

Conditional Statements and Looping in JavaScript

Module 7 - Introduction to Do While Loop in JavaScript

 CBSE

Loops in JavaScript are used to execute a block of code repeatedly as long as a specified condition is true. They are essential for performing repetitive tasks like iterating over arrays, processing data, or automating sequences.

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The do-while loop is similar to while loop except it executes the code block at least once before checking the condition.

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Just like the while loop, the do...while loop lets you iterate the code block as long as the specified condition is true. In the do-while loop, the condition is checked after executing the loop. So, even if the condition is true or false, the code block will be executed for at least one time.

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Syntax of the Do...While loop

```
do
{
    // code statements
}
while(condition)
```

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Solved Example: Display Numbers from 20 to 40 Using a Do...While Loop

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Ques: Create an HTML document with a JavaScript program that performs the following actions:

- Sets the background color of the webpage to light yellow (#f0e68c).
- Uses a do...while loop to display numbers from 20 to 40 on the webpage.
- Each number should be displayed on a new line.

**Requirements:**

- Initialize the starting number to 20.
- Use a do...while loop to display the numbers.
- Increment the number inside the loop.
- Ensure the loop stops when the number exceeds 40.

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Solution:

```
<!DOCTYPE html>
<html>
```

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```
<head>
  <title>Do While Loop Example</title>
</head>
<body bgcolor="#f0e68c">
  <script>
    let num = 20; // Initialize the starting number

    // Use do...while loop to display numbers from 20 to 40
    do {
      document.write("Number: " + num + "<br>");
      num++; // Increment the number
    } while (num <= 40); // Condition to stop when the number exceeds 40
  </script>
</body>
</html>
```

OUTPUT:

```
Number: 20
Number: 21
Number: 22
Number: 23
Number: 24
Number: 25
Number: 26
Number: 27
Number: 28
Number: 29
Number: 30
Number: 31
Number: 32
Number: 33
Number: 34
Number: 35
Number: 36
Number: 37
Number: 38
Number: 39
Number: 40
```

Output of  
Do --- While  
Loop

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**Difference Between For, While, and Do While Loops in JavaScript**

Aspect	For Loop	While Loop	Do While Loop
<b>Purpose</b>	Used when the number of iterations is known beforehand.	Used when the number of iterations is not known, and the condition is checked before execution.	Used when the condition must be checked after executing the loop at least once.
<b>Condition Check</b>	The condition is checked before the loop starts.	The condition is checked before the loop starts.	The condition is checked after the loop executes.
<b>Initialization</b>	Initialization is part of the loop structure (e.g., for(let i = 0; ...)).	Initialization must occur outside the loop.	Initialization must occur outside the loop.
<b>Execution Guarantee</b>	Executes only if the condition is true.	Executes only if the condition is true.	Executes at least once, even if the condition is false initially.
<b>Structure</b>	Compact and ideal for counter-based iterations.	Simple and straightforward for indefinite looping.	Best suited for situations where at least one execution is required.

**Assignment**

Ques 1: Prompt User to Enter a Number Greater Than 10 Using a Do...While Loop  
Create an HTML document with JavaScript that performs the following actions:

- Prompts the user repeatedly to enter a number greater than 10.
- Uses a do...while loop to ensure the user is prompted at least once, even if the input is invalid initially.
- Exits the loop only when the user enters a number greater than 10.
- Logs the entered number to the console once it meets the condition.

Expected Behavior:

- The program will continuously ask the user to enter a number greater than 10 if the condition is not met.
- Once the user enters a valid number, the loop will stop, and the number will be displayed in the console.

Ques 2: Display Multiples of a Number  
Problem Statement:

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Write a JavaScript program that:

- Prompts the user to enter a number.
- Uses a do while loop to display the first 10 multiples of the entered number.
- Example: If the user enters 3, the output should be 3, 6, 9, 12, ..., 30.

Ques 3: Guess the Secret Number

Problem Statement:

Write a JavaScript program that:

- Sets a secret number (e.g., 42).
- Continuously prompts the user to guess the number using a do while loop.
- Ends the loop only when the user guesses the correct number.
- Displays a congratulatory message upon a correct guess.

Ques 4: Sum of Positive Numbers

Problem Statement:

Write a JavaScript program that:

- Continuously prompts the user to enter positive numbers using a do while loop.
- Stops taking inputs when the user enters a negative number or 0.
- Calculates and displays the sum of all positive numbers entered.
- Example: If the user enters 5, 10, -1, the output should be Sum: 15.



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