Chapter 8 Transform Transition and Animations

Transforms are used to rotate, move skew or scale elements they are used to execute a 3D effect.

The transform property

Used to apply a 2D or 3D transform to an element.

The transform-origin property

Allows to change the position of transformed elements.

2D transforms -------- > can change x & y axis.

3D transforms -------- > can change z axis as well.

CSS 2D transform methods

You can use the following 2D transforms in css.

1. Translate ()

2. Rotate ()

3. ScaleX ()

5. ScaleY ()

6. Skew ()

7. Scale ()

CSS 3D transform methods

You can use the following 3D transforms in css.

1. RotateX()

2. RotateY()

3. RotateZ()

}

CSS Transition

Used to change property values smoothly, over a given duration.

The transition property

The transition property is used to add transition in css.

Following are the properties used for css transition.

1. Transition-property --------- > The property you want to transition.

2. Transition-duration --------- > Time for which you want transition to apply.

3. Transition-timing-function ----- > How you want the property to transition.

4. Transition-delay --------- > Specifies the delay for the transition.

All these properties can be set using a single shorthand property.

Transition: width 44 ease-in 3s;

Transitioning multiple properties

We can transition multiple properties as follows.

Transition: opacity 1s ease-out 1s, transform 3s ease-in;

CSS Animations

Used to animate CSS properties with more control we can use @keyframes rule to change the animation from a given style to a new style.

```
@keyframes munawar{

From{ width: 30px;}

To{width:50px;}

}
```

Properties to add Animations

Following are the properties used to set animation in css.

1. Animation-name --------- > name of the animation.

2. Animation-duration --------- > How long does the animation run.

3. Animation-timing-function ----- > Determines speed curve of the animation.

4. Animation-delay --------- > Delay for the start of an animation.

5. Animation-iteration-count --------- > Number of time an animation should run.

6. Animation-direction ----------------- > Specifies the duration of the animation.

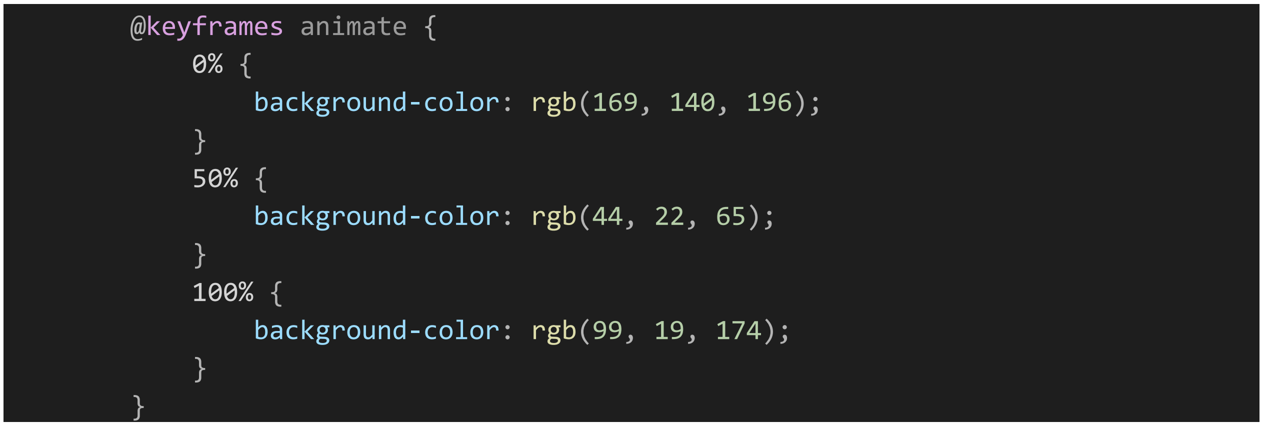
The Animation shorthand

All the animation properties from 1-6 can be applied like this.

Animation: munawar 5s linear 2s infinite reverse.

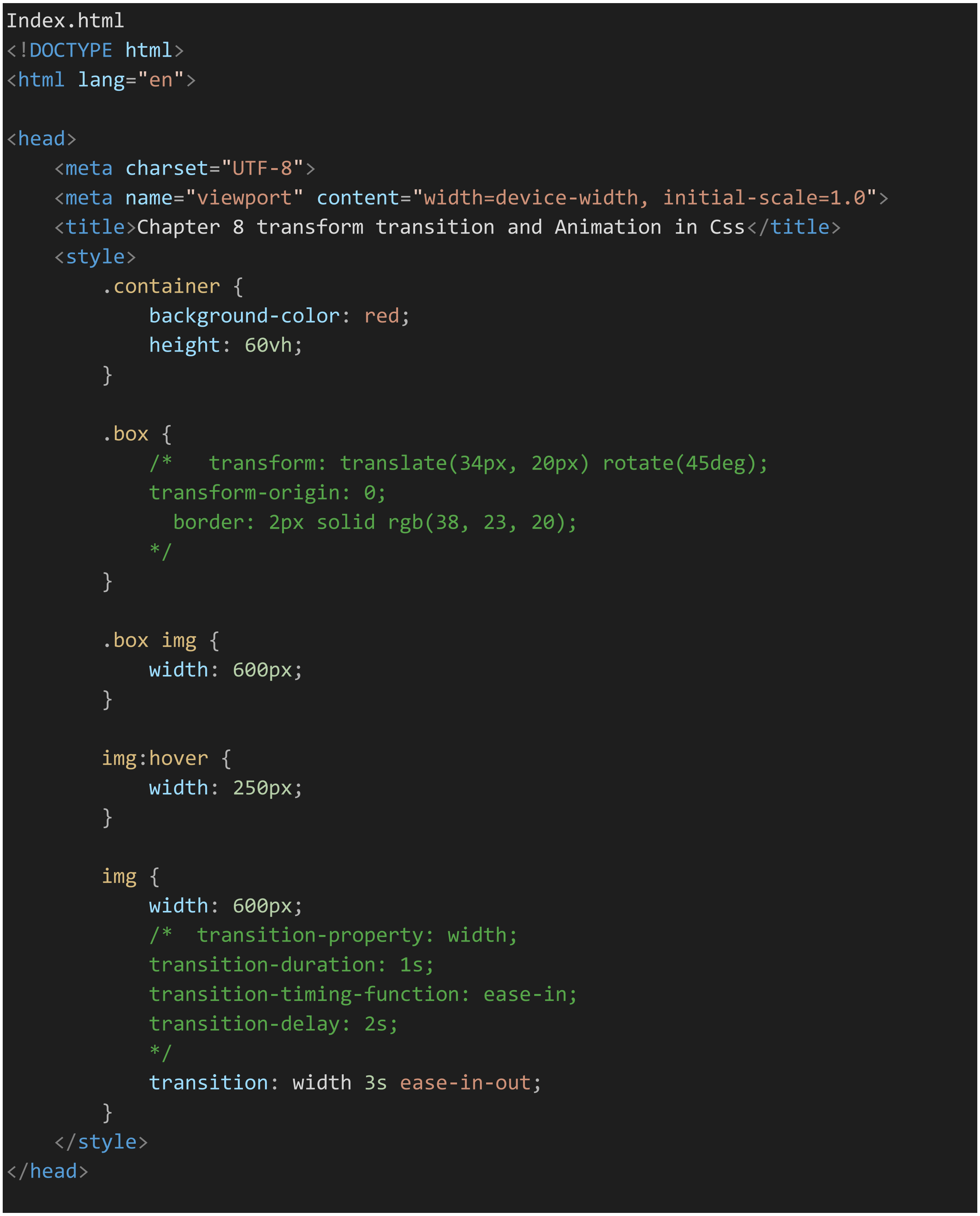
Using percentage value states with animation

We can use % values to indicate what should happen when a certain percent of animation is completed.

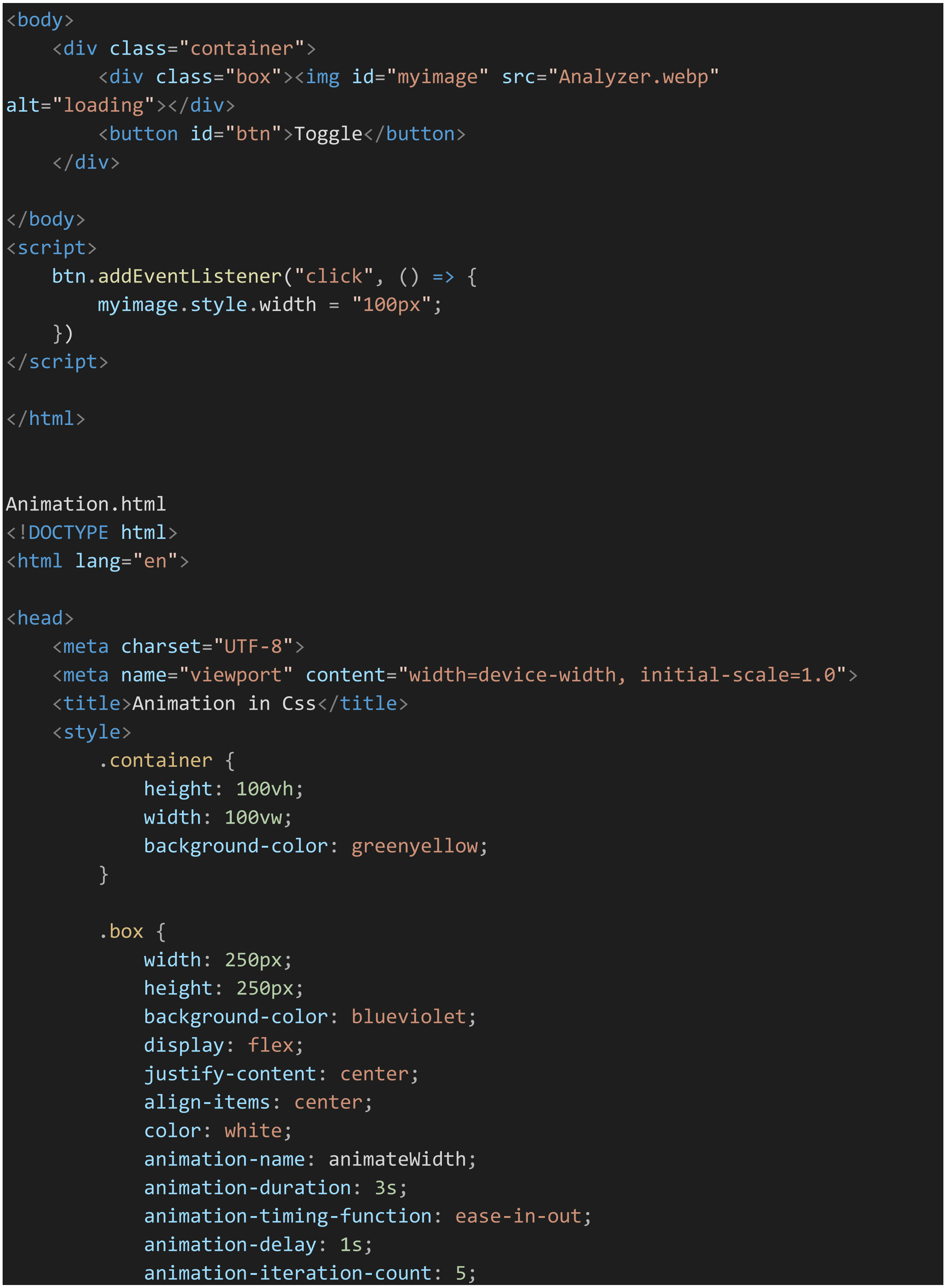


```
        @keyframes animate {
            0% {
                background-color: rgb(169, 140, 196);
            }
            50% {
                background-color: rgb(44, 22, 65);
            }
            100% {
                background-color: rgb(99, 19, 174);
            }
        }
```

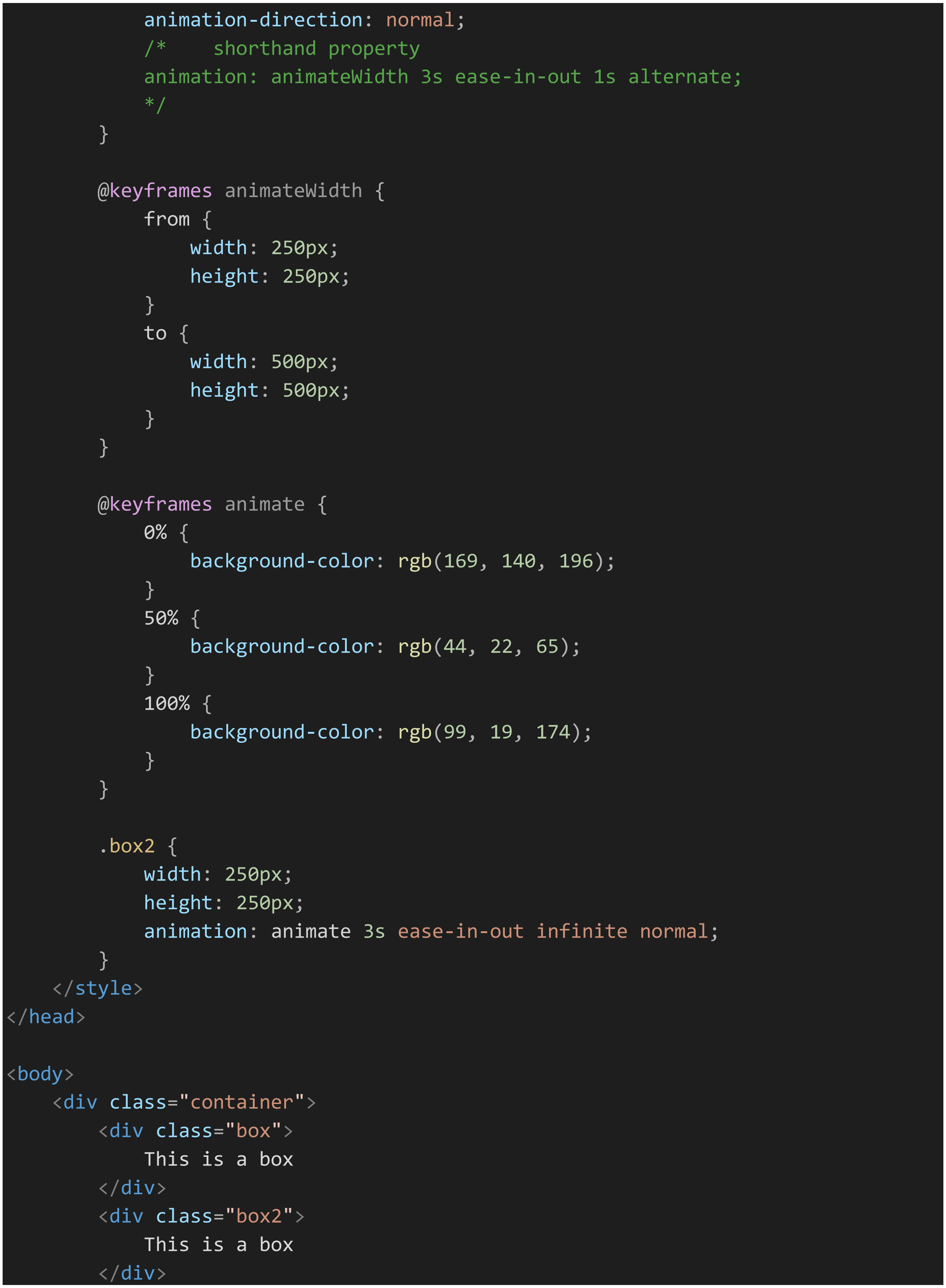
Source Code:



```
Index.html
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Chapter 8 transform transition and Animation in Css</title>
    <style>
        .container {
            background-color: red;
            height: 60vh;
        }

        .box {
            /*   transform: translate(34px, 20px) rotate(45deg);
            transform-origin: 0;
              border: 2px solid rgb(38, 23, 20);
            */
        }

        .box img {
            width: 600px;
        }

        img:hover {
            width: 250px;
        }

        img {
            width: 600px;
            /*  transition-property: width;
            transition-duration: 1s;
            transition-timing-function: ease-in;
            transition-delay: 2s;
            */
            transition: width 3s ease-in-out;
        }
    </style>
</head>
```



```
<body>
    <div class="container">
        <div class="box"><img id="myimage" src="Analyzer.webp"
alt="loading"></div>
        <button id="btn">Toggle</button>
    </div>

</body>
<script>
    btn.addEventListener("click", () => {
        myimage.style.width = "100px";
    })
</script>

</html>


Animation.html
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Animation in Css</title>
    <style>
        .container {
            height: 100vh;
            width: 100vw;
            background-color: greenyellow;
        }

        .box {
            width: 250px;
            height: 250px;
            background-color: blueviolet;
            display: flex;
            justify-content: center;
            align-items: center;
            color: white;
            animation-name: animateWidth;
            animation-duration: 3s;
            animation-timing-function: ease-in-out;
            animation-delay: 1s;
            animation-iteration-count: 5;
```



```
            animation-direction: normal;
            /*    shorthand property
            animation: animateWidth 3s ease-in-out 1s alternate;
            */
        }

        @keyframes animateWidth {
            from {
                width: 250px;
                height: 250px;
            }
            to {
                width: 500px;
                height: 500px;
            }
        }

        @keyframes animate {
            0% {
                background-color: rgb(169, 140, 196);
            }
            50% {
                background-color: rgb(44, 22, 65);
            }
            100% {
                background-color: rgb(99, 19, 174);
            }
        }

        .box2 {
            width: 250px;
            height: 250px;
            animation: animate 3s ease-in-out infinite normal;
        }
    </style>
</head>

<body>
    <div class="container">
        <div class="box">
            This is a box
        </div>
        <div class="box2">
            This is a box
        </div>
```

```html
    </div>
</body>

</html>
```

Thank You