

Write JavaScript code for

- a. Performing various mathematical operations such as calculating factorial / finding Fibonacci Series / Displaying Prime Numbers in a given range / Evaluating Expressions / Calculating reverse of a number
- b. Validating the various Form Elements

Factorial:

```
<!DOCTYPE html>
<html>
<head>
<title>Factorial Demo</title>
<script language="javascript">
var x=parseInt(prompt("Enter a number",""));
var fact=1,i;
for(i=1;i<=x;i++)
fact*=i;
document.write("<h1>Factorial of "+x+" is : "+fact+"</h1>");
</script>
</head>
<body>
</body>
</html>
```

Fibonacci:

```
<!DOCTYPE html>
<html>
<head>
<title>Fibonacci series Demo</title>
<script language="javascript">
var a=0,b=1,c,n,i;
n=parseInt(prompt("Enter limit for fibonacci series:", ""));
document.write("<h2> Fibonacci series: </h2><br>");
document.write(a+" "+b+" ");
for(i=2;i<n;i++)
{
c=a+b;
document.write(c+" ");
a=b;
b=c;
}
</script>
</head>
<body>
</body>
</html>
```

Write a JavaScript program to display all the prime numbers between 1 and 100.

Code:

```
<!DOCTYPE html>
<html>
<head>
<title>prime number</title>
<script>
for(var i=1;i<=100;i++)
{
var flag=0;
for(var j=2;j<=i/2;j++)
{
if(i%j==0)
{
flag=1;
break;
}
}
if(flag==0)
{
document.write(i+"<br>");
}
}
</script>
</head>
</html>
```

Write a JavaScript program to accept a number from the user and display the sum of its digits.

Code:

```
<!DOCTYPE html>
<html>
<head>
<title>Without using split function</title>
<script>
var str=prompt("Enter the sentence=", "");
var count=0;
for(i=0;i<str.length;i++)
{
if(str.charAt(i,1)==" " && str.charAt(i+1,1)!=" ")
count++;
}
document.write("Number of words are="+count+1);
</script>
</head>
<body>
</body>
</html>
```

Design a form and validate all the controls placed on the form using Java Script.

```
<html>
<head>
<title>Form Validation</title>
<script type="text/javascript">
function validate()
{
if( document.myForm.Name.value == "" )
{
alert( "Please provide your name!" );
document.myForm.Name.focus();
return false;
}
if( document.myForm.EMail.value == "" )
{
alert( "Please provide your Email!" );
document.myForm.EMail.focus();
return false;
}
if( document.myForm.Zip.value == "" || isNaN( document.myForm.Zip.value ) ||
document.myForm.Zip.value.length != 5 )
{
alert( "Please provide a zip in the format #####." );
document.myForm.Zip.focus();
return false;
}
if( document.myForm.Country.value == "-1" )
{
alert( "Please provide your country!" );
return false;
}
return(true);
}
</script>
</head>
<body>
<form name="myForm" onsubmit="return(validate());">
<table cellpadding="2" cellspacing="2" border="1">
<tr>
<td align="right">Name</td>
<td><input type="text" name="Name" /></td>
</tr>
<tr>
<td align="right">EMail</td>
<td><input type="text" name="EMail" /></td>
</tr>
<tr>
<td align="right">Zip Code</td>
<td><input type="text" name="Zip" /></td>
</tr>
<tr>
```

```
<td align="right">Country</td>
<td>
<select name="Country">
<option value="-1" selected>[choose yours]</option>
<option value="1">USA</option>
<option value="2">UK</option>
<option value="3">INDIA</option>
</select>
</td>
</tr>
<tr>
<td align="right"></td>
<td><input type="submit" value="Submit" /></td>
</tr>
</table>
</form>
</body>
</html>
```