JavaScript If-else

The JavaScript if-else statement is used to execute the code whether condition is true or false. There are three forms of if statement in JavaScript.

- If Statement
- If else statement
- if else if statement

JavaScript If statement

It evaluates the content only if expression is true. The signature of JavaScript if statement is given below.

```
if(expression){
//content to be evaluated
}
```

Code:

```
<html>
<head>
<title>  If else in javascript</title>
</head>
  <body>
 <script type = "text/javascript">
        var a=30;
        if(a>10)
        {
        document.write("value of a is greater than 10");
        }
</script>
 </body>
</html>
```

Output:

value of a is greater than 10

JavaScript If...else Statement

It evaluates the content whether condition is true of false. The syntax of JavaScript if-else statement is given below.

```
if(expression){
//content to be evaluated if condition is true
}
else{
//content to be evaluated if condition is false
}
```

Code:

```
<html>
<head>
<title>  statments in javascript</title>
</head>
  <body>
 <script type = "text/javascript">
        var a=30;
        if(a>40)
        {
        document.write("value of a is greater than 40");
        }
     else
```

```
    {
     document.write("value of a is smaller than 40");
    }
</script>
 </body>
</html>
```

Output:

value of a is smaller than 40

JavaScript If...else if statement

It evaluates the content only if expression is true from several expressions. The signature of JavaScript if else if statement is given below.

```
if(expression1){
//content to be evaluated if expression1 is true
}
else if(expression2){
//content to be evaluated if expression2 is true
}
else if(expression3){
//content to be evaluated if expression3 is true
}
else{
//content to be evaluated if no expression is true
}
```

Code:

```
<html>
<head>
```

```
<title>  statments in javascript</title>
</head>
  <body>
 <script type = "text/javascript">
var a=20;
if(a==10){
document.write("a is equal to 10");
}
else if(a==15){
document.write("a is equal to 15");
}
else if(a==20){
document.write("a is equal to 20");
}
else{
document.write("a is not equal to 10, 15 or 20");
}
</script>
 </body>
</html>
```

Output:

a is equal to 20

JavaScript Switch

The JavaScript switch statement is used to execute one code from multiple expressions. It is just like else if statement that we have learned in previous page. But it is convenient than if..else..if because it can be used with numbers, characters etc.

The signature of JavaScript switch statement is given below.

```
switch(expression){
case value1:  code to be executed;
                  break;
case value2:  code to be executed;
                 break;
......

default:    code to be executed if above values are not matched;
}
```

Code:

```
<html>
<head>
<title>  Switch in javascript</title>
</head>
  <body>
<script type = "text/javascript">
        var grade='B';
        var result;
        switch(grade)
{
```

```
case 'A':  result="A Grade";
                    break;
case 'B':  result="B Grade";
                break;
 case 'C':  result="C Grade";
                break;
default:  result="No Grade";
}
document.write(result);
</script>
  </body>
</html>
```

Output:

B Grade

JavaScript Loops

The JavaScript loops are used to iterate the piece of code using for, while, do while or for-in loops. It makes the code compact. It is mostly used in array.

There are four types of loops in JavaScript.

- for loop
- while loop
- do-while loop
- for-in loop (related to object)

JavaScript For loop

The JavaScript for loop iterates the elements for the fixed number of times. It should be used if number of iteration is known. The syntax of for loop is given below.

```
for (initialization; condition; increment)
{
   code to be executed
}
```

Code:

```
<html>
<head>
<title>  for loop in javascript</title>
</head>
  <body>
<script type = "text/javascript">
for (i=1; i<=5; i++)
{
document.write(i + "<br/>")
}
</script>
  </body>
</html>
```

Output:

1
2
3

4
5

JavaScript while loop

The JavaScript while loop iterates the elements for the infinite number of times. It should be used if number of iteration is not known. The syntax of while loop is given below.

```
while (condition)
{
   code to be executed
}
```

Code:

```
<html>
<head>
<title>  while loop in javascript</title>
</head>
  <body>
<script type = "text/javascript">
var i=10;
while (i<=14)
{
document.write(i + "<br/>");
i++;
}
</script>
  </body>
</html>
```

Output:

10
11
12
13
14

JavaScript do while loop

The JavaScript do while loop iterates the elements for the infinite number of times like while loop. But, code is executed at least once whether condition is true or false. The syntax of do while loop is given below.

```
do{
   code to be executed
}while (condition);
```

Code:

```
<html>
<head>
<title>  do while loop in javascript</title>
</head>
  <body>
<script type = "text/javascript">
var i=1;
do{
document.write(i + "<br/>");
i++;
}while (i<=5);
```

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

Output:

1

2

3

4

5

JavaScript Functions

JavaScript functions are used to perform operations. We can call JavaScript function many times to reuse the code.

Advantage of JavaScript function

There are mainly two advantages of JavaScript functions.

Code reusability: We can call a function several times so it save coding.

Less coding: It makes our program compact. We don't need to write many lines of code each time to perform a common task.

JavaScript Function Syntax

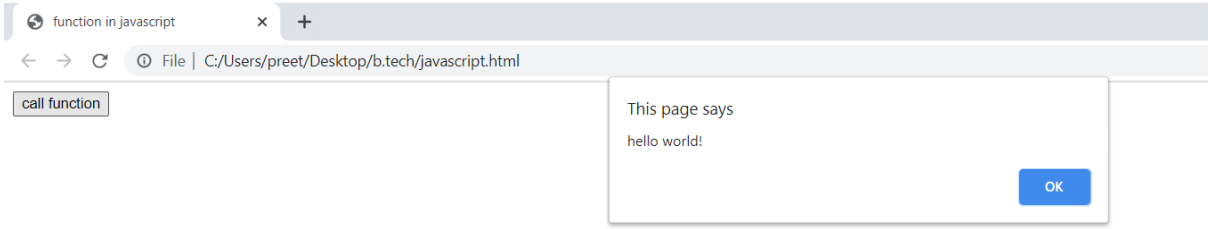
The syntax of declaring function is given below.

```
    function functionName([arg1, arg2, ...argN]) {
 //code to be executed
}
```

Code:

```
<html>
<head>
<title>  function in javascript</title>
</head>
  <body>
<script type = "text/javascript">
function myfunction(){
alert("hello world!");
}
</script>
</script>
<input type="button" onclick="  myfunction ()" value="call function"/>
  </body>
</html>
```

Output:



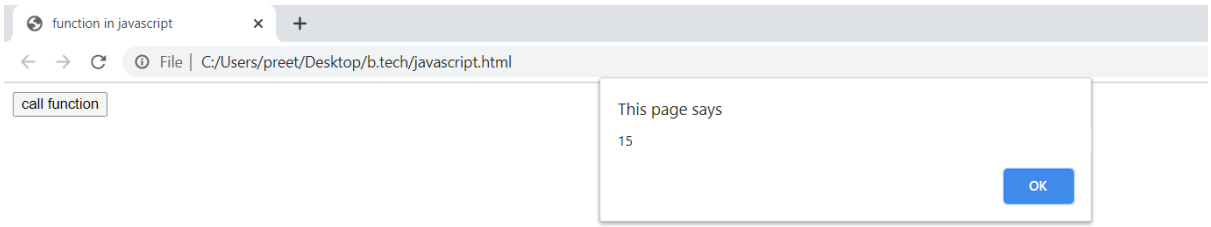
JavaScript Function Arguments

Call function by passing arguments.

Code:

```
<html>
<head>
<title>  function in javascript</title>
</head>
  <body>
<script type = "text/javascript">
function myfunction(num){
alert(num+num+num);
}
</script>
</script>
<input type="button" onclick="  myfunction (5)" value="call function"/>
  </body>
</html>
```

Output:



Function with Return Value

We can call function that returns a value and use it in our program

Code:

```
<html>
<head>
<title>  function in javascript</title>
</head>
  <body>
<script type = "text/javascript">
function myfunction(){
return 5+5+5;
}
</script>
<script>
document.write(myfunction());
</script>
</body>
</html>
```

Output:

15

JavaScript Objects

A javaScript object is an entity having state and behavior (properties and method). For example: car, pen, bike, chair, glass, keyboard, monitor etc.

JavaScript is an object-based language. Everything is an object in JavaScript.

JavaScript is template based not class based. Here, we don't create class to get the object. But, we direct create objects.

Creating Objects in JavaScript

There are 3 ways to create objects.

- By object literal
- By creating instance of Object directly (using new keyword)
- By using an object constructor (using new keyword)

JavaScript Object by object literal

The syntax of creating object using object literal is given below:

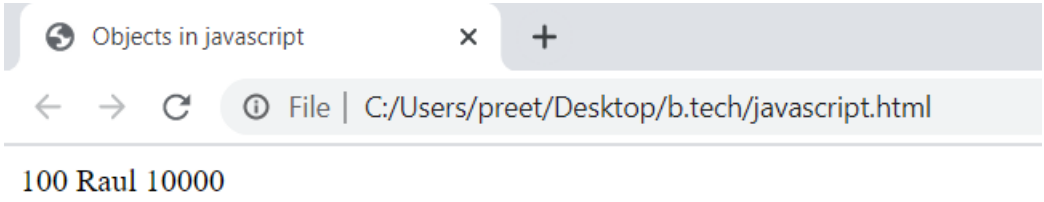
object={property1:value1,property2:value2.....propertyN:valueN}

Code:

```
<html>
<head>
<title>  Objects in javascript</title>
</head>
  <body>
<script type = "text/javascript">

emp={id:100,name:"Raul",salary:10000}
```

```
document.write(emp.id+" "+emp.name+" "+emp.salary);
</script>
</body>
</html>
```

Output:



By creating instance of Object

The syntax of creating object directly is given below:

```
var objectname=new Object();
```

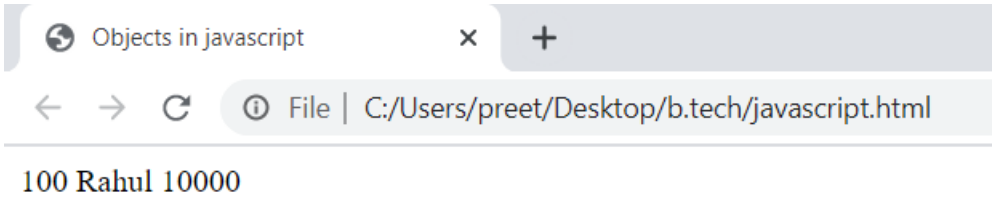
Here, new keyword is used to create object.

Code:

```
<html>
<head>
<title>  Objects in javascript</title>
</head>
  <body>
<script type = "text/javascript">
 var emp=new Object();
emp.id=100;
```

```
emp.name="Rahul";
emp.salary=10000;
document.write(emp.id+" "+emp.name+" "+emp.salary);
</script>
</body>
</html>
```

Output:



By using an Object constructor

Here, you need to create function with arguments. Each argument value can be assigned in the current object by using this keyword. The this keyword refers to the current object.

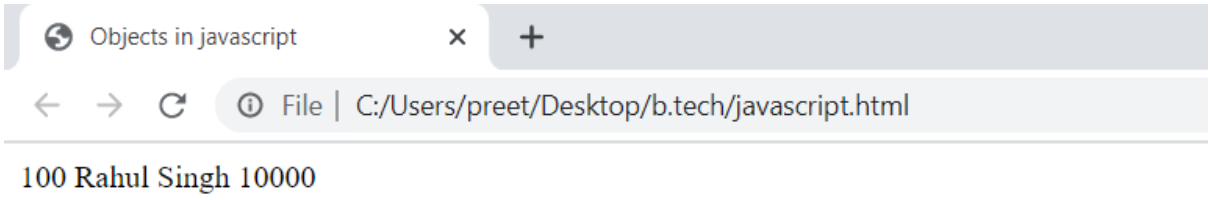
The example of creating object by object constructor is given below.

Code:

```
<html>
<head>
<title>  Objects in javascript</title>
</head>
  <body>
<script type = "text/javascript">
```

```
function emp(id,name,salary){
this.id=id;
this.name=name;
this.salary=salary;
}
e=new emp(100,"Rahul Singh",10000);
document.write(e.id+" "+e.name+" "+e.salary);
</script>
</body>
</html>
```

Output:



JavaScript Array

JavaScript array is an object that represents a collection of similar type of elements.

There are 3 ways to construct array in JavaScript

- By array literal
- By creating instance of Array directly (using new keyword)
- By using an Array constructor (using new keyword)

1) **JavaScript array literal**

The syntax of creating array using array literal is given below:

var arrayname=[value1,value2.....valueN];

As you can see, values are contained inside [ ] and separated by , (comma).

```
<script>
var emp=["Rahul","Ravi","Ratan"];
for (i=0;i<emp.length;i++){
document.write(emp[i] + "<br/>");
}
</script>
```

The .length property returns the length of an array.

Output

Rahul
Ravi
Ratan

2) JavaScript Array directly (new keyword)

The syntax of creating array directly is given below:

```
var arrayname=new Array();
```

Here, new keyword is used to create instance of array.

```
<script>
var i;
var emp = new Array();
emp[0] = "Rahul";
emp[1] = "Ravi";
emp[2] = "rohit";
for (i=0;i<emp.length;i++){
document.write(emp[i] + "<br>");
```

```
}
</script>
```

Output

```
Rahul
Ravi
rohit
```

3) JavaScript array constructor (new keyword)

Here, you need to create instance of array by passing arguments in constructor so that we don't have to provide value explicitly.

The example of creating object by array constructor is given below.

```
<script>
var emp=new Array("Jai","Vijay","Smith");
for (i=0;i<emp.length;i++){
document.write(emp[i] + "<br>");
}
</script>
```

Output

Jai

Vijay

Smith

JavaScript String

The JavaScript string is an object that represents a sequence of characters.

There are 2 ways to create string in JavaScript

- By string literal
- By string object (using new keyword)

1) By string literal

The string literal is created using double quotes. The syntax of creating string using string literal is given below:

var stringname="string value";

Let's see the simple example of creating string literal.

<script>

var str="This is string literal";

document.write(str);

</script>

Output

This is string literal

2) By string object (using new keyword)

The syntax of creating string object using new keyword is given below:

var stringname=new String("string literal");

Here, new keyword is used to create instance of string.

<script>

var stringname=new String("hello javascript string");

document.write(stringname);

</script>

Output

hello javascript string

JavaScript String Method

charAt() : It provides the char value present at the specified index.

charCodeAt(): It provides the Unicode value of a character present at the specified index.

concat(): It provides a combination of two or more strings.

indexOf(): It provides the position of a char value present in the given string.

lastIndexOf(): It provides the position of a char value present in the given string by searching a character from the last position.

search():It searches a specified regular expression in a given string and returns its position if a match occurs.

match():It searches a specified regular expression in a given string and returns that regular expression if a match occurs

replace(): It replaces a given string with the specified replacement.

Example:

```
<script>
var str="JavatScript";
document.writeln(str.charAt(4));
</script>
```

Output:

t

```
<script>
var str="JavatScript";
document.writeln(str. charCodeAt(3));
</script>
```

Output:

97

```
<script>
var str="JavatScript";
document.writeln(str.match("Java"));
</script>
```

Output: Java

Validation of form using JavaScript

Code:

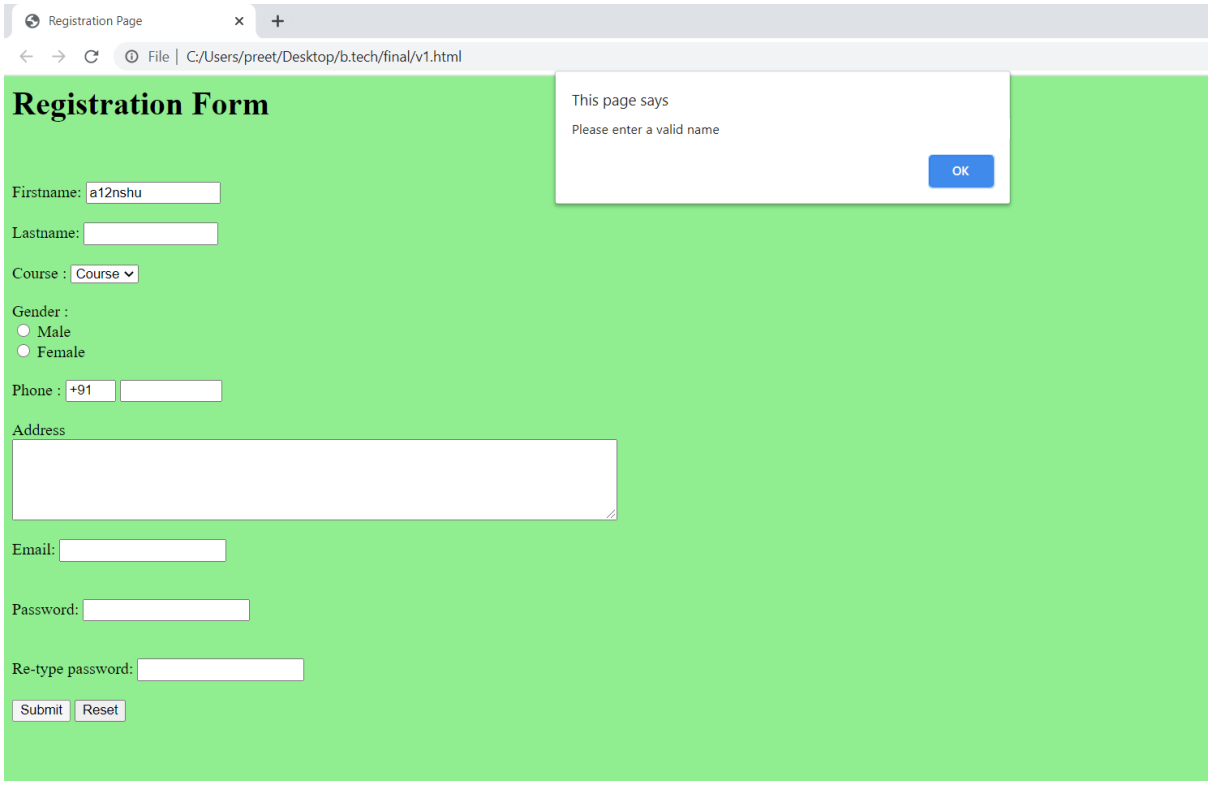
```
<Html>
<head>
<title>
Registration Page
</title>
<script>
function validate() {

   var name = document.getElementById("first").value;
 var surname = document.getElementById("surname").value;
 var mobile = document.getElementById("mobile").value;
var email = document.getElementById("email").value;
if(name == "") {
       alert("Please enter your name");
   } else {
       var regex = /^[a-zA-Z\s]+$/;
       if(regex.test(name) === false) {
          alert("Please enter a valid name");
       }

   }
if(surname == "") {
       alert("Please enter your surname");
   } else {
```

```
        var regex = /^[a-zA-Z\s]+$/;
        if(regex.test(surname) === false) {
            alert("Please enter a valid surname");
        }

    }
// mobile number validation
if(mobile == "") {
        alert("Please enter your mobile number");
    } else {
        var regex = /^[1-9]\d{9}$/;
        if(regex.test(mobile) === false) {
            alert("Please enter a valid 10 digit mobile number");
        }
        }
// email id validation
 if(email == "") {
        alert("Please enter your email address");
    } else {
        // Regular expression for basic email validation
        var regex = /^\S+@\S+\.\S+$/;
        if(regex.test(email) === false) {
            alert("Please enter a valid email address");
        }
        }
```

```
 }

</script>

</head>
<body bgcolor="lightgreen">

<h1>Registration Form </h1>
<br>
<br>
<form>
Firstname:    <input type="text" name="firstname" id="first" size="15" required/> <br> <br>
Lastname:       <input type="text" id="surname" name="lastname" size="15"/> <br> <br>
Course :  <select>
<option value="Course">Course</option>
<option value="B.Tech">BCA</option>
<option value="BBA">BBA</option>
<option value="BCA">B.Tech</option>
<option value="MBA">MBA</option>
<option value="MCA">MCA</option>

</select>

<br>
<br>
```

```
Gender :
<br>
<input type="radio" name="gender" value="male"/> Male <br>
<input type="radio" name="gender" value="female"/> Female <br>
 <br>
Phone :  <input type="text" name="country code"  value="+91" size="2"/>
<input type="text" name="phone" id="mobile"size="10"/> <br> <br>
Address
<br>
<textarea cols="80" rows="5" value="address">
</textarea>
<br> <br>
Email:  <input type="email" id="email" name="email"/> <br>
<br> <br>
Password:  <input type="Password" id="pass" name="pass"> <br>
<br> <br>
Re-type password:  <input type="Password" id="repass" name="repass"> <br>
<br>
 <input type="button" value="Submit" onclick="validate();"/>
<input type="reset" value="Reset"/>
</form>
</body>
</html>
```

Output:


Registration Page
File | C:/Users/preet/Desktop/b.tech/final/v1.html
Registration Form
This page says
Please enter a valid name
OK
Firstname: a12nshu
Lastname:
Course : Course
Gender :
Male
Female
Phone : +91
Address
Email:
Password:
Re-type password:
Submit
Reset