JAVASCRIPT

Ques 1 : Create a simple form to submit user input like his name, age, address and favorite subject. Put validation checks on values entered by the user using JavaScript (such as age should be a value between 1 and 150).

```html
<HTML>
<BODY>
<SCRIPT>
function validate(){
if(document.myform.name.value==""){
alert("Please provide your Name !");
return false;}
if(document.myform.address.value==""){
alert("Please provide your Address !");
return false;}
if(document.myform.age.value==""){
alert("Please provide your Age !");
return false;}
if(document.myform.name.subj==""){
alert("Please provide your Name !");
return false;}}
function agecheck(){
if(document.myform.age.value<1 || document.myform.age.value>125){
alert("Reenter Age!");
}
}
</SCRIPT>
<BR>
<BR>
<CENTER><H1>FORM</H1>
<BR>
<BR>
<BR>
<FORM NAME="myform" method="post" onsubmit="return validate()">
NAME: &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp<INPUT TYPE="text" NAME="name">
<BR>
```

```
<BR>
ADDRESS: &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp
&nbsp<INPUT TYPE="text" NAME="address">
<BR>
<BR>
AGE:  &nbsp &nbsp &nbsp &nbsp  &nbsp &nbsp &nbsp &nbsp  &nbsp &nbsp &nbsp &nbsp
&nbsp &nbsp &nbsp &nbsp <INPUT TYPE="text" Name="age">
<BR>
<BR>
FAVOURITE SUBJECT: &nbsp<INPUT TYPE="text" NAME="subj">
<BR>
<BR>
&nbsp &nbsp &nbsp &nbsp   &nbsp &nbsp &nbsp &nbsp   &nbsp &nbsp &nbsp &nbsp
&nbsp &nbsp &nbsp &nbsp
 &nbsp &nbsp &nbsp &nbsp  &nbsp &nbsp &nbsp &nbsp &nbsp &nbsp
<INPUT TYPE="Submit" value="Submit" onclick=agecheck()>
</FORM>
</BODY>
</HTML>
```

Ques 2 : Write a JavaScript program to display information box as soon as page loads.

```
<HTML>
<BODY onload="fun()">
<CENTER><H1>Higgs Boson</H1></CENTER>
<script>
function fun(){

alert("The Higgs boson is an elementary particle in the Standard Model of particle physics.It
is the quantum excitation of the Higgs field, a fundamental field of crucial importance to
particle physics theory first suspected to exist in the 1960s. Unlike other known fields such
as the electromagnetic field, it has a non-zero constant value in vacuum. The question of the
Higgs field's existence has been the last unverified part of the Standard Model of particle
physics."
);
}
</script>
</BODY>
</HTML>
```

Ques 3   : Write a JavaScript program to change background colour after 5 seconds of page load.

```
<HTML>
<SCRIPT>
var x;
function changecolour(){
x=1;
setInterval(change,5000);  //setInterval(function,milliseconds)
}
function change()
{
if(x==1)
{
color="red";
x=2;
}
else{
color="green";
x=1;
}
document.body.style.background=color;
}
</SCRIPT>
<BODY ONLOAD="changecolour()">
</BODY>
</HTML>
```

Ques 4 : Write a JavaScript program to dynamically bold, italic and underline words and phrases   based   on user actions.

```
<HTML>
<BODY>
<CENTER>
<H1 STYLE=COLOR:RED>
Higgs Boson
</H1><BR><BR><BR><BR>
</CENTER>
<P id="demo" onmouseenter="mouseenter( )" onmouseleave="mouseleave( )">The Higgs
boson is an elementary particle in the Standard Model of particle physics. It is the quantum
excitation of the Higgs field,a fundamental field of crucial importance to particle physics
theory first suspected to exist in the 1960s. Unlike other known fields such as the
electromagnetic field, it has a non-zero constant value in vacuum. The question of the Higgs
field's existence has been the last unverified part of the Standard Model of particle physics
and, according to some, "the central problem in particle physics".
The presence of the field, now confirmed by experimental investigation, explains why some
fundamental particles have mass when, based on the symmetries controlling their
interactions, they should be massless. The existence of the Higgs field would also resolve
several other long-standing puzzles, such as the reason for the weak force's extremely short
range.
Although it is hypothesised that the Higgs field permeates the entire Universe, evidence for
its existence has been very difficult to obtain. In principle, the Higgs field can be detected
through its excitations, manifested as Higgs particles, but these are extremely difficult to
produce and detect. The importance of this fundamental question led to a 40 year search,
and the construction of one of the world's most expensive and complex experimental
facilities to date, CERN's Large Hadron Collider, in an attempt to create Higgs bosons and
other particles for observation and study. On 4 July 2012, the discovery of a new particle
with a mass between 125 and 127 GeV/c2 was announced; physicists suspected that it was
the Higgs boson.Since then, the particle has been shown to behave, interact, and decay in
many of the ways predicted by the Standard Model. It was also tentatively confirmed to have
even parity and zero spin,two fundamental attributes of a Higgs boson. This appears to be
the first elementary scalar particle discovered in nature. More studies are needed to verify
that the discovered particle has properties matching those predicted for the Higgs boson by
the Standard Model, or whether, as predicted by some theories, multiple Higgs bosons exist.
</P>
<BR>
<CENTER>
```

```html
<button onclick="clickB()" >Bold</button>
&nbsp &nbsp
<button onclick="clickI()">Italic</button>
&nbsp &nbsp
<button onclick="clickU()">Underline</button>
&nbsp &nbsp
<button onclick="clickN()">Normal</button>
</CENTER>
<script>
function clickN()
{
document.getElementById("demo").style.fontWeight='normal';
}
function clickB()
{
document.getElementById("demo").style.fontWeight='bold';
}
function clickI()
{
document.getElementById("demo").style.fontStyle='italic';
}
function clickU()
{
document.getElementById("demo").style.textDecoration='underline';
}
function mouseenter()
{
document.getElementById("demo").style.color="green";
}
function mouseleave()
{
document.getElementById("demo").style.color="blue";
}
</script>
</BODY>
</HTML>
```

Ques 5 : Write a JavaScript program to display a hidden div (e.g. showing stats of a player when user clicks on his name).

```
<HTML>
<BODY>
<CENTER>
<BR><BR>
<H1>Virat Kohli </H1><BR>
</CENTER>
<CENTER><BUTTON onClick="clickmy()">Carrer Statistics </BUTTON></CENTER>
<BR><BR>
<DIV id="my">
<TABLE BORDER="1" width="40%" ALIGN="CENTER">
<TR>
<TH>Competetion</TH>
<TH>Test</TH>
<TH>ODI</TH>
<TH>T20!</TH>
<TH>FC</TH>
</TR>
<TR>
<TH>Matches</TH>
<TD ALIGN="CENTER">54</TD>
<TD ALIGN="CENTER">179</TD>
<TD ALIGN="CENTER">48</TD>
<TD ALIGN="CENTER">85</TD>
</TR>
<TR>
<TH>Runs scored </TH>
<TD ALIGN="CENTER">4,451</TD>
<TD ALIGN="CENTER">7,755</TD>
<TD ALIGN="CENTER">1,709</TD>
<TD ALIGN="CENTER">6458</TD>
</TR>
<TR>
<TH>Batting average</TH>
<TD ALIGN="CENTER">51.75</TD>
<TD ALIGN="CENTER">53.10</TD>
<TD ALIGN="CENTER">53.40</TD>
<TD ALIGN="CENTER">51.66</TD>
```

```html
</TR>
<TR>
<TH>100s/50s </TH>
<TD ALIGN="CENTER">16/14</TD>
<TD ALIGN="CENTER">27/39</TD>
<TD ALIGN="CENTER">0/16</TD>
<TD ALIGN="CENTER">22/22</TD>
</TR>
<TR>
<TH>Top score </TH>
<TD ALIGN="CENTER">235</TD>
<TD ALIGN="CENTER">183</TD>
<TD ALIGN="CENTER">90*</TD>
<TD ALIGN="CENTER">211</TD>
</TR>
<TR>
<TH>Balls bowled</TH>
<TD ALIGN="CENTER">150    </TD>
<TD ALIGN="CENTER">611</TD>
<TD ALIGN="CENTER">146</TD>
<TD ALIGN="CENTER">618 </TD>
</TR>
<TR>
<TH>Wickets </TH>
<TD ALIGN="CENTER">0       </TD>
<TD ALIGN="CENTER">4</TD>
<TD ALIGN="CENTER">4</TD>
<TD ALIGN="CENTER">3</TD>
</TR>
</TABLE>
</DIV>
<SCRIPT>
function clickmy(){
if(document.getElementById("my").style.visibility=='hidden'){
document.getElementById("my").style.visibility='visible';}
else{
document.getElementById("my").style.visibility='hidden';}
}
</SCRIPT>
</BODY>
</HTML>
```

Ques 6 : Write a JavaScript function to check whether an `input` is a string or not and if it is a string, then check if it is blank or not?

```
<HTML>
<BODY>
<H1 STYLE="TEXT-ALIGN:CENTER">Whether input is String or Not?</H1>
<BR><BR>
<BR><BR>
<FORM ID="myform" ALIGN="CENTER">
Enter the String:<INPUT TYPE="text" id="number">
<BR>
</FORM>
<CENTER>&nbsp &nbsp &nbsp &nbsp   <BUTTON onclick="myFunc()">Convert</BUTTON>
</CENTER>
<CENTER>
<H2>
<P id="demo"></P>
</CENTER>
</H2>
<BR>
<SCRIPT>
function myFunc()
{
var x=document.getElementById("number").value;
var res="";
var t=x;
res=res+isNaN(x);
if(res=='true')
{
t=t+":is a string";
}
else{
t=t+":is not a string";
}
document.getElementById("demo").innerHTML=t;
}
</SCRIPT>
</BODY>
</HTML>
```

Ques 7 : Write a JavaScript program to sort the items of an array.

```
<HTML>
<BODY>
<CENTER><H1>Sorting Arrays</CENTER></H1>
<CENTER><P>Array Before Sorting</P>
<script>
var ar= [10,1,20,15,5,4,3];
document.write(ar);
document.write("<BR>");
document.write("<BR>");
ar.sort(function(a,b){return a-b});
document.write("Array After Sorting");
document.write("<BR>");
document.write("<BR>");
document.write(ar);
</script>
</BODY>
</HTML>
```

Ques 8 : Write a JavaScript program which accept a string as input and swap the case of each character. For example if you input 'The Quick Brown Fox' the output should be 'tHE qUICK bROWN fOX'.

```
<HTML>
<BODY>
<FORM id="myform" ALIGN="CENTER">
<BR><BR>
<H1 STYLE="TEXT-ALIGN=CENTER">Swapping Case Of Characters</H1>
<BR><BR>
Enter the string : &nbsp &nbsp<INPUT TYPE="text" id="name1">
<BR>
</FORM>
<CENTER>        &nbsp        &nbsp        &nbsp        &nbsp        <button
onclick="outputname()">Submit</button></CENTER>
<BR>
<H2><P id="demo" ALIGN="CENTER">
<BR></P></H2>
<script>
function outputname(){
var y=document.getElementById("name1").value;
var t="";
for(var i=0;i<y.length;i++)
{
if(y[i]===y[i].toLowerCase())
{
t=t+y[i].toUpperCase();
}
else
{
t=t+y[i].toLowerCase();
}}
document.getElementById("demo").innerHTML=t;
}
</script>
</BODY>
</HTML>
```

Ques 9 : Write a JavaScript function to hide email addresses to protect from unauthorized user.

```html
<HTML>
<BODY>
<FORM id="myform" ALIGN="CENTER">
<BR><BR>
<H1 STYLE="TEXT-ALIGN=CENTER">Email Address Protection</H1>
<BR><BR>
Enter the email ID : &nbsp &nbsp<INPUT TYPE="text" id="name1"><BR>
</FORM>
<CENTER>          &nbsp          &nbsp          &nbsp          &nbsp          <button
onclick="outputname()">Submit</button></CENTER><BR>
<H2><P id="demo" ALIGN="CENTER">
<BR></P></H2>
<script>
function outputname(){
var y=document.getElementById("name1").value;
var t="";
var count=1;
for(var i=0;i<y.length;i++){
if(y[i+1]!='@'){
count=count+1;}
else{
break;}}
for(var i=0;i<y.length;i++){
if(i<count/2){
t=t+y[i];}
else if(i>=count/2 && i<count){
t=t+'x';}
else if(i==count){
t=t+'@';}
else{
t=t+y[i];}}
document.getElementById("demo").innerHTML=t;
}
</script>
</BODY>
</HTML>
```

Ques 10 : Write a JavaScript function to insert a string within a string at a particular position.

```
<HTML>
<BODY>
<FORM id="myform" ALIGN="CENTER">
<BR><BR>
<H1 STYLE="TEXT-ALIGN=CENTER">Inserting String in a String</H1>
<BR><BR>
Enter the I String : &nbsp &nbsp<INPUT TYPE="text" id="name1">
<BR><BR>
Enter the II String : &nbsp &nbsp<INPUT TYPE="text" id="name2">
<BR><BR>
Enter the position : &nbsp &nbsp<INPUT TYPE="text" id="pos"><BR>
</FORM>
<CENTER>        &nbsp        &nbsp        &nbsp        &nbsp        <button
onclick="outputname()">Submit</button></CENTER>
<BR>
<H2><P id="demo" ALIGN="CENTER">Output String:
</P></H2>
<script>
function outputname(){
var x=document.getElementById("name1").value;
var y=document.getElementById("name2").value;
var z=document.getElementById("pos").value;
var t="";
var j=0;
if(z>x.length || z<0){
t=x+y;}
else{
for(j=0;j<z;j++){
t=t+x[j];}
for(var i=0;i<y.length;i++){
t=t+y[i];}
for(var i=j;i<x.length;i++){
t=t+x[i];}}
document.getElementById("demo").innerHTML=t;}
</script>
</BODY>
</HTML>
```

Ques 11 : Write a JavaScript program to search a date within a string.

```
<HTML>
<BODY>
<FORM id="myform" ALIGN="CENTER">
<BR>
<BR>
<H1 STYLE="TEXT-ALIGN=CENTER">Finding Date in a String</H1>
<BR>
<BR>
Enter the I String : &nbsp &nbsp<INPUT TYPE="text" id="name1">
<BR>
<BR>
</FORM>
<CENTER>  &nbsp  &nbsp  &nbsp  &nbsp  <button  onclick="outputname()">Find
Dates</button></CENTER>
<BR>
<H2><P id="demo" ALIGN="CENTER">Output Date:
</P></H2>
<script>
function outputname( ){
var x=document.getElementById("name1").value;
var pattern=/([0][1-9]|[1][0-9]|[2][0-9]|[3][0-1])-([0][1-9]|[1][0-2])-\d\d\d\d/g;
var result=x.match(pattern);
var t="Dates found is/are :"+result;
document.getElementById("demo").innerHTML=t;
}
</script>
</BODY>
</HTML>
```

Ques 12 : Write a JavaScript program to count number of words in string.

          Note :

               - Remove white-space from start and end position.

               - Convert 2 or more spaces to 1.

               - Exclude newline with a start spacing.

```
<HTML>
<BODY>
<FORM NAME="myform" ALIGN="CENTER">
<BR><BR>
<H1 STYLE="TEXT-ALIGN=CENTER">Count Number of Words</H1>
<BR><BR>
<TEXTAREA id="my" COLS="80" ROWS="4" ALIGN=CENTER>
Type the string for which you want to count number of words.
</TEXTAREA>
<BR>
</FORM>
<BR>
<CENTER> &nbsp &nbsp <button onclick="outputname()">Count</button></CENTER>
<BR>
<H2><P id="demo" ALIGN="CENTER">
</P></H2>
<BR>
<script>
function outputname(){
var y=document.getElementById("my").value;
var x=y.trim();
var z=x.split(" ");
var count=0;
for(var i=0;i<z.length;i++){
if(z[i]!=""){
count++;}}
document.getElementById("demo").innerHTML="The  Number  of  words  in  the  String
are:"+count;}
</script>
</BODY>
</HTML>
```

Ques 13 : Write a JavaScript function to check whether a given value is hexadecimal value or not.

```
<HTML>
<BODY>
<FORM id="myform" ALIGN="CENTER">
<BR>
<BR>
<H1 STYLE="TEXT-ALIGN=CENTER">Given Number Hexadecimal or Not ?</H1>
<BR>
<BR>
Enter the Number : &nbsp &nbsp<INPUT TYPE="text" id="number1">
<BR>
</FORM>
<CENTER>        &nbsp        &nbsp        &nbsp        &nbsp        <button
onclick="outputname()">Submit</button></CENTER>
<BR>
<H2><P id="demo" ALIGN="CENTER">
</P></H2>
<script>
function outputname(){
var y=document.getElementById("number1").value;
var t="";
var a=parseInt(y,16);
if(a.toString(16)===y)
{
t=y+":is a hexadecimal number";
}
else{
t=y+":is not a hexadecimal number";
}
document.getElementById("demo").innerHTML=t;
}
</script>
</BODY>
</HTML>
```

Ques 14 : Write a JavaScript function to convert a decimal number to binary, hexadecimal or octal number.

```
<HTML>
<BODY>
<FORM id="myform" ALIGN="CENTER">
<BR><BR>
<H1 STYLE="TEXT-ALIGN=CENTER">Binary,Hexadecimal,Octal Number</H1>
<BR><BR>
Enter the Number : &nbsp &nbsp<INPUT TYPE="text" id="number1"><BR>
</FORM>
<CENTER>        &nbsp        &nbsp        &nbsp        &nbsp        <button
onclick="outputname()">Submit</button></CENTER><BR>
<H2><P id="demo" ALIGN="CENTER"></P></H2><BR>
<H2><P id="demo1" ALIGN="CENTER"></P></H2><BR>
<H2><P id="demo2" ALIGN="CENTER"></P></H2><BR>
<script>
function outputname()
{
var y=document.getElementById("number1").value;
var t="";
var z=y;
var a=parseInt(z);
var p="Binary Number:"+a.toString(2);
a=parseInt(z);
var q="Octal Number:"+a.toString(8);
a=parseInt(z);
var r="Hexadecimal Number:"+a.toString(16);
document.getElementById("demo").innerHTML=p;
document.getElementById("demo1").innerHTML=q;
document.getElementById("demo2").innerHTML=r;
}
</script>
</BODY>
</HTML>
<SCRIPT>
```

Ques 15 : Write a merge sort program in JavaScript.

```
<HTML>
<BODY>
<FORM id="myform" ALIGN="CENTER">
<BR>
<BR>
<H1 STYLE="TEXT-ALIGN=CENTER">Merge Sort</H1>
<BR>
<BR>
Enter the Array : &nbsp &nbsp<INPUT TYPE="text" id="name1">
<BR>
<BR>
</FORM>
<CENTER> &nbsp &nbsp &nbsp &nbsp <button
onclick="outputname()">Sort</button></CENTER>
<BR>
<H2><P id="demo" ALIGN="CENTER">
</P></H2>
<script>
function outputname(){
var x=document.getElementById("name1").value;
var y=x.split(" ");
var ar=[ ];
for(var i=0;i<y.length;i++)
{
ar.push(parseInt(y[i]));
}
mergeSort(ar,0,ar.length-1);
var result=ar.join(' ');
var result1="Sorted Array:"+result;
document.getElementById("demo").innerHTML=result1;
}
function mergeSort(ar,l,r)
{
if(l<r)
{
 var m=Math.floor((l+r)/2);
 mergeSort(ar,l,m);
 mergeSort(ar,m+1,r);
```

```javascript
  merge(ar,l,m,r);
  }
}
function merge(ar,l,m,r)
{
 var i,j,k;
 var n1=m-l+1;
 var n2=r-m;
 var L=[];
 var R=[];
 for(i=0;i<n1;i++) {
  L.push(ar[i+l]);}
 for(j=0;j<n2;j++){
  R.push(ar[j+m+1]);}
 i=0;
 j=0;
 k=l;
 while(i<n1 && j<n2){
  if(L[i]<=R[j]){
   ar[k]=L[i];
   i++;
   k++;
  }
  else{
   ar[k]=R[j];
   j++;
   k++;
  }
 }
 while(i<n1){
  ar[k]=L[i];
  i++;
  k++;}
 while(j<n2){
  ar[k]=R[j];
  j++;
  k++;}
}
</script>
</BODY>
</HTML>
```