

THE MINISTRY OF EDUCATION AND YOUTH OF THE
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TECHNICAL UNIVERSITY OF MOLDOVA
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REPORT
on Web Technologies
Laboratory Work No.2

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Theme: Problems in JavaScript

Task:

Solve the given problems in JavaScript .Explain the answers obtained.

Problem 1

"Hello JavaScript" Create an HTML page that displays an alert pop-up with the text "The page is loading" when the page loads. After clicking the OK button in the pop-up, another pop-up pops up with the text "The page has been loaded successfully". Provide two solutions to the problem. First, the scripts are embedded in the HTML page. Second - external scripts.

Solution 1

```
<!DOCTYPE HTML>
<script type='text/javascript'>
    alert("Page is loading!");
</script>
<html><head></head>
<body>
    <script>
        window.onload = function() {
            alert('Page is loaded')
        };
    </script>
<p>Line 1</p>

<p>Line two</p>
</body>
</html>
```

Solution 2

HTML

```
<!DOCTYPE HTML>
<script type='text/javascript' src="Loading.js"></script>
<html><head></head>
<body>
    <script defer src="Loaded.js">
    </script>
<p>Line 1</p>

<p>Line two</p>
</body>
</html>
```

Loading.js

```
    alert("Page is loading!");
```

Loaded.js

```
window.onload = function() {
    alert('Page is loaded')
};
```

Problem 2

The order of execution of scripts

In the example below, two small.js and big.js scripts are connected.

Assuming that small.js is loaded much faster than big.js - which one will be executed first?

Case 1

```
<script src="big.js"></script>
```

```
<script src="small.js"></script>
```

Case 2

```
<script async src="big.js"></script>
```

```
<script async src="small.js"></script>
```

Case 3

```
<script defer src="big.js"></script>
```

```
<script defer src="small.js"></script>
```

Scripts are situated inside body tag.

In case 1 and 3 script big.js will be executed first in case 2 script small js will executed first.

Problem 3

Classify the following variables in three categories:

-good

-unrecommended

-unacceptable

```
var adminName;  
var imia_Admina;  
var numele_Adminului;  
var admin_Name;  
var AdminName;  
var ADMINNAME;  
var имяАдмина;  
var _;  
var IstAdmin;  
var primaryAdmin;  
var $;  
var i;  
var j;  
var getCount;  
var count;  
var getCount();  
var int;  
var admin-Name;
```

Good

```
var adminName;  
var imia_Admina;  
var numele_Adminului;  
var admin_Name;  
var AdminName;  
var count;
```

Unrecomanded

```
var ADMINNAME;
```

```

var имяАдмина;
var $;
var i;
var j;
var _;
var getCount;
var int;

```

Unacceptable

```

var admin-Name;
var getCount();
var 1stAdmin;

```

Problem 4

What will be the result of x in the following code (explain)

```
var a = 2;
```

```
var x = 3 + (a *= 3);
```

*X=3+(2*3)=9*

because

a=3->a=a*3*

Problem 5

Write a function which will compute the minimum from two number min (a,b)

Present three ways of function declaration

-new function

-function expression

-function declaration

function expression

```
var minFunction=function min(a, b) {
```

```
    return a < b ? a : b;
```

```
}
```

function declaration

```
function min(a, b) {
```

```
    return a < b ? a : b;
```

```
}
```

New function

```
var minFunction= new Function ("a", "b", "return a < b ? a : b");
```

Problem 6

Please review the code below for formatting and recommended code conventions for JavaScript.

```
function pow(x,n)
{
var result=1;
for(var i=0;i<n;i++) {result*=x;}
return result;
}

x=prompt("x?","")
n=prompt("n?","")
if (n<0)
{
alert('Puterea'+n+'nu este procesată în cadrul exemplului dat, introduceți o putere >0');
}
else
{
alert(pow(x,n))
}
```

In order to follow th Java script convention the code must be written similar to this

```
function pow(x,n) {

var result=1;

for(var i=0;i<n;i++) {
    result*=x;
}
return result;
}

x=prompt("x?","");
n=prompt("n?","");
if (n<0) {
    alert('Puterea'+n+'nu este procesată în cadrul exemplului dat, introduceți o putere >0');
}
else {
    alert(pow(x,n))
}
```

Problem 7

Compute the following statements(explain results)

```
"" + 1 + 0 //10 string
"" - 1 + 0 //-1 number
true + false//1 number
6 / "3"//2 number
"2" * "3"//6 number
4 + 5 + "px"//9px string
"$" + 4 + 5//$45 string
"4" - 2// 2 number
"4px" - 2//NaN
7 / 0//Infinity number
"-9\n" + 5//-9
5 string
"-9\n" - 5//-14 number
5 && 2//2 number
2 && 5//5 number
5 || 0//5 number
0 || 5//5 number
null + 1//1 number
undefined + 1//NaN
null == "\n0\n"//false
+null == +"\n0\n"// false
```

In every case the compiler tries to perform implicit conversion and compute the results

Conclusion:

In this laboratory work I understood how to solve different simple math problems in Javascript and to predict the results of the solved problems I learned how to define a variable and a function correctly how to write readable and understandable code in JS.