JavaScript Prime Number Checker Assignment

Objective

The purpose of this assignment is to develop a JavaScript program that:
1. Takes two numbers as input.
2. Compares the inputs to ensure they meet the required conditions.
3. Displays an error if the input is invalid.
4. Finds and displays prime numbers between the two valid inputs.

Content:

- HTML Structure
  - CSS Style
- JavaScript Logic

Complete Code:

HTML

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Prime Number Checker</title>
  <link rel="stylesheet" href="style.css"> <!-- Link to external CSS -->
</head>
<body>

  <h2>Prime Number Checker</h2>

  <label for="num1">Enter First Number:</label>
  <input type="number" id="num1">
  <br><br>

  <label for="num2">Enter Second Number:</label>
  <input type="number" id="num2">
  <br><br>

  <button onclick="findPrimes()">Check Primes</button>

  <div id="error"></div>
  <div id="result"></div>

  <script src="script.js"></script> <!-- Link to external JS -->
```

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

CSS

```
body {
  font-family: Arial, sans-serif;
  text-align: center;
  margin-top: 100px;
}

h2 {
  color: #333;
}

label {
  font-size: 18px;
}

input {
  width: 200px;
  padding: 10px;
  font-size: 16px;
}
```

```
button {
  padding: 10px 20px;
  font-size: 18px;
  background-color: #28a745;
  color: white;
  border: none;
  cursor: pointer;
}

button:hover {
  background-color: #218838;
}

#error {
  margin-top: 10px;
  color: red;
  font-size: 16px;
}

#result {
  margin-top: 20px;
```

```
  font-size: 20px;
}
```

JavaScript

```
// Function to check if a number is prime
function isPrime(num) {
  if (num < 2) return false;
  for (let i = 2; i <= Math.sqrt(num); i++) {
    if (num % i === 0) return false;
  }
  return true;
}

// Function to find prime numbers between two inputs
function findPrimes() {
  const num1 = parseInt(document.getElementById('num1').value);
  const num2 = parseInt(document.getElementById('num2').value);
  const errorDiv = document.getElementById('error');
  const resultDiv = document.getElementById('result');

  // Clear previous results
  errorDiv.innerHTML = '';
  resultDiv.innerHTML = '';
```

```
  // Check for errors
  if (isNaN(num1) || isNaN(num2)) {
    errorDiv.innerHTML = '<p>Please enter both numbers.</p>';
    return;
  }

  if (num1 >= num2) {
    errorDiv.innerHTML = '<p>First number should be smaller than second number.</p>';
    return;
  }

  // Find and display prime numbers between num1 and num2
  let primes = [];
  for (let i = num1 + 1; i < num2; i++) {
    if (isPrime(i)) {
      primes.push(i);
    }
  }

  if (primes.length > 0) {
```

```
    resultDiv.innerHTML = '<p>Prime numbers between ' + num1 + ' and ' + num2 + ': ' + primes.join(', ') + '</p>';
  } else {
    resultDiv.innerHTML = '<p>No prime numbers found between ' + num1 + ' and ' + num2 + '.</p>';
  }
}
```

Output: