

More on JavaScript

ICS4U - Mr. Emmell

Data Types

- There is only one kind of variable and it is declared with the var keyword
- Basic values are
 - Numbers, like 42 and 3.14159
 - Booleans, true and false
 - Strings, like "thanks for all the fish..." and 'have a good day'
 - null
 - undefined, the value of a variable declared by never assigned to

```
var answer = 42;  
answer = "thanks for all the fish...";
```

Type Conversion

- Expressions involving a string, the + operator and a number will convert the numbers to strings

```
x = "The answer is " + 42  
// returns "The answer is 42"
```

```
y = 42 + " is the answer"  
// returns "42 is the answer"
```

- With other operators, strings are converted to numbers

```
"37" - 7 // returns 30  
"37" + 7 // returns "377"
```

Type Conversions (continued)

- Boolean values
 - null and undefined treated as false
 - 0 treated as false
 - "" (the empty string) treated as false
 - Everything else treated as true

Function Arguments

- JavaScript is very flexible with function arguments
- A function can be called with more or less arguments than the number of declared parameters
- Too few arguments: leaves parameters undefined

```
function showThese(x, y) {  
    document.write(x + "\n");  
    document.write(y + "\n");  
}  
showThese("hello"); // prints hello and undefined
```

JavaScript Objects

- JavaScript is object-oriented and uses the same method-calling syntax as Java
- We have already seen this with the document object
document.write("Hello World!");
- Some basic objects are built-in to JavaScript
 - String
 - Date
 - Array
 - Boolean
 - Math

JavaScript Strings

- A String object is created every time you use a string literal (just like in Python)
- Have many of the same methods as in Java/Python
 - `charAt`, `concat`, `indexOf`, `lastIndexOf`, `match`, `replace`, `search`, `slice`, `split`, `substr`, `substring`, `toLowerCase`, `toUpperCase`, `valueOf`
- There are also some HTML specific methods
 - `big`, `blink`, `bold`, `fixed`, `fontcolor`, `fontsize`, `italics`, `link`, `small`, `strike`, `sub`, `sup`
- Don't use the HTML methods (use CSS instead)
 - This is the worst kind of visual formatting

Dynamic Creation of Elements

```
var body = document.getElementById("mainBody");
var newSelect = document.createElement("select");

body.appendChild(newSelect);

var newOption = document.createElement("option");
newOption.value = "class1";
newOption.text = "Course #1";

newSelect.appendChild(newOption);
```