

Bangalore Institute of Technology
Department of Computer Science and Engineering
Web Technology Laboratory (BCSL504)

Week 6

Lab program 6

6. Apply HTML, CSS and JavaScript to design a simple calculator to perform the following operations: sum, product, difference, remainder, quotient, power, square-root and square.

```
<!DOCTYPE html>

<head>
  <title>Simple Calculator</title>
  <style>
    body {
      font-family: 'Arial', sans-serif;
      display: flex;
      justify-content: center;
      align-items: center;
      height: 100vh;
      margin: 0;
    }

    .calculator {
      background: #fff;
      padding: 20px;
      border-radius: 12px;
      box-shadow: 0 4px 8px rgba(0, 0, 0, 0.2);
      width: 320px;
      text-align: center;
    }

    h1 {
      border-radius: 8px;
      background: #000;
      font-size: 24px;
      padding: 10px;
      color: #ffffff;
      margin-bottom: 30px;
    }

    input,
    select, button {
```

```
width: 100%;
margin: 10px 0;
padding: 12px;
border: 1px solid #0808081d;
border-radius: 8px;
font-size: 16px;
box-sizing: border-box;
transition: border-color 0.3s, box-shadow 0.3s;
}

#operation {
  cursor: pointer;
}

input:focus,
select:focus,
button:focus {
  outline: none;
  border-color: #007bff;
  box-shadow: 0 0 0 3px rgba(38, 143, 255, 0.25);
}

option {
  background-color: #fff;
  color: #000;
  padding: 10px;
  border: none;
}

option:hover {
  background-color: #f1f1f1;
}

button {
  background-color: #007bff;
  color: white;
  border: none;
  cursor: pointer;
  font-size: 18px;
  transition: box-shadow 0.3s, transform 0.3s;
}

button:hover {
  box-shadow: 0 0 0 2px #fff, 0 0 0 4px #007bff;
}
```

```
button:focus {
  box-shadow: 0 0 0 2px #fff, 0 0 0 4px #007bff;
}
```

```
#result.error {
  background: #ffdddd;
  border-color: #ff0000;
}
```

```
#result.success {
  font-size: 17px;
  font-weight: 500;
  color: #000;
  background: #6ef08d38;
  border-color: #47e56d;
}
```

```
#result {
  font-size: 18px;
  color: #000000;
  border-radius: 8px;
  background: #afffe2;
  border: 1px solid #ccc;
  box-shadow: 0 2px 4px rgba(0, 0, 0, 0.1);
  transition: opacity 0.5s, transform 0.5s;
  opacity: 0;
  transform: translateY(-20px);
}
```

```
#result.show {
  cursor: not-allowed;
  opacity: 1;
  margin-top: 20px;
  padding: 15px;
  transform: translateY(0);
}
```

```
</style>
</head>
```

```
<body>
  <div class="calculator">
    <h1>Simple Calculator</h1>
    <form id="calculator-form">
      <input type="number" id="num1" placeholder="Enter first number" required>
```

```
<input type="number" id="num2" placeholder="Enter second number" required>
<select id="operation" required>
  <option value="">Select Operation</option>
  <option value="sum">Sum</option>
  <option value="product">Product</option>
  <option value="difference">Difference</option>
  <option value="remainder">Remainder</option>
  <option value="quotient">Quotient</option>
  <option value="power">Power</option>
  <option value="sqrt">Square Root</option>
  <option value="square">Square</option>
</select>
<button type="button" onclick="calculate()">Calculate</button>
</form>
<div id="result"></div>
</div>
<script>
function calculate() {
  const num1 = parseFloat(document.getElementById('num1').value);
  const num2 = parseFloat(document.getElementById('num2').value);
  const operation = document.getElementById('operation').value;
  let result = ' ';
  let resultClass = 'success';

  if (isNaN(num1) || isNaN(num2)) {
    result = 'Please enter valid numbers.';
    resultClass = 'error';
  } else {
    switch (operation) {
      case 'sum':
        result = `Sum: ${num1 + num2}`;
        break;
      case 'product':
        result = `Product: ${num1 * num2}`;
        break;
      case 'difference':
        result = `Difference: ${num1 - num2}`;
        break;
      case 'remainder':
        result = `Remainder: ${num1 % num2}`;
        break;
      case 'quotient':
        if (num2 === 0) {
          result = 'Cannot divide by zero';
          resultClass = 'error';
        } else {
```

```
        result = `Quotient: ${num1 / num2}`;
    }
    break;
case 'power':
    result = `Power: ${Math.pow(num1, num2)}`;
    break;
case 'sqrt':
    if (num1 < 0 || num2 < 0) {
        result = 'Square root is not defined for negative numbers';
        resultClass = 'error';
    } else {
        result = `Square Root of ${num1}: ${Math.sqrt(num1)} <br> Square Root
        of ${num2}: ${Math.sqrt(num2)}`;
    }
    break;
case 'square':
    result = `Square of ${num1}: ${Math.pow(num1, 2)} <br> Square of
    ${num2}: ${Math.pow(num2, 2)}`;
    break;
default:
    result = 'Please select an operation.';
    resultClass = 'error';
}
}

const resultDiv = document.getElementById('result');
resultDiv.innerHTML = result;
resultDiv.classList.remove('show', 'error', 'success');
resultDiv.classList.add(resultClass, 'show');
}

</script>
</body>

</html>
```