

### Constants

```
> const EULER = 2.7182818284
> EULER = 13
> EULER
> 2.7182818284 // Value stays the same
```

**Warning! If array or object, the reference is kept**

**constant. If the constant is a reference to an object, you can still modify the content, but never change the variable.**

```
> const CONSTANTS = []
> CONSTANTS.push(EULER)
> CONSTANTS
> [ 2.7182818284 ]
> CONSTANTS = { 'euler': 2.7182818284 }
> CONSTANTS
> [ 2.7182818284 ]
```

### Object Notation

```
// Computed properties
> let key = new Date().getTime()
> let obj = { [key]: "value" }
> obj
> { '1459958882881': 'value' }
// Object literals
balloon = { color, size };
// Same as
balloon = {
  color: color,
  size: size
}
// Better method notations
obj = {
  foo (a, b) { ... },
  bar
```

### Destructuring Arrays

```
> let [a, b, c, d] = [1, 2, 3, 4];
> console.log(a);
> 1
> b
> 2
```

### Destructuring Objects

```
> let luke = { occupation: 'jedi',
  father: 'anakin' }
> let {occupation, father} = luke
> console.log(occupation, father)
> jedi anakin
```

### Spread Operator

```
// Turn arrays into comma separated
// values and more
> function logger (...args) {
  console.log('%s arguments',
    args.length)
  args.forEach(console.log)
  // arg[0], arg[1], arg[2]
}
```

### let vs var

```
> var average = 5
> var average = (average + 1) / 2
> average
> 3
> let value = 'hello world'
> let value = 'what is new'
// ->throws TypeError: Identifier
'value' has
already been declared
Be aware of Temporal Dead Zones:
> console.log(val) // ->
'undefined'
> var val = 3
> console.log(val) // -> 3
Because it's equivalent to:
```

### let vs var (cont)

```
> var val
> console.log(val)
> val = 3
> console.log(val)
Variables declared with "let/const" do not get hoisted:
> console.log(val)
// -> Throws ReferenceError
> let val = 3
> console.log(val) // -> 3
```

### Promises

```
new Promise((resolve, reject) => {
  request.get(url, (error,
    response,
      body) => {
        if (body) {
          resolve(JSON.parse(
            body));
        } else {
          resolve({});
        }
      }
    })
  .then(() => { ...
  })
  .catch((err) =>
    throw err)
// Parallelize tasks
Promise.all([
  promise1, promise2, promise3
]).then(() => {
  // all tasks are finished
})
```



### Classes, Inheritance, Setters, Getters

```
class Rectangle extends Shape {
  constructor(id, x, y, w, h) {
    super(id, x, y)
    this.width = w
    this.height = h
  }
  // Getter and setter
  set width(w) {
    this._width = w
  }
  get width() {
    return this._width
  }
}

class Circle extends Shape {
  constructor(id, x, y, radius) {
    super(id, x, y)
    this.radius = radius
  }
  do_a(x) {
    let a = 12;
    super.do_a(x + a);
  }
  static do_b() { ...
}

Circle.do_b()
```

### Binary, Octal and Hex Notation

```
> 0b1001011101 // 605
> 0o6745 // 3557
> 0x2f50a // 193802
```

### Arrow Function

```
> setTimeout(() => {
... console.log('delayed')
... }, 1000)
```

### Equivalent with Anonymous Function

```
> setTimeout(function () {
... console.log('delayed')
... }.bind(this), 1000)
```

### Equivalent with IIFE

```
> (function () {
... var cue = 'Luke, I am your
father'
... console.log(cue) // 'Luke, I am
-
... }())
> console.log(cue) // Reference
Error
```

### New Scoped Functions

```
> {
... let cue = 'Luke, I am your
father'
... console.log(cue)
... }
> 'Luke, I am your father'
```

### String Interpolation, Thanks to Template Literals

```
> const name = 'Tiger'
> const age = 13
> console.log(`My cat is named
${name} and is
${age} years old.`)
> My cat is named Tiger and is 13
years old.
// We can preserve newlines...
let text = ( `cat
dog
nickelodeon`
)
```

### Default Params

```
> function howAreYou (answer =
'ok') {
  conso
```