

CoffeeScript

introduction

大綱

- CoffeeScript 介紹
- 語法
- 類別

CoffeeScript? Why?

- 語法較為簡潔
- 避免掉一些js常見錯誤
- => , @ 的使用: ES6
- 字串代換
- 支援class
- 不少套件的是以coffeeScript寫成
- <http://www.netmagazine.com/features/10-good-reasons-use-coffeescript>

使用 CoffeeScript

#coffeescript命令列

```
~ $ npm install -g coffee-script
```

#編譯coffee檔成js檔

```
~ $ coffee --compile my-script.coffee
```

注解 & 變數

```
# 單行注解
```

```
###  
多行注解  
###
```

(不會出現在編譯後的程式碼)

```
/*  
多行注解  
*/
```

```
# variable  
myVariable = "test"
```

```
var myVariable;  
myVariable = "test";
```

operator & alias

is
isnt
not
and
or
true, yes, on
false, no, off
@, this
of
in

====
!===
!
&&
||
true
false
this
in
no JS equivalent

函示宣告

```
# function  
func = ->  
  # An extra line  
  "bar"
```

```
times = (a, b) -> a * b
```

```
times = (a = 1, b = 2) -> a * b
```

```
var func;  
  
func = function() {  
  return "bar";  
};
```

```
var times;  
  
times = function(a, b) {  
  return a * b;  
};
```

```
var times;  
  
times = function(a, b) {  
  if (a == null) {  
    a = 1;  
  }  
  if (b == null) {  
    b = 2;  
  }  
  return a * b;  
};
```

函式

```
sum = (nums...) ->
  result = 0
  nums.forEach (n) -> result += n
  result
```

```
var sum,
  __slice = [].slice;

sum = function() {
  var nums, result;
  nums = 1 <= arguments.length ?
  __slice.call(arguments, 0) : [];
  result = 0;
  nums.forEach(function(n) {
    return result += n;
  });
  return result;
};
```

```
a = "Howdy!"

console.log a
# Equivalent to:
console.log(a)

console.log foo a
# Equivalent to:
console.log(foo(a))
```

```
var a;
a = "Howdy!";

console.log(a);
console.log(a);
console.log(foo(a));
console.log(foo(a));
```

context binding

```
this.clickHandler = () => alert("clicked")
element.addEventListener("click", (e) => this.clickHandler(e))
```

```
var _this = this;

this.clickHandler = function() {
  return alert("clicked");
};

element.addEventListener("click", function(e) {
  return _this.clickHandler(e);
});
```

物件

```
object1 = {one: 1, two: 2}

# Without braces
object2 = one: 1, two: 2

# Using new lines instead of commas
object3 =
  one: 1
  two: 2

User.create(name: "John Smith")
```

```
var object1, object2, object3;

object1 = { one: 1, two: 2 };

object2 = { one: 1, two: 2 };

object3 = { one: 1, two: 2 };

User.create({
  name: "John Smith"
});
```

陣列

```
array1 = [1, 2, 3]
```

```
array2 = [  
 1  
 2  
 3  
 ]
```

```
array3 = [1,2,3, ]
```

```
var array1, array2, array3;
```

```
array1 = [1, 2, 3];
```

```
array2 = [1, 2, 3];
```

```
array3 = [1, 2, 3];
```

if else

```
alert "It's cold!" if heat < 5
```

```
if not true then "Panic"
```

```
unless true  
  "Panic"
```

```
if true is 1  
  "Type coercion fail!"
```

```
if true isnt true  
  alert "Opposite day!"
```

```
if (heat < 5) { alert("It's cold!"); }
```

```
if (!true) { "Panic"; }
```

```
if (!true) { "Panic"; }
```

```
if (true === 1) { "Type coercion fail!"; }
```

```
if (true !== true) { alert("Opposite day!"); }
```

字符串替换

```
color = "Blue"  
out1 = "My favorite color is: #{color}"  
out2 = 'My favorite color is: #{color}'
```

```
var color, out1, out2;  
  
color = "Blue";  
  
out1 = "My favorite color is: " + color;  
  
out2 = 'My favorite color is: #{color}';
```

迴圈

```
for name in ["Roger", "Roderick", "Brian"]
    alert "Release #{name}"
```

```
var name, _i, _len, _ref;
_ref = ["Roger", "Roderick", "Brian"];
for (_i = 0, _len = _ref.length; _i < _len; _i++) {
    name = _ref[_i];
    alert("Release " + name);
}
```

迴圈

```
#第二個參數為index
for name, i in ["Roger the pickpocket", "Roderick the robber"]
    alert "#{i} - Release #{name}"
```

```
var i, name, _len, _ref;
_ref = ["Roger the pickpocket", "Roderick the robber"];
for (i = 0, _len = _ref.length; i < _len; i++) {
    name = _ref[i];
    alert(" " + i + " - Release " + name);
}
```

迴圈

```
release prisoner for prisoner in ["Roger", "Roderick", "Brian"]
```

```
var prisoner, _i, _len, _ref;
_ref = ["Roger", "Roderick", "Brian"];
for (_i = 0, _len = _ref.length; _i < _len; _i++) {
  prisoner = _ref[_i];
  release(prisoner);
}
```

迴圈 - filter

```
prisoners = ["Roger", "Roderick", "Brian"]
release prisoner for prisoner in prisoners when prisoner[0] is "R"
```

```
var prisoner, prisoners, _i, _len;
prisoners = ["Roger", "Roderick", "Brian"];
for (_i = 0, _len = prisoners.length; _i < _len; _i++) {
  prisoner = prisoners[_i];
  if (prisoner[0] === "R") {
    release(prisoner);
  }
}
```

陣列操作

```
range = [1..5]
```

```
firstTwo = ["one", "two", "three"][0..1]
```

```
numbers = [0..9]
numbers[3..5] = [-3, -4, -5]
```

```
#字串也可以操作
my = "my string"[0..2]
```

```
var range;
range = [1, 2, 3, 4, 5];
```

```
var firstTwo;
firstTwo = ["one", "two", "three"].slice(0, 2);
```

```
var numbers, _ref;
numbers = [0, 1, 2, 3, 4, 5, 6, 7, 8, 9];
[].splice.apply(numbers, [3, 3].concat(_ref
= [-3, -4, -5])), _ref;
```

```
var my;
my = "my string".slice(0, 3);
```

陣列查找（跨版本）

```
words = ["rattled", "roudy", "rebbles", "ranks"]  
alert "Stop wagging me" if "ranks" in words
```

```
var words;  
var __indexOf = Array.prototype.indexOf || function(item) {  
    for (var i = 0, l = this.length; i < l; i++) {  
        if (this[i] === item) return i;  
    }  
    return -1;  
};  
words = ["rattled", "roudy", "rebbles", "ranks"];  
if (__indexOf.call(words, "ranks") >= 0) {  
    alert("Stop wagging me");  
}
```

@, ::, ?

```
@saviour = true
```

```
this.saviour = true
```

```
User::first = -> @records[0]
```

```
User.prototype.first = function() {  
  return this.records[0];  
};
```

?

praise if brian?

velocity = southern ? 40

blackKnight.getLegs()?.kick()

blackKnight.getLegs().kick?()

```
if (typeof brian !== "undefined" && brian != null) {  
    praise;  
}
```

```
var velocity;  
velocity = typeof southern !== "undefined" && southern != null ? southern : 40;
```

```
var _ref;  
if (_ref = blackKnight.getLegs()) != null) {  
    _ref.kick();  
}
```

```
var _base;  
if (typeof (_base = blackKnight.getLegs()).kick === "function") {  
    _base.kick();  
}
```

Class

```
class Animal
  price: 5

  sell: =>
    alert "Give me #{@price} shillings!"

animal = new Animal
$("#sell").click(animal.sell)
```

```
var Animal, animal;
var __bind = function(fn, me){ return function(){ return fn.apply(me,
arguments); }; };
Animal = (function() {
  function Animal() {
    this.sell = __bind(this.sell, this);
  }
  Animal.prototype.price = 5;
  Animal.prototype.sell = function() {
    return alert("Give me " + this.price + " shillings!");
  };
  return Animal;
})();
animal = new Animal;
$("#sell").click(animal.sell);
```

Class method

```
class Animal
  @find: (name) ->

Animal.find("Parrot")
```

```
var Animal;
Animal = (function() {
  function Animal() {}
  Animal.find = function(name) {};
  return Animal;
})();
Animal.find("Parrot");
```

Class inherit

```
class Animal
constructor: (@name) ->

alive: ->
false

class Parrot extends Animal
constructor: ->
super("Parrot")

dead: ->
not @alive()
```

Resources

- <http://coffeescript.org/>
- <http://coffeescriptcookbook.com/>
- [The Little Book on CoffeeScript](#)
- <http://js2coffee.org/>