

THIS KEYWORD



this refers to the object
on which we call our
function:

Example

sayHello has 'this' (just like
all other functions) and
'this' value is obj

Obj.sayHello(this)

① obj is the object
on which we're calling
sayHello

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* Inside of a function the value
of 'this' is the object we used
to call the function.

What if we simply say

> SayHello() , we're not calling sayHello
on any object .

> In this case , 'this' refers to the
window object .



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* So just saying `sayHello()` is like saying `window.sayHello()`

① Look before the
↑ dot what's there?
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SomeObject.`SomeFunction()`

- ↓
- ② It's SomeObject → the value of 'this'
- ③ If there is not • means directly calling function, then look at it as

`window.`SomeFunction()

↓
what's left before the dot is window internally .

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* On global execution context
the value of 'this' is window

Example 1

```
function sayHello() {  
    console.log(this)  
}  
  
>sayHello()  
> window [Because sayHello  
is called without any object, internally  
it's window (window.sayHello())]
```

Example 2

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```
const obj = {  
    name: 'Simran'  
    sayHello: function() {  
        return 'Hi' + this.name  
    }  
}
```

If we want access to name
in sayHello this is how we can do it -
since sayHello is a part of obj, that
value of 'this' inside sayHello is 'obj'



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To run it we will use

obj.sayHello()

And what's before that • ? It's
'obj', that means value of 'this'
inside sayHello should be 'obj'

Example 3

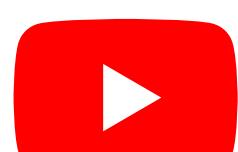
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- * Execute same code for multiple object (Reuse)

```
function sayHello() {  
    console.log(this.name)  
}
```

```
const obj1 = {  
    name: 'Simran'  
    sayHello: sayHello  
}
```

```
const obj2 = {  
    name: 'John'  
    sayHello: sayHello  
}
```



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```
const name = 'Lara';
```

```
> window.sayHello() OR sayHello()  
→ Lara
```

```
> obj1.sayHello()  
→ Simran
```

```
> obj2.sayHello()  
→ John
```

Conclusion

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- * This gives methods (functions 'inside your object) access to the object they're defined in
- * Let's us execute same code (sayHello) by multiple objects (obj1 and obj2)



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Example 4

```
const a = function() {  
    console.log('a', this)  
    const b = function() {  
        console.log('b', this)  
        const c = {  
            sayHello: function() {  
                console.log('c', this)  
            }  
        }  
        c.sayHello()  
    }  
    b()  
}
```

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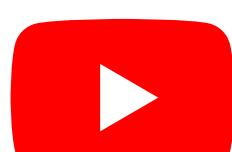
```
}  
a()
```

► a → Window

(because there is nothing before a()
it's effectively window.a())

► b → Window

(same case as a)



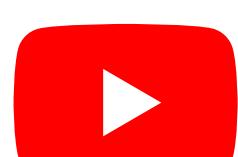
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Note: value of 'this' inside
b is window means it DOES
NOT MATTERS WHERE WE
DEFINED FUNCTION B, what
matters is how it's called

But Javascript follows lexical
(static) scoping right? Scope
of a function is decided by
where it is defined and not
where it's called. @codewithSimran
No wonder 'this' is like an
alien, that follows dynamic
scope, value of this depends
on how we called the function
not where it is ~~is~~ actually
defined.



► `c → C`
Inside `C` the value of `this` is the object `c` because we called `sayHello` as `c.sayHello()`

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Example 5

```
const obj = {  
    name: 'Simran',  
    sayHello: sayHello()  
        console.log('Hello', this);
```

Example 5.

```
const obj = {  
    name: 'Simran',  
    sayHello: function() {  
        console.log('Hello', this)  
        var sayBye = function() {  
            console.log('Bye', this)  
        }  
        sayBye()  
    }  
}
```



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```
> obj.sayHello()  
▶ Hello obj  
▶ Bye Window
```

So how do we solve this problem and make it work as lexically scoped , value of this should depend on where the function was defined because that's how rest of javascript works

Soln Arrow functions 😊

if you convert sayBye to an arrow function out will be

- ▶ Hello obj
- ▶ Bye obj

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Why? Because inside arrow function value of this depends on where that arrow function is present or defined And its defined inside obj right? So value of this will be obj



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Wait!! Arrow functions were introduced in ES6 right? What did people do ~~do~~ before that?

* To get the same result with normal function as arrow function you can use the bind method

~~sayBye()~~

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sayBye.bind(this);



you're basically binding the current value of this (which is obj) to sayBye as well.



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In order to play with 'this' keyword, we have 3 methods.
`call()`, `apply()`, `bind()`

* Internally every function uses `call()` when it's invoked.

→ So when you call a function by `sayHello()`

you're basically doing
`sayHello.call()` [Internally]

Let's take an example of a game where you've a battery life (of player) and in some situations the player can charge itself to 100%.

```
const player1 = { @codewithSimran
  name: 'John'
  battery: 62
  charge: function() {
    this.battery = 100
  }
}
```

So basically `player1` is an object with a method `charge` (to charge 100%).



To simply charge ~~player1~~
we can do

→ player1.charge()
[battery: 100]

Now let's introduce a second
player, player2

const player2 = {
 name: 'Lara'
 battery: 20

3

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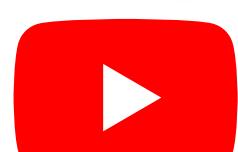
OKAY, player2 does not have
a charge method, so can it
borrow the same from player1
Also not we don't want to
repeat code that can be reused

→ call the charge method of player1

player1.charge.call(player2)



But call it on player2



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We're essentially able to pass reference to player2 (which will be value of `this`) inside battery method.

So argument to call is overriding what the value of '`this`' will be when that method is invoked.

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*Also you can pass arguments using call which will be received by battery method.

`player1.charge.call(player2, 20,30,40)`

arguments

and your battery function might look like this

battery: function (arg1,arg2,arg3)

NOTE: You don't need to accept `player2` as an argument. `'this'` already contains `player2`.



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apply

It's pretty much same as call but the way it takes arguments is different.

It takes an array of arguments.

```
player1.charge.apply(player2,[20,30,40])
```

takes an array of arguments

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bind()

call and apply immediately invoke the function, whereas bind returns a new function binded with a new this which we can run later.

```
const callLater =
```

```
player1.charge.bind(player2,20,30,40)
```

[syntax same as call]

to ~~call~~ actually call it we can later do

```
callLater()
```



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