JAVASCRIPT

CLOSURES

WHAT ARE CLOSURES?

CLOSURES

CLOSURES

- function within a function (enclosed scope)

CLOSURES

- function within a function (enclosed scope)
- inner function is returned from outer function

CLOSURES – ENCLOSED SCOPE

CLOSURES – ENCLOSED SCOPE

```
function outer() {

}
```

CLOSURES – ENCLOSED SCOPE

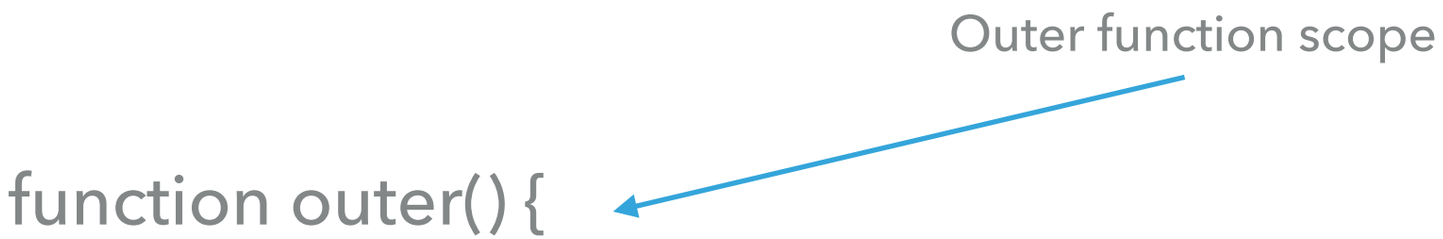
```
function outer() {

    function inner() {

    }

}
```

CLOSURES – ENCLOSED SCOPE

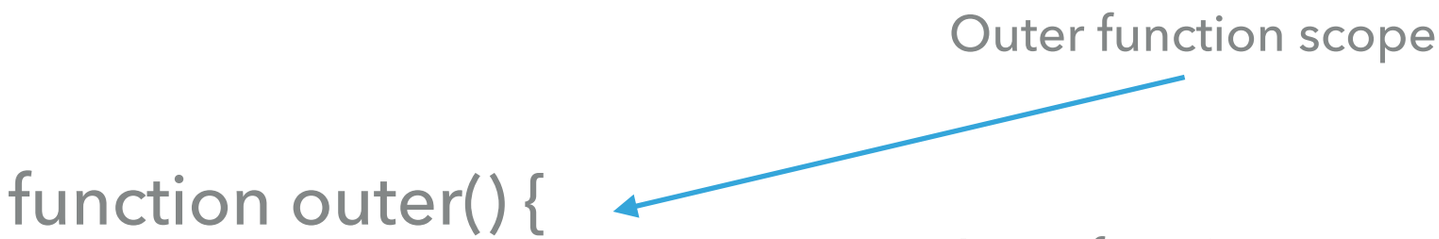
Outer function scope

```
function outer() {

    function inner() {

    }

}
```

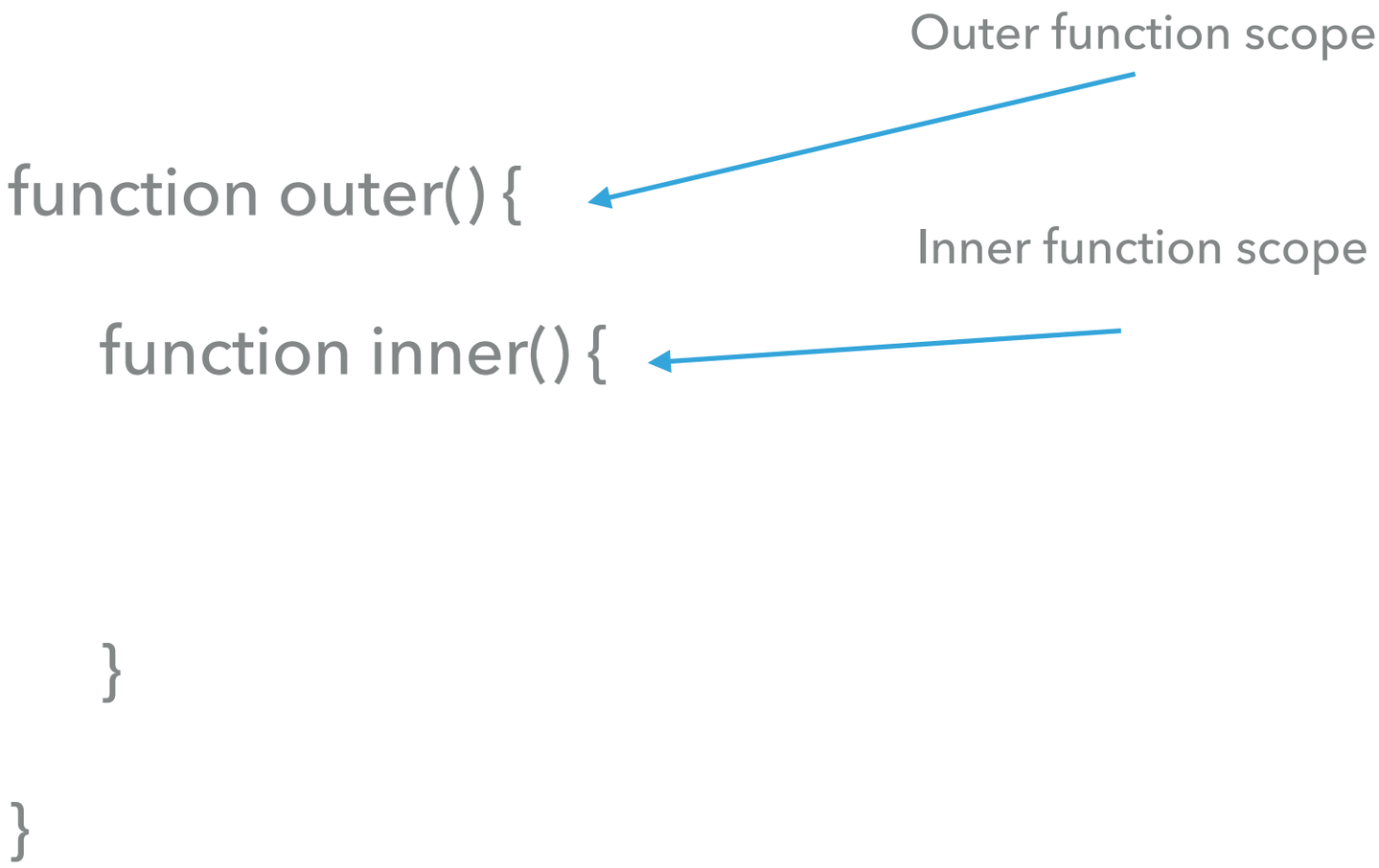
CLOSURES – ENCLOSED SCOPE



CLOSURES – ENCLOSED SCOPE



CLOSURES – ENCLOSED SCOPE

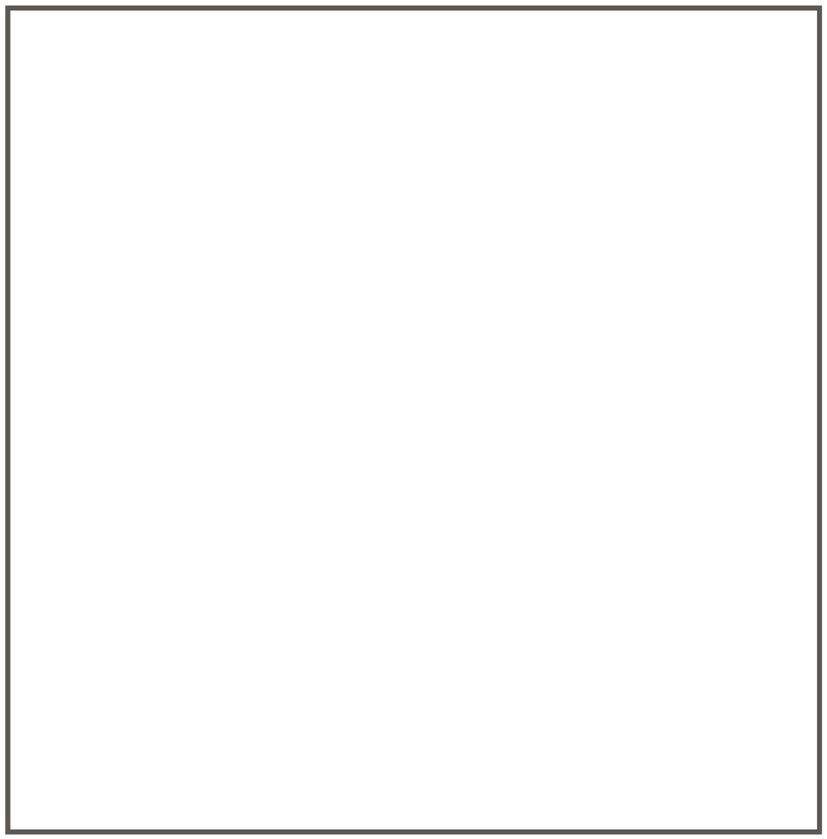


CLOSURES – ENCLOSED SCOPE

Outer function scope

Inner function scope

```
function outer() {

    function inner() {

    }

}
```



CLOSURES – ENCLOSED SCOPE

Outer function scope

Inner function scope

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}
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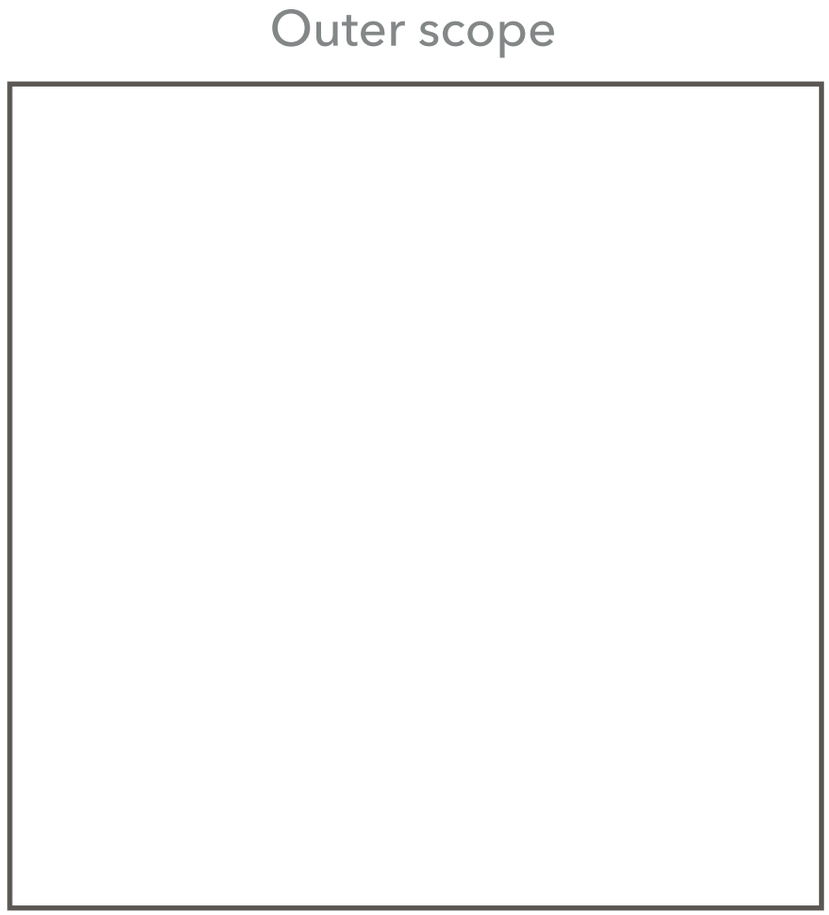
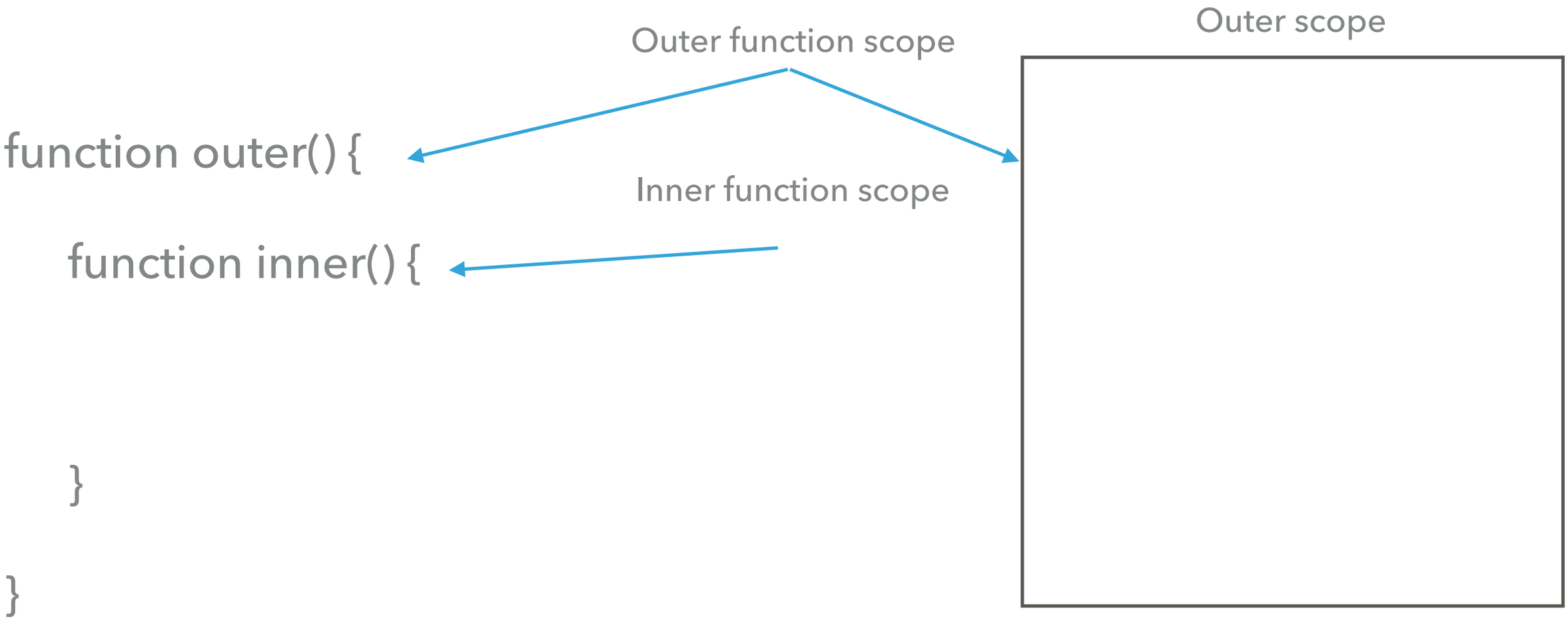


CLOSURES – ENCLOSED SCOPE



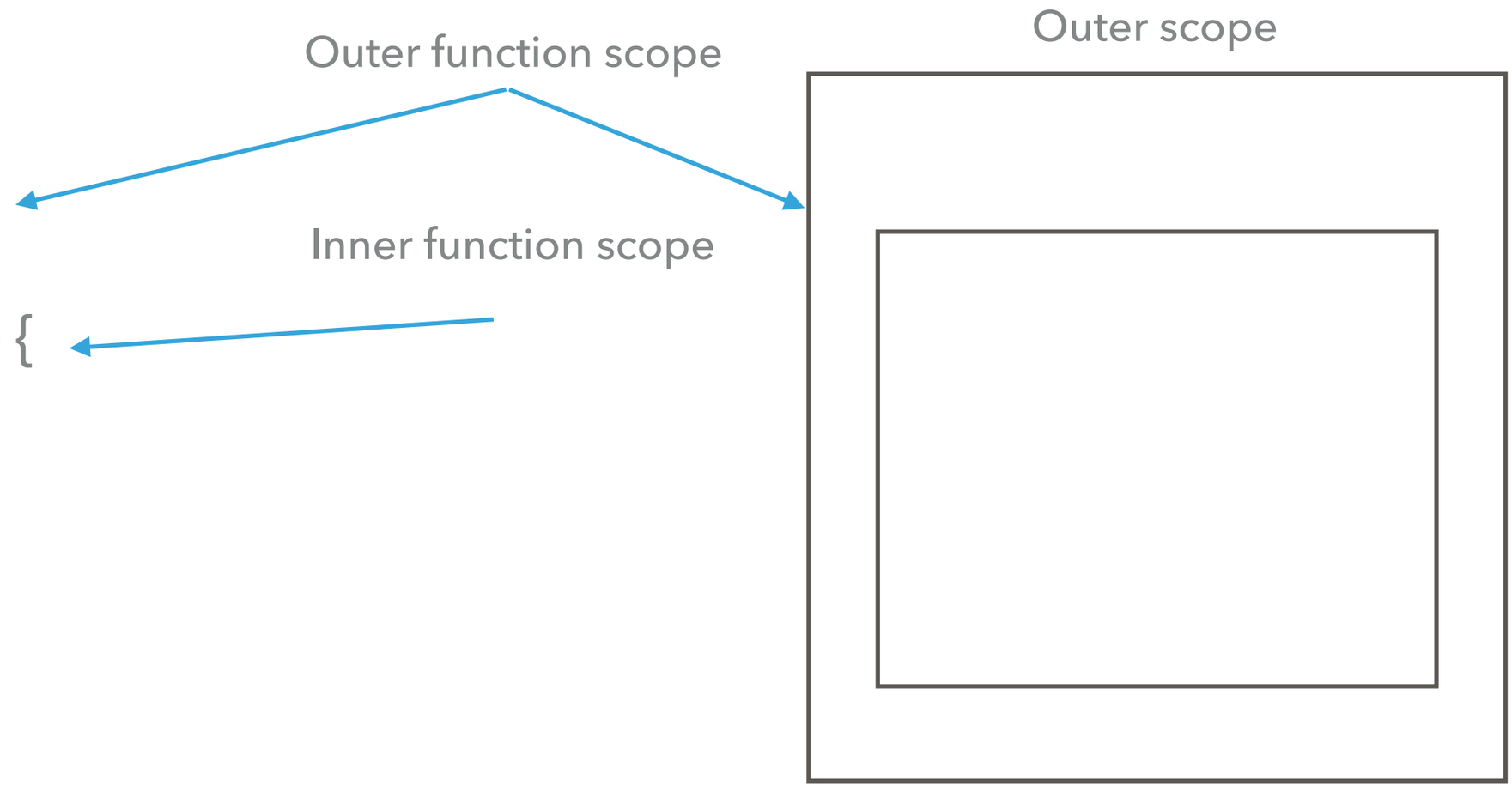
CLOSURES – ENCLOSED SCOPE

```
function outer() {

    function inner() {

    }

}
```



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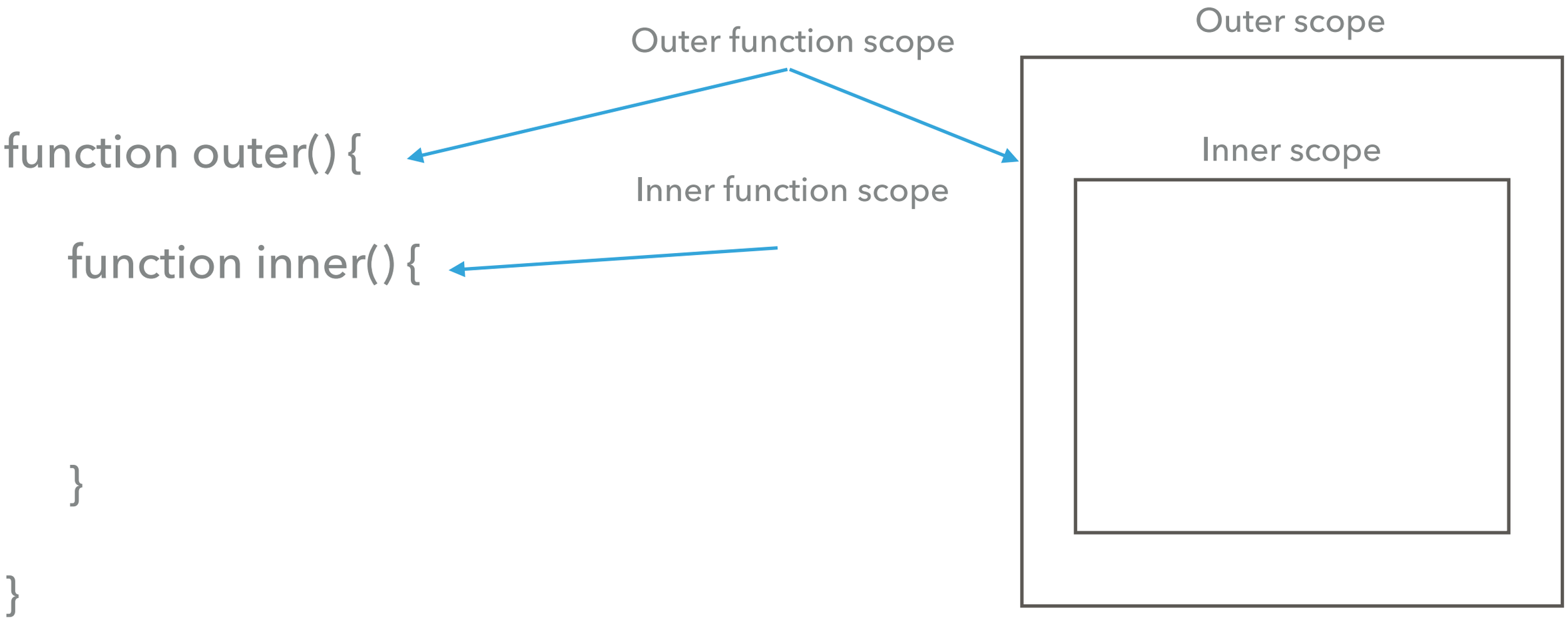


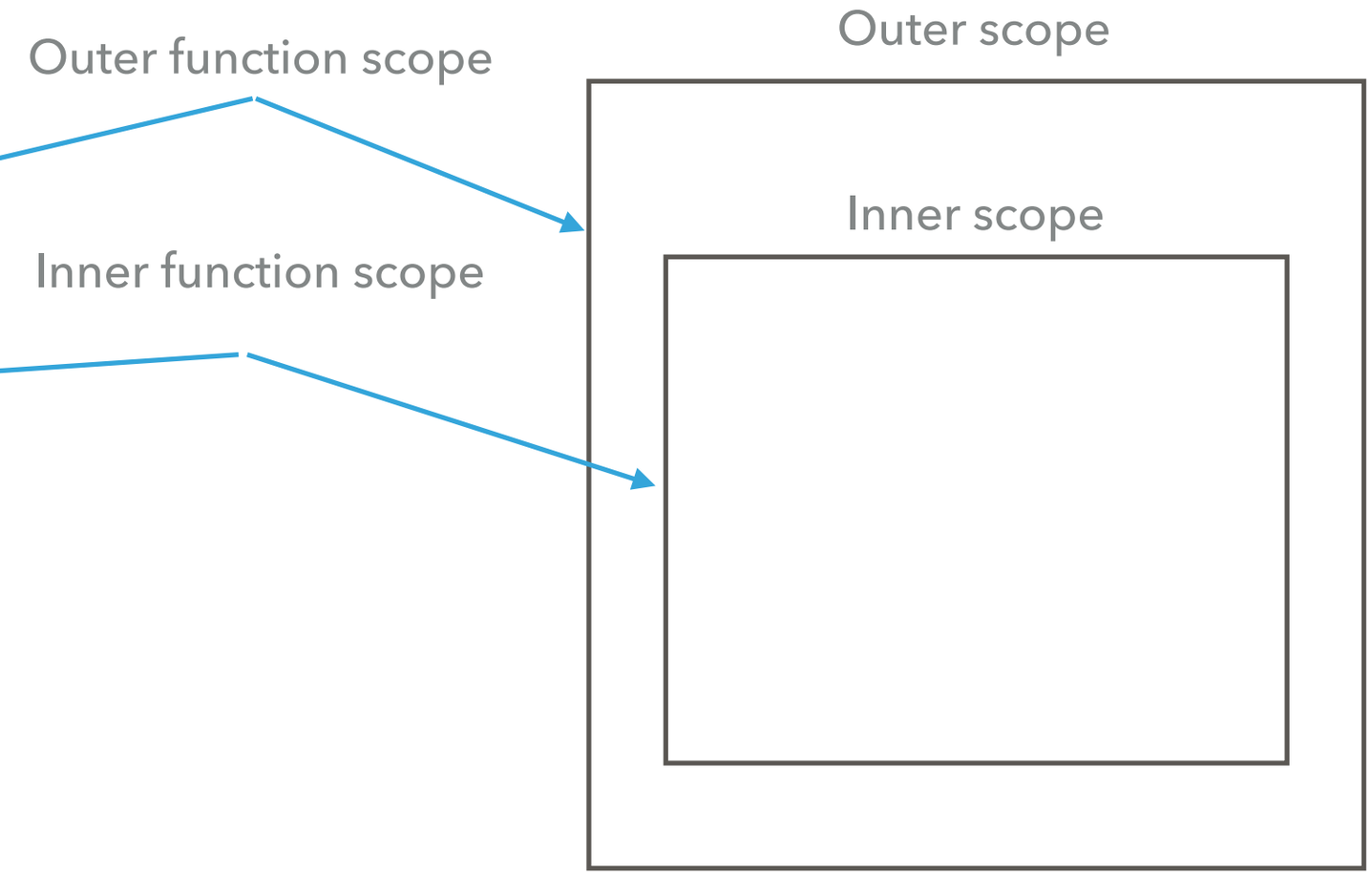
CLOSURES – ENCLOSED SCOPE

```
function outer() {

    function inner() {

    }

}
```



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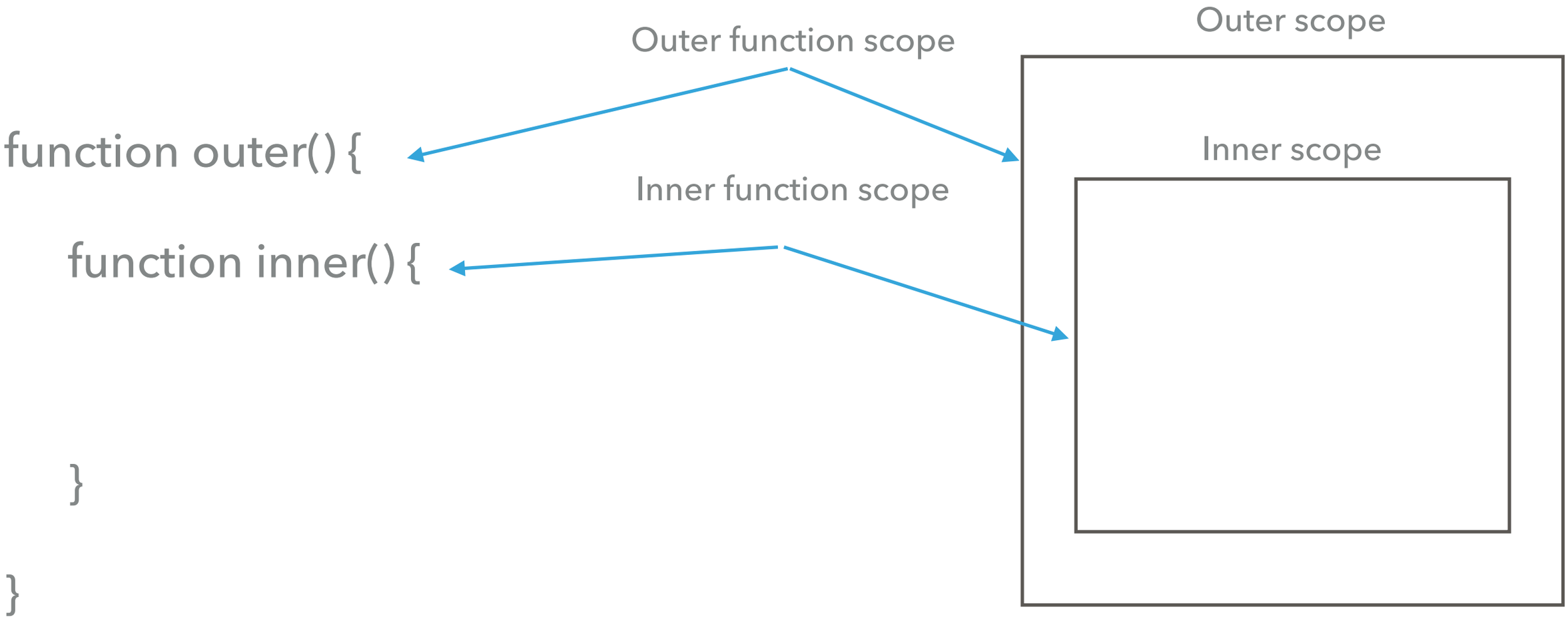
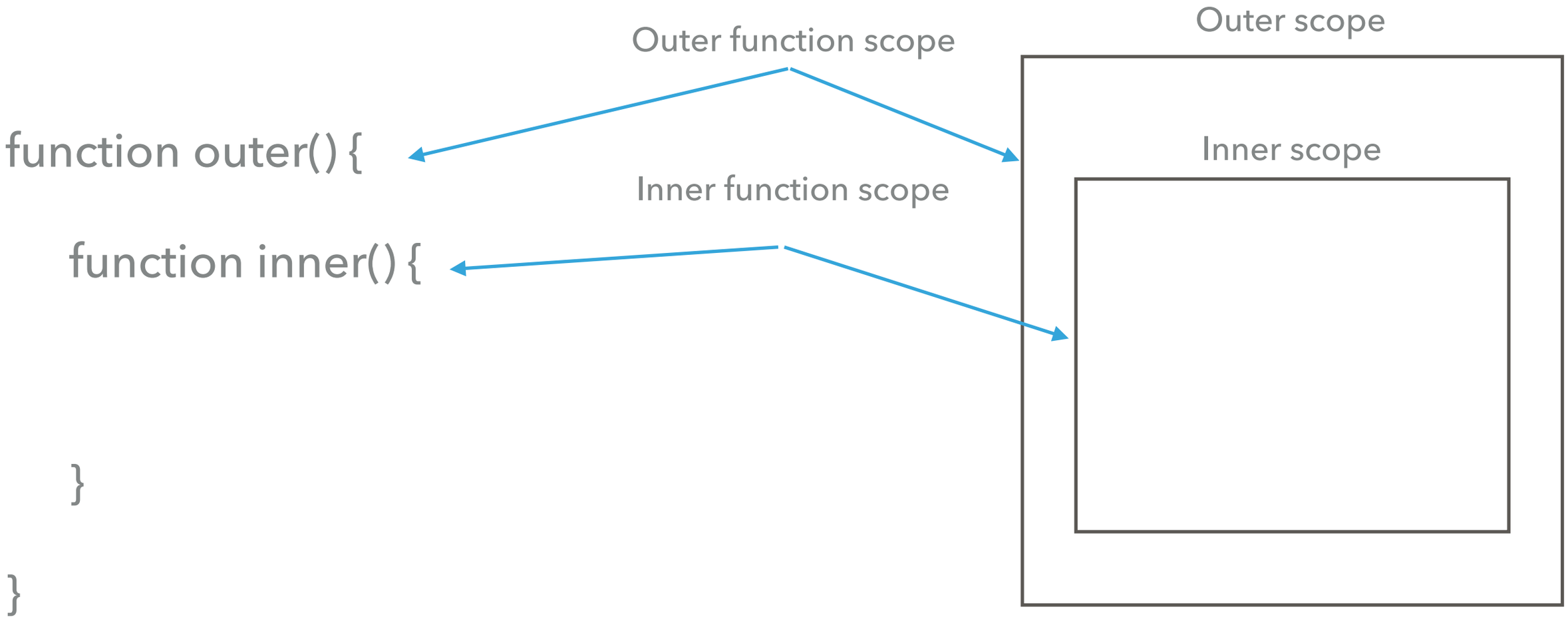


The outer scope has enclosed the inner scope.

CLOSURES – ENCLOSED SCOPE



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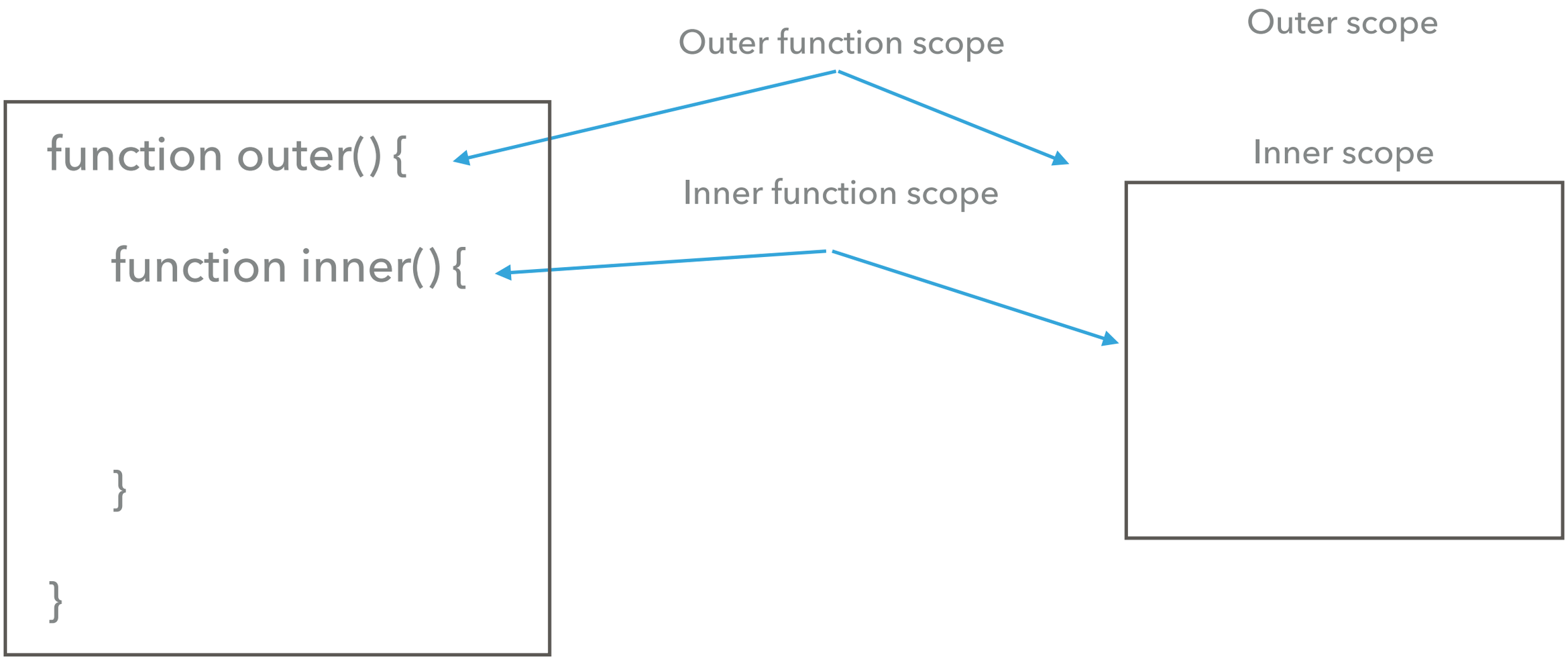
Simple terms: function within a function

CLOSURES – ENCLOSED SCOPE



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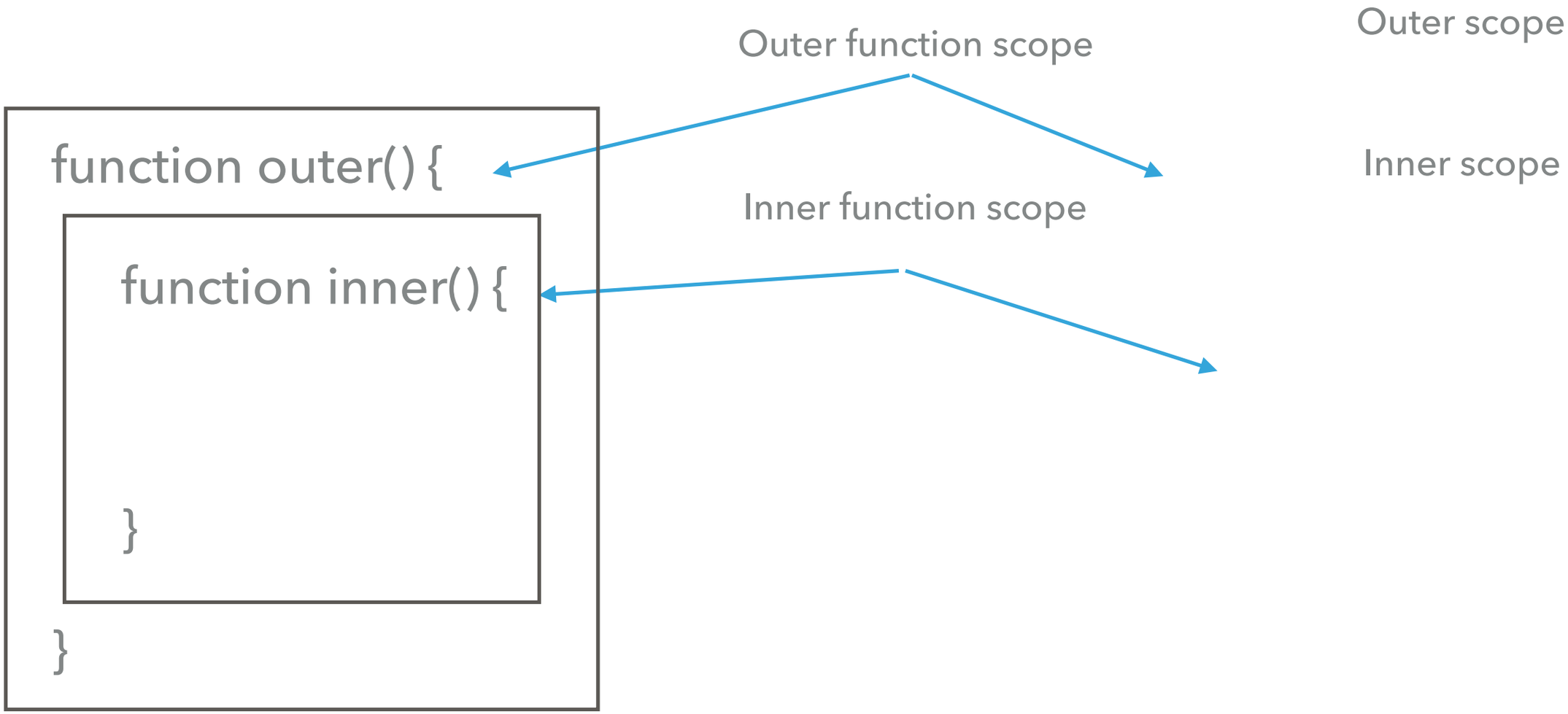

The outer scope has enclosed the inner scope.

Simple terms: function within a function

CLOSURES – SCOPE REVIEW

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```
function outer() {
    var num = 9;
    function inner() {
    num += 10;
    }
    inner();
}
outer();
```

CLOSURES – SCOPE REVIEW

```
function outer() {
    var num = 9;
    function inner() {
    num += 10;
    }
    inner();
}
outer();
```

Can inner function access num?

CLOSURES – SCOPE REVIEW

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function outer() {
    var num = 9;
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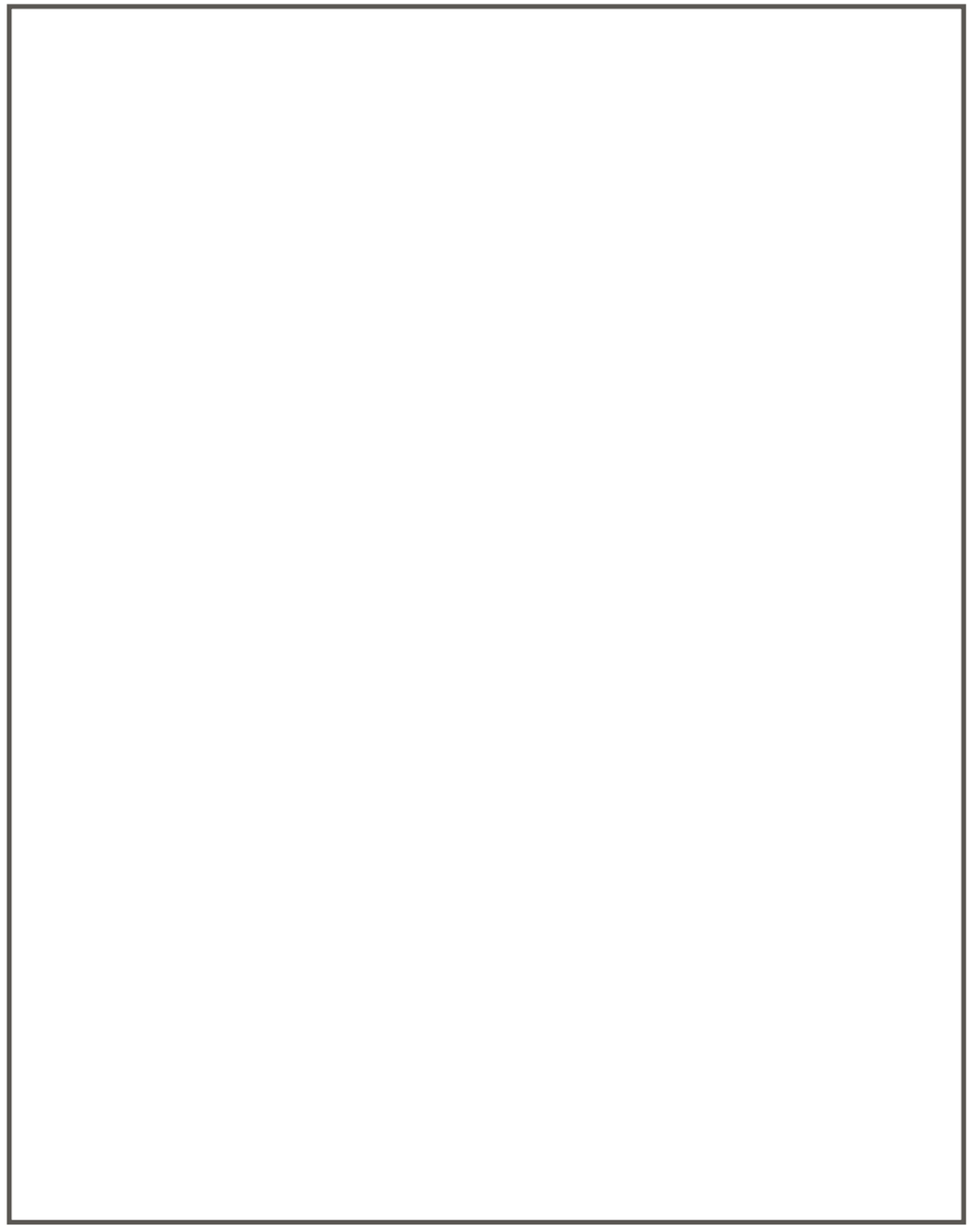

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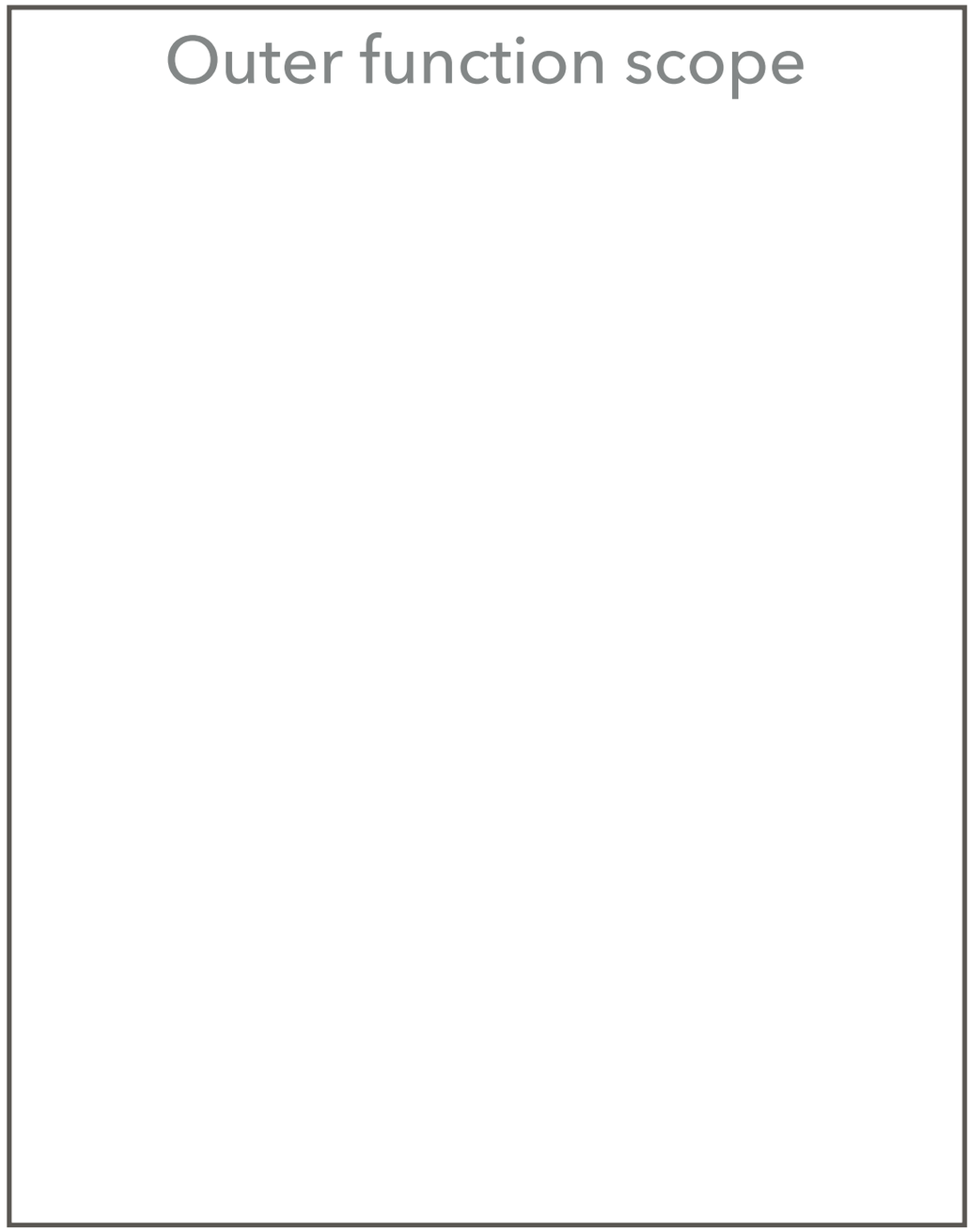

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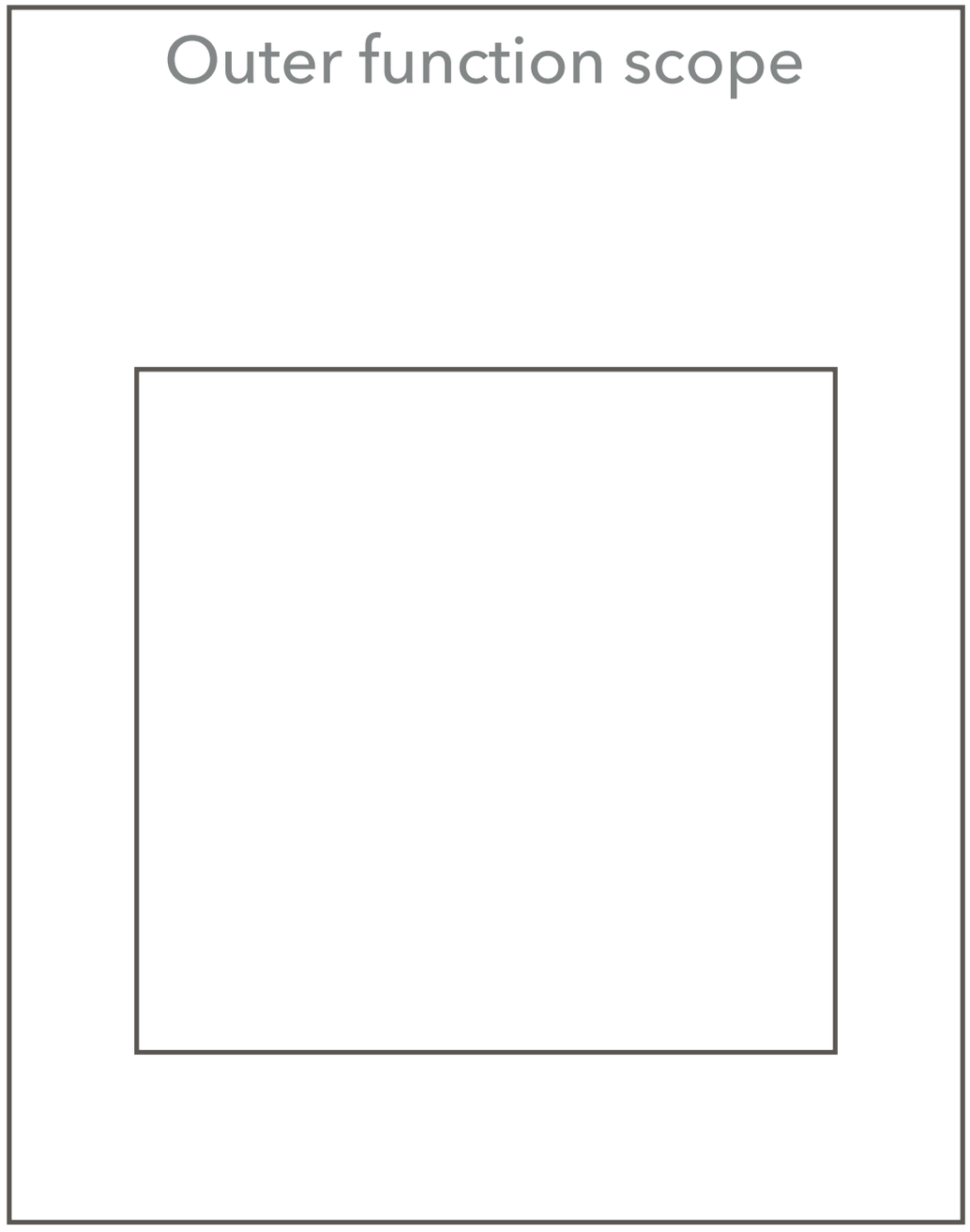

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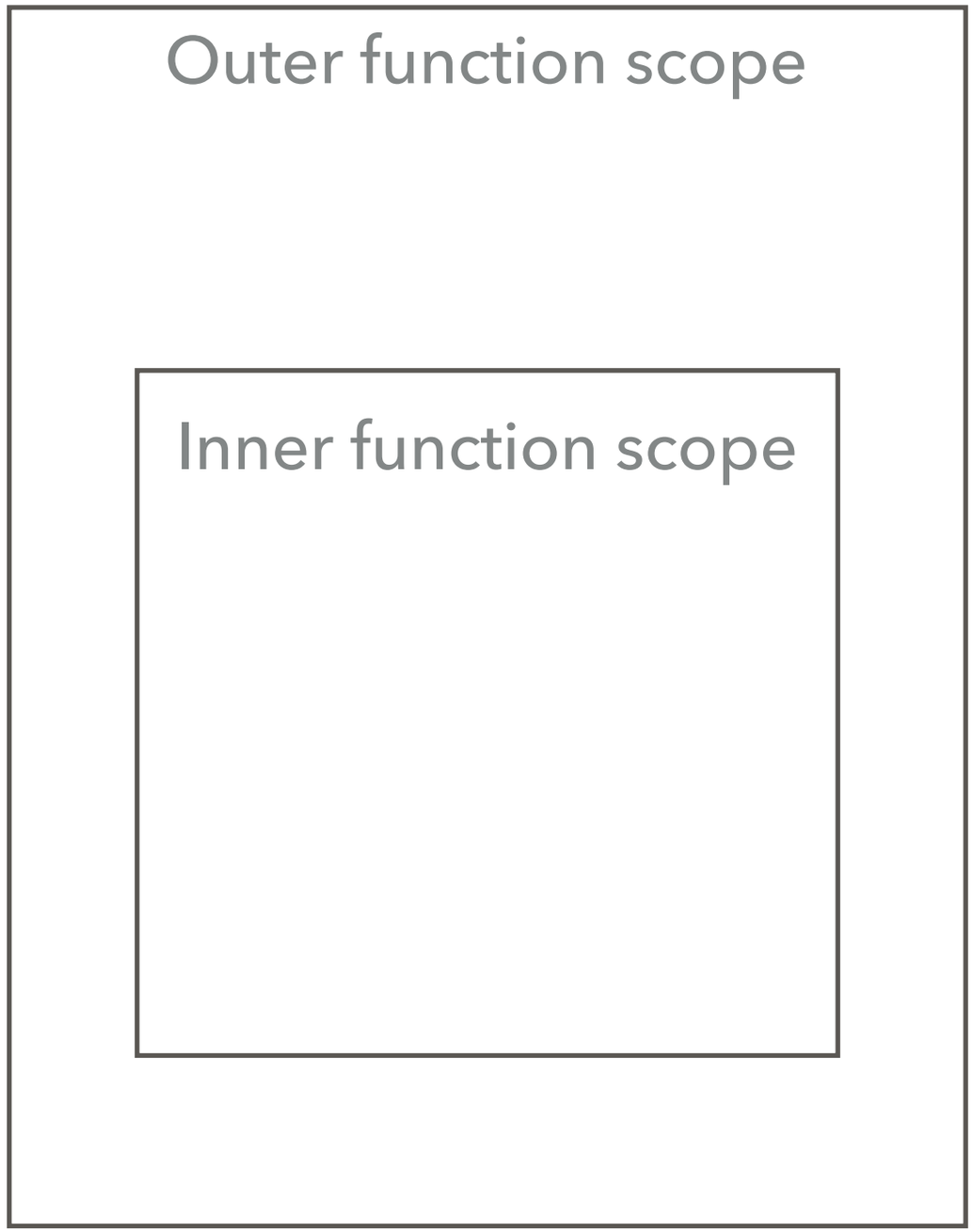

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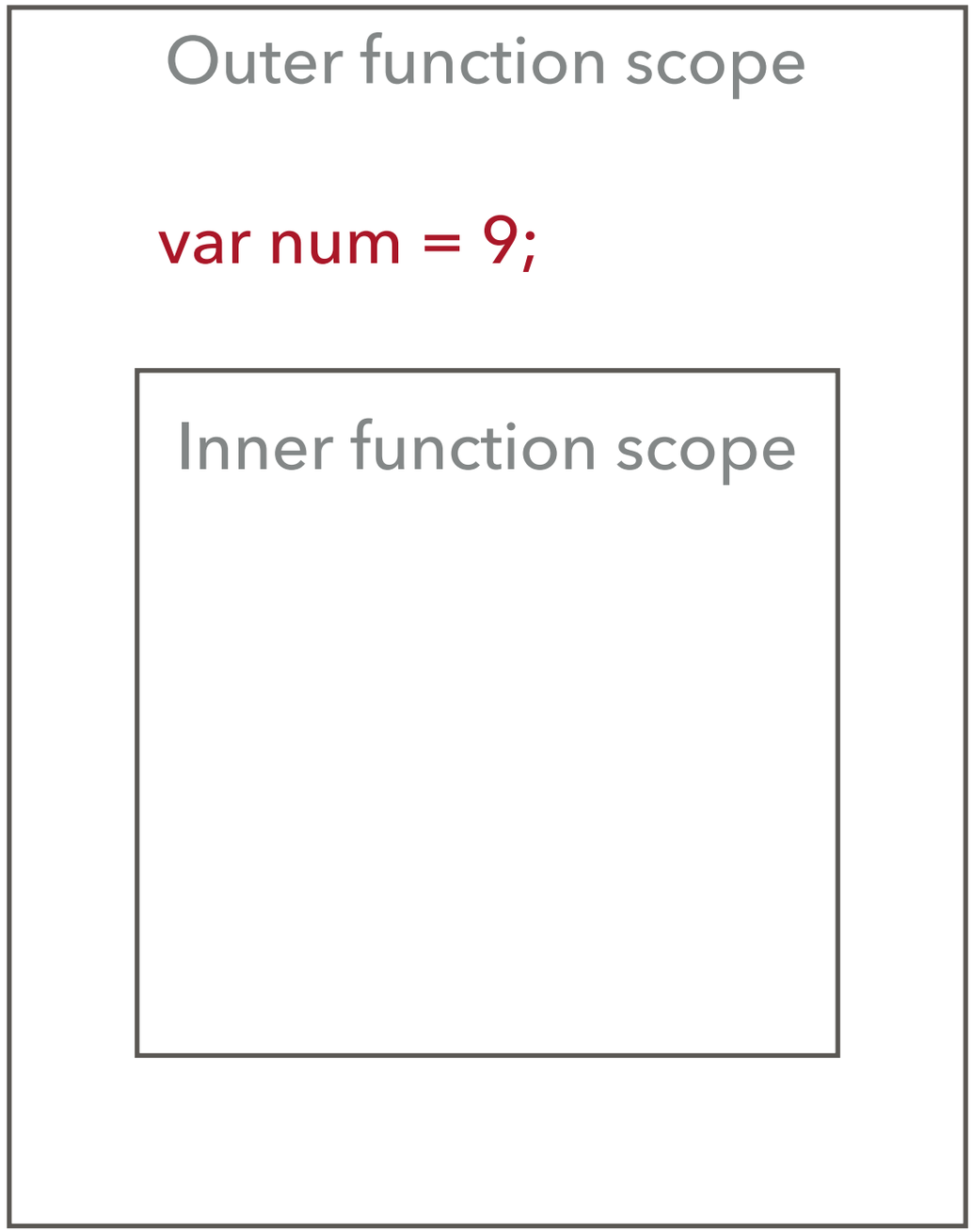

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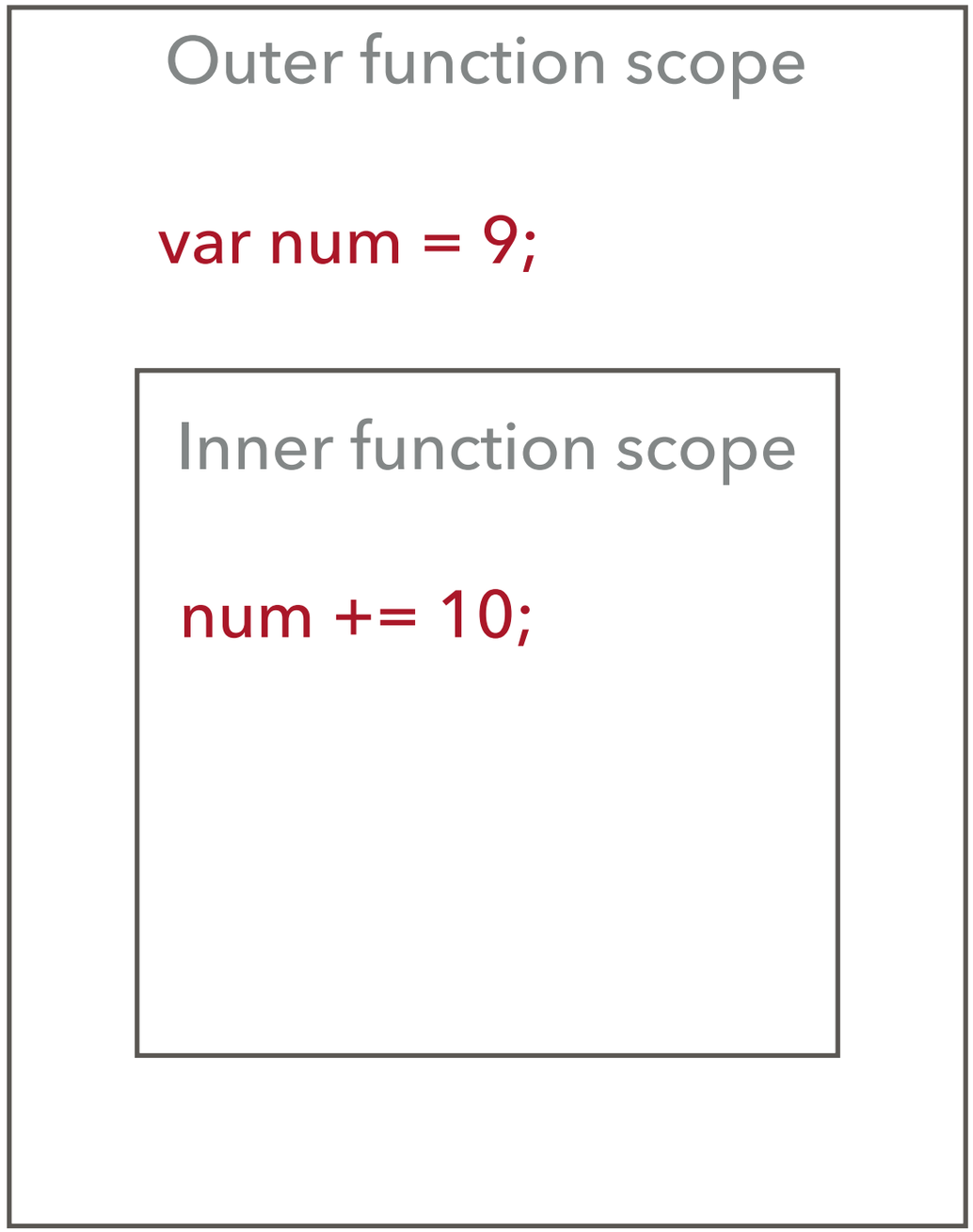

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CLOSURES – SCOPE REVIEW

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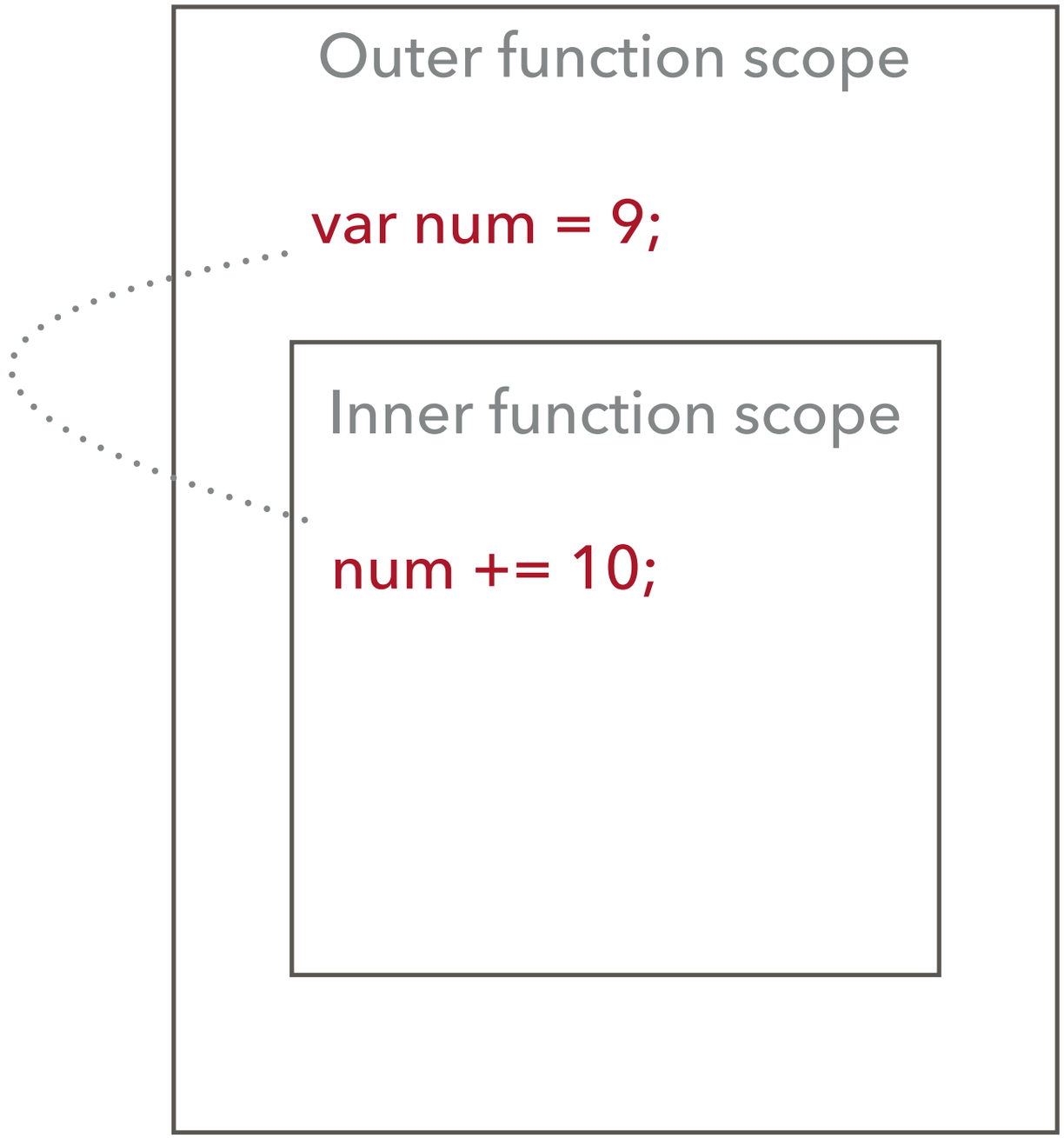

Can inner function access num?

CLOSURES

Inner function returned.

CLOSURES

```
function outer() {

  var num = 9;

}
```

Inner function returned.

CLOSURES

```
function outer() {

    var num = 9;

    function inner() {

      num++;

      return num;

    }

}
```

Inner function returned.

CLOSURES

```
function outer() {

    var num = 9;

        function inner() {

            num++;

            return num;

        }

}
```

Inner function returned.

CLOSURES

```
function outer() {

    var num = 9;

    return  function inner() {

                num++;

                return num;

            }

}
```

Inner function returned.

CLOSURES

```
function outer() {

    var num = 9;

    return  function inner() {

                num++;

                return num;

            }

}

var innerFn = outer();
```

Inner function returned.

CLOSURES

Inner function returned.

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function outer() {

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    return num;

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CLOSURES

Inner function returned.

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function outer() {

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    return num;

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```

CLOSURES

Inner function returned.

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function outer() {

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  return function inner() {

    num++;

    return num;

  }

}

var innerFn = outer();

innerFn();
```

CLOSURES

Inner function returned.

```
function outer() {

  var num = 9;

  return function inner() {

    num++;

    return num;

  }

}

var innerFn = outer();

innerFn();  // 10
```

CLOSURES – SNAPSHOT

CLOSURES – SNAPSHOT

```
function outer() {
    var num = 0;
    function inner() {
        return ++num;
    }
    return inner;
}
```

CLOSURES - SNAPSHOT

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function outer(){
    var num = 0;
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CLOSURES - SNAPSHOT

```
function outer(){
    var num = 0;
    function inner(){
        return ++num;
    }
    return inner;
}
var one = outer();
```

CLOSURES - SNAPSHOT

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function outer(){
    var num = 0;
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        return ++num;
    }
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}
var one = outer();
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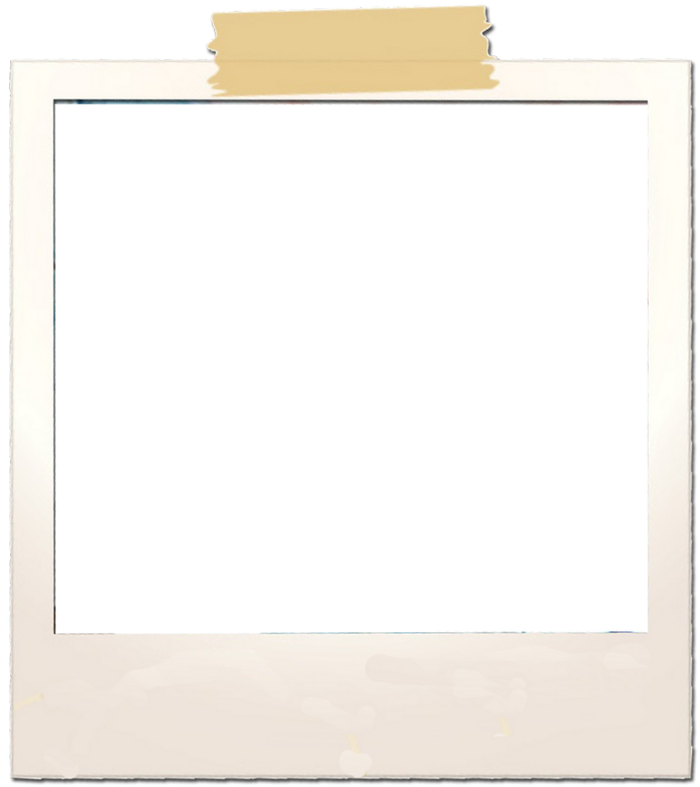

CLOSURES - SNAPSHOT

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function outer(){
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        return ++num;
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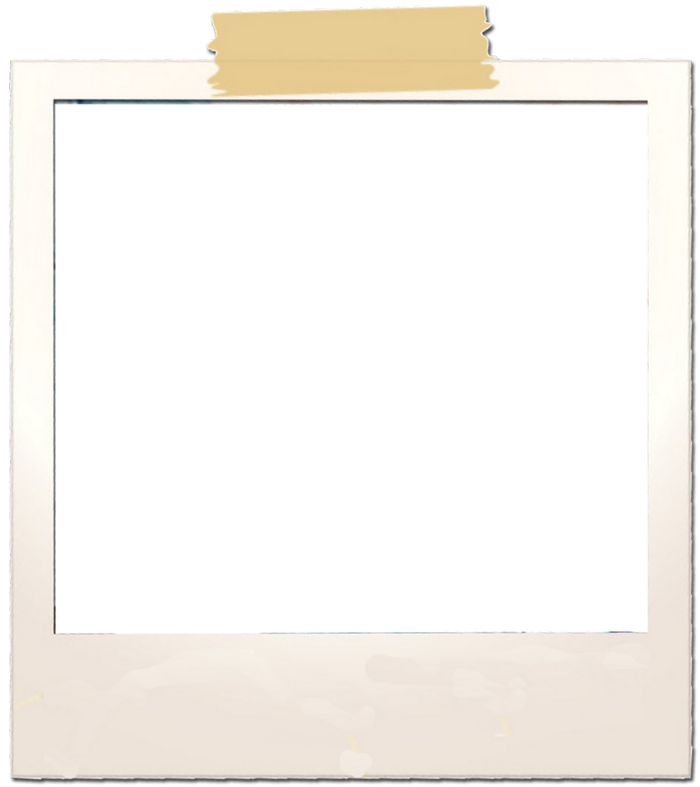
    return inner;
}
var one = outer();
```

snapshot of lexical environment



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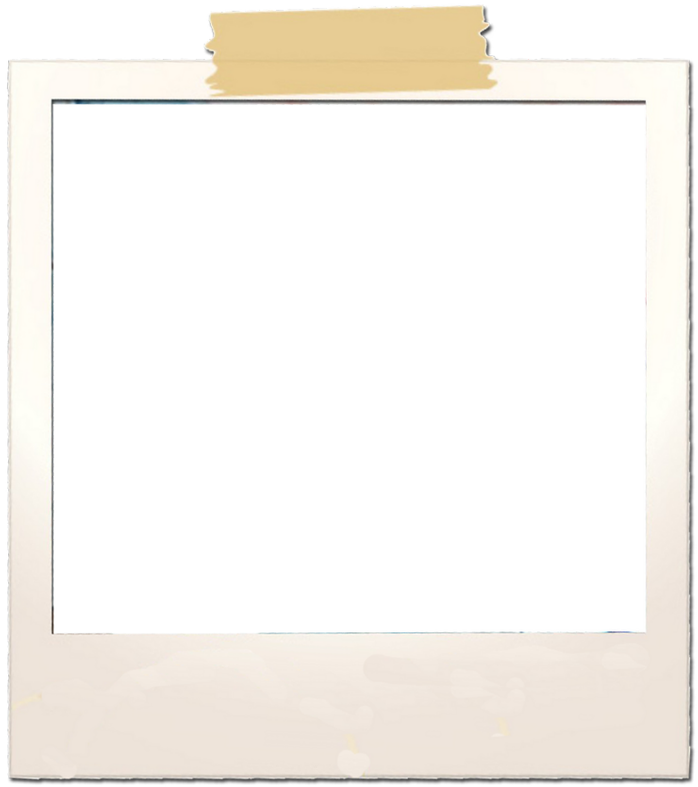

snapshot of lexical environment

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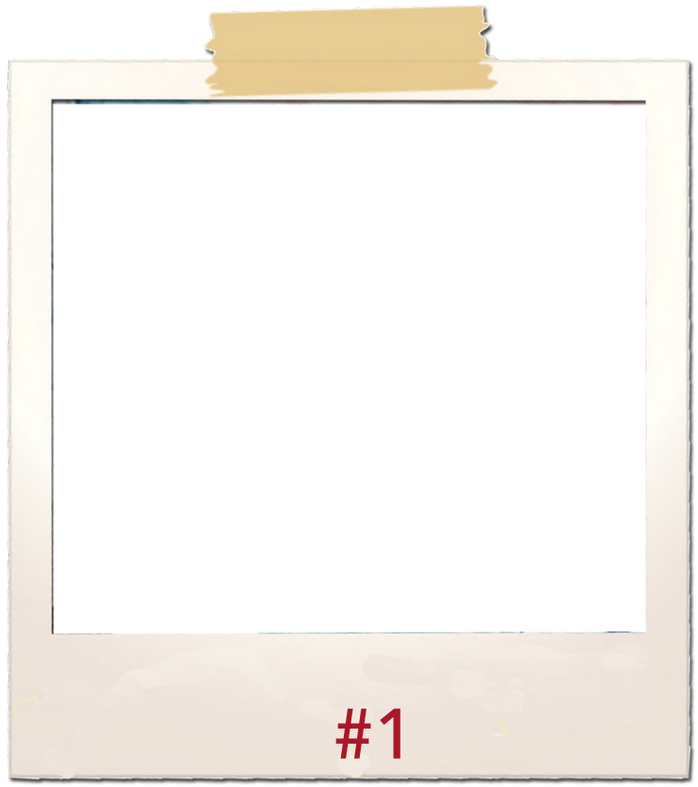

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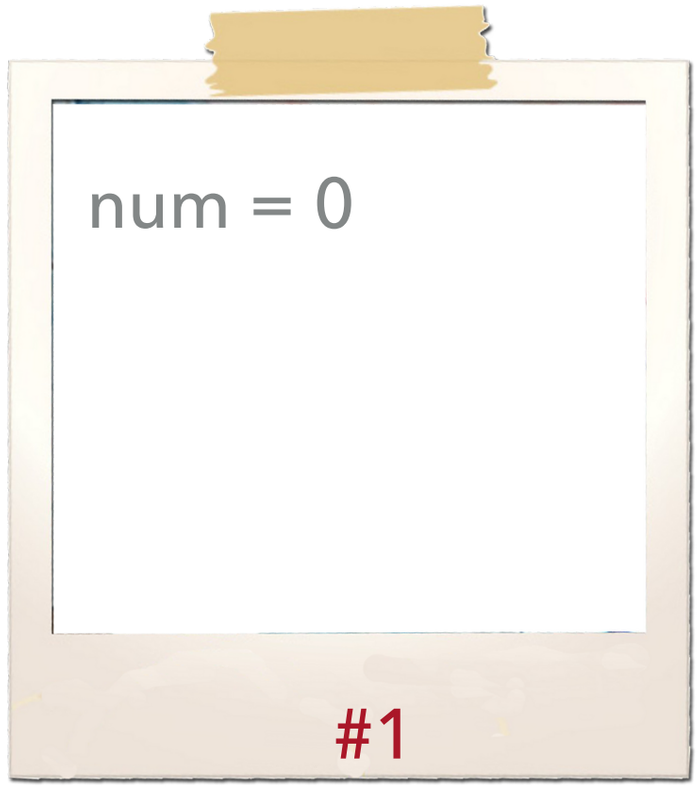

CLOSURES - SNAPSHOT

```
function outer(){
    var num = 0;
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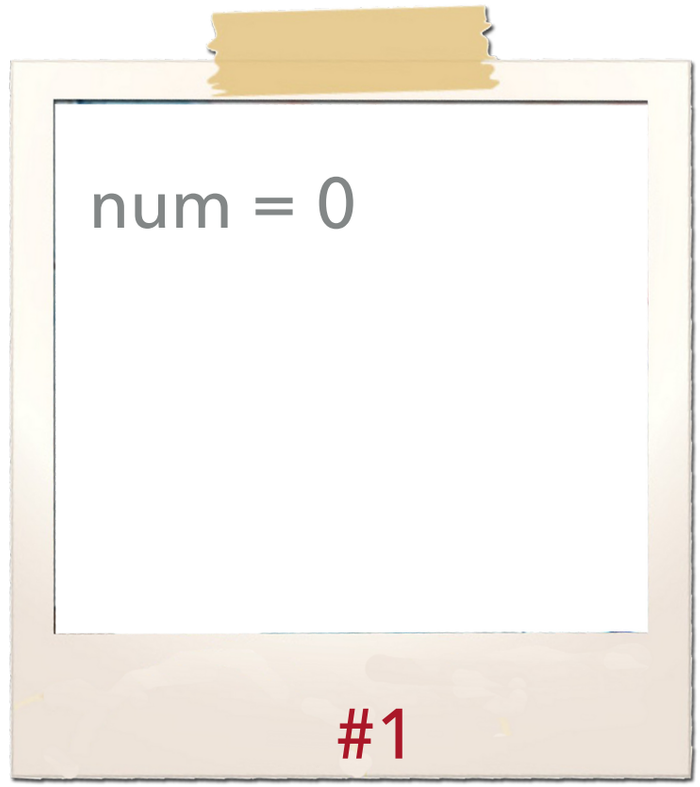
    }
    return inner;
}
var one = outer();
one();
```

snapshot of lexical environment



CLOSURES - SNAPSHOT

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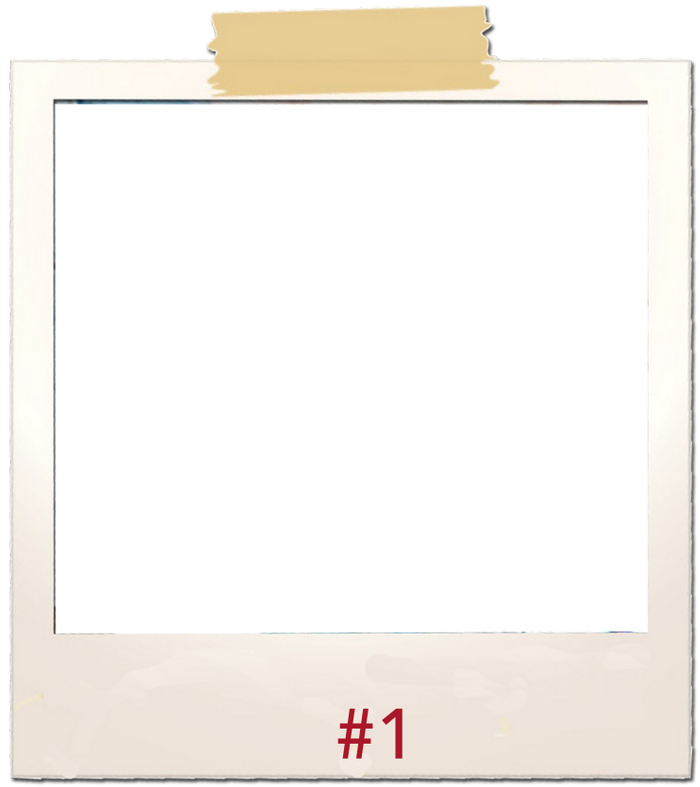

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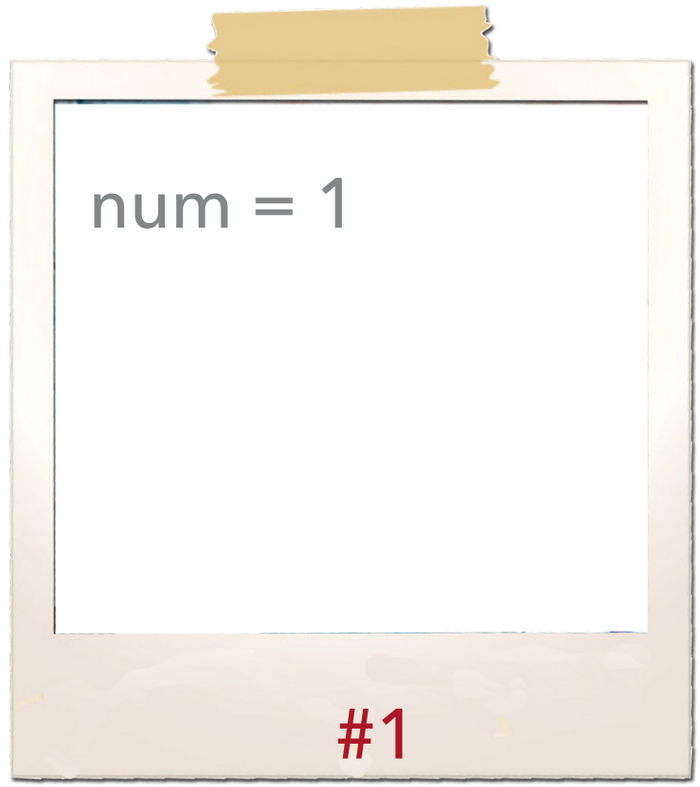
snapshot of lexical environment



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    var num = 0;
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    }
    return inner;
}
var one = outer();
one();
var two = outer();
```
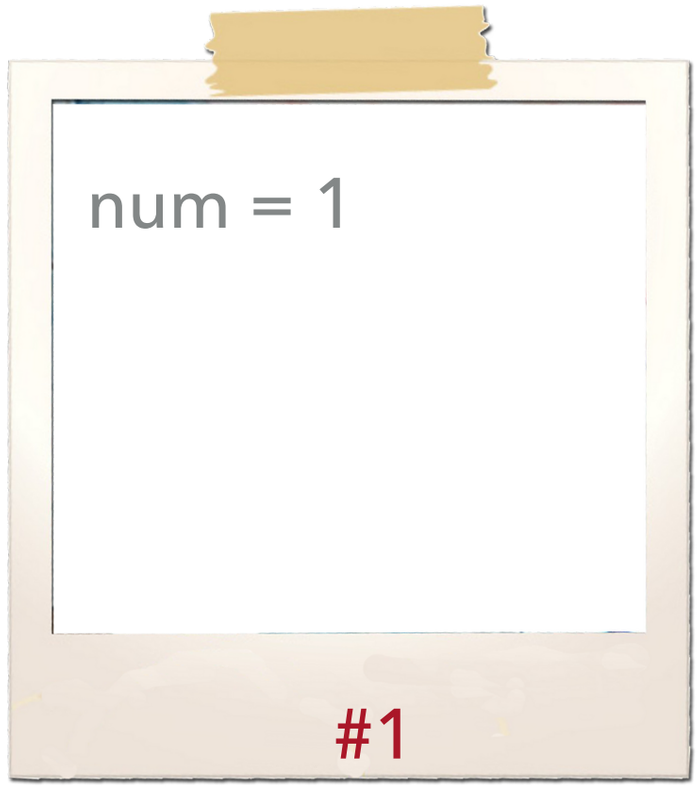

snapshot of lexical environment



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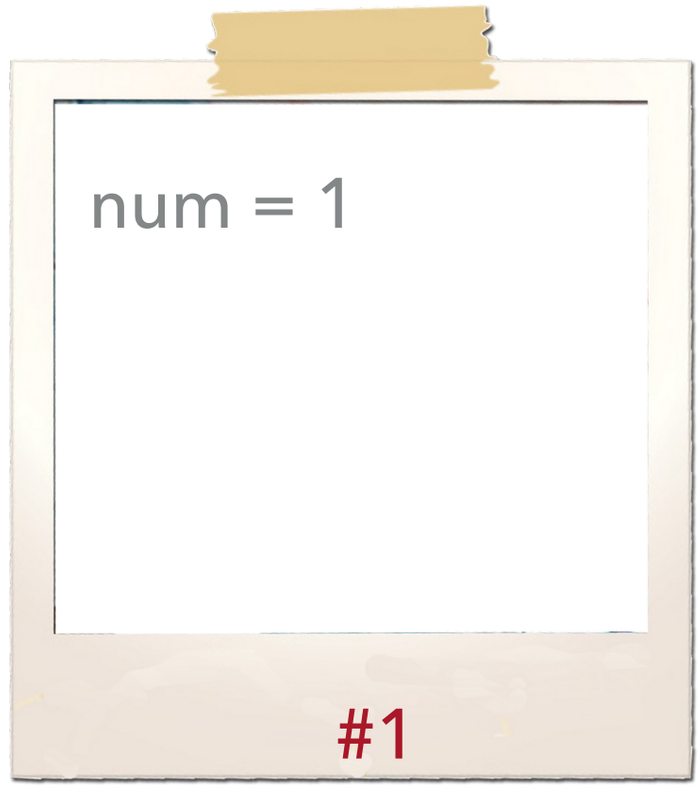

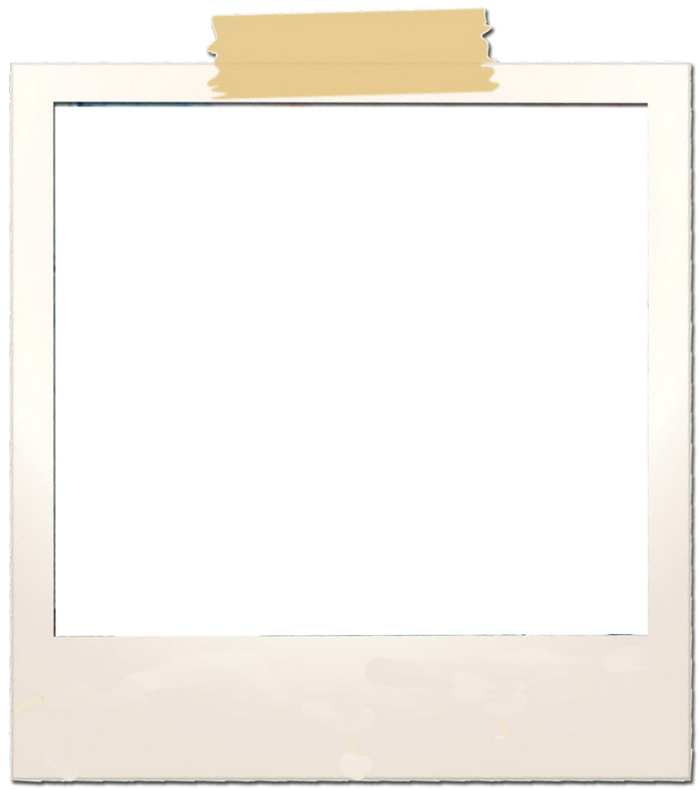

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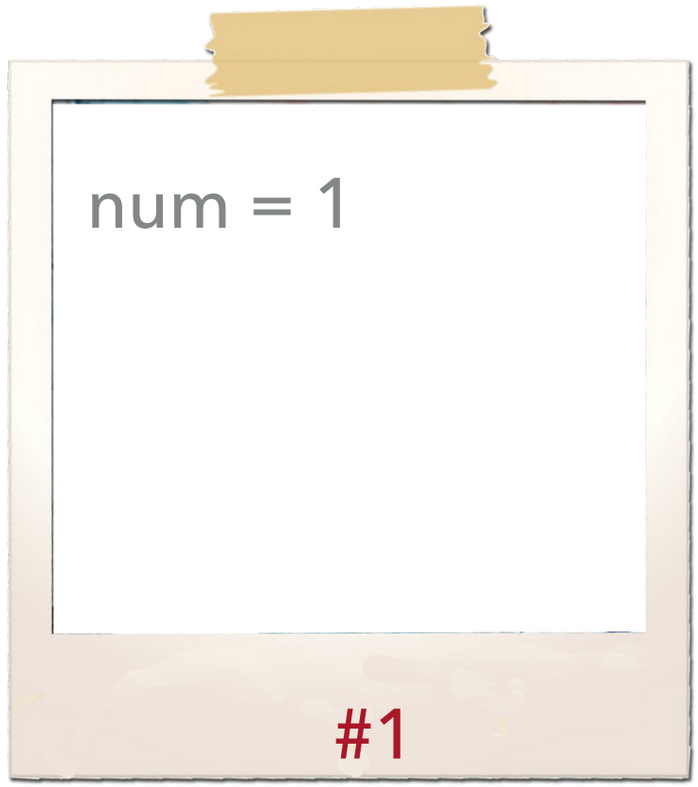

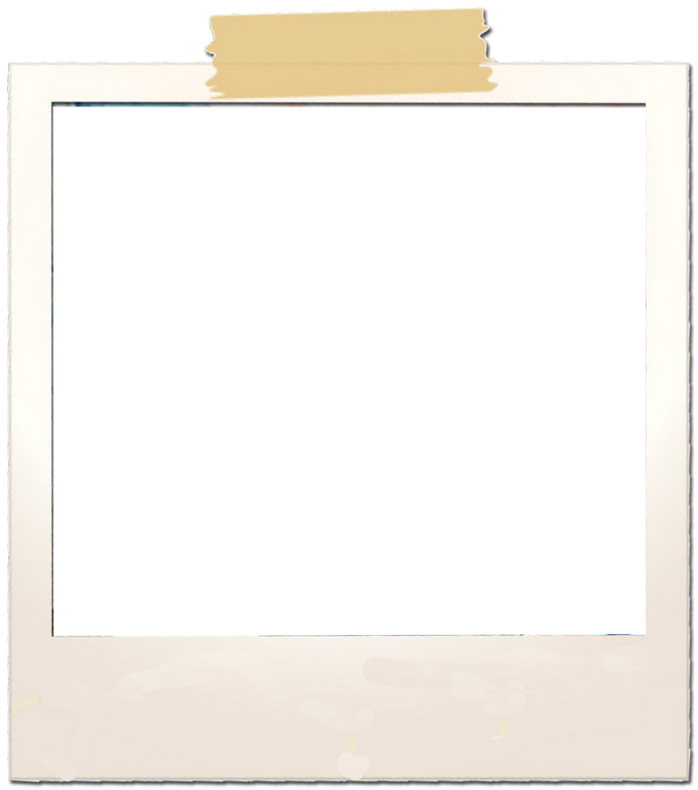

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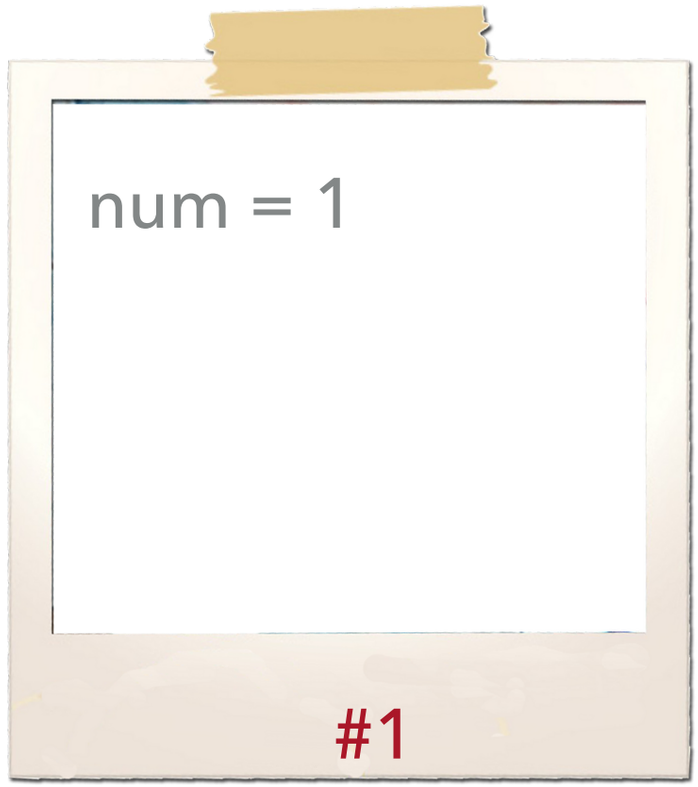

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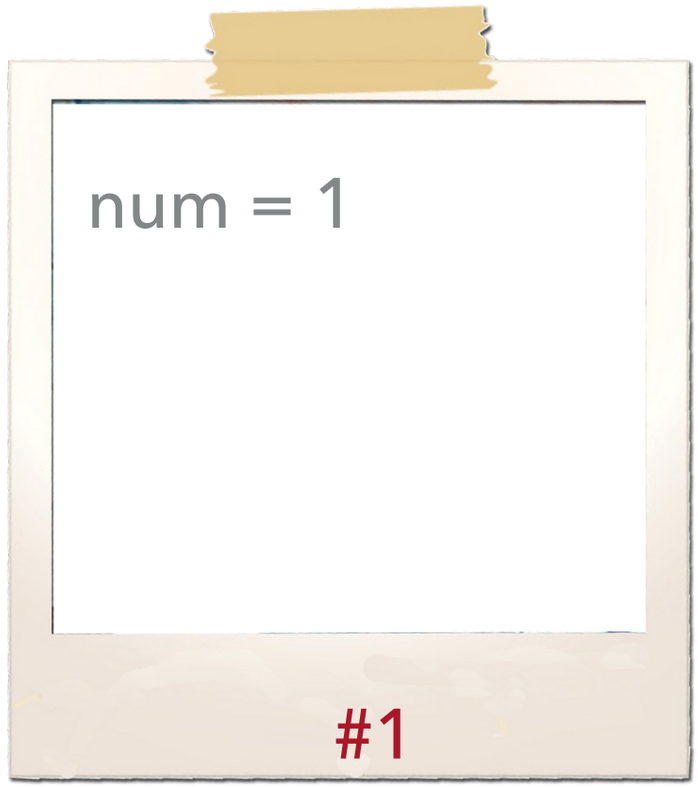

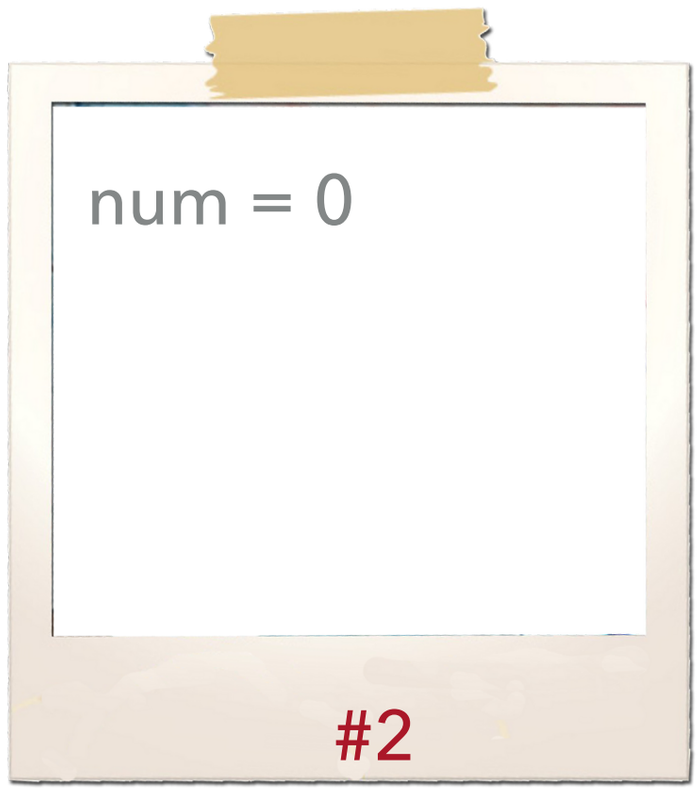

CLOSURES - SNAPSHOT

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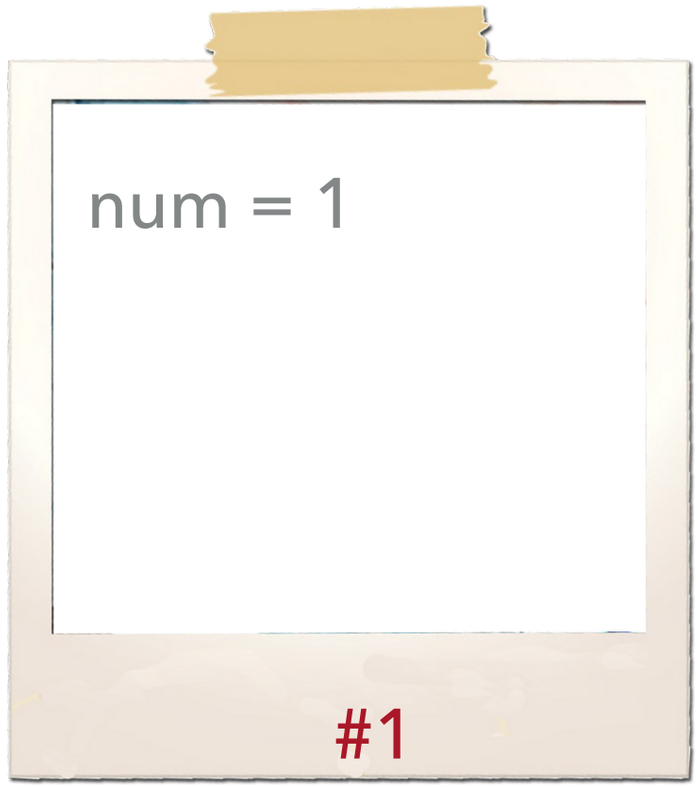

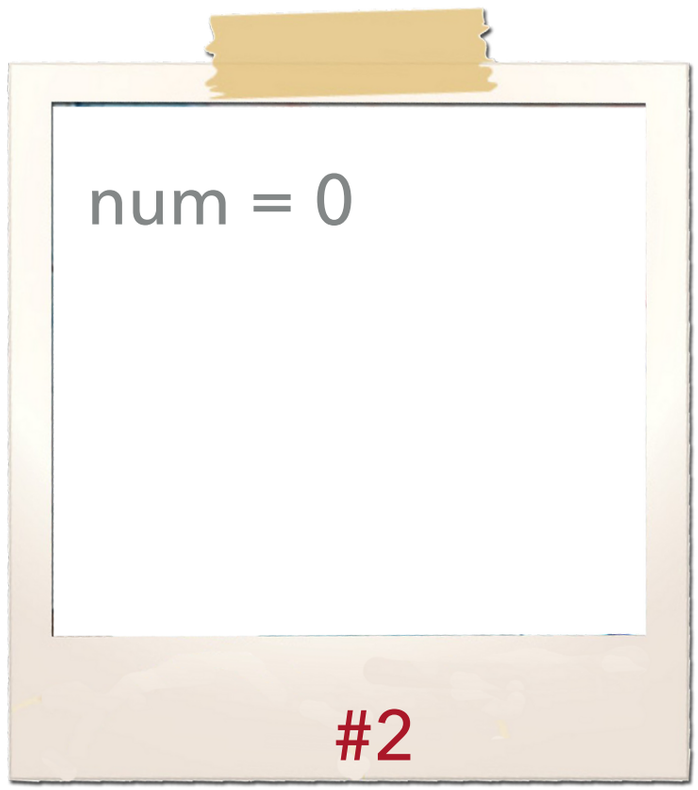

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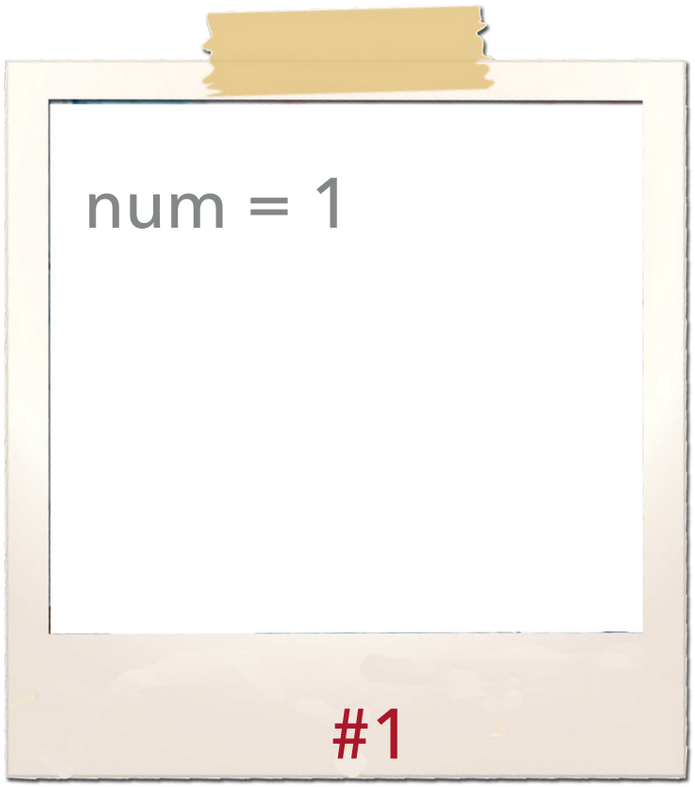

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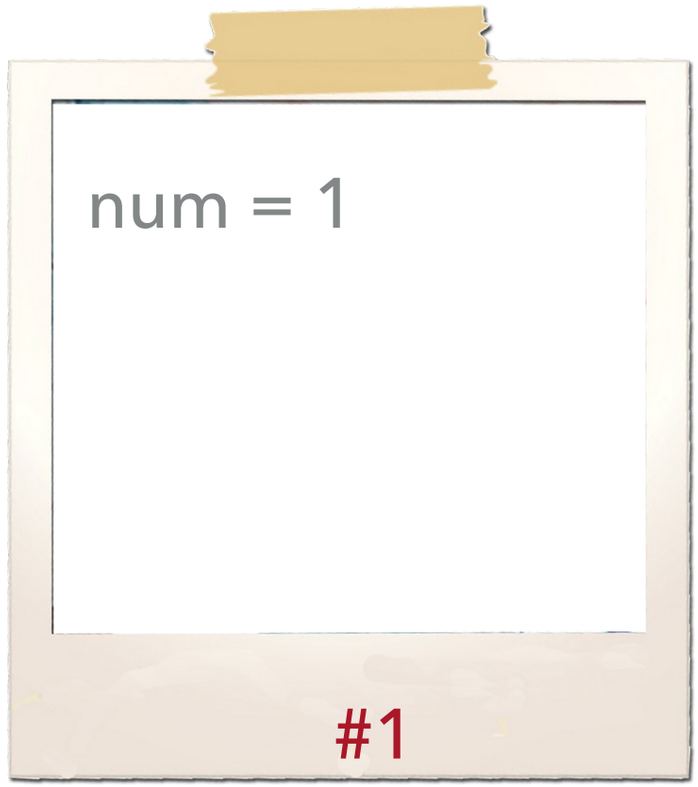

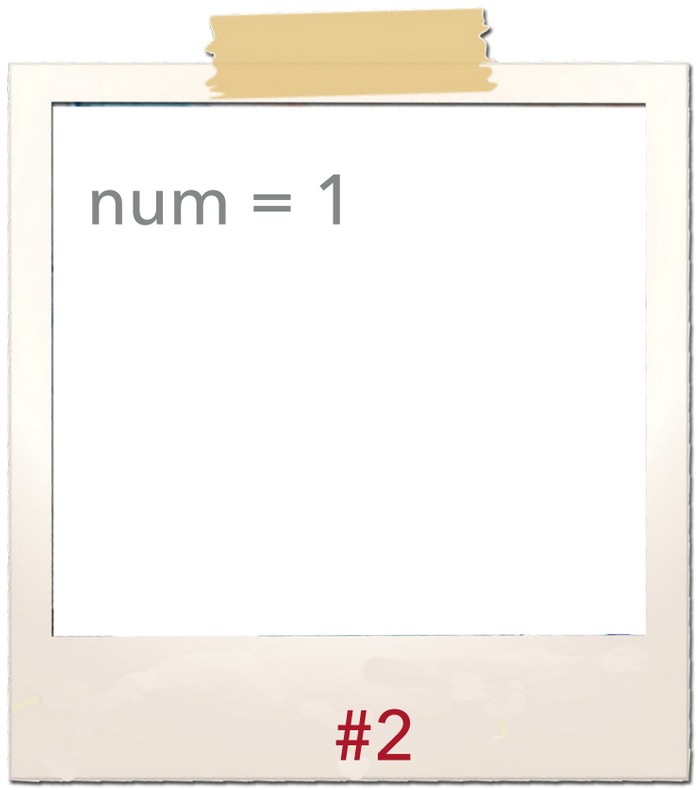

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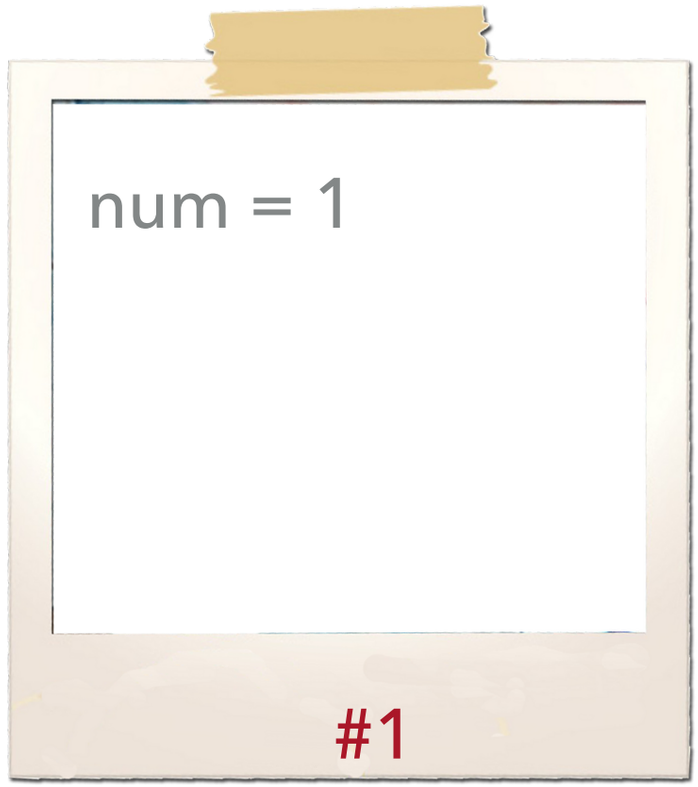

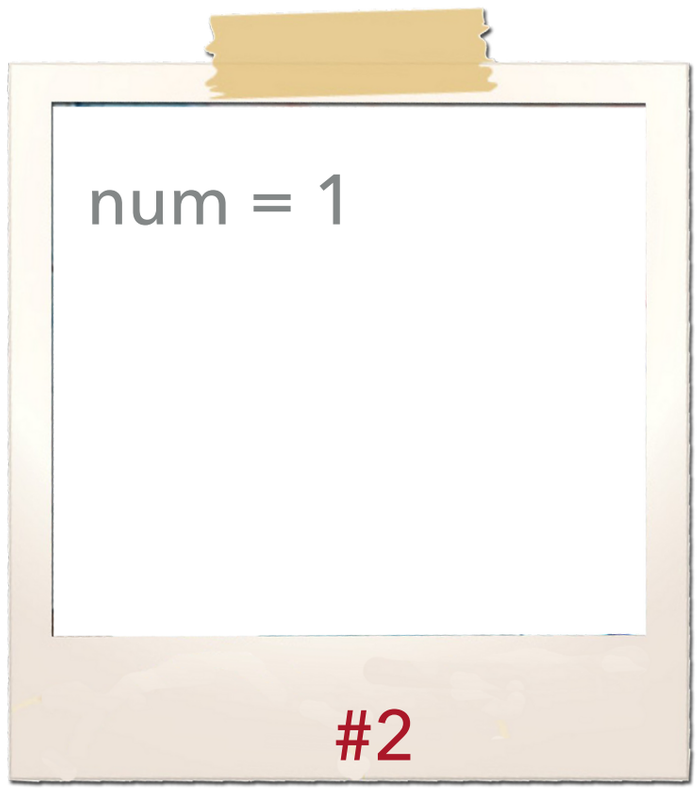

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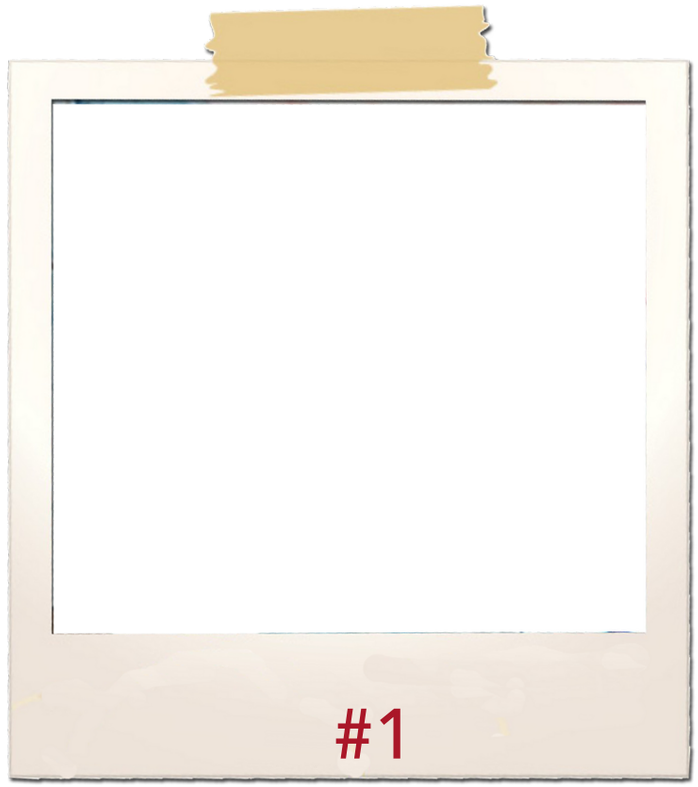

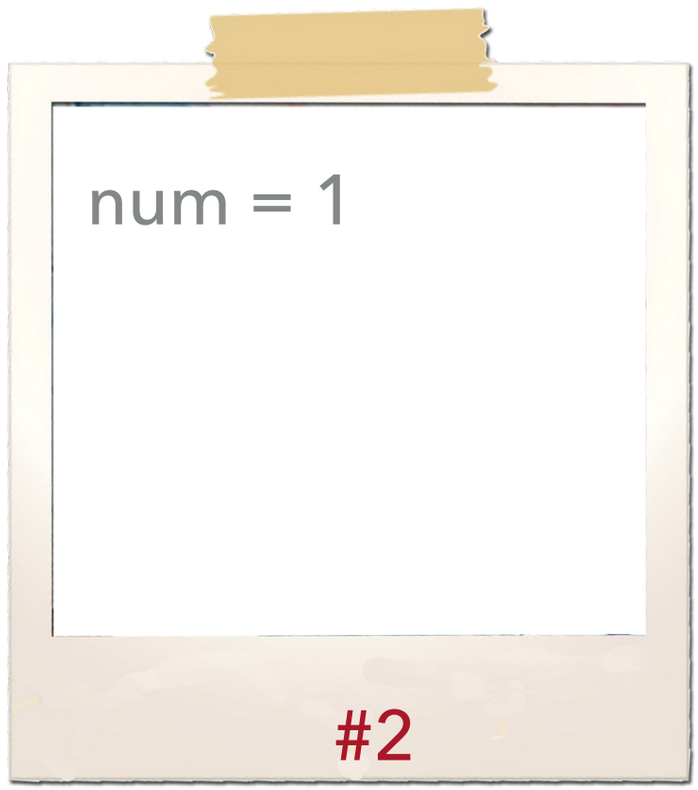

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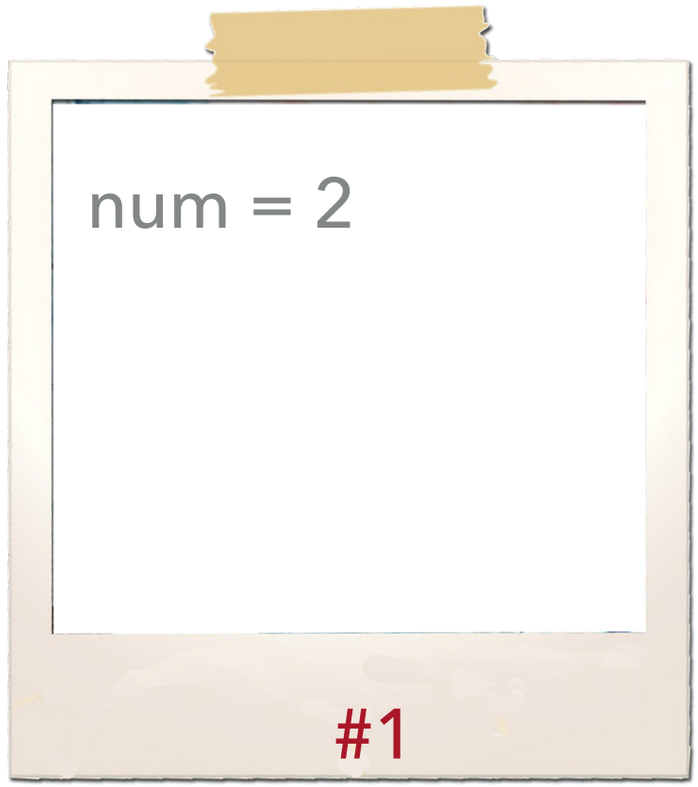

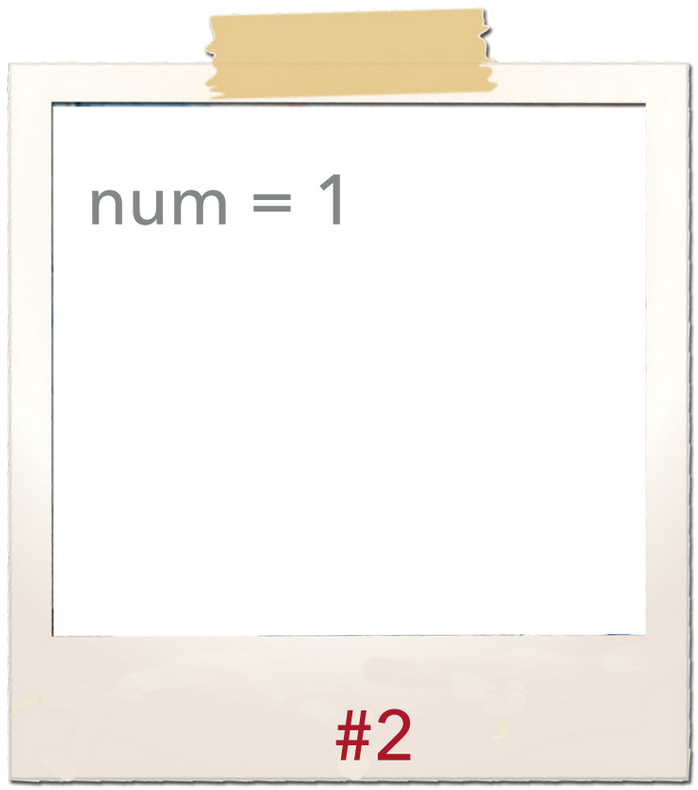

HTTPS://REPL.IT/K8SB/4

PRACTICE:

HTTPS://REPL.IT/K9EP/43

DRY ERASE BOARD EXERCISE

MAKE THE FOLLOWING CODE WORK:

```
VAR ADD = MATHSTUFF(10);
ADD(10)  // RETURNS —> 20
```

JAVASCRIPT

CONSTRUCTOR FUNCTIONS

HTTPS://REPL.IT/K9EZ/21

DRY ERASE BOARD EXERCISE

BUILD AN EMPLOYEE CONSTRUCTOR FUNCTION
SHOULD HAVE NAME, POSITION PROPERTIES
USE PROTOTYPE