CALL APPLY BIND

JS

INTERVIEW QUESTIONS-46

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@Duvvuru Kishore

FIRST WE WILL HAVE A LOOK AT THIS KEYWORD

In JavaScript,

- this keyword refers to an object.
- Every function gets this property automatically
- And will always refer to a single object

```
const person = {
  firstName: 'John',
  lastName: 'Doe',
  printName: function() {
    console.log(this.firstName + ' ' + this.lastName);
  }
};

person.printName(); // This will print "John Doe" to the console
```

WHY WE NEED CALL,BIND AND APPLY

- call, apply, and bind are methods in JavaScript that provide more flexibility and control when working with functions.
- especially in scenarios where you need to specify the context (this value) or pass arguments explicitly.

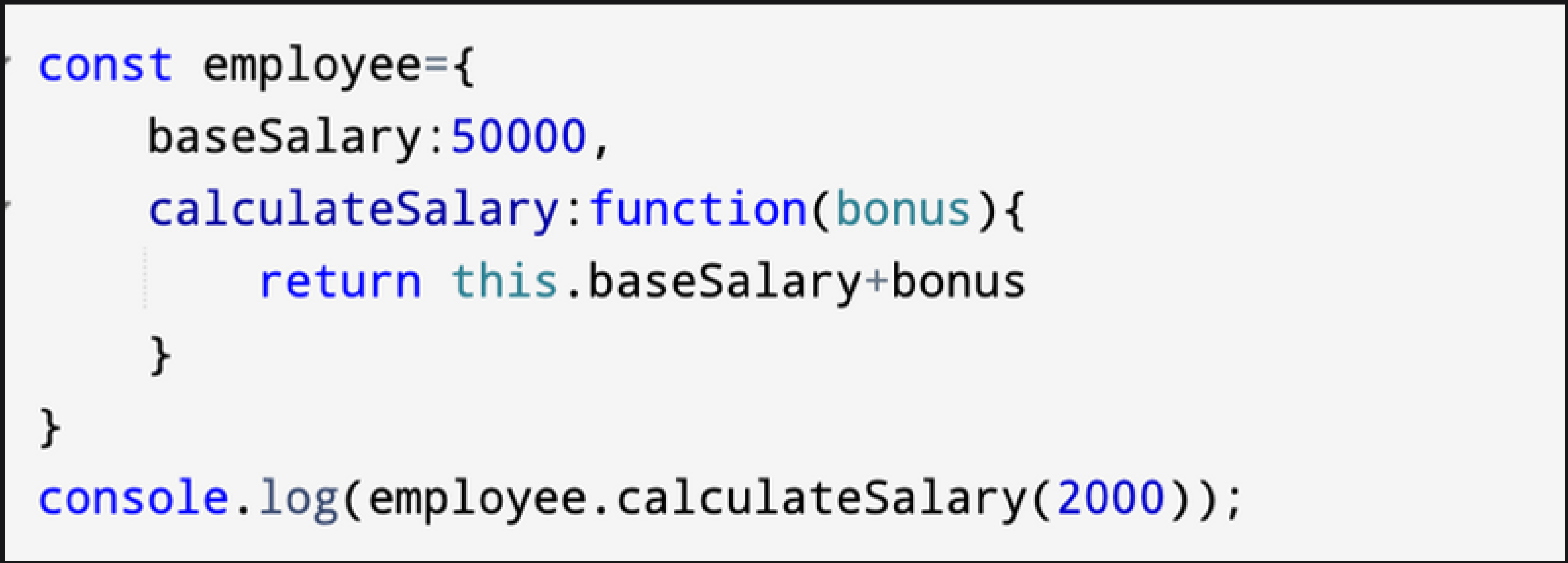
CALL()

WHEN TO USE CALL ?

Let’s have a example where programmatically it tells when to use Call()

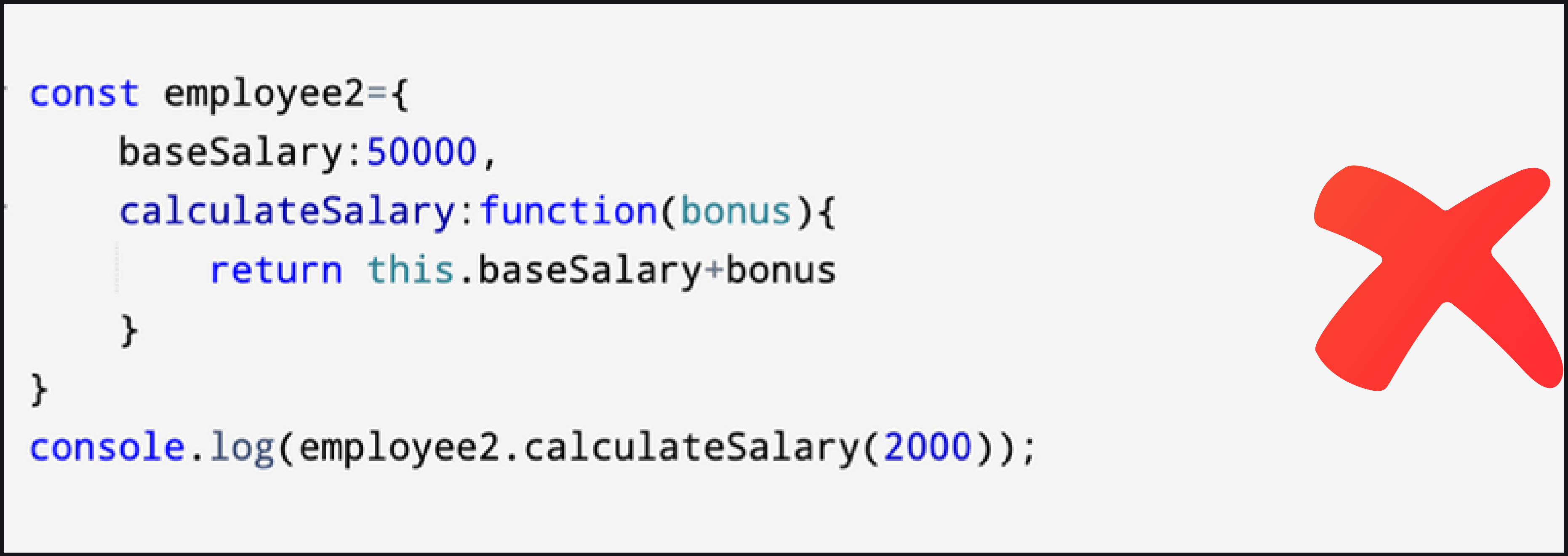
lets have a look at how to calculate salary and bonus of different employess.

CALCULATING EMPLOYEE 1 SALARY



```
const employee={
    baseSalary:50000,
    calculateSalary:function(bonus){
        return this.baseSalary+bonus
    }
}
console.log(employee.calculateSalary(2000));
```

CALCULATING EMPLOYEE 2 SALARY

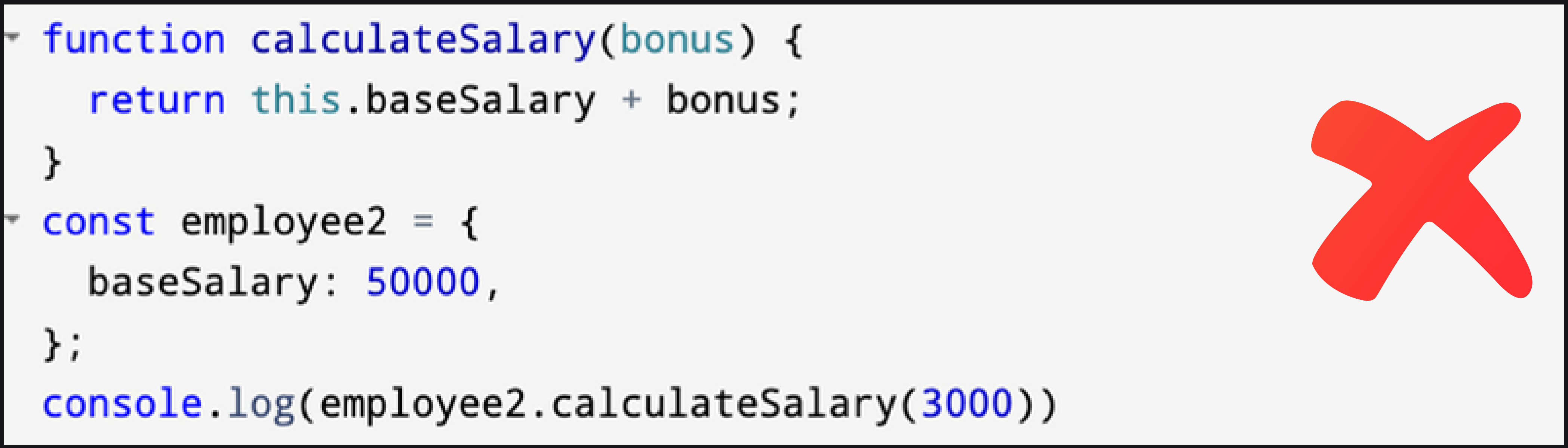


```
const employee2={
    baseSalary:50000,
    calculateSalary:function(bonus){
        return this.baseSalary+bonus
    }
}
console.log(employee2.calculateSalary(2000));
```

NOT A GOOD PRACTICE BEACUSE?

- We are using same functions into different objects, which is creating duplicte functions.
- so need to remove duplicate functions and need to make it work with single function for good programming practice .

MAY BE YOU CAN THINK YOU CAN WRITE IN THIS WAY

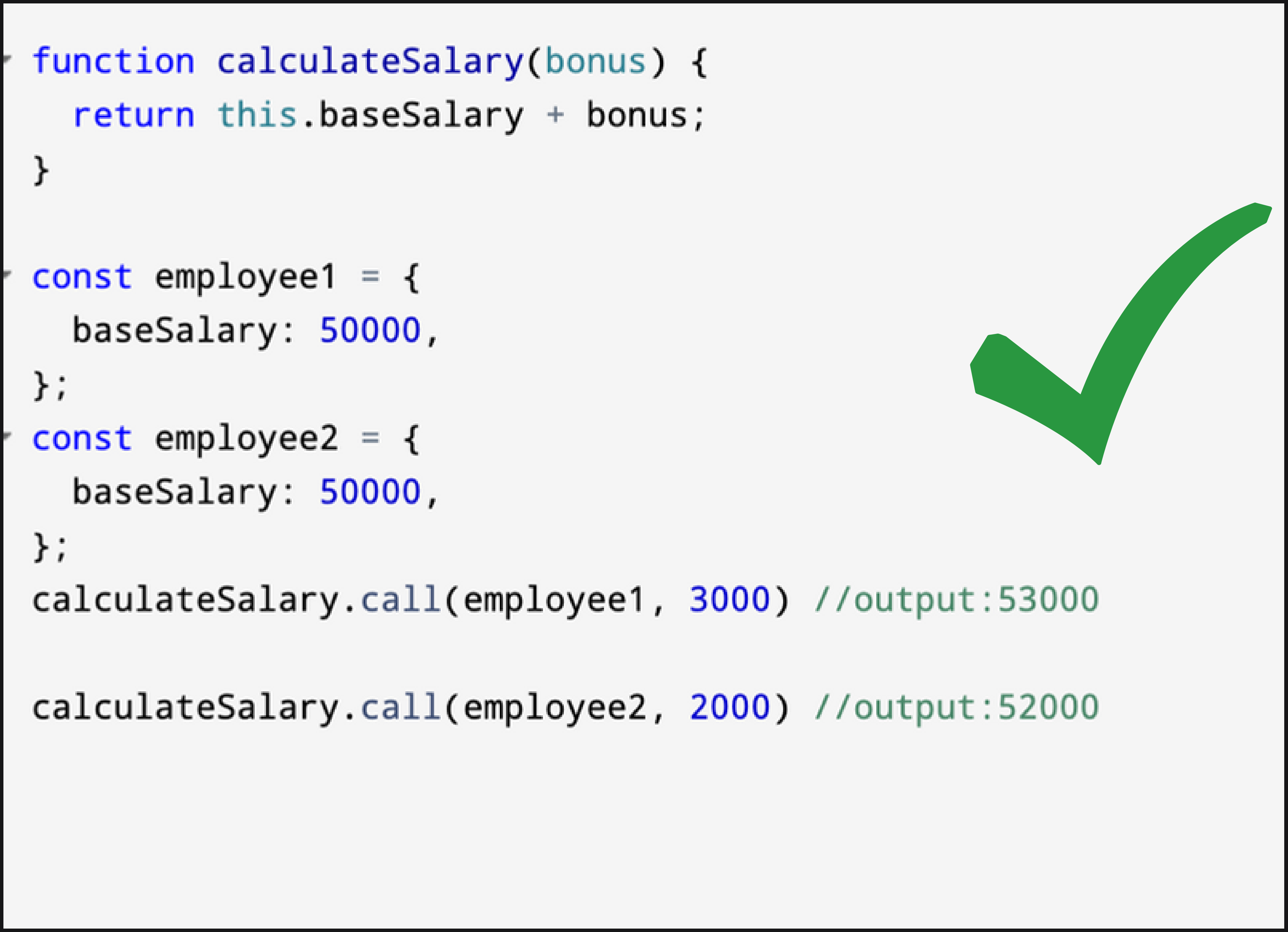


```
function calculateSalary(bonus) {
  return this.baseSalary + bonus;
}
const employee2 = {
  baseSalary: 50000,
};
console.log(employee2.calculateSalary(3000))
```

calculateSalary function is not a method of the employee2 object, so it doesn't have access to this.baseSalary.

THIS IS WHERE CALL COMES IN RESCUE

SAME EXAMPLE WITH CALL()



```javascript
function calculateSalary(bonus) {
  return this.baseSalary + bonus;
}

const employee1 = {
  baseSalary: 50000,
};
const employee2 = {
  baseSalary: 50000,
};
calculateSalary.call(employee1, 3000) //output:53000

calculateSalary.call(employee2, 2000) //output:52000
```

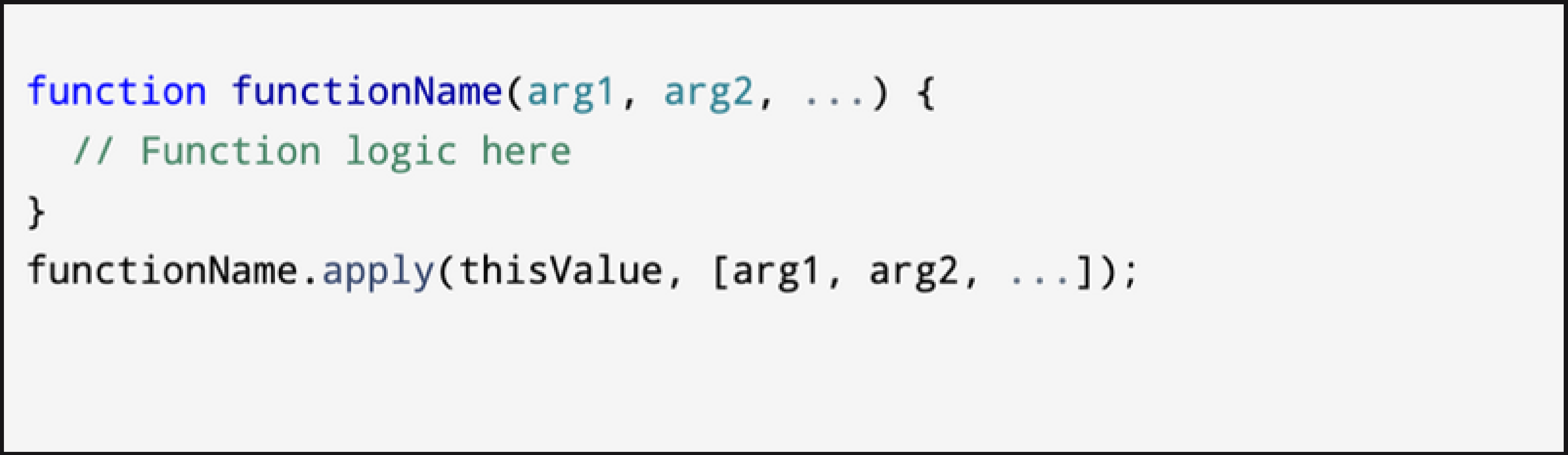
- **calculateSalary added with prototype call() to pass objects.**
- **In call along with objects , we can pass parameters (3000,2000)**

CALL DEFINITION COME EXPLANATION

- The call() method is used to invoke a function with a specified this value and arguments provided individually.
- It allows you to call a function as if it were a method of an object, even if it's not originally defined as a method of that object.

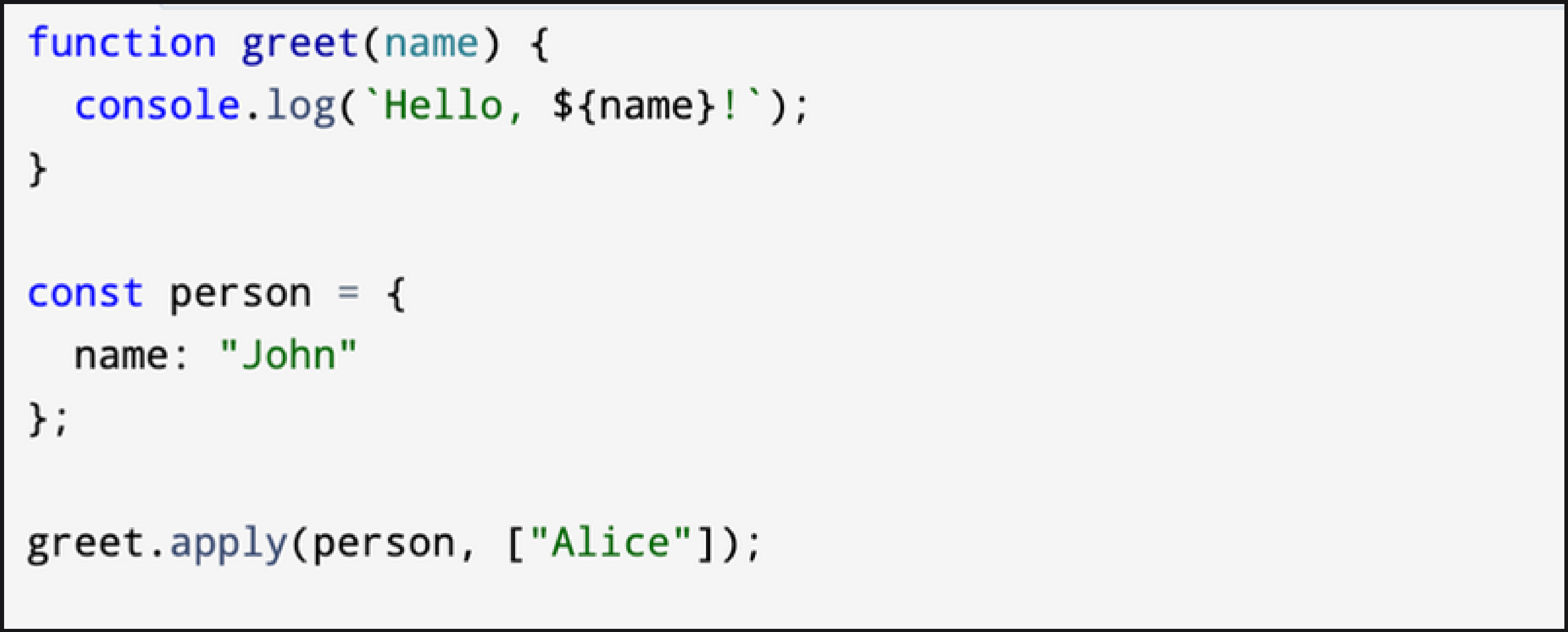
APPLY()

- apply() method in JavaScript is similar to the call() method, but it accepts arguments as an array rather than individually.
- It allows you to call a function with a specified this value and an array or array-like object of arguments



```
function functionName(arg1, arg2, ...) {
  // Function logic here
}
functionName.apply(thisValue, [arg1, arg2, ...]);
```

EXAMPLE



```javascript
function greet(name) {
  console.log(`Hello, ${name}!`);
}

const person = {
  name: "John"
};

greet.apply(person, ["Alice"]);
```

BIND 👉

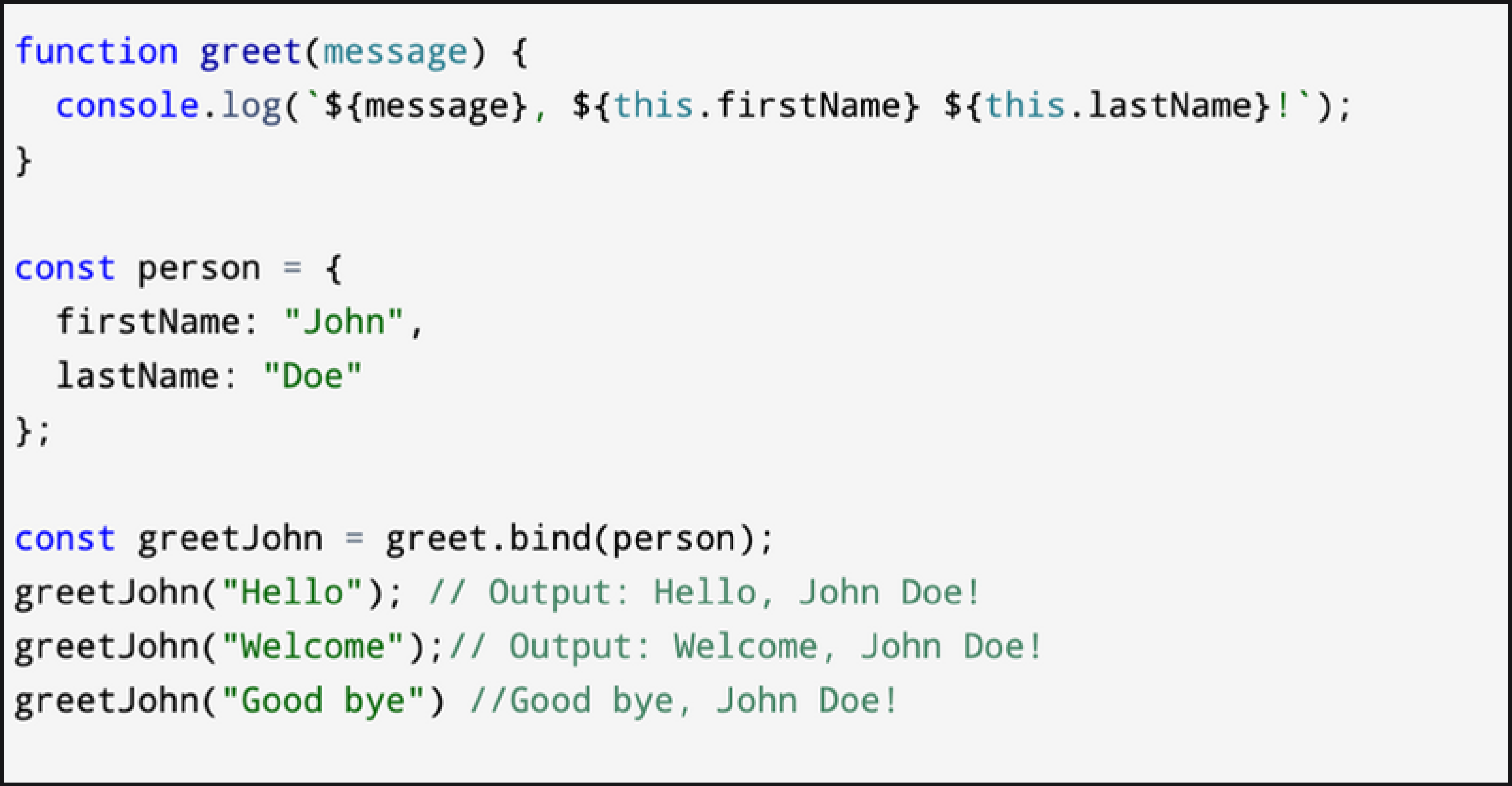
BIND()

bind() is a method that creates a new function with a specific this context and optionally prepends arguments to the argument list.

NOTE:

call() is a method that allows you to invoke a function immediately. where as bind() is a method that creates a new function .

EXAMPLE



```
function greet(message) {
  console.log(`${message}, ${this.firstName} ${this.lastName}!`);
}

const person = {
  firstName: "John",
  lastName: "Doe"
};

const greetJohn = greet.bind(person);
greetJohn("Hello"); // Output: Hello, John Doe!
greetJohn("Welcome");// Output: Welcome, John Doe!
greetJohn("Good bye") //Good bye, John Doe!
```

As bind creates new function with specific this context , we see greetJhon() called with different values like hello, welcome etc...which is giving the respective output with this context.and it’s not possible with call() as it’s immediately invoked.

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@Duvvuru Kishore