



# NASL INNOVATION STUDIO

# COMPLETE JAVASCRIPT COURSE

JS



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# Cover Topics



Trainer's: M. Hudair  
Hussain Yousuf Sunain



**Starter**

- How Website Works?
- What is JavaScript
- History of JavaScript
- Values & Variables
- Data Types in JavaScript
- Concat & Type Coercion
- If Statement & Loops
- Function in JavaScript
- Arrays in JavaScript
- Strings in JavaScript
- Math Object
- Date & Time in JavaScript



**Advance**

- ECMAScript 2015 – 2024
- Windows Object BOM vs DOM
- Event Objects in JavaScript
- LocalStorage in JavaScript
- Timing Based Events
- Objects in JavaScript
- Event Propagation
- Advance Functions
- JSON & FETCH API & other APIs
- Promises, Async & Await
- Error Handling



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**Master**

- How JavaScript [Works](#)?
- Interview Questions
- Tips & Tricks
- Project with HTML, CSS & JavaScript



# **How can you get the best learning experience from this JavaScript course?**

**code Alone:** Get your hands dirty and practice coding yourself.

**Problem-Solving Practice:** Attempt **Coding challenges independently** before watching the **solution**.

**Break It to Understand It:** Messing up **code provides valuable lessons** you won't get from just looking at it.

**Think Back and Practice:** Look back on what you've learned and practice it again. **After 2 – 3 days.**

**Set Targets:** Define your final goal clearly, then achieve it steadily by taking consistent, manageable steps without rushing the process.



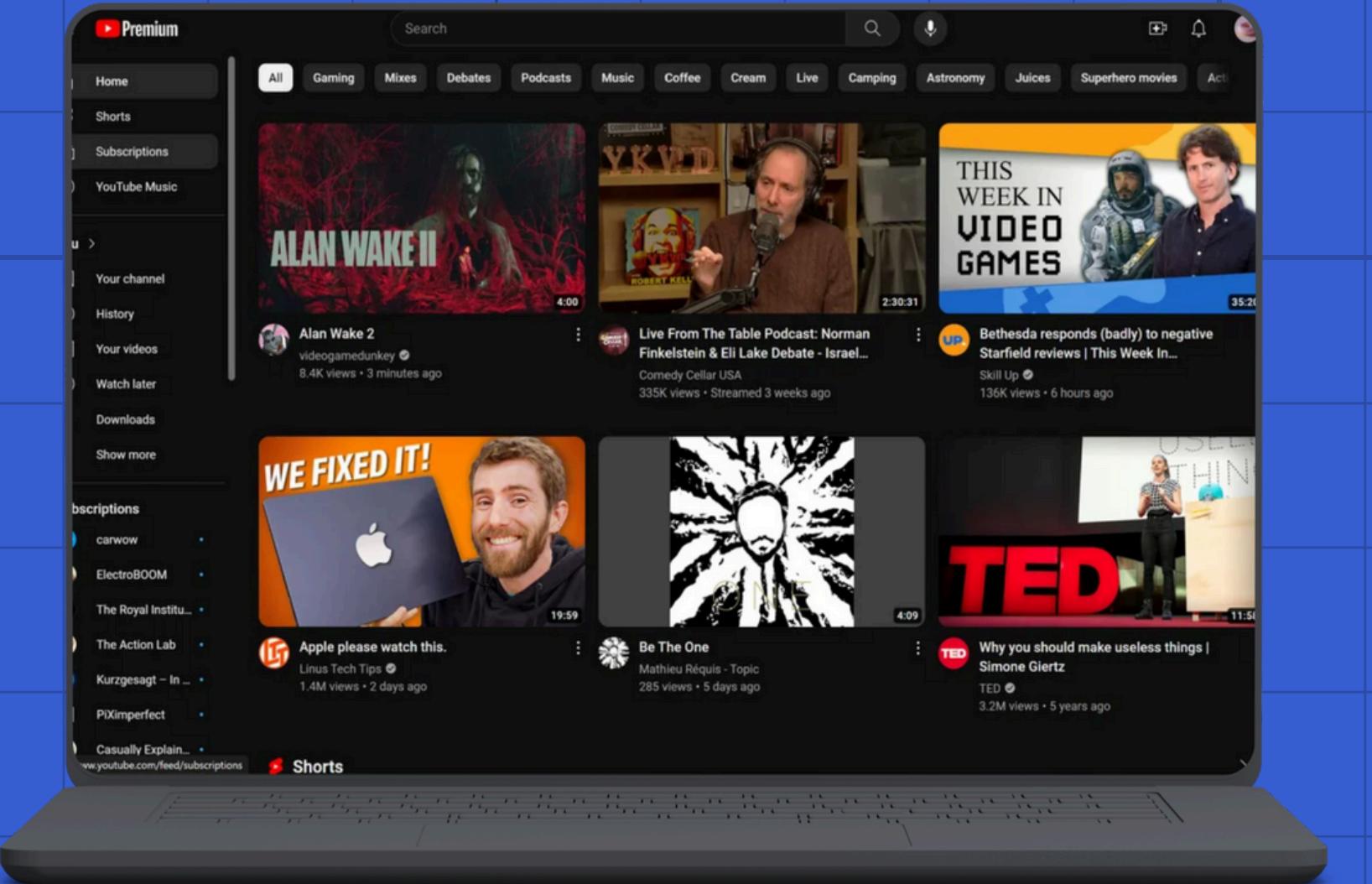
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# 01

# How Website Works?

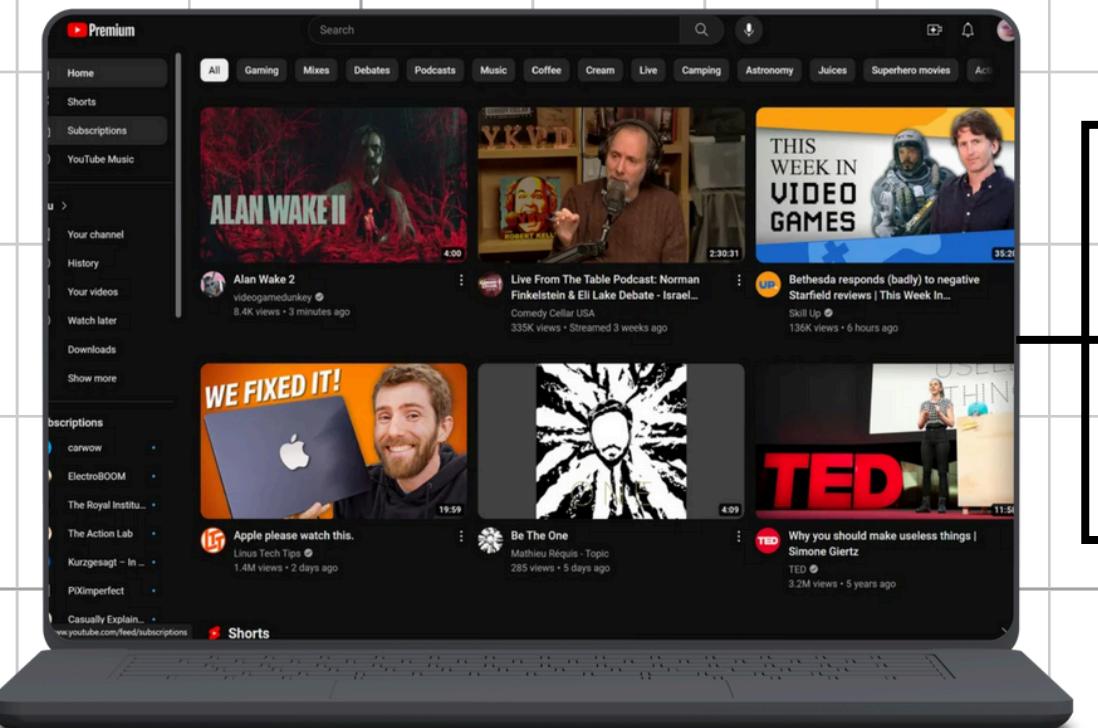
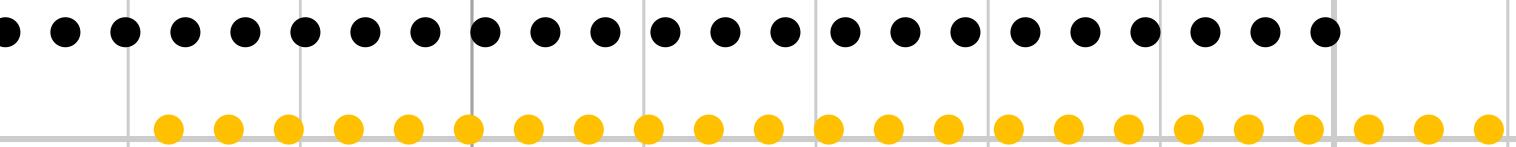


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# CLIENT VS SERVER



HTML

CSS

JavaScript

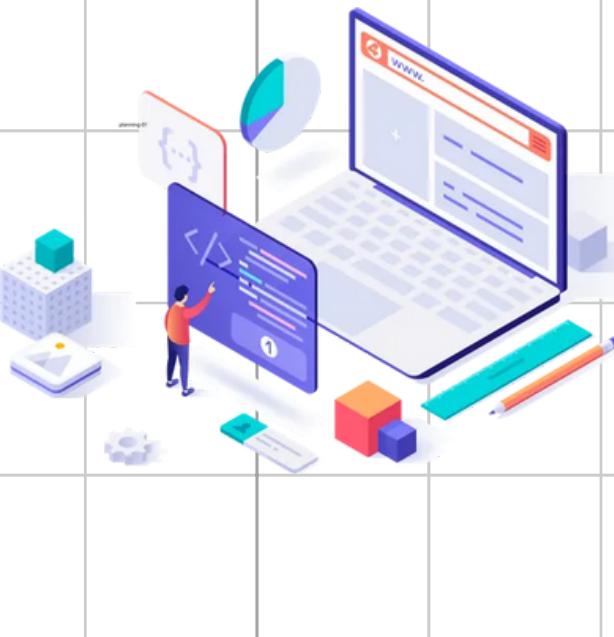


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# BUILDING BLOCKS OF WEBSITE



## HTML

Provide the structure and content of a webpage.



## CSS

Styles and design the appearance of the webpage



## JS

Adds interactivity and dynamic behavior the webpage



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# REAL LIVE EXAMPLE



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# What is JavaScript?

**JavaScript takes a static web page and converts it into a dynamic, interactive experience, significantly improving user engagement.**

OR

**By manipulating HTML and CSS, JavaScript adds dynamic behavior, moving web pages far beyond static design.**



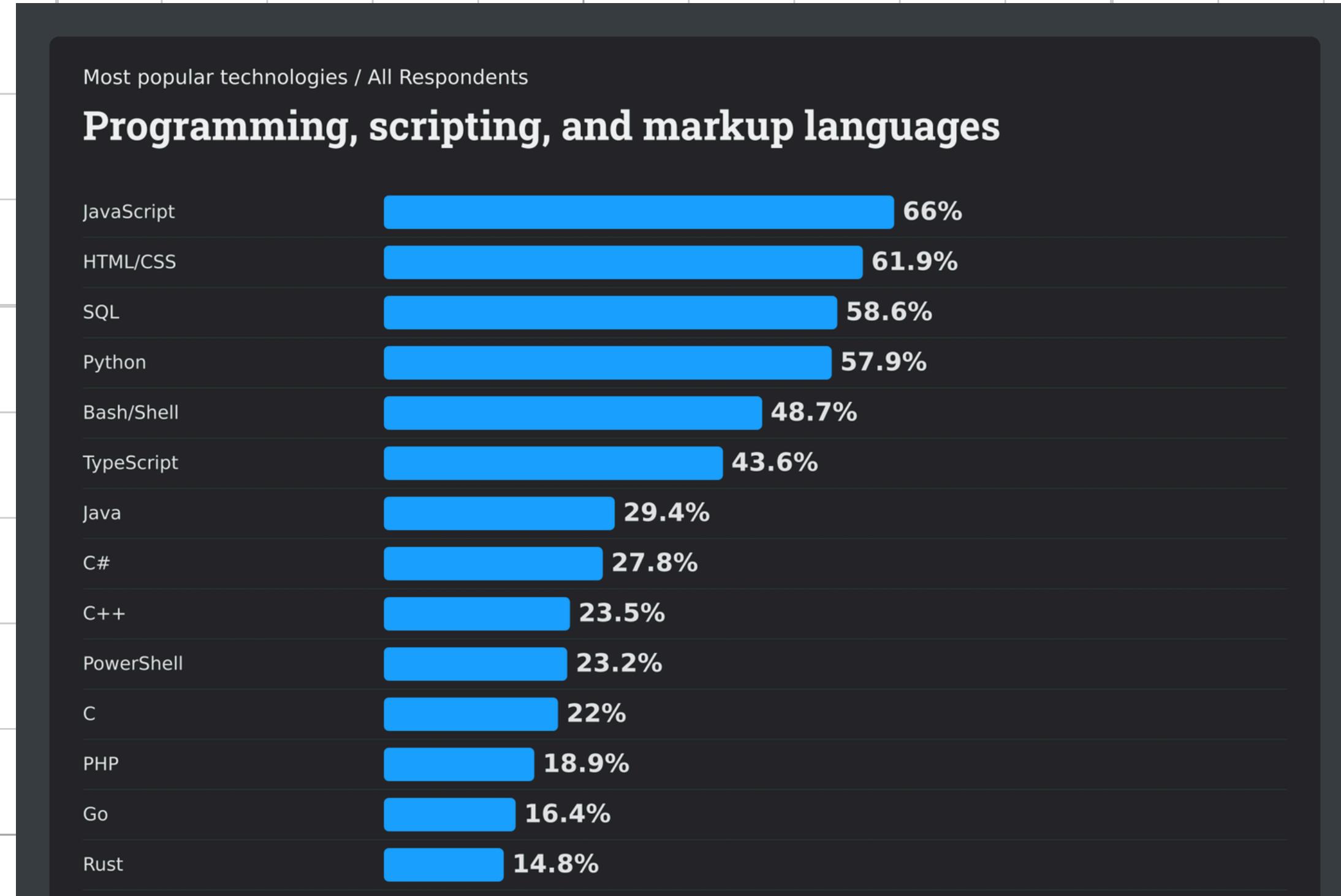
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# Why JavaScript?

Most used Programming Languages among developers in 2025



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# History of JavaScript

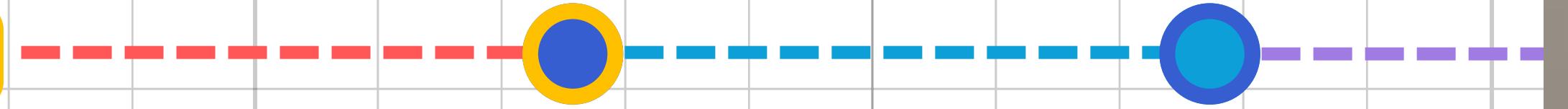
In 1995 -

Brendan Eich famously created **JavaScript** for **Netscape** in **only ten days**, laying the foundation for **modern web interactivity**.



Renaming **LiveScript** to **JavaScript** cleverly leveraged **Java's fame** and strengthened **Netscape's partnership** with **Sun Microsystems**.

1996



JAVASCRIPT  
JavaScript was created

ECMA INTERNATIONAL  
It was then submitted to **ECMA International** for standardization, which resulted in **ECMAScript**.

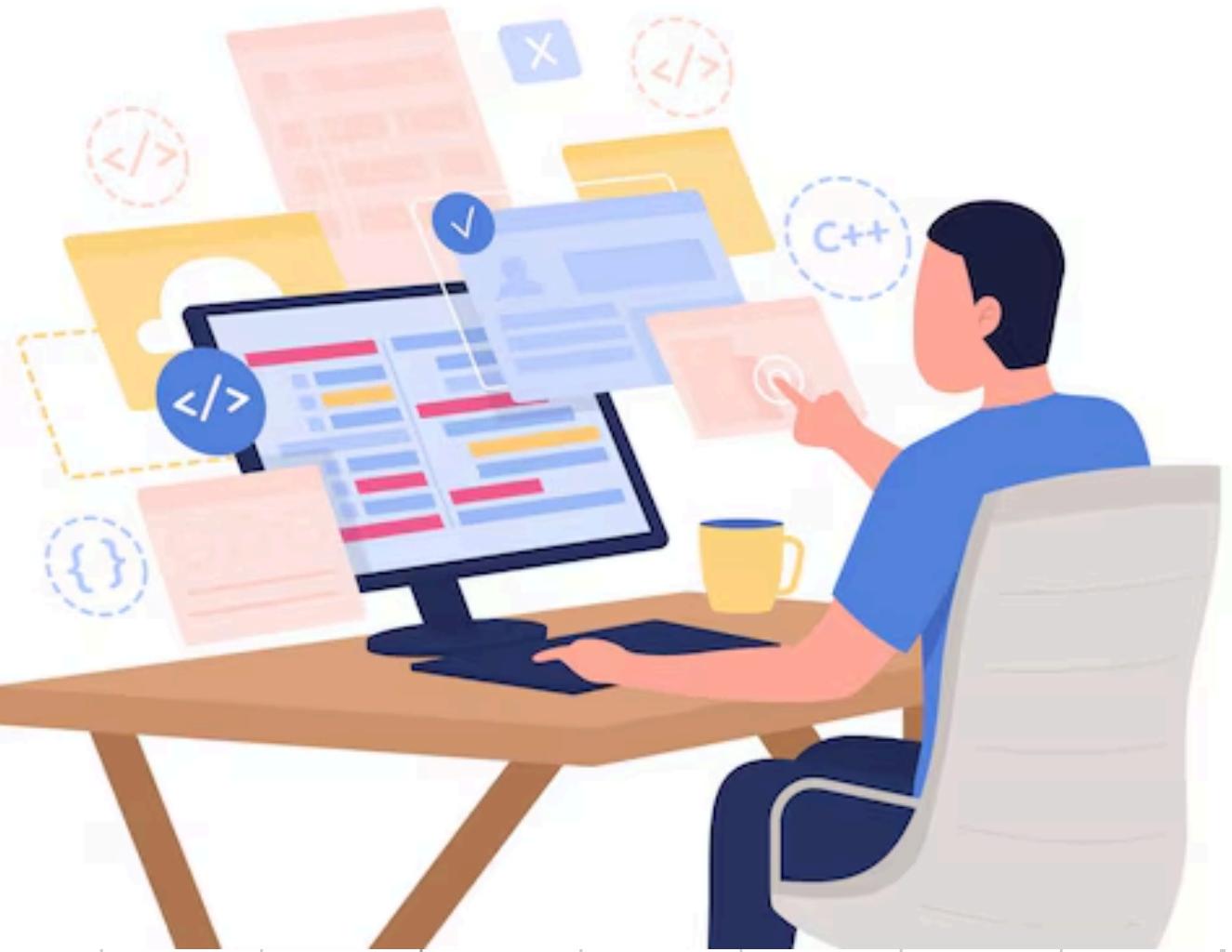


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# Let's write our First JavaScript Code in Console

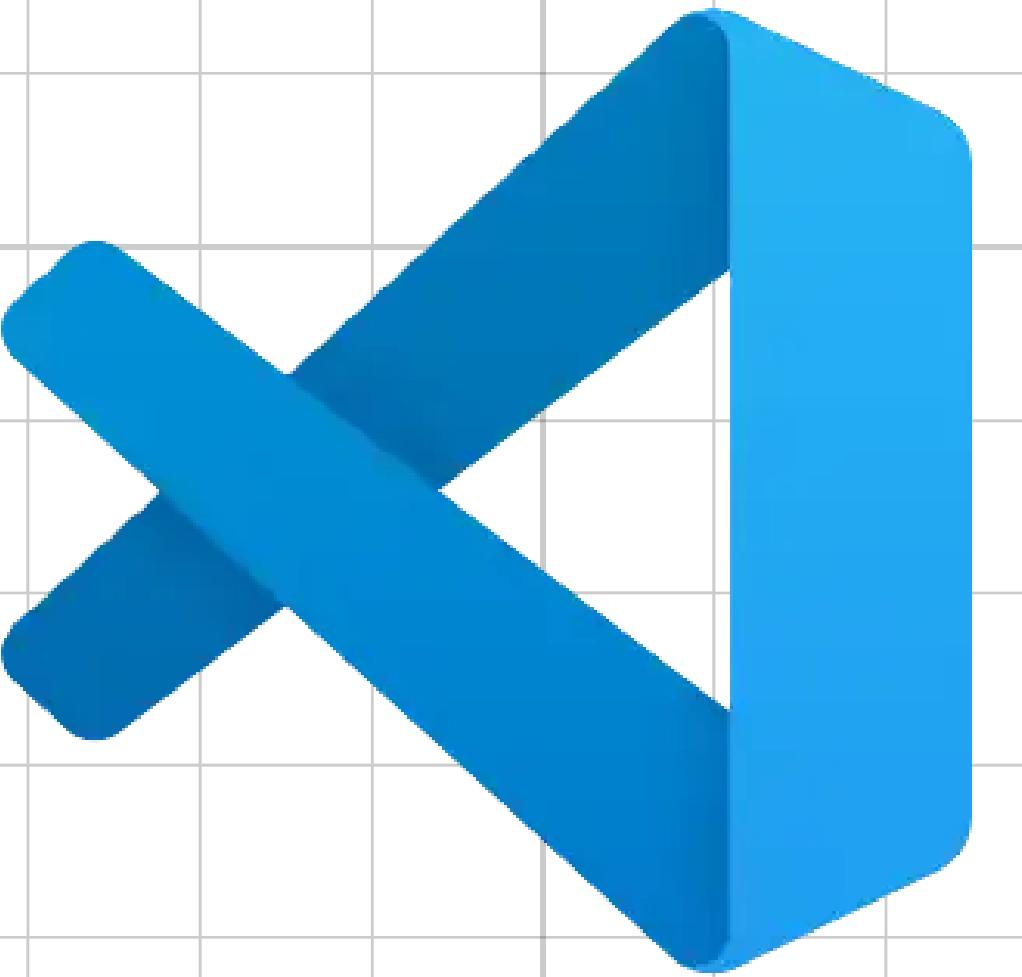


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# We need a **Code Editor**



# VISUAL STUDIO CODE EDITOR



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# WAYS TO WRITE JAVASCRIPT CODE

03



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# Inline JavaScript

```
<button onclick="alert("Hello World")">Click me</button>
```



# Internal JavaScript

```
<script> console.log("Hello, World!"); </script>
```

```
<script src="script.js"></script>
```

# External JavaScript

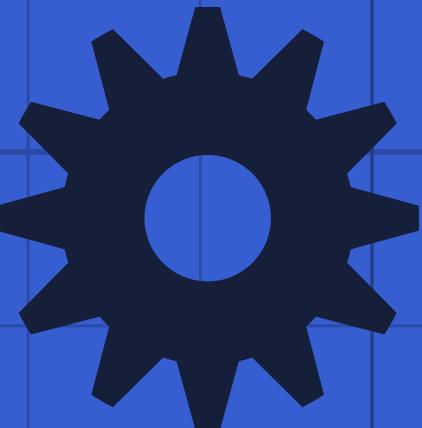
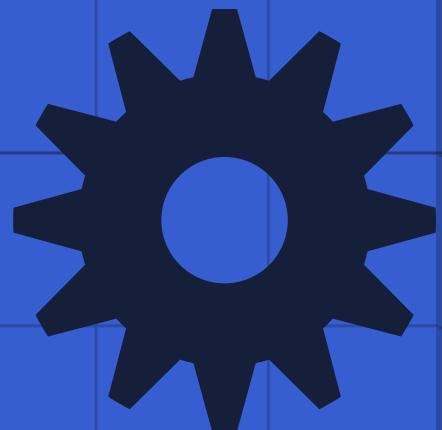


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# JAVASCRIPT VALUES & VARIABLES



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Variable Name

A Variable is a container (box) that holds a value

```
var myName = "Hudair";
```

Variable (key)

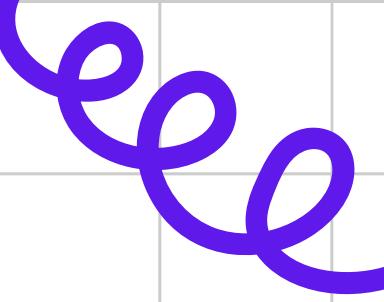
Value



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### Mastering Variable Names: Rules and best practices for clear variable naming.

\* Variable names must start with a letter, an **underscore** (\_) or a **dollar sign** (\$).

\* Variable cannot be the same as **reserved keywords** such as **if** or **const**.

\* You can make variable names as long as you want.

\* Variable names are **case sensitive**.

\* Variable names cannot contain spaces.

\* By convention, JavaScript variable names are written in **camelCase**.



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# Challenge Time ?

Are you ready for this challenge



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Try Yourself

## Questions



```
var my(firstName = "Name1";
```

```
var _myLastName = "Name2";
```

```
var 123myAge = 23;
```

```
var $cityName = "Faisalabad";
```

```
var my@Email = "Hudair@gmail.com";
```



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## Answers



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## Try Yourself

## Questions



```
var my(firstName = "Name1";
```

```
var _myLast$Name = "Name2";
```

```
var 123myAge = 23;
```

```
var $cityName = "Faisalabad";
```

```
var my@Email = "Hudair@gmail.com";
```

## Answers

\* This is valid variable name.

\* This is valid variable name.

\* This is invalid variable name.

\* This is valid variable name.

\* This is invalid variable name.



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# Data Types



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## Data Types

### Date Types

### Primitive Data Types

### Object Data Types

String

Number

Boolean

Undefined

Null

Bigint

Symbol

Object

Array

Date



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## Interview Question - Data Types

- 1: What is the difference between null and undefined in JavaScript ?
- 2: What is the purpose of typeof operator in JavaScript ?
- 3: What is the result of "typeof null" in JavaScript ?
- 4: What are primitive data types in JavaScript ?
- 5: Explain the concept of truthy and falsy values in JavaScript. Provide examples ?



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# Challenge Time ?

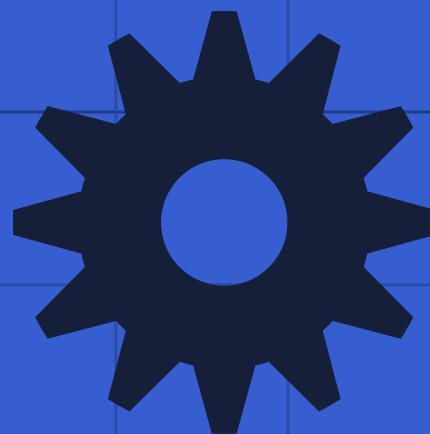
Are you ready for this challenge



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# JAVASCRIPT Expressions & Operators



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# Expression

Operator

$$10 + 20$$

Operand

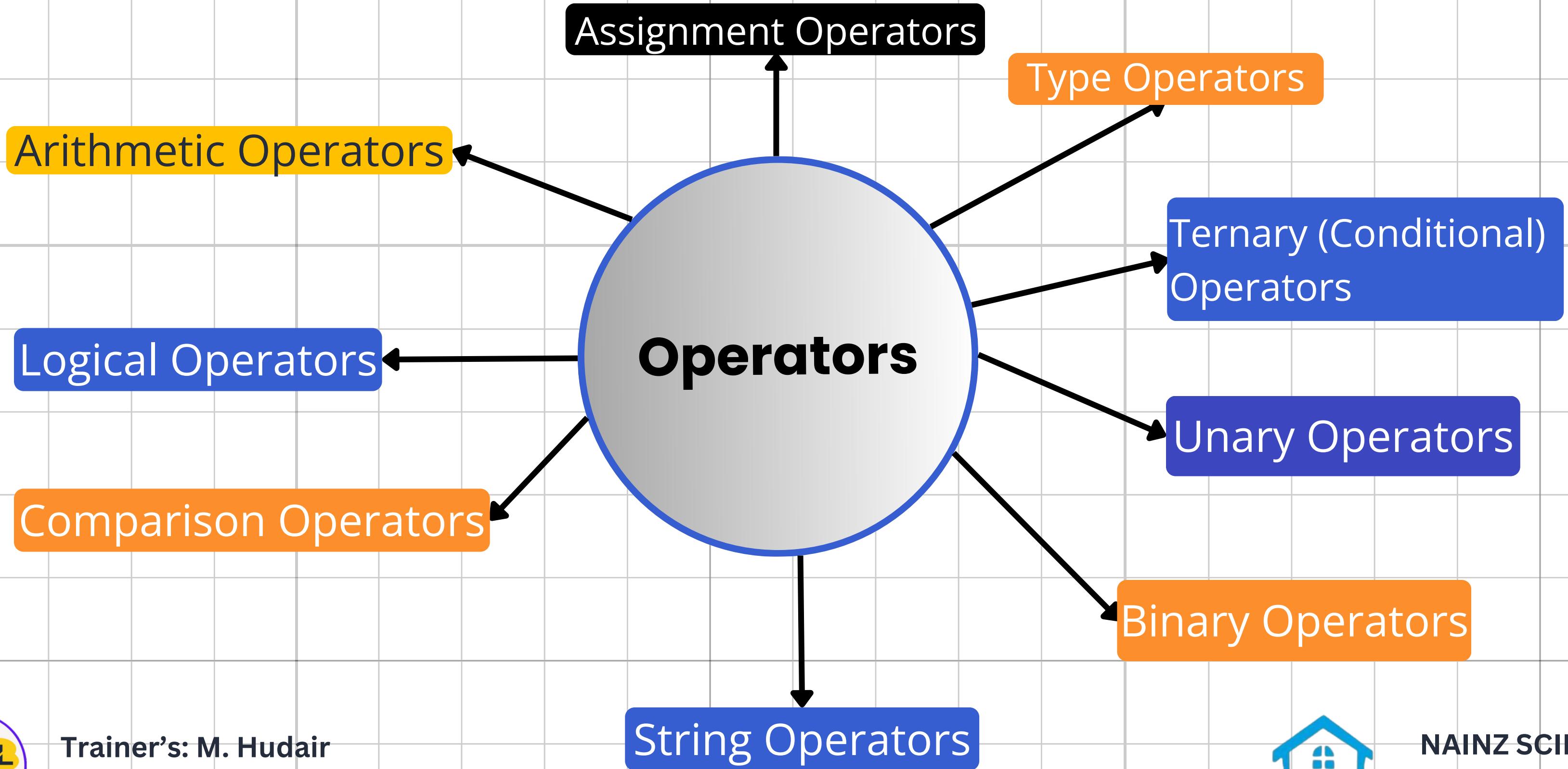


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# Types of Operators

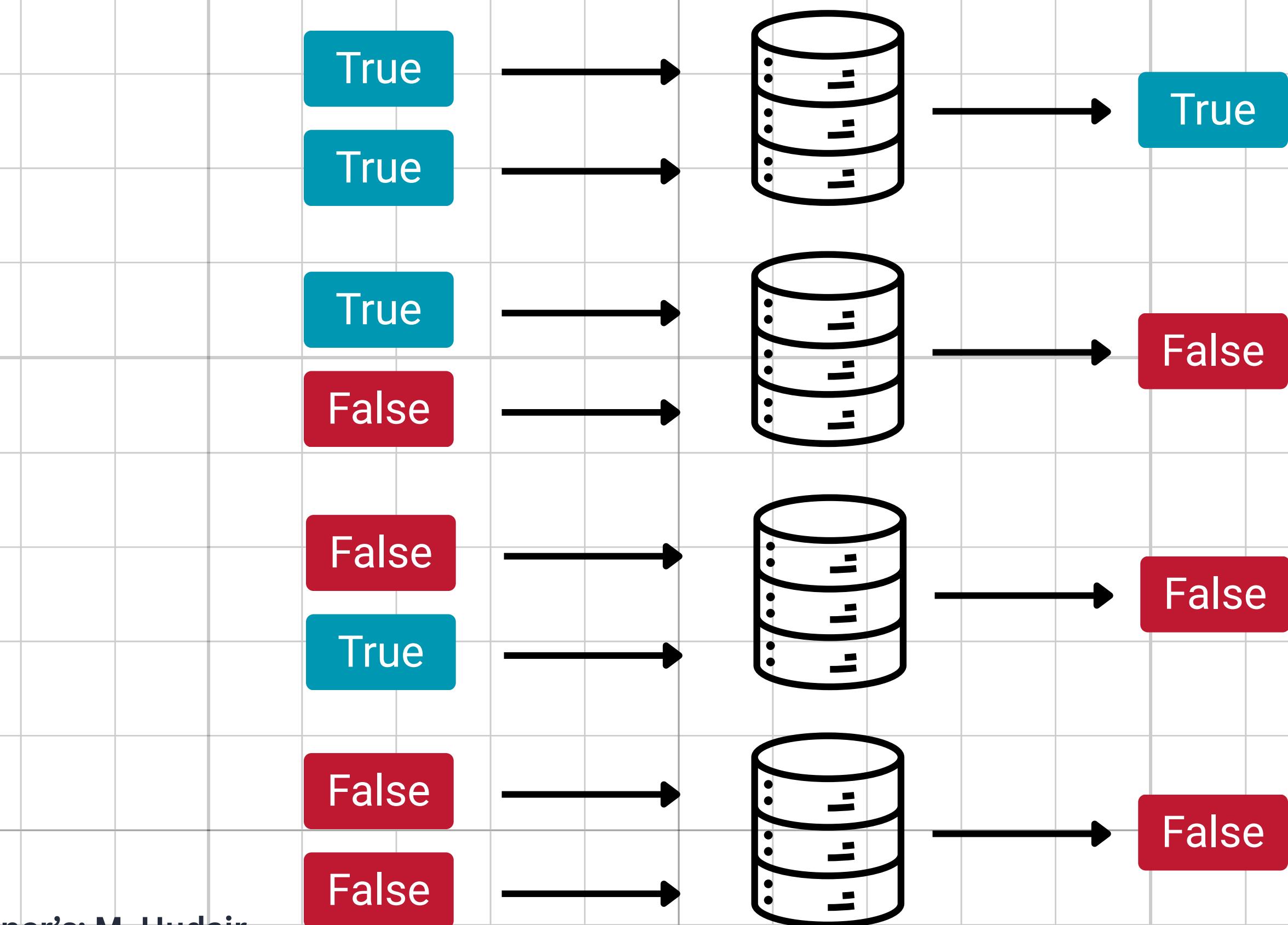


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# How Logical AND Operator Works?

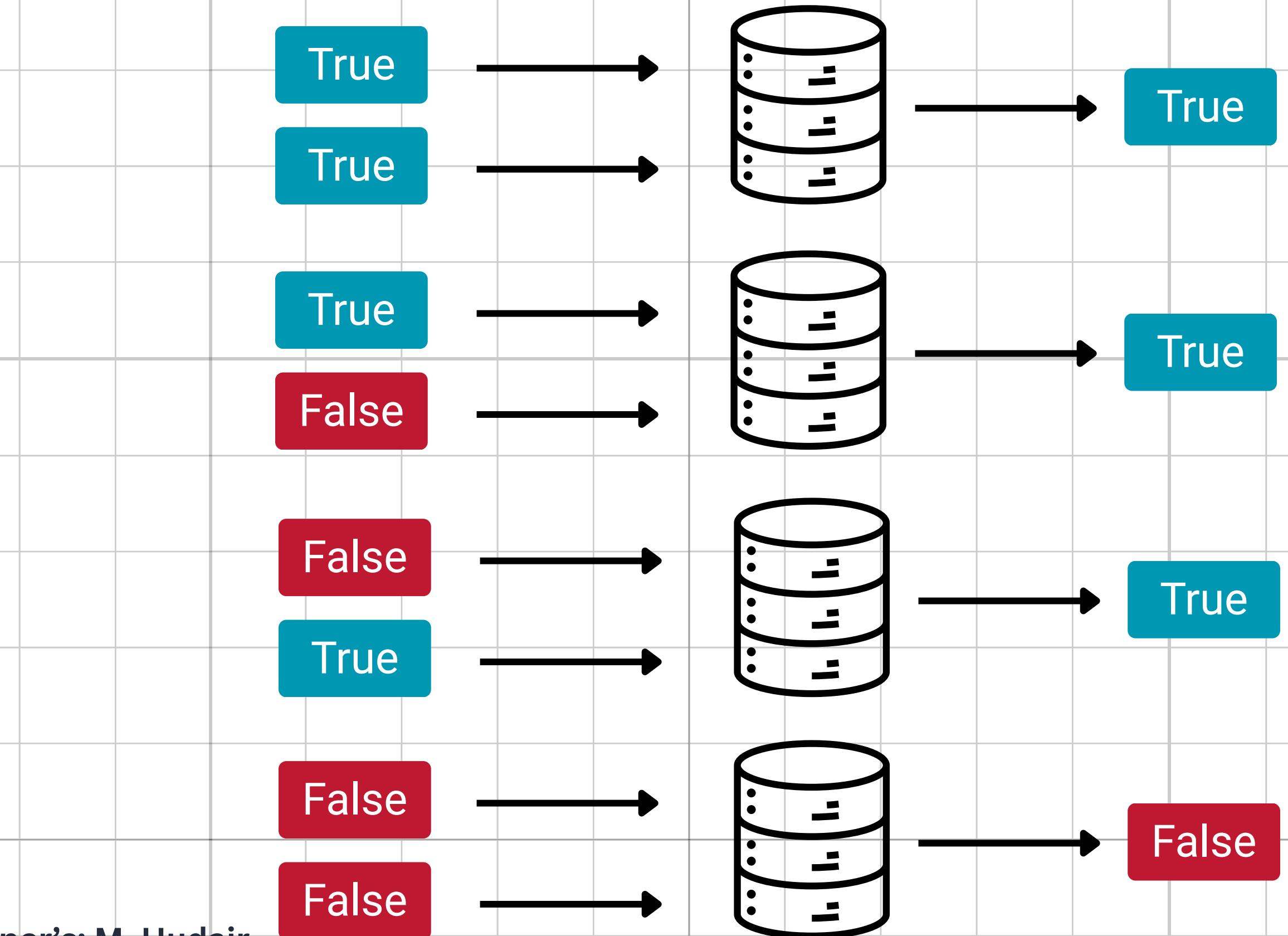


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# How Logical OR Operator Works?



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## Ternary Operator

### Syntax:

Condition ? expressionTrue : expressionFalse;

If condition is false



If condition is true

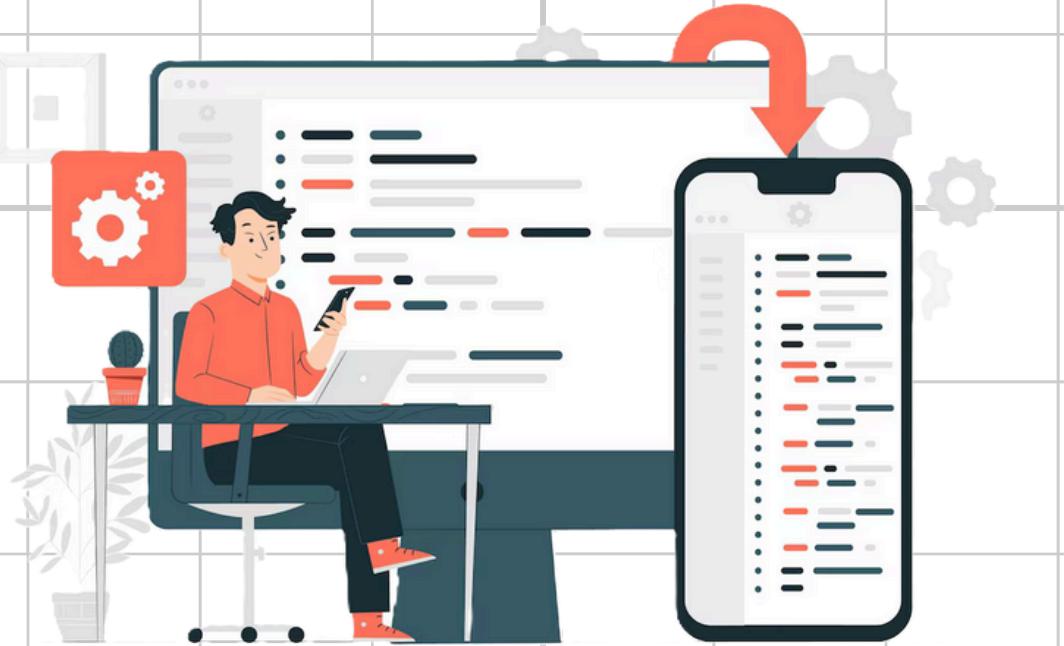


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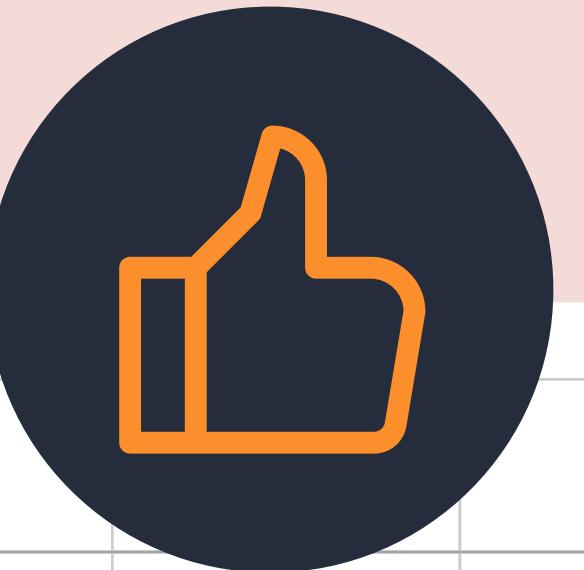


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**Wait!!!!**



# Interview Questions



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**Interview Question**

console.log("5" - 3);

2

console.log(31 < 7 > 207);

True

console.log("5" + 21 + 32);

52132

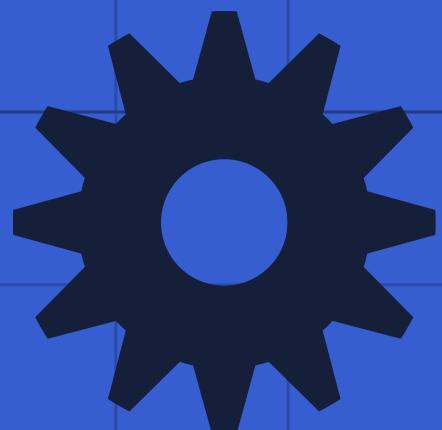


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# JAVASCRIPT Control Statement & loops



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# Control Statements & Loops

1

If Else Statement

2

Switch Statements

3

While Loop

4

Do-While Loop

5

For Loop

6

For In / For Of Loop  
(Later in Arrays)



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# Syntax - IF Statement

```
if (condition) {  
    // This code executed if condition is true  
} else {  
    // This code executed if condition is false  
}
```



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# Example of IF Statement

```
var temp = ;  
if (temp > 20) {  
    console.log("It's a perfect day for a picnic!");  
} else {  
    console.log("Stay inside");  
}
```



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# If Else Practice

**1. Write a Program to check if number is even or odd.**

**2. Write a Program to check if number is Positive, Negative or odd.**



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# Switch Statement

```
let dayOfWeek = 3;  
let dayName;  
switch (dayOfWeek) {  
    case 1:  
        dayName = "Monday";  
        break;  
    case 2:  
        dayName = "Tuesday";  
        break;  
    default:  
}  
console.log(`Today is ${dayName}`);
```



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# Syntax - While Loop

```
While (condition) {
```

//A loop keeps executing as long as the condition stays true.  
When the condition turns false, the execution ends.

```
}
```



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# Syntax – While Loop

```
do {  
    //A loop keeps executing as long as the condition stays true.  
    //When the condition turns false, the execution ends.  
} While (condition);
```



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# Syntax - For Loop

```
var num = 10;  
for(initialization; condition; iteration)  
{  
    // Write code here  
}  
    num < 5  
    num++
```



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# Syntax - While Loop

```
let i = 1;  
while (i <= 10) {  
    console.log(i);  
    i++;  
}
```

Initialization → let i = 1;

Condition → while (i <= 10) {

Iteration → i++; }



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