

Week 4 Lab 2

Functions and javascript source files

A) Functions

1. Scope of variables

- i. Create a new html file and name it 'varscope.html' using a code editor of your choice.
- ii. In varscope.html, fill in HTML5 doctype declaration, html, head, title and body elements.
- iii. Between body element opening and closing tags, write the following code:

```
<center>

<p>Outside myFunction(), name is not defined.</p>

<p id=myName01></p>

<p id=myName02></p>

<script>

    function myFunction(){

        var name = "Mr. Rogers";

        document.getElementById("myName01").innerHTML = "Name is: " + name;

    }

    myFunction();

    document.getElementById("myName02").innerHTML = "Name is: " + name;

</script>

</center>
```

- iv. Save varscope.html, open the file in your internet browser and observe the results.
- v. Move the code **var name = "Mr. Rogers";** and place it outside of the function, as the following:

```
<center>

<p>Outside myFunction(), name is not defined.</p>

<p id=myName01></p>

<p id=myName02></p>
```

```

<script>

    var name = "Mr. Rogers";

    function myFunction(){

        document.getElementById("myName01").innerHTML = "Name is: " + name;

    }

    myFunction();

    document.getElementById("myName02").innerHTML = "Name is: " + name;

</script>

</center>

```

vi. Save varscope.html, open the file in your internet browser and observe the results.

2. Arguments and parameters

- i. Create a new html file and name it 'argandpara.html' using a code editor of your choice.
- ii. In argandpara.html, fill in HTML5 doctype declaration, html, head, title and body elements.
- iii. Write a script element, <script> </script> between head element opening and closing tags.
- iv. Between script element opening and closing tags, write the following Javascript code:

```

var num1 = 10;

var num2 = 5;

function calculate(firstnumber, secondnumber){

    firstnumber = firstnumber + 10;

    secondnumber = secondnumber * 10;

    document.write("firstnumber: " + firstnumber + " secondnumber: " +
secondnumber + "<br>");

}

for (var i=1; i<=5; i++){

    calculate(num1 + i, num2 * i);
}

```

}

- v. Save argandpara.html, open the file in your internet browser, your output should be as follows:

firstnumber: 21 secondnumber: 50
firstnumber: 22 secondnumber: 100
firstnumber: 23 secondnumber: 150
firstnumber: 24 secondnumber: 200
firstnumber: 25 secondnumber: 250

- vi. Try changing the variables num1 and num2 to a few different values and observe the results. Make sure you understand how the code works.

3. Return statement

- i. Create a new html file and name it 'return.html' using a code editor of your choice.
- ii. In return.html, fill in HTML5 doctype declaration, html, head, title and body elements.
- iii. Write a script element, <script> </script> between head element opening and closing tags.
- iv. Between script element opening and closing tags, write the following Javascript code:

```
var num1 = 1;  
  
var num2 = 5;  
  
function calculate(firstnumber, secondnumber){  
    return (firstnumber + secondnumber);  
}  
  
var result = 0;  
for (var i=0; i<5; i++){  
    result = calculate(num1 + result, num2 + result);  
    document.write("result: " + result + "<br>");  
}
```

- v. Save return.html, open the file in your internet browser, your output should be as follows:

result: 6
result: 18
result: 42
result: 90
result: 186

- vi. Try inserting a few different values for num1 and num2, and observe the results.

B) Objects

1. Math objects

- i. Create a new html file and name it 'math.html' using a code editor of your choice.
- ii. In math.html, fill in HTML5 doctype declaration, html, head, title and body elements.
- iii. Write a script element, <script> </script> between head element opening and closing tags.
- iv. Between script element opening and closing tags, write the following Javascript code:

```
var num = Math.PI;  
  
document.write("Num is pi: " + num + "<br>");  
  
num = num * -1;  
  
document.write("Num is pi*-1: " + num + "<br>");  
  
num = Math.abs(num);  
  
document.write("Absolute value of num: " + num + "<br>");  
  
num = Math.floor(num)  
  
document.write("Rounded down integer value of num: " + num + "<br>");  
  
  
for(var i=0; i<5; i++){  
  
    document.write("Random number between 0 and num:  
    (Math.random()*num) + "<br>");  
  
}
```

- v. Save math.html, open the file in your internet browser, try refreshing your browser and observe the change in results.

2. Boolean objects

- i. Create a new html file and name it 'bool.html' using a code editor of your choice.
- ii. In bool.html, fill in HTML5 doctype declaration, html, head, title and body elements.
- iii. Write a script element, <script> </script> between head element opening and closing tags.
- iv. Between script element opening and closing tags, write the following Javascript code:

```
var one = 0;  
  
var two = 1;  
  
var three = " _";
```

```
var four = NaN;
```

```
var b1 = new Boolean(one);
```

```
var b2 = new Boolean(two);
```

```
var b3 = new Boolean(three);
```

```
var b4 = new Boolean(four);
```

```
document.write(one + " results in Boolean " + b1 + "<br>");
```

```
document.write(two + " results in Boolean " + b2 + "<br>");
```

```
document.write(three + " results in Boolean " + b3 + "<br>");
```

```
document.write(four + " results in Boolean " + b4 + "<br>");
```

- v. Save bool.html, open the file in your internet browser and observe the results.

3. Date objects

- i. Create a new html file and name it 'date.html' using a code editor of your choice.
- ii. In date.html, fill in HTML5 doctype declaration, html, head, title and body elements.
- iii. Write a script element, <script> </script> between head element opening and closing tags.
- iv. Between script element opening and closing tags, write the following Javascript code:

```
setInterval(clock, 1000);
```

```
function clock(){
```

```
    document.body.innerHTML = "";
```

```
    var today = new Date();
```

```
    var day = today.getDate();
```

```
    var month = today.getMonth();
```

```
    var year = today.getFullYear();
```

```
    var hour = today.getHours();
```

```
    var minutes = today.getMinutes();
```

```
    var seconds = today.getSeconds();
```

```

        document.write("Date: " + day + "." + month + "." + year + "<br>");

        document.write("Time: " + hour + ":" + minutes + ":" + seconds + "<br>");
    }

```

- v. Save date.html, open the file in your internet browser and observe the results.

C) Javascript source files

- i. Create a new html file and name it 'js.html' using a code editor of your choice.
- ii. In js.html, fill in HTML5 doctype declaration, html, head, title and body elements.
- iii. Between head element opening and closing tags, write the following code:

```

<script type="text/javascript" src="javascript.js"></script>

<script>

    setInterval(clock, 1000);

</script>

```

- iv. Create a new file and name it 'javascript.js' using a code editor of your choice.
- v. Write the following code in 'javascript.js' file:

```

function clock(){

    document.body.innerHTML = "";

    var today = new Date();
    var day = today.getDate();
    var month = today.getMonth();
    var year = today.getFullYear();
    var hour = today.getHours();
    var minutes = today.getMinutes();
    var seconds = today.getSeconds();

    document.write("Date: " + day + "." + month + "." + year + "<br>");
    document.write("Time: " + hour + ":" + minutes + ":" + seconds + "<br>");
}

```

- vi. Save js.html and javascript.js, open js.html file in your internet browser and observe the results.