type="radio" name="gender"> <label>Male</label>
```

```
<input type="radio" name="gender"> <label>Female</label>
<br> <br>
<label>Country</label>
<select>
  <option value="India">India</option>
  <option value="Nepal">Nepal</option>
  <option value="London">London</option>
  <option value="USA">USA</option>
</select>
<br> <br>
<button>Submit</button>
</form>

</body>
</html>
```



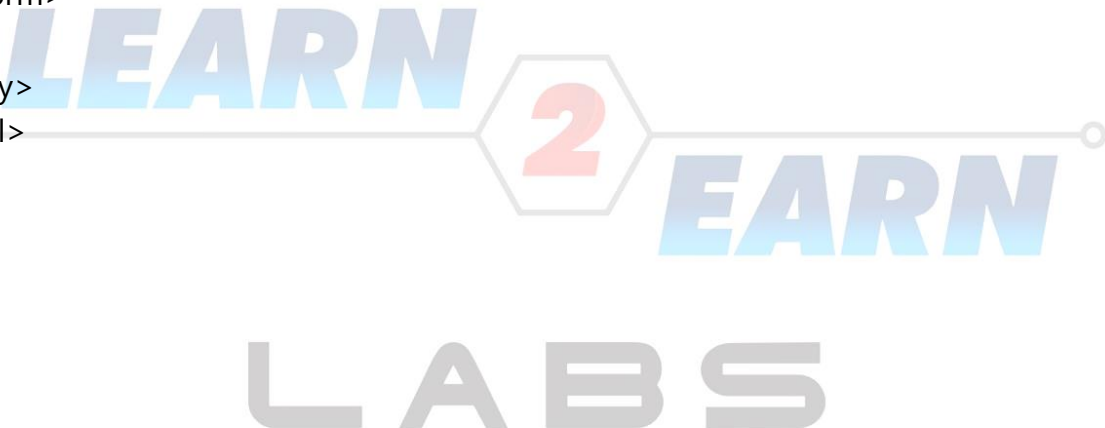
### 1.30) :valid

- The :valid CSS pseudo-class represents any <input> or other <form> element whose contents validate successfully.
- This allows to easily make valid fields adopt an appearance that helps the user confirm that their data is formatted properly.

#### Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input[type="email"]:valid
    {
      border: 2px solid green;
    }
  </style>
</head>
<body>
  <h1>HTML Form</h1>
  <form action="">
    <label>Firstname</label>
    <input type="text" required > <br> <br>
    <label>Lastname</label>
    <input type="text"> <br> <br>
    <label>Your Age</label>
    <input type="number" min="0" max="20" > <br> <br>
    <label>Email Id</label>
    <input type="email" required> <br> <br>
    <label>Your Hobbies</label>
    <input type="checkbox" name="hobby"> <label>Sports</label>
    <input type="checkbox" name="hobby"> <label>Music</label>
    <input type="checkbox" name="hobby"> <label>Travel</label>
    <input type="checkbox" name="hobby"> <label>Books Reading</label>
    <br> <br>
```

```
<label>Your Gender</label>
<input type="radio" name="gender"> <label>Male</label>
<input type="radio" name="gender"> <label>Female</label>
<br> <br>
<label>Country</label>
<select>
  <option value="India">India</option>
  <option value="Nepal">Nepal</option>
  <option value="London">London</option>
  <option value="USA">USA</option>
</select>
<br> <br>
<button>Submit</button>
</form>
</body>
</html>
```

The logo for Learn 2 Earn Labs is displayed. It features the word "LEARN" in a large, blue, sans-serif font. To its right is a hexagonal icon containing a red number "2". Further right is the word "EARN" in a blue, sans-serif font, followed by a horizontal line ending in a small circle. Below this entire assembly, the word "LABS" is written in a large, grey, sans-serif font.

### 1.31) :invalid

The :invalid CSS pseudo-class represents any <input> or other <form> element whose contents fail to validate.

#### Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input[type="email"]:invalid
    {
      border: 2px solid red;
    }
  </style>
</head>
<body>
  <h1>HTML Form</h1>
  <form action="">
    <label>Firstname</label>
    <input type="text" required > <br> <br>
    <label>Lastname</label>
    <input type="text"> <br> <br>
    <label>Your Age</label>
    <input type="number" min="0" max="20" > <br> <br>
    <label>Email Id</label>
    <input type="email" required> <br> <br>
    <label>Your Hobbies</label>
    <input type="checkbox" name="hobby"> <label>Sports</label>
    <input type="checkbox" name="hobby"> <label>Music</label>
    <input type="checkbox" name="hobby"> <label>Travel</label>
    <input type="checkbox" name="hobby"> <label>Books Reading</label>
    <br> <br>
    <label>Your Gender</label>
    <input type="radio" name="gender"> <label>Male</label>
```

```
<input type="radio" name="gender"> <label>Female</label>
<br> <br>
<label>Country</label>
<select>
  <option value="India">India</option>
  <option value="Nepal">Nepal</option>
  <option value="London">London</option>
  <option value="USA">USA</option>
</select>
<br> <br>
<button>Submit</button>
</form>

</body>
</html>
```



### 1.32) :default

The :default CSS pseudo-class selects form elements that are the default in a group of related elements.

Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input:default
    {
      box-shadow: 0 0 0 3px green;
    }
  </style>
</head>
<body>
  <h1>HTML Form</h1>
  <form action="">
    <label>Firstname</label>
    <input type="text" required > <br> <br>
    <label>Lastname</label>
    <input type="text"> <br> <br>
    <label>Your Age</label>
    <input type="number" min="0" max="20" > <br> <br>
    <label>Email Id</label>
    <input type="email" required> <br> <br>
    <label>Your Hobbies</label>
    <input type="checkbox" name="hobby" checked> <label>Sports</label>
    <input type="checkbox" name="hobby"> <label>Music</label>
    <input type="checkbox" name="hobby"> <label>Travel</label>
    <input type="checkbox" name="hobby"> <label>Books Reading</label>
    <br> <br>
    <label>Your Gender</label>
    <input type="radio" name="gender"> <label>Male</label>
```



```
<input type="radio" name="gender"> <label>Female</label>
<br> <br>
<label>Country</label>
<select>
  <option value="India">India</option>
  <option value="Nepal">Nepal</option>
  <option value="London">London</option>
  <option value="USA">USA</option>
</select>
<br> <br>
<button>Submit</button>
</form>

</body>
</html>
```



## Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input:default + label
    {
      color: green;
    }
  </style>
</head>
<body>
  <h1>HTML Form</h1>
  <form action="">
    <label>Firstname</label>
    <input type="text" required > <br> <br>
    <label>Lastname</label>
    <input type="text"> <br> <br>
    <label>Your Age</label>
    <input type="number" min="0" max="20" > <br> <br>
    <label>Email Id</label>
    <input type="email" required> <br> <br>
    <label>Your Hobbies</label>
    <input type="checkbox" name="hobby" checked> <label>Sports</label>
    <input type="checkbox" name="hobby"> <label>Music</label>
    <input type="checkbox" name="hobby"> <label>Travel</label>
    <input type="checkbox" name="hobby"> <label>Books Reading</label>
    <br> <br>
    <label>Your Gender</label>
    <input type="radio" name="gender"> <label>Male</label>
    <input type="radio" name="gender"> <label>Female</label>
    <br> <br>
    <label>Country</label>
    <select>
      <option value="India">India</option>
```

```
<option value="Nepal">Nepal</option>
<option value="London">London</option>
<option value="USA">USA</option>
</select>
<br> <br>
<button>Submit</button>
</form>
</body>
</html>
```



## Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    input:default + label
    {
      color: green;
    }
    option:default
    {
      color: red;
    }
  </style>
</head>
<body>

  <h1>HTML Form</h1>
  <form action="">
    <label>Firstname</label>
    <input type="text" required > <br> <br>
    <label>Lastname</label>
    <input type="text"> <br> <br>
    <label>Your Age</label>
    <input type="number" min="0" max="20" > <br> <br>
    <label>Email Id</label>
    <input type="email" required> <br> <br>
    <label>Your Hobbies</label>
    <input type="checkbox" name="hobby" checked> <label>Sports</label>
    <input type="checkbox" name="hobby"> <label>Music</label>
    <input type="checkbox" name="hobby"> <label>Travel</label>
    <input type="checkbox" name="hobby"> <label>Books Reading</label>
    <br> <br>
    <label>Your Gender</label>
    <input type="radio" name="gender"> <label>Male</label>
```

```
<input type="radio" name="gender"> <label>Female</label>
<br> <br>
<label>Country</label>
<select>
  <option value="India">India</option>
  <option value="Nepal" selected>Nepal</option>
  <option value="London">London</option>
  <option value="USA">USA</option>
</select>
<br> <br>
<button>Submit</button>
</form>

</body>
</html>
```



### 1.33) :root

- The :root CSS pseudo-class matches the root element of a tree representing the document.
- In HTML, :root represents the <html> element and is identical to the selector html, except that its specificity is higher.

#### Example

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>Document</title>
  <style>
    :root
    {
      background-color: red;
      color: white;
    }
  </style>
</head>
<body>
  <h1>HTML Form</h1>
</body>
</html>
```