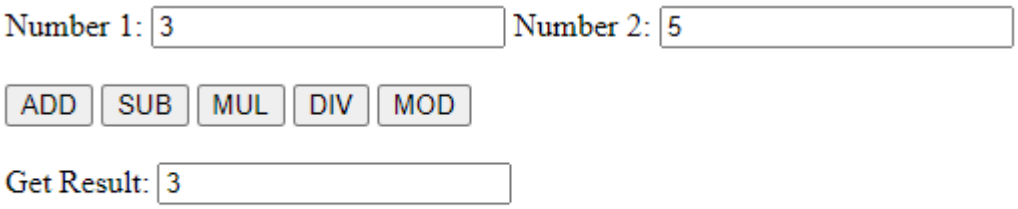
1. Write a JavaScript program for performing Arithmetic Operations

```
<!DOCTYPE html>
<html>
<body>
 <script type="text/javascript">
  function multiply(){
   a=Number(document.my_cal.first.value);
   b=Number(document.my_cal.second.value);
   c=a*b;
   document.my_cal.total.value=c;
  }

  function addition(){
   a=Number(document.my_cal.first.value);
   b=Number(document.my_cal.second.value);
   c=a+b;
   document.my_cal.total.value=c;
  }


  function subtraction(){
   a=Number(document.my_cal.first.value);
   b=Number(document.my_cal.second.value);
   c=a-b;
   document.my_cal.total.value=c;
  }


  function division(){
   a=Number(document.my_cal.first.value);
   b=Number(document.my_cal.second.value);
   c=a/b;
   document.my_cal.total.value=c;
  }

  function modulus(){
   a=Number(document.my_cal.first.value);
   b=Number(document.my_cal.second.value);
   c=a%b;
   document.my_cal.total.value=c;
  }
 </script>

 <!-- Opening a HTML Form. -->
 <form name="my_cal">
```

```
<!-- Here user will enter 1st number. -->
Number 1: <input type="text" name="first">


<!-- Here user will enter 2nd number. -->
Number 2: <input type="text" name="second">

<br><br>

<input type="button" value="ADD" onclick="javascript:addition();">
<input type="button" value="SUB" onclick="javascript:subtraction();">
<input type="button" value="MUL" onclick="javascript:multiply();">
<input type="button" value="DIV" onclick="javascript:division();">
<input type="button" value="MOD" onclick="javascript:modulus();">

<br><br>

<!-- Here result will be displayed. -->
Get Result: <input type="text" name="total">

</body>
</html>
```

OUTPUT:



2. Text growing and shrinking in Java script

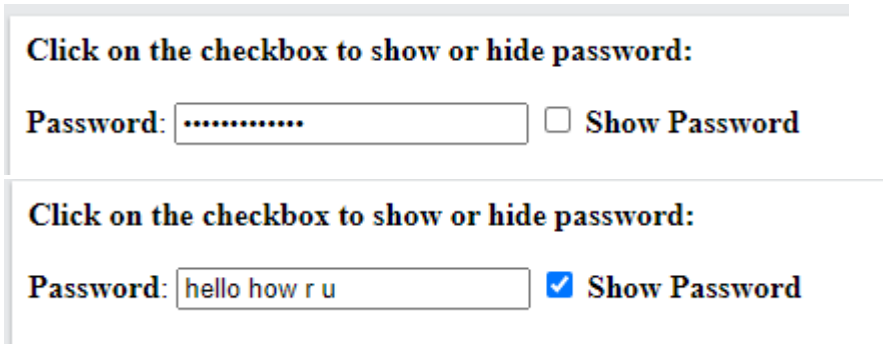
```
<html>
<body>
 <div id="h"></div>
 <script>
  var v = 0, f = 1,t="TEXT-GROWING",color;
  function a()
  {
   if(f==1)
    v+=5,color="red";
   else
    v-=5,color="blue";
   document.getElementById("h").innerHTML = "<h1 style=\"font-size: "+v+"px ; margin: 0px;
color : "+color+"\"><b> "+t+"</b></h1>";
   if(v==50)
    f = 0, t="WEB TECHNOLOGY";
```

```
 if(v==5)
  f = 1, t="MAAN PESHAVARIA";
 c();
}
function c()
{
 setTimeout(a,300);
}
c();
</script>
</body>
</html>
```

3. Design HTML form which includes two fields username and password. Write JavaScript code to show and hide password.

```
<html>
<body>

<b><p>Click on the checkbox to show
        or hide password: </p></b>

<b>Password</b>: <input type="password"
   value="hello how r u" id="maan">

<input type="checkbox" onclick="Toggle()">
  <b>Show Password</b>

  <script>
  // Change the type of input to password or text
     function Toggle() {
        var temp = document.getElementById("maan");
        if (temp.type === "password") {
           temp.type = "text";
        }
        else {
           temp.type = "password";
```

```
        }
      }
</script>
</body>
</html>
```



4. Design a login form using HTML & JavaScript with following validations on username and password fields: Also, password length must be of 6 to 12 characters. Username should not start with _, @ or number and both the fields should not be blank

```
<html>
  <head>
    <script>
      function XYZ() {
        var name =
          document.forms.RegForm.Name.value;
        var email =
          document.forms.RegForm.EMail.value;
        var phone =
          document.forms.RegForm.Telephone.value;
        var what =
          document.forms.RegForm.Subject.value;
        var password =
          document.forms.RegForm.Password.value;
        var address =
          document.forms.RegForm.Address.value;
        var regEmail=/^\w+([\.-]?\w+)*@\w+([\.-]?\w+)*(\.\w{2,3})+$/g;  //Javascript reGex for
Email Validation.
```

```
        var regPhone=/^\d{10}$/;                    // Javascript reGex for Phone Number validation.
        var regName = /\d+$/g;                      // Javascript reGex for Name validation

        if (name == "" || regName.test(name)) {
           window.alert("Please enter your name properly.");
           name.focus();
           return false;
        }

        if (address == "") {
           window.alert("Please enter your address.");
           address.focus();
           return false;
        }

        if (email == "" || !regEmail.test(email)) {
           window.alert("Please enter a valid e-mail address.");
           email.focus();
           return false;
        }

        if (password == "") {
           alert("Please enter your password");
           password.focus();
           return false;
        }

        if(password.length <6){
           alert("Password should be atleast 6 character long");
           password.focus();
```

```
            return false;

        }
        if (phone == "" || !regPhone.test(phone)) {
            alert("Please enter valid phone number.");
            phone.focus();
            return false;
        }

        if (what.selectedIndex == -1) {
            alert("Please enter your course.");
            what.focus();
            return false;
        }

        return true;
    }
</script>

<style>
    div {
        box-sizing: border-box;
        width: 100%;
        border: 100px solid black;
        float: left;
        align-content: center;
        align-items: center;
    }

    form {
        margin: 0 auto;
```

```
            width: 600px;
        }
    </style>
  </head>

  <body>
    <h1 style="text-align: center;">REGISTRATION FORM</h1>
    <form name="RegForm" onsubmit="return XYZ()" method="post">

<p>Name: <input type="text"
                size="65" name="Name" /></p>

      <br />

<p>Address: <input type="text"
                size="65" name="Address" />
    </p>

      <br />

<p>E-mail Address: <input type="text"
                size="65" name="EMail" /></p>

      <br />

<p>Password: <input type="text"
              size="65" name="Password" /></p>

      <br />

<p>Telephone: <input type="text"
```

```
                size="65" name="Telephone" /></p>

        <br />


<p>
            SELECT YOUR COURSE
            <select type="text" value="" name="Subject">
               <option>BTECH</option>
               <option>BBA</option>
               <option>BCA</option>
               <option>B.COM</option>
               <option>XYZ</option>
            </select>
        </p>

        <br />
        <br />

<p>Comments: <textarea cols="55"
                    name="Comment"> </textarea></p>


<p>
            <input type="submit"
               value="send" name="Submit" />
            <input type="reset"
               value="Reset" name="Reset" />
        </p>

      </form>
```

```
  </body>
</html>
```

OUTPUT:

REGISTRATION FORM

Name:

Address:

E-mail Address:

E-mail Address:

Password:

Telephone:

SELECT YOUR COURSE BTECH

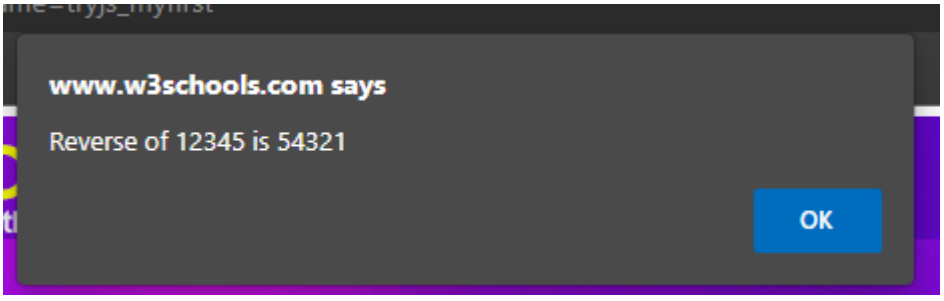
Comments:

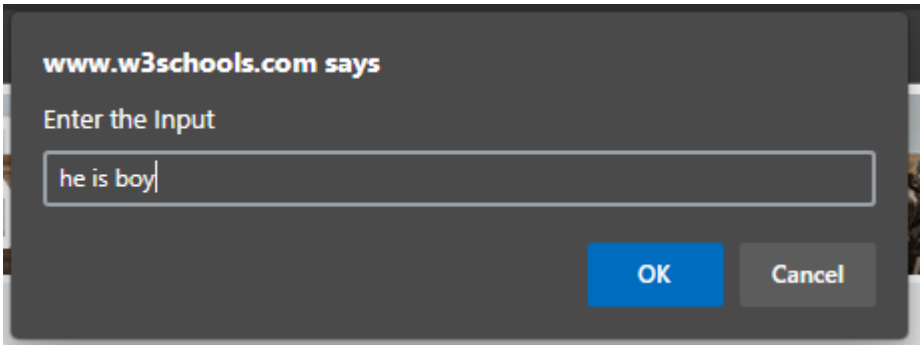
send Reset

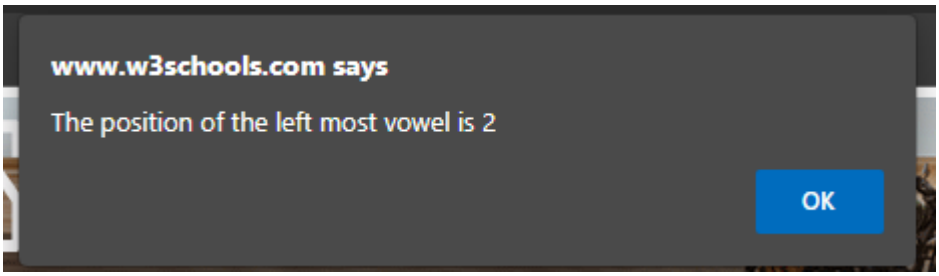
5. Write JS to demonstrate various built-in string functions Develop and demonstrate a HTML5 file that includes JavaScript script that uses functions for the following problems: a. Parameter: A string Output: The position in the string of the left-most vowel b. Parameter: A number Output: The number with its digits in the reverse order

<html>

```
<body>
<script >
var str = prompt("Enter the Input","");

if(isNaN(str))
{
str = str.toUpperCase();
for(var i = 0; i < str.length; i++) {
var chr = str.charAt(i);
if(chr == 'A' || chr == 'E' || chr == 'I' || chr == 'O' || chr == 'U')break;
}
if( i < str.length )
alert("The position of the left most vowel is "+(i+1));
else
alert("No vowel found in the entered string");
}

else
{
var num,rev=0,remainder;
num = parseInt(str);
while(num!=0) {
remainder = num%10;
num = parseInt(num/10);
rev = rev * 10 + remainder;
}
alert("Reverse of "+str+" is "+rev);
}
</script>
</body>
</html>
```







6. Write JS to search an element in an array of size N

```
<script>

// JavaScript program to find third
// Largest element in an array
// of distinct elements

function thirdLargest(arr, arr_size)
{
   /* There should be
   atleast three elements */
   if (arr_size < 3)
   {
      document.write(" Invalid Input ");
      return;
   }

   // Find first
   // largest element
   let first = arr[0];
   for (let i = 1;
         i < arr_size ; i++)
      if (arr[i] > first)
         first = arr[i];

   // Find second
   // largest element
   let second = Number.MIN_VALUE;
```

```
    for (let i = 0;
            i < arr_size ; i++)
        if (arr[i] > second &&
            arr[i] < first)
            second = arr[i];

    // Find third
    // largest element
    let third = Number.MIN_VALUE;
    for (let i = 0;
            i < arr_size ; i++)
        if (arr[i] > third &&
            arr[i] < second)
            third = arr[i];

    document.write("The third Largest " +
                "element is ", third);
}

// Driver Code

    let arr = [12, 13, 1,
               10, 34, 16];
    let n = arr.length;
    thirdLargest(arr, n);

</script>
```

```
The third Largest element is 13
```

[Javascript Program for Search an element in a sorted and rotated array - GeeksforGeeks]

7.