Object Inheritance & Prototype Chain

Open obj.js for a thorough explanation in the form of comments.

OBJECTS IN JAVASCRIPT

Everything is an object.
(Well, almost everything)

PRIMITIVES

- Numbers
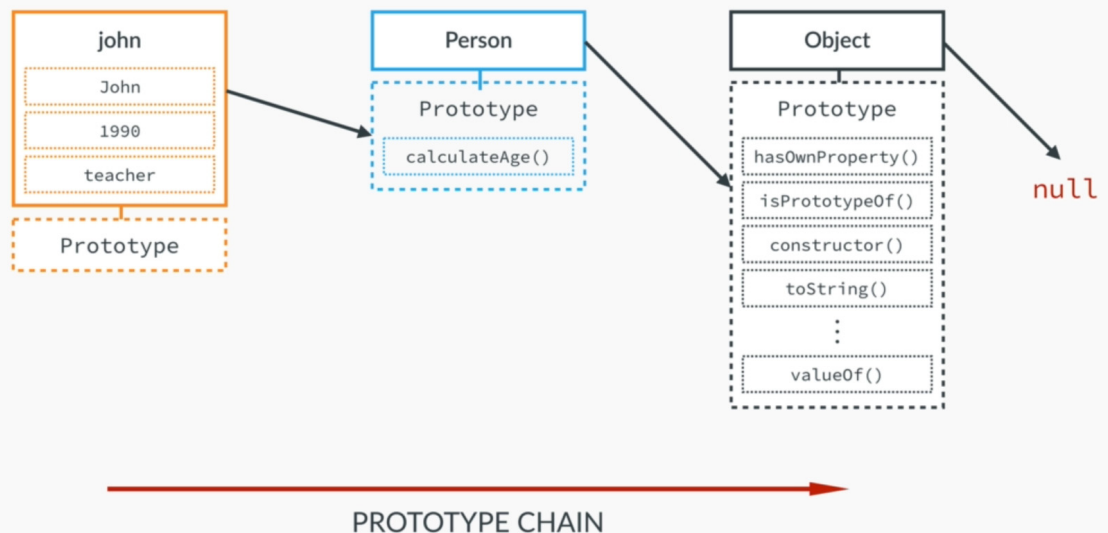- Strings
- Booleans
- Undefined
- Null

EVERYTHING ELSE ...

- Arrays
- Functions
- Objects
- Dates
- Wrappers for Numbers, Strings, Booleans

... IS AN OBJECT

INHERITANCE IN JAVASCRIPT: PROTOTYPES AND PROTOTYPE CHAINS

john
John
1990
teacher
Prototype

Person
Prototype
calculateAge()

Object
Prototype
hasOwnProperty()
isPrototypeOf()
constructor()
toString()
⋮
valueOf()

null

PROTOTYPE CHAIN

```
                                                          Console was cleared                                    VM2635:1
⟵ undefined
> john;
⟵ ▼ Person {name: "John", yearOfBirth: 1990, job: "teacher"} ℹ
       job: "teacher"
       name: "John"
       yearOfBirth: 1990
     ▼ __proto__:
       ▶ calculateAge: ƒ ()
         lastName: "Smith"
       ▶ constructor: ƒ (name, yearOfBirth, job)
       ▼ __proto__:
         ▶ constructor: ƒ Object()
         ▶ hasOwnProperty: ƒ hasOwnProperty()
         ▶ isPrototypeOf: ƒ isPrototypeOf()
         ▶ propertyIsEnumerable: ƒ propertyIsEnumerable()
         ▶ toLocaleString: ƒ toLocaleString()
         ▶ toString: ƒ toString()
         ▶ valueOf: ƒ valueOf()
         ▶ __defineGetter__: ƒ __defineGetter__()
         ▶ __defineSetter__: ƒ __defineSetter__()
         ▶ __lookupGetter__: ƒ __lookupGetter__()
         ▶ __lookupSetter__: ƒ __lookupSetter__()
         ▶ get __proto__: ƒ __proto__()
         ▶ set __proto__: ƒ __proto__()
> Person.prototype;
⟵ ▼ {calculateAge: ƒ, lastName: "Smith", constructor: ƒ} ℹ
       ▶ calculateAge: ƒ ()
         lastName: "Smith"
       ▶ constructor: ƒ (name, yearOfBirth, job)
       ▶ __proto__: Object
> john.__proto__ === Person.prototype;
⟵ true
> john.__proto__.__proto__ === Object.prototype;
⟵ true
> john.hasOwnProperty("job");
⟵ true
> john.hasOwnProperty("lastName");
⟵ false
> john instanceof Person;
⟵ true
> john instanceof Object;
⟵ true
>
```

```
⊳  ⎕ |  Elements   Console   Sources   »          ⋮   ✕

▷  ⊘ | top                   ▼ | 👁 | Filter  Default levels ▼   ⚙

    Console was cleared                              VM4725:1
‹  undefined
›  x = [2,4,6];
‹  ▶ (3) [2, 4, 6]
›  console.info(x);
    ▼ (3) [2, 4, 6] ⓘ                                VM4804:1
        0: 2
        1: 4
        2: 6
        length: 3
      ▶ __proto__: Array(0)
‹  undefined
›  x.length;
‹  3
›  x.__proto__ === Array.prototype;
‹  true
›  x.__proto__.__proto__ === Object.prototype;
‹  true
›  |
```
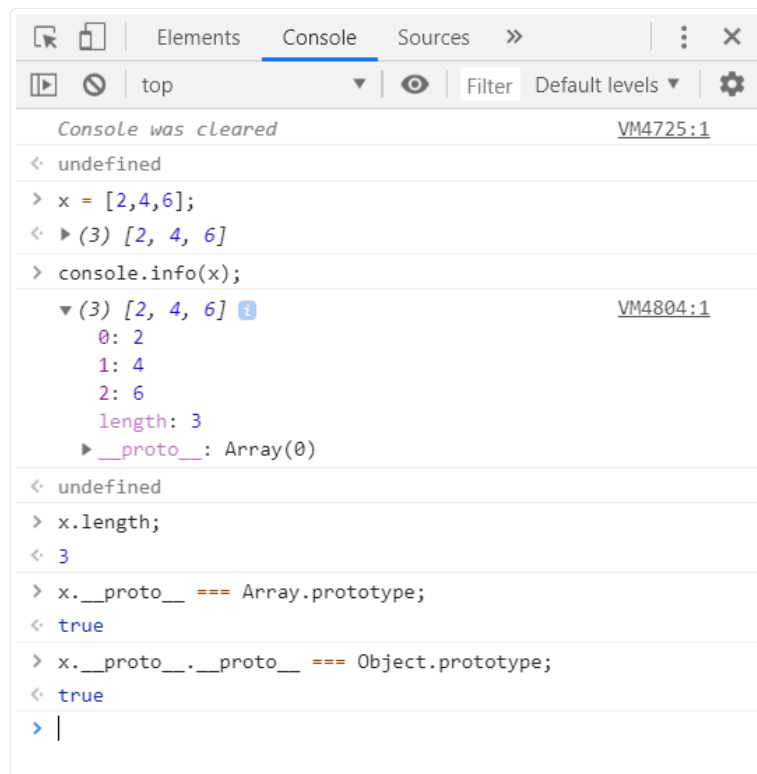
Check the developer console for the log (Only for .html version)

Images are taken from: