

APPMOB - Javascript Prototypes

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Prototypal Inheritance

```
var object1 = {};  
object1.a = 10;
```

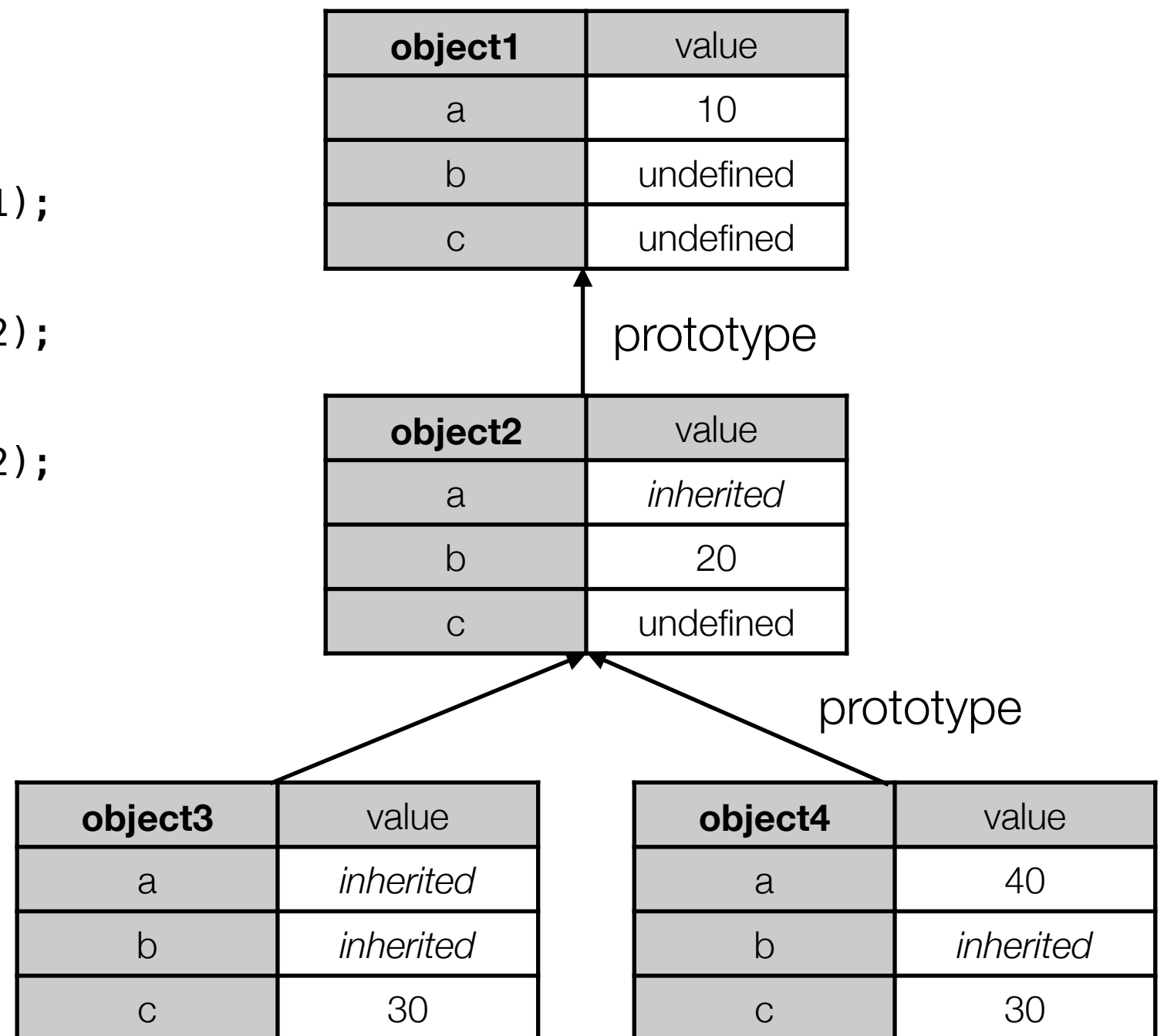
```
var object2 = Object.create(object1);  
object2.b = 20;
```

```
var object3 = Object.create(object2);  
object3.c = 30;
```

```
var object4 = Object.create(object2);  
object4.a = 40;  
object4.c = 30;
```

```
console.log(object3.a); // 10  
console.log(object3.b); // 20  
console.log(object3.c); // 30
```

```
console.log(object4.a); // 40  
console.log(object4.b); // 20  
console.log(object4.c); // 30
```



Class-like Inheritance with Prototypes

```
function Person(name) {  
  this.name = name;  
}
```

This is a **constructor function**. The **this** variable is the object that will be created. You can attach properties to that object.

```
Person.prototype.isAlive = function() {  
  return true;  
};
```

```
Person.prototype.canEat = function() {  
  return true;  
};
```

The **prototype** of the function will be the prototype of the created object. You can add functions (or methods) to it. All objects created with this constructor function will have these methods (through the prototype).

```
Person.prototype.hello = function(name) {  
  return "Hello " + name + "! I'm " + this.name + ".";  
};
```

```
var john = new Person("John");
```

By using the **new** keyword, you call **Person** as a **constructor function** rather than as a regular function.

```
john.isAlive();    // true  
john.canEat();     // true  
john.hello("Bob"); // "Hello Bob! I'm John."
```

Class-like Inheritance with Prototypes

The Zombie prototype can **override** methods of the Person prototype.

```
function Zombie() {  
}
```

```
Zombie.prototype = Object.create(Person.prototype);  
Zombie.prototype.constructor = Zombie;
```

```
Zombie.prototype.isAlive = function() {  
    return undefined;  
};
```

```
Zombie.prototype.hello = function() {  
    return "Brainssssssss!";  
};
```

```
var graar = new Zombie();
```

```
graar.isAlive();    // undefined  
graar.canEat();     // true  
graar.hello("Bob"); // "Brainssssssss!"
```

The **prototype** of Zombie is a Person. This is how you can simulate class-like behavior.

canEat is not defined on the Zombie prototype. It is **inherited** from the Person prototype.

<http://codepen.io/AlphaHydrae/pen/RNqBwq/>

Class-like Inheritance with Prototypes

You usually avoid implementing Javascript "classes" like this, because it's not very readable.

```
function Zombie() {  
  Person.call(this, "Zombies have no name");  
}
```

This is how you would call the **parent constructor**, the equivalent of **super** in Java.

```
Zombie.prototype = Object.create(Person.prototype);  
Zombie.prototype.constructor = Zombie;
```

This is how you would call the method of the **parent prototype**, the equivalent of **super** in Java.

```
Zombie.prototype.hello = function(name) {  
  return Person.prototype.call(this, name) + " Let's eat brainsss!";  
};
```

Use an existing class library. For example:

<http://ejohn.org/blog/simple-javascript-inheritance/>

```
var Person = Class.extend({
  init: function(isDancing) {
    this.dancing = isDancing;
  },
  dance: function() {
    return this.dancing;
  }
});

var Ninja = Person.extend({
  init: function() {
    this._super(false);
  },
  dance: function() {
    // Call the inherited version of dance()
    return this._super();
  },
  swingSword: function(){
    return true;
  }
});
```

```
var p = new Person(true);
p.dance(); // true
```

```
var n = new Ninja();
n.dance(); // false
n.swingSword(); // true
```