The CSS transition property is used to create smooth, animated changes between different states of an element. It allows you to specify which CSS properties should animate, how long the transition should last, the timing function that controls the speed of the transition, and any delay before the transition starts.

**Key Concepts**

1. **Properties to Animate**: You can specify specific CSS properties (like background-color, width, etc.) that you want to transition. Alternatively, you can use all to apply transitions to every animatable property.
2. **Duration**: This defines how long the transition takes to complete. It can be specified in seconds (s) or milliseconds (ms).
3. **Timing Function**: This defines the acceleration curve of the transition. Common options include:
   * ease: Starts slow, speeds up, then slows down.
   * linear: Constant speed throughout.
   * ease-in: Starts slow and speeds up.
   * ease-out: Starts fast and slows down.
   * ease-in-out: Starts and ends slow, with a faster middle.
4. **Delay**: This specifies a delay before the transition starts, allowing for timing adjustments.
5. **Background Color Transition**

<div class="color-box"></div>

.color-box {

width: 100px;

height: 100px;

background-color: blue;

transition: background-color 0.5s ease;

}

.color-box:hover {

background-color: green;

}

**2. Width and Height Transition**

<div class="size-box"></div>

.size-box {

width: 100px;

height: 100px;

background-color: orange;

transition: width 0.4s ease, height 0.4s ease;

}

.size-box:hover {

width: 150px;

height: 150px;

}

**3. Opacity Transition**

<div class="fade-box"></div>

.fade-box {

width: 100px;

height: 100px;

background-color: purple;

opacity: 1;

transition: opacity 0.6s ease;

}

.fade-box:hover {

opacity: 0.5;

}

**4. Transform Transition**

<div class="transform-box"></div>

.transform-box {

width: 100px;

height: 100px;

background-color: red;

transition: transform 0.3s ease-in-out;

}

.transform-box:hover {

transform: rotate(45deg) scale(1.1);

}

**5. Multiple Properties Transition**

<div class="multi-box"></div>

.multi-box {

width: 100px;

height: 100px;

background-color: teal;

transition: background-color 0.5s ease, transform 0.3s ease;

}

.multi-box:hover {

background-color: yellow;

transform: translateY(20px);

}

**6. Delay Transition**

<div class="delay-box"></div>

.delay-box {

width: 100px;

height: 100px;

background-color: pink;

transition: background-color 0.5s ease 0.2s; /\* 0.2s delay \*/

}

.delay-box:hover {

background-color: lightblue;

}

**7. Using all for Simplicity**

<div class="all-box"></div>

.all-box {

width: 100px;

height: 100px;

background-color: lightgreen;

transition: all 0.5s ease;

}

.all-box:hover {

background-color: lime;

width: 120px;

height: 120px;

}

The CSS transform property is used to apply various transformations to an element, allowing you to change its size, shape, position, and orientation. This property can be used for effects like rotation, scaling, translation, and skewing, enhancing the visual dynamics of web pages.

**Syntax**

transform: transform-function(value);

**Common Transform Functions**

1. **Translate**: Moves an element from its current position.
   * **Syntax**: translate(x, y)
   * **Example**:

transform: translate(50px, 100px);

1. **Scale**: Changes the size of an element.
   * **Syntax**: scale(sx, sy)
   * **Example**:

transform: scale(1.5, 2); /\* 1.5 times width, 2 times height \*/

1. **Rotate**: Rotates an element around a specified point.
   * **Syntax**: rotate(angle)
   * **Example**:

transform: rotate(45deg);

1. **Skew**: Distorts the shape of an element along the X and Y axes.
   * **Syntax**: skew(x-angle, y-angle)
   * **Example**:

transform: skew(30deg, 20deg);

1. **Perspective**: Applies a perspective view to the transformed element.
   * **Syntax**: perspective(value)
   * **Example**:

transform: perspective(500px) rotateY(30deg);

**Combining Transform Functions**

You can combine multiple transform functions in one transform property by separating them with spaces:

transform: translate(50px, 100px) scale(1.5) rotate(30deg);

**Example Usage**

example that uses the transform property along with a transition:

<div class="transform-box"></div>

.transform-box {

width: 100px;

height: 100px;

background-color: blue;

transition: transform 0.3s ease;

}

.transform-box:hover {

transform: translate(20px, 20px) rotate(45deg) scale(1.2);

}

<!DOCTYPE html>

<html lang="en">

<head>

    <meta charset="UTF-8">

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

    <title>Document</title>

    <style>

        .color-box {

            width: 100px;

            height: 100px;

            background-color: blue;

            transition: background-color 2.5s ease;

}

.color-box:hover {

  background-color: green;

}

.size-box {

  width: 100px;

  height: 100px;

  background-color: orange;

  transition: width 0.4s ease, height 0.4s ease;

}

.size-box:hover {

  width: 150px;

  height: 150px;

}

.fade-box {

  width: 100px;

  height: 100px;

  background-color: purple;

  opacity: 1;

  transition: opacity 0.6s ease;

}

.fade-box:hover {

  opacity: 0.5;

}

.transform-box {

  width: 100px;

  height: 100px;

  background-color: red;

  transition: transform 2s ease-in-out;

}

.transform-box:hover {

  transform: rotate(180deg) scale(2.0,2.0);

}

.multi-box {

  width: 100px;

  height: 100px;

  background-color: teal;

  transition: background-color 0.5s ease, transform 0.3s ease;

}

.multi-box:hover {

  background-color: yellow;

  transform: translateX(20px);

}

.delay-box {

  width: 100px;

  height: 100px;

  background-color: pink;

  transition: background-color 0.5s ease 1s; /\* 0.2s delay \*/

}

.delay-box:hover {

  background-color: lightblue;

}

.all-box {

  width: 100px;

  height: 100px;

  background-color: lightgreen;

  transition: all 0.5s ease;

}

.all-box:hover {

  background-color: lime;

  width: 120px;

  height: 120px;

}

.transform-box {

  width: 100px;

  height: 100px;

  background-color: blue;

  transition: transform 0.3s ease;

}

.transform-box:hover {

  transform: translate(50px, 20px) rotate(45deg) scale(1.2);

}

    </style>

</head>

<body>

    <div class="color-box"></div>

    <div class="size-box"></div>

    <div class="fade-box"></div>

    <div class="transform-box">Text</div>

    <div class="multi-box"></div>

    <div class="delay-box"></div>

    <div class="all-box"></div>

    <div class="transform-box"></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>Document</title>

    <style>

    .btn {

        width:100px;

        height: 100px;

        background-color: blue;

        color:white;

        font-size: 20px;

        transition: color 1s ease, font-size 1s ease;

    }

    .btn:hover

    {

        color:red;

        font-size: 10px;

    }

    </style>

</head>

<body>

    <form>

<input type="button" value="Login" class="btn">

</form>

</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>Document</title>

    <style>

        img

        {

            opacity: 0.5;

            transition: opacity 0.5s ease, transform 0.5s ease;

        }

        img:hover

        {

            opacity: 1;

            transform:  translateX(100px);

        }

    </style>

</head>

<body>

    <img src="images/kids-banner.avif">

</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>Document</title>

    <style>

        img

        {

            opacity: 0.5;

            transition: opacity 0.5s ease, transform 0.5s ease;

        }

        img:hover

        {

            opacity: 1;

            transform:  skewY(20deg);

        }

    </style>

</head>

<body>

    <img src="images/kids-banner.avif">

</body>

</html>