

# COMP2707 Lecture 7: Box Properties

## Objectives

- understand the CSS visual formatting model
- use the CSS box model
- apply the margin/padding/border properties
- use the page layout box properties
- create a simple page layout

## CSS Visual Formatting Model

- describes how element content boxes should be displayed by the browser
- based on hierarchical structure of HTML doc and element display type

## Display Type Categories

- **Block:** block elements contain inline boxes that contain element content
- **Inline:** contain the content within the block-level elements; they do not form new block of content
- **List-item:** create a surrounding containing box and list-item inline boxes

## Specifying Display Type

- CSS `display` property determines the display type of an element
- you can create block-level, inline, and list type elements
- ex: create horizontal nav lists:
  - `li{ display: inline; list-style-type: none;}`

## Using the CSS Box Model

- describes rectangular boxes that contain content on a web page
- each block-level element created is displayed as a box containing content in the browser window
- each content box can have margins, borders, and padding, measured in length or percentage

## Negative Margins

- can be set to achieve special effects
- override default browser margin by: `p{margin-left: -10px;}`
- can be used to remove the default margin

## Collapse Margins

- browser will collapse vertical margins between elements
- by default, browser selects the greater of the two margins

## Zeroing Margins

- remove default margin spacing in the browser, set margin values to zero: `body{margin: 0;}`
- must explicitly set margins for individual elements

## Padding Properties

- control the padding area in the box model (area between element content and border)
- inherits background color
- five properties: `padding`, `padding-top`, `padding-right`, `padding-left`, `padding-bottom`

## Border Properties

- five basic properties: `border`, `border-top`, `border-right`, `border-bottom`, `border-left`
- border usage: `border: solid thin black;`
- `border-width`: `thin`, `medium` (default), `thick`
- `border-color`: hex RGB or color name
- `border-radius`: make rounded corners
  - `border-top-left-radius`, `border-top-right-radius`, `border-bottom-left-radius`, `border-bottom-right-radius`

Border Style	Description
none	no border on element
dotted	dotted border
dashed	dashed border
solid	solid line border
double	double line border
groove	3D embossed border
ridge	3D outward extended border
inset	3D inset border (entire box)
outset	3D outset (entire box)

## Page Layout Box Properties

- control the dimensions and position of content boxes
- properties: `width`, `min-width`, `max-width`, `height`, `min-height`, `max-height`, `float`, `clear`, `overflow`

## Box Model Width

- width specified applied to content only, not the entire element
- element width is the result of content width + padding + margin

## Element Height

- `height` useful when creating a box with specific dimensions
- normally, content would determine the height of the element

## Floating Elements

- let you position an element to the left or right edge of its containing element
- can float an image or content box to the left or right of text

## Clearing Elements

- lets you control the flow of text around floated elements
- only used when you're floating an element
- use `clear` to force text beneath a floated element rather than next to it

## Controlling Overflow

- lets you control when content overflows the content box that contains it
- can happen when the content is larger than the area that contains it
- `height` property is the most common cause of overflow problems

## Creating Box Shadows

- lets you add shadows to create a 3D effect
- not evenly supported by all browsers
- set both horizontal and vertical measurement and color for the shadowed edges of the box
- `box-shadow: .5em .5em #ccc;`

## Summary

- CSS box model lets you control spacing around elements
- set margin, border, padding values for all four sides of the box
- flexible layouts, choose relative length units
- for fixed pages, choose pixel measurements
- page layout box properties let you create floating content boxes and wrap text around images
- remember to use margin, border, and padding properties to enhance legibility