Лабораторийн ажил 6. Анимешн

Даалгавар

Энэ удаагийн лабораторийн ажлаар бид 6 дүгээр лекц дээрээс олж авсан CSS animation тухай мэдлэгээ ашиглан Лаб№4 дээр үүсгэсэн SVG графикийг хөдөлгөнө. График дээр дүрсэлсэн дүрс дээр урсах, эргэх, тодрох, алга болох гм анимшн хийнэ:

ДаалгаварN№1

SVG график дээр дүрс дээр.

- Урсах –slide
- Эргэх –rotate
- Тодрох, алга болох – Opacity анимешн ашиглана.

ДаалгаварN№2

Текстэд анимешн ашигах

- SVG графикийн доор нэг DIV үүсгэж зургийн тайлбар бичээд түүнийг Урсах анимешн хийх.

Үнэлгээ/Ашиглах

1. CSS animation
2. CSS animation-transform
3. CSS animation-keyframes
4. CSS animation-rotate
5. CSS animation-translate
6. CSS animation-opacity
7. DIV

лабораторийн цаг дээрээ шалгуулна

Нэмэлт материал

CSS animations

Дэлгэрэнгүй:
https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_animations/Using_CSS_animations

https://developer.mozilla.org/en-US/docs/Web/CSS/animation

make it possible to animate transitions from one CSS style configuration to another. Animations consist of two components, a style describing the CSS animation and a set of keyframes that indicate the start and end states of the animation's style, as well as possible intermediate waypoints.

Using the animation shorthand

The animation shorthand is useful for saving space. As an example, some of the rules we've been using through this article:

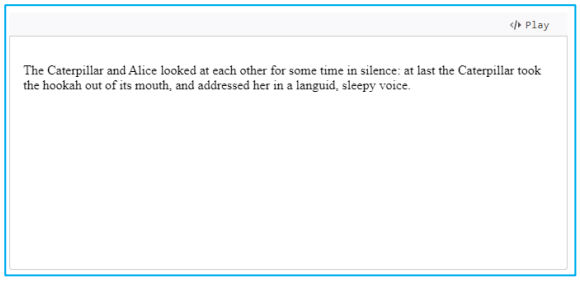
```
p {
  animation-duration: 3s;
  animation-name: slidein;
```

```
  animation-iteration-count: infinite;
  animation-direction: alternate;
}
p {
  animation: 3s infinite alternate slidein;
}
```

Adding another keyframe

Let's add another keyframe to the previous example's animation. Let's say we want the header's font size to increase as it moves from right to left for a while, then to decrease back to its original size. That's as simple as adding this keyframe:

```
75% {
  font-size: 300%;
  margin-left: 25%;
  width: 150%;
}

p {
  animation-duration: 3s;
  animation-name: slidein;
}

@keyframes slidein {
  from {
    margin-left: 100%;
    width: 300%;
  }

  75% {
    font-size: 300%;
    margin-left: 25%;
    width: 150%;
  }

  to {
    margin-left: 0%;
    width: 100%;
  }
}

<p>
  The Caterpillar and Alice looked at each other for some time in silence: at
  last the Caterpillar took the hookah out of its mouth, and addressed her in a
  languid, sleepy voice.
</p>
```



Repeating the animation

To make the animation repeat itself, use the animation-iteration-count property to indicate how many times to repeat the animation. In this case, let's use infinite to have the animation repeat indefinitely:

CSS Play

```css
p {
  animation-duration: 3s;
  animation-name: slidein;
  animation-iteration-count: infinite;
  animation-direction: alternate;
}
```

And the rest of the code:

CSS Play

```css
@keyframes slidein {
  from {
    margin-left: 100%;
    width: 300%;
  }

  to {
    margin-left: 0%;
    width: 100%;
  }
}
```

HTML Play

```html
<p>
  The Caterpillar and Alice looked at each other for some time in silence: at
  last the Caterpillar took the hookah out of its mouth, and addressed her in a
  languid, sleepy voice.
</p>
```

Animating Multiple Properties

Adding onto the sun animation in the previous example, we add a second animation changing the color of the sun as it rises and sets. The sun starts off dark red when it is below the horizon and changes to a bright orange as it reaches the top.

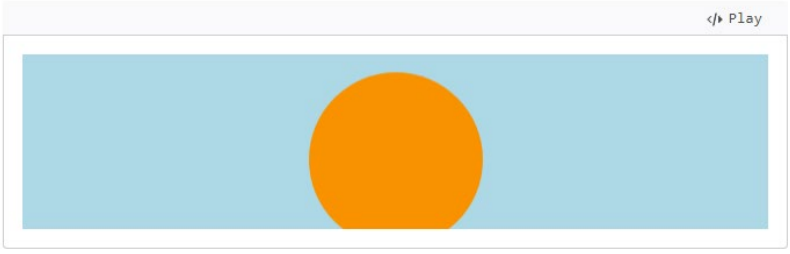
HTML

```
<div class="sun"></div>
```

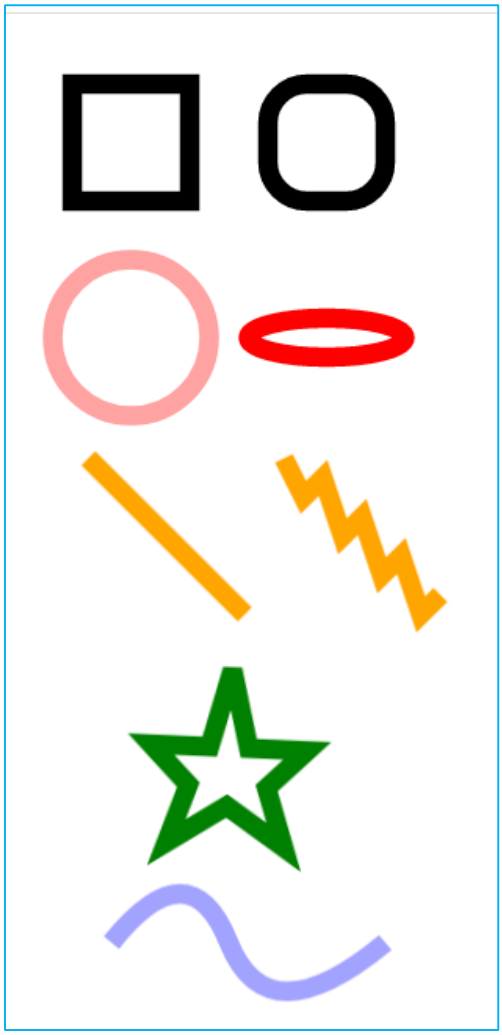
CSS

```
:root {
  overflow: hidden;
  background-color: lightblue;
  display: flex;
  justify-content: center;
}

.sun {
  background-color: yellow;
  border-radius: 50%;
  height: 100vh;
  aspect-ratio: 1 / 1;
  animation: 4s linear 0s infinite alternate animating-multiple-properties;
}

/* it is possible to animate multiple properties in a single animation */
@keyframes animating-multiple-properties {
  from {
    transform: translateY(110vh);
    background-color: red;
    filter: brightness(75%);
  }
  to {
    transform: translateY(0);
    background-color: orange;
    /* unset properties i.e. 'filter' will revert to default values */
  }
}
```

Үр дүн:



Жишээ:



```
 <html>
<style>
.myFade {
animation: tutsFade 4s 1s infinite linear alternate
}
polygon1 {
transform-origin: 50% 50%;
display: inline-block;
animation: tutsRotate 4s 1s infinite linear alternate;
}

.wing1 {
 transform-origin: center center;
 transform-box: fill-box;
 animation: spin 6s cubic-bezier(.8, 0, .2, 1) infinite;

}

.mySlide {
 animation-duration: 1s;
 animation-name: slidein1;
 animation-iteration-count: infinite;
}

@keyframes tutsFade {
 to {
  opacity: 0;
 }
}
@keyframes tutsRotate {
 to {
  transform:  rotate(180deg);
 }
}
 @keyframes spin {
  50% { transform: rotate(180deg); }
  100% { transform: rotate(360deg); }
 }
```

```
@keyframes slidein1 {

  33% { transform:  translateX(10px) translateY(-10px) ; }

            66% { transform:  translateX(0px) translateY(0px) ; }

  100% { transform:  translateX(-10px) translateY(10px) ; }

 }


@keyframes slidein {

 from {

  margin-left: 100%;

  width: 300%;

 }


 to {

  margin-left: 0%;

  width: 100%;

 }

}

</style>

<body>

<center>

<svg width="800" height="500" version="1.1" xmlns="http://www.w3.org/2000/svg">

<rect x="10" y="10" width="30" height="30" stroke="black" fill="transparent" stroke-width="5" />

<rect x="60" y="10" rx="10" ry="10" width="30" height="30" stroke="black" fill="transparent" stroke-width="5" />

<circle  class="myFade" cx="25"` cy="75" r="20" stroke="red" fill="transparent" stroke-width="5" />

<ellipse cx="75" cy="75" rx="20" ry="5" stroke="red" fill="transparent" stroke-width="5" />

<line class="mySlide" x1="10" x2="50" y1="110" y2="150" stroke="orange" stroke-width="5" />

<polyline class="mySlide" points="60 110 65 120 70 115 75 130 80 125 85 140 90 135 95 150 100 145" stroke="orange" fill="transparent" stroke-
width="5" />

<polygon class="wing1" points="50 160 55 180 70 180 60 190 65 205 50 195 35 205 40 190 30 180 45 180" stroke="green" fill="transparent"
stroke-width="5"/>

  <path class="myFade" d="M20,230 Q40,205 50,230 T90,230" fill="none" stroke="blue" stroke-width="5" />

</svg>

</center>

</body>

</html>
```

Жишээ

https://www.youtube.com/watch?v=8CllsCiJjw0 хаяг дээрх видео дээр гарах мотоцикл унаад аялаж буй банхарын хүүхэлдэйг хийнэ. Өдөр шөнө солигдож, үүлс, мод, бут нь алслалтаасаа хамаарч өөр өөр хурдаар гарч өнгөрнө, банхарын мотоцикл доргино.