

In JavaScript, `call`, `apply`, and `bind` are methods used to set the context of `this` when invoking a function.

Overview of Each Method

1. `call()`

The `call` method invokes a function with a specified `this` value (object) and arguments provided **individually**.

```
function greet(greeting, punctuation) {  
    console.log(greeting + ', ' + this.name + punctuation);  
}  
const person = { name: 'Alice' };  
greet.call(person, 'Hello', '!'); // Output: Hello, Alice!
```

2. `apply()`

The `apply` method is similar to `call`, but arguments are provided as an **array**.

```
function greet(greeting, punctuation) {  
    console.log(greeting + ', ' + this.name + punctuation);  
}  
const person = { name: 'Alice' };  
greet.apply(person, ['Hello', '!']); // Output: Hello, Alice!
```

3. `bind()`

The `bind` method is similar to `call`, but instead of executing the function immediately, it **returns a new function** with the specified `this` value and pre-set arguments.

```
function greet(greeting, punctuation) {  
    console.log(greeting + ', ' + this.name + punctuation);  
}  
const person = { name: 'Alice' };  
const greetAlice = greet.bind(person, 'Hello');  
greetAlice('!'); // Output: Hello, Alice!
```

Summary: Key Differences

Method	Execution	Arguments Handling
call	Invokes immediately	Arguments passed individually
apply	Invokes immediately	Arguments passed as an array
bind	Returns a new function	Arguments passed individually, can be invoked later

By understanding these methods, you can effectively control the context of `this` and enhance the flexibility of your JavaScript functions.