

JavaScript Cheatsheet

1) What is JavaScript

- **Definition**: JavaScript is a high-level, interpreted programming language primarily used for client-side development. It enables dynamic content, interactivity and user experience enhancement in webpages.
- **Features**: JavaScript is lightweight, versatile, and supports event-driven, functional and object-oriented programming paradigms.
- **Compatibility**: Supported by all modern web browsers, JavaScript is an essential component of web technology stacks alongside HTML and CSS.

2) Variables and Data Types

- **var, let, const**: Declare variables using var, let, const. Var is function-scoped, let and const are block-scoped.
- **Data Types**: Primitive types are number, string, boolean, null, undefined, symbol. Objects include, object, array, function.

3) Operators: Operators are used to perform operations on operands.

- **Arithmetic Operators**: + (addition), - (subtraction), * (multiplication), / (division), % (modulus).
- **Comparison Operators**: == (equality), === (strict equality), != (inequality), > (greater than), < (less than), >= (greater than or equal to).
- **Logical Operators**: && (logical And), || (logical OR), ! (logical Not).
- **Assignment Operators**: = (assignment), += (addition assignment), *= (multiplication assignment), etc.

44 Control Flow :

- if...else : Conditional statement for executing different actions based on different conditions.
- Switch : Select one of many code block to be executed.
- for loop : Loops through a block of code a number of times.
- While loop : Loops through a block of code while specified condition is true.
- break : Terminates a loop or switch statement.
- Continue : Jump out of the current iteration in a loop and continues with the next iteration.

54 Functions :

- Functions are a block of code used to perform specific operations.
- Declaration : Define a function using the 'function' keyword followed by a name and parenthesis containing parameters.
- Arrow function : A concise way to write function using the (\Rightarrow) arrow syntax, especially useful for anonymous function and short callbacks.
- Parameters and Arguments : Parameters are variables listed in the function definition. Arguments are the actual values passed to the function when it's called.
- Return Statement : Specifies the value to be returned by the function.

6/ Arrays :

- Declaration : Create an array of any datatype using square brackets `[]`.
- Accessing Elements : Access elements using square bracket notation and zero-based indexing.
- Array Methods : Includes `push()`, `pop()`, `shift()`, `unshift()`, `splice()`, `slice()`, `concat()`, `forEach()`, `map()`, `filter()`, `reduce()`.

7/ Objects :

- Declaration : Create an object using curly braces `{ }` and define key-value pairs.
- Accessing properties : Access properties using dot notation or bracket notation.
- Object Methods : Includes `Object.keys()`, `Object.values()`, `Object.entries()`, `hasOwnProperty()`.

8/ Error Handling :

- `try...catch` : Used to handle errors in JavaScript.
- `throw` : Generates an error.
- `finally` : Specifies a block of code to execute after `try...catch`, regardless of the result.

9/ ES6 Features :

- `let` and `const` : Block-scoped variable declaration.
- Template and Literals : String literals allowing embedded expressions.
- Destructuring Assignment : Extracting values from arrays or properties from objects into distinct variables.
- Spread and Rest operation : Spread operator `...` spreads elements of an array.

Traversable objects

- Arrow function: Concise syntax for writing functions.
- Classes: Syntactical Sugar over JavaScript's existing prototype based inheritance