JavaScript Scope

In Detail

Mallikarjun | @CodeBustler

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Scope determines the **accessibility** (visibility) of variables.

JavaScript has **3 types** of scope:

- Global scope
- Local/Function scope
- Block scope

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Global Scope

A global variable can be **accessed and modified from anywhere** in the code.

It is **declared outside** of any function or code block and should be used carefully to avoid **potential issues** such as **naming conflicts** and **unintended** modifications.

It's generally recommended to **minimize the use of global variables** for better code organize & maintenance

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Example: Global Scope

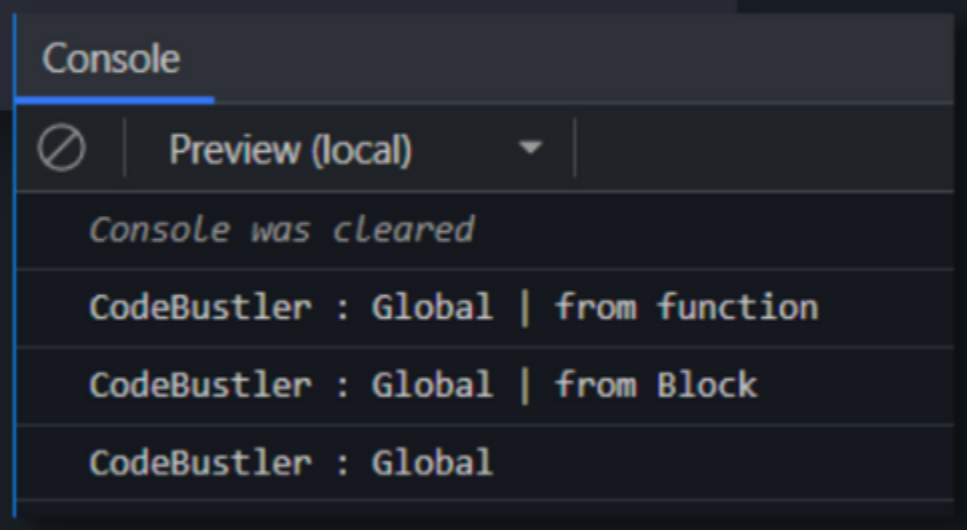
```
// Global Scope
let a = "CodeBustler : Global";

// Within Function
function abc() {
  console.log(a + " | from function");
}

abc();

// Within Block
{
  console.log(a + " | from Block");
}

// Outside of Function & Block
console.log(a);
```



Local/Function Scope

Local scope refers to variables that are limited to a specific block of code,

function scope refers to the entire body of a function, including any **nested functions** and their variables.

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Example: Func/Local

```
let a = 100; // Global Scope**

function parentFunc() {
  let a = 10; // Function Scope**

  function childFunc() {

    let b = 20; // Local Scope**

    console.log(a); // RETURNS: 10
    console.log(b); // RETURNS: 20
  }

  childFunc();

  console.log(a); // RETURNS: 10
  console.log(b); //Error: b is not defined
  // Because b is local scope to childFunc()
}

parentFunc();

console.log(a); // RETURNS: 100 | From GLOBAL SCOPE
console.log(b); //Error: b is not defined
```

Block Scope

Before ES6 (2015), JavaScript had only **Global Scope** and **Function Scope.**

ES6 introduced two important new JavaScript keywords: **let** and **const.**

These keywords provide **Block Scope** in JavaScript.

Variables declared inside a **{ } block cannot be accessed from outside** the block:

Example: Block Scope

```
// BLOCK SCOPE

{
  let x = 10;
  const y = 20;
  var z = 30;

  console.log(x); // 10
  console.log(y); // 20
}

console.log(x);
// Error: x is not defined

console.log(y);
// Error: y is not defined

console.log(z);
// 30
```

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