

# Announcements

- ❖ Check class announcements daily
- ❖ You must implement programming projects by yourself

# For Loop

- ❖ Iteration statement
- ❖ General form

***for (initialize; test; expression)  
statement***

basically equivalent to

***Initialize  
while (test) {  
statement  
expression  
}***

- ❖ If more than one statement use { }
- ❖ Semicolons are required
- ❖ Beware of infinite loop if semicolon after )
- ❖ **Example:** ForLoop.html
- ❖ **Example:** ForLoopVariations.html

# Nested Loops

- ❖ You can combine if, while and do while statements in several ways
  - ❖ You can have an several nested if statements
  - ❖ You can have if statements within while statements
  - ❖ You can have while statements within if
- ❖ **Example:** NestedLoops.html
- ❖ **Example:** MultiplicationTable.html

# One-Dimensional Arrays

- ❖ **Problem** → You need to keep track of the scores of students in a class
  - ❖ Declaring and handling 50 variables is not an easy task
  - ❖ Arrays come to the rescue
- ❖ **Array** → Collection of values that can be treated as a unit or individually
  - `var a = new Array(4)`
- ❖ You can visualize an array as a set of variables one after another
- ❖ **Indexing** → We access an element using [ ]
  - ❖ First element associated with index 0 (e.g., `a[0]`)
- ❖ An element of an array can be of any type and an array can hold different types of elements
- ❖ The length property represents the length of the array (e.g., `a.length`)
- ❖ We can print the contents of an array by using `alert`
- ❖ **Example:** `ArrayEx.html`

# Definition of One-Dimensional Arrays

- ❖ Via array literal → comma separated list of elements within square brackets

```
var a = [2, 3, 5];
```

```
var b = []; // empty array
```

- ❖ Specified in the Array constructor

```
var c = new Array();
```

```
var e = new Array(4); // defines array of size 4
```

# Handling ERRORS

- ❖ We can detect errors by using `window.onerror`
- ❖ **Example:** `ErrorHandler.js`, `Error.html`
- ❖ Let's introduce some errors in `Error.html`

# Top-Down Design

- ❖ What is Top-Down Design?
- ❖ Let's go over an example
  - ❖ Video Store Software
- ❖ Bottom-Up Design