ANNOUNCEMENTS

- You must implement programming projects by yourself.
DATA TYPES

- Primitive data types in JavaScript
  - Numbers
  - Strings
  - Booleans
- Composite Data Types
  - Objects
  - Arrays
- All numbers are represented as floating-point values.
- To represent a single character using a string of length 1.
- You can use ‘‘ or “ “ for strings although we will use “ “ in this class.
- Remember floating-point values are approximations.
- Special numeric values
  - NaN – Not a Number
  - Number.MAX_VALUE – maximum value possible
  - Number.MIN_VALUE – smallest (closest to zero) number
  - Number.NaN – Not a Number
  - Number.POSITIVE_INFINITY
  - Number.NEGATIVE_INFINITY
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 { }

- **Example:** ForLoops.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: MultiplicationTable.html
**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.

```javascript
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`.
- For loops are often used with arrays.

**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 d = new Array(2, 3, 5); // initializes array with 2, 3, 5
  - var e = new Array(4); // defines array of size 4