

Conditional Statements and Looping in JavaScript

Module 1 - Introduction to If Statement in JavaScript



CBSE

JavaScript Statements

In JavaScript, a statement is like a complete instruction that tells the computer to do something. These statements are made up of different parts: Values, Operators, Keywords, Expressions, and Comments. Each statement is executed by the browser in the order it appears, line by line.



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Examples of JavaScript Statements

Semicolons

Semicolons are used to separate JavaScript statements. They mark the end of a statement. You can put multiple statements on one line if you separate them with semicolons.



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Code Blocks

A code block is a group of statements that are enclosed within curly brackets `{}`. This allows multiple statements to be executed together.



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White Space

JavaScript ignores extra spaces in your code. This means you can use spaces to make your code more readable without affecting how it works.



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Line Length and Line Breaks

It's good practice to keep your code lines to around 80 characters. If a line of code is too long, you can break it up, usually after an operator (like `+`, `=`, etc.).



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Conditional statements in JavaScript



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They allow you to perform different actions based on different conditions. They enable decision-making in your code, where certain blocks of code execute only if a specified condition is true.



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Conditional statements give us that ability, and are key to working with JavaScript. A conditional statement consists of three parts:

- A test (often with a comparison operator, or comparator) to see if a given condition is true or false.
- A block of code that is performed if and only if the condition is true.
- An optional block of code that is performed if and only if the condition is false.



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Types of Java Script Conditional Statements

In JavaScript we have the following conditional statements:

- if statement - use this statement if you want to execute some code only if a specified condition is true.
- if...else statement - use this statement if you want to execute some code if the condition is true and another code if the condition is false.
- if...else if...else statement - use this statement if you want to select one of many blocks of code to be executed.
- switch statement - use this statement if you want to select one of many blocks of code to be executed.

if Statement

Executes a block of code if a specified condition is true.

**Syntax:**

```
if (condition) {
    // code to be executed if condition is true
}
```

**Solved Example 1: Write a JavaScript program that checks whether a person is eligible to vote. The program should:**

- Use a variable age to store the age of the person.
- Use an if statement to determine if the person is 18 years old or older.
- If the person is eligible, display the message: "You are eligible to vote." in the console.

**Solution:**

```
<!DOCTYPE html>
<html>
<head>
    <title>Voting Eligibility Check</title>
</head>
<body>
    <h2>Check Voting Eligibility</h2>
    <script>
        // Program to check voting eligibility
        let age = 20; // Assign the age of the person

        // Check if the person is eligible to vote
        if (age >= 18) {
```

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```
document.write("You are eligible to vote."); // Message displayed if
eligible
}
</script>
</body>
</html>
```

**Solved Example 2: Create an HTML document with JavaScript that performs the following actions:**

- Prompts the user to enter their age using a prompt() dialog box.
- Checks the following conditions using only if statements:
- If the user is 18 years old or older, display an alert with the message: "You are eligible to vote."
- If the user is below 18 years of age, display an alert with the message: "You are not eligible to vote."
- If the user cancels the prompt or leaves it empty, display an alert with the message: "No age entered!"
- Ensure all checks are done with separate if statements only.

**Solution:**

```
<!DOCTYPE html>
<html>
<head>
  <title>Voting Eligibility Check</title>
</head>
<body>
  <h2>Check Voting Eligibility</h2>
  <script>
    // Prompt the user to enter their age
    let age = prompt("Please enter your age:", "");

    // Check if the input is not empty and not canceled
    if (age !== null && age !== "") {
      // Convert age to a number
      age = Number(age);

      // Check if the user is 18 or older
      if (age >= 18) {
        alert("You are eligible to vote."); // Message for eligible voters
      }

      // Check if the user is below 18
```



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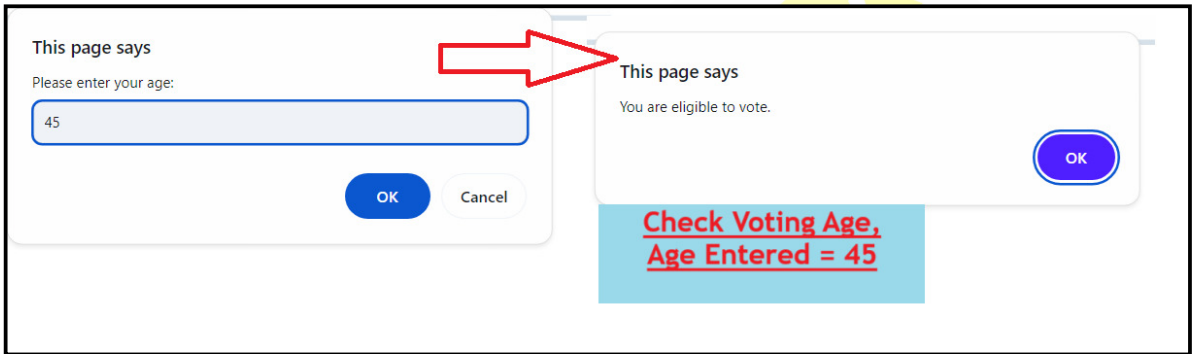
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```

if (age < 18) {
    alert("You are not eligible to vote."); // Message for ineligible voters
}

// If the user cancels or leaves the input empty
if (age === null || age === "") {
    alert("No age entered!"); // Message for no input
}
</script>
</body>
</html>
    
```



**Assignment on If Statement**

**Ques 1: Checking Pass/Fail Status**

Create an HTML document with JavaScript that performs the following actions:

- Prompts the user to enter their marks out of 100 using a prompt() dialog box.
- Checks the following conditions using only if statements:
  - If the marks are 40 or above, display an alert with the message: "Congratulations! You have passed."
  - If the marks are below 40, display an alert with the message: "Unfortunately, you have failed. Better luck next time!"
  - If the user cancels the prompt or leaves it empty, display an alert with the message: "No marks entered!"

**Ques 2: Temperature Checker**

Create an HTML document with JavaScript that performs the following actions:

- Prompts the user to enter the temperature in degrees Celsius using a prompt() dialog box.

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- Checks the following conditions using only if statements:
- If the temperature is less than 0, display an alert with the message: "It's freezing! Stay warm."
- If the temperature is between 0 and 25 (inclusive), display an alert with the message: "The weather is pleasant."
- If the temperature is above 25, display an alert with the message: "It's hot outside! Stay cool."
- If the user cancels the prompt or leaves it empty, display an alert with the message: "No temperature entered!"

**Ques 3: Checking for a Leap Year**

Create an HTML document with JavaScript that performs the following actions:

- Prompts the user to enter a year using a prompt() dialog box.
- Checks the following conditions using only if statements:
- If the year is divisible by 4 but not by 100, or it is divisible by 400, display an alert with the message: "This is a leap year."
- If the year does not satisfy the above condition, display an alert with the message: "This is not a leap year."
- If the user cancels the prompt or leaves it empty, display an alert with the message: "No year entered!"

