

# JAVA SCRIPT

## Program 1:

Design a web page to validate credit card numbers per the specifications below. The following tables outline the major credit cards you want to validate and allow prefixes and lengths.

Card Type	Prefix	Length
Master Card	51–55	16
Visa	4	13,16
American Express	34,37	15

## HTML Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <style>
    body{
      border: 5px solid black;
      padding: 20px;
      margin: 20px;
    }
  </style>
</head>
<body>
  <label for="">Enter card number</label>
  <input type="number" name="" id="inp"><br><br>
  <button type="button" onclick="validate_str()">validate</button>
  <div id="ans"></div>
  <script>

    function validate_str(){
      var num= document.getElementById("inp").value;
      var sub1= num.substring(0,2);
      var sub2= num.substring(0,1);
      if(num.length==16 && (sub1>=51 && sub1<=55)){
        document.getElementById("ans").innerHTML="master card";
      }
      else if((num.length==16 || num.length==13) && (sub2==4)){
```

```
        document.getElementById("ans").innerHTML="visa card";
    }
    else if(num.length==15 && (sub1==37 || sub1==34)){
        document.getElementById("ans").innerHTML="ameerican express card";
    }
    else{
        document.getElementById("ans").innerHTML="invalid";
    }
}
</script>
</body>
</html>
```

**Output**

Enter card number

master card

## Program 2:

Design a web page to validate the following according to the standard conditions.

- a. Name
- b. E-Mail-id
- c. Password.

## HTML Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <style>
    body{
      border: 5px solid black;
      padding: 20px;
      margin: 20px;
    }
  </style>
</head>
<body>
  <h1>Name</h1>
  <input type="text" placeholder="Enter name" name="" id="name"><br><br>
  <button type="button" onclick="validate_name()" >validate</button>
  <div id="name_out"></div><br>
  <h1>Email</h1>
  <input type="text" placeholder="Enter email" name="" id="email"><br><br>
  <button type="button" onclick="validate_email()">validate</button>
  <div id="email_out"></div><br>
  <h1>Password</h1>
  <input type="text" placeholder="Enter password" name="" id="pass"><br><br>
  <button type="button" onclick="validate_pass()">validate</button>
  <div id="pass_out"></div><br>

  <script>
    function validate_name(){
      var name=document.getElementById("name").value;
      if(/^[a-zA-Z ]+$/ .test(name)){
        document.getElementById("name_out").innerHTML="valid";
      }
      else{
        document.getElementById("name_out").innerHTML="invalid";
      }
    }
    function validate_email(){
```

```
var email=document.getElementById("email").value;
if(/^[a-zA-Z0-9]+@[a-zA-Z]+\.[a-zA-Z]{2,}$/ .test(email)){
    document.getElementById("email_out").innerHTML="valid";
}
else{
    document.getElementById("email_out").innerHTML="invalid";
}
}
function validate_pass(){
    var pass=document.getElementById("pass").value;
    if(/^[a-zA-Z0-9]+[@#%&_]*$/ .test(pass)){
        //if(/^(?=.*[a-z])(?=.*[A-Z])(?=.*[0-9])(?=.*[!@#$%^&\*])(?=.*{8,})$/ .test(pass)){
            document.getElementById("pass_out").innerHTML="valid";
        }
        else{
            document.getElementById("pass_out").innerHTML="invalid";
        }
    }
}
</script>
</body>
</html>
```

**Output:**

## Name

valid

## Email

valid

## Password

valid

### Program 3

Store some country names and their capitals. Ask the user to select a country and its capital from two lists. If the match is correct, display “Correct answer”; otherwise, display an error message and tell the correct answer.

#### HTML Code:


```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <style>
    body{
      border: 5px solid black;
      padding: 20px;
      margin: 20px;
    }
  </style>
</head>
<body>
  <label for="country">Choose country: </label>
  <select id="country">
    <option value="india">India</option>
    <option value="usa">USA</option>
    <option value="uk">UK</option>
    <option value="australia">Australia</option>
    <option value="france">France</option>
  </select><br>
  <label for="capital">Choose country: </label>
  <select name="" id="capital">
    <option value="london">London</option>
    <option value="delhi">Delhi</option>
    <option value="washington">Washington</option>
    <option value="paris">Paris</option>
    <option value="canberra">Canberra</option>
  </select><br>
  <button type="button" onclick="validate()">validate</button>
  <div id="ans"></div><br>
  <script>
    function validate(){
      const ctry={
        "india":"delhi",
        "usa":"washington",
```


```
    "uk":"london",
    "australia":"canberra",
    "france":"paris"
}

var country=document.getElementById("country").value;
var capital=document.getElementById("capital").value;
if(ctry[country]==capital){
    document.getElementById("ans").innerHTML="correct";
}
else{
    document.getElementById("ans").innerHTML="incorrect";
}
}
</script>
</body>
</html>
```





**Output:**

Choose country:  

Choose country:  

incorrect

Choose country:  

Choose country:  

correct

## Program 4

Design the simple Calculator

### HTML Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <style>
    body{
      border: 5px solid black;
      padding: 20px;
      margin: 20px;
    }
  </style>
</head>
<body>
  <input type="number" placeholder="Enter number" name="" id="in1"><br><br>
  <input type="number" placeholder="Enter number" name="" id="in2"><br><br>
  <select name="" id="operator">
    <option value="+">+</option>
    <option value="-">-</option>
    <option value="*">*</option>
    <option value="/">/</option>
  </select>
  <button type="button" onclick="calculate()">calculate</button>
  <div id="ans"></div><br>

  <script>
    function calculate(){
      var num1 = Number(document.getElementById("in1").value);
      var num2 = Number(document.getElementById("in2").value);
      var op =document.getElementById("operator").value;
      var ans;
      if(op=='+'){
        ans=num1+num2;
      }
      else if(op=='-'){
        ans=num1-num2;
      }
      else if(op=='*'){
        ans=num1*num2;
      }
      else if(op=='/'){
```

```
        ans=num1/num2;
    }
    else{
        ans="invalid";
    }
    document.getElementById("ans").innerHTML=ans;
}
</script>
</body>
</html>
```

Output:

250

## Program 5

Design a web page that is self-modifying itself after every minute.

### HTML Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <style>
    body{
      border: 5px solid black;
      padding: 20px;
      margin: 20px;
    }
  </style>
</head>
<body>
  <div id="loc"></div>
  <script>
    function myfun(){
      var d = new Date();
      document.getElementById("loc").innerHTML = d;
    }
    setInterval(myfun,1000);
  </script>
</body>
</html>
```

**Output:**

Wed Mar 26 2025 21:02:41 GMT+0530 (India Standard Time)


## Program 6

Write a code for a web application that accepts the user's birthdate in a textbox and displays the day of the week in a message box at the click of a button.

### HTML Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <style>
    body{
      border: 5px solid black;
      padding: 20px;
      margin: 20px;
    }
  </style>
</head>
<body>
  <label for="">Enter birth date</label>
  <input type="date" id="bd"><br>
  <button type="button" onclick="myfun()">get day</button>
  <div id="loc"></div>
  <script>
    function myfun(){
      const
week=["Sunday","Monday","Tuesday","Wednesday","Thursday","Friday","Saturday"];
      var bd = document.getElementById("bd").value;
      var d = new Date(bd);
      var day=d.getDay();
      day=week[day];
      document.getElementById("loc").innerHTML = day;
    }
  </script>
</body>
</html>
```

Output:

Enter birth date  

Wednesday



## Program 7

Write a script that inputs a telephone number as a string in the form (555)555-555. The script should use the strings method split to extract the area code as a token and the last four digits of the phone numbers as a token. Display the area code in one test field and the seven-digit phone number in another text field.

### HTML Code

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <style>
    body{
      border: 5px solid black;
      padding: 20px;
      margin: 20px;
    }
  </style>
</head>
<body>
  <label for="">Enter phone number</label>
  <input type="number" name="" id="inp"><br><br>
  <label for="">area code</label>
  <textarea name="" id="ac"></textarea><br>
  <label for="">number</label>
  <textarea name="" id="an"></textarea><br>
  <button type="button" onclick="extract()">validate</button>
  <script>
    function extract(){
      var num= document.getElementById("inp").value;
      var ac= num.substring(0,3);
      var an= num.substring(3,9);
      document.getElementById("ac").innerHTML=ac;
      document.getElementById("an").innerHTML=an;
    }
  </script>
</body>
</html>
```

## Output

Enter phone number

area code

number

## Program 8

Develop and demonstrate an HTML file that includes a 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 Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <style>
    body{
      border: 5px solid black;
      padding: 20px;
      margin: 20px;
    }
  </style>
</head>
<body>
  <label for="str">Enter a string: </label>
  <input type="text" name="" id="str"><br><br>
  <button type="button" onclick="find_first_vowel()">Find vowel</button>
  <div id="vow"></div><br><br>
  <label for="num">Enter a number: </label>
  <input type="number" name="" id="num"><br><br>
  <button type="button" onclick="reverse_number()">Reverse number</button>
  <div id="rev"></div><br><br>

  <script>
    function find_first_vowel(){
      var str= document.getElementById("str").value;
      var vowels="aeiouAEIOU";
      for(var i=0;i<str.length;i++){
        if(vowels.includes(str[i])){
          document.getElementById("vow").innerHTML="First vowel is at: "+i;
```

```
        break;
    }
}
}
function reverse_number(){
    var num= document.getElementById("num").value;
    var rev=0;
    while(num>0){
        var rem= num%10;
        rev= rev*10+rem;
        num= parseInt(num/10);
    }
    document.getElementById("rev").innerHTML="Reversed number is: "+rev;
}
</script>
</body>
</html>
```

**Output:**

Enter a string:

First vowel is at: 1

Enter a number:

Reversed number is: 1234783789

### Program 9

Write a JavaScript function that takes a string that has lower and upper case letters as a parameter and converts upper case letters to lower case and lower case letters to upper case.

#### HTML Code:

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <style>
    body{
      border: 5px solid black;
      padding: 20px;
      margin: 20px;}
  </style>
</head>
<body>
  <label for="">Enter a string</label>
  <input type="text" name="" id="inp"><br>
  <button type="button" onclick="inverse_case()">Change case</button>
  <div id="ans"></div>
  <script>
    function inverse_case(){
      var str= document.getElementById("inp").value;
      var ans="";
      for(var i=0;i<str.length;i++){
        if(str[i]==str[i].toUpperCase()){
          ans+=str[i].toLowerCase();
        }
        else{
          ans+=str[i].toUpperCase();
        }
      }
      document.getElementById("ans").innerHTML=ans;}
  </script>
</body>
</html>
```

## Output

Enter a string

Hello World

Change case

hELLO wORLD

### Program 10

Design a web page to perform a survey on four different models of Maruti (Maruti -K10, ZenAstelo, Wagnor, Maruti- SX4) owned by people living in four metro cities(Delhi, Mumbai, Chennai & Kolkatta). Display tabulated report like format given below:

	Maruti-K10	Zen-Astelo	Wagnor	Maruti-SX4
Delhi				
Mumbai				
Cheennai				
Kolkatta				

Calculate the number of cars of different models in each metro city.

### HTML Code

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
  <style>
    body{
      border: 5px solid black;
      padding: 20px;
      margin: 20px;
    }
  </style>
</head>
<body>
  <label for="city">City</label>
  <select name="" id="city">
    <option value="D">Delhi</option>
    <option value="M">Mumbai</option>
    <option value="C">Chennai</option>
    <option value="K">Kolkata</option>
  </select>
  <label for="car">car</label>
  <select name="" id="car">
    <option value="mk">Maruti-K10</option>
```



```

    <option value="z">Zen-Astelo</option>
    <option value="w">Wagnor</option>
    <option value="ms">Maruti-SX4</option>
</select><br>
<button type="button" onclick="addCar()">Submit</button>
<table border="1px">
    <tr>
        <th>City</th>
        <th>Maruti-K10</th>
        <th>Zen-Astelo</th>
        <th>Wagnor</th>
        <th>Maruti-SX4</th>
    </tr>
    <tr>
        <td>Delhi</td>
        <td id="Dmk">0</td>
        <td id="Dz">0</td>
        <td id="Dw">0</td>
        <td id="Dms">0</td>
    </tr>
    <tr>
        <td>Mumbai</td>
        <td id="Mmk">0</td>
        <td id="Mz">0</td>
        <td id="Mw">0</td>
        <td id="Mms">0</td>
    </tr>
    <tr>
        <td>Chennai</td>
        <td id="Cmk">0</td>
        <td id="Cz">0</td>
        <td id="Cw">0</td>
        <td id="Cms">0</td>
    </tr>
    <tr>
        <td>Kolkata</td>
        <td id="Kmk">0</td>
        <td id="Kz">0</td>
        <td id="Kw">0</td>
        <td id="Kms">0</td>
    </tr>

```

```
</table>
<div id="loc"></div>
<script>
  function addCar(){
    var city= document.getElementById('city').value;
    var car= document.getElementById('car').value;
    var toadd=city+car;
    var count=Number(document.getElementById(toadd).innerHTML);
    count++;
    document.getElementById(toadd).innerHTML=count;
  }
</script>
</body>
</html>
```

Output:

City  car

City	Maruti-K10	Zen-Astelo	Wagnor	Maruti-SX4
Delhi	1	7	0	0
Mumbai	1	0	0	0
Chennai	0	8	0	10
Kolkata	9	0	0	0