



# Module 4 Day 3

## Document Object Model

# What makes an application?

- Program Data

- ✓ Variables & .NET Data Types
- ✓ Arrays
- ✓ More Collections (list, dictionary, stack, queue)
- ✓ Classes and objects (OOP)

- Program Logic

- ✓ Statements and expressions
- ✓ Conditional logic (if)
- ✓ Repeating logic (for, foreach, do, while)
- ✓ Methods (functions / procedures)
- ✓ Classes and objects (OOP)
- ✓ Frameworks (MVC)

- Input / Output

- User
  - ✓ Console read / write
  - ✓ HTML / CSS
  - ❖ Front-end frameworks (HTML / CSS / JavaScript)
- Storage
  - ✓ File I/O
  - ✓ Relational database
  - ❑ APIs

# Document Object Model (DOM)

- The browser's internal representation of the HTML document
- CSS and JS target the DOM (not the original HTML)!
- *View Page Source* shows the original HTML
- F12 -> Elements (Inspect) shows the DOM
- *document* represents the HTML page (root object of the HTML doc)

# DOM Get Methods

- `document.getElementById('element-id')`
  - Most efficient
  - Returns first (should be only) element matching id
  - Called only through document
- `element.querySelector('css-selector-string')`
  - Returns first element matching the selector
  - Called through any element to narrow the search
- `element.querySelectorAll('css-selector-string')`
  - Returns NodeList containing all matching elements
  - Called through any element to narrow the search

# Other Get Methods

- element.`getElementsByClassName`('class-name')
- element.`getElementsByName`('element-name')
- element.`getElementsByTagName`('tag-name')
- These return 'live' lists

# Modifying Elements – Properties

Property	Description
innerText / innerHTML	Gets or sets the text inside the node. innerText is safe; innerHTML is susceptible to injection attack.
value	Gets or sets the value of most input elements
checked	Gets or sets the Boolean state of a checkbox
classList	Gets a collection of the classes applied to the element. Use .add() or .remove() to change the classes on an element.
children / childNodes	Gets a collection of this element's child elements, or child nodes, respectively. children is <i>*usually*</i> what you want; childNodes include text, comments and other nodes that you are usually not interested in.
parentNode	Gets the element to which this element belongs (is in the parent's children collection)
nextElementSibling / previousElementSibling	Gets to the next/previous element with the same parent

# Creating New Elements

```
// Create the element
let ele = document.createElement('tag-name');
// Set properties on the element
ele.id = 'element-id';
ele.innerText = 'text';    // etc.
// Find another relevant element in the tree
let parent = document.getElementById('parent-id');
// Insert the element into the DOM
parent.insertAdjacentElement('afterbegin', ele);
```



# Removing Elements

// Find the element

```
let ele = document.querySelector('selector-string');
```

// Remove the element from its parent

```
ele.parentNode.removeChild(ele);
```