

LAB FOR SESSION 11 & 12**Introduction to JavaScript****A. OBJECTIVES**

- Using basic syntax of JavaScript.
- Using operators.
- Using regular expression.
- Javascript statements: conditional statements, loop statements, Function.

B. STEP BY STEP EXERCISES**1. Variable declaration and using message boxes and type converting**

Create a web page which allow enter 2 numbers. If user enter incorrect format then display error message box. Otherwise, display sum of two numbers

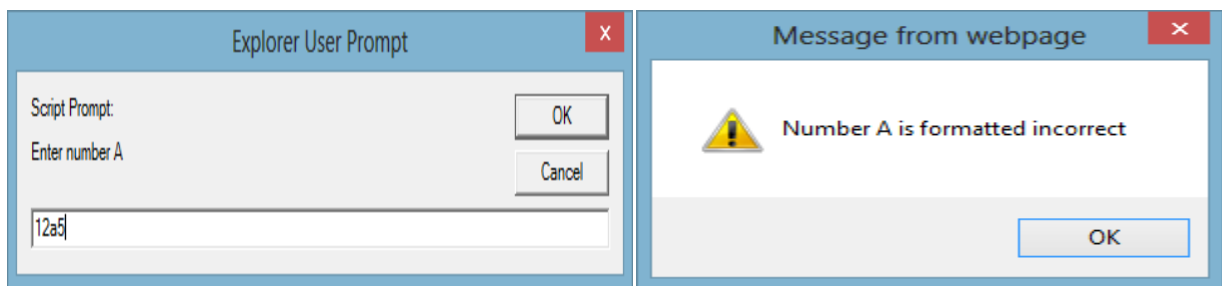


Figure 11.1 - Input data and error message box

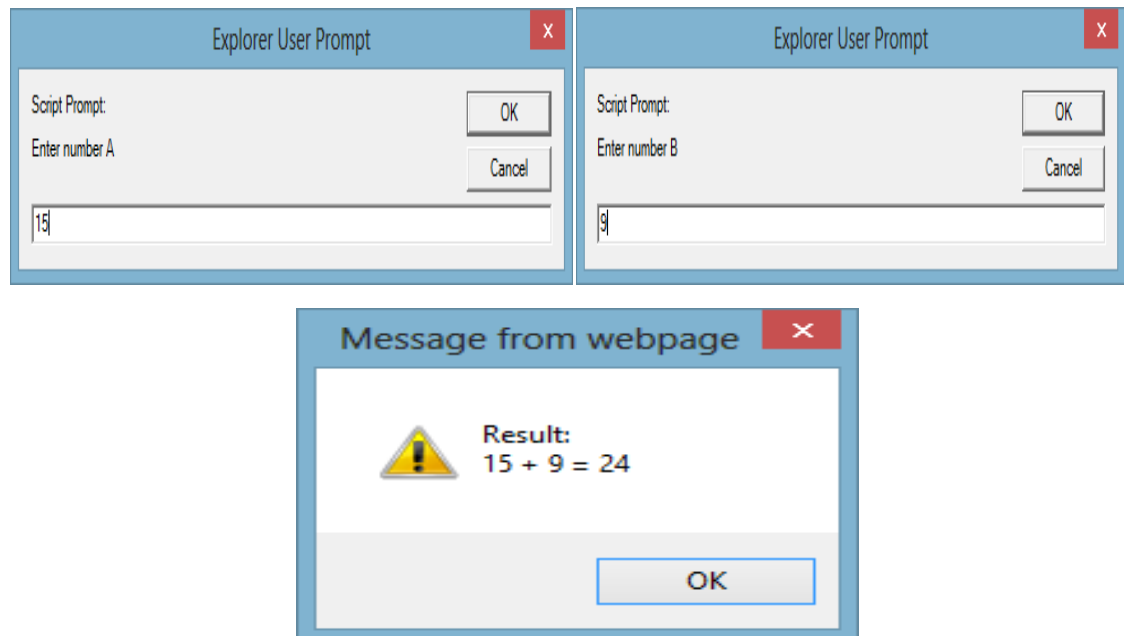


Figure 11.2 - Output data

```

<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>ex02</title>
<script language="javascript">
var txta = prompt("Enter number A");
var txtb = prompt("Enter number B");

if(txta == null || txta == "" || isNaN(txta)) {
    alert("Number A is formatted incorrect ");
} else if(txtb == null || txtb == "" || isNaN(txtb)) {
    alert("Number B is formatted incorrect ");
} else {
    var result = parseFloat(txta) + parseFloat(txtb);
    alert("Result:\n" +
        txta + " + " + txtb + " = " + result);
}
</script>
</head>
<body>
</body>
</html>

```

2. Using document.write to display

```

<html>
<head>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
<title>ex03</title>
<script language="javascript">
var txta = prompt("Enter any integer");

if(txta == null || txta == "" || isNaN(txta))
    document.write("<font color='red'>You must enter a number</font>");
else if(txta % 2 == 0)
    document.write("<font color='green'><b>" + txta + " is an even number</b></font>");
else
    document.write("<font color='blue'><i>" + txta + " is an odd number</i></font>");
</script>
</head>
<body>
</body>
</html>

```

EXTRA EXERCISES

- a. Create a web page that allow calculate the perimeter and area of rectangle.
 - b. Create a web page that allow calculate the perimeter and area of circle with $\pi = 3.14$.
3. Using switch statement to calculate dates in a month

DATES IN MONTH

Year:

Month:

Date:

DATES IN MONTH

Year:

Month:

Date:

*Figure 11.3**Code:*

```

1 <!DOCTYPE HTML>
2 <html>
3 <head>
4 <meta charset="utf-8">
5 <title>Dates in month</title>
6 <script language="javascript">
7 function isLeapYear(n) {
8     return (n%4==0 && n%100!=0) || n%400==0;
9 }
10 function update() {
11     year = document.f.year;
12     month = document.f.month;
13     date = document.f.date;
14     if(year.value==" " || isNaN(year.value)) {
15         date.value = "Year must a number";
16         year.focus();
17     } else
18         switch(month.value) {
19             case "1":
20             case "3":
21             case "5":
22             case "7":
23             case "8":
24             case "10":
25             case "12":
26                 date.value = 31;
27                 break;
28             case "4":
29             case "6":
30             case "9":
31             case "11":
32                 date.value = 30;
33                 break;

```

```

34         case "2":
35             date.value = isLeapYear(year.value)? 29: 28;
36             break;
37     }
38 }
39 </script>
40 </head>
41 <body onload="update()" >
42 <form name="f">
43     <table border="0" align="center">
44         <tr><td colspan="2" align="center">
45             <h2>DATES IN MONTH</h2></td></tr>
46         <tr><td align="right">Year: </td>
47             <td><input name="year" value="2012"
48                 onblur="update()" /></td>
49         </tr>
50         <tr><td align="right">Month: </td>
51             <td><select name="month" onblur="update()" >
52                 <option value="1">01</option>
53                 <option value="2">02</option>
54                 <option value="3">03</option>
55                 <option value="4">04</option>
56                 <option value="5">05</option>
57                 <option value="6">06</option>
58                 <option value="7">07</option>
59                 <option value="8">08</option>
60                 <option value="9">09</option>
61                 <option value="10">10</option>
62                 <option value="11">11</option>
63                 <option value="12">12</option>
64             </select>
65         </td></tr>
66         <tr><td align="right">Date: </td>
67             <td><input name="date" readonly="readonly" /></td>
68         </tr>
69     </table>
70 </form></body></html>

```

4.

5. Using loop statement to create multiplication table

MULTIPLICATION TABLE

Which multiplication table that you want to display?

Multiplication table 9:

9 x 1 = 9
9 x 2 = 18
9 x 3 = 27
9 x 4 = 36
9 x 5 = 45
9 x 6 = 54
9 x 7 = 63
9 x 8 = 72
9 x 9 = 81
9 x 10 = 90

Figure 11.4

MULTIPLICATION TABLE

Which multiplication table that you want to display?

You must enter a number

Figure 11.5

Hint:

```

1 <!DOCTYPE HTML>
2 <html>
3 <head>
4 <meta charset="utf-8">
5 <title>Multiplication table</title>
6 <script language="javascript">
7 function display() {
8     a = document.f.a;
9     //access the iframe "view_area"
10    var txt = document.getElementById("view_area").contentWindow;
11
12    txt.document.body.innerHTML = ""; //clear old content
13    if(a.value == "" || isNaN(a.value))
14        txt.document.write("<font color='red'>You must enter a number</font>");
15    else {
16        txt.document.write("<b>Multiplication table " + a.value + " :</b><br/>");
17        for(i=1; i<=10; i++)
18            txt.document.write(a.value + " x " + i + " = " + (i*a.value) + "<br/>");
19    }
20 }
21 </script>
22 </head>
23 <body>
24 <form name="f">
25     <table border="0" align="center">
26         <tr><td colspan="2" align="center">
27             <h2>MULTIPLICATION TABLE</h2></td></tr>
28         <tr><td align="right">
29             Which multiplication table that you want to display?</td>
30             <td><input name="a" size="5" onchange="display()" /></td></tr>
31         <tr><td colspan="2" align="center">
32             <iframe id="view_area" width="230" height="250"></iframe></td></tr>
33     </table>
34 </form>
35 </body>
36 </html>

```

6. Using regular expression and eval function

Create a form that allows user enter two number and an operator (such as: +, -, *, /, %).

After click on Calculate button the result will be shown in result textbox.

MINI CALCULATOR

a =

b =

Operator:

Result:

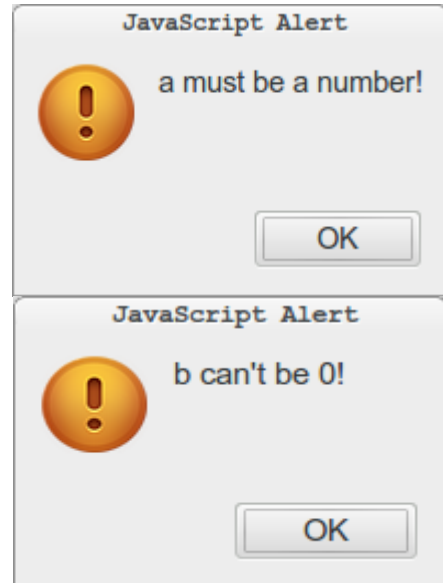


Figure 11.6

Code:

```

1 <!DOCTYPE HTML>
2 <html>
3 <head>
4 <meta charset="utf-8">
5 <title>Mini calculator</title>
6 <script language="javascript">
7 function calculate() {
8     var a = document.frmCal.txta;
9     var b = document.frmCal.txtb;
10    var o = document.frmCal.slto;
11    var r = document.frmCal.txtr;
12
13    var numberFormat = /^[+-]?\d+(\.\d+)?$/;
14
15    if(numberFormat.test(a.value) == false) {
16        alert("a must be a number!");
17        a.focus();
18    } else if(numberFormat.test(b.value) == false) {
19        alert("b must be a number!");
20        b.focus();
21    }

```

```

22     else if((o.value=="/" || o.value=="%") && parseInt(b.value)==0) {
23         alert("b can't be 0!");
24         r.value = "";
25         b.focus();
26     } else
27         r.value = eval(a.value + o.value + b.value);
28 }
29 </script>
30 </head>
31 <body>
32 <form name="frmCal">
33     <table border="0" align="center">
34         <tr><td colspan="2" align="center">
35             <h2>MINI CALCULATOR </h2></td></tr>
36         <tr><td align="right">a = </td>
37             <td><input name="txta" /></td></tr>
38         <tr><td align="right">b = </td>
39             <td><input name="txtb" /></td></tr>
40         <tr><td align="right">Operator: </td>
41             <td><select name="slto">
42                 <option value="+">+</option>
43                 <option value="-">-</option>
44                 <option value="*">*</option>
45                 <option value="/">/</option>
46                 <option value="%">%</option>
47             </select>
48         </td></tr>
49         <tr><td align="right">Result: </td>
50             <td><input name="txtr" readonly /></td></tr>
51         <tr><td colspan="2" align="center">
52             <input type="button" value="Calculate"
53                 onClick="calculate()" />
54         </td></tr>
55     </table>
56 </form>
57 </body>
58 </html>

```

7. Form validation

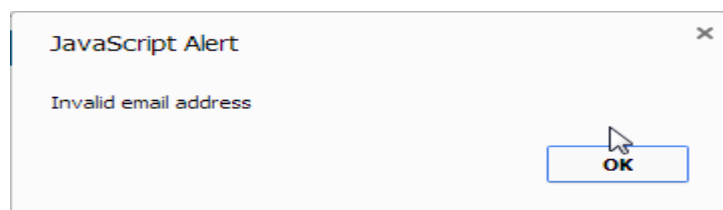
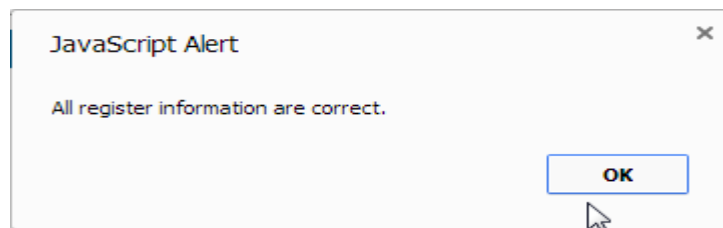
REGISTER NEW ACCOUNT

Username
Password
Confirm password
Gender ☒ Male ☐ Female
Phone
Email
Favourite ☒ Music ☒ Reading
Picture No file chosen
Description
Education level

Aptech ▼

Language

Vietnamese
 English
 French
 Japanese

Figure 13.2**Figure 13.3****Figure 13.4**

- **Hint:** *FormValid* function

```

function formValid() {
    f = document.frmRegister;
    var phone_pattern = /^(\\(0\\d{1,3}\\)\\d{7})|(0\\d{9,10})$)/;
    var email_pattern = /^[a-zA-Z]\\w*(\\.\\w+)*@\\w+(\\.\\w{2,3})+$/;
    if(f.txtUsername.value=="") {
        alert("Username can't be empty");
        f.txtUsername.focus();
        return false;
    }
    if(f.txtPassword1.value.length < 6){
        alert("Password length must be from 6 to 20 characters");
        f.txtPassword1.focus();
        return false;
    }
    if(f.txtPassword1.value != f.txtPassword2.value){
        alert("Password doesn't match");
        f.txtPassword2.focus();
        return false;
    }
    if(phone_pattern.test(f.txtPhone.value)==false){
        alert("Invalid phone number");
        f.txtPhone.focus();
        return false;
    }
    if(email_pattern.test(f.txtEmail.value)==false){
        alert("Invalid email address");
        f.txtEmail.focus();
        return false;
    }
    if(f.chkMusic.checked==false && f.chkReading.checked==false){
        alert("You must select at least one favourite");
        f.chkMusic.focus();
        return false;
    }
    if(f.filPicture.value==""){
        alert("You must select your picture");
        f.filPicture.focus();
        return false;
    }
    if(f.txtDescription.value==""){
        alert("You must enter description");
        f.txtDescription.focus();
        return false;
    }
    alert("All register information are correct.");
    return true;
}

```

- *Using onsubmit event*

```
<form name="frmRegister" method="get" onsubmit="return formValid();">
```