

Module 10 - Transition and Animations in CSS

CSS Animation

CSS animation is a way to make HTML elements move, change, or transition between styles over time, using only CSS—no JavaScript needed.

It allows you to:

- Animate the position, size, color, opacity, etc.
- Create effects like fading, sliding, bouncing, spinning
- Build visually engaging user interfaces

What Are @keyframes in CSS?

@keyframes is a special CSS rule used to define animations – specifically, how the styles of an element should change over time.

@keyframes is a rule in CSS that defines how an element should change styles step-by-step over time during an animation.

It's used with the animation property to create complex, smooth animations that aren't limited to just start and end points.

Animation Properties

animation-name	Name of the keyframes to use
animation-duration	How long the animation lasts (e.g., 2s)
animation-delay	Wait before starting (e.g., 1s)
animation-iteration-count	How many times to repeat (1, infinite)
animation-direction	normal, reverse, alternate, etc.
animation-fill-mode	Keeps styles after animation (forwards, etc.)

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**CSS Transition**

A CSS transition is a way to smoothly animate changes in CSS properties over time, without using JavaScript or keyframes.

It lets you animate property changes, like color, size, or position, when they happen—such as when an element is hovered over, clicked, or focused.

**Transition Properties**

- Transition: **Shorthand** property to define all transition details in one line.
- Transition-delay: Sets **how long to wait** before the transition starts.
- Transition-duration: Sets **how long** the transition takes to complete.
- Transition-property: Specifies **which CSS property** will change with transition.
- Transition-timing-function: Controls the **speed curve** of the transition (how it accelerates and slows).

**Difference Between Transition and Animation**

- Transition is used to animate changes in CSS properties between two states, such as from normal to hover.
- It needs a trigger, like :hover, :focus, or JavaScript interaction to start the animation.
- It's great for simple effects like fading, resizing, or color changes.
- Transitions can't loop or define intermediate steps—just a start and end.
- animation uses @keyframes to define multiple stages of an animation.
- It can start automatically when the page loads or be triggered with JavaScript.
- Animations can loop, reverse, pause, and be more dynamic.
- Ideal for complex movements like bouncing, sliding, or sequencing multiple style changes.

**Why we use Transition?**

Purpose	Explanation
Smooth Interaction	Makes UI interactions (like hovering over buttons) feel natural and smooth.
User Feedback	Gives visual cues that an action has occurred (e.g., color fades when a button is clicked).
Simple Effects	Best for basic changes like color, size, or opacity between two states.

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Why we use Animation?

Purpose	Explanation
Complex Motion	Can create multi-step or continuous effects (e.g., bouncing, sliding, fading in/out).
Automated Effects	Animations can run on page load or loop without any user interaction.
Better Storytelling	Helps convey progress, guide users, or add personality to the interface.

### HTML with Internal CSS Animation

```
<!DOCTYPE html>
<html>
<head>
<title>CSS Animation Example</title>
<style>
/* Style and animation */
.box {
width: 100px;
height: 100px;
background-color: blue;
position: relative;
animation: slideRight 3s ease-in-out infinite;
}

/* Keyframes for the animation */
@keyframes slideRight {
0% { left: 0; }
50% { left: 300px; }
100% { left: 0; }
}
</style>
</head>
<body>

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

</body>
</html>
```

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Explanation

- A blue box moves left to right and back in a loop.
- The @keyframes define the movement.
- The animation is smooth and runs forever.

HTML with Internal CSS Transition

```
<!DOCTYPE html>
<html lang="en">
<head>
  <title>CSS Transition Example</title>
  <style>
    /* Initial style for the box */
    .box {
      width: 150px;
      height: 150px;
      background-color: blue;
      transition: background-color 0.5s ease, transform 0.3s;
    }
    /* Change style on hover */
    .box:hover {
      background-color: red;
      transform: scale(1.1);
    }
  </style>
</head>
<body>
  <div class="box"></div>
</body>
</html>
```

Explanation

- Creates a blue square box using a <div> with a class .box – it's 150px by 150px in size.
- Adds a smooth transition effect to the background color and size change using the transition property.

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- On hover, the box changes color from blue to red and slightly increases in size using transform: scale(1.1).
- These changes happen **smoothly** over time, not instantly, because of the transition effect.

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Assignment

Make a div box  
Div Content

Discipline is the foundation of success and personal development. It is the ability to control one's emotions, behaviors, and desires in the face of external demands, to stay focused on long-term goals. A disciplined person consistently makes choices that align with their values and responsibilities, even when it's difficult. Whether in academics, work, or daily life, discipline helps individuals manage time effectively, build strong habits, and overcome procrastination. Without discipline, talent and ambition may be wasted. It is not something one is born with, but a skill that can be developed through practice, commitment, and a strong sense of purpose.

You have to write this content in this div:

- The width and height of the box should be width: 150px height: 150px
- You add the background color pink.
- And the transition should be of 3 seconds. Use Internal CSS.