Execution Context and Execution Stack

Execution Context

- An Execution context is an environment where JavaScript code is executed.

There are two types of Execution context in JavaScript:-

1.) Global Execution Context (GEC):

- The Global Execution Context is the default execution Context where all javascript code that is not inside of any function.
- Everything happens in a global execution context.in this phase, memory is allocated to all the variables and functions.
- There can be only one global execution context in a program.

2.) Function execution context :

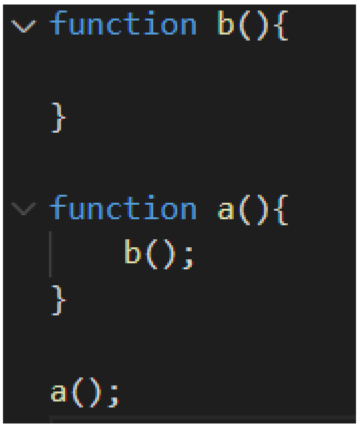
CODING NINJAS

- A new execution context is created whenever a function call is encountered.
- There can be multiple function execution contexts.

Execution Stack:

- An execution stack is used to store all the execution contexts which are created during the code execution.
- An execution stack is also known as a calling stack(LIFO structure) in other programming languages.
- When the JavaScript engine first encounters JavaScript code, it creates a global execution context at the bottom and all the subsequent function invocation is pushed to the top of the stack.
- The JavaScript engine executes the function whose execution context is at the top of the stack. When this function completes, its execution stack is popped off from the stack.

E.g. What happens when you invoke a function:

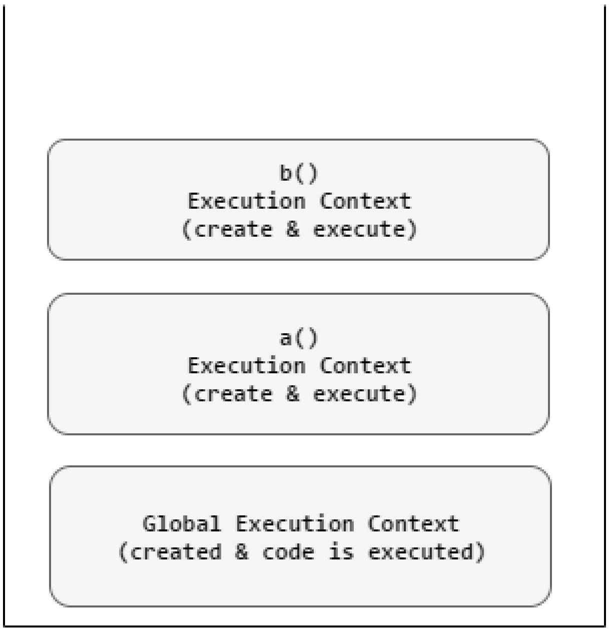


```
function b(){

}

function a(){
    b();
}

a();
```



- Now first of all Global Execution Context is going to be created.
- Then execution starts and the interpreter encounters a call to function a(), and here a new execution context is created and pushed on top of Execution Stack.
- So now the Execution Context for a() is Created interpreter will execute the code inside a() line-by-line.
- Then the interpreter encounters a call to function b(), this creates another Execution Context which is pushed on top of the Execution Stack.

- When b() finishes it will be popped off the stack then a() will finish & down to Global Execution Context.

CODING NINJAS