### Overriding Methods & Properties

This lesson teaches us how to override methods and properties in both the ES5 and ES6 versions of JavaScript.

#### WE'LL COVER THE FOLLOWING

- Overriding in the ES5 Version
- Example
- Overriding in the ES6 Version
  - Example

### Overriding in the ES5 Version #

The properties and methods defined on the prototype of a *constructor* function can be **overridden** when *inherited* by another *constructor* function.

## Example #

Let's take a look at an example implementing this:

```
//constructor function Shape
function Shape(shapeName, shapeSides){
 this.name = shapeName
  this.sides = shapeSides
}
Shape.prototype.displayInfo = function(){
  console.log(`Shape is ${this.name}`)
}
Shape.prototype.equalSides = 'no'
//constructor function Rectangle
function Rectangle(shapeName, shapeSides, shapeLength, shapeWidth){
  Shape.call(this,shapeName,shapeSides)
  this.length = shapeLength
  this.width = shapeWidth
}
Rectangle.prototype = Object.create(Shape.prototype)
Rectangle.prototype.constructor = Rectangle
```

```
//overriding the value of "equalsides" property
Rectangle.prototype.equalSides = 'yes'
console.log(Rectangle.prototype.equalSides)

//overriding the displayInfo method
Rectangle.prototype.displayInfo = function(){
   return this.sides
}
var rec = new Rectangle('Rectangle',4,3,5)
//shows sides instead of name
console.log(rec.displayInfo())
```

#### In the example above:

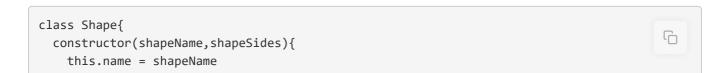
- In **line 6**, the **displayInfo** function is defined on the prototype of **Shape** constructor function.
- In **line 10**, the **equalSides** property is defined on the prototype of **Shape** constructor function.
- When Shape object becomes the prototype for Rectangle, Rectangle can then inherit Shape 's prototype properties.
- In **line 24**, Rectangle overrides the inherited property, equalSides, by accessing it and setting its value equal to yes.
- Similarly, in **line 29**, Rectangle overrides the inherited <code>displayInfo</code> function by modifying it and returning <code>sides</code> instead of displaying the <code>name</code>.

# Overriding in the ES6 Version #

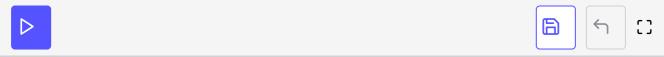
As discussed in the previous lesson, using super() invokes the parent class
constructor. Similarly, super.method() is used to invoke a parent class method.

#### Example #

Let's see how super.method() can be used to override a method in the child class in the example below:



```
this.sides = shapeSides
  getArea(){
    return 0
  }
}
class Rectangle extends Shape{
  constructor(shapeName, shapeSides, shapeLength, shapeWidth){
    super(shapeName, shapeSides)
    this.length = shapeLength
    this.width = shapeWidth
  //method calculating the area of rectangle
  calculateArea(){
    console.log("Area:",this.length*this.width)
  //overriding the getArea() method from parent class
  getArea(){
    //parent class's getArea called first
    super.getArea()
    //calculateArea called
    this.calculateArea()
  }
}
var rec = new Rectangle('Rectangle',4,3,5)
console.log("Name:",rec.name)
console.log("Sides:",rec.sides)
console.log("Length", rec.length)
console.log("Width", rec.width)
rec.getArea()
```



As seen in the code above, in order to modify the functionality of the original getArea method in the Rectangle, i.e., the child class:

- A method calculateArea is defined that displays the area of a rectangle by computing the product of its length and width properties.
- A method with the same name, getArea, is defined which calls Shape's getArea method using the super keyword followed by a call to its calculateArea function.

Hence, Rectangle gets a getArea function with a modified functionality.

Let's discuss the interesting concept of mixins in the next lesson.