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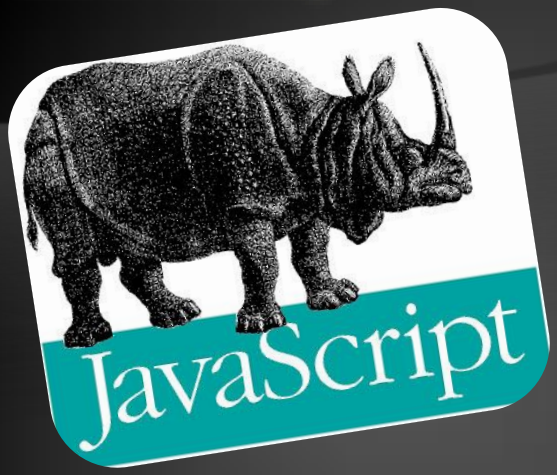
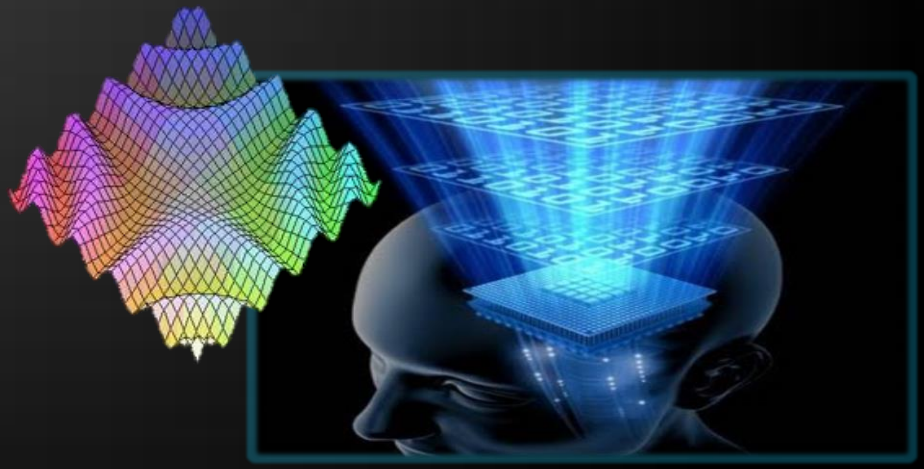


JavaScript Patterns

Private/Public fields, Module, Revealing Module



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Learning & Development Team
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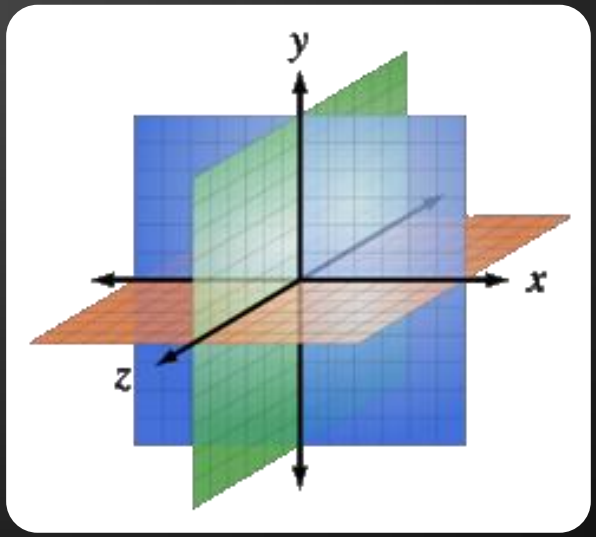
Public/Private fields

Using the function scope



Public/Private Fields

- Each variable is defined:
  - In the global scope (Public)
  - In a function scope (Private)

```
var global = 5;

function myFunction() {
	var private = global;

	function innerFunction(){
		var innerPrivate = private;
	}
}
```

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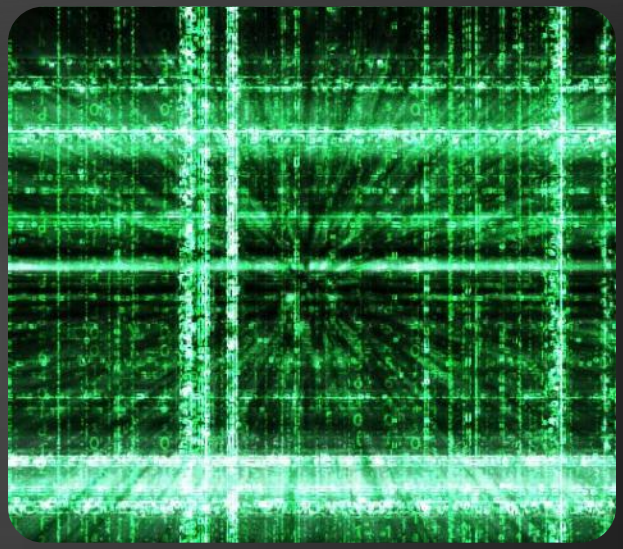

Public/Private fields

Live Demo

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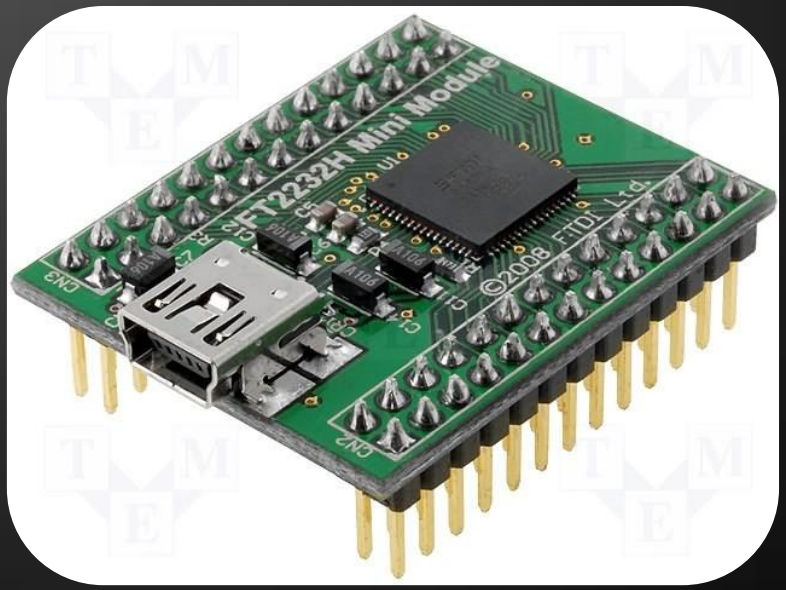
The Module Pattern

Hide members



Pros and Cons

- Pros:
  - "Modularize" code into re-useable objects
  - Variables/functions not in global namespace
  - Expose only public members
- Cons:
  - Functions may be duplicated across objects in memory
  - Not easy to extend
  - Some complain about debugging

Structure

- Structure:

```
var module = (function() {
        //private variables
        //private functions

        return {
                //public members
        };
});
```

- Usage
  - With the new keyword

Example

- Example:

```
var Calculator = (function(eq) {
	var eqCtl = document.getElementById(eq);

	return {
		add: function(x,y) {
			var val = x + y;
			eqCtl.innerHTML = val;
		}
	};
});

var calculator = new Calculator('eq');
calculator.add(2,2);
```

Summary

- Module pattern provides encapsulation of variables and functions
- Provides a way to add visibility (public versus private) to members
- Each object instance creates new copies of functions in memory
- Extending objects can be difficult since no prototyping is used

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Module Pattern

Live Demo

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The Revealing Module Pattern

Reveal the most interesting members

Pros and Cons

- Pros:
  - "Modularize" code into re-useable objects
  - Variables/functions taken out of global namespace
  - Expose only public members
  - "Cleaner" way to expose public members
- Cons:
  - Functions may be duplicated across objects in memory when not using singleton
  - Not easy to extend
  - Some complain about debugging

Structure

- Structure:

```
var module = function() {
        //private variables
        //private functions

        return {
                //public members
        };
}();
```

- Usage
  - Without the new keyword

Example

- Example:

```
var calculator = function(eq) {
       var eqCtl = document.getElementById(eq),
            doAdd = function(x,y) {
                     var val = x + y;
                     eqCtl.innerHTML = val;
                     };

       return {
              add: doAdd
       }; //Expose public member
}('eqCtl');

calculator.add(2,2);
```

Summary

- Module pattern provides encapsulation of variables and functions
- Provides a way to add visibility (public versus private) to members
- Each object instance creates new copies of functions in memory
- Extending objects can be difficult since no prototyping is used

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```
var salary = function () {


}();
```

Revealing Module Pattern

Live Demo

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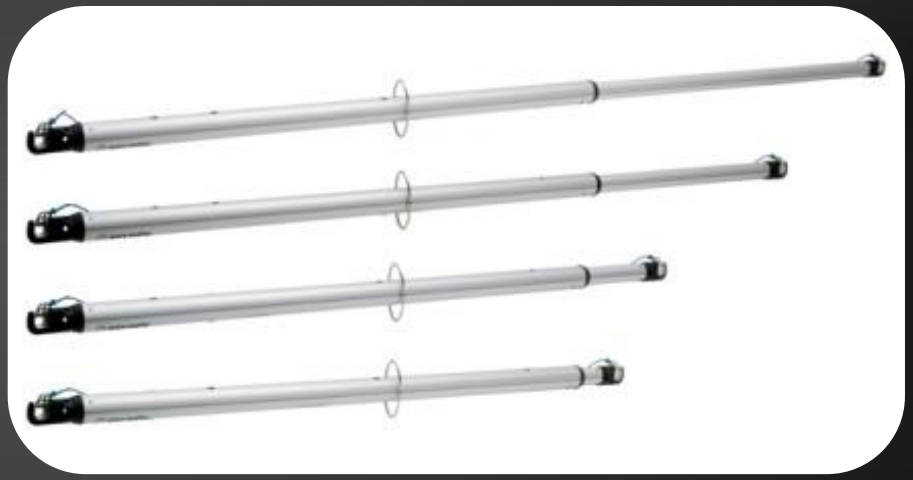

Extending Existing Module

Live Demo

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Arrays

Questions?

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Homework

Create the Snake game using the Revealing module pattern. Design the game such that it has at least three modules.