

# Live Cohort

## Notes Day 22



# JavaScript Notes: Loops & Arrays

## Loops in JavaScript

Loops allow us to execute a block of code multiple times based on a condition. JavaScript supports different types of loops, such as for, while, and for...of

### 1 . Printing Numbers in Reverse (for loop)

Problem: Write a for loop to print numbers from 10 to 1 in reverse.

Solution:

```
for (let i = 10; i >= 1; i--) {  
  console.log(i);  
}
```

Explanation:

- The loop starts with  $i = 10$ .
- The condition  $i \geq 1$  ensures the loop continues until  $i$  reaches 1.
- $i--$  decreases the value of  $i$  by 1 in each iteration.

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## Loops in JavaScript

### 2 . Multiples of 3 (while loop)

Problem: Use a while loop to print multiples of 3 from 3 to 30.

Solution:

```
let num = 3;
while (num <= 30) {
  console.log(num);
  num += 3;
}
```

Explanation:

- The while loop runs as long as num is  $\leq 30$ .
- num starts at 3 and increases by 3 each time, ensuring only multiples of 3 are printed.

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## Loops in JavaScript

### 3. Sum of Numbers from 1 to 100

Problem: Write a program to calculate the sum of numbers from 1 to 100 using a loop.

Solution:

```
let sum = 0;
for (let i = 1; i <= 100; i++) {
    sum += i;
}
console.log("Sum:", sum); // Output: 5050
```

Explanation:

- The loop runs from 1 to 100.
- In each iteration, the current value of *i* is added to *sum*.
- The final sum is 5050.

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## Loops in JavaScript

### 4 . Star Pattern (Nested Loops)

Problem: Create a nested loop to print a star pattern.

Solution:

```
for (let i = 1; i <= 5; i++) {  
  let stars = "";  
  for (let j = 1; j <= i; j++) {  
    stars += "*";  
  }  
  console.log(stars);  
}
```

Output:

```
*  
**  
***  
****  
*****
```

Explanation:

- The outer loop controls the number of rows (1 to 5).
- The inner loop adds \* for each row.

# JavaScript Notes: Loops & Arrays

## Loops in JavaScript

### 5 . Iterating Over a String (for...of loop)

Problem: Use a for...of loop to iterate over the string "JavaScript".

Solution:

```
let str = "JavaScript";  
for (let char of str) {  
    console.log(char);  
}
```

Explanation:

- The for...of loop iterates over each character in the string and prints it.