Week 3 Lab 2

Variables & Operators

A) Variables

1. Scope
   a. Create a new html file and name it 'scope.html' using a code editor of your choice.
   b. In scope.html, fill in HTML5 doctype declaration, html, head, title and body elements.
   c. Write a script element, <script> </script> between head element opening and closing tags.
   d. Between script element opening and closing tags, write the following Javascript code:

   > *var x = 100;*
   >
   > *document.write(x);*

   e. Save scope.html, open the file in your internet browser and observe the result.
   f. Edit your Javascript code to add a function named writeVar():

   > *var x = 100;*
   >
   > *function writeVar(){*
   >
   > > *document.write(x);*
   >
   > *}*

   g. Save scope.html, open the file in your internet browser and observe the result.

   The value for x doesn't appear on your web site. Why?

   This is because we haven't call or use our function writeVar() yet. We only have created it.

   h. To use the function writeVar(), edit your Javascript code to look as follows:

   > *var x = 100;*

```
function writeVar(){

        document.write(x);

}
writeVar();
```

i. Save scope.html, open the file in your internet browser and observe the result.
j. Add the following code in your Javascript code **after calling or using** the function writeVar():

```
document.write(x);
```

k. **Inside the function** writeVar(), edit your code to look like the following:

```
document.write(x + "</br>");
```

l. Save scope.html, open the file in your internet browser and observe the result. Your page should display the following:

    100

    100

m. Move the following line of code into writeVar() function:

```
var x = 100;
```

n. Save scope.html, open the file in your internet browser and observe the result. Your page should display the following:

    100

2. Changing variable value

a. Using previous code, edit your Javascript code so that the variable 'x' is a global variable. Your code should look as the following:

> *var x = 100;*
>
> *function writeVar(){*
>
> > *document.write(x + "</br>");*
>
> *}*
>
> *writeVar();*
>
> *document.write(x);*

b. Save scope.html, open the file in your internet browser and observe the result. Your page should display the following:

> 100
>
> 100

c. Edit writeVar() function as shown below, adding the line of code as highlighted:

> *function writeVar(){*
>
> > *x= 50;*
> >
> > *document.write(x + "</br>");*
>
> *}*

d. Save scope.html, open the file in your internet browser and observe the result. Your page should display the following:

> 50
>
> 50

e.   Before calling or using the function writeVar(), add a line of code to change the value of variable 'x' to 500. Your whole code should look like this:

```
var x = 100;

function writeVar(){

        x = 50;

        document.write(x + "</br>");

}

x = 500;

writeVar();

document.write(x);
```

f.   Save scope.html, open the file in your internet browser and observe the result. Your page display results will be the same before in point d. above, highlighted in blue. Why?

g.   Move the line of code that assigns 500 to variable 'x' to after writeVar() function call. Your code should look like this:

```
var x = 100;

function writeVar(){

        x = 50;

        document.write(x + "</br>");

}

writeVar();
x = 500;

document.write(x);
```

h.   Save scope.html, open the file in your internet browser and observe the result. Your page display result will be as follows:

50

500

3. Strings & characters
   a. Create a new html file and name it 'strchar.html'
   b. fill in HTML5 doctype declaration, html, head, title and body elements.
   c. Write a script element, <script> </script> between head element opening and closing tags.
   d. Between script element opening and closing tags, write the following Javascript code:

   var txt1 = "Hi, my name is";

   var txt2 = 'Slim Shady';

   document.write(txt1 + " " + txt2);

   e. Save strchar.html, open the file in your internet browser and observe the result.
   f. Edit your code above as follows:

   var txt = "Hi, my name is Slim Shady. I am a student in XMUM.";

   document.write(txt + "</br>");

   document.write("Length of text is " + txt.length + " characters.");

   g. Save strchar.html, open the file in your internet browser and observe the result. Your web page should display the following:

   Hi, my name is Slim Shady. I am a student in XMUM.
   Length of text above is 50 characters.

   h. Edit your code to change the string assigned to 'txt' variable. The line of code should be as follows:

   var txt = "Hi, my name is \"Slim Shady\". I am a student in XMUM.";

   i. Save strchar.html, open the file in your internet browser and observe the result.

B) Relational, logical and conditional operators

1. Relational operator
   a. Create a new html file and name it 'op.html' using a code editor of your choice.
   b. In op.html, fill in HTML5 doctype declaration, html, head, title and body elements.
   c. Write a script element, <script> </script> between head element opening and closing tags.
   d. Between script element opening and closing tags, write the following Javascript code:

   > *var x = 10;*
   >
   > *var y = 100;*
   >
   > *document.write(x < y);*

   j. Save op.html, open the file in your internet browser and observe the result.
   k. Change the values of the variables x and y, and change the operator to each of the following operators:
      a. >
      b. >=
      c. <=
      d. ==
      e. !=

   Save op.html, open the file in your internet browser and observe the result after each change.

2. Logical operator
   a. Using previous code, edit your Javascript code so it is as follows:

   > *var x = 10;*
   >
   > *var y = 100;*
   >
   > *var result;*
   >
   > *result = (x < y) && ((x*2) > y);*
   >
   > *document.write(result);*

   b. Save op.html, open the file in your internet browser and observe the result.
   c. Change '**&&**' to '**||**'. Save op.html, open the file in your internet browser and observe the result.

3. Conditional operator
   a. Using previous code, edit your Javascript code so it is as follows:

   var password = "12345";

   var userPrompt = prompt("Enter password");

   var result;

   result = (password == userPrompt) ? "You may enter!" : "Wrong password";

   document.write(result);

   b. Save op.html, open the file in your internet browser.
   c. Enter the password (value assigned to 'password' variable) when prompted. Observe the result.
   d. Refresh the page and enter a wrong password when prompted. Observe the result.