

JavaScript by

Manjot dev

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Introduction to Programing

Programing is a way to talk to computers. A language like English can be use to talk to a human but for computers we need straight forword instructions

Computer is Dumb!

When was the last time you ordered some cereal and got DVDs of serial ?
Programing is the act of constructing a program, a set of precise instructions telling a computer what to do.

What is Ecmascript?

ECMA Script is a standard on which javascript is based! It was created to ensure that different documents on javascript are actually talking about the some language.

JavaScript & ECMA script can almost always be used interchangeably javascript is very liberal in what it allows.

How to execute JavaScript?

JavaScript can be executed right inside one's browser. You can open the javascript console and start writing javascript there.

Another way to execute javascript is a runtime like Node.js which can be installed and used to run javascript code.

Yet another way to execute javascript is by inserting it inside `<script>` tag of an HTML documents

Chapter 1 Variables & Data

Just like we follow some rules while speaking english(the grammar) we have some rules to follow while writing a javascript program. The set of these rules is called syntax in javascript

What is a variable ?

A variable is a container that stores a value.This is very similar to the containers used to store rice water and cats (treat this as an analogy!)

This value of a javascript variable can be changed during the execution of a program

```
var a = 7;  
let a = 7;
```

Rules for choosing variable names

- Letters, digits, underscores & \$ sign allowed
- Must begin with a \$, _ or a letter
- JavaScript reserved words cannot be used as a variable name
- Harry & harry are different variable (case sensitive)

Var vs Let in javaScript

- var is globally scoped while let & const are block scoped
- var can be updated & re-declared within its scope
- let can be updated but not re-declared
- const can neither be updated nor be re-declared
- var variable are initialized with undefined where as let and const variable are not initialized
- const must be initialized during declaration unlike let and var

Primitive data type & objects

Primitive data type are a set of basic data types in javascript

Object is a non primitive datatype in javascript. objects is a non primitive datatype in javascript these are the 7 primitive datatype in javascript

- Null
- Number
- String
- Symbol
- Undefined
- Boolean
- BigInt

Object

An object in JavaScript can be created as follows.

```
const item = {  
  name: "Led Bulb",  
  price: "150"  
};
```

Quick Quiz

Write a javascript program to store name, phone number and marks of a student using objects.

Chapter 2 Expressions & conditionals

A fragment of code that produces a value is called an expression. Every value written literally is an expression for ex: 77 or “Manjot”

Operators in JavaScript

1. Arithmetic Operators

```
+   = Addition
-   = Subtraction
*   = Multiplication
**  = Exponentiation
/   = Division
%   = Modulus
++  = Increment
--  = Decerment
```

2. Assignment Operators

```
=      x=y
+=     x=x+y
-=     x=x-y
*=     x=x*y
/=     x=x/y
%=     x=x%y
**=    x=x**y
```

3. Comparison Operators

```
==     equal to
!=     not equal
===    equal value and type
!==    not equal value or not equal type
>      greater than
<      less than
>=     greater than or equal to
<=     less than or equal to
?      ternary operator
```

4. Logical Operators

<code>&&</code>	logical and
<code> </code>	logical or
<code>!</code>	logical not