

Q1 Using for loops, write a Javascript program to output the following pattern -

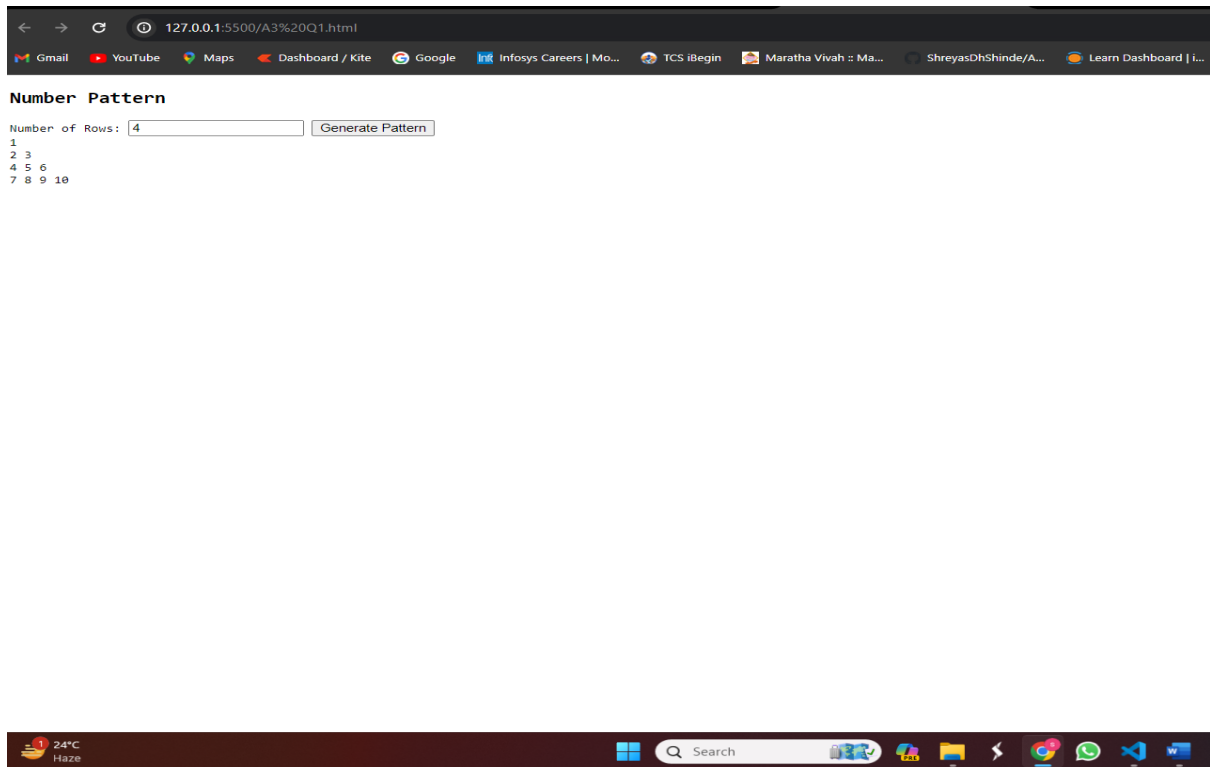
```
1
2 3
4 5 6
7 8 9 10
```

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Number Pattern</title>
  <style>
    body {
      font-family: monospace;
    }
  </style>
  <script>
    function generatePattern(rows) {
      let count = 1;
      let result = "";

      for (let i = 1; i <= rows; i++) {
        for (let j = 1; j <= i; j++) {
          result += count + " ";
          count++;
        }
        result += "<br>";
      }

      document.getElementById("output").innerHTML = result;
    }
  </script>
</head>
<body>
  <h2>Number Pattern</h2>
  <label for="rows">Number of Rows:</label>
  <input type="number" id="rows" name="rows" value="4">
  <button
onclick="generatePattern(Number(document.getElementById('rows').value))">Gener
ate Pattern</button>
  <div id="output"></div>
</body>
</html>
```

Output



Q2. Write a program to find whether a given number is armstrong number or not-

The Armstrong number is a number that is equal to the sum of cubes of its digits.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Armstrong Number Checker</title>
  <script>
    function isArmstrongNumber(number) {
      // Convert the number to a string to iterate through its digits
      const numString = number.toString();
      const numDigits = numString.length;

      let sum = 0;
      for (let i = 0; i < numDigits; i++) {
        const digit = parseInt(numString[i], 10);
        sum += Math.pow(digit, numDigits);
      }

      return sum === number;
    }

    function checkArmstrongNumber() {
      const inputNumber = document.getElementById("number").value;
      const resultContainer = document.getElementById("result");

      if (!isNaN(inputNumber) && inputNumber > 0) {
        const number = parseInt(inputNumber, 10);

        if (isArmstrongNumber(number)) {
          resultContainer.innerHTML = `${number} is an Armstrong number.`;
        } else {
          resultContainer.innerHTML = `${number} is not an Armstrong number.`;
        }
      } else {
        resultContainer.innerHTML = "Please enter a valid positive number.";
      }
    }
  </script>
</head>
<body>
  <h2>Armstrong Number Checker</h2>
  <label for="number">Enter a number:</label>
  <input type="text" id="number" name="number">
  <button onclick="checkArmstrongNumber()">Check Armstrong Number</button>
  <div id="result"></div>
</body>
</html>
```

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

Output

Armstrong Number Checker

Enter a number:

153 is an Armstrong number.

Armstrong Number Checker

Enter a number:

453 is not an Armstrong number.

Q 3. Write a program to find whether a given number is special number or not

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Special Number Checker</title>
</head>
<body>

  <h2>Special Number Checker</h2>

  <label for="numberInput">Enter a number: </label>
  <input type="number" id="numberInput">
  <button onclick="checkSpecialNumber()">Check</button>

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

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

    function checkSpecialNumber() {
      const numberInput = document.getElementById('numberInput').value;
      const num = parseInt(numberInput);

      if (isNaN(num) || num < 0 || num % 1 !== 0) {
        document.getElementById('result').innerHTML = 'Please enter a
valid positive integer.';
        return;
      }

      let sum = 0;
      let temp = num;

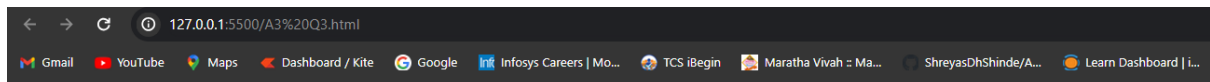
      while (temp > 0) {
        const digit = temp % 10;
        sum += factorial(digit);
        temp = Math.floor(temp / 10);
      }

      if (sum === num) {
```

```
        document.getElementById('result').innerHTML = `${num} is a
special number.`;
    } else {
        document.getElementById('result').innerHTML = `${num} is not a
special number.`;
    }
}
</script>

</body>
</html>
```

Output

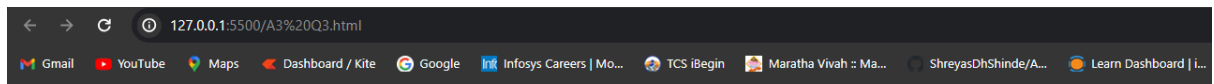


Special Number Checker

Enter a number:

145 is a special number.





Special Number Checker

Enter a number:

144 is not a special number.

