

JavaScript do while Loop

(Guaranteed Execution Loop Model)

Subtitle: Understand how do...while ensures at least one execution before condition checking and how it behaves differently from other loops.

Website Name: haas.dev

Website Link: <https://dev-roast-app.vercel.app>

Introduction

Most loops in JavaScript first check a condition, then decide whether to run.

But there is a special case:

A loop that runs first, and checks condition later.

This is the **do...while loop**.

It exists for one critical reason:

When you must execute code at least once, no matter what.

Step 1: What is do...while Loop?

A do...while loop executes:

- code block first
- condition check later

Syntax:

```
do {  
  
  // code runs first  
  
} while (condition);
```

Step 2: Execution Flow (Core Mental Model)

1. Run code
2. Check condition

3. If true → repeat

4. If false → stop

Step 3: Simple Example

```
let i = 1;
```

```
do {  
  console.log(i);  
  i++;  
} while (i <= 5);
```

Output:

```
1  
2  
3  
4  
5
```

Step 4: Key Difference vs while Loop

while loop:

```
while (false) {  
  console.log("Runs?");  
}
```

✗ Runs 0 times

do...while loop:

```
do {  
  console.log("Runs at least once");  
} while (false);
```

✓ Runs 1 time

Core Rule:

Loop Type	Condition Check
while	before execution
do...while	after execution

Step 5: Real-World Use Cases

1. Login Attempt System

```
let attempts = 0;

do {
  console.log("Try login...");
  attempts++;
} while (attempts < 3);
```

2. Menu Systems

```
let choice;

do {
  console.log("1. Start");
  console.log("2. Exit");
  choice = 2;
} while (choice !== 2);
```

3. Retry Systems (APIs / Requests)

- try request

- if fail → retry
- always runs at least once

Step 6: Why do...while Exists

It solves this problem:

“I want to run this code first, then decide whether to continue.”

Used in:

- input validation
- menus
- retry logic
- initialization flows

Step 7: Common Mistakes

1. Forgetting condition update

```
let i = 1;
```

```
do {
```

```
  console.log(i);
```

```
} while (i < 5);
```

 Infinite loop risk

2. Thinking it behaves like while

It does NOT check first.

3. Overusing do...while

Not needed for simple loops

Step 8: Mini Exercises

Exercise 1

Print numbers 1 to 10 using do...while.

Exercise 2

Simulate password retry system.

Exercise 3

Create menu loop that runs until exit condition.

Step 9: Mini Quiz

1. When is condition checked in do...while?
2. How is it different from while loop?
3. Why does it run at least once?
4. Where is it used in real systems?

Step 10: Thinking Upgrade

If you understand do...while:

- you understand execution timing control
- you can design retry systems
- you can handle real-world input flows

👉 This is the first step toward system-level loop thinking.

Step 11: Summary

- do...while runs code first, checks later
- guarantees at least one execution
- used in menus, retries, validation flows
- different from while loop logic
- useful in real interactive systems