Function Scope V/s Block Scope

We already know about function scope. Everytime we call a function we create a function scope, and we can only access variables declared inside a function inside it. We can't access them outside the function. Because they're within the function scople

So what's block scope?

Block scope is the scope created inside {...} (curly brackets)
JavaScript follows ~~block~~ ~~so~~ function scople. And didnt actually have the concept of block scope until ES6 was introduced.

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```
if(true)
{
  var name = 'Simran'
}
console.log(name)
```

> Simran

Because if is not a function right? so name is still in global scope and is accessible.

So if we had

```
function sayName()
{
  var name = 'Simran'
}
console.log(name)
```

> Reference error

Explanation
Basically when name is declared inside function a function scope is created and that's why global scope does not have name it's in function scope)

However, with the introduction of let and const, they also come under block scope.

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```
if(true)
{ let name = 'Simran' }
console.log(name)
```

> ~~Simran~~ Reference Error

Because since let and const are block scoped using if statement is like block scope ({...}) there those variables are only accessible inside the block scope.

** Var still follows function scope.

Let and const follow block scope.

→ Therefore in most situations it's better to avoid & var

Immediatly invoked function expressions ~~EE~~ (IIFE)

Before that let's understand why global variables are bad and then how IIFE can help us :)

-> we already spoke about memory leaks

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Okay, if space is the problem, can I use a few global variables

Let's say we have included multiple script tags in a file

<script> var count = 1 </script>
<script> var count = 2 </script>

* Both files have a global variable named "count" so now your count will be overwritten by the lastest count value which is 2

THAT'S BAD RIGHT?

As your codebase gets larger it'll get hard to track these name collisions.

* All script tags get combined to one execution context so count 'is used across all and obviosly it can't have different value for different files.

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IIFE will help us here

IIFE is a function expresion that woks like this

This brack says this is not a function delcation, its a function expression

```
( function () {
})();
```

→ anonymous func (no name)

→ we are immediatly calling this function

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Summary

It's an function expression (we already learnt function expresions don't get completely voisted as JE does not look at them as function declaration)

That means whatever code we put inside this function will not be a part of global execution. context since this function itself is not part of global ex

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So far we know whatever code (variables) we declare inside this IIFE are going to be ~~global~~ local to this function.

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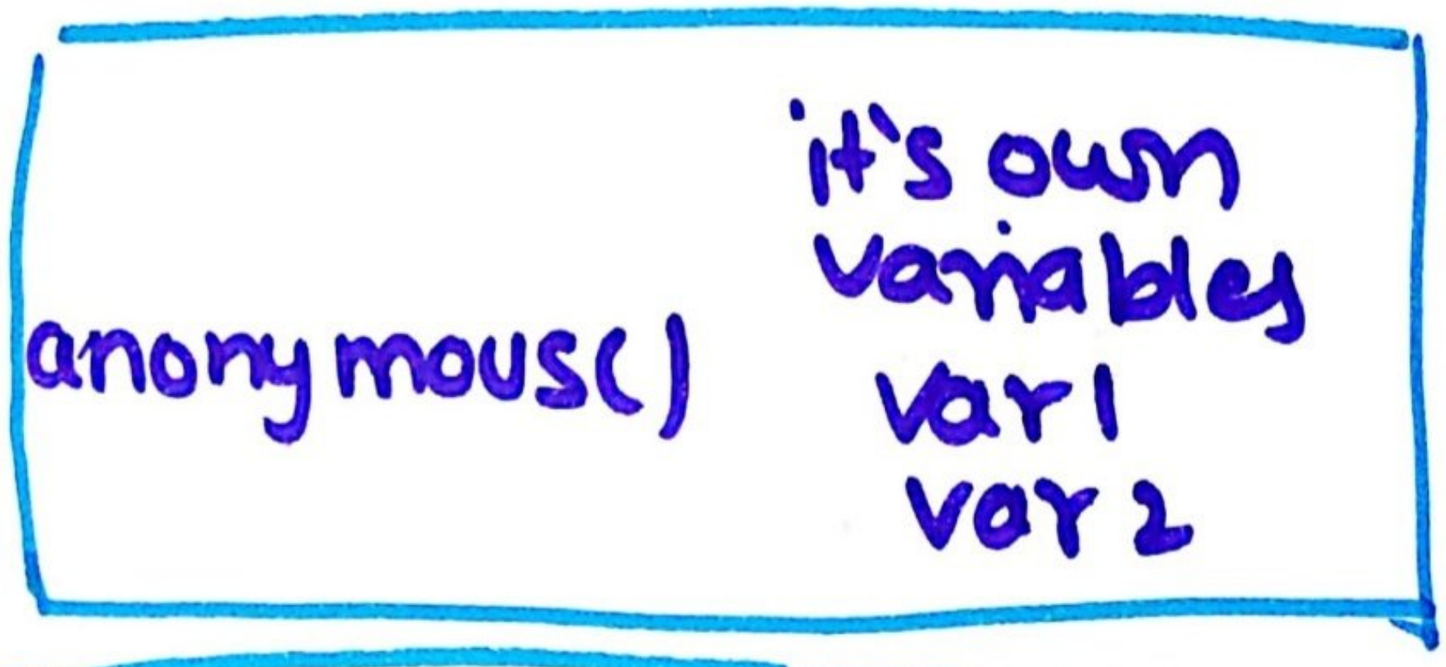
This is how the execution context looks



So a new execution context is created for this anonymous function and it has it's own local variables

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How doe we use IIFE to use data (variables or functions) throughout the file?

file is @codewithSimran

```
var file1 = (function() {
    var name = 'Simran'
    function sayHello() {
        return 'Simran'
    }
    return {
        name: name,
        sayHello: SayHello
    }
})()
```

** Since we're 'immediatly invokiy 'calling this IIFE file1 variable has the returned data or return value of this IIFE so we can simply do

file1.name

file1.sayHello() etc

But again, we ~~s###~~ still have a global variable called file1 so there is a better solution in modern Javascript called <u>modules</u> we will study about it later.

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