

Program 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 | vtucode</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>