HTML5 & CSS3

A chance to Do things Differently

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Day 2

CSS3

Other Selectors & New Properties

Positioning Styles

- **Elements can be positioned as:**
  - **position:relative**
    - → How to position an element relative to its normal position.
  - **position:absolute**
    - → How to position an element using an absolute value.
  - **position:fixed**
    - → How to position an element using fixed value
  - **position:static**
    - → The default position of an element
  - **position:sticky**

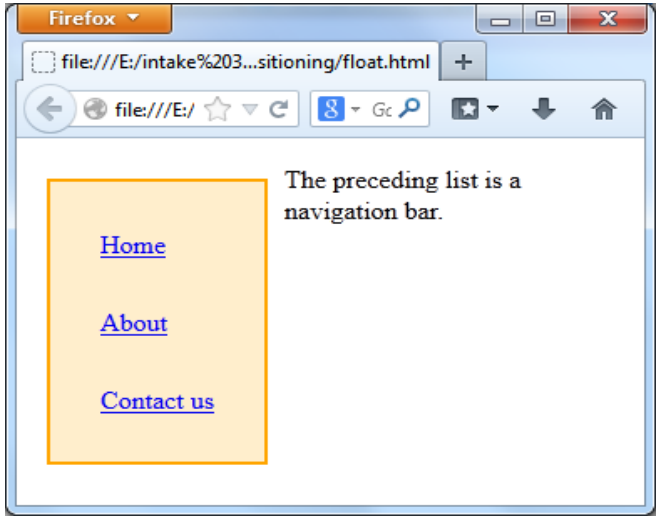
Positioning Styles
(offset properties)

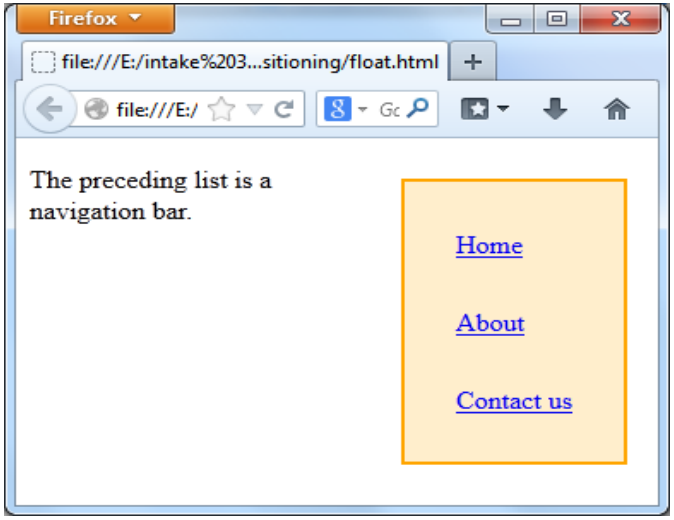
Property	Effects
left:*n*	Sets the left edge of the element relative to its container element; *n* is a *string* measurement unit, e.g., 100px.
top:*n*	Sets the top edge of the element relative to its container element; *n* is a *string* measurement unit, e.g., 100px
pixelLeft	Sets the left edge of the element relative to its container element; *n* is *numeric* for use in calculations, e.g., 100.
pixelTop	Sets the top edge of the element relative to its container element; *n* is *numeric* for use in calculations, e.g., 100.

Example!

float and clear

- Declares whether a box should float to the left or right of other content, or whether it should not be floated at all.





Example!

visibility

- **The visibility property determines if an element is visible or not.**

- **Hidden element pre-allocates its space on the page if not positioned absolute**

- **The general format is:**

  visibility:hidden|visible

Example!

display

- The **display** property differs from the visibility property in that it does *not* reserve space for hidden items
- **Some possible values for display:**

    1. **none**
    2. **block**
    3. **inline**
    4. **inline-block**

- **The general format is :**

    display:block|inline|none

    OR

    object.style.display="block|inline|none"

Example!

z-index

- The z-index property is used to place an element "behind" another element.
- z-index only affects elements that have a position value other than static
- Default z-index is 0.
- The higher number the higher priority. z-index: -1 has lower priority.
- The general format is:

  z-index:n

  OR

  object.style.zIndex=n

Example!

Dynamic sizing

Property	Effects
width:***value***	**Sets the width of the element; *n* is a string measurement, either in pixels or percentages.**
height:***n***	**Sets the height of the element; *n* is a string measurement, either in pixels or percentages.**
pixelWidth	**Sets the width of the element; *n* is numeric for use in calculations.**
pixelHeight	**Sets the height of the element; *n* is numeric for use in calculations.**

overflow

- Specifies if content of a block-level element should be clipped when it is larger than the parent element.

- **The general format is :**

  overflow:visible|hidden|scroll

  OR

  object.style.overflow=“visible|hidden|scroll "

Example!

CSS Selectors

- Several types of selectors are defined for use when implementing Style Sheets:
  - ✓ Simple Basic Selectors
  - ✓ Attribute selectors
  - ✓ Combinators
  - ✓ Pseudo-Classes
  - ✓ Pseudo-Elements
- A selector can contain a chain of one or more simple selectors separated by combinators, optionally followed by attribute selectors, ID selectors, or pseudo-classes. but it can contain only one pseudo-element, which must be appended to the last simple selector in the chain

Pseudo-Classes Selector

- A pseudo-class is similar to a class in HTML, but it's not specified explicitly in the markup.
- pseudo-class selectors
  - ✓ Dynamic
  - ✓ Link / Target
  - ✓ UI Element
  - ✓ Structural

Pseudo-Classes Selector

- Dynamic pseudo-class selectors
  - :active
    - matches any element that’s being activated by the user → the "pressed" state of a button-style link
  - :hover
    - matches elements that are being designated by a pointing device. i.e. when the mouse cursor rolls over a link, that link is in it's hover state and this will select it.
  - :focus
    - matches any element that’s currently in focus

Pseudo-Classes Selector

- Link / Target pseudo-class selector
  - :link
    - matches link elements that are unvisited
  - :visited
    - matches link elements that have been visited
  - :target
    - matches an element that's the target of a fragment identifier in the document's URI

Pseudo-Classes Selector

- UI element pseudo-class selectors
  - :enabled
    - matches user interface elements that are enabled
  - :disabled
    - matches user interface elements that are disabled
  - :checked
    - matches elements like checkboxes or radio buttons that are checked.
  - :valid
  - :required
  - etc.

Pseudo-Classes Selector

- Structural (Position-Number based) pseudo-class selectors
  - :first-child
  - :last-child
  - :only-child
  - :nth-child(n)
  - :nth-last-child(n)
  - :first-of-type
  - :last-of-type
  - :only-of-type
  - :nth-of-type(n)
  - :nth-last-of-type(n)
  - etc.

http://nthmaster.com/

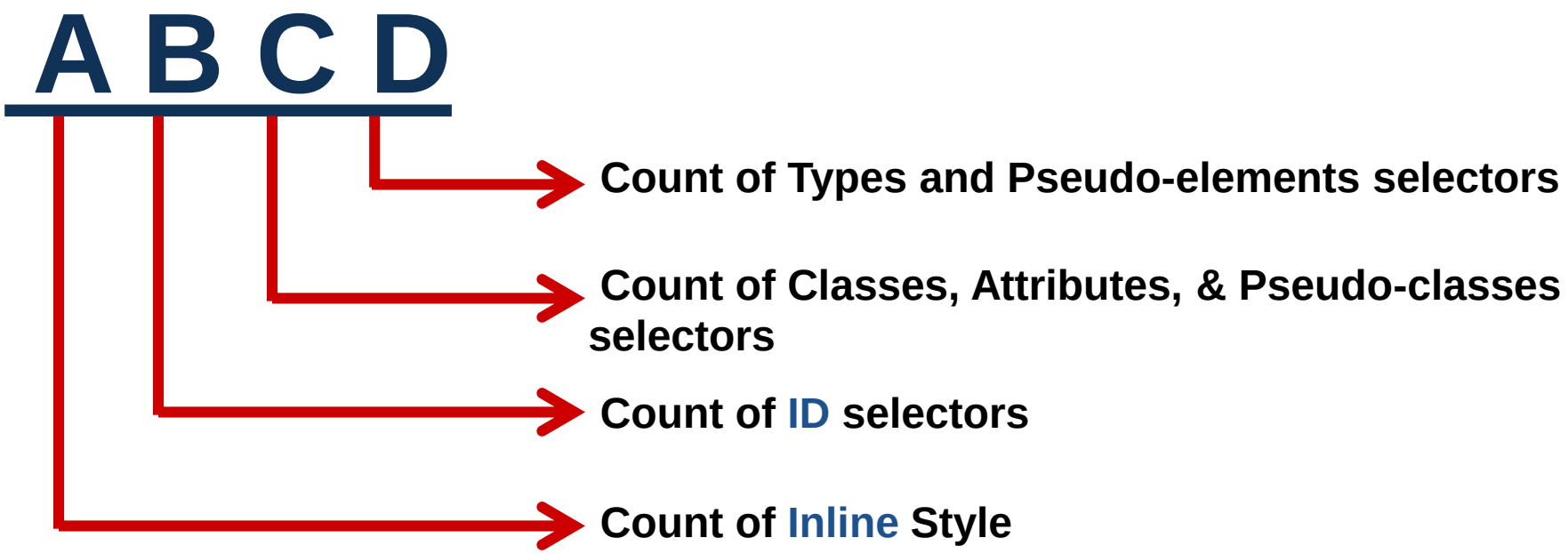
Pseudo-Element Selector

- Pseudo-elements match virtual elements that don't exist explicitly in the document tree.
- In CSS1 and CSS2, pseudo-elements start with a colon (:) In CSS3, pseudo-elements start with a double colon (::), which differentiates them from pseudo-classes.
- :first-letter
  - represents the first character of the first line of text within an element
- :first-line
  - represents the first formatted line of text
- :before
  - specifies content to be inserted before another element
- :after
  - specifies content to be inserted after another element
- ::selection
  - represents a part of the document that's been highlighted by the user

https://oinam.github.io/entities/

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

Specificity



Specificity

Example

```
body#home div#warning p.message { color: red; }
```

Inline Style	IDs	Classes, Attributes, and Pseudo-classes	Element Types and Pseudo-elements

Specificity

Example

```
ul#nav li.active a { color: red; }
```

Inline Style	IDs	Classes, Attributes, and Pseudo-classes	Element Types and Pseudo-elements

Specificity

Example

```
#footer *:not(nav) li{ color: red; }
```

Inline Style	IDs	Classes, Attributes, and Pseudo-classes	Element Types and Pseudo-elements

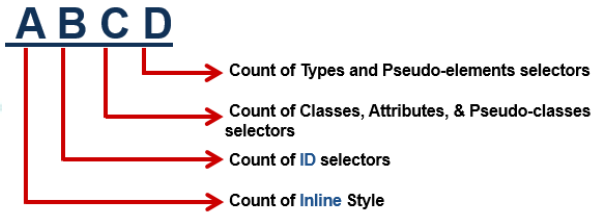
Note:
The :not() sort-of-pseudo-class adds no specificity by itself, only what's inside the parents is added to specificity value.

Specificity

Example

```
body#home div#warning p.message { color: red; }

p.message { color: green; }

#home #warning p.message { color: yellow; }

#warning p.message { color: white; }

body#home div#warning p.message { color: blue; }

p { color: teal; }

* body#home>div#warning p.message { color: red; }

#warning p { color: black; }
```

Specificity



Selector	A	B	C	D
body#home div#warning p.message	0	2	1	3
* body#home>div#warning p.message	0	2	1	3
body#home div#warning p.message	0	2	1	3
#home #warning p.message	0	2	1	1
#warning p.message	0	1	1	1
#warning p	0	1	0	1
p.message	0	0	1	1
p	0	0	0	1

Specificity Important Notes

- The universal selector (*) has no specificity value
- Pseudo-elements (e.g. :first-line) get 0,0,0,1 unlike their pseudo-class which get 0,0,1,0
- The pseudo-class :not() adds no specificity by itself, only what's inside it's parentheses
- The **!important** value appended a CSS property value is an *automatic win*.

New Properties

New Properties

- @rule
- Animation
- Transition
- Transformation (2D,3D)
- …etc.

Opacity

- Specifies the transparency of an element
- Opacity has a default initial value of 1
  - Range: 0.0 (invisible) to 1.0 (solid)
- Not inherited, but a child element less transparent than the parent.

Example!

Shadowing

- Text Shadow

http://www.cssmatic.com/

https://cssgenerator.org/box-shadow-css-generator.html

- Box Shadow
  - The box-shadow property allows designers to easily implement multiple drop shadows (outer or inner) on box elements, specifying values for color, size, blur and offset.

Example!

Vendor Extension Prefixes

https://autoprefixer.github.io/

Prefix	Organization
-moz-	Mozilla Foundation
-ms-	Microsoft
-o-	Opera Software
-webkit-	Safari and Chrome

https://www.geeksforgeeks.org/explain-css-vendor-prefixes/

@rule

- At-rules are instructions or directives to the CSS parser. They can be used for a variety of purposes.
  - @charset
  - @import
  - @media
  - @page
  - @font-face
  - @namespace
  - @keyframe

Font Style

@font-face & Different Formats

http://fontsquirrel.com/
https://www.dafont.com/

ttf	✔	✔	✔	✔	✔
otf	✔	✔	✔	✔	✔
svg	✔		✔		✔
eot				✔	
woff	✔	✔	✔	✔	✔

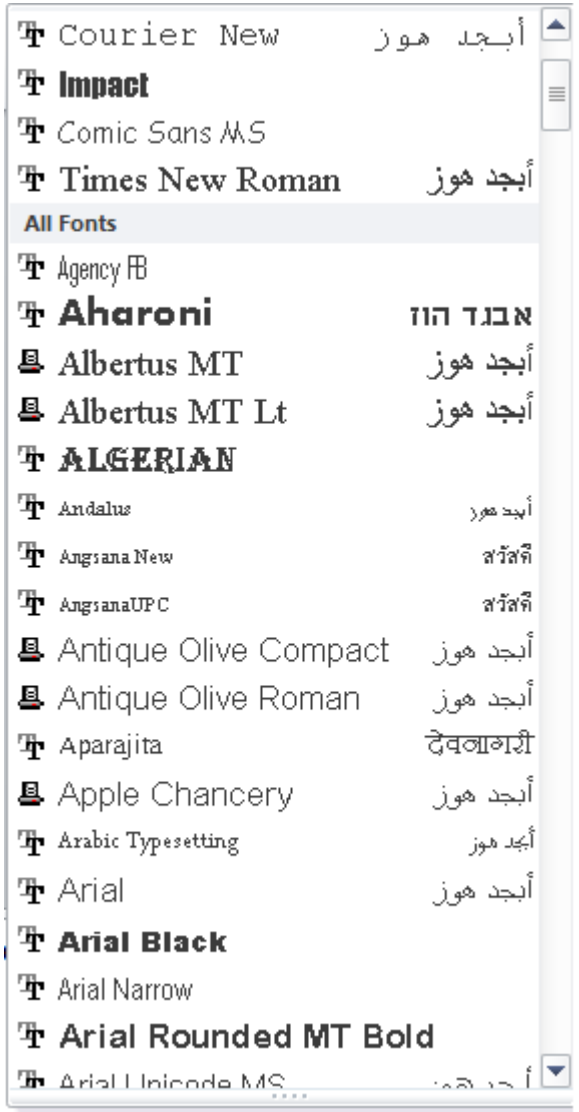
@font-face: allows specifying custom fonts

Example!

https://fonts.google.com/

Font Collections

- Serif
  - Time New Roman
- Sans-serif
  - Arial
- Cursive
  - *Comic sans*
- Fantacy
  - **Impact**
- Monospace
  - `Courier New`



Animation

Property	Description
@keyframes	Specifies the animation
animation	A shorthand property for all the animation properties below, except the animation-play-state property
animation-name	Specifies a name for the @keyframes animation
animation-duration	Specifies how many seconds an animation takes to complete one cycle
animation-timing-function	Specifies the speed curve of the animation (linear|ease|ease-in|ease-out|ease-in-out..)
animation-delay	Specifies when the animation will start
animation-iteration-count	Specifies the number of times an animation should be played
animation-direction	Specifies whether or not the animation should play in reverse on alternate cycles (normal|alternate..)

Transform

- Applies a 2D or 3D transformation to an element
  - rotate, scale, skew, translate.. etc.
  - i.e. scale(x,y), scale3d(x,y,z), scaleX(x), scaleY(y), scaleZ(z).. etc.

Example!

Transform

Property	Description
transform	Applies a 2D or 3D transformation to an element rotate, scale, skew, translate.. etc. i.e. scale(x,y), scale3d(x,y,z), scaleX(x), scaleY(y), scaleZ(z).. etc.
transform-origin	Allows you to change the position on transformed elements *x-axis y-axis z-axis*;

Example!

Transition

- Allows property changes in CSS values to occur smoothly over a specified duration.

Property	Description
transition	A shorthand property for setting the four transition properties
transition-property	Specifies the name of the CSS property the transition effect is for
transition-duration	Specifies how many seconds or milliseconds a transition effect takes to complete
transition-timing-function	Specifies the speed curve of the transition effect
transition-delay	Specifies when the transition effect will start

Example!

References

- http://css-tricks.com
- http://css.maxdesign.com.au/selectutorial
- https://developer.mozilla.org/en-US/docs/Web/API/Window/getComputedStyle
- http://code.tutsplus.com/
- http://www.sitepoint.com
- http://www.css3.info/
- https://www.html5rocks.com/en/tutorials/filters/understanding-css/
- https://css-tricks.com/examples/ShapesOfCSS/

Assignment