

Name: Vinayak Kumar Singh

Register No: 23MCA1030

1. JS function to find simple interest

```
<!DOCTYPE html>
<html>
<head>
  <title>Calculator</title>
</head>
<body>
  <h1>Simple Interest Calculator</h1>
  <b>Name:</b> Vinayak Kumar Singh
  <br><br>
  <b>Register No:</b> 23MCA1030
  <br><br>

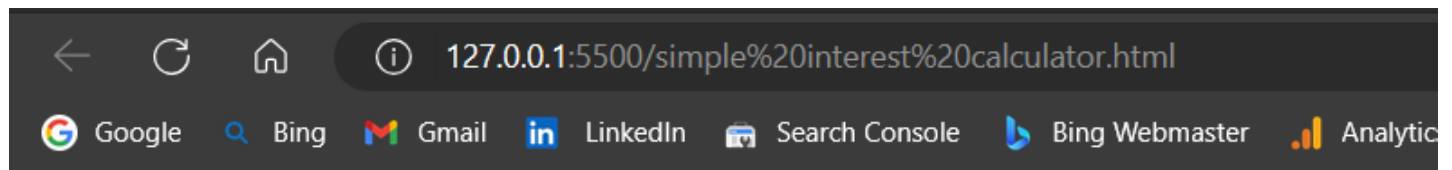
  <form id="interestForm">
    <label for="principal">Principal Amount in ₹ </label>
    <input type="number" id="principal" required>
    <br><br>
    <label for="rate">Rate of Interest in % </label>
    <input type="number" id="rate" required>
    <br><br>
    <label for="time">Time Period in years </label>
    <input type="number" id="time" required>
    <br><br>
    <button type="button"
onclick="calculateInterest()">Calculate</button>
  </form>

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

  <script>
    function calculateInterest() {
      var principal =
parseFloat(document.getElementById("principal").value);
      var rate =
parseFloat(document.getElementById("rate").value);
```

```
        var time =  
parseFloat(document.getElementById("time").value);  
        var simpleInterest = (principal * rate * time) / 100;  
        document.getElementById("result").innerHTML = "Simple  
Interest in ₹ " + simpleInterest;  
    }  
</script>  
</body>  
</html>
```

Output:



Simple Interest Calculator

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Principal Amount in ₹

Rate of Interest in %

Time Period in years

Simple Interest in ₹ 100

2. JS function to if the given number is Armstrong

```
<!DOCTYPE html>
<html>
<head>
  <title>Armstrong</title>
</head>
<body>
  <h1>Armstrong Number Checker</h1>
  <b>Name:</b> Vinayak Kumar Singh
  <br><br>
  <b>Register No:</b> 23MCA1030
  <br><br>
  <label for="number">Enter a number:</label>
  <input type="number" id="number">
  <button onclick="Armstrongcheck()">Check</button>
  <p id="result"></p>

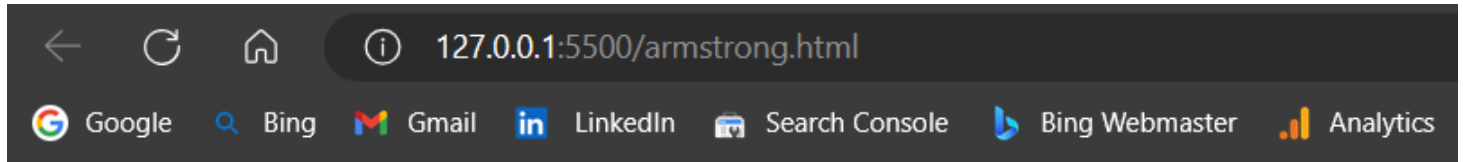
  <script>
    function Armstrongcheck() {
      var number =
parseInt(document.getElementById("number").value);
      var originalNumber = number;
      var numDigits = number.toString().length;
      var sum = 0;

      while (number > 0) {
        var digit = number % 10;
        sum += Math.pow(digit, numDigits);
        number = Math.floor(number / 10);
      }

      if (sum === originalNumber) {
        document.getElementById("result").innerHTML =
originalNumber + " is an Armstrong number.";
      } else {
        document.getElementById("result").innerHTML =
originalNumber + " is not an Armstrong number.";
      }
    }
  </script>
</body>
</html>
```

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

Output:



Armstrong Number Checker

Name: Vinayak Kumar Singh

Register No: 23MCA1030

Enter a number:

153 is an Armstrong number.

3. JS function to find if the given number is Krishnamoorthy no

```
<!DOCTYPE html>
<html>
<head>
  <title>Krishnamoorthy</title>
</head>
<body>
  <h1>Krishnamoorthy Number Checker</h1>
  <b>Name:</b> Vinayak Kumar Singh
  <br><br>
  <b>Register No:</b> 23MCA1030
  <br><br>
  <label for="number">Enter a number:</label>
  <input type="number" id="number">
  <button onclick="Krishnamoorthychecker()">Check</button>
  <p id="result"></p>

  <script>
    function factorial(n) {
      if (n === 0 || n === 1) {
        return 1;
      } else {
        return n * factorial(n - 1);
      }
    }

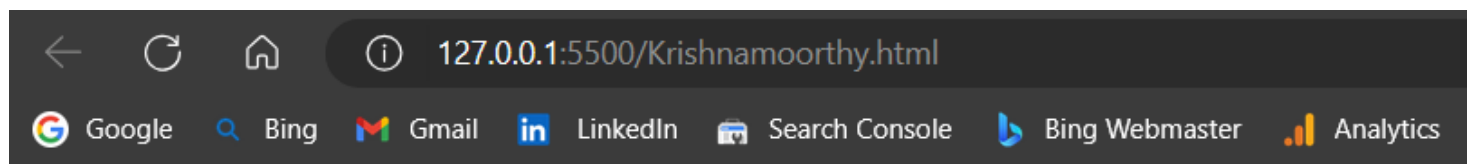
    function Krishnamoorthychecker() {
      var number =
parseInt(document.getElementById("number").value);
      var originalNumber = number;
      var sum = 0;

      while (number > 0) {
        var digit = number % 10;
        sum += factorial(digit);
        number = Math.floor(number / 10);
      }

      if (sum === originalNumber) {
```

```
        document.getElementById("result").innerHTML =  
originalNumber + " is a Krishnamoorthy number.";  
    } else {  
        document.getElementById("result").innerHTML =  
originalNumber + " is not a Krishnamoorthy number.";  
    }  
}  
</script>  
</body>  
</html>
```

Output:



Krishnamoorthy Number Checker

Name: Vinayak Kumar Singh

Register No: 23MCA1030

Enter a number:

145 is a Krishnamoorthy number.

4. JS program to guess the given number

```
<!DOCTYPE html>
<html>
<head>
  <title>Number Guessing Game</title>
</head>
<body>
  <h1>Number Guessing Game</h1>
  <b>Name:</b> Vinayak Kumar Singh
  <br><br>
  <b>Register No:</b> 23MCA1030
  <br><br>
  <p>Guess a number between 1 and 10:</p>
  <input type="number" id="userGuess">
  <button onclick="checkGuess()">Check</button>
  <button onclick="resetGame()">Reset</button>
  <p id="result"></p>

  <script>
    var maxNumber = 10;
    var randomNumber = generateRandomNumber();

    function generateRandomNumber() {
      return Math.floor(Math.random() * maxNumber) + 1;
    }

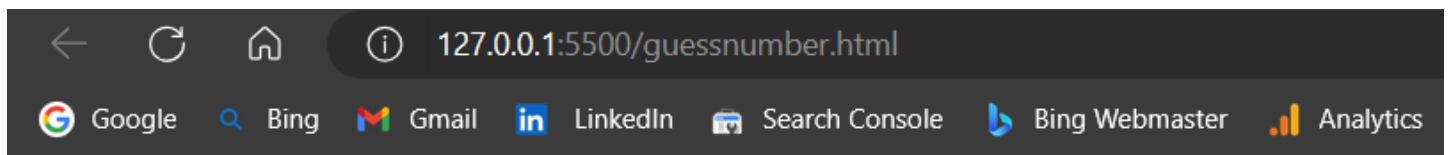
    function checkGuess() {
      var userGuess =
parseInt(document.getElementById("userGuess").value);

      if (userGuess < randomNumber) {
        document.getElementById("result").innerHTML = "Your
guess is less";
      } else if (userGuess > randomNumber) {
        document.getElementById("result").innerHTML = "Your
guess is high";
      } else {
        document.getElementById("result").innerHTML =
"Congratulations! You guessed the correct number: " + randomNumber;
```

```
        randomNumber = generateRandomNumber();
    }
}

function resetGame() {
    randomNumber = generateRandomNumber();
    document.getElementById("userGuess").value = "";
    document.getElementById("result").innerHTML = "";
}
</script>
</body>
</html>
```

Output:



Number Guessing Game

Name: Vinayak Kumar Singh

Register No: 23MCA1030

Guess a number between 1 and 10:

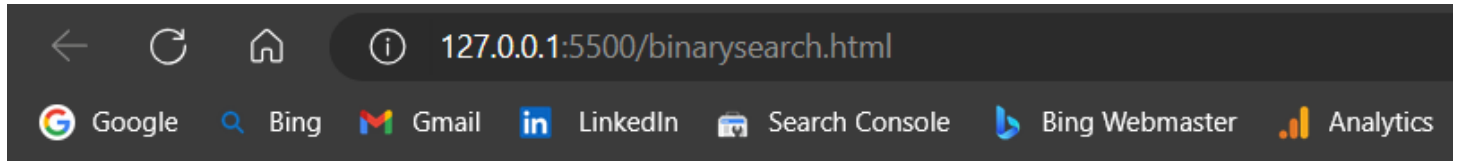
Congratulations! You guessed the correct number: 7

5. JS function to perform binary search

```
<!DOCTYPE html>
<html>
<head>
  <title>Binary Search</title>
</head>
<body>
  <h1>Binary Search</h1>
  <b>Name:</b> Vinayak Kumar Singh
  <br><br>
  <b>Register No:</b> 23MCA1030
  <br>
  <p> <b>Predefined array : </b> [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]</p>
  <p>Enter the target value:</p>
  <input type="number" id="targetValue">
  <button onclick="CallBinarySearch()">Search</button>
  <p id="result"></p>
  <script>
    var predefinedArray = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10];
    function CallBinarySearch() {
      var targetValue =
parseInt(document.getElementById("targetValue").value);
      var left = 0;
      var right = predefinedArray.length - 1;
      while (left <= right) {
        var mid = Math.floor((left + right) / 2);
        if (predefinedArray[mid] === targetValue) {
          document.getElementById("result").innerHTML = "Found
at index " + mid;
          return;
        } else if (predefinedArray[mid] < targetValue) {
          left = mid + 1;
        } else {
          right = mid - 1;
        }
      }
      document.getElementById("result").innerHTML = "Not found in
the array.";
    }
  </script>
</body>
</html>
```

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

Output:



Binary Search

Name: Vinayak Kumar Singh

Register No: 23MCA1030

Predefined array : [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]

Enter the target value:

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