



# CSY1018

## Web Programming

### Topic 10

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# Topic 10

- Advanced Animations
  - Keyframes

# Animations in CSS

- There are two types of animations available in CSS
  - Transitions
  - Keyframes

# Transitions

- Transitions are the *simple* kind of animation
- We looked at these in topic 5

# Transitions

- Opacity can support any value from 0-1
- 0.5 means semi-transparent
- CSS can be used to *transition* a property

```
nav ul ul {  
  position: absolute;  
  background-color: green;  
  padding: 0;  
  display: block;  
  width: 100%;  
  opacity: 0;  
  transition: opacity 0.5s ease-in;  
}  
  
nav > ul > li:hover ul {  
  opacity: 1;  
}
```

# Animating

- To create a *slide* effect using transitions you can use code like below:

```
nav ul ul {  
  position: absolute;  
  background-color: green;  
  padding: 0;  
  display: block;  
  width: 100%;  
  transform: translate(0, -100%);  
  transition: transform 0.5s ease-in;  
  z-index: -1;  
}  
  
nav > ul > li:hover ul {  
  transform: translate(0, 0);  
}
```

# Transitions

- Transitions allow you to create a two state animation:
  - Before
  - After
- Transitions can be applied to any property that has a numerical range of values ( x,y screen co-ordinates, opacity, border size, etc)
- Transitions are limited to this use-case
- If your animation requires more than two states (before and after) you cannot achieve this with transitions

# Keyframe animations

- Keyframe animations allow you to describe an animation with as many different steps as you like
- The syntax is more complex than transitions because there is more to do.
- There are two parts to defining a keyframe animation:
  - 1. Describe the steps of the animation
  - 2. Apply the animation to an element on the page



- See [demo1.html](#)

# Exercises

- 1. Create an animation that moves an element from the left of the screen to the right of the screen and back again repeatedly
- 2. Create an animation that moves an element as follows:
  - Top right
  - Bottom left (diagonally)
  - Bottom right
  - Top left (diagonally)
  - Top right

# Exercises

- 3. Using the menu from Topic 5 as a basis, create an animation that slides down the menu in at a 90 degree rotation, then rotates it into place
- 4. Next term sneak-peak: Download [exercise4.zip](#) and look through the (very advanced!) CSS.
  - Try adding

# Advanced effects

- There are many different effects which can be achieved with CSS
- Here are a few to look through:
  - 3d flip <https://webdevtrick.com/css-flip-effect-on-hover/>
  - 3d text <https://freefrontend.com/css-3d-text-effects/>
  - Animated text <https://www.legendblogs.com/how-to-create-3d-animated-text-with-css>
  - 3d cube: <https://redstapler.co/pure-css-3d-cube-effect-tutorial/>
- Non-square shapes
  - Triangles: <https://medium.com/@codingdudecom/css-triangle-81eb02dffeee>
  - Hexagons: <https://newtodesign.com/css-hexagons/>
  - Pentagons , octagons: [https://coursesweb.net/css/polygons-css\\_cs](https://coursesweb.net/css/polygons-css_cs)