Functions

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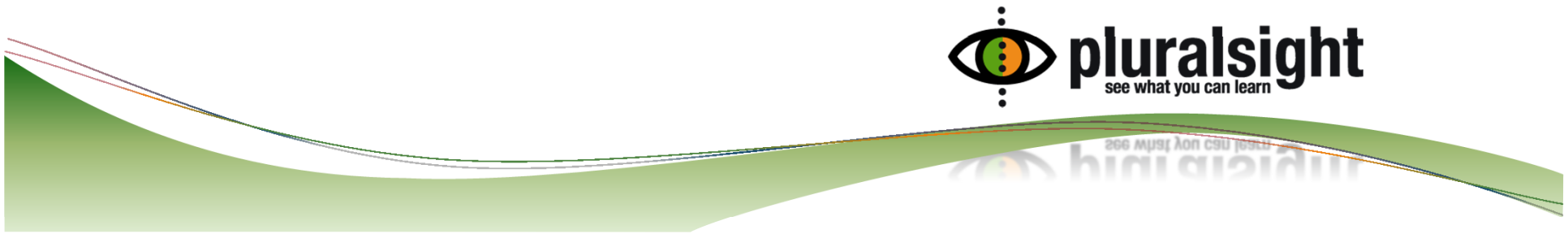
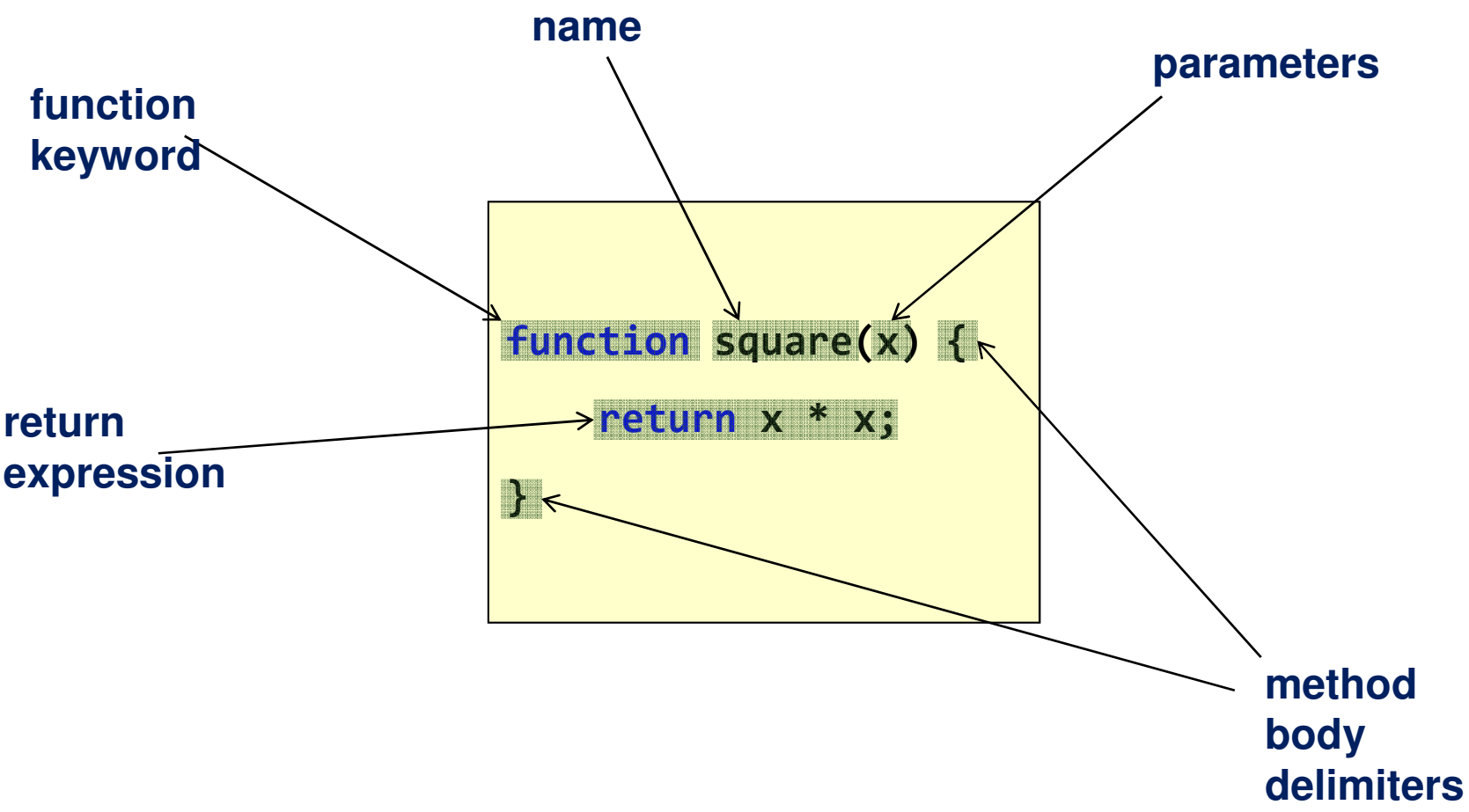


Overview

- Meet the function
- Declaring functions
- Invocation
- Overloading
- The Arguments Object
- Recursion
- Closure

Meet the function



Declaring Functions

- **Multiple techniques**

Standard function declaration

```
function square(x) {
    return x * x;
}
```

Declaring Functions

Named and assigned function

```
var squareFunc = function square(x) {
    return x * x;
};
```

Declaring Functions

Anonymous and assigned function

```
var square = function (x) {
    return x * x;
};
```

Declaring Functions

Anonymous and immediately invoked

```
(function ($) {
    // implement plugin
})(jQuery);
```

Invocation

```
var squareFunc = function (x) {
    return x * x;
};

function square(x) {
    return x * x;
};
```

1. Method name followed by ()

```
square(7);
// result is 49
```

2. Function variable name followed by ()

```
squareFunc(7);
// result is 49
```

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Function Overloading

- Functions cannot be overloaded
- Parameter flexibility
- Object parameters are passed by reference
- Primitive type parameters are passed by value

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The Arguments Object

- Local variable available within all functions
- Contains the functions parameters
- Indexed like an array
- Has a length property

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Recursion

- A function may call itself

```
// a recursive function calls itself
function factorial(n) {
    if (n === 0 || n === 1) {
        return 1;
    }
    return n * factorial(n - 1);
}

factorial(5); // result is 120
```

Closure

- Functions may be nested
- Inner functions have access to variables defined outside of the inner function

```
var resultSelector = '.result';


$.get('ajax/test.html', function (data) {
    $(resultSelector).html(data);
    alert('Load was performed.');
});
```

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Summary

- Functions are special objects that can be invoked
- Declared with the function keyword
- Named or anonymous
- Cannot be overloaded
- Support arbitrary numbers of parameters via the arguments object
- Can be called recursively
- Provide closure

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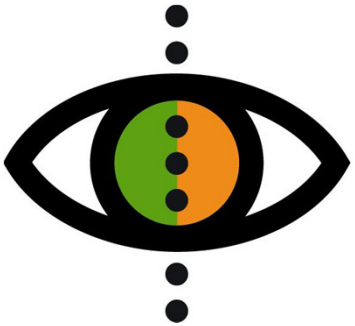

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