**Elements**

* Article – Container – logical separate for a large content on a page
* Aside – used to show content on sides – not related to the general content of the page
* Audio/Video
  + Source – can accept multiple sources
  + Track
* BDI – correctly interpret bidirectional text
* Canvas – drawing surface in the browser – 2D / WebGL (3D). Drawn in a pixel x pixel matrix
* Datalist – Allows adding suggestions to text boxes.
* Details/Summary – allows to implement/expand collapse
* Embed – To embed rich media like flash, Silverlight etc.
* Figure – Usually used to show images
* Header / Footer – Child of container elements
* Main – page’s main content. Should not be a child of any other tag. **Only one main allowed**.
* Math – allows math in markup language
* Mark – highlight, bold (or mark) text within text
* Meter – Usually a bar graph – progress bars
* Nav – used for navigation links within the pages. **Nav is not used for links to pages outside the current website.**
* Progress – renders a progress bar (Not Meter which is static).
* Section – creates logical container around a set of elements. **Similar to div**.
  + Section is used to make associations but no styling is requited. Div is used for grouping with the aim to make the elements inside div look different than the content of the page.
* Time – used for date-time
  + Pubdate attribute – used for marking the publish date of the page. There can be only one time element with pubdate attribute.
* Wbr – breaks the word based on logic to wrap text.

**Some New JavaScript APIs**

* Canvas API – declare 2D/3D contents
* Contacts API – allows to have a local repo of information
* File API – to store data on the user’s computer
* Forms – built in validation
* Geolocation – to request location info from the user (HTML5 Advanced topics)
* IndexedDB – local storage in the browser. Usually few MB of data (Check canIuse.com for support)
* Mircodata – allows extra meta data in the HTML doc
* Messaging –
* Offline Web App API – some pages can be marked for offline usage
* Selection – allows selection of elements
* Server-Sent Events – one way message from server to clients (transmits via HTTP)
* Web Notifications – Allows to display notifications from the browser.
* Web Sockets – allows to send sockets to and from the server
* Web Storage – local and session storage.
* Web workers – similar to threading for browsers. Works good with messaging API.
* XMLHttpRequest Level 2 – AJAX

**Modernizr**

* Modernizr can be used to find if a given browser supports any given HTML5 API

**DOM Selection**

* getElementsByClassName
* querySelector – used for CSS3 selection
* querySelectorAll – such as find all div tags in a page
* To access ID – use #
* To access classes – use DOT (.)

**Forms**

* Input type (Fall back to text box on unsupported browsers)
  + Color – to show color pallet/picker
  + Datalist
  + Date – calendar picker
  + Time – time picker
  + DateTime – date-time picker
  + Month – choose specific month within a year
  + Week – choose single week in a year
  + Email – have the nature for email
  + URL – have the nature for URL
  + Tel (Telephone) – have the nature for telephone
  + Range – slider to select a number
  + Number – choose numbers (uses spin buttons)
  + Search – text box for search
* Soft keyboard / number / URL / EMail

**Native Validation Rules (Implement using span data-rule attribute)**

* valueMissing - when a require attribute is added
* typeMismatch – true if the value of the element is not given
* patternMismatch – doesn’t match against RegEX
* tooLong – longer than max length
* rangeUnderFlow / rangeOverFlow – lower / higher than the min / max attribute
* stepMismatch – incorrect increment steps
* valid – true when all other are false