School of Computing, Maths & Digital Technology

6G4Z2101: Introduction to Web Design and Development

CSS3

transforms, transitions and animations

Manchester Metropolitan University

CSS3

- CSS3 is the newest specification for CSS
- CSS is divided into “modules” – some are old specifications, some are new
- W3C bring different modules to the Recommendation level at different times
  - 7-stage process
    - W3C receives a Submission
    - W3C publishes a Note
    - W3C creates a Working Group
    - W3C publishes a Working Draft
    - W3C publishes a Candidate Recommendation
    - W3C publishes a Proposed Recommendation
    - W3C publishes a Recommendation

CSS3 modules

- CSS3 is split into modules, such as
  - Selectors
  - Box model
  - Backgrounds
  - Colours
  - Text effects
  - 2D/3D transformations
  - Animations
  - Multiple column layout

  …. and more

Manchester Metropolitan University

CSS3 box styling features

- border-radius: create rounded corners for borders

```
border: 2px solid #a1a1a1;
padding: 10px 40px;
background: #dddddd;
width: 300px;
border-radius: 25px;
```

The border-radius property allows you to add rounded corners to elements.

The border-radius property allows you to add rounded corners to elements.

- box-shadow: add shadow to boxes

```
width:300px;
height:100px;
background-color:blue;
box-shadow: 10px 10px 5px #888888;
```

Offset X

Offset Y

Blur Radius

- Read more
- Mozilla Developer pages
- w3schools try it out

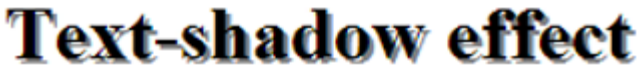
Manchester Metropolitan University

Text effects

- text-shadow:
  - Specify horizontal value, vertical value, blur distance value and the shadow's colour

h1 {text-shadow: 5px 5px 5px #FF0000; }

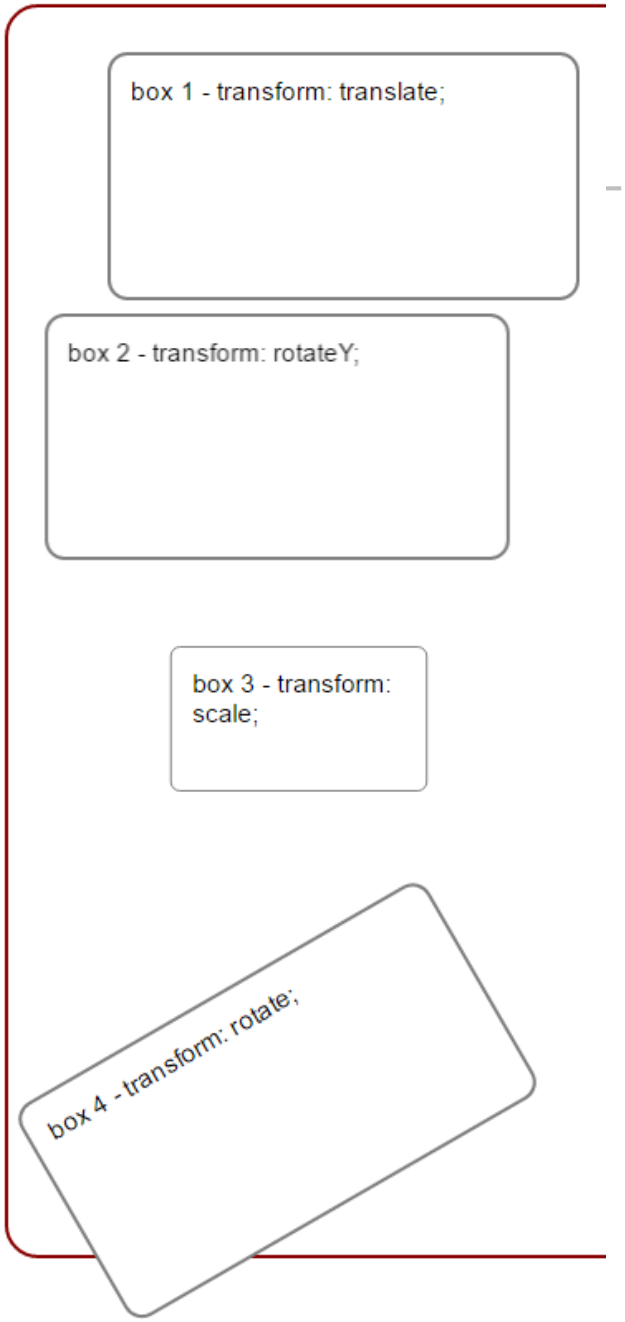
- Also 'overflow' and 'word-wrap' controls
- More effects possible with transitions, transforms and animations
- Further reading
  - Mozilla Foundation
  - w3schools
  - more examples




```
h1 {
    text-decoration: underline overline;
}
```

CSS3 Transforms

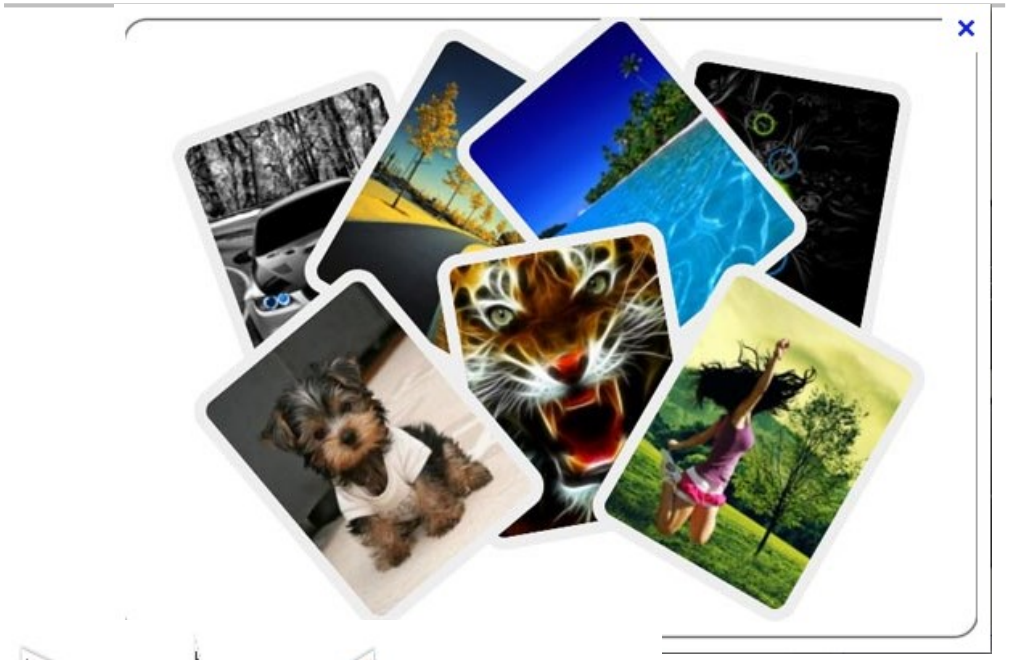
- 2D transforms allow elements to change shape, size and position eg you can **translate**, **rotate**, **scale**, **skew**
- Uses x-axis and y-axis values
- 3D transform allows you to rotate an element around the x or y axis
- Read more
  - w3schools
  - www.the-art-of-the-web



School of Computing, Maths & Digital Technology

6G4Z2101: Introduction to Web Design and Development

Manchester Metropolitan University



copyright © stu nicholls - CSS play

Manchester Metropolitan University

CSS Transitions

- Transitions allow you to animate properties such as width, height or background colour
- Transitions have a timing function, and a trigger (e.g. mouse hover)
- Set an **initial state** (e.g. a starting width)
- In the transition statement say **what properties** you want to transition
- In the **hover** statement you add the new property values

```
#divname {
        width: 150px;
        height: 200px;
        background: #fffff
        transition: width, height, background;
        }

#divname:hover {
        width: 300px;
        height: 400px;
        background: #666;
        }
```

Manchester Metropolitan University

Transition timings

- Transitions can have a duration over which they will run
- A delay can be added
- Timing functions include linear, ease-in, ease-out, ease-in-out
- Timings are useful for adding smoothness to a transition

See examples

```
#divname {
    transition: width, height, background;
    transition-duration: 3s;
    transition-delay: 1s;
    }
```

Transform with Transition

- If you create a transform and want to add a timing function, you can add the transform to a transition

```
#divname {
        transition: transform 3s;
        }

#divname:hover {
        transform: translateY(6em) scale(1.2, 1.2) rotateY(180deg);
        }
```

Animating with keyframes

- CSS3 animation allows you to use keyframes to control the state of the animation at given points as the animation is running
- Keyframes are declared using a percentage value of the total animation duration
- Statements can include more than one animation effect

```
#divname {
width:200px;
height:200px;
background:red;
position: relative;
animation: myAnim  5s;
}
```

```
@keyframes myAnim
{
0% {background: red; left:0px; top:0px;}
25%  {background: yellow; left:400px; top:0px;}
50%  {background: blue; left:400px; top:400px;}
75%  {background: green; left:0px; top:400px;}
100% {background: red; left:0px; top:0px;}
}
```

See simple animation example

Manchester Metropolitan University

CSS Transitions & Animations

- Transitions (often with Transforms) & Animations allow you to create animation effects that can replace animated gifs, Flash animations and JavaScript

Examples

- Page-flip book effect
- Animated menus
- cssplay.co.uk has a wide variety of css3 examples, many with animation (referenced on w3c website)
- Animation-transition examples
- When looking for examples of css animations you will find that some also rely on using some Javascript

Text animation

- Text can be animated by using transitions and animations

- Allows Flash-type effects often used in advertising banners within web pages
  - Example of rotating through a sequence of words

- Examples of splash pages using css3
  - splash-and-coming-soon-page-effects-with-css3/

Manchester Metropolitan University

Browser prefixes

- Older browsers may not handle some CSS3 elements without the use of browser prefixes
  - -webkit- for Chrome and Safari
  - -moz- for Firefox
  - -ms- for IE
  - -o- for Opera
- Check browser support

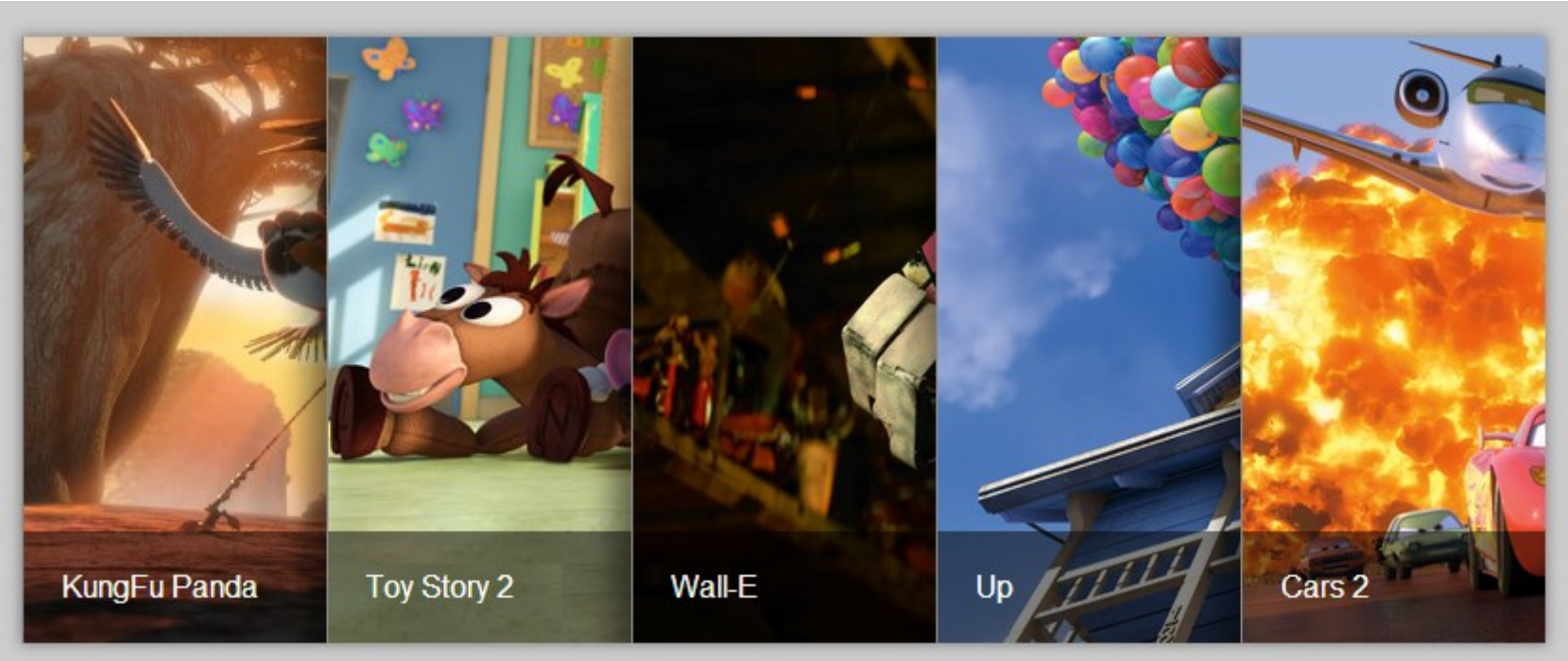
http://www.w3schools.com/cssref/css3_browsersupport.asp

```
#divname {
        -webkit-transform: background 5s;
        -moz-transform: background 5s;
        -ms-transform: background 5s;
        -o-transform: background 5s;
        transform: background 5s;
        }
```

Manchester Metropolitan University

CSS3 slider example

- Accordion-style slider using CSS3 from thecodeplayer.com



Manchester Metropolitan University

Multiple Columns

- A useful feature that allows you to lay text out in newspaper style columns easily, without the need for tables or floated divs
- Column-count property defines the number of columns (e.g. -moz-column-count:3)
- Column-gap property defines number of pixels between columns (e.g. -moz-column-gap:40px)
- Column-rule properties set the width, style and colour of the line between columns (e.g. -moz-column-rule-style:dotted)
- Read more
  - W3schools
  - A List Apart

More CSS3 examples

- CSS3 tutorial for rounded corners, borders, drop shadows, image tricks, and more at Webmonkey
- See various css3 examples at webdesignerwall.com
- See animation examples at Design Shack
- See more animation examples at optimum7.com
- Examples of CSS3 photo galleries with some interactivity
- Examples of 3D transform effects

Manchester Metropolitan University

Final note

- There is more to both HTML5 and CSS3 than we have covered
- The specifications, especially CSS, are still evolving, and will continue to do so
- Remember to use browser prefixes where necessary