Collatz Sequence Analyzer

🎯 Objective

Use loop logic to generate and analyze the Collatz sequence (a.k.a. "3n + 1" sequence) for any positive integer.

📂 Starter Files

```html
<!DOCTYPE html>
<html lang="en">
  <head>
    <meta charset="UTF-8" />
    <title>Collatz Sequence Analyzer</title>
  </head>
  <body>
    <h1>Collatz Sequence Analyzer</h1>
    <script>
      // your code here
    </script>
  </body>
</html>
```

☑ Your Task

- Prompt the user for a **positive integer** n.

- Using a **while** loop, repeatedly transform n:

    - If n is even → `n = n / 2`
    - If n is odd → `n = 3 * n + 1`

- Log each value of n to the console until it reaches 1.

- Count the number of steps taken and log

    ```js
    console.log(`Reached 1 in ${steps} steps.`);
    ```

- **Bonus:** If it hasn't reached 1 after 500 iterations, break the loop and log