

IT350 Web and Internet Programming

SlideSet #9: JavaScript Functions

(from Chapter 9 of the text 4th or 5th edition)

Function Definitions

- Syntax and terminology:

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

```
/* Returns the sum of x and y */  
function doAdd(x, y) {  
    var sum = x + y;  
    return sum;  
}
```

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);  
Document.writeln("<br/> End of script");
```

Output?

JavaScript Scope Rules

- Variables declared inside a function:
 - Explicitly (with var)
 - Implicitly (just used)
 - Parameters(Look at FIRST USE inside a function to decide which applies)

- 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 `
`
- b.) 'N' dashes, followed by the string 'str2', then `
`

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

Connecting JavaScript and XHTML

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

```
<script type = "text/javascript" src = "calc.js" >
</script>
```
- 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” – may cause error or lead to NaN
 - null
- Gotchas
 - `color = red;`
 - `if (x = 7) ...`
 - Uninitialized variables
 - Forgetting “break” in switch

JavaScript Tips

- Quoting

```
document.writeln("<a href=\"cat.html\">cat</a>");
```

vs.

```
document.writeln("<a href='cat.html'>cat</a>");
```

- Multiple arguments to document.write()

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

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

(doesn't work with my_writeln())