

Data Types

Primitive Data Types:

String:

This data type represents textual data and is enclosed in either double quotes (") or single quotes ('). Examples: "Hello, World!", '12345'.

Number:

It represents numerical values, including integers and floating-point numbers. In JavaScript, numbers have a range from $-(2^{53} - 1)$ to $2^{53} - 1$. Examples: 42, 3.14.

Boolean:

It has two possible values, true or false, and is used for logical operations and conditional expressions.

Null:

This is a special value that represents the intentional absence of any object value. It's often used to signify that a variable has no value or that a value is unknown or not applicable.

Undefined:

When a variable is declared but not assigned a value, it has an "undefined" value by default. It is also the default return value of a function that doesn't return anything explicitly.

BigInt:

BigInt is a primitive data type introduced in modern JavaScript (ES11/ES2020) for representing large integers that cannot be accurately represented using the regular Number type. It is created by appending n to the end of an integer literal or by calling the BigInt() constructor.

Symbol:

Symbols are unique and immutable values that are often used as object property keys to prevent name collisions. They are created using the Symbol() constructor.

Non-Primitive Data Types:

Object:

An object is a complex data type that can hold multiple key-value pairs. It is used to represent real-world entities and is a collection of properties and methods. Objects are created using curly braces {} or the new Object() constructor.

Arrays:

An array is a special type of object that stores a list of values. Each value in an array is associated with an index, starting from 0. Arrays are created using square brackets []. Example: [1, 2, 3].

Function:

In JavaScript, functions are treated as first-class citizens. They can be assigned to variables, passed as arguments to other functions, and returned from functions. Functions are used for encapsulating reusable blocks of code.