**CSS Animation CS-10th**

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| **<! DOCTYPE html>**  **<html >**  **<head>**  **<title>Simple Animation</title>**  **<style>**  **#animated-box {**  **margin-top: 50px;**  **margin-left: 50px;**  **width: 100px;**  **height: 100px;**  **background-color: red;**  **animation: spin 2s infinite linear;**  **}**  **@keyframes spin {**  **from {**  **transform: rotate(0deg);**  **}**  **to {**  **transform: rotate(360deg);**  **}**  **}**  **</style>**  **</head>**  **<body>**  **<div id="animated-box"></div>**  **</body>**  **</html>** |

**CSS:**

**CSS (Cascading Style Sheets)** is a language used to style and design web pages. It controls the layout, colors, fonts, sizes, and animations of HTML elements, making the web pages more attractive and user-friendly.

### Use of CSS Animation:

CSS Animation is used to add movement or transition effects to web elements without using JavaScript. Animations can include changing colors, moving elements, rotating them, scaling them, or fading them in and out. It improves user experience and visual appeal.

**Purpose of Animation:**

* To rotate or move objects
* To draw attention to specific elements
* To make web pages interactive and modern

**CSS animation has 2 main parts:**

**1. @keyframes**

Defines **how the animation changes over time** (steps).

### 2.animation properties

These are applied to the HTML element to **control the animation**.

#### Common animation properties:

| **Property** | **What It Does** | **Example** |
| --- | --- | --- |
| animation-name | Which keyframes to use | animation-name: bounce; |
| animation-duration | How long the animation takes | 2s, 1s |
| animation-delay | Delay before animation starts | 1s |
| animation-iteration-count | How many times it runs | infinite, 2 |
| animation-timing-function | Speed curve (smooth, fast, slow) | ease, linear |
| animation-direction | Normal or reverse or alternate | alternate |

### 

**Moves an element up or down.**

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| --- |
| **@keyframes slideDown**  **{**  **from { transform: translateY(0); }**  **to { transform: translateY(100px); }**  **}**  **@keyframes spin**  **{**  **from { transform: rotate(0deg); }**  **to { transform: rotate(360deg); }**  **}**  **@keyframes growText**  **{**  **from { transform: scale(1); }**  **to { transform: scale(1.3); color: red; }**  **}** |

### @keyframes

**Definition:** It defines the animation steps.

It creates the rules for what should happen during the animation. the **name of the animation** defined using @keyframes.

It tells **what animation should happen** (like rotate, fade, move, etc.).

animation-name

* **Definition:** Specifies the name of the keyframe to use.
* **One-line Explanation:** Links the animation to a @keyframes rule.

**animation-name: slideDown**

**. animation-duration**

**Definition:** How long the animation takes to complete one cycle.

Controls the speed of the animation.

**animation-duration: 2s;**

animation-iteration-count

**Definition:** Number of times the animation should repeat.

Tells how many times to run the animation.

**animation-iteration-count: infinite;**

### animation-direction

**Definition:** Tells if the animation should run normally or in reverse.

Controls the direction or back-and-forth of animation.

**Example:**

**animation-direction: alternate;**

### animation-timing-function

**Definition:** Defines the speed curve of the animation.

Controls how fast the animation happens at different stages.

**Example:**

**animation-timing-function: ease-in-out;**

### ease-in-out —

It’s a **timing function** used in CSS animations and transitions.

It controls **how the speed of the animation changes over time**.

Specifically:

* + **Starts slow** (ease in)
  + **Speeds up in the middle**
  + **Slows down again at the end** (ease out)

### 🔹 ID vs CLASS

| **Term** | **Definition** | **One-line Explanation** | **Syntax Example** |
| --- | --- | --- | --- |
| ID | Unique identifier (1 per element)  Represented by dot ( **#** ) | Used for single element styling or JS | <p id="myText">Hello</p> and **#**myText {} |
| CLASS | Reusable styling identifier  Represented by dot ( **.** ) | Used to style multiple elements | <p class="para">Hi</p> and  **.**para {} |

### Animation Example (Using ID and Class Separately)

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| --- |
| ***<!DOCTYPE html>***  ***<html>***  ***<head>***  ***<style>***  ***/\* Animation using ID \*/***  ***#smileText {***  ***animation-name: bounceText;***  ***animation-duration: 1s;***  ***animation-iteration-count: infinite;***  ***animation-direction: alternate;***  ***animation-timing-function: ease-in-out;***  ***}***  ***@keyframes bounceText {***  ***from { transform: translateY(0); }***  ***to { transform: translateY(-20px); }***  ***}***  ***/\* Animation using class \*/***  ***.scaleText {***  ***animation: growText 2s infinite alternate;***  ***}***  ***@keyframes growText {***  ***from { transform: scale(1); }***  ***to { transform: scale(1.3); color: red; }***  ***}***  ***</style>***  ***</head>***  ***<body>***  ***<h2 id="smileText">😊 Smile (Using ID)</h2>***  ***<h2 class="scaleText">😊 Smile (Using Class)</h2>***  ***</body>***  ***</html>*** |

### 🔹 footnote

* **Definition:** A note placed at the bottom of a page (usually not a standard HTML tag).
* **One-line Explanation:** It provides extra information or citation.
* **Example (using <small> or <sup> with CSS):**
* <p>This is a text<sup>1</sup></p>
* <small>1: Footnote explanation here</small>