

JAVASCRIPT:

1. Comparison Operators in JavaScript Explained

📌 JavaScript Operators (Short, Important & Sorted Notes)

✅ 1. Arithmetic Operators (Math stuff)

```
+    // Addition
-    // Subtraction
*    // Multiplication
/    // Division
%    // Modulus (Remainder)
**   // Exponent (Power)
```

✅ 2. Assignment Operators (Store values)

```
=      // Assign
+=     // Add & assign → x += 5 (x = x + 5)
-=     // Subtract & assign
*=     // Multiply & assign
/=     // Divide & assign
%=     // Modulus & assign
```

✅ 3. Comparison Operators (True/False check)

```
==      // Equal (value only)
===     // Strict equal (value + type)  ✅ Preferred
!=      // Not equal
!==     // Strict not equal
>       // Greater than
<       // Less than
>=      // Greater or equal
<=      // Less or equal
```

✅ 4. Logical Operators (Multiple conditions)

```
&&      // AND → true if both are true
||       // OR → true if at least one is true
!        // NOT → reverses (true → false, false → true)
```

✅ 5. Unary Operators (One operand)

```
++      // Increment (x++)
--      // Decrement (x--)
typeof  // Returns data type → typeof "hi" → "string"
```

✅ 6. Ternary Operator (Short if-else)

```
condition ? valueIfTrue : valueIfFalse  
let age = 18;  
let result = age >= 18 ? "Adult" : "Minor";
```

2. Decision-Making Statements in JavaScript

✓ 1. **if** Statement

Runs a block if the condition is true.

```
let age = 18;
if (age >= 18) {
  console.log("You are an adult");
}
```

✓ 2. **if...else** Statement

Runs one block if true, another if false.

```
let isRainy = true;
if (isRainy) {
  console.log("Take an umbrella");
} else {
  console.log("No need for umbrella");
}
```

✓ 3. **if...else if...else**

Checks multiple conditions in order.

```
let score = 75;
if (score >= 90) {
  console.log("Grade A");
} else if (score >= 70) {
  console.log("Grade B");
} else {
  console.log("Grade C");
}
```

✓ 4. **switch** Statement

Checks one value against many cases (like menu options).

```
let day = "Mon";
switch (day) {
  case "Mon":
    console.log("Monday");
    break;
  case "Tue":
    console.log("Tuesday");
    break;
  default:
    console.log("Other day");
}
```

- Use `break` to stop after matching case.
-

✅ 5. Ternary Operator (`? :`)

Short version of `if...else`.

```
javascript
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let age = 20;
let result = age >= 18 ? "Adult" : "Minor";
console.log(result);
```

User Input in JavaScript

🚀 User Input in JavaScript (Very Easy Notes)

✅ 1. `prompt()` – Get input from user (text box)

- It shows a popup and lets the user type something.
- Always returns a **string**.

```
javascript
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let name = prompt("What is your name?");
console.log("Hello, " + name);
```

✅ 2. Convert input to Number

Since `prompt()` gives a string, convert to number for math:

```
javascript
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let age = prompt("Enter your age:");
age = Number(age); // or use parseInt(age)
console.log(age + 5); // Adds 5 to your age
```

✅ 3. `confirm()` – Yes/No (OK/Cancel) popup

- Returns **true** if OK, **false** if Cancel.

```
javascript
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let isSure = confirm("Are you sure?");
console.log(isSure); // true or false
```

🚀 Examples Together:

```
javascript
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let name = prompt("Enter your name:");
let age = Number(prompt("Enter your age:"));
let sure = confirm("Do you want to continue?");

console.log(`Name: ${name}, Age: ${age}, Continue: ${sure}`);
```

🔥 Notes:

- `prompt()` → input (always string)
- `Number()` → convert to number
- `confirm()` → true/false (Yes/No)
- Works only in **browser**, not in Node.js