**JavaScript Day 3 (12-09-24)**

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**01.What is Global Execution Context ?**

In normal words we can say that it is an **environment** which is designed to **handle** the **transformation** and **execution** of the code.

**Execution Context** is a **big container** where all the JavaScript code is **executed**.

**Execution Context:**

Execution context has two phases:-

* **Memory Phase**: In this phase the variables and functions are stored in the form of (Key-Value) pairs.
* **Execution Phase:** JavaScript is a **Synchronus** single threaded Language so the execution happen **line-by-by** (or) **one line at a time** in this part.

When JavaScript code runs the **Global Execution Context(GEC)** is created and execution happens in **two phases** as I mentioned earlier.

* **Memory Phase**: In this phase the variables and functions are defined before execution with undefined values.(only applicable for VAR variables)
* **Execution Phase:** Execution one line at a time (or) line-by-line happens in this phase. Whatever **declaration** we have done for the variables in the code will be defined in the **memory** in this phase only.

**02.What are Variables in JavaScript?**

Basically, **variables**are used to store data in JavaScript.

* Variables are used to declare or Initialization of variableName, Identifier.
* Variables are like a containers which store the data.
* The data in the variables are reusable.

So there are some rules to declare a variable

* These are case-sensitive (you should declare it correctly cause if one letter is wrong then it is not gonna work).
* Should begin with “letter” , “\_” , “$”. It can contain numbers as weel but it should not begin with number.
* A variable cannot be a reserved keyword.
* If it contains two name the second one should begin with uppercase letter(ex:- rahulYadav).

**To use the variable we have to declare it and assign a value to it:**

* Var a; //**declaration**.
* a = 10; //**Assignment**.

**We can do declaration and assignment at a time :-**

* Var a = 10;

This is known as **initialization.**

**There are three types of Variables:-**

1. var
2. let
3. const

**1.var:** In early days of JavaScript this was the sole keyword used to declare the variables.

Syntax:

var variableName = var value;

* It has a global-scope that means it can be accesed any where If we declare it in main program it can be used in any function or block of code.
* We can Re-assign the value of var and the last one will be considered as JS is Interpreted Language
* Var cannot be deleted using “delete” keyword it is a global variable.

**2.Let:** This keyword is also used to declare the variables and it was introduce in ES6 or 2015 update.

Syntax:

let variableName = let value;

* It is a block-scope variable it cannot be accessed outside of the function or block of code.
* The value of let variable can be changed.

**3.Const:** This keyword function Is also same as other to declare the variables

Syntax:

let variableName = let value;

* It is a block-scope variable it cannot be accessed outside of the function or block of code.
* The value of let variable cannot be changed.

**03.What is Hoisting ?**

**Hoisting:** It is a process where logging (or) calling the variables before declaration of that is known as Hoisting.

Example: Output:

Console.log(a); //Undef (because pf GEC)

var a = 10; //a will be assigned with a value of 10.

The variable is undefine because we discussed earlier that GEC’S memory phase the variables and functions inside the code are given a value of **undef** only if it is declared by using **var** keyword.