

**Question 1: Explain the different types of loops in JavaScript (for, while, do-while). Provide a basic example of each.**

Loops are used when we want to **repeat a task multiple times**.

JavaScript has **3 main loops**:

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### **1)For Loop**

Used when we know **how many times** we want to repeat something.

**Syntax:**

```
for (start; condition; change) {  
    // code  
}
```

**New Simple Example:**

```
for (let i = 1; i <= 5; i++) {  
    console.log("Hello", i);  
}
```

### **2)While Loop**

Used when we **don't know** how many times the loop will run.  
It runs **as long as the condition is true**.

**New Example:**

```
let x = 1;  
  
while (x <= 3) {  
    console.log("Number:", x);  
    x++;  
}
```

### 3)Do-While Loop

- Runs **at least once**, even if the condition is false.
- Condition is checked **after** running the code.

#### New Example:

let y = 5;

```
do {  
  console.log("Value is:", y);  
  y++;  
} while (y < 5);
```

✓ This prints once even though the condition is false.

**Question 2: What is the difference between a while loop and a do-while loop?**

#### While Loop

- Condition is checked **first**
- If condition is false → loop **does NOT run**

Example:

```
while (false) {  
  console.log("Will never run");  
}
```

#### Do-While Loop

- Runs the code **first time**, even if condition is false
- Condition is checked **after** running

Example:

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