JavaScript ES6

Lesson 16
ES6-Extensions

Lesson Objectives

At the end of this module you will be able to:

- Perform operation on the new extensions introduced in JavaScript objects

ES6 Library - Extensions

ES6 has added lots of new properties and methods to built-in JavaScript objects, so that the programmer can do cumbersome tasks easily.

These new functionalities aim to help the developers get rid of using hacks and error-prone techniques to do various operations related to numbers, strings, and arrays.

ES6 Library – Number Extensions

Functions like parseInt, parseFloat can be accessed as a static function using Number object.

In ES6 numeric now constants can also be represented using binary and octal notation.

Functions like isInteger, isNaN, isFinite, isSafeInteger have been added to the Number object.

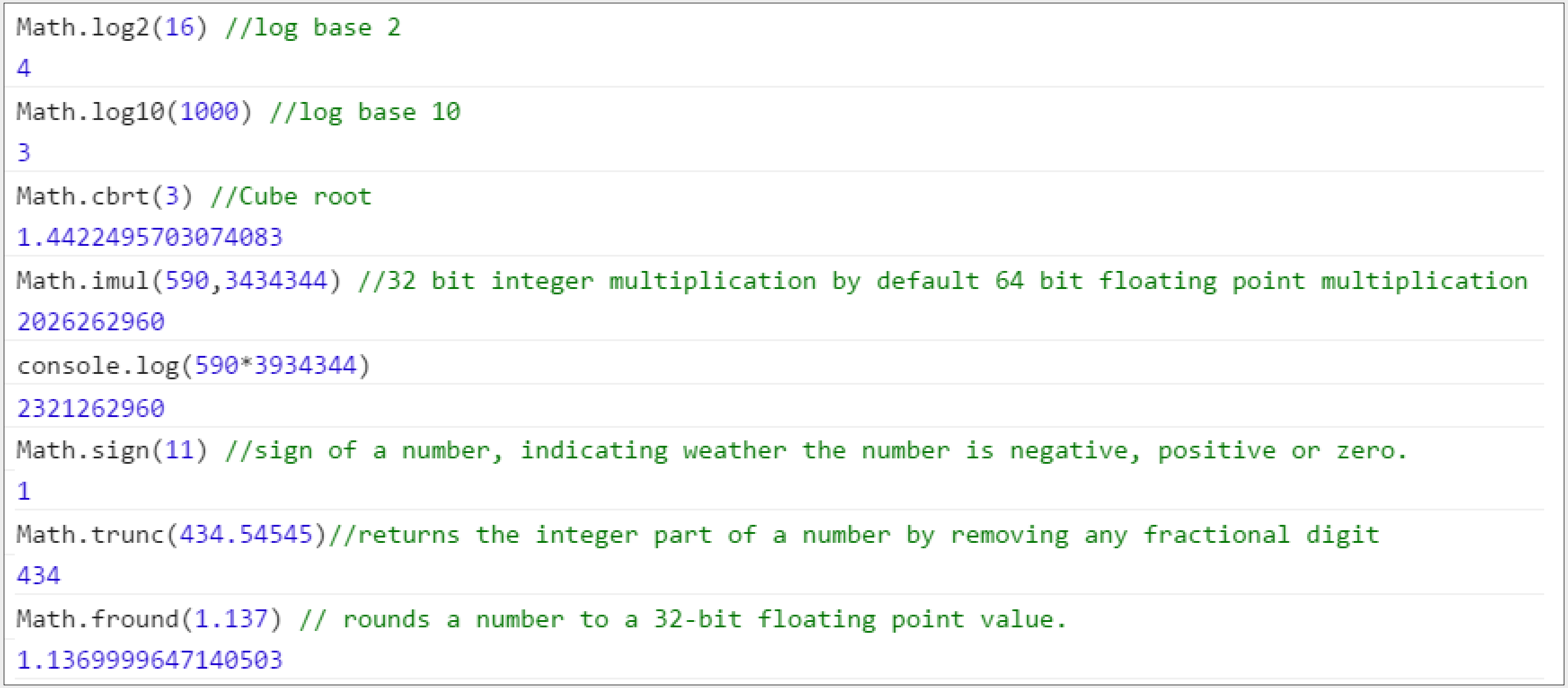
Three new constants like Number.EPSILON, Number.MAX_SAFE_INTEGER, Number.MAX_SAFE_INTEGER has been added to the Number object.

Demo

Number-Extensions

ES6 Library – Math Extensions

ES6 adds a lot of new methods to the Math object, related to trigonometry, arithmetic and many more, so that developers can use native methods instead of external math libraries.



```
Math.log2(16) //log base 2
4
Math.log10(1000) //log base 10
3
Math.cbrt(3) //Cube root
1.4422495703074083
Math.imul(590,3434344) //32 bit integer multiplication by default 64 bit floating point multiplication
2026262960
console.log(590*3934344)
2321262960
Math.sign(11) //sign of a number, indicating weather the number is negative, positive or zero.
1
Math.trunc(434.54545)//returns the integer part of a number by removing any fractional digit
434
Math.fround(1.137) // rounds a number to a 32-bit floating point value.
1.1369999647140503
```

ES6 Library – String Extensions

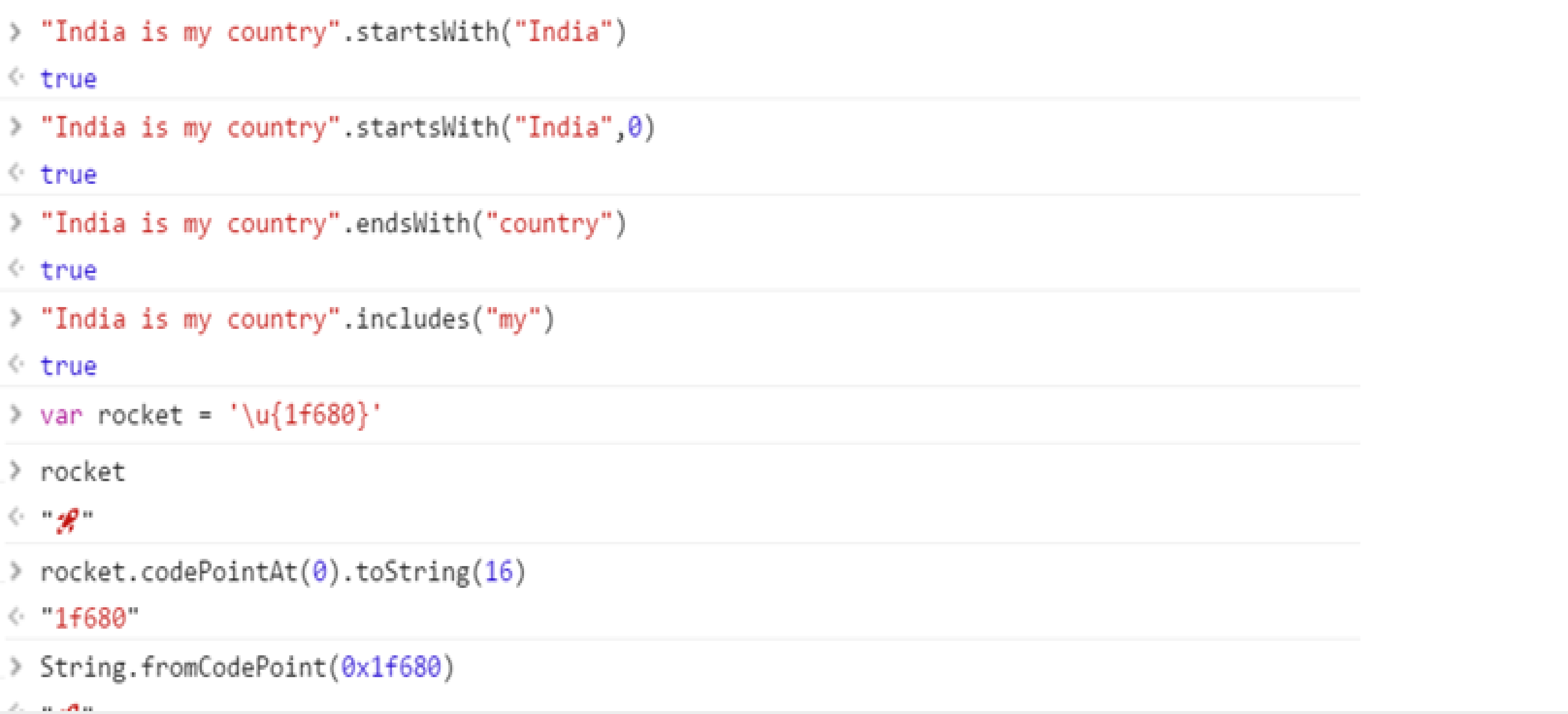
ES6 provides new ways of creating strings and adds new properties to global String object and to its instances to make working with strings easier.

Template strings is a new literal for creating strings which provide features such as embedded expressions, multi-line strings, string interpolation, string formatting, string tagging, and so on.

New functions		
codePointAt	repeat	includes
startsWith	endsWith	normalize

Supports Astral-plane value '\u{1F680}', which takes more than 4 Hexadecimal values. In ES5 it needs to be provided with 2 Hex Values '\ud83d\ude80'

ES6 Library – String Extensions



```
> "India is my country".startsWith("India")
<· true
> "India is my country".startsWith("India",0)
<· true
> "India is my country".endsWith("country")
<· true
> "India is my country".includes("my")
<· true
> var rocket = '\u{1f680}'
> rocket
<· "🚀"
> rocket.codePointAt(0).toString(16)
<· "1f680"
> String.fromCodePoint(0x1f680)
<· "🚀"
```

Demo

String-Extensions

ES6 Library – Object Extensions

ES6 standardizes the __proto__ property of an object

Object.is() method determines whether two values are equal or not.

Object.setPrototypeOf() method is just an another way to assign the [[prototype]] property of an object.

Object.assign() method is used is used to copy the values of all enumerable own properties from one or more source objects to a target object.

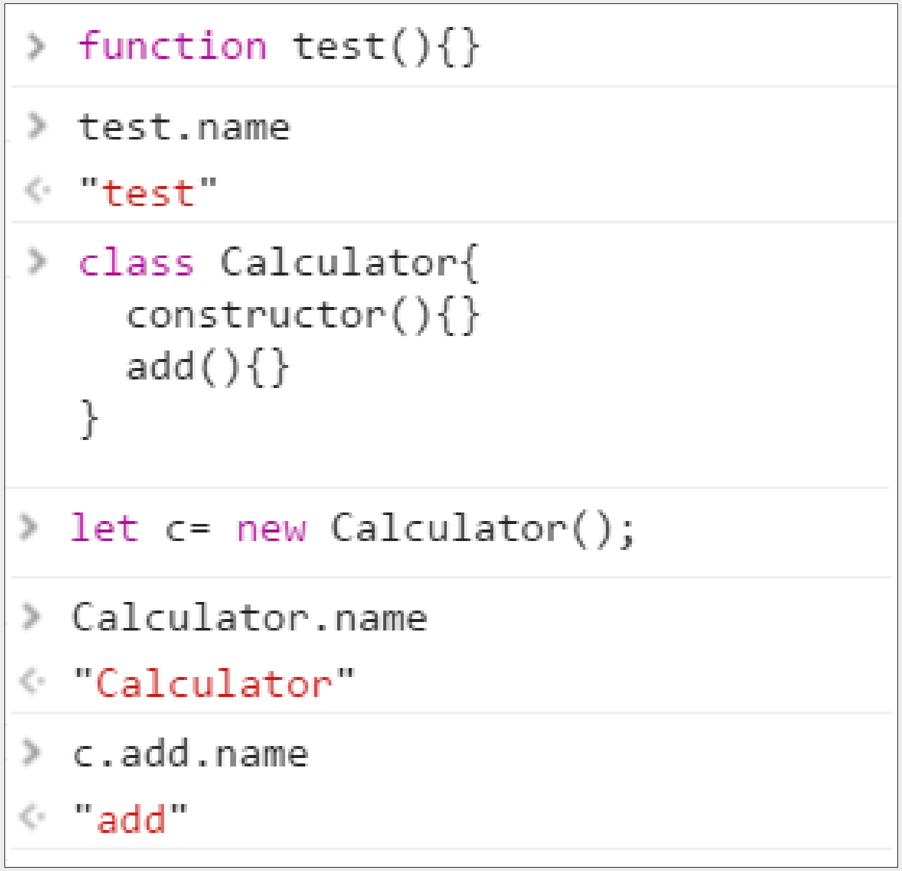
Object.getOwnPropertySymbols() method returns an array of all symbol properties found directly upon a given object.

Demo

Object-Extensions

ES6 Library – Function Extensions

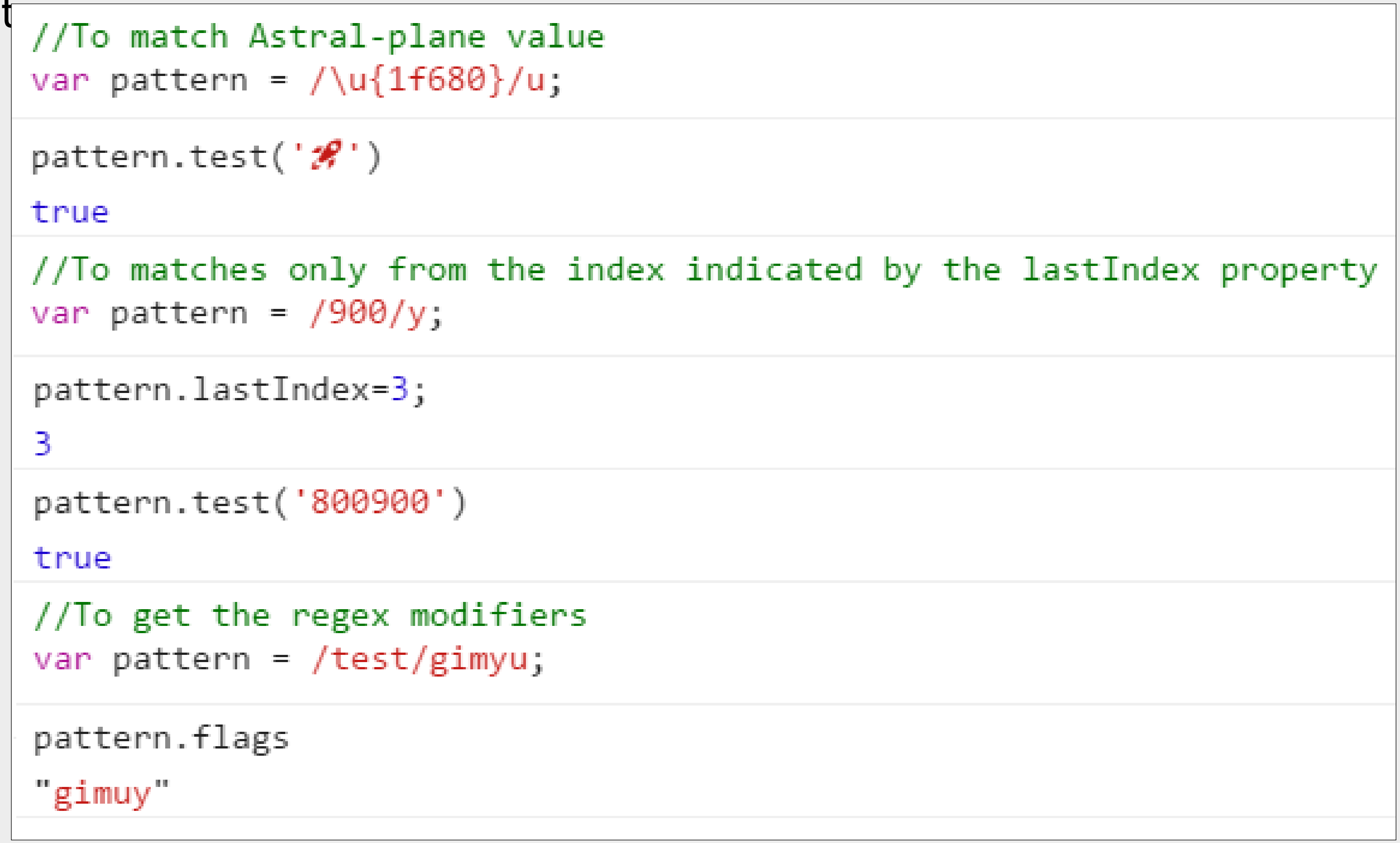
ES6 introduce name property on the function which will be useful for logging purpose.



```
> function test(){}
> test.name
< "test"
> class Calculator{
    constructor(){}
    add(){}
  }
> let c= new Calculator();
> Calculator.name
< "Calculator"
> c.add.name
< "add"
```

ES6 Library – Regex Extensions

ES6 introduces two new flags /u and /y and a property named flags for Regex object



```
//To match Astral-plane value
var pattern = /\u{1f680}/u;

pattern.test('🚀')
true

//To matches only from the index indicated by the lastIndex property
var pattern = /900/y;

pattern.lastIndex=3;
3

pattern.test('800900')
true

//To get the regex modifiers
var pattern = /test/gimyu;

pattern.flags
"gimuy"
```

Summary

In ES6 numeric now constants can also be represented using binary and octal notation.

In ES6 String supports Astral-plane value which takes more than 4 Hexadecimal values.

ES6 standardizes the __proto__ property of an object

ES6 introduce name property on the function which will be useful for logging purpose.

ES6 introduces two new flags /u and /y and a property named flags for Regex object.