

Conditionals

Control Flow

Control flow is the order in which statements are executed in a program. The default control flow is for statements to be read and executed in order from left-to-right, top-to-bottom in a program file.

Control structures such as conditionals (`if` statements and the like) alter control flow by only executing blocks of code if certain conditions are met. These structures essentially allow a program to make decisions about which code is executed as the program runs.

`if` Statement

An `if` statement accepts an expression with a set of parentheses:

- If the expression evaluates to a truthy value, then the code within its code body executes.
- If the expression evaluates to a falsy value, its code body will not execute.

```
const isMailSent = true;

if (isMailSent) {
  console.log('Mail sent to recipient');
}
```

`else` Statement

An `else` block can be added to an `if` block or series of `if - else if` blocks.

The `else` block will be executed only if the `if` condition fails.

```
const isTaskCompleted = false;

if (isTaskCompleted) {
  console.log('Task completed');
} else {
  console.log('Task incomplete');
}
```

Logical Operator !

The logical NOT operator **!** can be used to do one of the following:

- Invert a Boolean value.
- Invert the truthiness of non-Boolean values.

```
let lateToWork = true;
let oppositeValue =
  !lateToWork;

console.log(oppositeValue);
// Prints: false
```

Truthy and Falsy

In JavaScript, values evaluate to **true** or **false** when evaluated as Booleans.

- Values that evaluate to **true** are known as *truthy*
- Values that evaluate to **false** are known as *falsy*

Falsy values include **false**, **0**, empty strings, **null**, **undefined**, and **NaN**. All other values are *truthy*.

Comparison Operators

Comparison operators are used to comparing two values and return **true** or **false** depending on the validity of the comparison:

- **===** strict equal
- **!==** strict not equal
- **>** greater than
- **>=** greater than or equal
- **<** less than
- **<=** less than or equal

```
1 > 3           // false
3 > 1           // true
250 >= 250      // true
1 === 1         // true
1 === 2         // false
1 === '1'       // false
```

else if Clause

After an initial `if` block, `else if` blocks can each check an additional condition. An optional `else` block can be added after the `else if` block(s) to run by default if none of the conditionals evaluated to truthy.

```
const size = 10;

if (size > 100) {
  console.log('Big');
} else if (size > 20) {
  console.log('Medium');
} else if (size > 4) {
  console.log('Small');
} else {
  console.log('Tiny');
}
// Print: Small
```

Logical Operator &&

The logical AND operator `&&` checks two values and returns a boolean. If *both* values are truthy, then it returns `true`. If one, or both, of the values is falsy, then it returns `false`.

```
true && true;           // true
1 > 2 && 2 > 1;          // false
true && false;           // false
4 === 4 && 3 > 1;        // true
```

Logical Operator ||

The logical OR operator `||` checks two values and returns a boolean. If one or both values are truthy, it returns `true`. If both values are falsy, it returns `false`.

A	B	A B
false	false	false
false	true	true
true	false	true

```
true || false;          //
true
10 > 5 || 10 > 20;       //
true
false || false;          //
false
10 > 100 || 10 > 20;     //
false
```

switch Statement

The **switch** statements provide a means of checking an expression against multiple **case** clauses. If a case matches, the code inside that clause is executed.

The **case** clause should finish with a **break** keyword. If no case matches but a **default** clause is included, the code inside **default** will be executed.

Note: If **break** is omitted from the block of a **case**, the **switch** statement will continue to check against **case** values until a break is encountered or the flow is broken.

```
const food = 'salad';

switch (food) {
  case 'oyster':
    console.log('The taste of the sea 🍤');
    break;
  case 'pizza':
    console.log('A delicious pie 🍕');
    break;
  default:
    console.log('Enjoy your meal');
}

// Prints: Enjoy your meal
```

Ternary Operator

The ternary operator allows for a compact syntax in the case of binary (choosing between two choices) decisions. It accepts a condition followed by a **?** operator, and then two expressions separated by a **:**. If the condition evaluates to truthy, the first expression is executed, otherwise, the second expression is executed.

```
let price = 10.5;
let day = "Monday";

day === "Monday" ? price -= 1.5 : price += 1.5;
```