

2. Design a Simple Interest Calculator and Compound Interest Calculator webpage using JavaScript function, operators. Use JavaScript to retrieve user input values from the input fields for initial investment, interest rate, and investment years. Update the HTML content dynamically with the calculated result, informing the user about the future value of their investment.

CODE:

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Interest Calculator</title>

  <style>

    body { font-family: Arial, sans-serif; padding: 20px; }

    .container { max-width: 400px; margin: auto; }

    input, button { margin: 10px 0; display: block; width: 100%; padding: 8px; }

    .result { font-weight: bold; margin-top: 10px; }

  </style>

</head>

<body>

  <div class="container">

    <h2>Simple & Compound Interest Calculator</h2>

    <input type="number" id="principal" placeholder="Initial Investment">

    <input type="number" id="rate" placeholder="Interest Rate (in %)">

    <input type="number" id="years" placeholder="Years">

    <button onclick="calculateInterest()">Calculate</button>

    <p class="result" id="interestResult"></p>

  </div>

  <script>

    function calculateInterest() {

      let p = parseFloat(document.getElementById('principal').value);

      let r = parseFloat(document.getElementById('rate').value) / 100;

      let t = parseFloat(document.getElementById('years').value);
```

```

let simpleInterest = p * r * t;

let compoundInterest = p * (Math.pow((1 + r), t) - 1);

document.getElementById('interestResult').innerText = `Simple Interest:
${simpleInterest.toFixed(2)}, Compound Interest: ${compoundInterest.toFixed(2)}`;

}

</script>
</body>
</html>

```

OUTPUT:

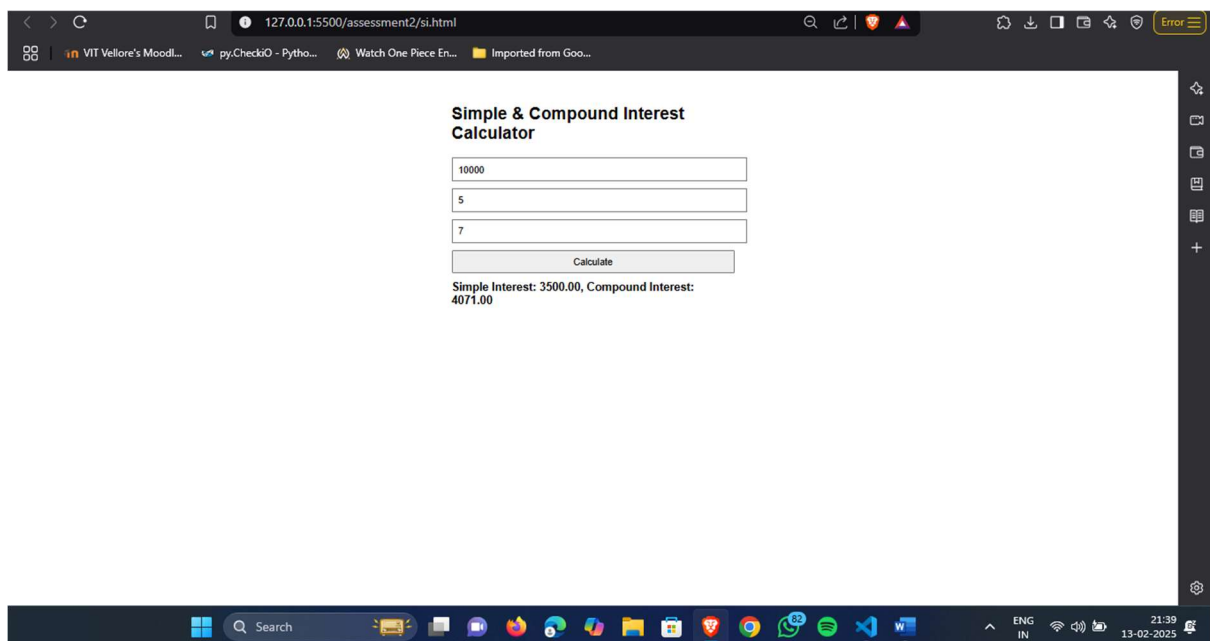
Simple & Compound Interest Calculator

Initial Investment
Interest Rate (in %)
Years
Calculate

Simple & Compound Interest Calculator

10000
5
7
Calculate

Simple Interest: 3500.00, Compound Interest: 4071.00



3. Design a webpage to accept a positive integer number as input. Write JavaScript to find the following using functions, switch case statement. a. Prime number or not b. Armstrong number or not c. Palindrome or not d. Print smallest even digit e. Print highest odd digit f. Strong number or not

CODE:

```
<!DOCTYPE html>

<html lang="en">

<head>

  <meta charset="UTF-8">

  <meta name="viewport" content="width=device-width, initial-scale=1.0">

  <title>Number Analyzer</title>

  <style>

    body { font-family: Arial, sans-serif; padding: 20px; }

    .container { max-width: 400px; margin: auto; }

    input, select, button { margin: 10px 0; display: block; width: 100%; padding: 8px; }

    .result { font-weight: bold; margin-top: 10px; }

  </style>

</head>

<body>

  <div class="container">

    <h2>Number Analyzer</h2>

    <input type="number" id="numberInput" placeholder="Enter a positive integer">

    <select id="operation">

      <option value="isPrime">Check Prime</option>

      <option value="isArmstrong">Check Armstrong</option>

      <option value="isPalindrome">Check Palindrome</option>

      <option value="smallestEvenDigit">Smallest Even Digit</option>

      <option value="highestOddDigit">Highest Odd Digit</option>

      <option value="isStrong">Check Strong Number</option>

    </select>

    <button onclick="analyzeNumber()">Analyze</button>

    <p class="result" id="result"></p>

  </div>
```

```

<script>
function analyzeNumber() {
    var num = parseInt(document.getElementById('numberInput').value);
    var operation = document.getElementById('operation').value;
    var resultText = '';

    switch(operation) {
        case 'isPrime':
            resultText = isPrime(num) ? num + ' is a prime number.' : num + ' is not a prime number.';
            break;
        case 'isArmstrong':
            resultText = isArmstrong(num) ? num + ' is an Armstrong number.' : num + ' is not an
Armstrong number.';
            break;
        case 'isPalindrome':
            resultText = isPalindrome(num) ? num + ' is a palindrome.' : num + ' is not a palindrome.';
            break;
        case 'smallestEvenDigit':
            var smallestEven = smallestEvenDigit(num);
            resultText = smallestEven !== null ? 'Smallest even digit is ' + smallestEven + '.' : 'No even
digits found.';
            break;
        case 'highestOddDigit':
            var highestOdd = highestOddDigit(num);
            resultText = highestOdd !== null ? 'Highest odd digit is ' + highestOdd + '.' : 'No odd digits
found.';
            break;
        case 'isStrong':
            resultText = isStrong(num) ? num + ' is a strong number.' : num + ' is not a strong
number.';
            break;
        default:
            resultText = 'Invalid operation selected.';
    }
    document.getElementById('result').innerText = resultText;
}

```

```
}
```

```
function isPrime(n) {  
  if (n <= 1) return false;  
  for (var i = 2; i <= Math.sqrt(n); i++) {  
    if (n % i === 0) return false;  
  }  
  return true;  
}
```

```
function isArmstrong(n) {  
  var sum = 0;  
  var temp = n;  
  var digits = n.toString().length;  
  while (temp > 0) {  
    var remainder = temp % 10;  
    sum += Math.pow(remainder, digits);  
    temp = Math.floor(temp / 10);  
  }  
  return sum === n;  
}  
  
function isPalindrome(n) {  
  var str = n.toString();  
  var reversedStr = str.split('').reverse().join('');  
  return str === reversedStr;  
}  
  
function smallestEvenDigit(n) {  
  var digits = n.toString().split('');  
  var evenDigits = digits.filter(function(digit) {  
    return parseInt(digit) % 2 === 0;  
  });  
  if (evenDigits.length === 0) return null;  
  return Math.min.apply(null, evenDigits.map(Number));  
}
```

```
function highestOddDigit(n) {  
    var digits = n.toString().split("");  
    var oddDigits = digits.filter(function(digit) {  
        return parseInt(digit) % 2 !== 0;  
    });  
    if (oddDigits.length === 0) return null;  
    return Math.max.apply(null, oddDigits.map(Number));  
}
```

```
function isStrong(n) {  
    var sum = 0;  
    var temp = n;  
    while (temp > 0) {  
        var remainder = temp % 10;  
        sum += factorial(remainder);  
        temp = Math.floor(temp / 10);  
    }  
    return sum === n; }
```

```
function factorial(x) {  
    if (x === 0 || x === 1) return 1;  
    var fact = 1;  
    for (var i = 2; i <= x; i++) {  
        fact *= i; }  
    return fact;  
}
```

</script>

</body>

</html>

OUTPUT:

Number Analyzer

6996

Check Palindrome



Check Prime

Check Armstrong

Check Palindrome

Smallest Even Digit

Highest Odd Digit

Check Strong Number

Number Analyzer

6996

Check Palindrome



Analyze

6996 is a palindrome.

Number Analyzer

6996

Check Armstrong



Analyze

6996 is not an Armstrong number.

Number Analyzer

204

Smallest Even Digit



Analyze

Smallest even digit is 0.

Number Analyzer

204

Highest Odd Digit



Analyze

No odd digits found.