JAVASCRIPT

Q1. How to add JavaScript in HTML

javascript can be added in HTML in **<Script> </Script>**Tag

Internal JavaScript code

Using **<script>** or **<Script Language= "JavaScript">**

Script code….

</Script>

External JavaScript file can also be added using src attribute with <Script> Tag

<Script Language= "JavaScript**" src=** "External.js">

Script code….

</Script>

Q2. How to Add Comments in JavaScript

Single Line comments it can be given by putting **//** before the text makes it a single line comment.

Multiline Comments It can be given between **/* */**

Q3. What is variable? How to declare variable in JavaScript

Variable are used to store value which can be used and modified during execution of script. **var** keyword is used to declare variable in JavaScript

Q4. Name four primitive data type of JavaScript

1 String 2 Number 3 Boolean 4 Array 5 Undefined Null 6 Object are different type of primitive data type

Q5. What are logical (Boolean) operator in JavaScript

&& || ! are Boolean operator used to create logical expression which results in either True or False

Q6. What is the difference between = ,== & === operator explain with example

= operator is used to assign value

== operator is used compare two operand for equality

=== is also used to compare to operand strictly for same type

Example

0==false // results in true as false is equivalent 0

2=="2" // results in true as string automatically converted to int

But
0===false // false as data type are different for operand
2===”2” // false as data type are different for operand

Q8. **What is difference between / and % operator**

/	%
/ operator is used to find quotient	% is used to find remainder after dividing two no
/ operator can be used with integer and floating no. 5/2=2.5 or 3.6/1.2 =3	/ operator can be used only with integer does not works with floating no. 5/2=1 but 3.2/1.2 error

Q9 What are unary operator give two example
Operator which required one operand is called unary operator
Java Script has to unary operator (+) and (-) when they are used with one operand
var A1= +40 // A1 assign a positive value of 40
var A2 = -a // A2 assign a negative value of a so A2 = -40

Q10. **Which operator is used to find data type of variable**
typeof operator is used to find the data type of operand such as whether a variable is string, number, Boolean object tec.

Q11. What is conditional operator? Explain with example

Condition Operator or ternary operator require three operands . the conditional operator is used as a replacement o **if-else** logic statement. Syntax
Conditional_Expression ? Expression 1: Expression 2
Conditional Expression is evaluated which results in either True or False
If **True Expression 1** is executed If **False Expression 2** will be executed

Result= Age>18 ? “Can Vote” : “Can Not Vote”

Q12. Explain the following

alert() this function is used to display message to a dialogue box(also called alert box)
Syntax **alert(“Message”)**
Alert(“Welcome to Website”);

prompt() this function ask user to input some information and store that in a variable
Syntax **Variable=prompt(“Message”)**
var name=prompt(“”Enter Your Name”)
confirm() function display a confirm dialogue box and ask user user to click either ok or cancel to
respond to question. It return true if Ok button is clicked and false if Cancel button is clicked
Syntax **variable=confirm(“Message”)**
var choice= (“are you Vegetarian”)

Q13. Differentiate between Local & Global Variable

Local Variable Variables that are declared inside a block or function and can be used with in it.

It will terminate with the end of block or function.
Value cannot be used outside block

Global Variable Variables that are declared outside any block or function and can be used

throughout the script/ Program.
They hold their value throughout the execution of program

Q14. Differentiate between Formal Parameter & Actual Parameter

Formal parameter are the variable declared in function header. they receive value from the calling function through actual parameter. They can only be variable.

Actual Parameter : Are the actual variable/Constant passed during function is called. It can be variable constant or expression resulting a value

```
Function add ( A, B)  // A & B are formal parameter
{
var sum=A+B;
alert(sum);
}

var x=10;
var y =20;
add(x,y)// x, y are actual parameter
add(20,30)// passing constant as actual parameter
add(2*x, y-2) //passing expression as actual parameter
```

Q15. Explain the following funct ion

eval()	It evaluates a string as JavaScript statement or expression and either execute it or returns the resulting value Syntax **eval(String)** **eval("2+2")** // **return 4** **x=5** **y=4** **document.write(eval("x+y+1"))** // **return 10**

isNaN()	This function determine whether variable is a legal number or not. It return true if it's a string otherwise false
	isNaN(35) // false
	isNaN("abc") // true
	isNaN(null) // false

parseInt()	Convert the string to Number if number is in the form of string if there is no number at the beginning of string , "NaN" is return
	document.write(parseInt("123.45")); //return 124
	document.write(parseInt("abcdef")); // return NaN
	document.write(parseInt("216.ABC")); // return 216

round()	It is used to round off the number with decimal place to an integer value
	document.write(Math.round(23.45)); //return 23
	document.write(Math.round(123.65)); //return 124

ceil()	It returns the smallest integer which is equal to our greater than the given number
	document.write(Math.ceil(23.35)); //return 24
	document.write(Math. ceil (123.65)); //return 124

floor()	It returns the largest integer which is equal to our lower than the given number
	document.write(Math.ceil(23.35)); //return 23
	document.write(Math. ceil (123.65)); //return 123

sqrt()	Returns the square root of any number document.write(Math.sqrt(25)); //return 5
getDate()	The Day of the month as an integer from 1 to 31
getMonth()	The month of the year as an integer from 0 to 11, where 0 is January and 11 is December
getDay()	The day of week as an ieen nteger from 0 to 6 where 0 is Sunday and 6 is Saturday
getFullyear()	Return the 4 digit year ex 2017
getHours()	Return the hour as integer between 0 to 23
getMinutes()	Return the minute as integer between 0 to 59
getSeconds()	Return the seconds as integer between 0 to 59
getTime()	Current time in miniseconds since 00:00:00 1 Jan 1970

Q16 Name 5 String function in JavaScript with example

concat()	This function combines one or more string into the exiting one and returns the combined string.
	var str1= “CBSE”;
	var str2= “ Multimedia and Web Tech ”;
	var str3= str1.concat(str2, “ Class-XII”)
	document.write(str3)
	//output:**CBSE Multimedia and Web Tech Class-XII”**
	document.write(str2.concat(str1))
	//output:**Multimedia and Web Tech CBSE**

length	Return length of the string var str1= “CBSE”; document.write(str1.length) // return **4**
substr() **substr(start,no)**	Returns the characters in a string beginning at “start” and through the specified no of characters given as argument if not given then whole string we be displayed from beginning at “start” first character is at zero index var str1= “Multimedia and Web Tech ”;

	document.write(str1.substr(5,5)) //output : **media**
	document.write(str1.substr(5)) // output: **media and Web Tech**

toLowerCase (string)	Convert the string to lower case string var str1= "Multimedia and Web Tech "; document.write(str1.toLowerCase())//output: **multimedia and web tech**
toUpperCase(string)	Convert the string to upper case string var str1= "Multimedia and Web Tech "; document.write(str1.toUpperCase()) //output:**MULTIMEDIA AND WEB TECH**
charAt(x)	Return the character at index **x** of the string first character of string index is zero var str1= "Multimedia and Web Tech "; document.write(str1.charAt(7)) // output **d**
replace(searchvalue,newvalue)	The replace() method searches a string for a specified value, or a *regular expression*, and returns a new string where the specified values are replaced. var str = **"VKS LEARNING** var res = str**.replace("VKS", "FAIPS");** **document.write(res) // FAIPS LEARNING**
indexOf(char)	This function searches and (if found) returns the index number of searched character or substring within the string if not found it return -1 Var Str1="Multimedia"; Str1.**indexOf**("t"); // it return 3
toString()	This method is used to convert a number to string. var num=100 var str1=num.**toString()**; document.write(str1+100); // 100100

Q17. What is the use of statement in JavaScript

break	break statement is used to exit from the current block or loop immediately
continue	It will make the loop continue from the beginning of the loop again
default	It is used to handle the case when no match of any case in the switch statement is found.

Q18 Difference between Entry level & Exit Level Loop

Entry Level	Exit Level
Condition is checked in the beginning	Condition is checked at the end of loop
Loop will not run if the condition is false in the beginning	Loop will run atleast once even if the condition is false.
while loop & for loop	**do..while loop**

Q19 What is an array? Write JavaScript statement to declare an array of 5 objects.

An array is a collection of variables of the same type under one name.

Ar =[1,2,3,4,5]; or Ar=new Array(1,2,3,4,5)

Q20. Explain flowing Array Method of JavaScript

concat()	The method is used to joins two or more arrays and returns a copy of joined arrays. var Arr1=[“Sun” , “Mon” , “Tue”] var Arr2=[“Wed” , “Thu”, “Fri”, “Sat”] var week=Arr1.concat(Arr2) for(var i=0;i<week.length;i++) document.write(week[i]+ “ -””) output : **Sun-Mon-Tue-Wed-Thu-Fri-Sat-**
join()	This method joins the element of an array into string and returns a string var Arr1=[“Sun” , “Mon” , “Tue”] var week=Arr1.join(“@”) document.write(week) output: **Sun@Mon@Tue**
sort()	This method is used to sort an array element in its own place. The sort order can be either alphabetic or numeric and either ascending or descending order var Arr1=[“Sun” , “Mon” , “Tue”] document.write(Arr1.sort()) output: **Mon,Sun,Tue**
reverse()	This method is used to reverse the order of the element in any array in its own place var Arr1=[“Sun” , “Mon” , “Tue”] document.write(Arr1.reverse()) output : **Tue, Mon, Sun**

Q21. Give the correct option for Event with Interface

Event	Interface Element
OnClick	Text
OnMouseOver	Button
OnChange	Image

Button – OnClick, Text – OnChange, Image – OnMouseOver

Q22 What is event handling? Which of the following two events will be required to write a code to enlarge an image when the mouse pointer is over the image and retains its original size when the mouse points anywhere else on the page?

OnMouseOver, OnMouseIn, OnMouseOut, OnMouseExit, OnClick, OnMouseClick

Event handling refers to writing code that is executed to perform the processing in response to occurance of an event.

Two events: **onMouseOver, onMouseOut**

Q23. Write the output of the following code:

<table>
<tr>
<td>
<script language = JavaScript>
var result = 0
for (var i = 1; i<=5; i++)
result = result + second(4)
document.write(result +"")
function second(num)
{ t = num*5
num = num + 1
return t }
</script>

Output 100
</td>
<td>
<script language = JavaScript>
function change (a, b)
{ a=a+a
b = b*b
document.write(a+", "+b+"
")
}
c=3
d=10
e=5
f=20
change(c,d);
change(e,f)
</script>
Output
6,100
10,400
</td>
</tr>
<tr>
<td>
<script Language="JavaScript">
x=2,y=20;
function Change (a,b)
{ x+=a+b;
a+=x+b;
b+=a+x;
document.write(a + ","+b+","+x+"
")
}
P=3
Q=5
Change(P,Q)
Change(Q,P)
</script>
Output
18,33,10
26,47,18
</td>
<td>
<Script Language="JavaScript">
sum=0;
a=10;
for(b=1;b<=6;b+=2)
{ sum+=a+b;
a-=b;
document.write(a + "
");
}
document.write(sum);
</Script>
Output
9
6
1
34
</td>
</tr>
</table>

Q24. Observe the code segment given below and answer the questions that follow:

```
<script language="JavaScript">
        A=(10*3)%4
        document.write(A)
        B=40%3
        document.write(B)
         if(!(B>=A))
                C=5
        else    C=10
        document.write(C)
        </script>
```

a) Name any one relational operator and one logical operator in the above code
Relational Operator **>=** Logical Operator !

b) Rewrite the statement: if (!(B>=A)) without using the ! operator. **if (B<A)**

Q25 Identify the error in the following codes and write the corrected script with the correction underlined.

a)
```
<script lang="javascript">
dim sum,
a
sum==0
for(a=1; a<8, a++)
{
sum=sum+a
}
document.write(sum +  <BR>" + a)
```

Ans
```
<script language="javascript">
var sum=0,a
for(a=1; a<8; a++)
{
sum=sum+a
}
document.write(sum +  "<BR>" + a)
</script>
```
Output
28
8

b)
```
<script language="javascript">
var i;
i=0
for(i=1; i<-20; i++)
print(i);
i==i+2;
}
<script>
```

Ans
```
<script language="javascript">
i=0
for(i=1; i<=12; i++) {
document.write(i);
i=i+2;
}
</script>
```
Output
14710

c)
```
<script language="javascript">
var i, x;
i=1
x=
0
for(i==1; i<10; i*=2)
document.text(x++)
}
response.write("<BR>" + i)
</script>
```

```
<script language="javascript">
var i, x;
i=1,x=0
for(i=1; i<10; i*=2)
{
document.write(x++)
}
document.write("<BR>" + i)
</script>
```
Output
0123
16

d)
```
<script language="javascript">
var
i=0,
x=0;
do
while(i
<10)
if((i%2
)=0)
{  x=x+i
```

```
<script language="javascript">
var
i=0,
x=0;
do{
if(i%2
==0)
{  x=x+i
   document.write(x + " " );  }
  i++;
} while(i<10)
</script>
```
Output

Q26. **Give the output of the following code and rewrite the code using a for loop instead of do..while loop without affecting the output:**

```
<script language = JavaScript>
var prod, counter
prod = 1
counter = 1
do
{
        prod = prod*counter
        counter = counter+2
        document.write(prod+", "+counter+"<BR>")
}
while (counter <=7)
```

Output:

1, 3
3, 5
15, 7
105, 9

Q27. Study the code given below and answer the questions that follow:

```
<SCRIPT LANGUAGE="JavaScript">
P=5
Q=30
do
{
        P=P+6
        document.write(P+" ")
}
while(P<=Q)
</SCRIPT>
```

(i) How many times the above WHILE loop gets executed?

5 Times

(ii) Convert the given DO WHILE loop to FOR loop without affecting the output.

```
<SCRIPT LANGUAGE="JavaScript">
P=5
Q=30
for(P=5;P<=35;P+=6)
{
document.write(P+" ")
}
</SCRIPT>
```

(iii) Give the output of the above code.

11 17 23 29 35

Q28. Change the following script to for loop to while loop while loop to for loop without effecting the output: Give ouput also

a)

```
var str = "INDIA";
for(i=str.length; i>=1; i--)
{
for(a=0; a<i; a++)
{
document.write(str.charAt(a));
}
document.write("<br>");
}
```

Ans

```
var str = "INDIA";
i=str.length
while( i>=1)
{
a=0;
      while(a<i)
       { document.write(str.charAt(a));
          a++   }
i--;
document.write("<br>");
}
Output
INDIA
INDI
IND
IN
I
```

b)

```
var a, b, c, sum_even=0, sum_odd=0;
a=10, b=1;
while(b<=a)
{
if(b%2==0)
sum_even+=
b
else
sum_odd+=b
 b++;
}
document.write( sum_even +"<br>");
```

Ans

```
<script language="javascript">
sum_even=0,sum_odd=0
a=10,b=1
for(b=1;b<=a;b++)
{
  if(b%2==0)
   sum_even+=b
  else
   sum_odd+=b
 }
document.write(sum_even +"<br>")
document.write(sum_odd +"<br>")
</script>
Output
30
25
```

Q29. Rewrite the following code using if..else statement:

```
switch(choice)
{       case 1: document.write("Monday");          break;
        case 2: document.write("Tuesday");         break;
        case 3: document.write("Wednesday");        break;
        default: document.write("Sunday");   }
```

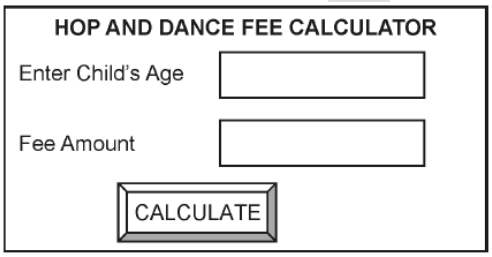
Ans

```
if (choice == 1)
        document.write("Monday");
else if (choice == 2)
        document.write("Tuseday");
else if (choice == 3)
        document.write("Wednesday");
else    document.write("Sunday");
```

Q30. Write the equivalent script for the following code using for loop without affecting the output:

<script language="javascript"> ans=1 count=2 do { ans=ans*count count=count+2 }while (count<=10) document.write(ans) </script> OUTPUT: **3840**	**Ans** <script language="javascript"> ans=1 for(count=2;count<=10;count+=2) { ans=ans*count } document.write(ans) </script> OUTPUT: **3840**

Q31 Write the HTML code to generate the following form:



Write the JavaScript code to display the fee for the Dance Course as

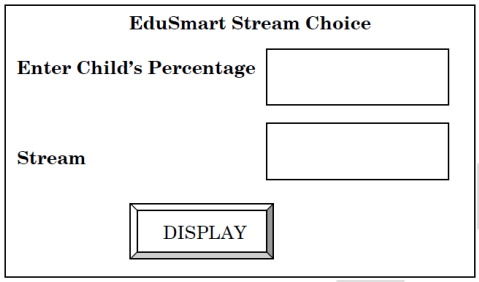
- 600 for children aged 6-12
- 1000 for children aged 11-16
- "Not Allowed" for any other age

On the click of the CALCULATE button. The user inputs the child's age in the top text box and the fee amount or the message "Not allowed" should be displayed in the second text box.

```
<html> <head>
<script language = javascript>
function CalcFee()
{
        age= parseInt(document.form1.age.value)
        if (age>=6 && age<=12)
                Fee = 600;
        else if (age>=11 && age <=16)
                Fee = 1000
        else Fee = "Not Allowed"
        document.form1.fee.value = Fee;
}
</script> </head>
<form name = form1>
<Pre>
<center>HOP AND DANCE CALCULATOR</center>
```

```
Enter Child's Age <input type = text name = age>
Fee Amount       <input type = text name = fee>
<input type = button value = Calculate onclick = CalcFee()>
</form>
</body>
</html>
```

Q32. Write the HTML code to generate the following form:



Write the JavaScript code to display the Stream for the Institute as

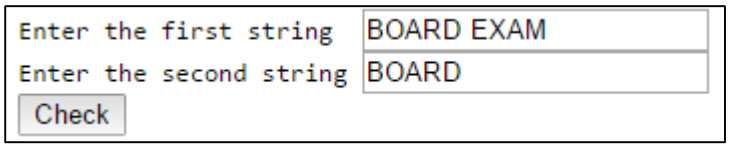
- Science for percentage above 80
- Commerce for percentage between 60 – 80
- Humanities for percentage between 50 – 60
- Not Eligible otherwise

on the click of the **DISPLAY** button.

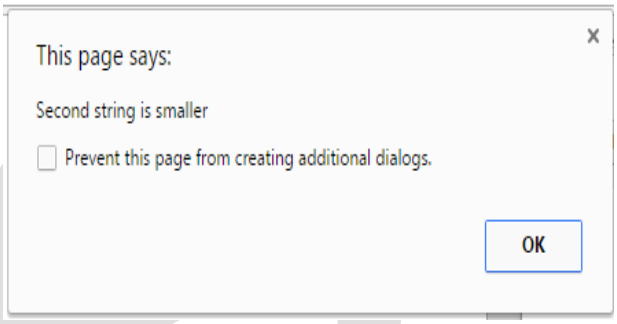
The user inputs the child's percentage in the top text box and the stream or the message ''Not Eligible'' should be displayed in the second text box.

```
<head> </head> <body>
<script language="javascript">
        function stream()
        {
        per= parseInt(document.f1.per.value);
        if (per>80)
                document.f1.str.value = "Science";
        else if (per>60 && per<=80)
                document.f1.str.value = "Commerce";
        else if (per>50 && per <=60)
                document.f1.str.value = "Humanities";
        else document.f1.str.value = "Not Eligible";
        }
</script>
<font size=4>
<center>EduSmart Stream Choice</center>
<form name = f1 action = js_qb.html>
<pre>
Enter Child's Percentage <input type = text name = per>
Stream                   <input type = text name = str>
<input type = button value = "DISPLAY" onclick = stream()>
</form> </body> </html>
```

Q33. Write the HTML code to generate the following form:

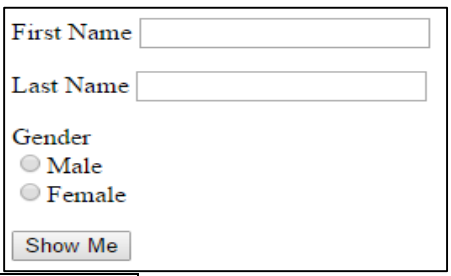


Write the JavaScript code to display appropriate message (as shown above) as to which string is smaller on the click of the CHECK button.




```
<html>
<head>
<script language = javascript>
function Compare()
{
        s1= document.form1.text1.value
        s2= document.form1.text2.value
        if (s1<s2)
                alert("First string is smaller")
        else if (s2<s1)
                alert("Second string is smaller")
        else alert("Strings are equal")
}
</script>
</head>
<form name = form1>
<Pre>
Enter the first string  <input type = text name = text1>
Enter the second string <input type = text name = text2>
<input type = button value = Check onclick = Compare()>
</form>
</body>
</html>
```

Q34. Create a form that contains two text box options and radio button with two options as shown below:



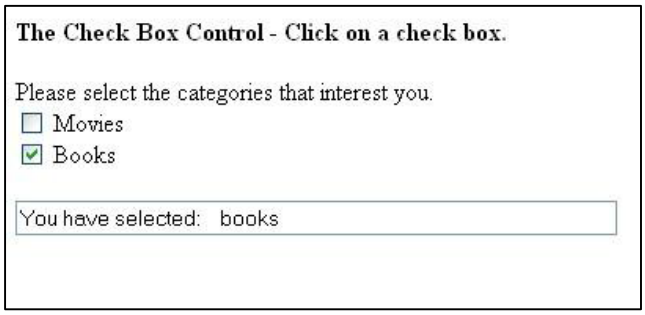
When the user clicks on any of the radio buttons, the message should be displayed according to selected Gender **For example**, if the First name entered by the user is **Neeraj** and the Last Name entered by the user is **Singh** the following message should be displayed according to the selected gender:

Gender	Message
Male	Hello Mr. N. Singh. Welcome to our website.
Female	Thank you Ms. N.Singh for visiting the website.

Write the HTML code for creating the form and the embedded JavaScript code for the click event of the button.

```
<html>
<body>
<script language="javascript">
function hello()
{       fn = document.f1.fn.value;
        ln = document.f1.ln.value;
        alert("Hello Mr. "+fn[0]+". "+ln+". Welcome to our website.")
}
function bye()
{       fn = document.f1.fn.value;
        ln = document.f1.ln.value;
        alert("Thank you Ms. "+fn[0]+". "+ln+". for visiting the website.")
}
function msg()
{       gender = document.f1.gender.value;
        if (gender == "m")
                hello();
        else if (gender == "f")
                bye();
}
</script>
<form name = f1 action = js_qb.html>
First Name <input type = text name = fn> <P>
Last Name <input type = text name = ln> <P>
Gender <BR> <input type = radio name = gender value = m  onclick = hello()>Male<BR>
<input type = radio name = gender value = f   onclick = bye()>Female<P>
<input type = button value = "Show Me" onclick = msg()>
</form>
</body></html>
```

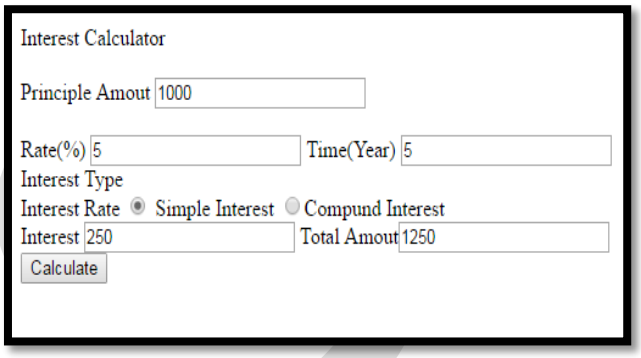
Q35. Create a form that contains two checkbox options and a textbox as shown below. When the user clicks on any checkbox the selected options must be displayed in the textbox. Write the HTML code for creating the form and the embedded JavaScript code for the click events of the checkboxes.




```
 <html>
<body>
<script language="javascript">
function show()
{
        selection = "You have selected: ";
        if (document.f1.Movies.checked)
                selection += "Movies"
        if (document.f1.Books.checked)
                selection += " Books"
        document.f1.t1.value = selection
}
</script>
<font size=4>
<B>The Check Box Control - Click on a check box</B>
```

```
<P>
<form name = f1>
Please select the categories that interest you <BR>
<input type = checkBox name = Movies onclick = show()>Movies<BR>
<input type = checkBox name = Books onclick = show()>Books<P>
<input type = text name = t1>
</form>
</body>
</html>
```

Q36. Create a Form and calculate Interest on basis of Interest Type Write JavaScript code for calculate button




```
<head>
<script >
function Interest()
{       var n1 = parseFloat(document.f1.t1.value)
        var n2 = parseFloat(document.f1.t2.value)
        var n3 = parseFloat(document.f1.t3.value)
        SI=(n1*n2*n3)/100
        TA=n1+SI
        CA=n1*(1+n2/100)*n3
        CI=CA-n1
        if(document.f1.r1[0].checked)     {
                document.f1.t4.value=SI
                document.f1.t5.value=TA  }
        if(document.f1.r1[1].checked)      {
                document.f1.t4.value=CI
                document.f1.t5.value=CA  }
}
</script>
</head>
<body>
<form name="f1">
Interest Calculator<br>
Principle Amount<input type="text" name="t1" size=75> <br>
Rate(%) <input type="text" name="t2"> Time(Year) <input type="text" name="t3"><br>
Interest Type</Legend> <br>
Interest Rate <input type="radio" value="SI" name="r1"> Simple Interest
<input type="radio" value="CI" name="r1">Compund Interest <br>
Interest <input type="text" name="t4">   Total Amout<input type="text" name="t5"><br>
<input type="button" name="b1" value="Calculate" onclick="Interest()">
</form>
</body>
</html>
```

HTML events to trigger script functions

Event	Description	Applicable for
Onblur	Fires the moment the element loses focus	ALL HTML elements, EXCEPT: , <head>, <html>, <script>, <style>, and <title>
onChange	Fires the moment when the value of the eleent is changed	<input> (except <input type = img>), <select> and <textarea>
onFocus	Fires the moment when the element gets focus	ALL HTML elements, EXCEPT: , <head>, <html>, <script>, <style>, and <title>
onClick	Fires on a mouse click on the element	All HTML elements, EXCEPT: , <head>, <html>, <script>, <style>, and <title>
onMouseOver	Fires when the mouse pointer moves over an element	All HTML elements, EXCEPT: , <head>, <html>, <script>, <style>, and <title>
onMouseOut	Fires when the mouse pointer moves out of an element.	All HTML elements, EXCEPT: , <head>, <html>, <script>, <style>, and <title>
onLoad	Fires after the page finishes loading	<body>, <frame>, <img>, <input type="image">, <script>, <style>
onUnLoad	Fires once a page has unloaded (or the browser window has been closed)	<body>