

# IT350 Web and Internet Programming

Fall 2005

## SlideSet #10: JavaScript Functions

(from Chapter 10 of the text)

### Function Definitions

- Syntax and terminology:

```
function function-name( parameter-list )
{
    declarations and statements
}
```

- Example

```
function getIntegerWithMax(max) {
    var value;
    do {
        value = window.prompt(
            "Please enter an integer no larger than "+max);
    } while (value > max);
    return value;
}
```

## Function Invocation

- Built-in functions
- User-defined functions

Arguments are passed \_\_\_\_\_, so original  
values in caller are \_\_\_\_\_

## Scope – Where is a variable visible in the program?

```
function dog(g) {  
    h = 3;  
    var sum = g+h;  
    document.write("<br/> Sum is: "+sum);  
}  
  
g = 7;  
h = 5;  
  
document.writeln("<br/> g: "+g+" h: "+h);  
dog(g);  
document.writeln("<br/> g: "+g+" h: "+h);  
document.writeln("<br/> sum: "+sum);
```

Output?

## JavaScript Scope Rules

- Variables declared inside a function:
  - Explicitly (with var)
  - Implicitly (just used)
  - Parameters
- Variables declared outside a function:
  - Explicitly
  - Implicitly

**Exercise #1 – Write a function that takes two arguments and returns the minimum of the two**

## Exercise #2 – What's the output?

```
function fun1 (x) {
    x = x + 3;
    y = y + 4;
    document.writeln("<br/> FUN1: " +x+ "," +y);
}

function fun2 () {
    var y;
    x = x + 10;
    y = y + 20;
    document.writeln("<br/> FUN2: " +x+ "," +y);
}

x = 1;
y = 2;

document.writeln("<br/> MAIN #1: " +x+ "," +y);
fun1(x);
document.writeln("<br/> MAIN #2: " +x+ "," +y);
fun1(y);
document.writeln("<br/> MAIN #3: " +x+ "," +y);
fun2();
document.writeln("<br/> MAIN #4: " +x+ "," +y);
```

**Exercise #3 – Write a function `indentPrint(N, str1, str2)` that outputs the following:**

- a.) 'N' dashes, followed by the string 'str1', then <br/>
- b.) 'N' dashes, followed by the string 'str2', then <br/>

**Use `document.write()` for output. You can assume N is an integer.**

## Exercise #4

1. What point(s) are strange about the following code?
2. Will each cause a syntax error, logic error, or neither?
3. Fix the average function so that it correctly calculates both requested averages.
4. (a stretch) Do #3 without changing the function header.

```
function average(x, y, z) {  
    return (x + y + z) / 3;  
}  
  
document.write("<br/> avg2:" +average(3, 9));  
document.write("<br/> avg1:" +average(10, 20, 30, 40));
```

## Connecting JavaScript and XHTML

- Where to place the JavaScript
  - In the .html file
  - In a separate file

```
<script type = "text/javascript" src = "calc.js" />
```
- How to invoke the script?
  - Place non-function code in the <head>
  - ```
<body onload="start()">
```
  - ```
<input type = "button" value = "Roll"  
      onclick = "play()" />
```

## JavaScript Secrets

- Invalid numbers are NaN
  - Test with `isNaN(value)`
- 5 types for variables:
  - Number (including NaN)
  - String
  - Boolean
  - “undefined”
  - Null
- Gotchas
  - `color = red;`
  - `if (x = 7) ...`
  - Uninitialized variables
  - Forgetting “break” in switch

## JavaScript Tips

- Quoting

```
document.write("<a href=\"cat.html\">cat</a>");  
vs.  
document.write("<a class='cat.html'>cat</a>");
```
- Multiple arguments to document.write()

```
document.write("<h1>" + heading + "</h1>");  
  
document.write("<h1>", heading, "</h1>");
```