

## Understanding for and while Loops in Simple Terms

Both for and while loops **repeat code** multiple times. The main difference is **how they are structured**.

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### 1□ for Loop - All in One Place

A for loop **packs everything into one line**:

- ✓ **Start counting**
- ✓ **Check if we should continue**
- ✓ **Increase the counter**

*Example:*

```
for (var i = 0; i <= 3; i++) {  
  alert(i);  
}
```

#### ⚡ How It Works:

1. `var i = 0;` → Start at 0.
2. `i <= 3;` → Keep looping while i is **less than or equal to 3**.
3. `i++` → Increase i by 1 each time.

#### ⚡ What It Does: It alerts:

0 → 1 → 2 → 3

(Then it stops because i is no longer `<= 3`.)

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### 2□ while Loop - Step by Step

A while loop **splits the logic** into different parts.

*Example (Same as Above, But Using while):*

```
var i = 0; // Start at 0  
while (i <= 3) { // Keep looping while i is <= 3  
  alert(i);  
  i++; // Increase i by 1  
}
```

#### ⚡ How It Works:

1. `var i = 0;` → Declare i before the loop.
2. `while (i <= 3)` → Keep looping **until i is greater than 3**.
3. Inside the loop, `alert(i);` shows the number.
4. `i++` increases the counter.

#### ⚡ What It Does:

Alerts the **same numbers** as the for loop:

0 → 1 → 2 → 3

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## When to Use Each Loop

- ✓ Use for **when you know exactly how many times** you want to loop.
- ✓ Use while **when you don't know how many times** the loop should run (e.g., waiting for user input).