Comp 125 - Visual Information Processing

Spring Semester 2019 - Week 9 - Wednesday

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CSS Basics - box model - part 1

- consideration of the CSS box model
- a document's attempt to represent each element as a rectangular box
- boxes and properties determined by browser rendering engine
- browser calculates size, properties, and position of these required boxes
- properties can include, for example,
  - *colour, background features, borders, width, height...*
- box model designed to describe an element's required space and content
- each box has a series of edges,
  - ***margin*** *edge*
  - ***border*** *edge*
  - ***padding*** *edge*
  - ***content*** *edge*

CSS Basics - box model - part 2

Content

- box's **content area** describes element's actual content
- properties can include `color`, `background`, `img`...
  - *apply inside the **content** edge*
- dimensions include **content width** and **content-height**
- content size properties (assuming that the `box-sizing` property remains default) include,
  - *`width`, `min-width`, `max-width`, `height`, `min-height`, `max-height`*

Demo - CSS Box Model

- Demo - CSS Box Model

CSS Basics - box model - part 3

Padding

- box's **padding area** includes the extent of the padding to the surrounding border
- background, colour etc properties for a content area extend into the padding
  - *we often consider the padding as extending the content*
- padding itself is located in the box's **padding edge**
- dimensions are the width and height of the **padding-box**.
- control space between padding and content edge using the following properties,
  - `padding-top`, `padding-right`, `padding-bottom`, `padding-left`
  - `padding` *(sizes calculated clock-wise)*

Demo - CSS Box Model - Padding

- JSFiddle - CSS Box Model

CSS Basics - box model - part 4

Border

- **border area** extends **padding area** to area containing the borders
- it becomes the area inside the **border edge**
- define its dimensions as the width and height of the **border-box**
- calculated area depends upon the width of the `border` we set in the CSS
- set size of our border using the following properties in CSS,
  - *`border-width`*
  - *`border`*

Demo - CSS Box Model - Border

- JSFiddle - CSS Box Model

CSS Basics - box model - part 5

Margin

- **margin area** can extend this border area with an empty area
  - *useful to create a defined separation of one element from its neighbours*
- dimensions of area defined as width and height of the **margin-box**
- control size of our margin area using the following properties,
  - `margin-top`, `margin-right`, `margin-bottom`, `margin-left`
  - `margin` *(sizes calculated clock-wise)*

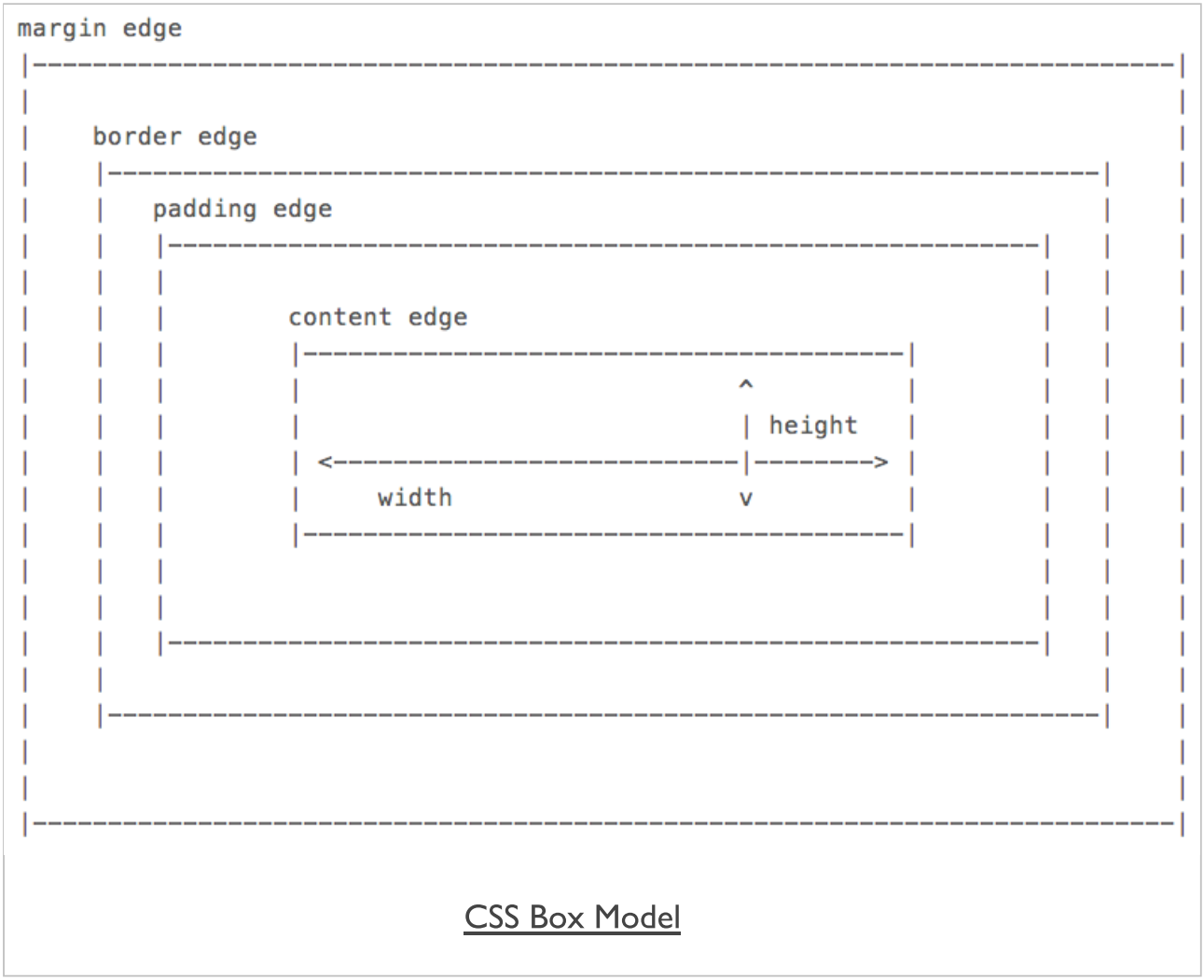
Demo - CSS Box Model - Margin

- JSFiddle - CSS Box Model

Demo - CSS Box Model

- Demo - CSS Box Model

Image - CSS Box Model



CSS Box Model

Source - MDN - CSS Box Model

CSS Basics - selectors

- **selectors** are a crucial part of working with CSS, JS...
- basic selectors such as

```
p {
  color: #444;
}
```

- above ruleset adds basic styling to our paragraphs
  - *sets the text colour to HEX value 444*
- simple and easy to apply
  - *applies the same properties and values to all paragraphs*
- specificity requires classes, pseudoclasses...

CSS Basics - classes

- add a **class** attribute to an element, such as a <p>
  - *can help us differentiate elements*
- also add a **class** to any DOM element
  - *e.g. add different classes to multiple <p> elements*

```
<p class="p1">paragraph one...</p>
<p class="p2">paragraph two...</p>
```

- we can now select our paragraphs by class name within the DOM
- then apply a **ruleset** for each class
- style this class for a specific element

```
p.p1 {
  color: #444;
}
```

- style all elements with the class `p1`, and not just <p> elements

```
.p1 {
  color: #444;
}
```

CSS Basics - pseudoclasses

- add a class to links or anchors, styling all links with the same ruleset
- we might also want to add specific styles for different link states
- styling links with a different colour
  - *e.g. whether a link has already been used or not*

```
a {
  color: blue;
  }

a:visited {
  color: red;
  }
```

- `visited` is a CSS **pseudoclass** applied to the <a> element
- browser implicitly adds this pseudoclass for us, we add style

```
a:hover {
  color: black;
  text-decoration: underline;
}
```

- pseudoclass for link element, <a>, `hover`