JavaScript Object Accessors

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JavaScript Accessors (Getters and Setters)

ECMAScript 5 (2009) introduced Getter and Setters.

Getters and setters allow you to define Object Accessors (Computed Properties).

JavaScript Getter (The get Keyword)

This example uses a `lang` property to `get` the value of the `language` property.

Example

```
// Create an object:
var person = {
  firstName: "John",
  lastName : "Doe",
  language : "en",
  get lang() {
    return this.language;
  }
};

// Display data from the object using a getter:
document.getElementById("demo").innerHTML = person.lang;
```

Try it Yourself »

JavaScript Setter (The set Keyword)

This example uses a `lang` property to `set` the value of the `language` property.

Example

```
var person = {
  firstName: "John",
  lastName : "Doe",
  language : "",
  set lang(lang) {
    this.language = lang;
  }
};

// Set an object property using a setter:
person.lang = "en";

// Display data from the object:
document.getElementById("demo").innerHTML = person.language;
```

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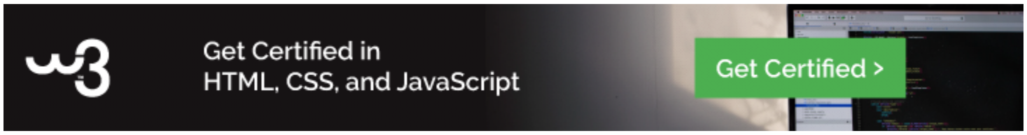

JavaScript Function or Getter?

What is the differences between these two examples?

Example 1

```
var person = {
  firstName: "John",
  lastName : "Doe",
  fullName : function() {
    return this.firstName + " " + this.lastName;
  }
};

// Display data from the object using a method:
document.getElementById("demo").innerHTML = person.fullName();
```

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Example 2

```
var person = {
  firstName: "John",
  lastName : "Doe",
  get fullName() {
    return this.firstName + " " + this.lastName;
  }
};

// Display data from the object using a getter:
document.getElementById("demo").innerHTML = person.fullName;
```

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Example 1 access fullName as a function: person.fullName().

Example 2 access fullName as a property: person.fullName.

The second example provides simpler syntax.

Data Quality

JavaScript can secure better data quality when using getters and setters.

Using the `lang` property, in this example, returns the value of the `language` property in upper case:

Example

```
// Create an object:
var person = {
  firstName: "John",
  lastName : "Doe",
  language : "en",
  get lang() {
    return this.language.toUpperCase();
  }
};

// Display data from the object using a getter:
document.getElementById("demo").innerHTML = person.lang;
```

Try it Yourself »

Using the `lang` property, in this example, stores an upper case value in the `language` property:

Example

```
var person = {
  firstName: "John",
  lastName : "Doe",
  language : "",
  set lang(lang) {
    this.language = lang.toUpperCase();
  }
};

// Set an object property using a setter:
person.lang = "en";

// Display data from the object:
document.getElementById("demo").innerHTML = person.language;
```

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Why Using Getters and Setters?

- It gives simpler syntax
- It allows equal syntax for properties and methods
- It can secure better data quality
- It is useful for doing things behind-the-scenes

A Counter Example

Example

```
var obj = {
  counter : 0,
  get reset() {
    this.counter = 0;
  },
  get increment() {
    this.counter++;
  },
  get decrement() {
    this.counter--;
  },
  set add(value) {
    this.counter += value;
  },
  set subtract(value) {
    this.counter -= value;
  }
};

// Play with the counter:
obj.reset;
obj.add = 5;
obj.subtract = 1;
obj.increment;
obj.decrement;
```

Try it Yourself »

Object.defineProperty()

The `Object.defineProperty()` method can also be used to add Getters and Setters:

Example

```
// Define object
var obj = {counter : 0};

// Define setters
Object.defineProperty(obj, "reset", {
  get : function () {this.counter = 0;}
});
Object.defineProperty(obj, "increment", {
  get : function () {this.counter++;}
});
Object.defineProperty(obj, "decrement", {
  get : function () {this.counter--;}
});
Object.defineProperty(obj, "add", {
  set : function (value) {this.counter += value;}
});
Object.defineProperty(obj, "subtract", {
  set : function (value) {this.counter -= value;}
});

// Play with the counter:
obj.reset;
obj.add = 5;
obj.subtract = 1;
obj.increment;
obj.decrement;
```

Try it Yourself »

Browser Support

Getters and Setters are not supported in Internet Explorer 8 or earlier:

Yes	9.0	Yes	Yes	Yes

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