CSS3 - Animation

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- An animation lets an element gradually change from one style to another.

- You can change as many CSS properties you want, as many times you want.

- To use CSS3 animation, you must first specify some keyframes for the animation.

- Keyframes hold what styles the element will have at certain times.

Example1 – Animation code

```
/* The animation code */
    @keyframes example {
        from {background-color: red;}
        to {background-color: yellow;}
    }
/* The element to apply the animation to */
    div {
        width: 100px;
        height: 100px;
        background-color: red;
        animation-name: example;
        animation-duration: 4s;
    }
```

- CSS styles inside the @keyframes rule, the animation will gradually change from the current style to the new style at certain times.

- To get an animation to work, **bind the animation to an element**.

- The animation will lasts for 4 seconds, and it will gradually change the background-color of the <div> element from "red" to "yellow":

Example2 – Animation code

```
/* The animation code */
    @keyframes example {
        0%   {background-color: red;}
        25%  {background-color: yellow;}
        50%  {background-color: blue;}
        100% {background-color: green;}
    }
/* The element to apply the animation to */
    div {
        width: 100px;
        height: 100px;
        background-color: red;
        animation-name: example;
        animation-duration: 4s;
    }
```

Change the background-color of the <div> element when the animation is 25% complete, 50% complete, and again when the animation is 100% complete:

Example3 – Animation code

```css
/* The animation code */
@keyframes example {
    0%   {background-color: red; left:0px; top:0px;}
    25% {background-color: yellow; left:200px; top:0px;}
    50% {background-color: blue; left:200px; top:200px;}
    75% {background-color: green; left:0px; top:200px;}
    100% {background-color: red; left:0px; top:0px;}
}

/* The element to apply the animation to */
div {
    width: 100px;
    height: 100px;
    position: relative;
    background-color: red;
    animation-name: example;
    animation-duration: 4s;
}
```

Animation delay property

The animation-delay property specifies a delay before the start of an animation.

```
div {
    width: 100px;
    height: 100px;
    position: relative;
    background-color: red;
    animation-name: example;
    animation-duration: 4s;
    animation-delay: 2s;
}
```

Rounds of animation

```
div {
    width: 100px;
    height: 100px;
    position: relative;
    background-color: red;
    animation-name: example;
    animation-duration: 4s;
    animation-iteration-count: 3;
}
```

Animation – Infinite times

```
div {
    width: 100px;
    height: 100px;
    position: relative;
    background-color: red;
    animation-name: example;
    animation-duration: 4s;
    animation-iteration-count: infinite;
}
```

Animation – Reverse Direction

```
div {
    width: 100px;
    height: 100px;
    position: relative;
    background-color: red;
    animation-name: example;
    animation-duration: 4s;
    animation-iteration-count: 3;
    animation-direction: reverse;
}
```

Animation – Alternate Direction

"alternate" to make the animation first run forward, then backward, then forward:

```
div {
    width: 100px;
    height: 100px;
    position: relative;
    background-color: red;
    animation-name: example;
    animation-duration: 4s;
    animation-iteration-count: 3;
    animation-direction: alternate;
}
```

Specify the Speed Curve of the Animation

- animation-timing-function property - speed curve
- Property values can be
  - linear - specifies an animation with the same speed from start to end
  - ease - specifies an animation with a slow start, then fast, then end slowly (this is default)
  - ease-in - specifies an animation with a slow start
  - ease-out - specifies an animation with a slow end
  - ease-in-out - specifies an animation with a slow start and end

Example Animation with Speed Curve

```css
div {
    width: 100px;
    height: 50px;
    background-color: red;
    font-weight: bold;
    position: relative;
    -webkit-animation: mymove 5s infinite; /* Chrome, Safari, Opera */
    animation: mymove 5s infinite;
}
@keyframes mymove {
    from {left: 0px;}
    to {left: 300px;}
}
```

...Contd

```
#div1 {animation-timing-function: linear;}
#div2 {animation-timing-function: ease;}
#div3 {animation-timing-function: ease-in;}
#div4 {animation-timing-function: ease-out;}
#div5 {animation-timing-function: ease-in-out;}

<div id="div1">linear</div>
<div id="div2">ease</div>
<div id="div3">ease-in</div>
<div id="div4">ease-out</div>
<div id="div5">ease-in-out</div>
```