

The Proxy API



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The Proxy API



Defining Proxies

Available Traps

Get by Proxy

Calling Functions by Proxy

A Proxy as a Prototype

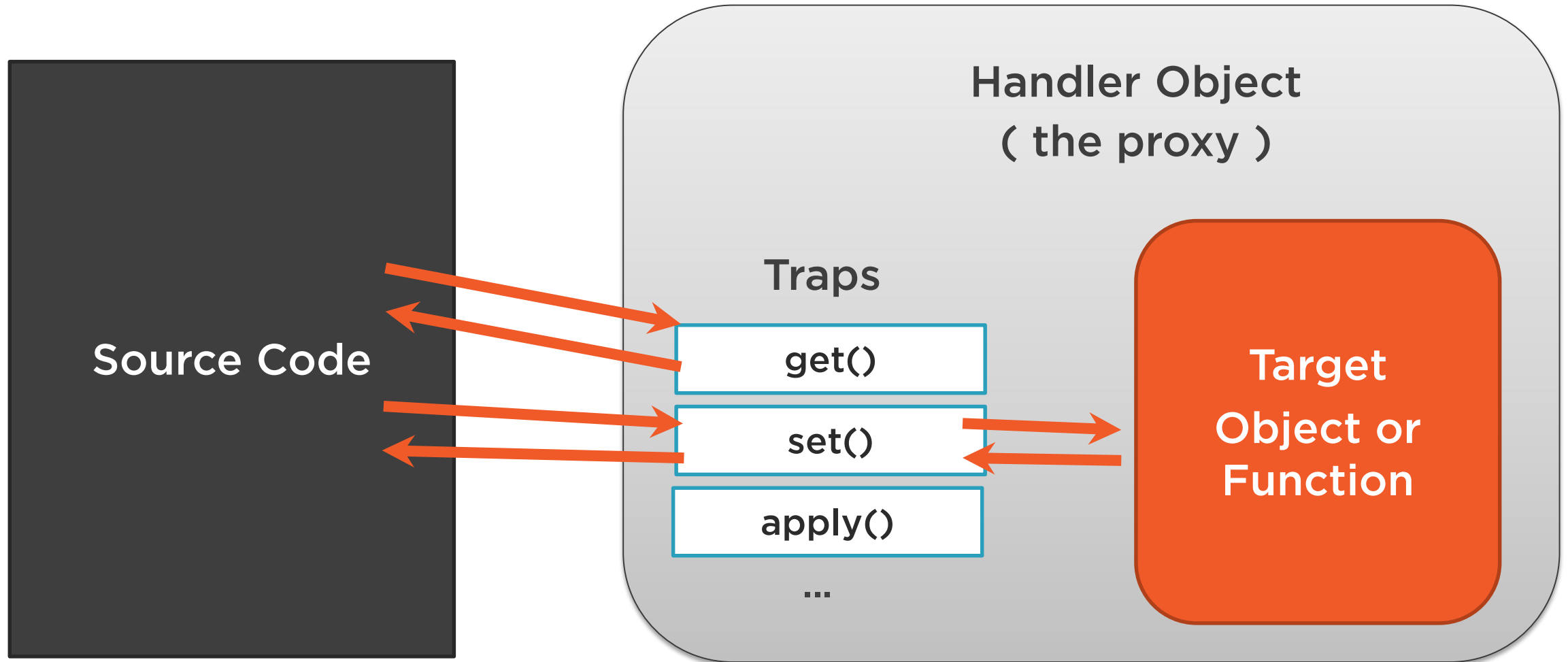
Revocable Proxies



Proxies Defined



Proxy Terminology



Available Traps

handler.construct()

handler.apply()

handler.getPrototypeOf()

handler.setPrototypeOf()

handler.get()

handler.set()

handler.has()

handler.ownKeys()

handler.defineProperty()

handler.deleteProperty()

handler.getOwnPropertyDescriptor()

handler.preventExtensions()

handler.isExtensible()



Untrappable Object Usage

Comparisons (== and ===)

typeof and instanceof

Operations (target + " ")

String(target)



Get by Proxy



```
function Employee () {  
  this.name = 'Milton Waddams';  
  this.salary = 0;  
}  
var e = new Employee();  
  
var p = new Proxy(e, {  
  get: function (target, prop, receiver) {  
    return "Attempted access: " + prop;  
  }  
});  
  
console.log(p.salary);
```

Question

What shows in the console?

Answer

Attempted access: salary


```
function Employee () {  
  this.name = 'Milton Waddams';  
  this.salary = 0;  
}  
var e = new Employee();  
  
var p = new Proxy(e, {  
  get: function (target, prop, receiver) {  
    return Reflect.get(target, prop,  
                        receiver);  
  }  
});  
  
console.log(p.salary);
```

Question

What shows in the console?

Answer

0

```
function Employee () {  
  this.name = 'Milton Waddams';  
  this.salary = 0;  
}  
var e = new Employee();  
  
var p = new Proxy(e, {  
  get: function (target, prop, receiver) {  
    if (prop === 'salary')  
      return 'Denied';  
    return Reflect.get(target, prop,  
                        receiver);  
  }  
});  
  
console.log(p.salary);  
console.log(p.name);
```

Question

What shows in the console?

Answer

Denied
Milton Waddams

Calling Functions by Proxy



```
function getId() {  
    return 55;  
}
```

```
var p = new Proxy(getId, {  
    apply: function (target, thisArg, argumentsList) {  
        return Reflect.apply(target, thisArg, argumentsList);  
    }  
});
```

```
console.log( p() );
```



What shows in the console?



55

A Proxy as a Prototype



```
var t = {  
  tableId: 99  
}  
var p = new Proxy({}, {  
  get: function (target, prop, receiver) {  
    return 'Property ' + prop + ' doesn\'t exist...';  
  }  
});
```

```
Object.setPrototypeOf(t, p);
```

```
console.log(t.tableId);  
console.log(t.size);
```



What shows in the console?



99
Property size doesn't exist

Revocable Proxies



`Proxy.revocable(...)`




```
var t = {  
  tableId: 99  
}
```

```
let { proxy, revoke } = Proxy.revocable(t, {  
  get: function (target, prop, receiver) {  
    return Reflect.get(target, prop, receiver) + 100;  
  }  
});
```

```
console.log(proxy.tableId);  
revoke();  
console.log(proxy.tableId);
```



What shows in the console?

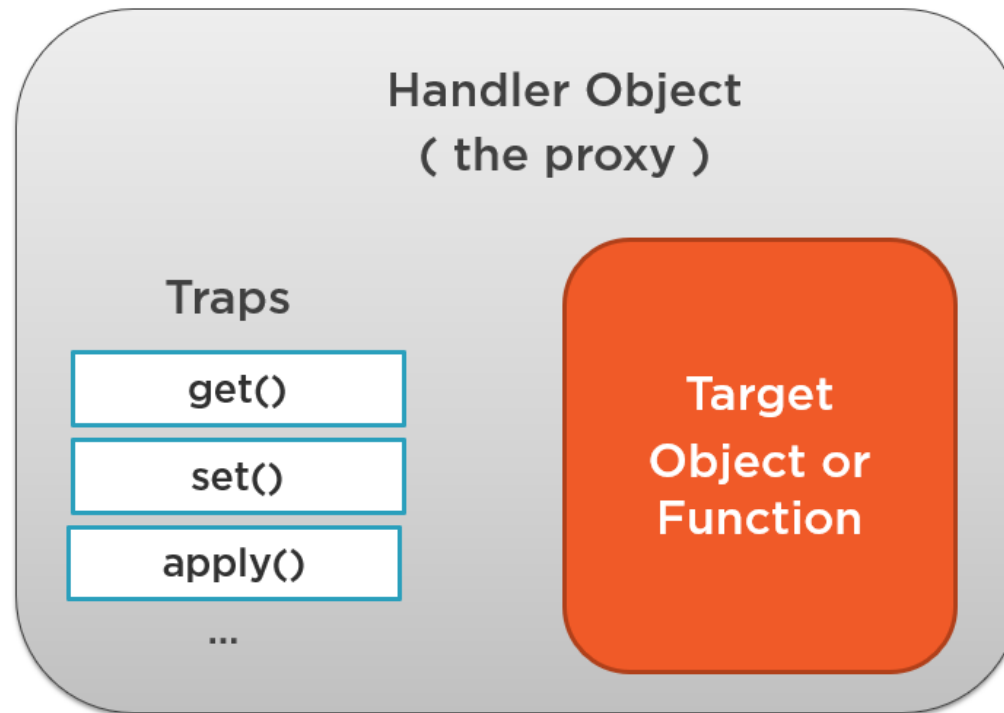


199
Property size doesn't exist

Summary



Defining Proxies



Summary



Traps

`handler.construct()`

`handler.apply()`

`handler.getPrototypeOf()`

`handler.setPrototypeOf()`

`handler.get()`

`handler.set()`

`handler.has()`

`handler.ownKeys()`

`handler.defineProperty()`

`handler.deleteProperty()`

`handler.getOwnPropertyDescriptor()`

`handler.preventExtensions()`

`handler.isExtensible()`



Summary



Get

```
function Employee () {  
    this.name = 'Milton Waddams';  
    this.salary = 0;  
}  
var e = new Employee();  
  
var p = new Proxy(e, {  
    get: function (target, prop, receiver) {  
        return "Attempted access: " + prop;  
    }  
});  
  
console.log(p.salary);
```



Summary



Calling Functions

```
function getId() {  
    return 55;  
}  
  
var p = new Proxy(getId, {  
    apply: function (target, thisArg, argumentsList) {  
        return Reflect.apply(target, thisArg, argumentsList);  
    }  
});  
  
console.log( p() );
```



Summary



A Proxy as a Prototype

```
var t = {  
  tableId: 99  
}  
var p = new Proxy({}, {  
  get: function (target, prop, receiver) {  
    return 'Property ' + prop + ' doesn\'t exist...';  
  }  
});  
  
Object.setPrototypeOf(t, p);  
  
console.log(t.tableId);  
console.log(t.size);
```



Summary



Revocable Proxies

```
var t = {  
  tableId: 99  
}  
  
let { proxy, revoke } = Proxy.revocable(t, {  
  get: function (target, prop, receiver) {  
    return Reflect.get(target, prop, receiver) + 100;  
  }  
});  
  
console.log(proxy.tableId);  
revoke();  
console.log(proxy.tableId);
```

