

# EVENT LISTENERS AND HANDLERS

---

*Listen up*

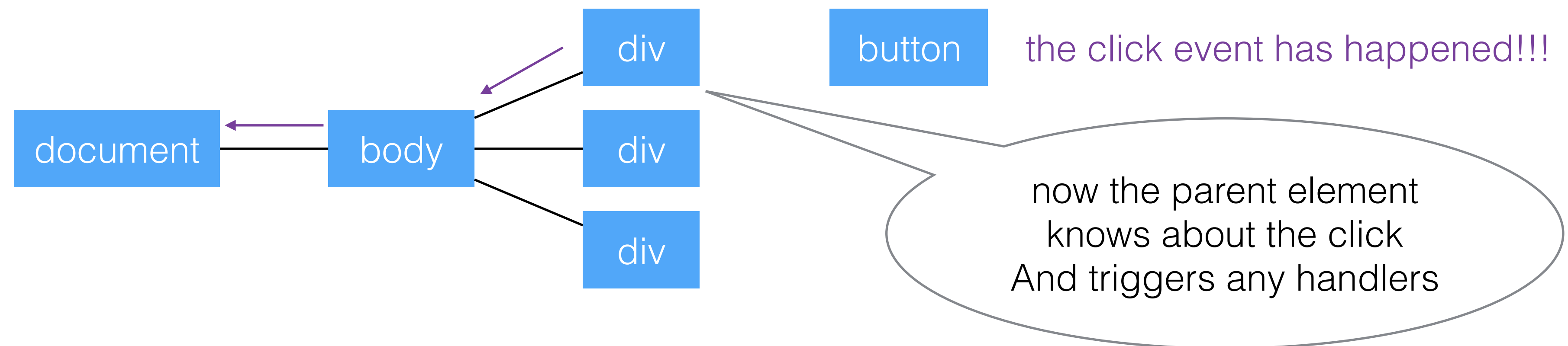
# EVENT HANDLERS

```
element.addEventListener('click', function (event) {  
    // Run this code on click  
});
```

- JS that handles things that happen in the DOM
- Event examples:
  - click
  - (form) submit
  - hover
  - mouseover

# EVENT PROPAGATION/BUBBLING

- An event is directed to its intended target
- If there is an event handler it is triggered
- From here, the **event** *bubbles* up to the containing elements
- This continues to the document element itself



```
<body>
  <div id="1">
    <button>Click Me</button>
  </div>

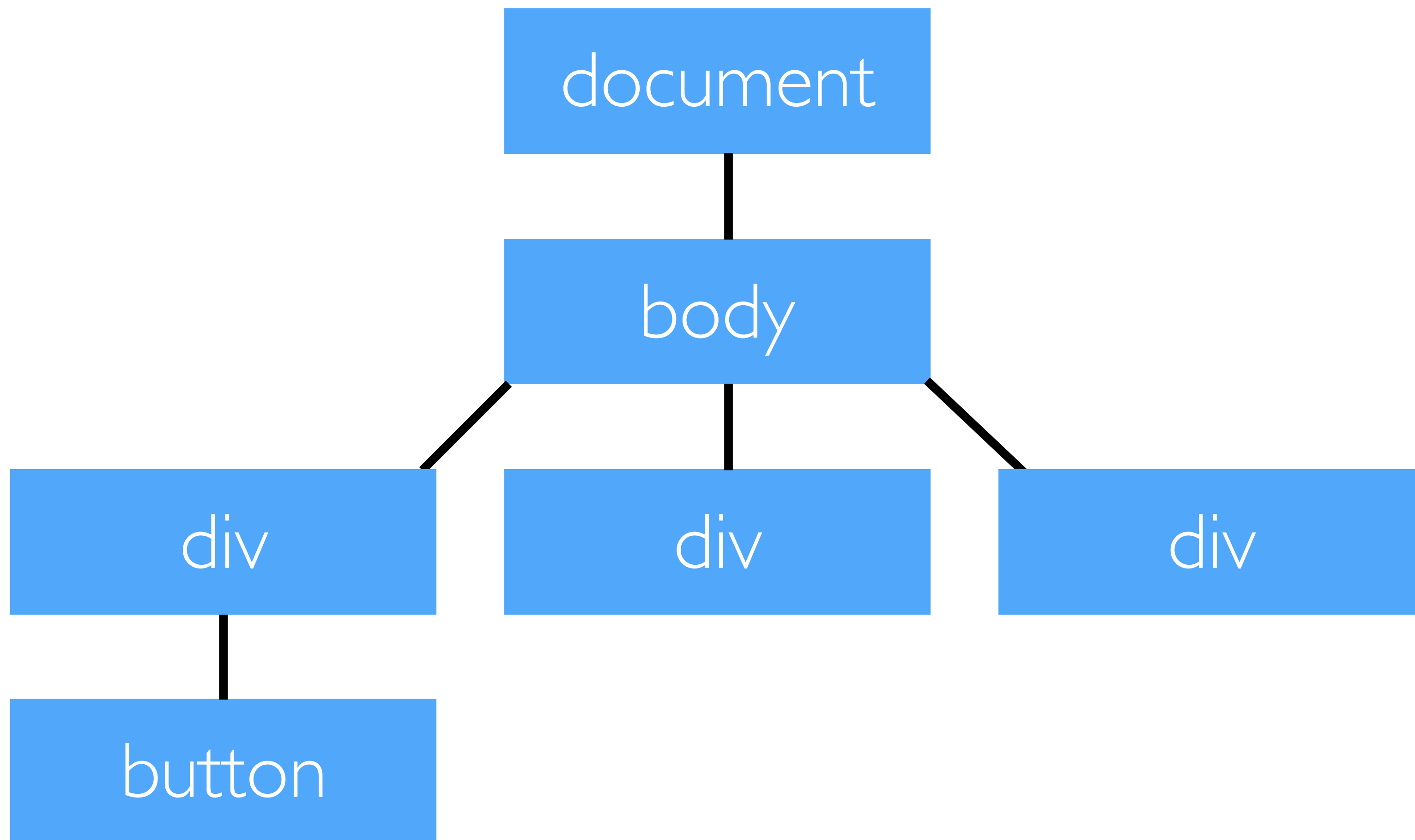
  <div id="2"></div>

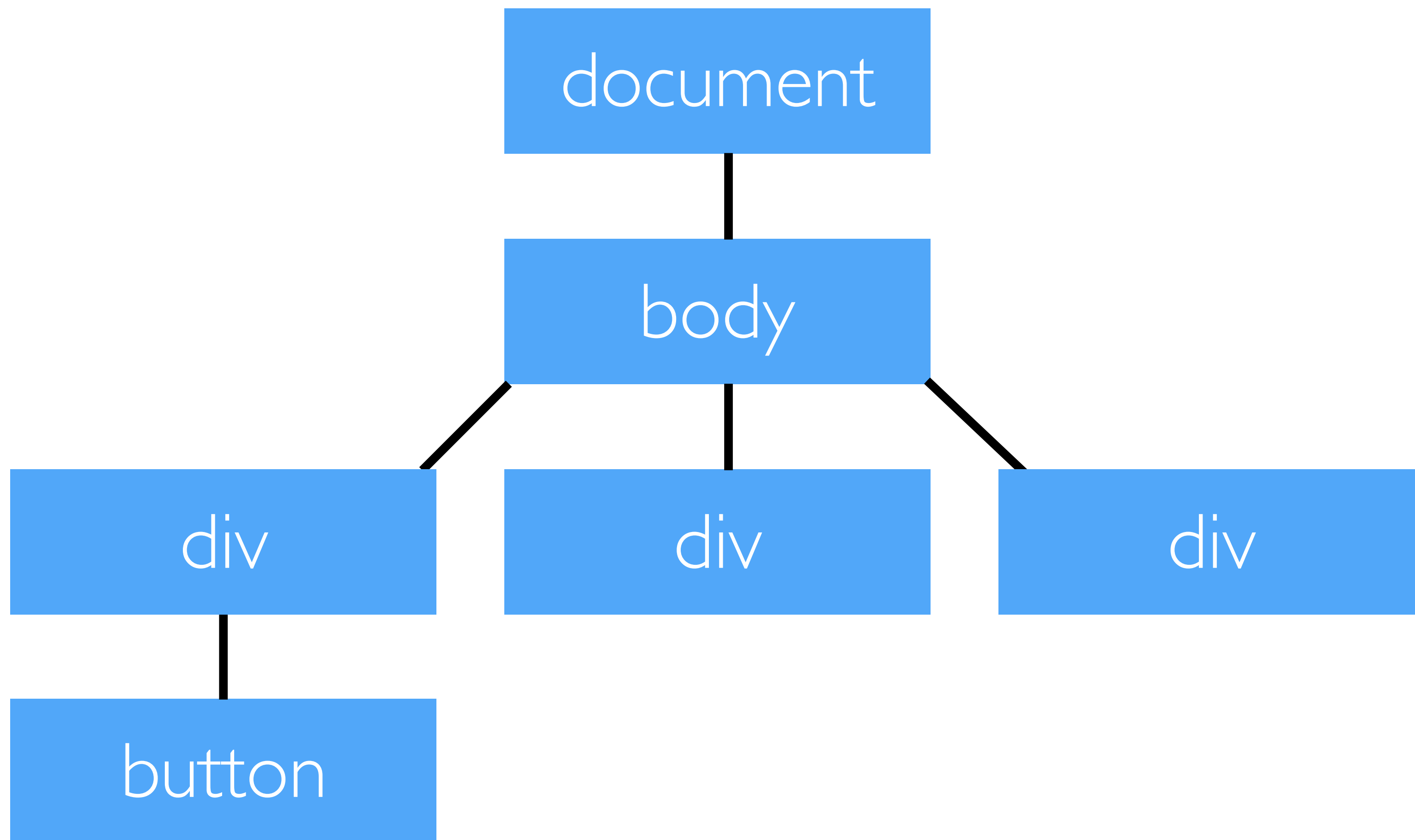
  <div id="3"></div>
</body>
```

```
<body>
  <div id="1">
    <button>Click Me</button>
  </div>

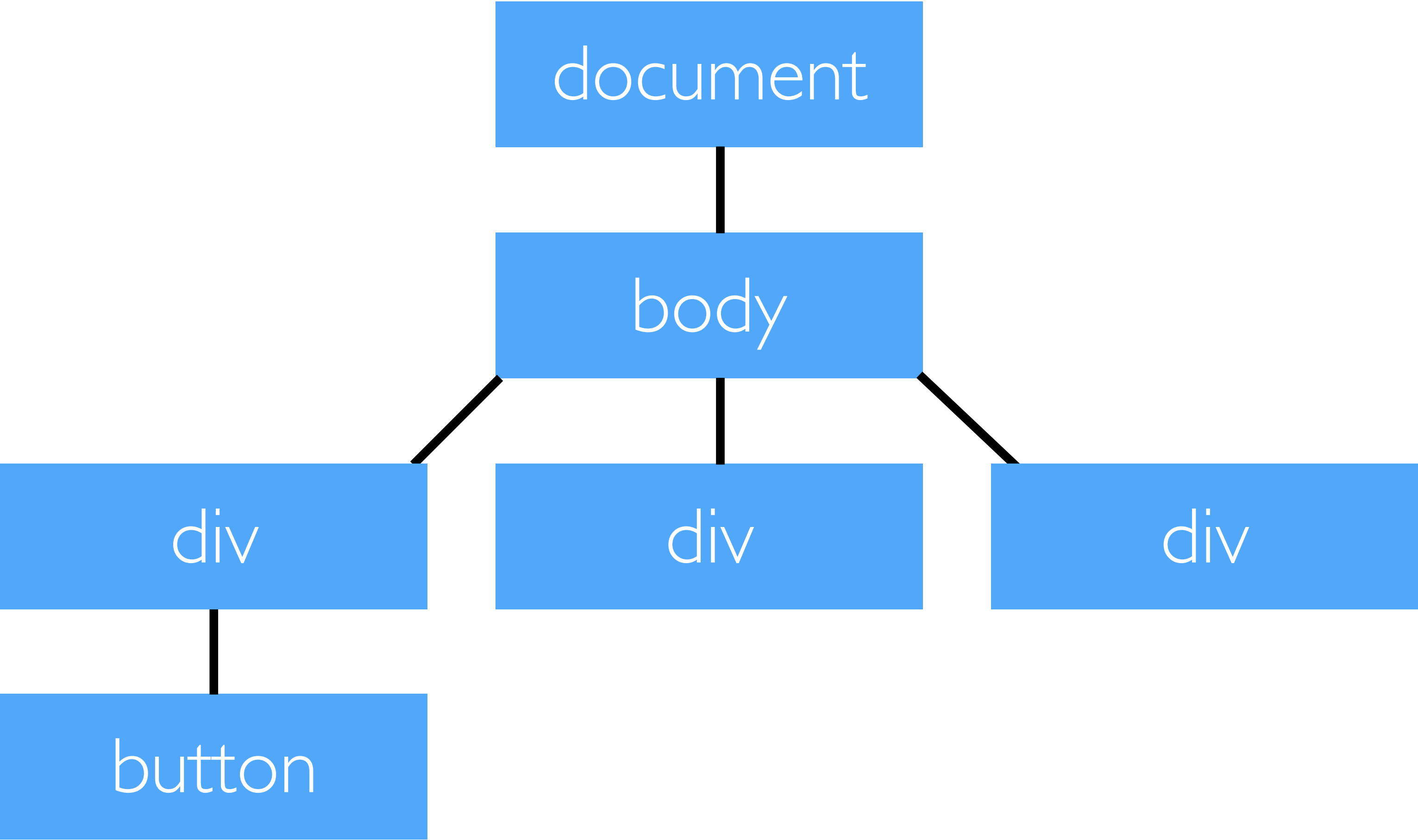
  <div id="2"></div>

  <div id="3"></div>
</body>
```





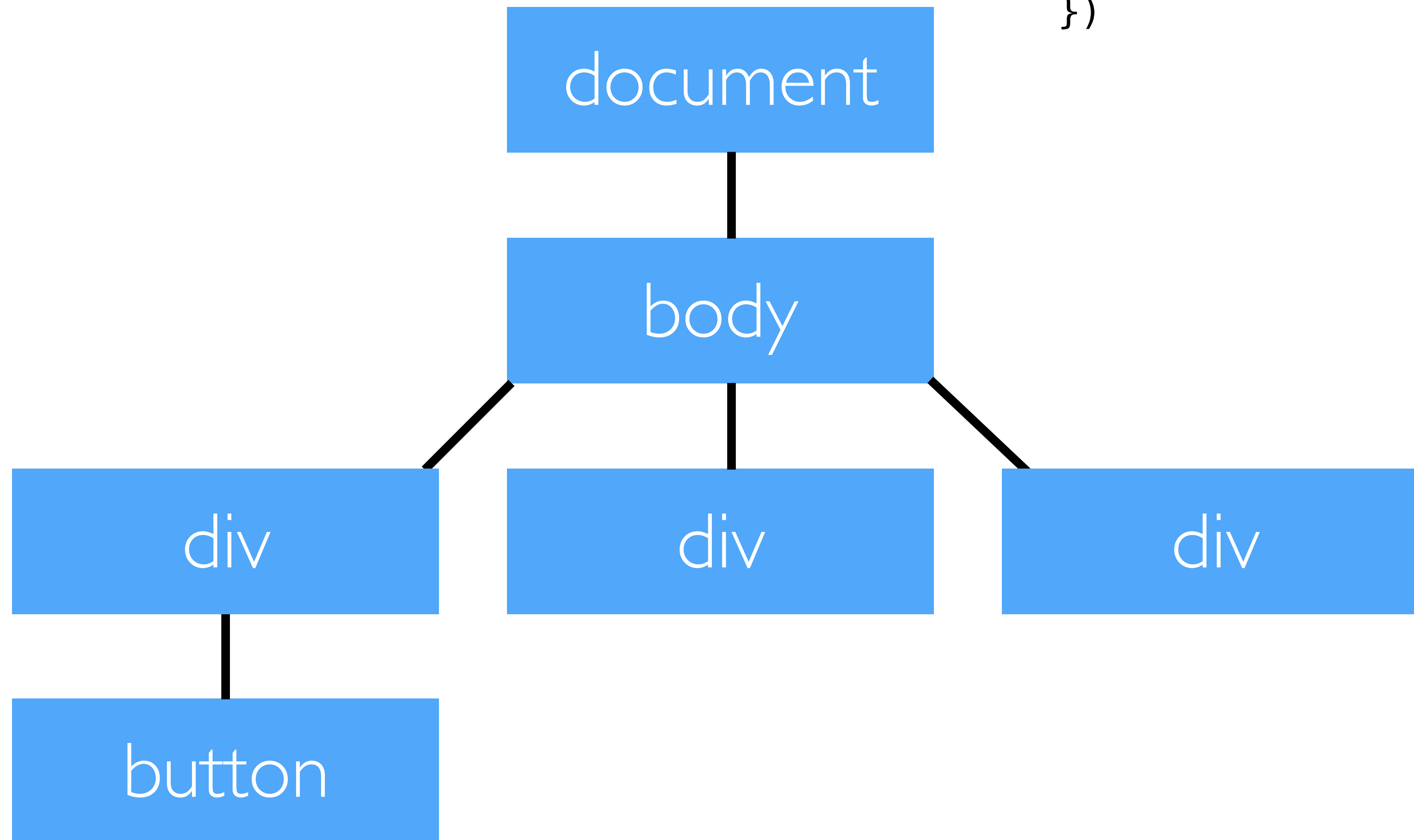
```
const button = document.getElementsByTagName( 'button' ) [0]
```





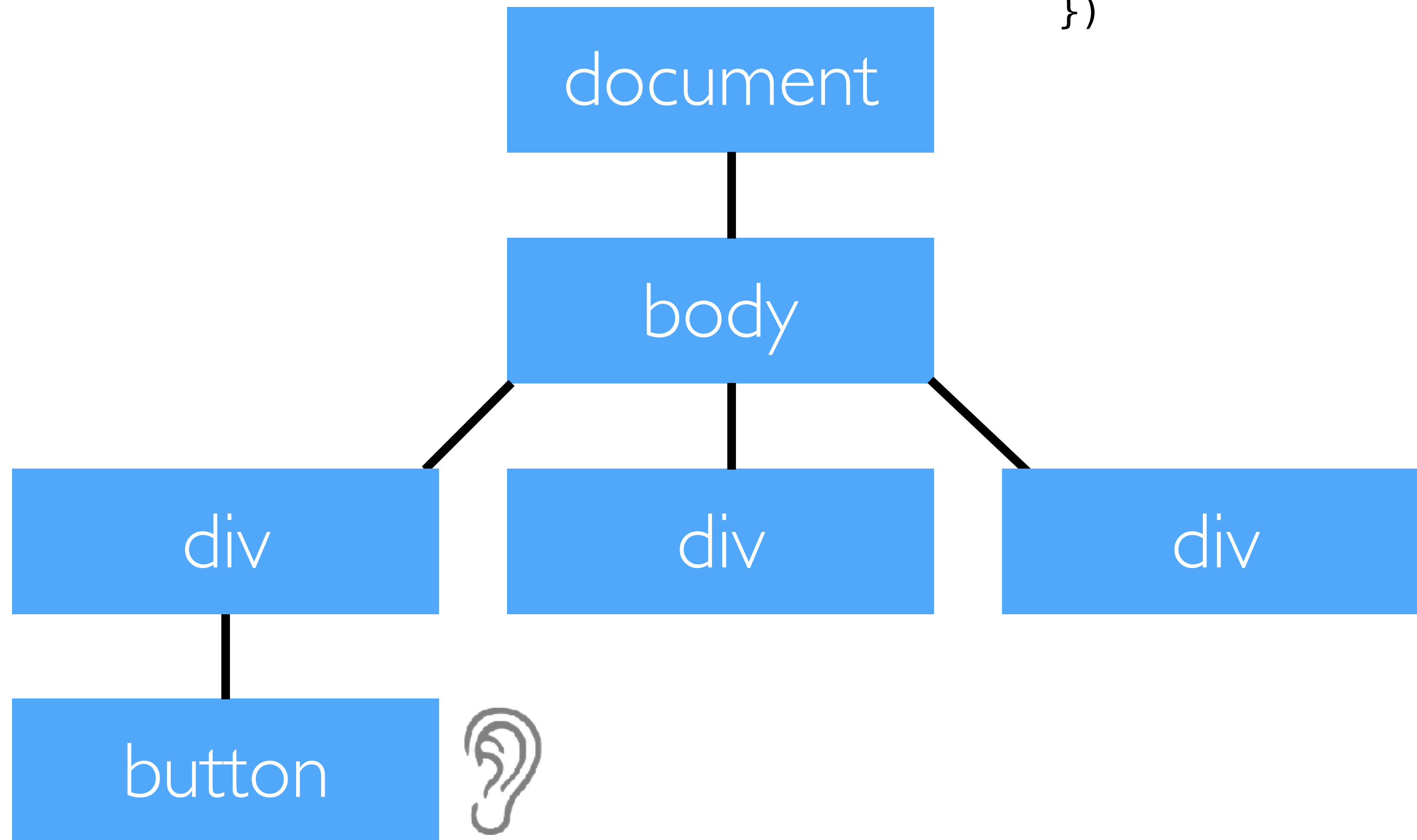
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const button = document.getElementsByTagName('button')[0]

button.addEventListener('click', function (evt) {
  console.log('button was clicked!')
})
```



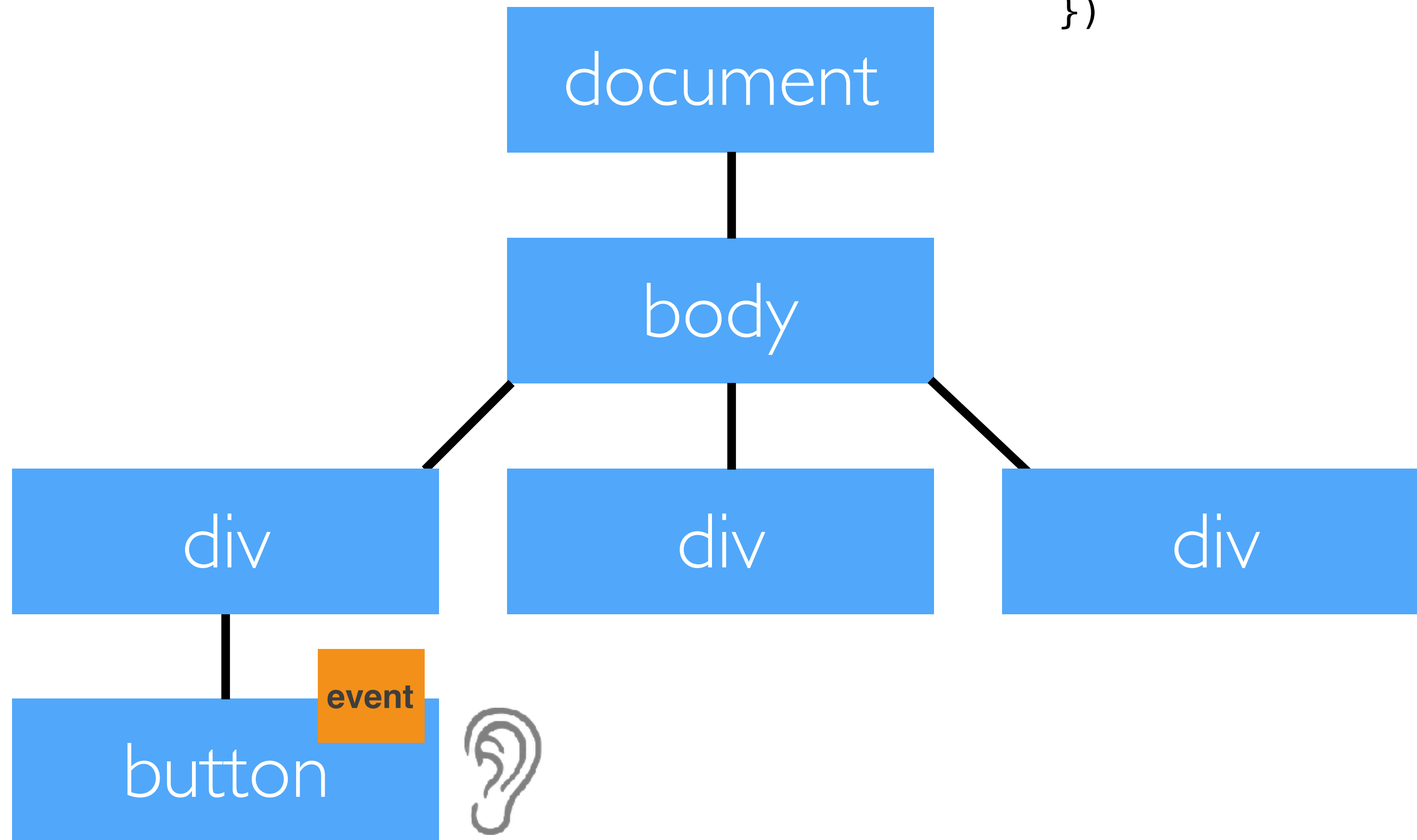
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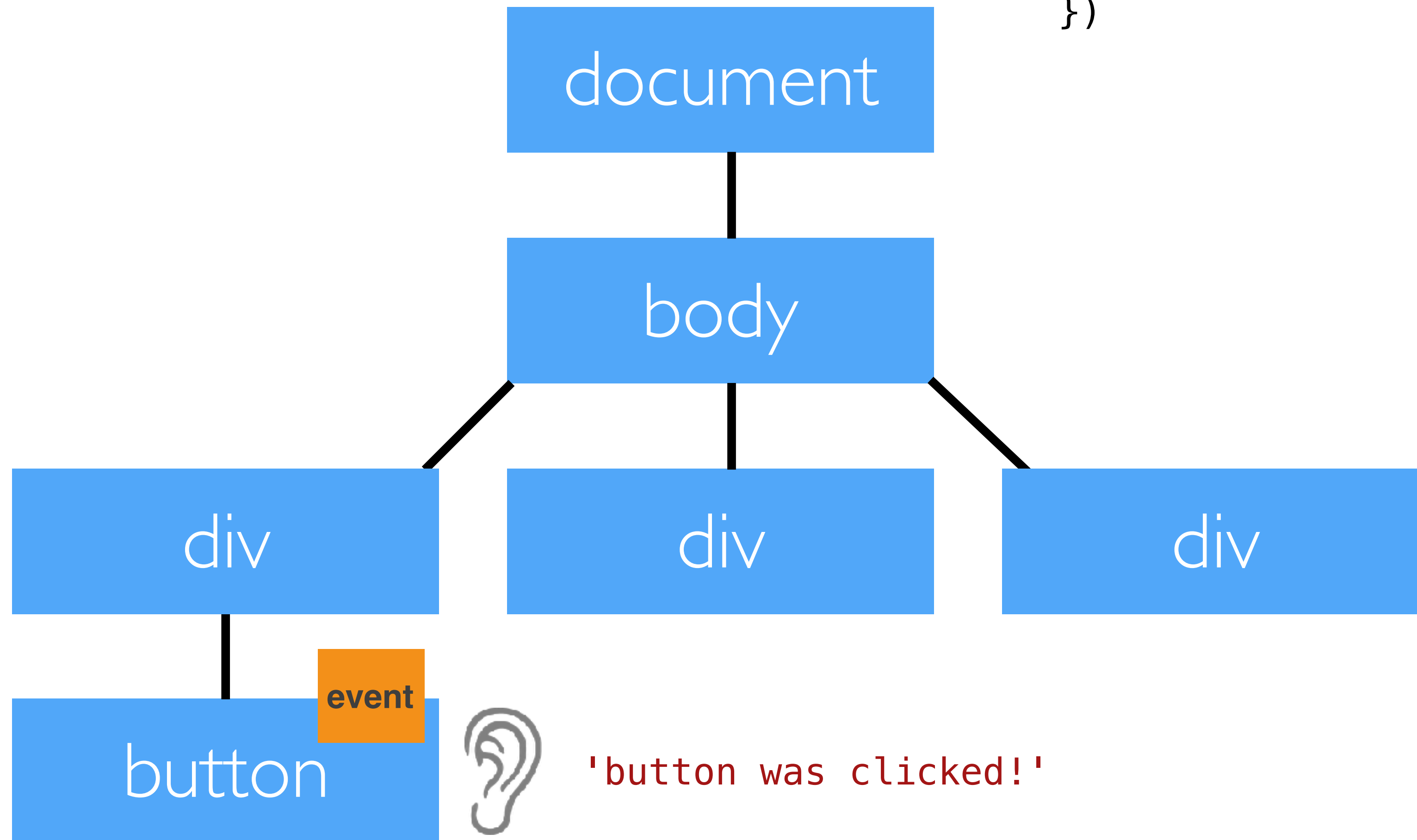
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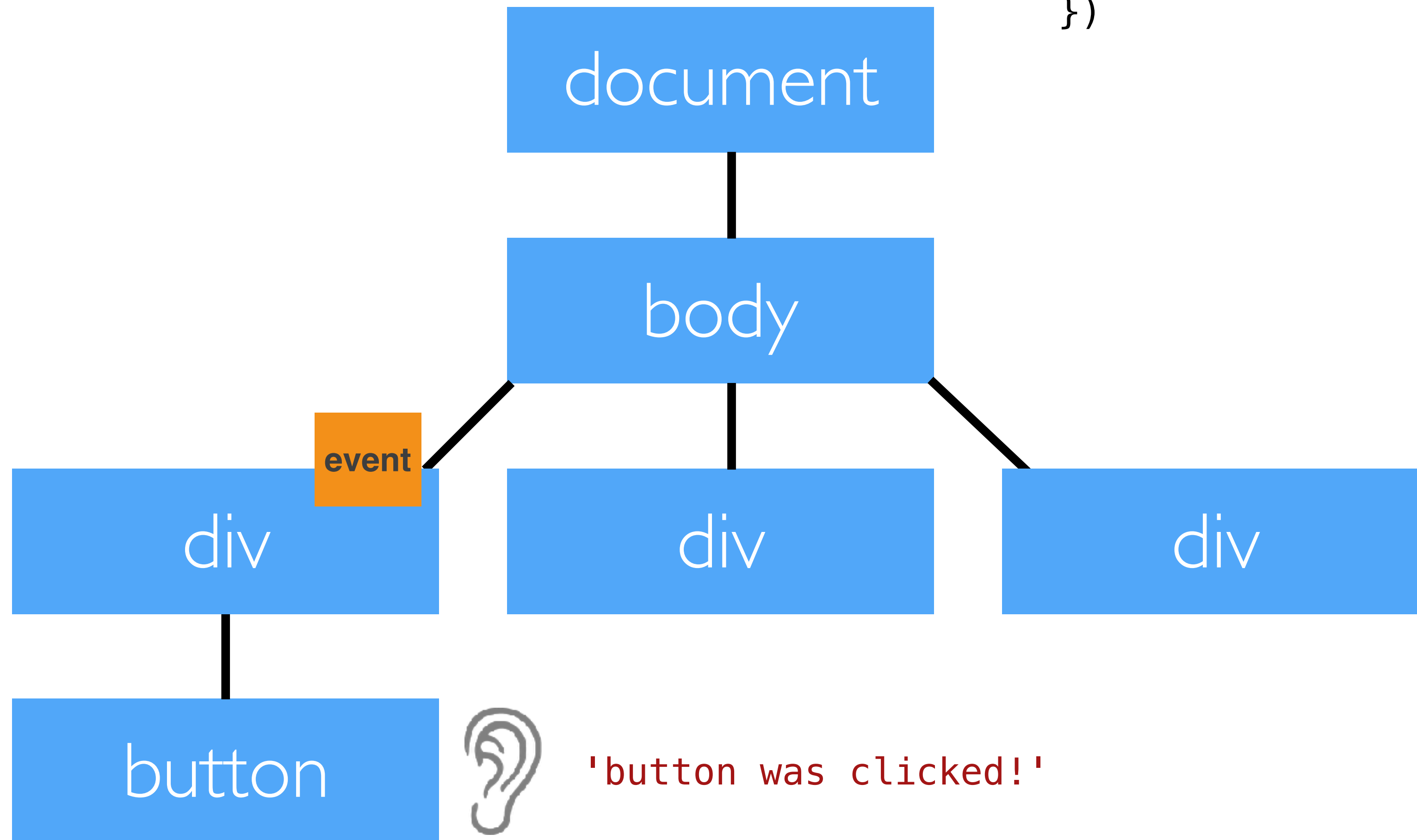
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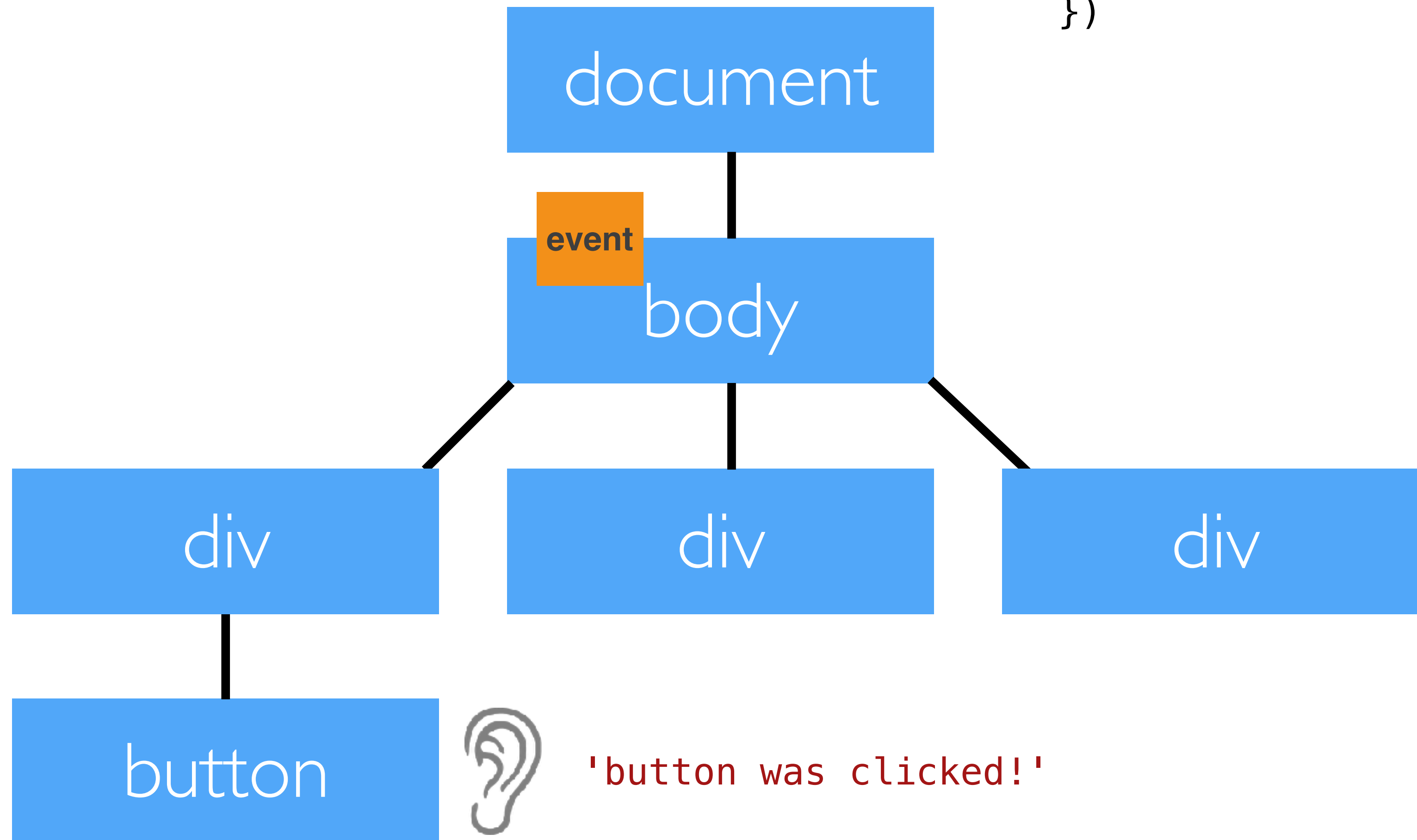
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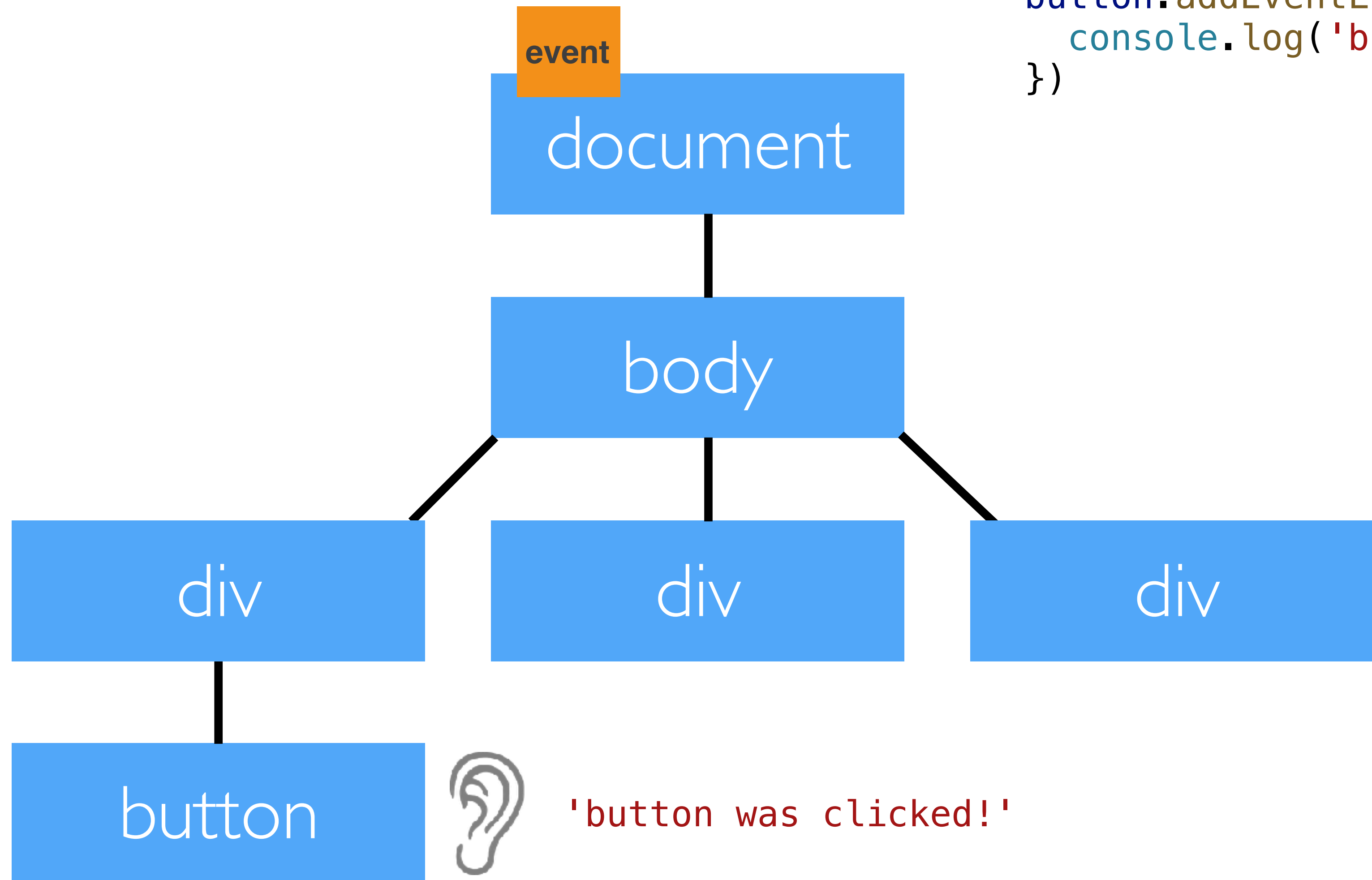
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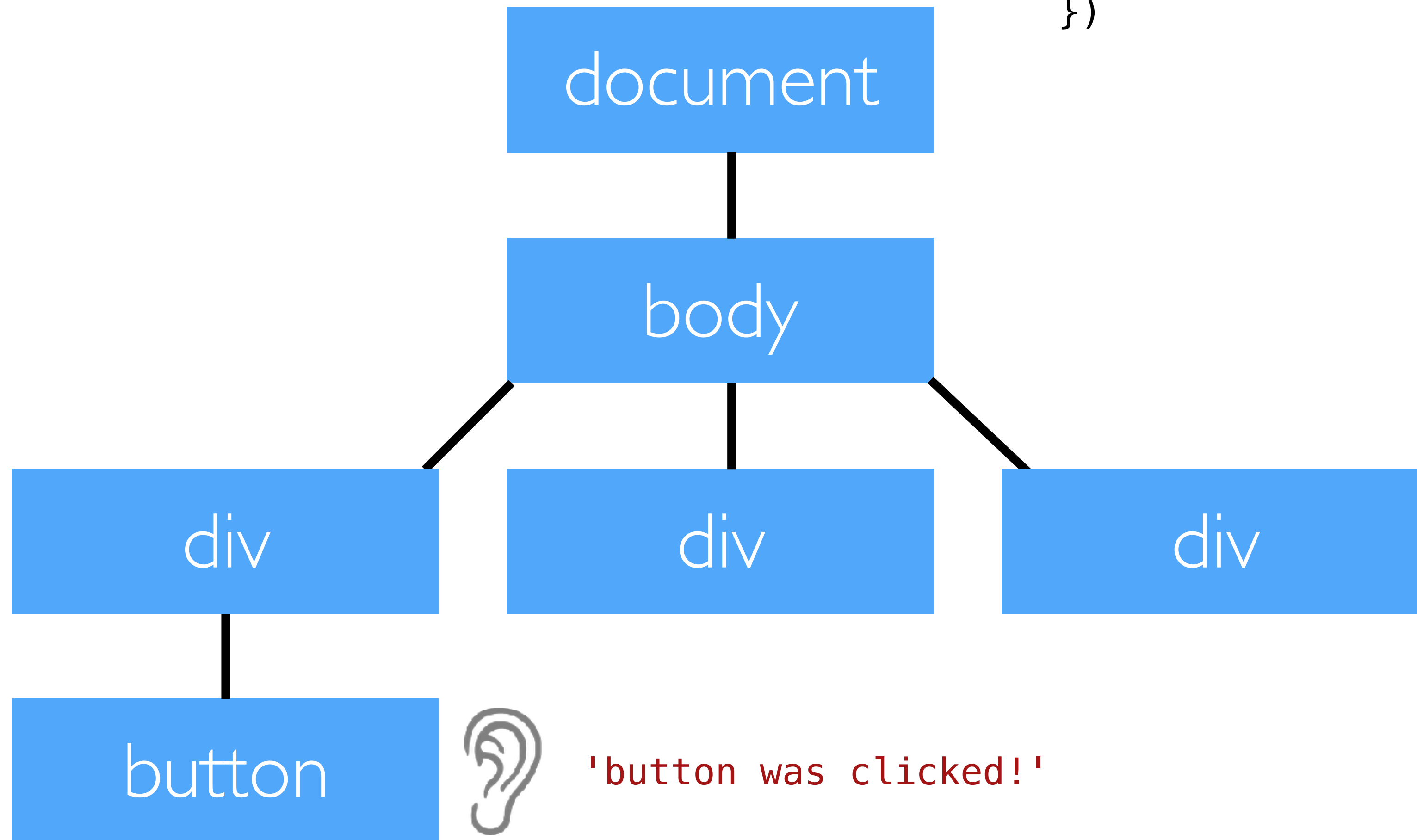
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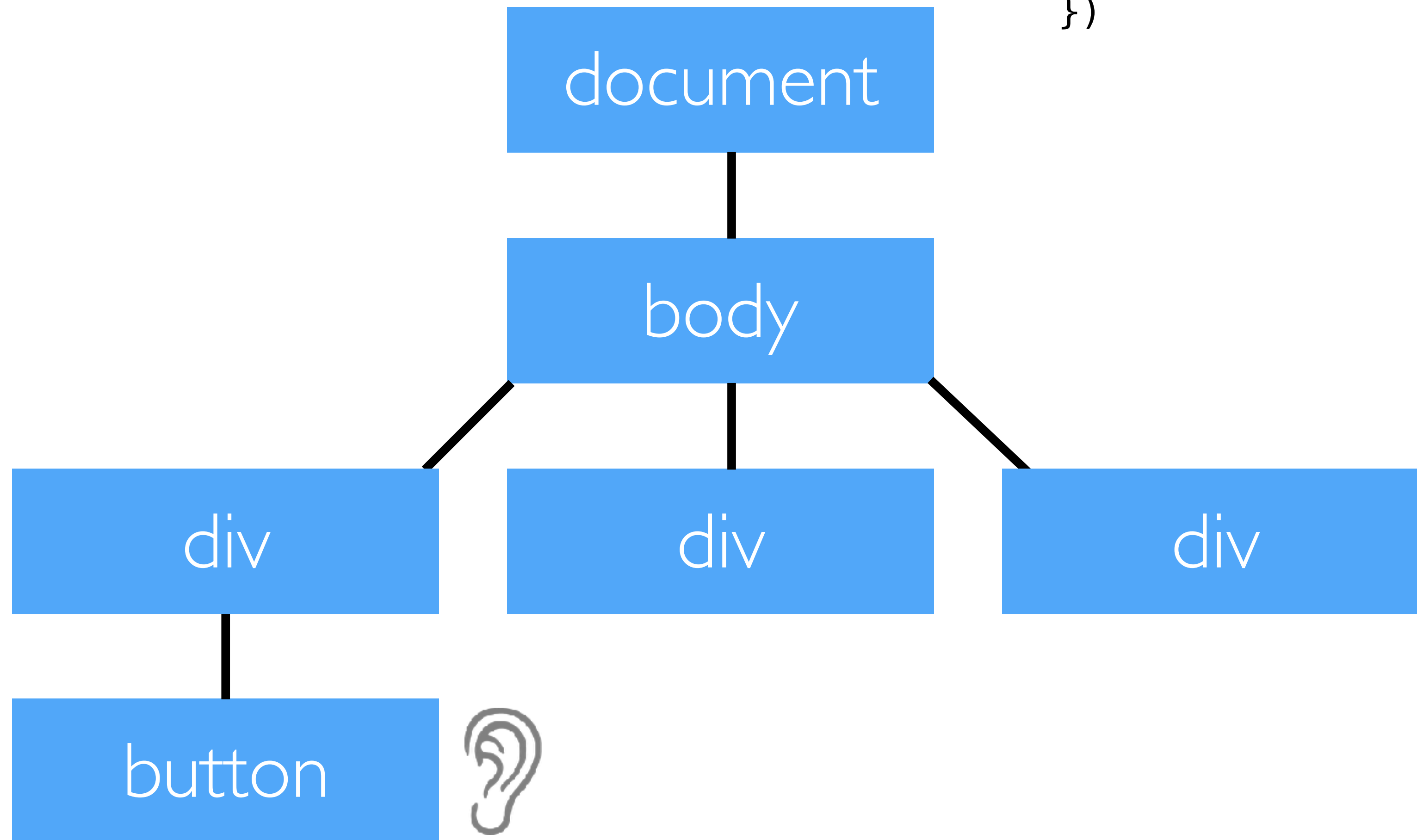
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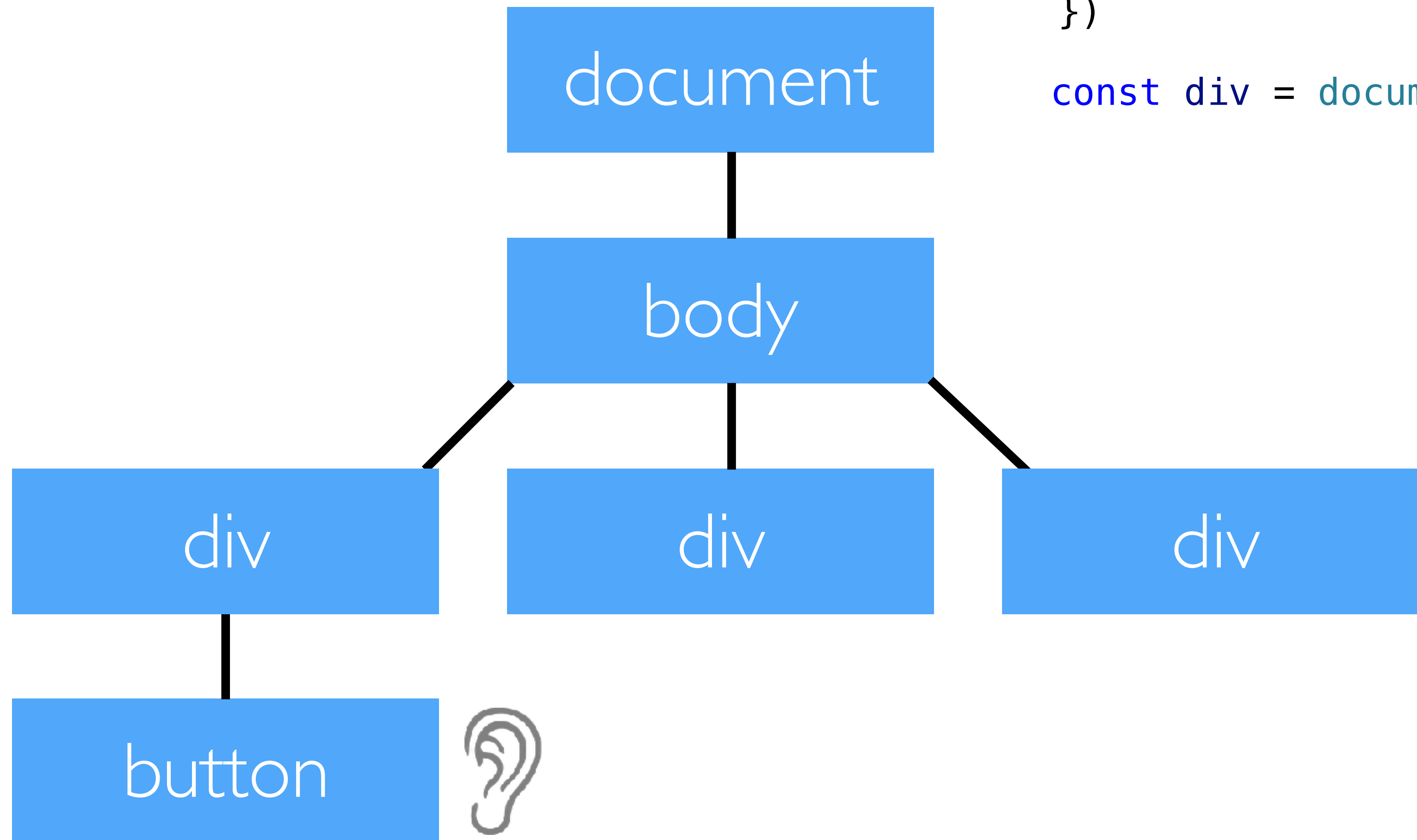
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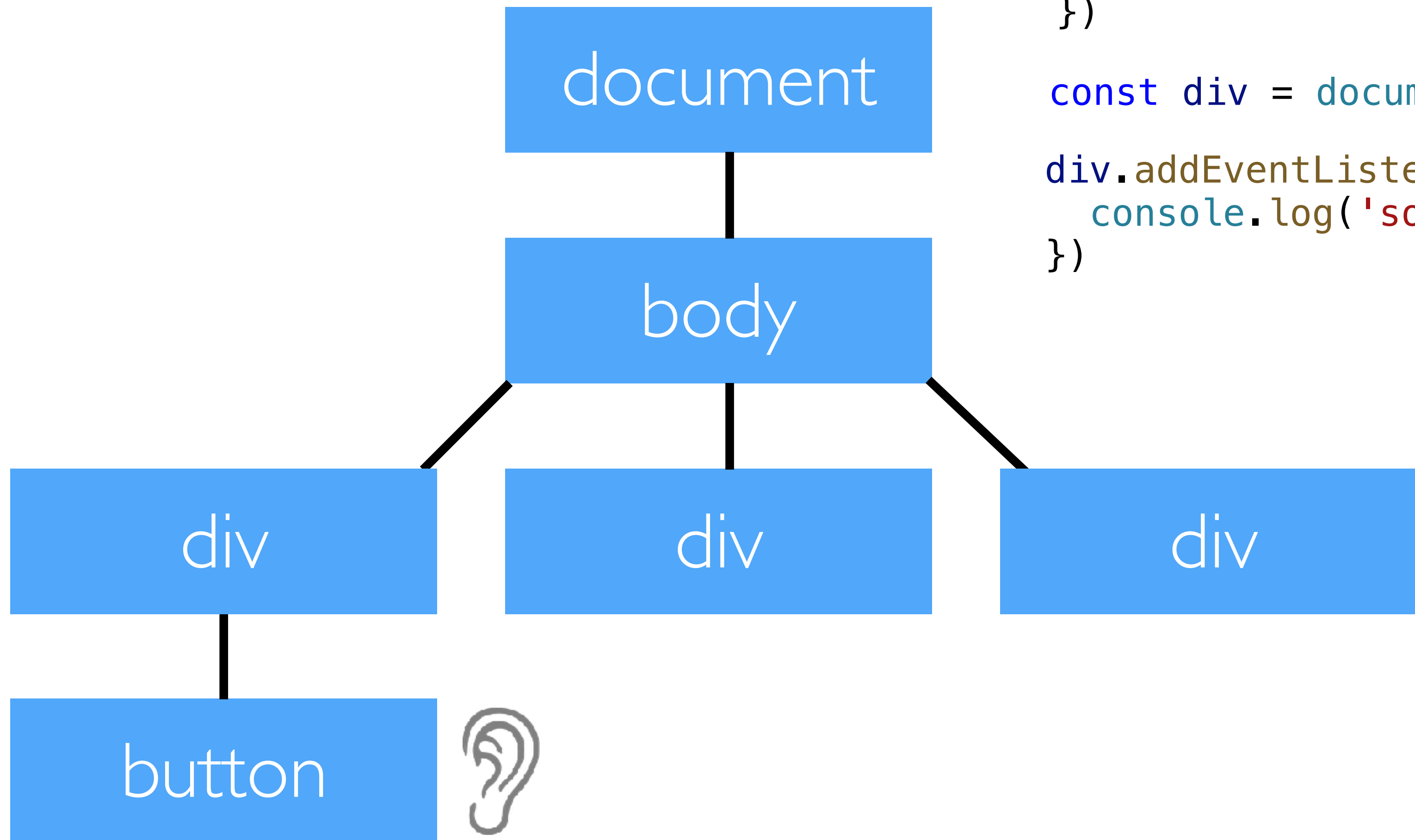


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const div = document.getElementById('one')
```



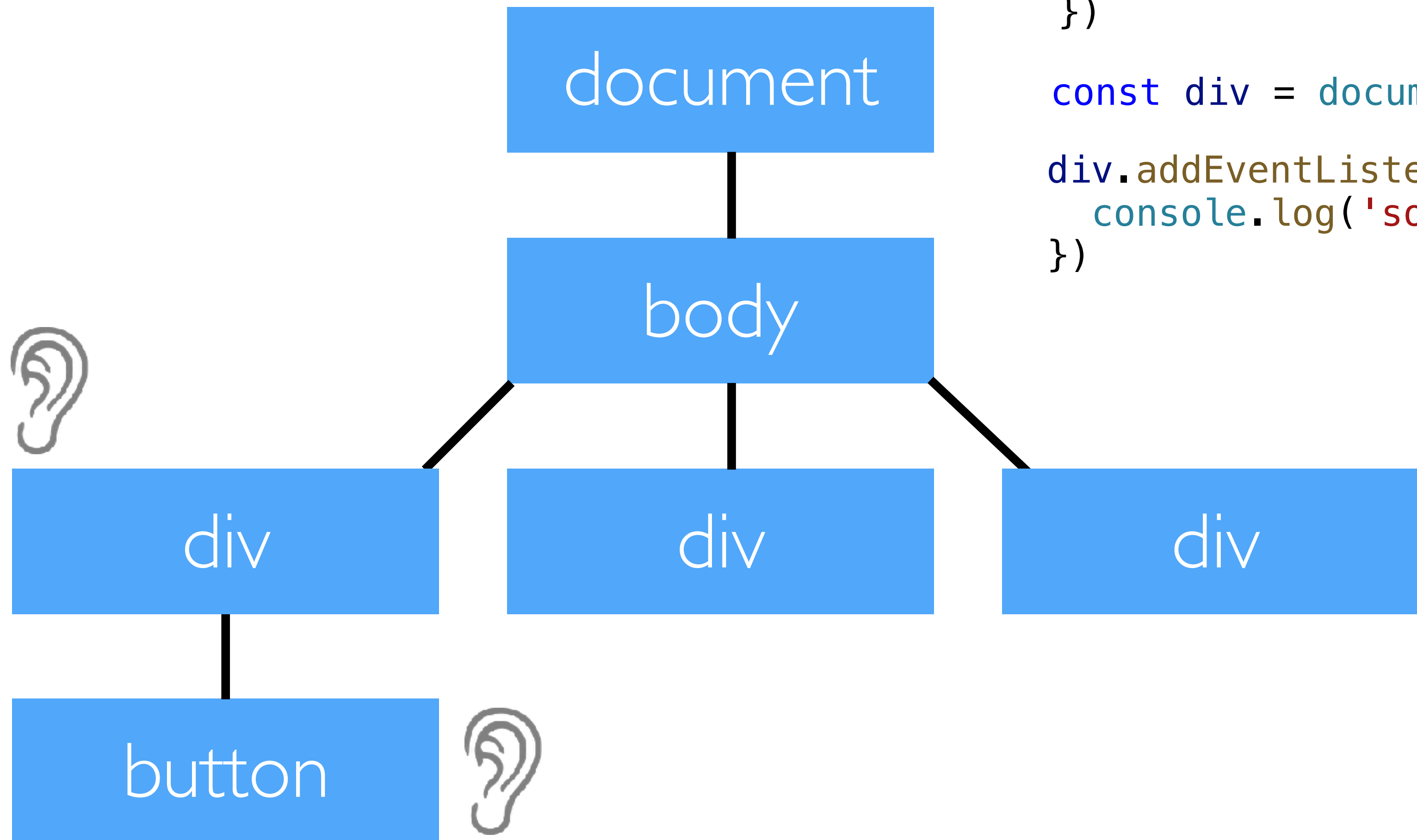


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})

const div = document.getElementById('one')

div.addEventListener('click', function (evt) {
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```

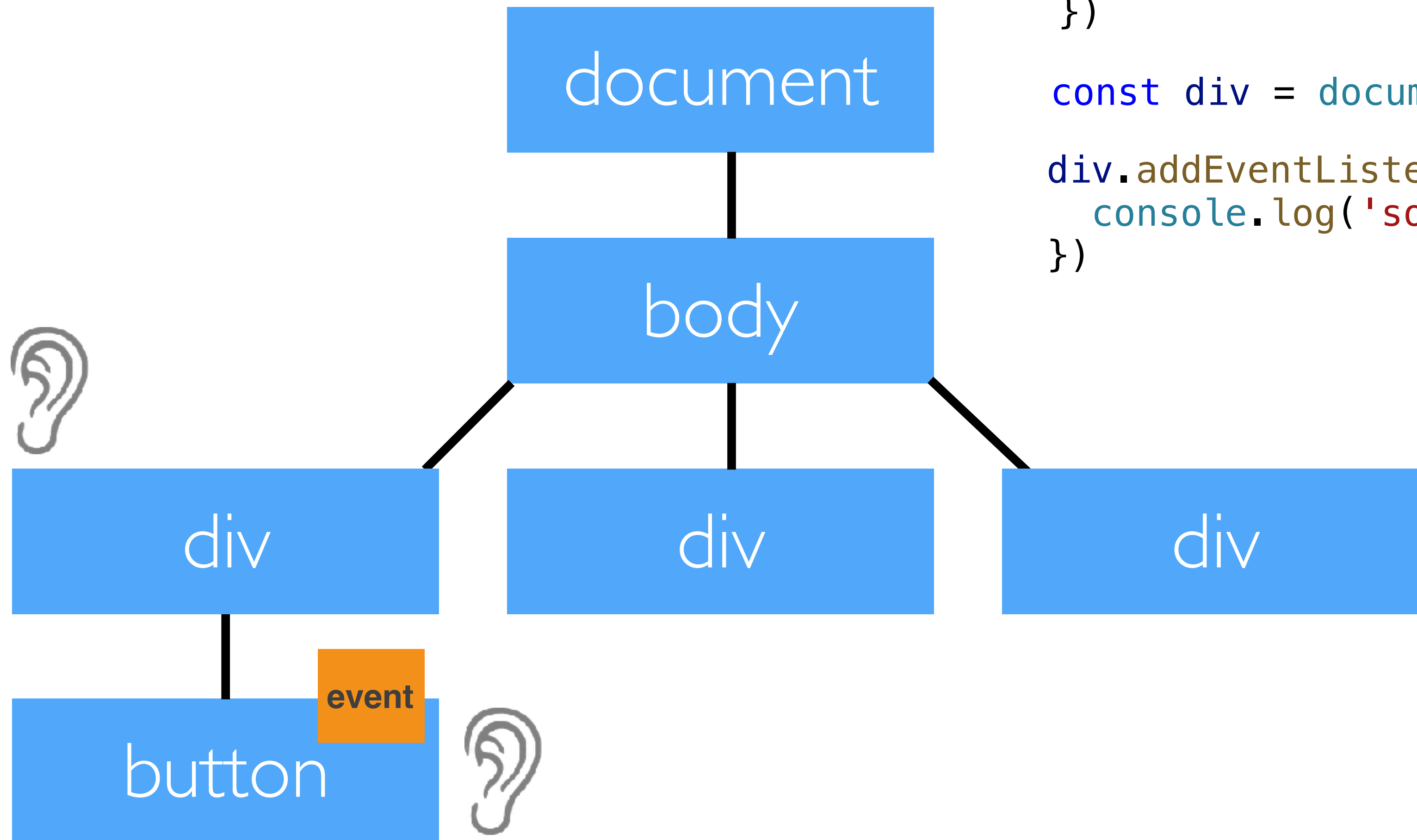


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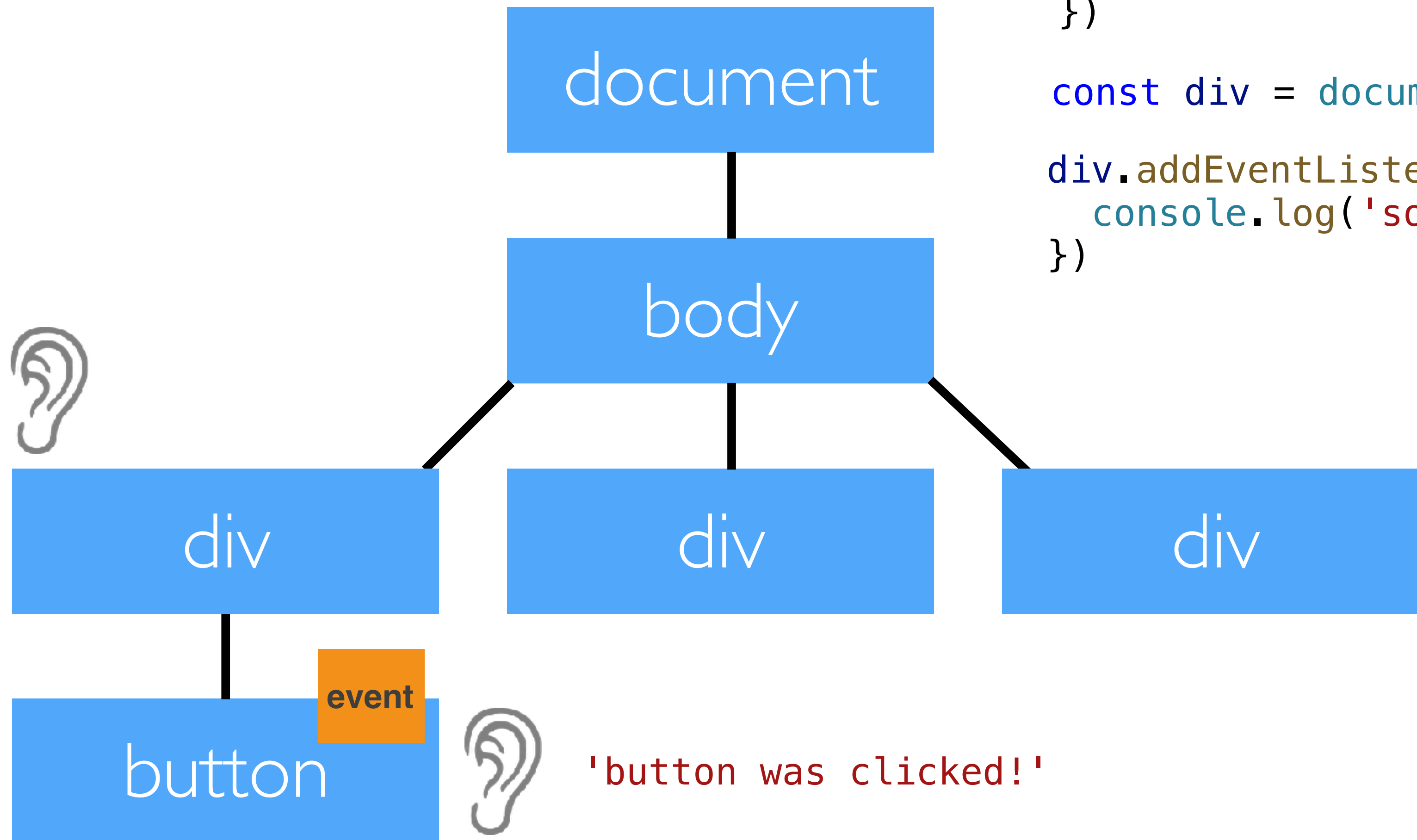


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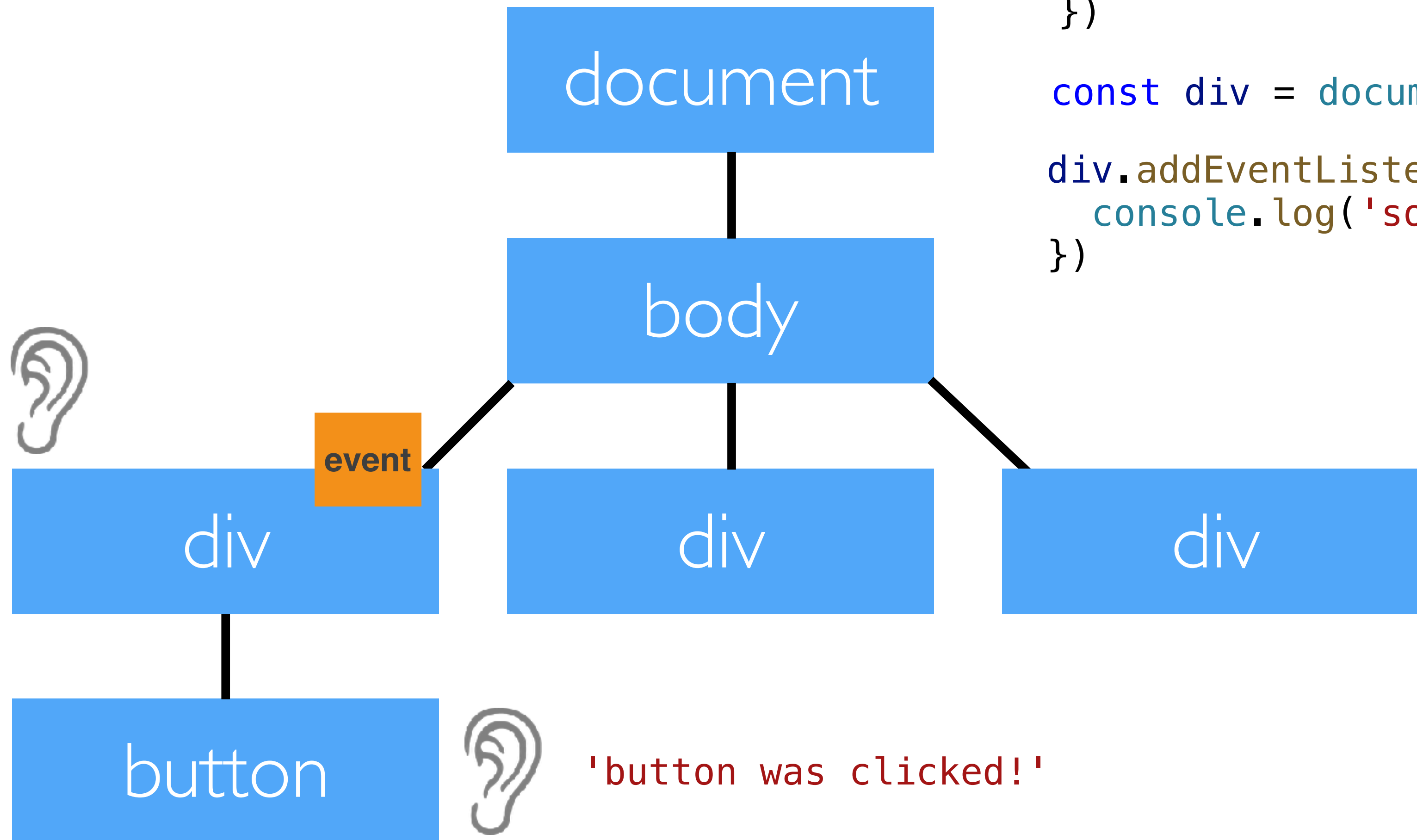


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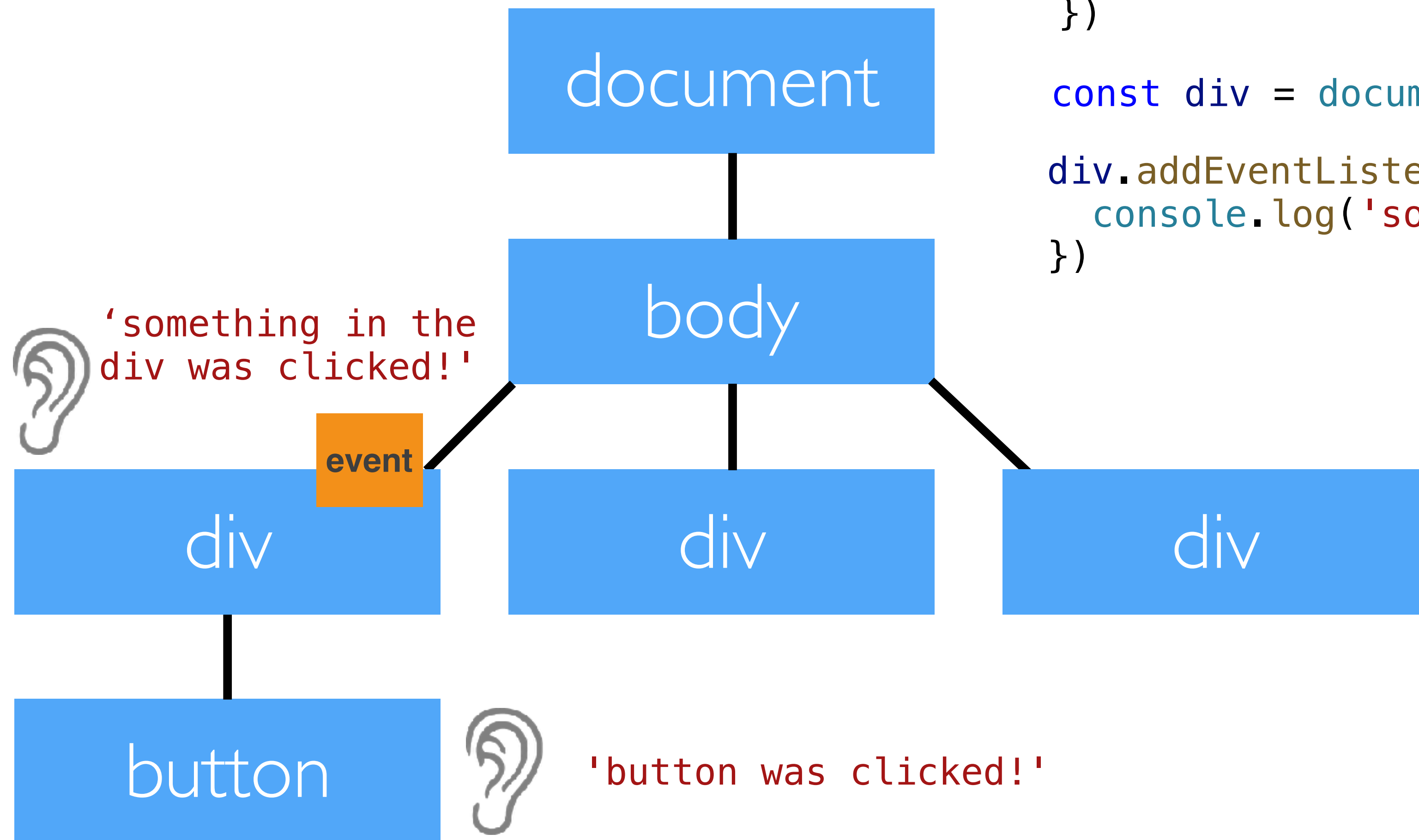


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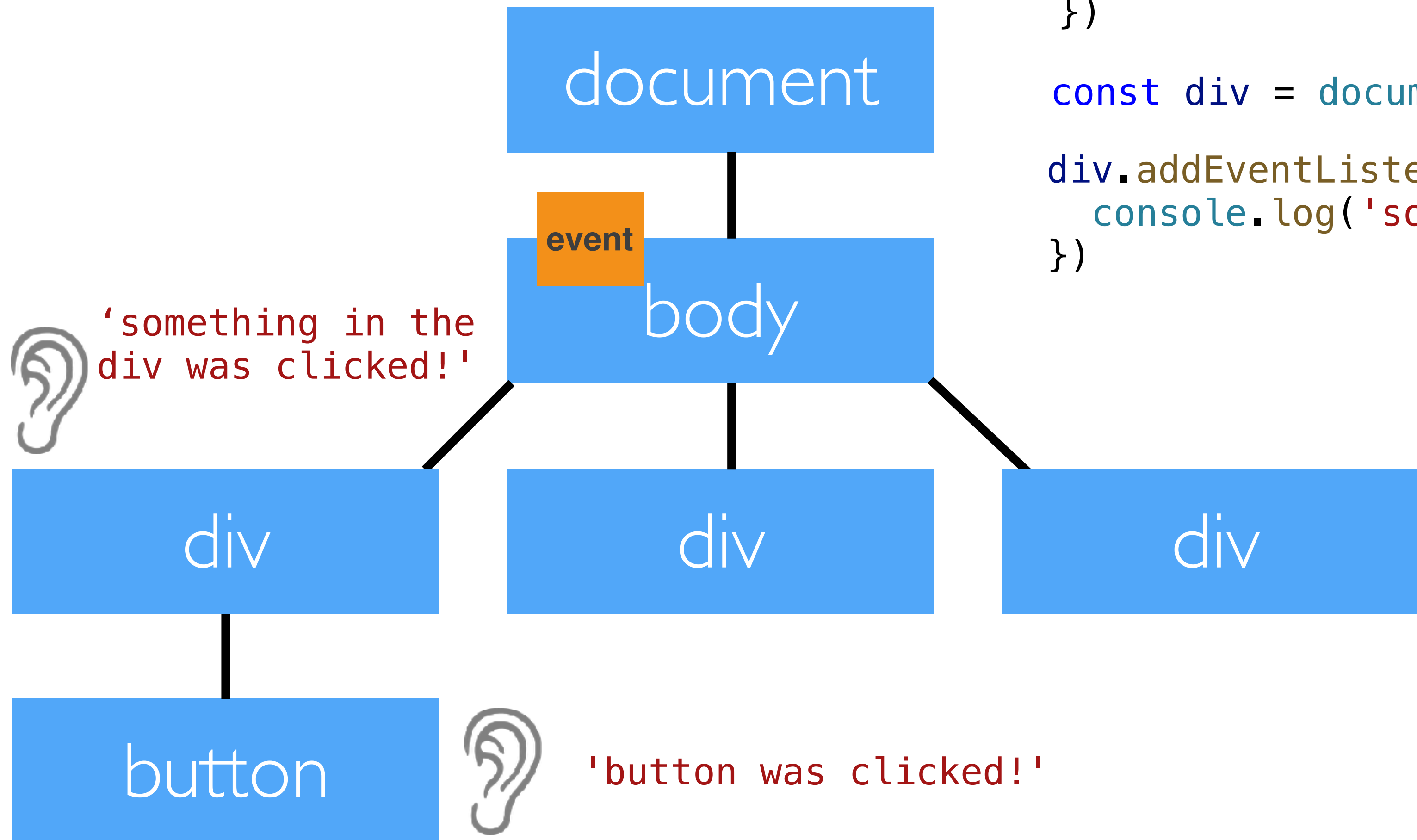
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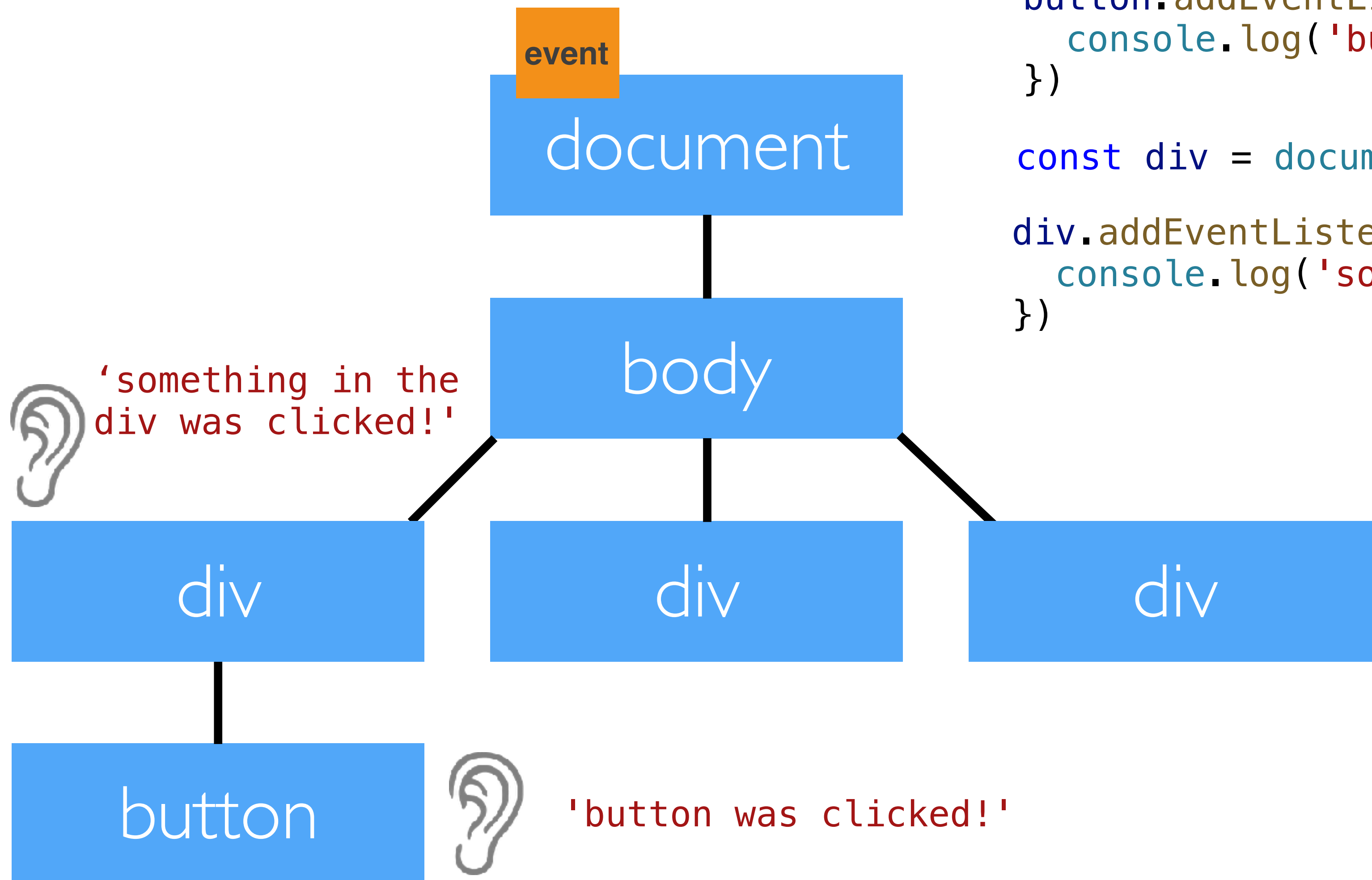


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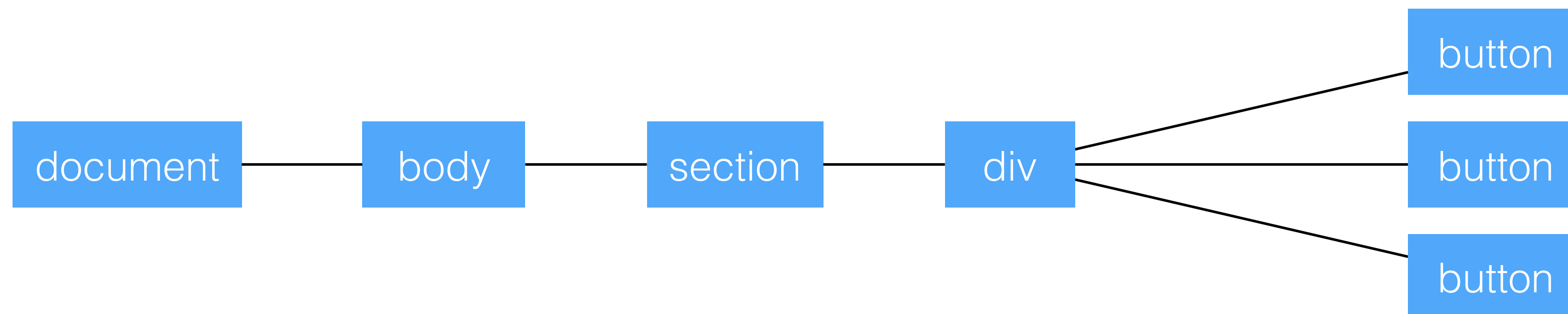
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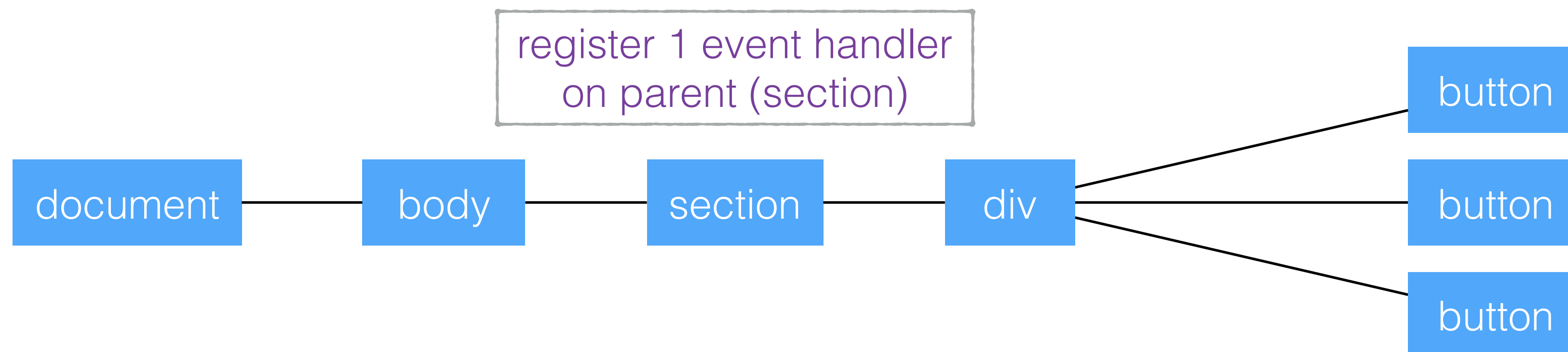
# EVENT DELEGATION

- The process of using event propagation to handle events at a higher level in the DOM
- Allows for a single event listener



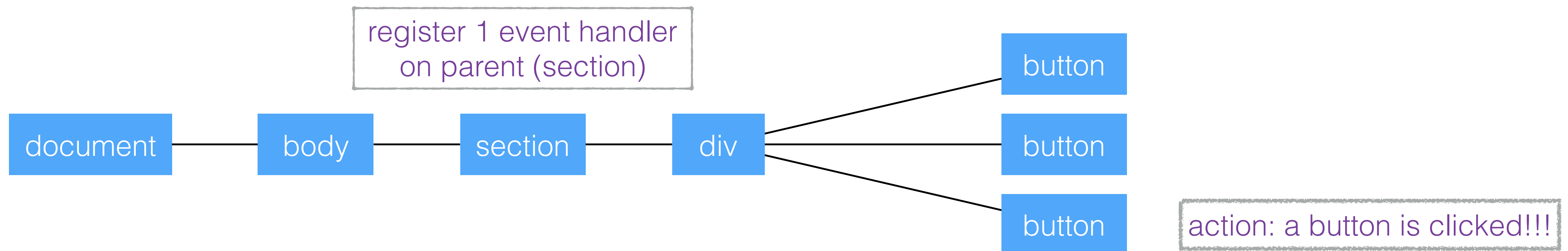
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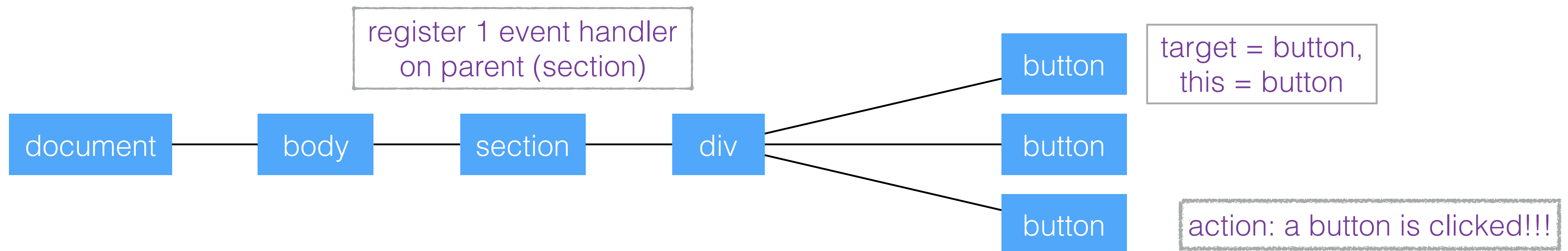
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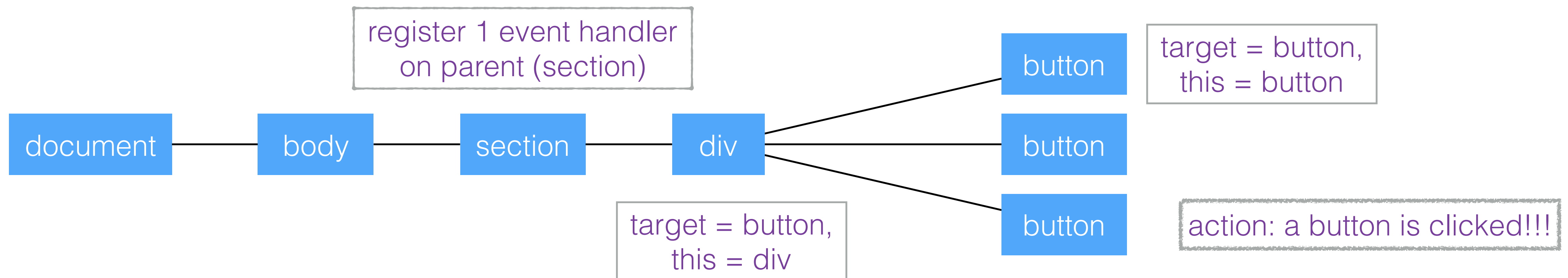
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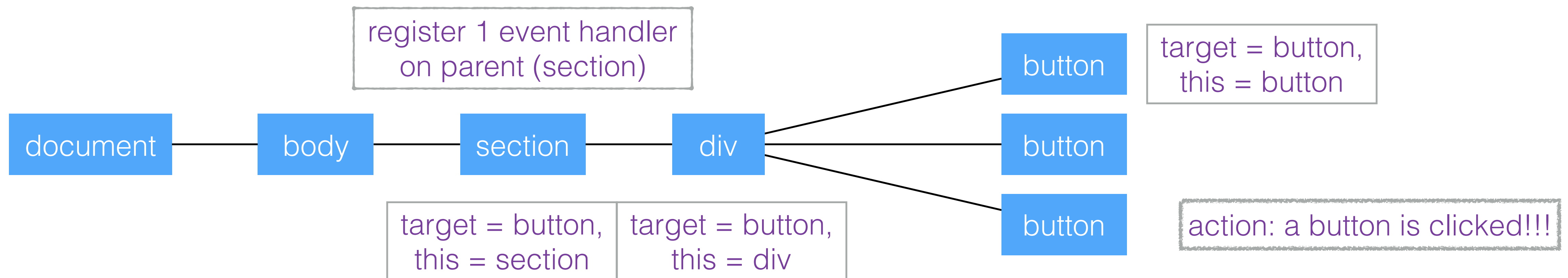
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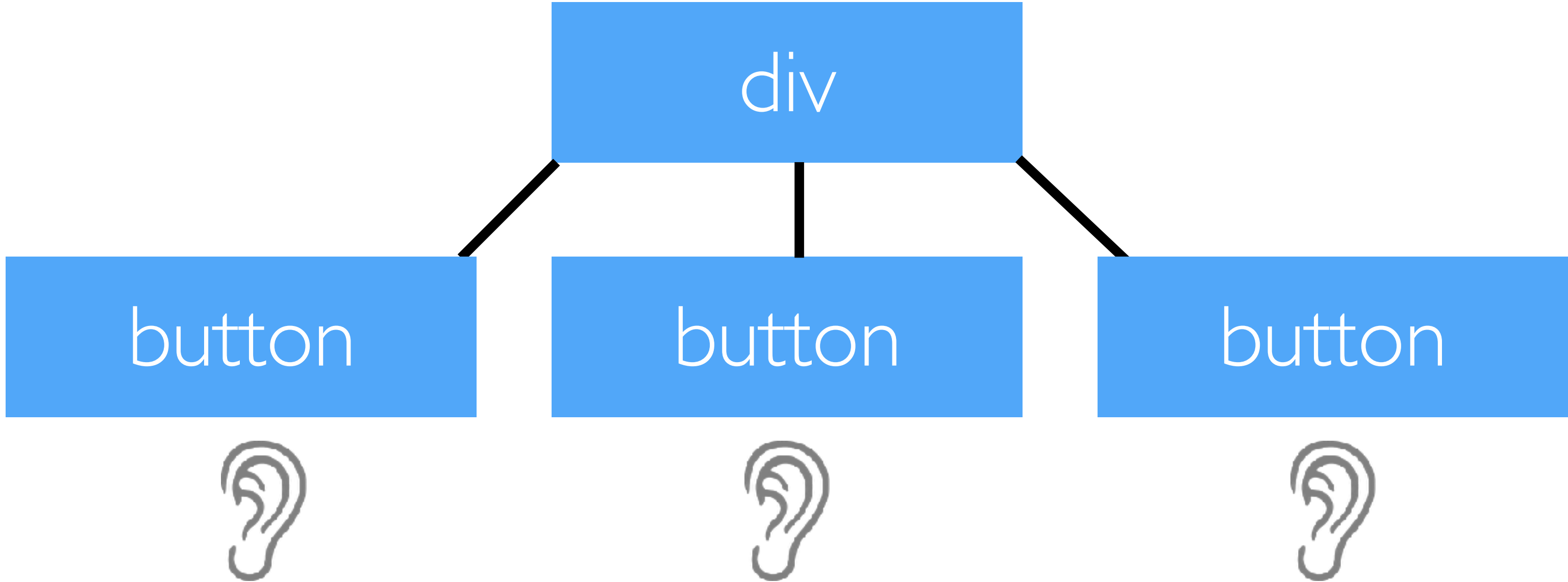
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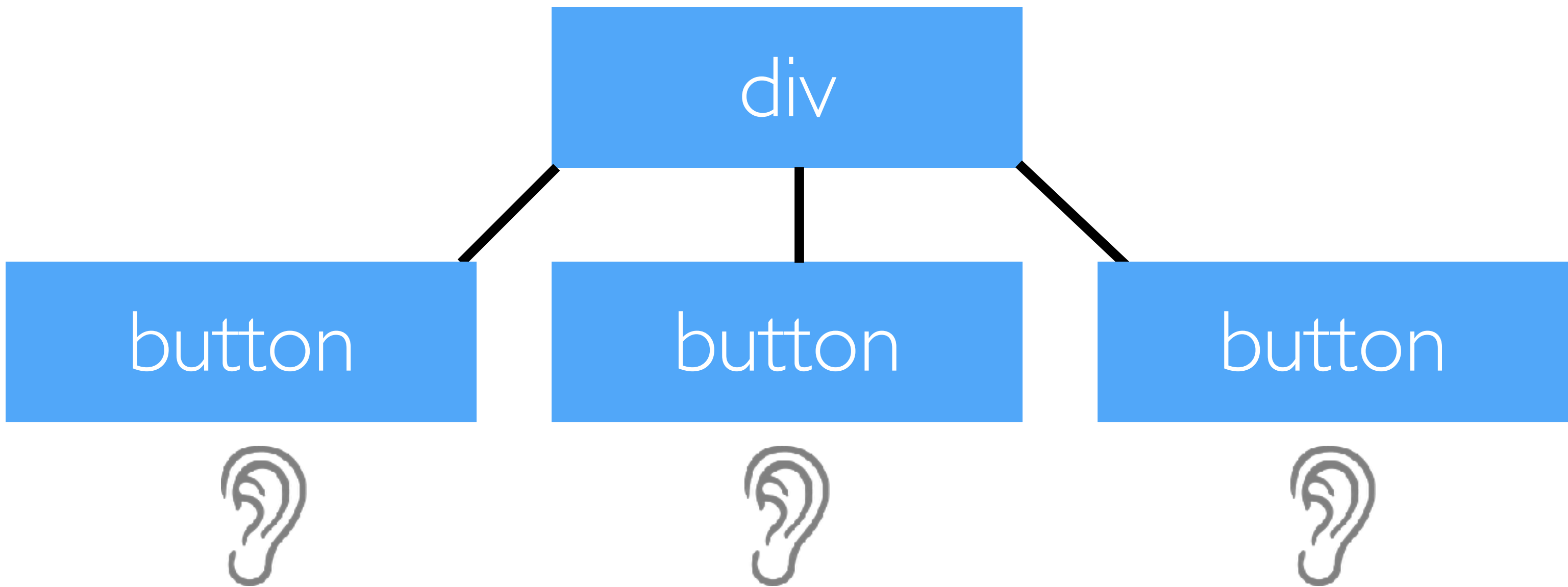


# Without Event Delegation



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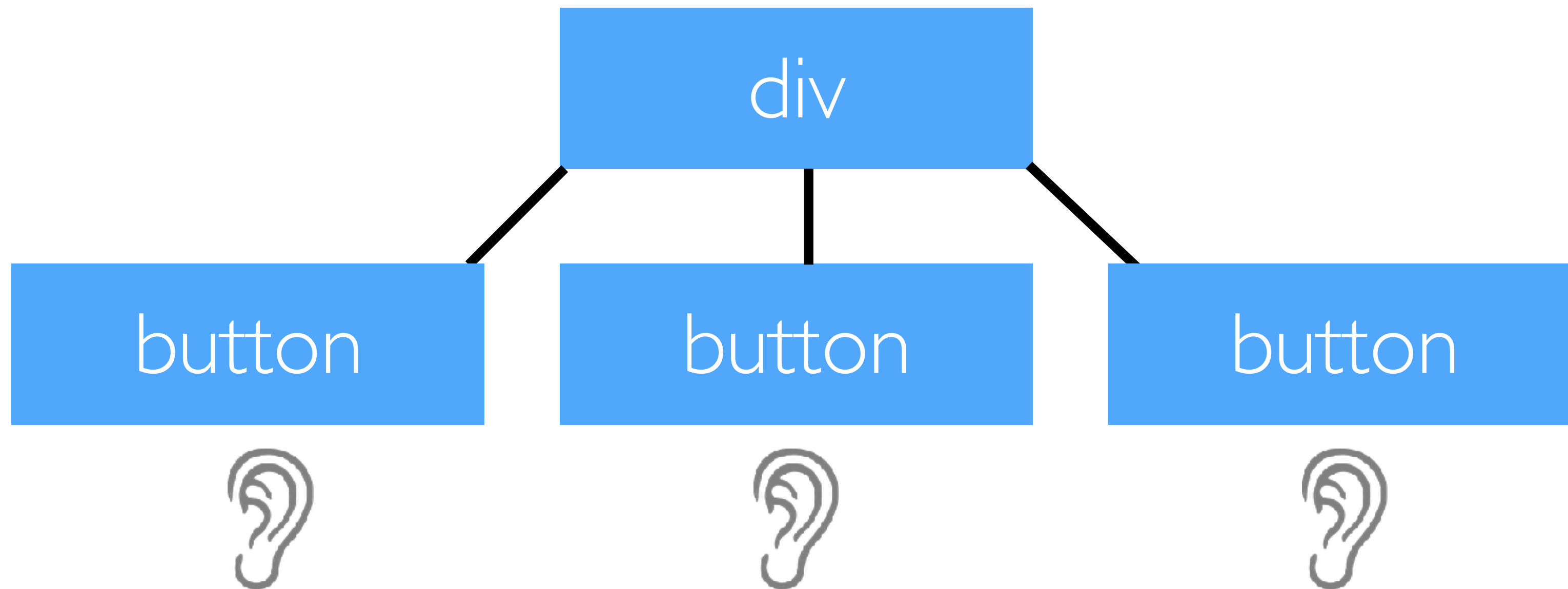
```
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const button1 = document.getElementsByTagName('button')[0]
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button1.addEventListener('click', function (event) {
})
```

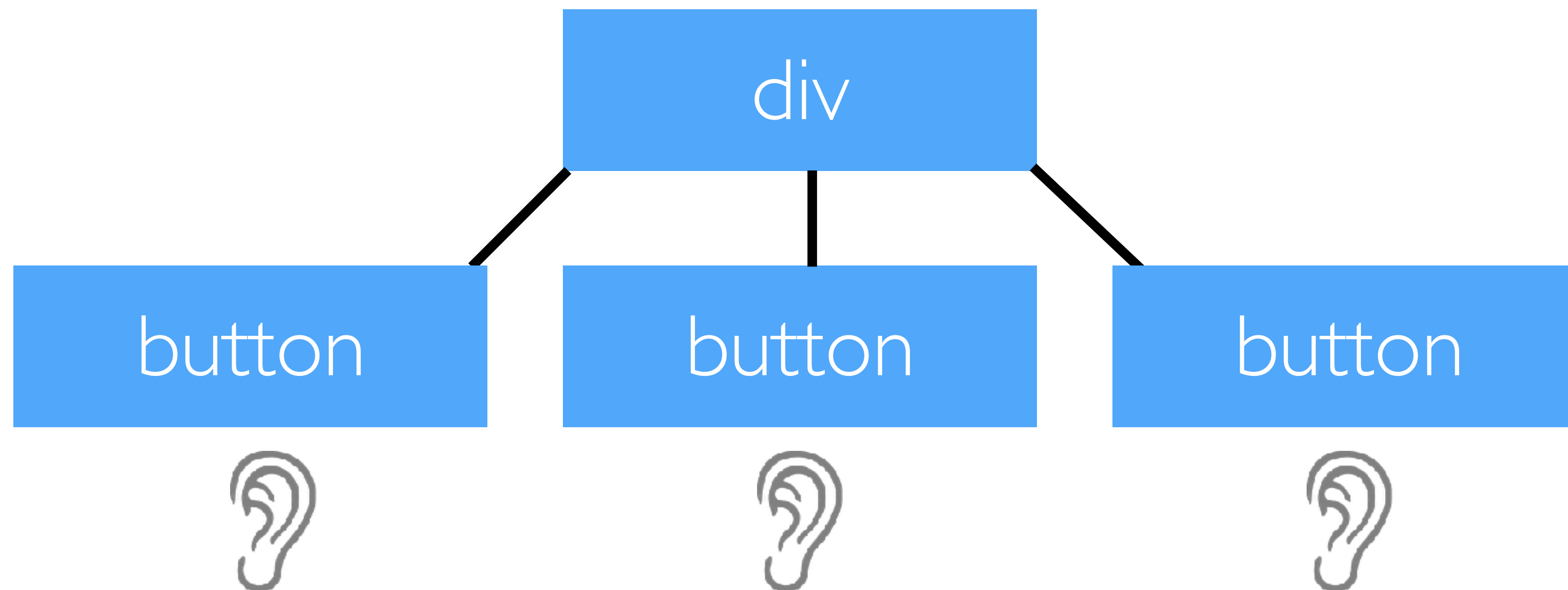


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```

```
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})
```

```
button2.addEventListener('click', function (event) {
})
```



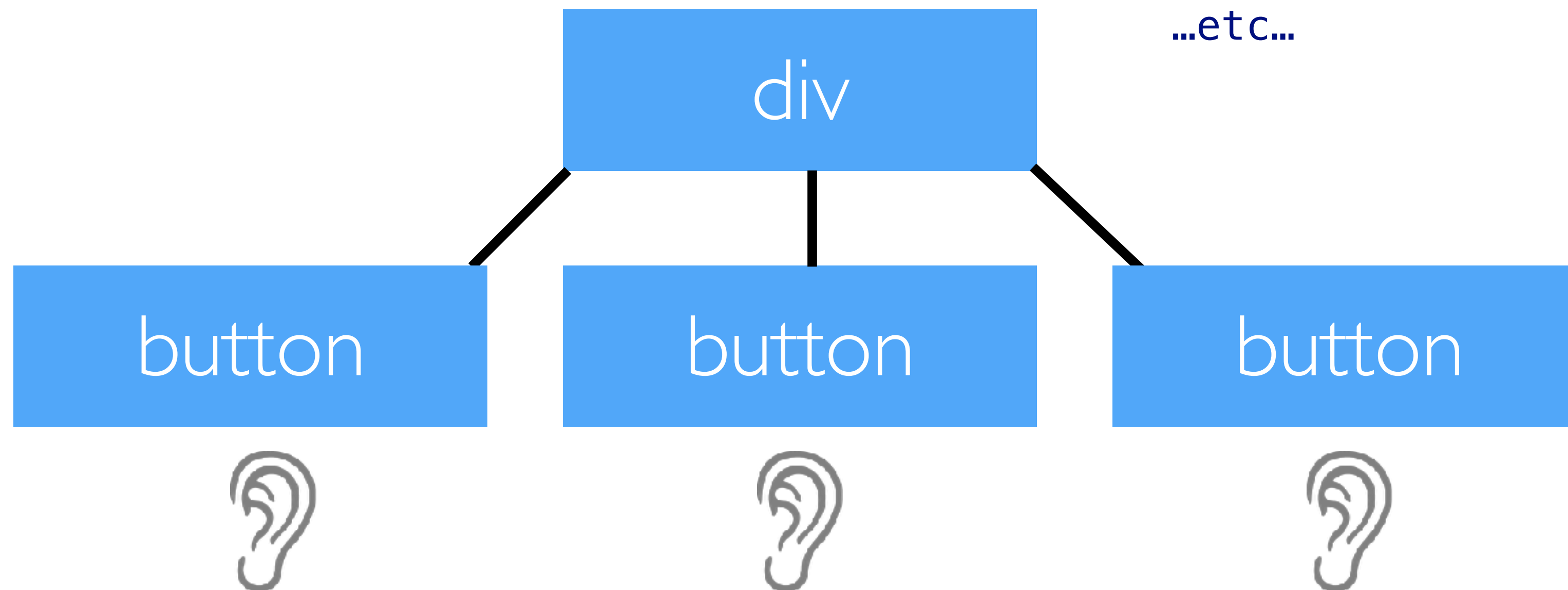
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button1.addEventListener('click', function (event) {
})
```

```
button2.addEventListener('click', function (event) {
})
```

...etc...



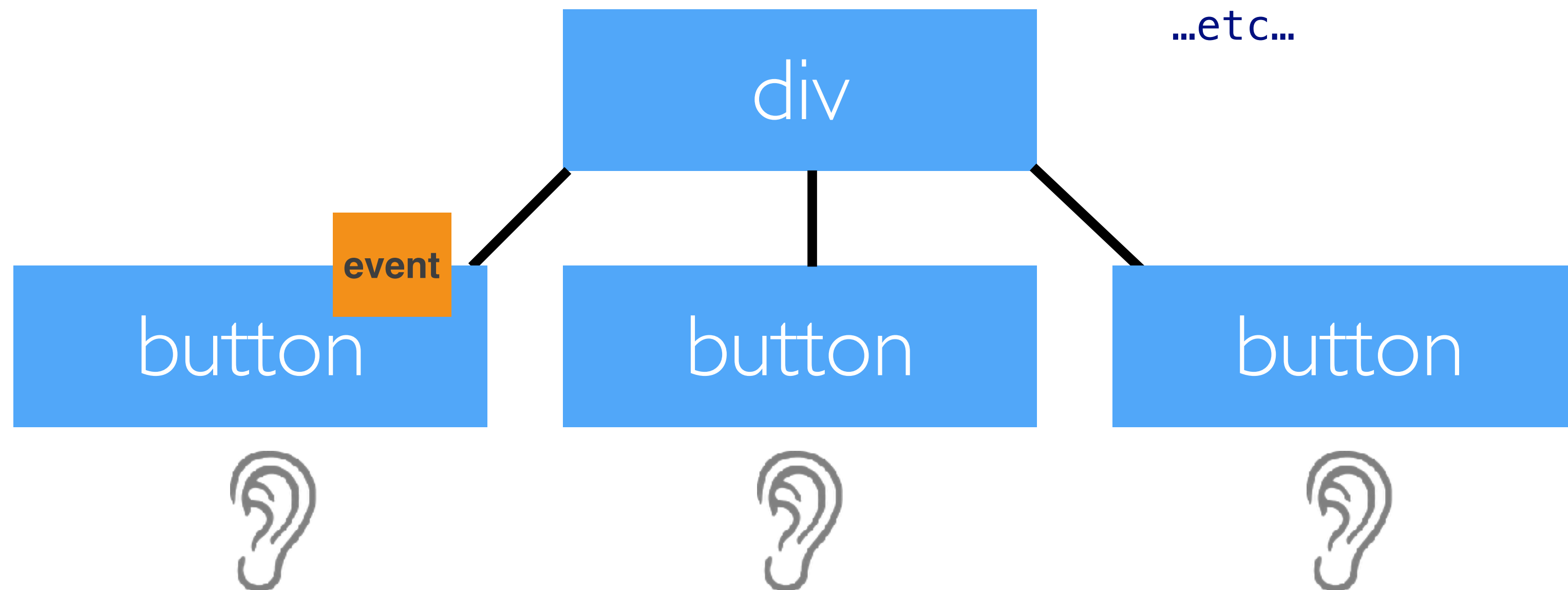
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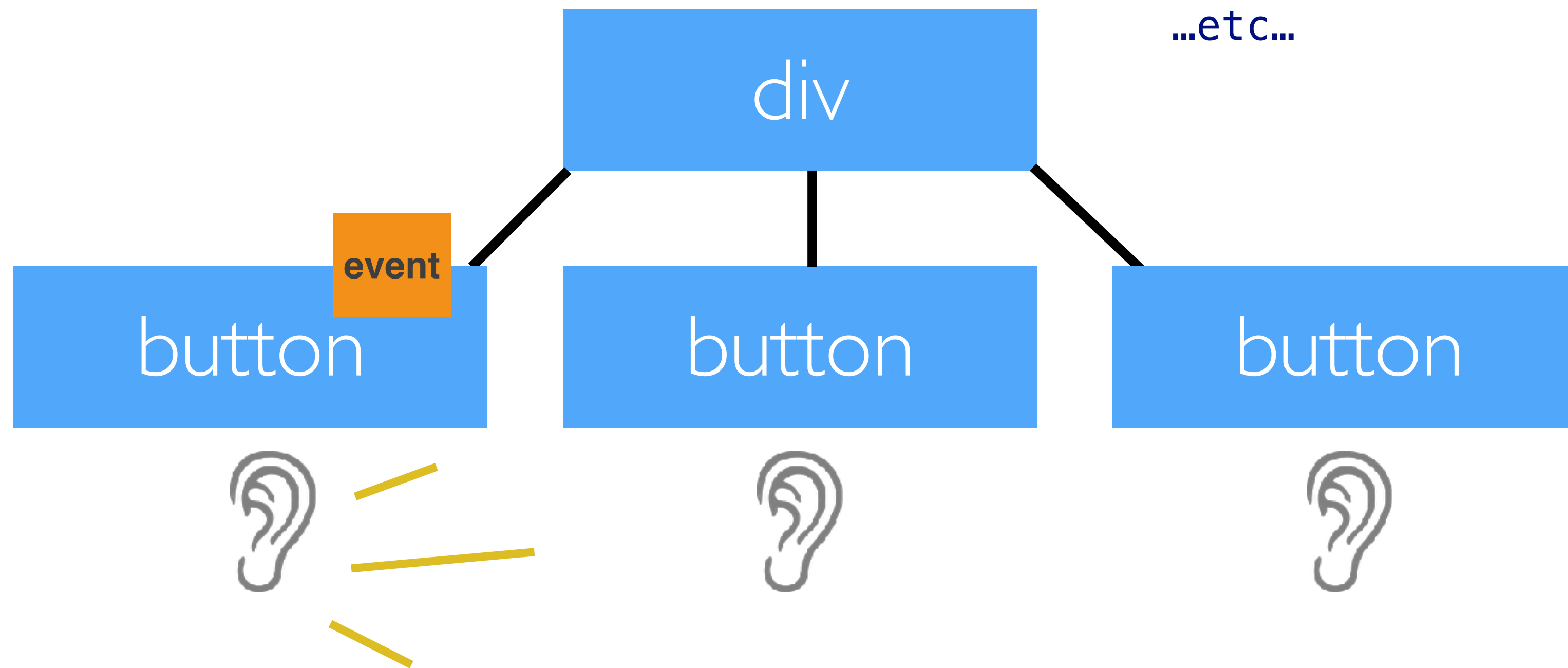
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...etc...



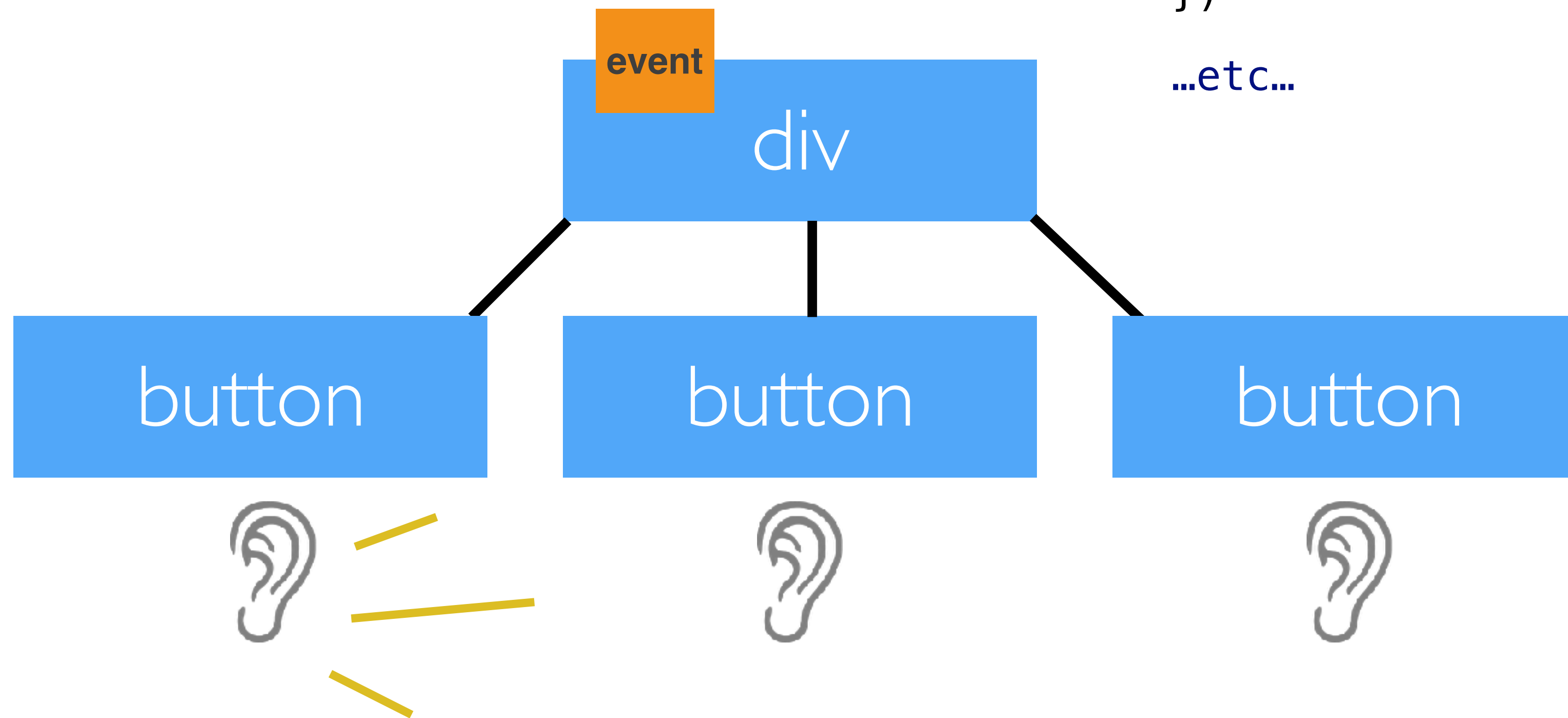
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```

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button1.addEventListener('click', function (event) {
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```

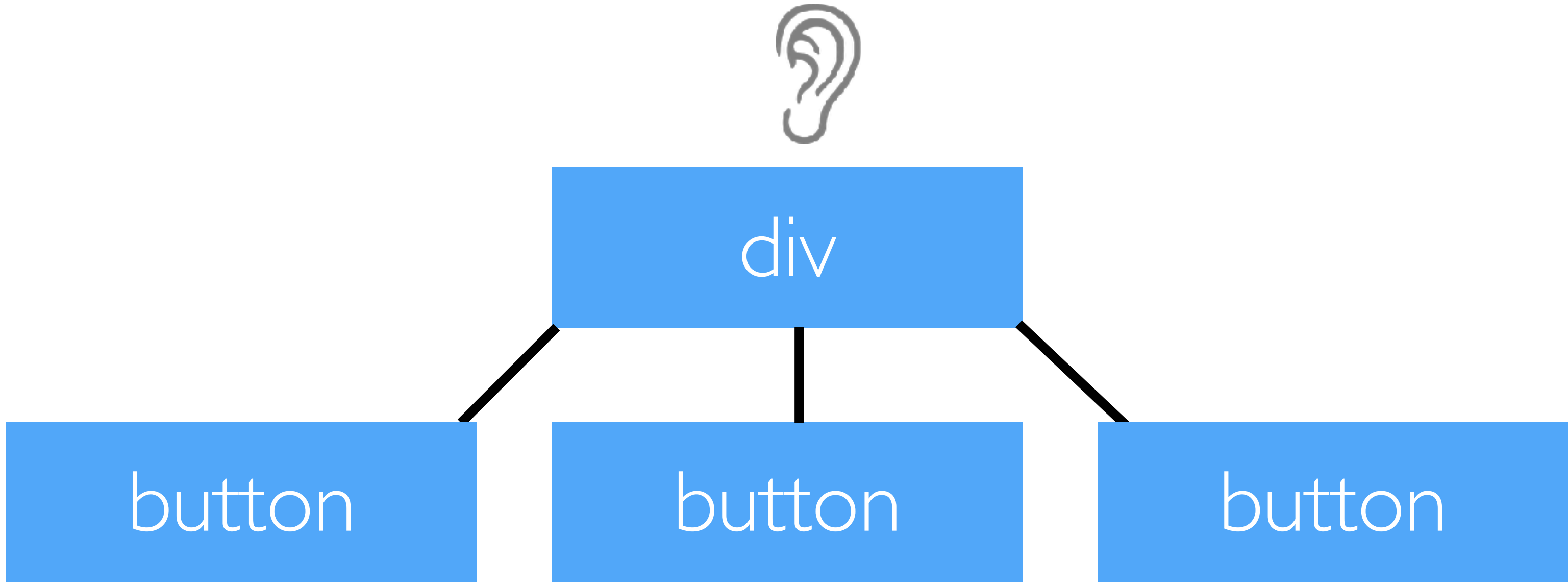
```
button2.addEventListener('click', function (event) {
})
```

...etc...



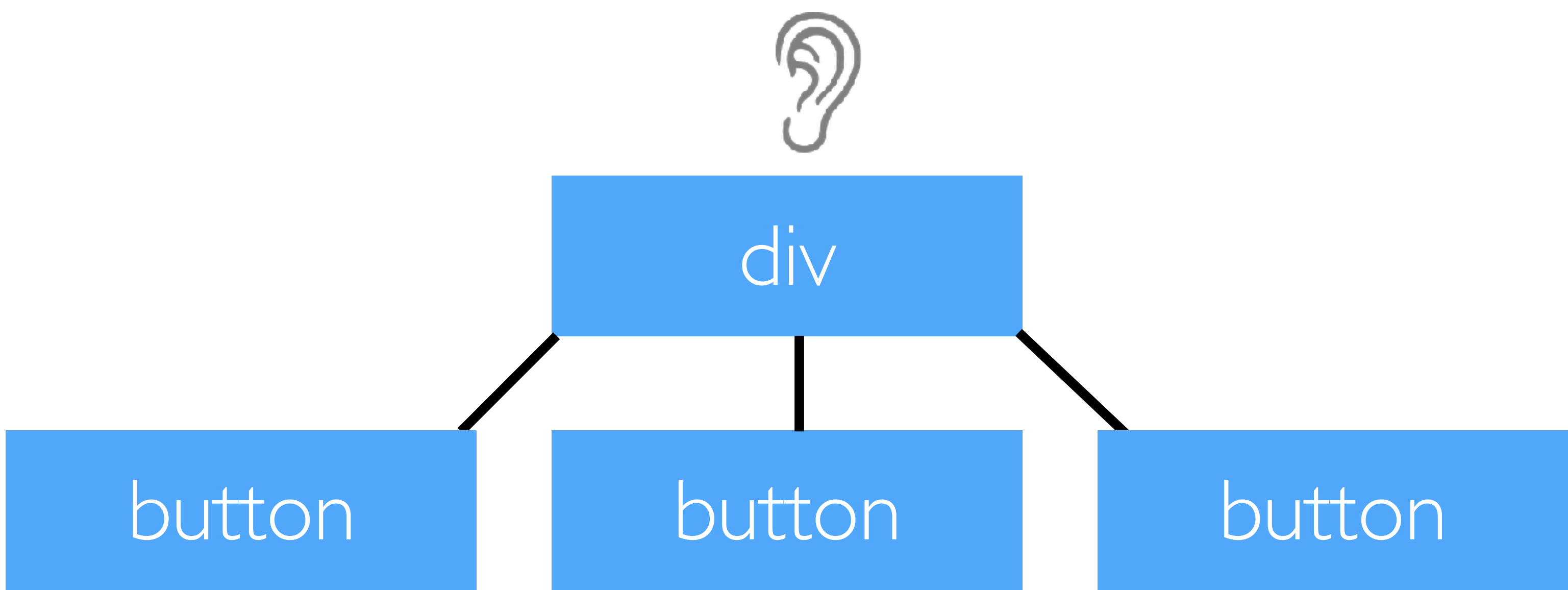


# With Event Delegation



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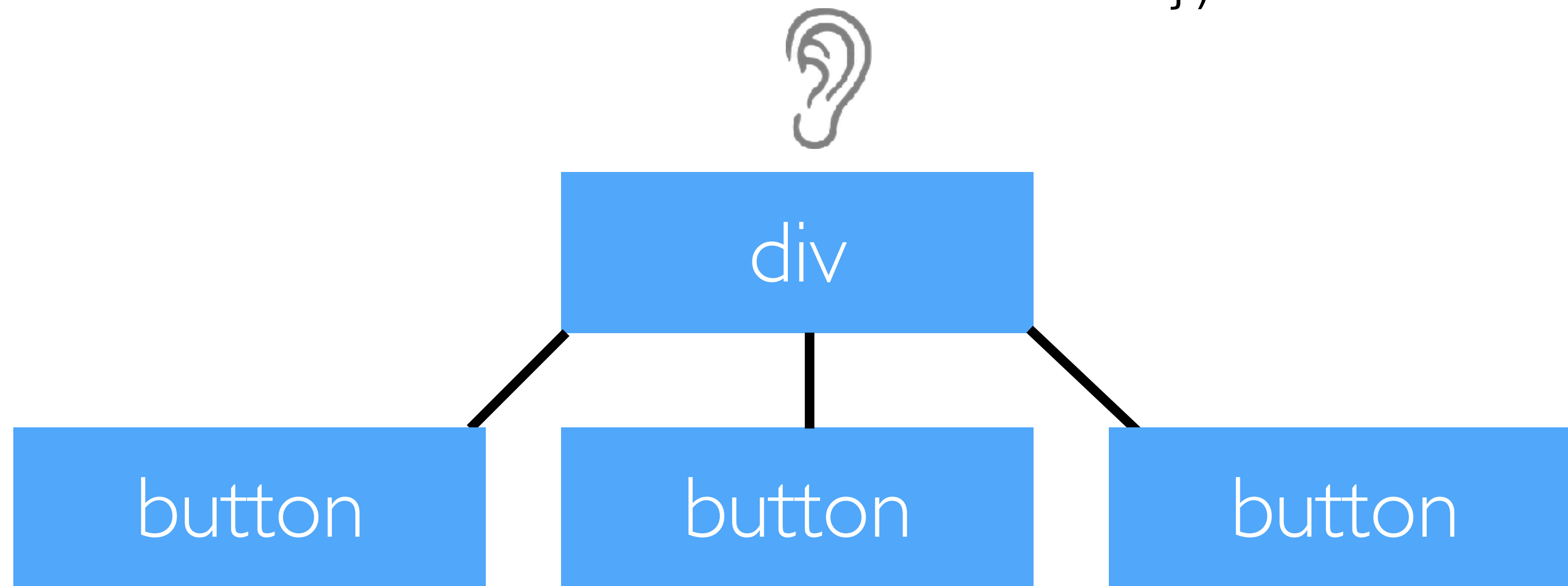
```
const div = document.getElementById('button-container')
```



# With Event Delegation

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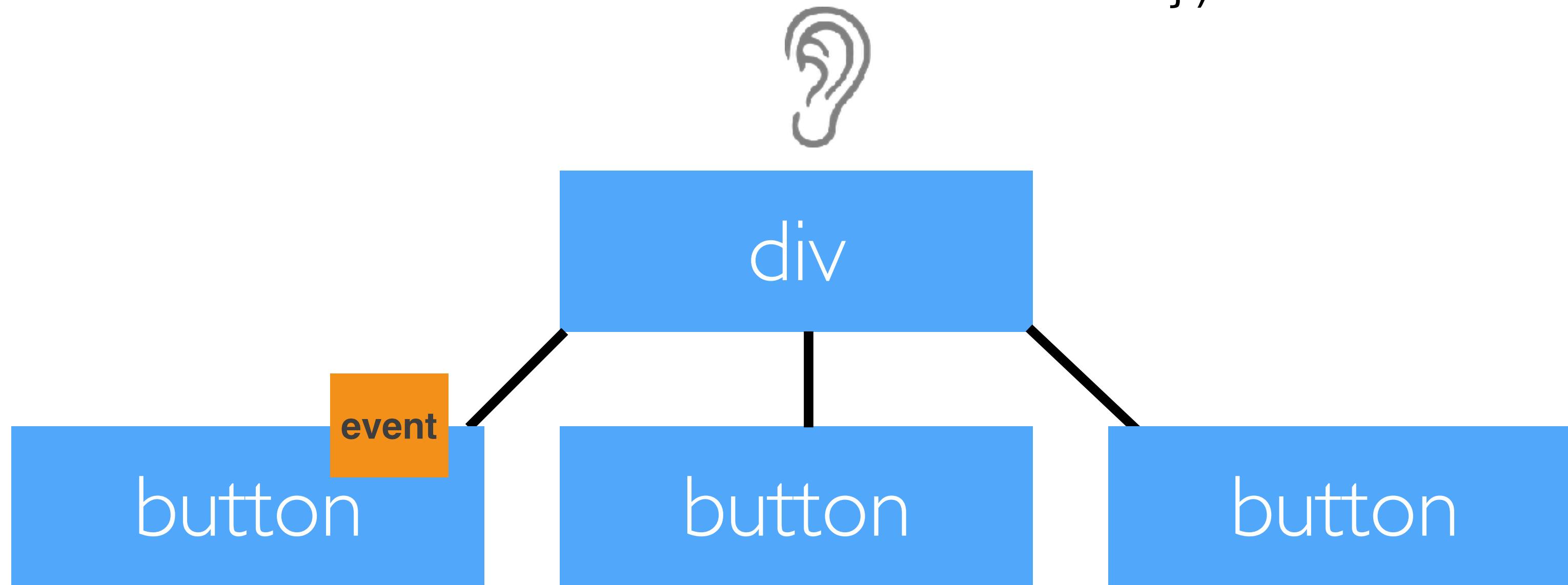
div.addEventListener('click', function (event) {
  // `this` -> div
  // `event.target` -> button
})
```



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const div = document.getElementById('button-container')

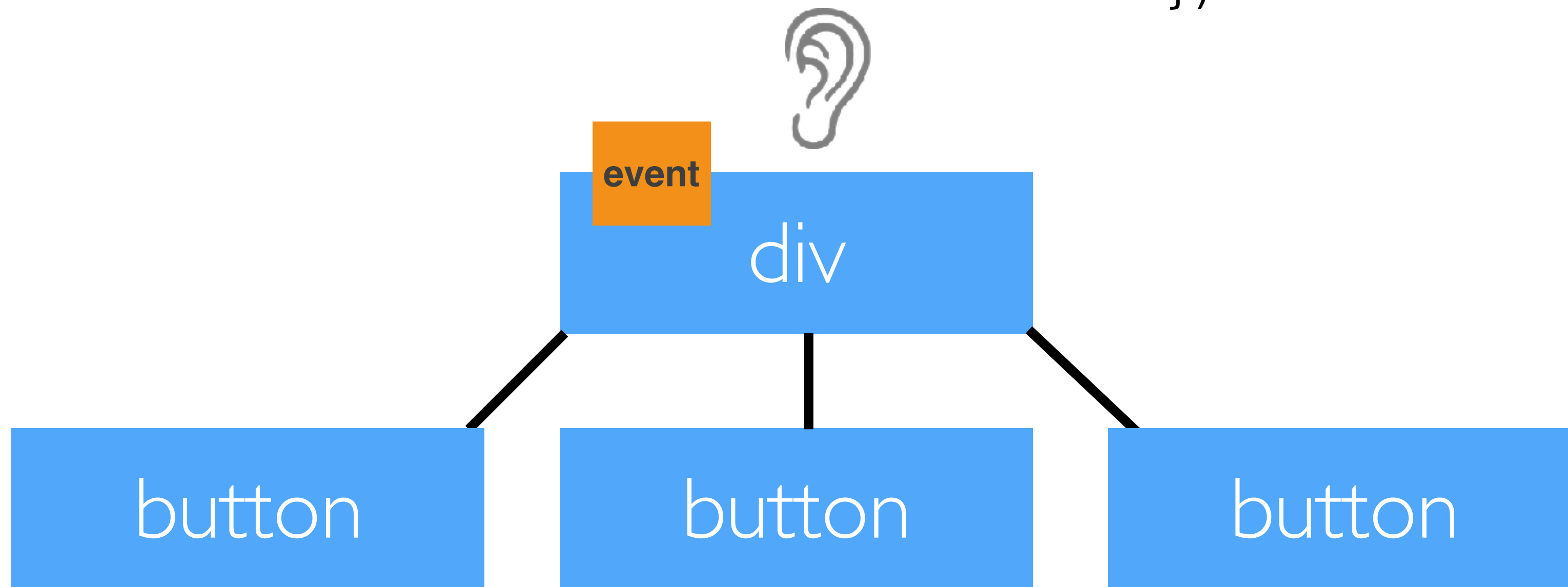
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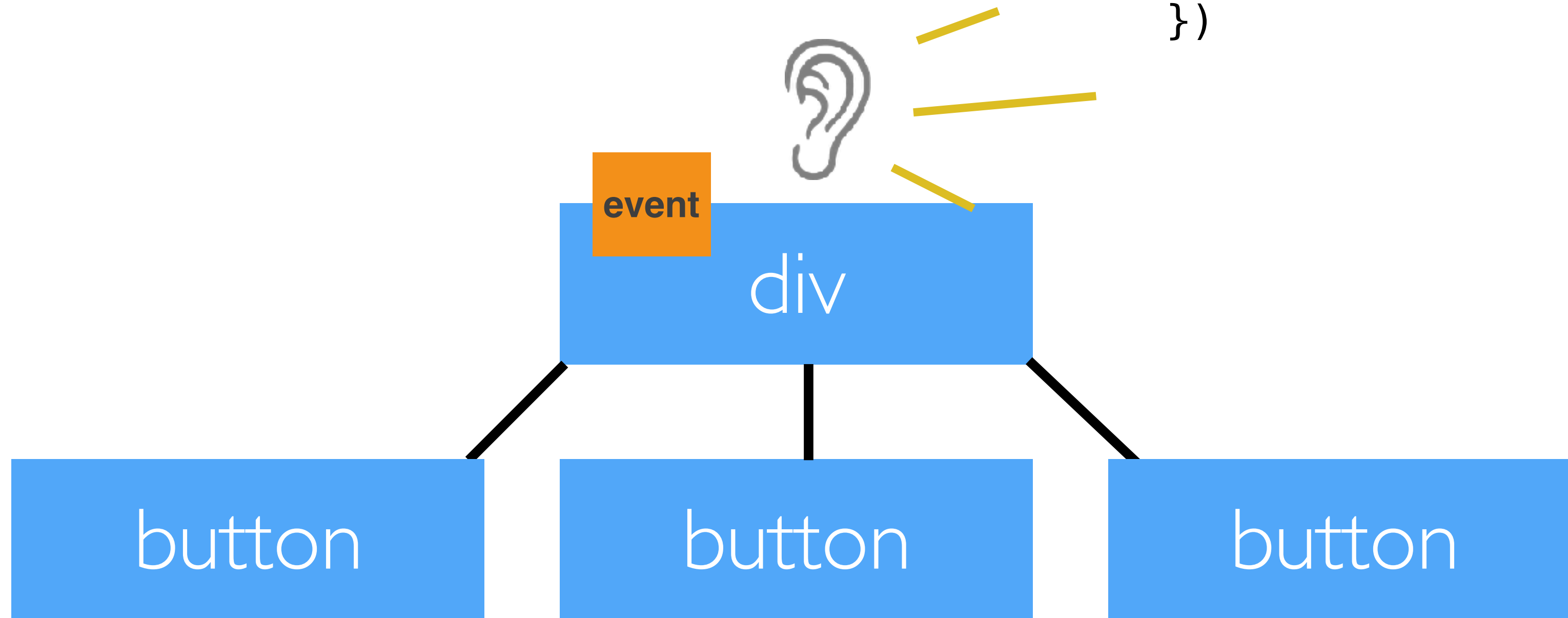
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  // `event.target` -> button
})
```



# THIS

# THIS

- ...is the “context” for a function.
- ...is determined when a function is *invoked*, not when it is defined (**exception**: arrow functions).

To determine what `this` is for any function, take a look at its *call-site*.



# TYPES OF CONTEXT BINDING AND CALL-SITE

- Default binding: `func()`;
- Implicit binding: `obj.func()`;
- Explicit binding: `func.call(obj)`;
- “new” binding: `new func()`;

# THE .BIND METHOD

- Requires one argument, a `thisArg`.
- Returns a new function whose `this` is always the thisArg.
- Does *not* invoke the function.

```
const boundFunc = oldFunc.bind(thisArg);  
boundFunc(); //invoked with thisArg as `this`
```

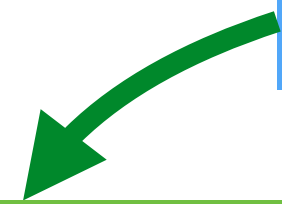
Is it an arrow func?

Is it an arrow func?



Same as `this` in the scope  
where it was defined

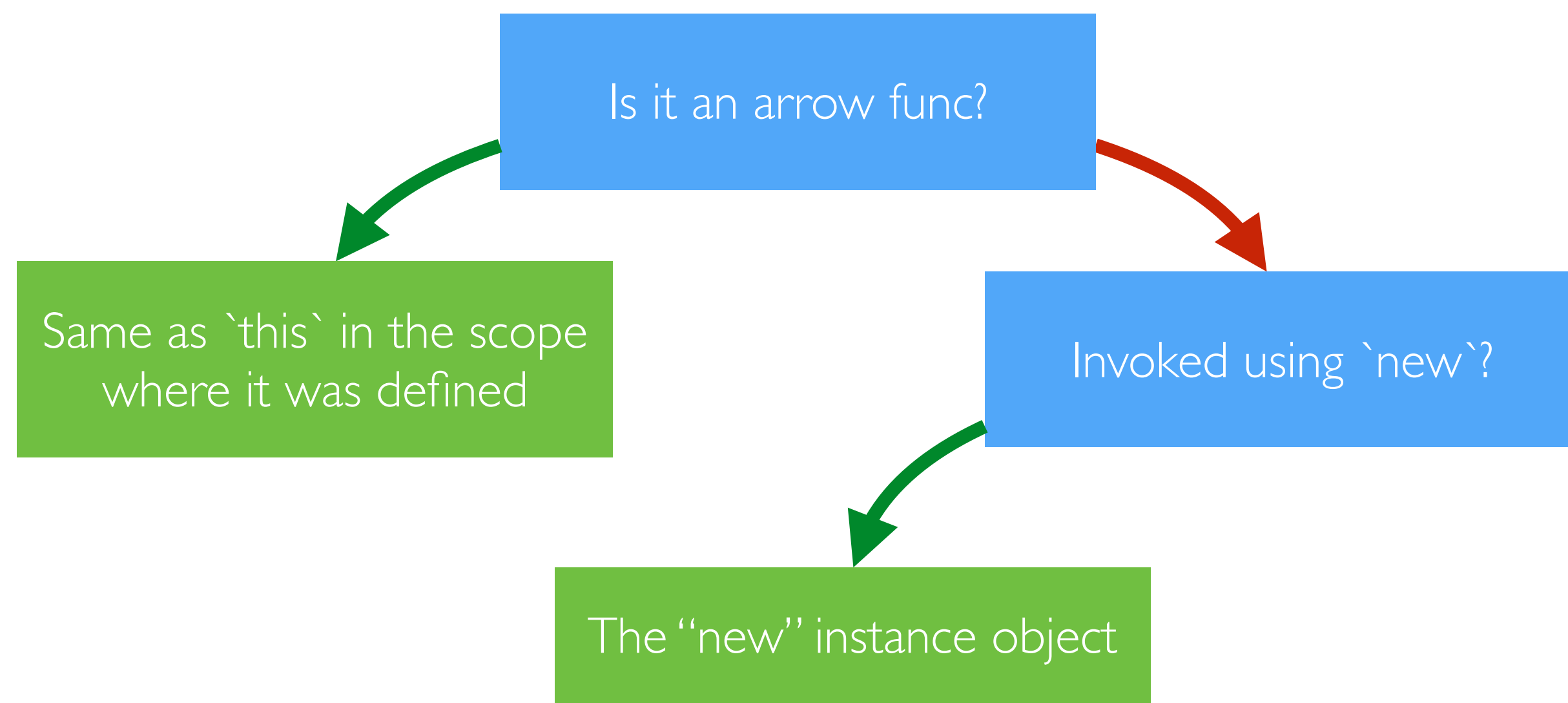
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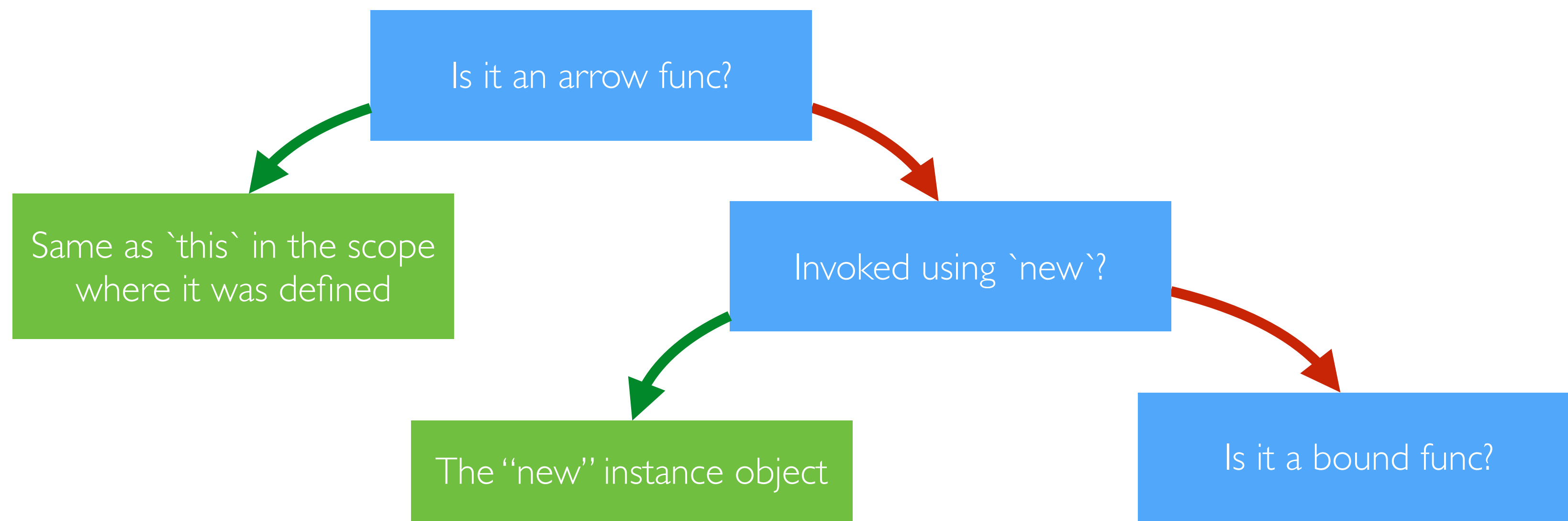


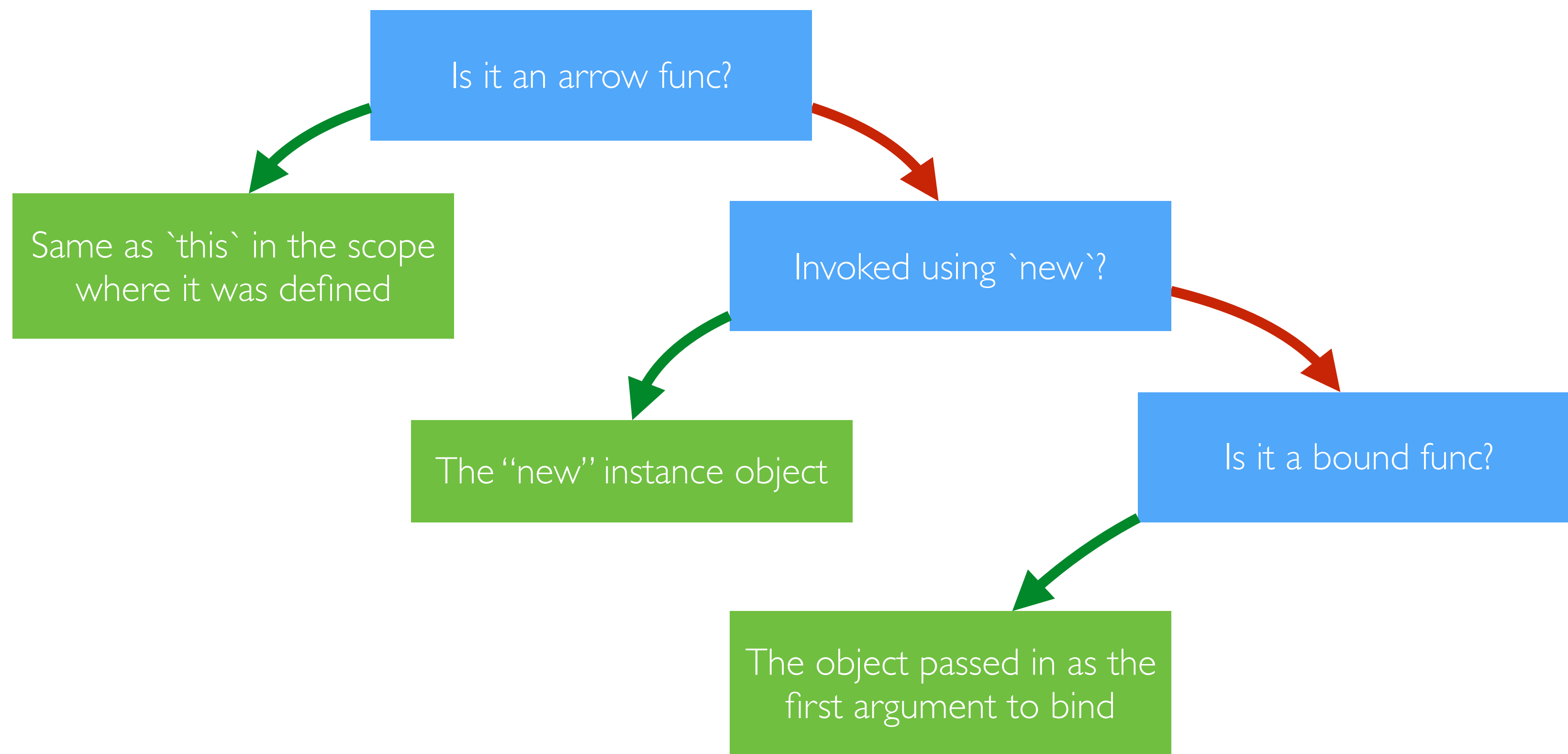
Same as ``this`` in the scope  
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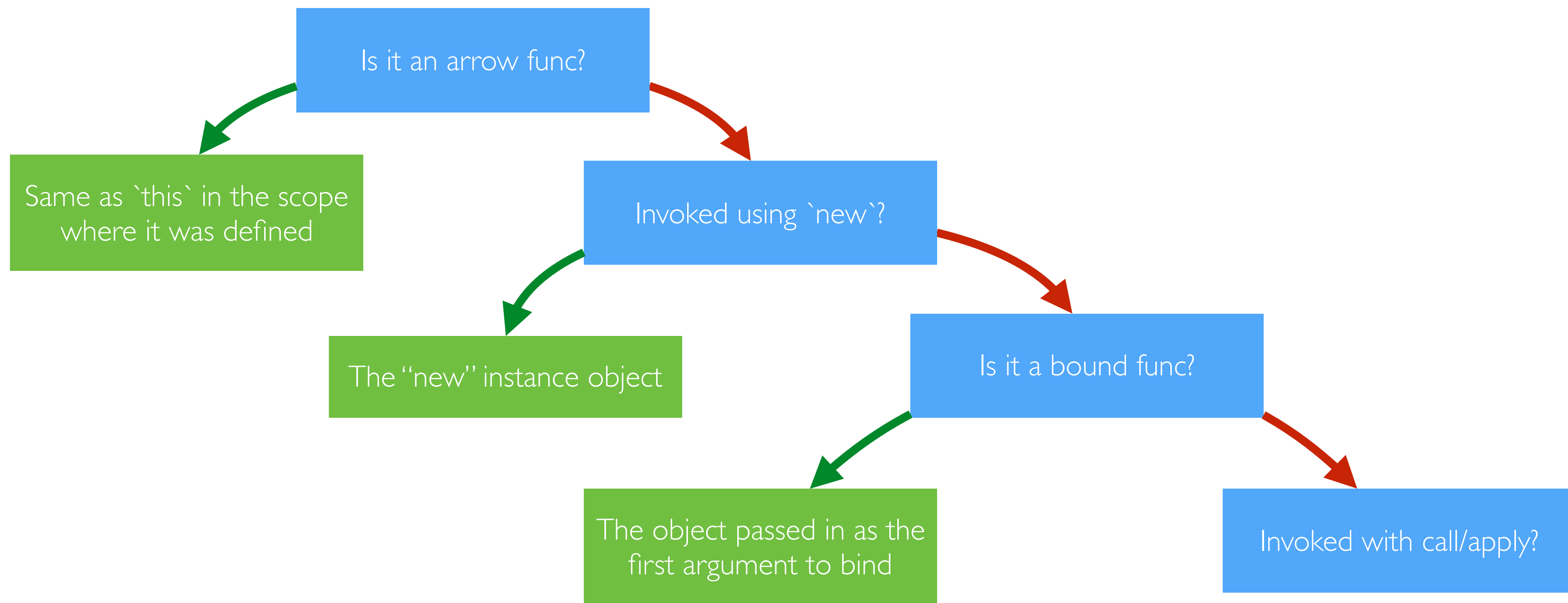
Invoked using ``new``?

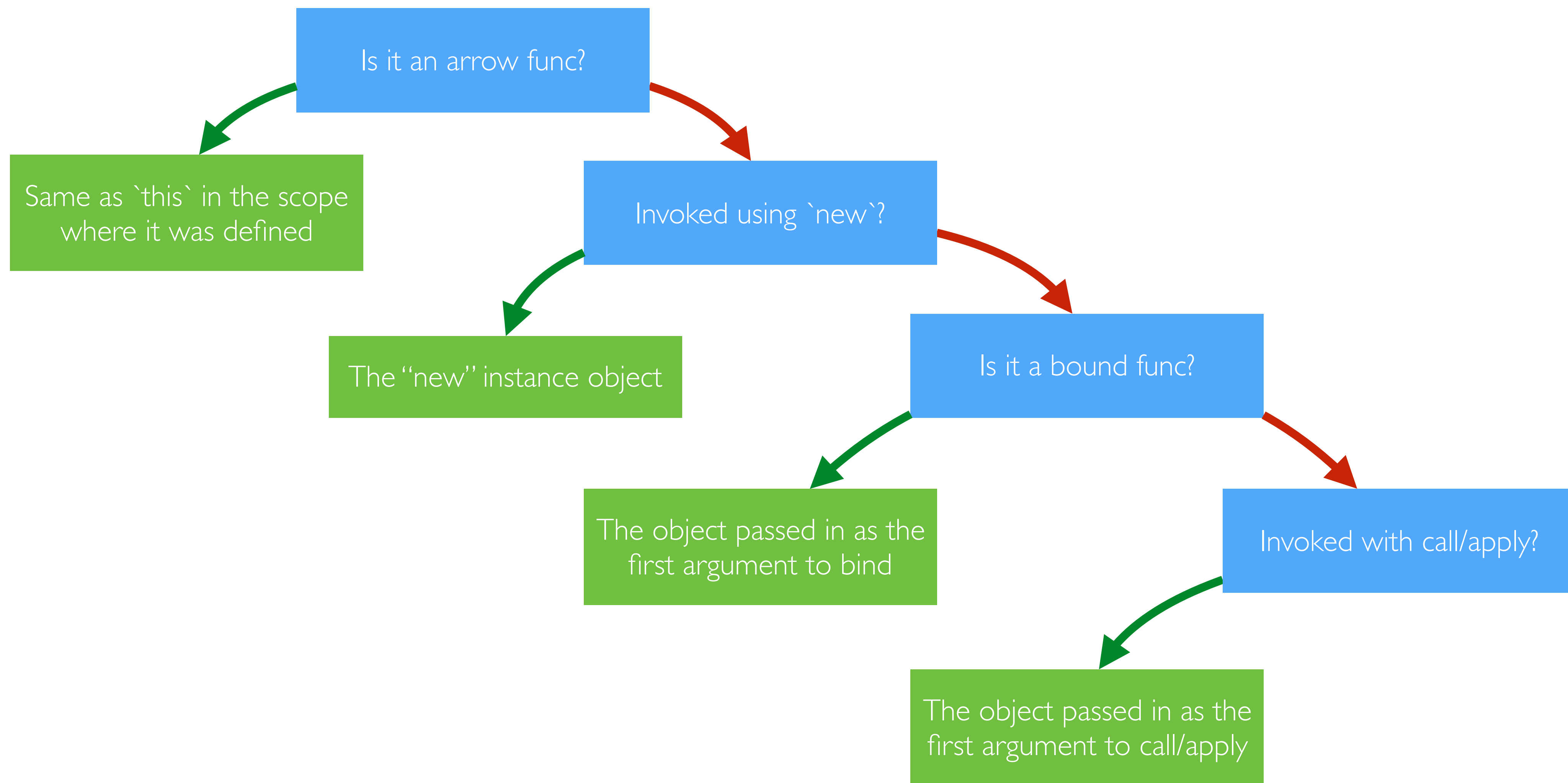


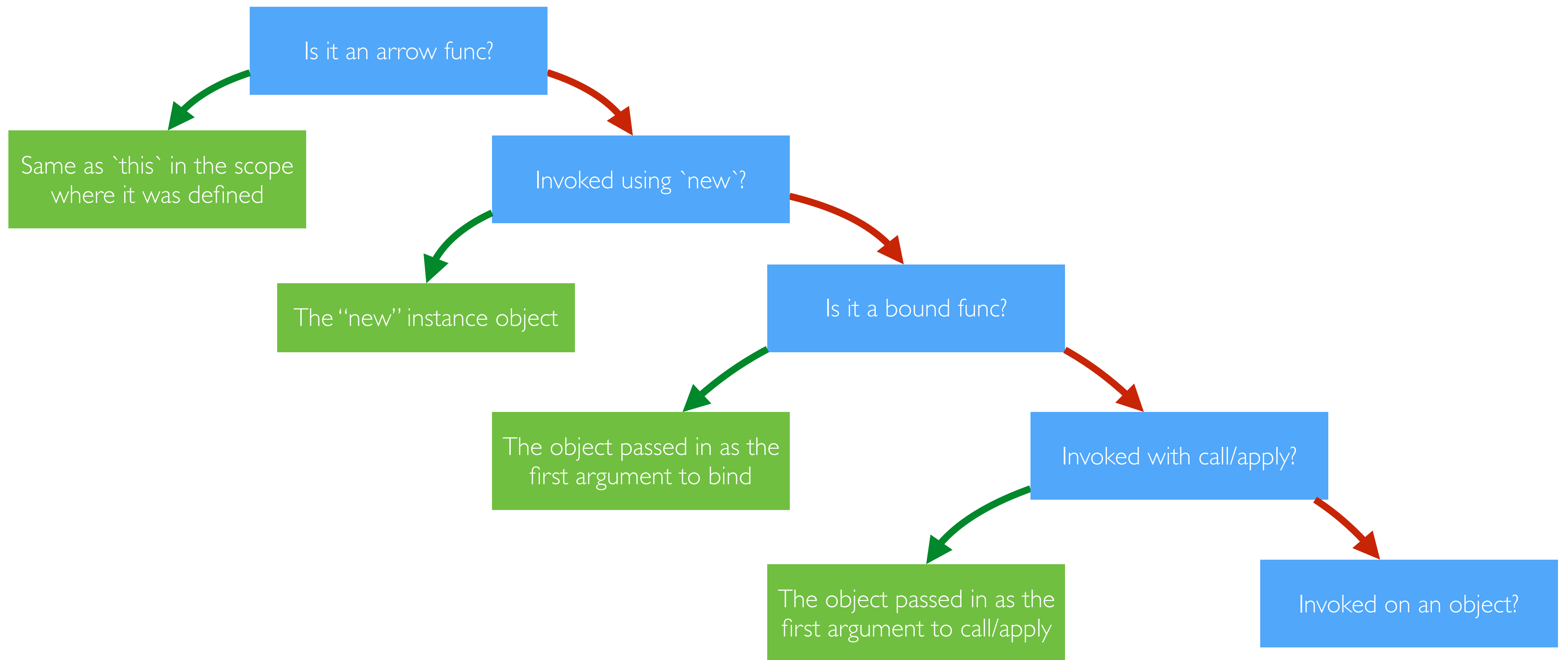


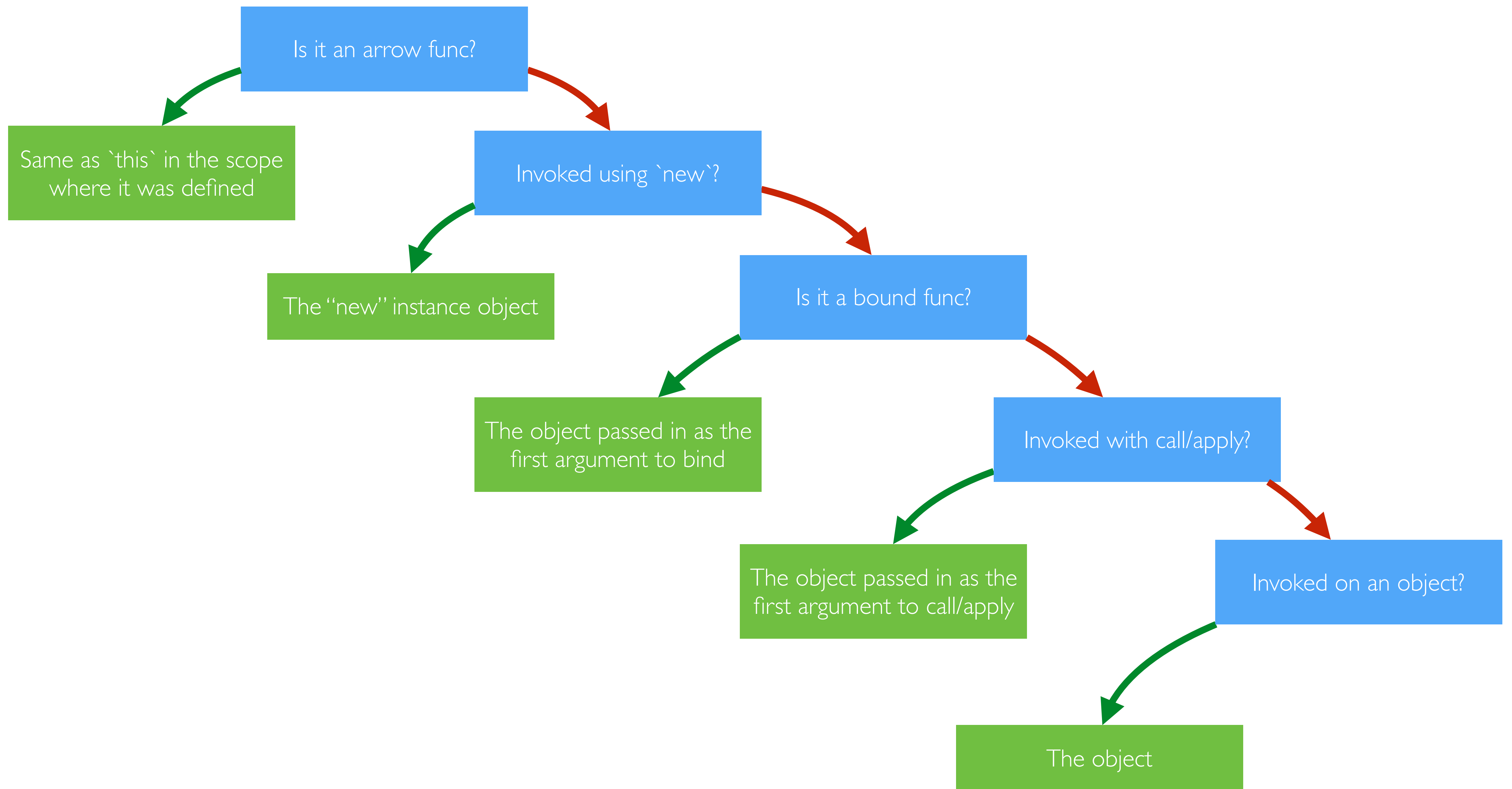


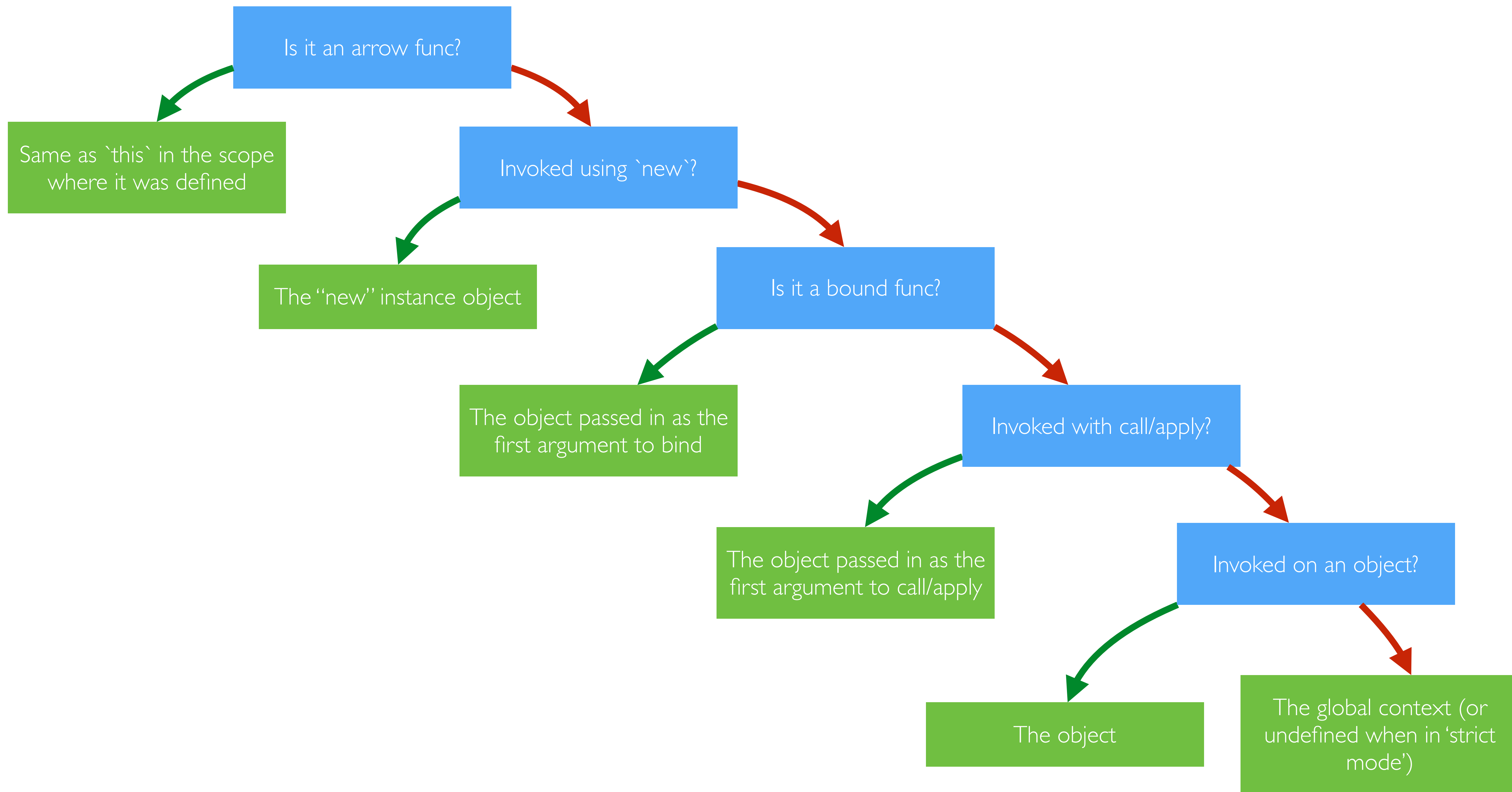
















# WORKSHOP TIME