

# JavaScript



## Arrays

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# Outline



- Arrays
- Creating Arrays
- Reading and Writing Array Elements
- Types of Arrays

# Recap



- Function
- Types
- Parameters
- return
- Function Expression

# Array



- is an **ordered collection** of values
- Each value is called an **element**, and each element has a numeric position in the array, known as its **index**.
- JavaScript arrays are **untyped**
- JavaScript arrays are **dynamic**
- a collection of multiple items under a single variable name

# Arrays



- JavaScript arrays may be **sparse**
- Every JavaScript array has a **length** property.
- For non-sparse arrays, this property specifies the number of elements in the array

# Creating Arrays



There are several ways to create arrays

- Array literals
- The ... spread operator on an iterable object (ES6)
- The Array() constructor
- The Array.of() and Array.from() factory methods

# Array Literals



1. *let empty = []; // An array with no elements*
2. *let primes = [2, 3, 5, 7, 11]; // An array with 5 numeric elements*
3. *let misc = [ 1.1, true, "a", ]; // 3 elements of letious types + trailing comma*
4. *let base = 1024;*
5. *let table = [base, base+1, base+2, base+3];*

# Array Literals



1. *let count = [1,,3]; // Elements at indexes 0 and 2. No element at index 1*
2. *let undefs = [,,]; // An array with no elements but a length of 2 (optional trailing comma)*



# Array() Constructor



1. *let a = new Array(); //creates an empty array like empty literal [].*
2. *let a = new Array(10); // creates an array with the specified length*
3. *let a = new Array(5, 4, 3, 2, 1, "testing, testing");*

# The Spread Operator



1. *let a = [1, 2, 3];*
2. *let b = [0, ...a, 4]; // b = [0, 1, 2, 3, 4]*
3. *It can only be used in array literals*

# The Spread Operator

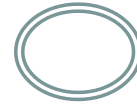


1. *The spread operator is a convenient way to create a (shallow) copy of an array:*
2. *let original = [1,2,3];*
3. *let copy = [...original];*
4. *copy[0] = 0; // Modifying the copy does not change the original*
5. *original[0] // => 1*

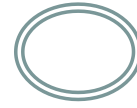
# The Spread Operator



1. The spread operator works on any iterable object.
2. *let digits = [..."0123456789ABCDEF"];*
3. *digits // => ["0","1","2","3","4","5","6","7","8","9","A","B","C","D","E","F"]*



Questions?



Thank you.