

## EXPERIMENT NO 2

### Working with JavaScript

**AIM:** To learn programming through JavaScript and develop dynamic webpages.

**Question (1).** Make an Electricity Bill Calculator in using JavaScript the conditional statements with the following conditions specified below. Create a form which has name, mobile number, emailID and number of units consumed. Perform form validation on the fields Name, Mobile Number and emailID.

- For the first 50 units – Rs. 3.50/unit
- For next 100 units – Rs. 4.00/unit
- For next 100 units – Rs. 5.20/unit
- For units above 250 – Rs. 6.50/unit

The application should generate the bill and inform the amount payable using confirm() box.

#### SOURCE CODE:

##### HTML

```
<!DOCTYPE html>
<head>
    <title>Electricity Bill</title>
    <style>
        .center{
            text-align: center;
        }
    </style>
    <script type="text/javascript">
        function BILL(){
            var U=document.getElementById('units').value;
            var RES
            if (0<U<=50){
                RES=U*3.50
                document.getElementById("res").innerHTML="Total bill is: Rs.
"+RES;
            }
            else if (50<U<=150){
                first50=50*3.50
                next100=(U-50)*4
                RES=first50+next100
                document.getElementById("res").innerHTML="Total bill is: Rs.
"+RES;
            }
        }
    </script>
</head>
<body>
    <div class="center">
        <h3>Electricity Bill</h3>
        <form>
            <input type="text" value="Name" />
            <input type="text" value="Mobile Number" />
            <input type="text" value="Email ID" />
            <input type="text" value="Units Consumed" />
            <input type="button" value="Calculate Bill" />
        </form>
        <div id="res" style="margin-top: 20px;">
            <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 0 auto;">
                <h4>Total Bill</h4>
            </div>
        </div>
    </div>
</body>
</html>
```

```
        else if (150<U<=250){
            first50=50*3.50
            next100=100*4
            nextnext100=(U-150)*5.20
            RES=first50+next100+nextnext100
            document.getElementById("res").innerHTML="Total bill is: Rs.
"+RES;
        }
        else if (U>250){
            first50=50*3.50
            next100=100*4
            nextnext100=150*5.20
            unit200=(U-250)*6.50
            RES=first50+next100+nextnext100+unit200
            document.getElementById("res").innerHTML="Total bill is: Rs.
"+RES;
        }
        confirm("Total payable amount is Rs. "+RES);
    }
</script>
</head>
<body>
    <div align="right">
        <a href="../index.htm"><button onmouseover="this.style.color='red'">GO
BACK TO INDEX</button></a>
    </div>
    <div class="center" style="background-color: purple; color:white;"><h2>LAB
ACTIVITY 2</h2></div>
    <span><u>ELECTRICITY BILL</u></span>
    <div>
        <form onsubmit="return VALIDATE()" name="myForm" method="post">
            <fieldset>
                <legend>
                    <h2>Electricity Bill</h2>
                </legend>
                <table>
                    <tr>
                        <td>
                            <label for="name">Name: </label>
                        </td>
                        <td>
                            <input type="text" required placeholder="Name"
name="username" id="name" required>
                        </td>
                    </tr>
                    <tr>
                        <td>
                            <label for="mobnumber">Mobile Number:</label>
                        </td>
                        <td>
                            <input type="number" required placeholder="Mobile
Number" name="contact" id="mobnumber" required>
                        </td>
                    </tr>
                </table>
            </fieldset>
        </form>
    </div>
```

```

        <td>
            <label for="email">Email ID: </label>
        </td>
        <td>
            <input type="email" required placeholder="Email
ID" name="useremail" id="email" required>
        </td>
    </tr>
    <tr>
        <td>
            <label for="units">Units Consumed: </label>
        </td>
        <td>
            <input type="number" required placeholder="Unit
Consumed" name="unitsconsumed" id="units">
        </td>
    </tr>
    <tr><td> </td><td> </td></tr>
    <tr>
        <td></td>
        <td style="text-align: right;">
            <input type="submit" value="Submit"
onclick=BILL(>
        </td>
    </tr>
    <tr>
        <td><p id="res">Amount here!</p></td>
    </tr>
</table>
</fieldset>
</form>
</div>
</body>
</html>

```

**OUTPUT SCREENSHOT:**[GO BACK TO INDEX](#)**LAB ACTIVITY 2**ELECTRICITY BILL**Electricity Bill**

Name:   
 Mobile Number:   
 Email ID:   
 Units Consumed:

Amount here!

**Question (2). Develop web pages to demonstrate the effect of roll over buttons. When the user places his or her mouse pointer over text, listing the various tourist places in Dehradun, the corresponding image displaying the tourist spot to be shown. Also perform the zoom in and zoom out effect on an image for that image on a button click.**

### SOURCE CODE:

```
<!DOCTYPE html>
<head>
  <title>LAB ACTIVITY 2</title>
  <link rel="stylesheet" href="../css/float.css">
  <style>
    img {
      max-width: 60%;
      max-height: 50%;
      box-shadow: 8px 8px 15px 8px black;
    }
  </style>
</head>

<body>
  <div align="right">
    <a href="../index.htm"><button onmouseover="this.style.color='red'">GO
    BACK TO INDEX</button></a>
  </div>
  <center>
    <div class="div" style="text-align: center;">
      <h2>ROLL OVER BUTTONS</h2>
    </div>
  </center><br>
  <br>
  <div>
    <center></center>
  </div>
  <div>
    <ul>
      <li><span onmouseover="document.s.src='../images/FRI.jpg'"
      onmouseout="document.s.src='../images/dehra.jpg'">FRI
      Dehradun</span></li>
      <li><span onmouseover="document.s.src='../images/TMM.jpg'"
      onmouseout="document.s.src='../images/dehra.jpg'">Tapekeshwar
      Temple</span></li>
      <li><span onmouseover="document.s.src='../images/MM.jpg'"
      onmouseout="document.s.src='../images/dehra.jpg'">Mindrolling
      Monastary</span></li>
      <li><span onmouseover="document.s.src='../images/RC.jpg'"
      onmouseout="document.s.src='../images/dehra.jpg'">Robber's
      Cave</span></li>
      <li><span onmouseover="document.s.src='../images/DZ.jpg'"
      onmouseout="document.s.src='../images/dehra.jpg'">Dehradun
      Zoo</span></li>
```

```
</ul>
</div>
```

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

**OUTPUT SCREENSHOT:**

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**ROLL OVER BUTTONS**



- FRI Dehradun
- Tapekeshwar Temple
- Mindrolling Monastery
- Robber's Cave
- Dehradun Zoo

**Question (3). Design a Stopwatch in HTML using JavaScript.**

**SOURCE CODE:**

**HTML**

```
<!DOCTYPE html>
<head>
  <meta http-equiv="X-UA-Compatible" content="IE=edge">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Design Stopwatch using HTML CSS and JavaScript</title>
  <link rel="stylesheet" href="../styles/clock.css">
</head>
<body>
  <div class="container2">
    <a href="../index.htm"><button onmouseover="this.style.color='red'">GO
BACK TO INDEX</button></a>
  </div>
  <div class="container">
    <h1>Stop Watch</h1>
```

```
<div id="time">
  <span class="digit" id="hr">
    00</span>
  <span class="txt">Hr</span>
  <span class="digit" id="min">
    00</span>
  <span class="txt">Min</span>
  <span class="digit" id="sec">
    00</span>
  <span class="txt">Sec</span>
  <span class="digit" id="count">
    00</span>
</div>
<div id="buttons">
  <button class="btn" id="start">
    Start</button>
  <button class="btn" id="stop">
    Stop</button>
  <button class="btn" id="reset">
    Reset</button>
</div>
</div>

<script src="../../scripts/js/clock.js"></script>
</body>
</html>
```

## JAVASCRIPT

```
let startBtn = document.getElementById('start');
let stopBtn = document.getElementById('stop');
let resetBtn = document.getElementById('reset');

let hour = 00;
let minute = 00;
let second = 00;
let count = 00;

startBtn.addEventListener('click', function () {
  timer = true;
  stopWatch();
});

stopBtn.addEventListener('click', function () {
  timer = false;
});

resetBtn.addEventListener('click', function () {
  timer = false;
  hour = 0;
  minute = 0;
  second = 0;
  count = 0;
  document.getElementById('hr').innerHTML = "00";
```

```
document.getElementById('min').innerHTML = "00";
document.getElementById('sec').innerHTML = "00";
document.getElementById('count').innerHTML = "00";
});

function stopWatch() {
    if (timer) {
        count++;

        if (count == 100) {
            second++;
            count = 0;
        }

        if (second == 60) {
            minute++;
            second = 0;
        }

        if (minute == 60) {
            hour++;
            minute = 0;
            second = 0;
        }

        let hrString = hour;
        let minString = minute;
        let secString = second;
        let countString = count;

        if (hour < 10) {
            hrString = "0" + hrString;
        }

        if (minute < 10) {
            minString = "0" + minString;
        }

        if (second < 10) {
            secString = "0" + secString;
        }

        if (count < 10) {
            countString = "0" + countString;
        }

        document.getElementById('hr').innerHTML = hrString;
        document.getElementById('min').innerHTML = minString;
        document.getElementById('sec').innerHTML = secString;
        document.getElementById('count').innerHTML = countString;
        setTimeout(stopWatch, 10);
    }
}
```

**OUTPUT SCREENSHOT:**

**Question (4). Validate the form given below using JavaScript. Also have floating logos in the forms.**

**SOURCE CODE:****HTML**

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <meta http-equiv="X-UA-Compatible"
    content="IE=edge">
  <meta name="viewport"
    content="width=device-width, initial-scale=1.0">
  <title>Floating Icons and Form Validation</title>
  <link rel="stylesheet" href="../styles/float.css">
</head>
<body>
  <div align="right">
    <a href="../index.htm"><button onmouseover="this.style.color='red'">GO
BACK TO INDEX</button></a>
  </div>
  <div style="align-items:center; background-color:lightgray;">
    <form action="">
      <fieldset>
        <legend>Contact Us</legend>
        <div class="card">
          <table>
            <tr>
              <td class="tright"><label for="firstName">First Name:
</label></td>
```



```

        <td><input class="input" type="text" name="username" id="firstName"
required placeholder="First Name"></td>
        </tr>
        <tr>
        <td class="tright"><label for="secondName">Last Name:
</label></td>
        <td><input class="input" type="text" name="username" id="secondName"
required placeholder="Last Name"></td>
        </tr>
        <tr>
        <td class="tright"><label for="email">Email ID:
</label></td>
        <td><input class="input" type="email" name="useremail" id="email"
required placeholder="Email"></td>
        </tr>
        <tr>
        <td class="tright"><label for="phone">Phone #:
</label></td>
        <td><input class="input" type="tel" name="userphone" id="phone"
required placeholder="Phone Number"></td>
        </tr>
        <tr>
        <td class="tright"><label for="address">Address:
</label></td>
        <td><textarea rows="1" class="input" name="useraddress" id="address"
required placeholder="Address"></textarea></td>
        </tr>
        <tr>
        <td class="tright"><label for="city">City:
</label></td>
        <td><input class="input" type="text" name="usercity" id="city"
required placeholder="City"></td>
        </tr>
        <tr>
        <td class="tright"><label for="state">State:
</label></td>
        <td>
        <select class="input" name="userstate" id="state"
required>
                <option value="andhrapradesh">ANDHRA
PRADESH</option>
                <option value="arunachalpradesh">ARUNACHAL
PRADESH</option>
                <option value="assam">ASSAM</option>
                <option value="bihar">BIHAR</option>
                <option
value="chattisgarh">CHATTISGARH</option>
                <option value="goa">GOA</option>

```

```

<option value="gujarat">GUJARAT</option>
<option value="haryana">HARYANA</option>
<option value="himachalpradesh">HIMACHAL
PRADESH</option>

<option value="jharkhand">JHARKHAND</option>
<option value="karnataka">KARNATAKA</option>
<option value="kerala">KERALA</option>
<option value="madhyapradesh">MADHYA
PRADESH</option>

<option
value="maharashtra">MAHARASHTRA</option>
<option value="manipur">MANIPUR</option>
<option value="meghalaya">MEGHALAYA</option>
<option value="mizoram">MIZORAM</option>
<option value="nagaland">NAGALAND</option>
<option value="odisha">ODISHA</option>
<option value="punjab">PUNJAB</option>
<option value="rajasthan">RAJASTHAN</option>
<option value="sikkim">SIKKIM</option>
<option value="tamilnadu">TAMIL NADU</option>
<option value="telangana">TELANGANA</option>
<option value="tripura">TRIPURA</option>
<option value="uttarpradesh">UTTAR
PRADESH</option>

<option
value="uttarakhand">UTTARAKHAND</option>
<option value="westbengal">WEST
BENGAL</option>

<option value="FIRST" selected>Please select
your State</option></select>
</td>
</tr>
<tr>
<td class="tright"><label for="zipCode">Zip Code:
</label></td>
<td><input class="input" type="number" maxlength=6 name="userzipcode"
id="zipCode" required placeholder="Zip Code"></td>
</tr>
<tr>
<td class="tright"><label for="domain">Website or
Domain Name: </label></td>
<td><input class="input" type="text" name="userdomain" id="domain"
required placeholder="Website or Domain name"></td>
</tr>
<tr>
<td class="tright"><label for="hosting">Do you have
hosting?: </label></td>
<td><input type="radio" name="userhost" id="yes"
value="YES"><label for="yes">YES</label><br>
<input type="radio" name="userhost" id="no"
value="NO"><label for="no">NO</label></td>
</tr>
</tr>

```

```

        <td class="tright"><label for="projDescrip">Project
Description: </label></td>
        <td><textarea class="input"
name="userproj" id="projDescrip" required placeholder="Project
Description"></textarea></td>
        </tr>
        <tr>
        <td></td>
        <td><input class="btn" type="submit"
value="Send"></td>
        </tr>
    </table>
</div>
</fieldset>
</form>
</div>
</body>
</html>
```

## CSS

```
table {
    margin-top: 2rem;
    margin-bottom: 2rem;
}

.tright {
    text-align: right;
}

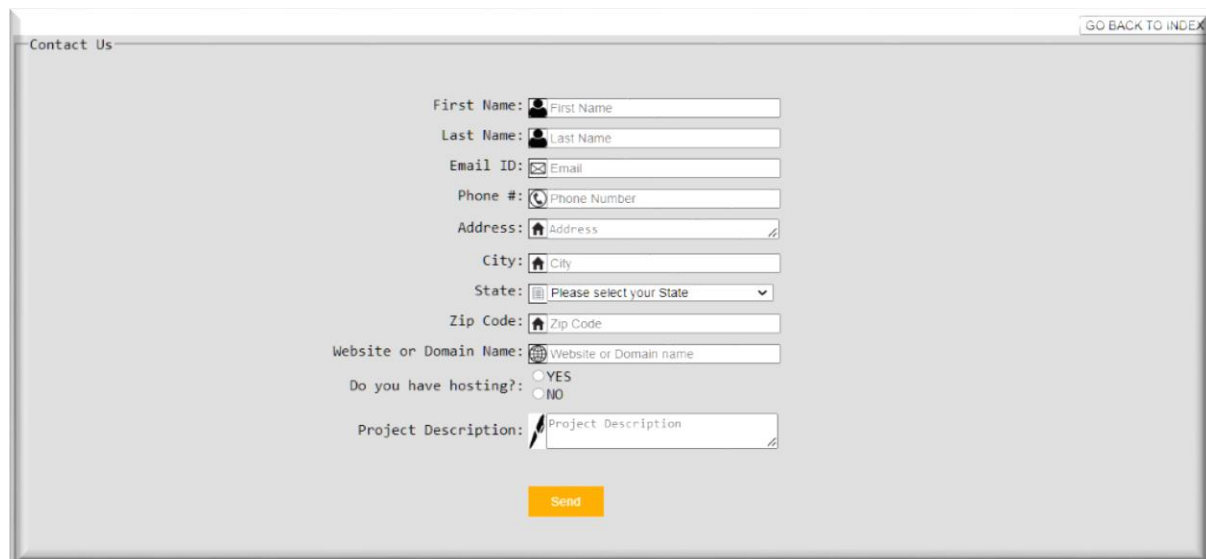
.card {
    margin-left: 20rem;
    margin-right: 20rem;
    align-items: center;
    justify-content: center;
}

.img {
    margin-top: 8px;
    border: 1px solid black;
    border-right: none;
    width: 20px;
    height: 20px;
}

.input {
    max-width: 15rem;
    width: 15rem;
    margin-top: 8px;
}
```

```
.btn {  
  width: 5rem;  
  height: 2rem;  
  margin-top: 2rem;  
  padding-top: 2px;  
  padding-left: 2px;  
  padding-right: 2px;  
  padding-bottom: 2px;  
  border: none;  
  text-decoration-color: white;  
  background-color: orange;  
  color: aliceblue;  
}  
  
.div {  
  max-width: 30%;  
  max-height: 20%;  
  align-items: center;  
  align-self: center;  
  color: cyan;  
  background-color: orange;  
}
```

### OUTPUT SCREENSHOT:



The screenshot shows a web browser window with a title bar that says "Contact Us" and a "GO BACK TO INDEX" button in the top right corner. The main content area is a light gray form with the following fields and controls:

- First Name:
- Last Name:
- Email ID:
- Phone #:
- Address:
- City:
- State:
- Zip Code:
- Website or Domain Name:
- Do you have hosting?: ☐ YES ☐ NO
- Project Description:
- Send: