EVENT LISTENERS AND HANDLERS

Listen up

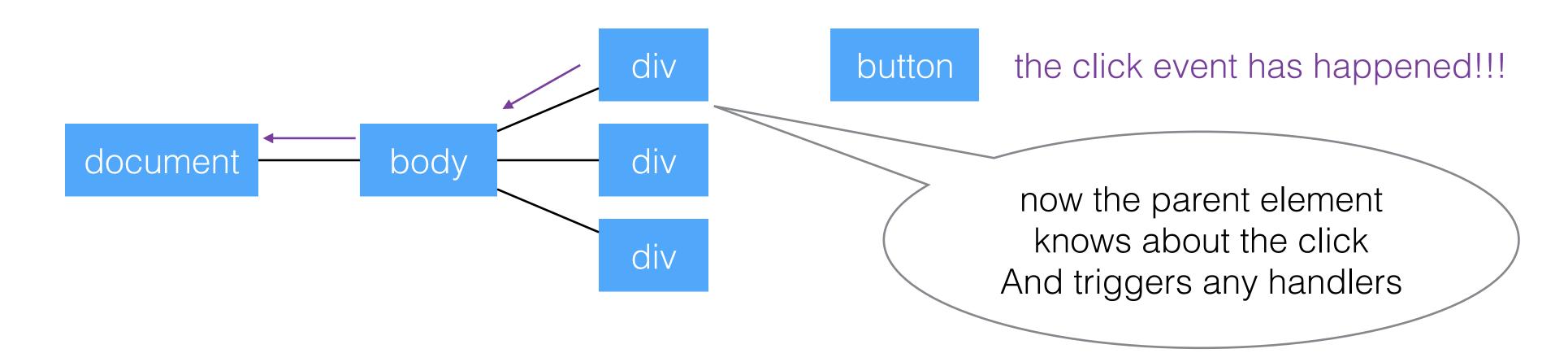
EVENT HANDLERS

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

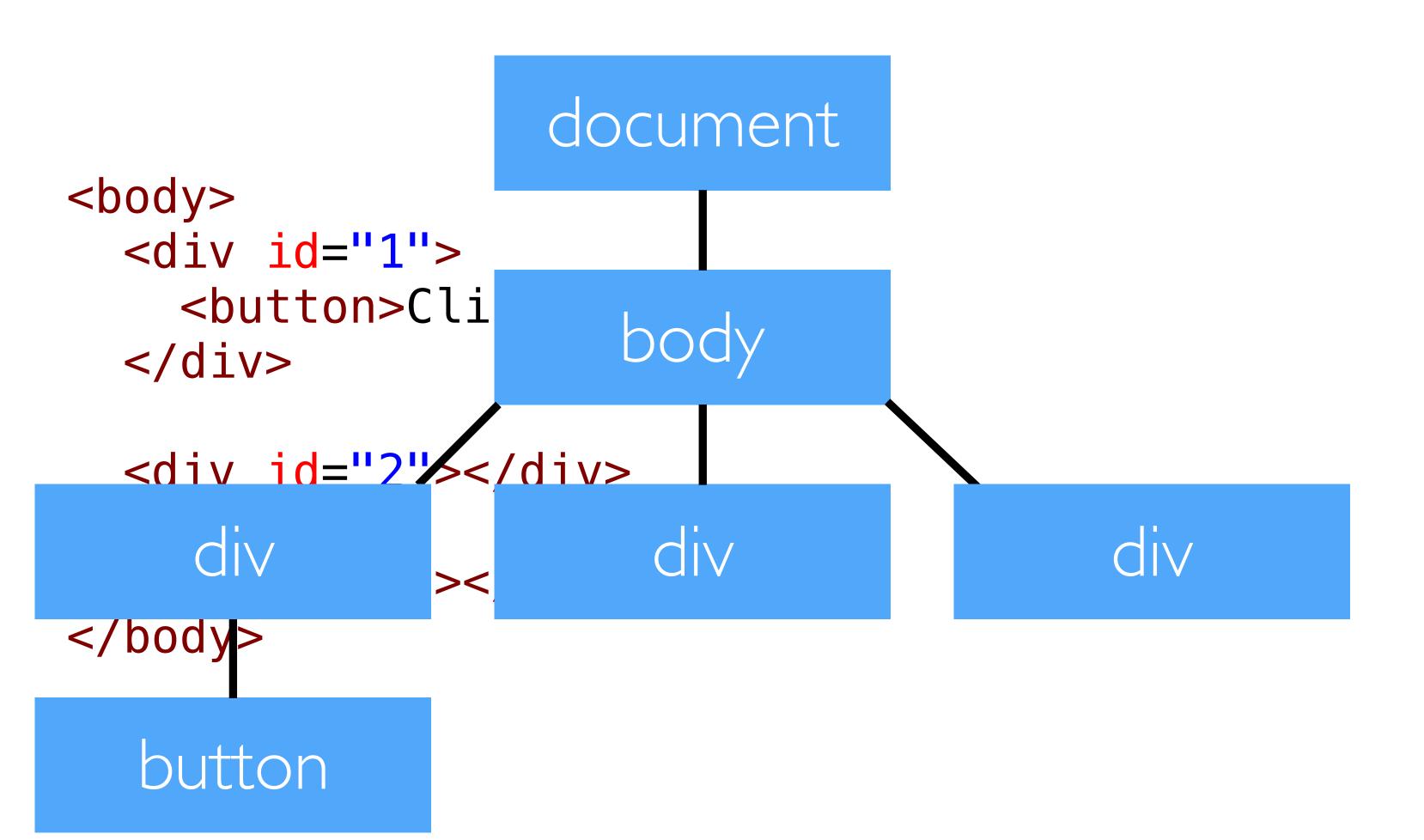
- JS that handles things that happen in the DOM
- Event examples:
 - click
 - (form) submit
 - hover
 - mouseover

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>
```

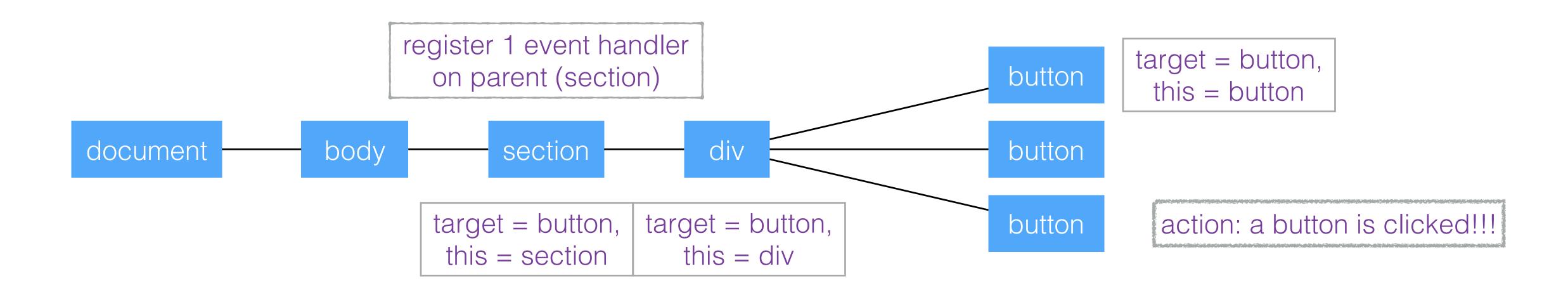


```
const button = document.getElementsByTagName('button')[0]
                                        button.addEventListener('click', function (evt) {
                                          console.log('button was clicked!')
                                        })
                  document
                      body
  div
        event
button
                    'button was clicked!'
```

```
const button = document.getElementsByTagName('button')[0]
                                          button.addEventListener('click', function (evt) {
                                            console.log('button was clicked!')
                                          })
                    document
                                          const div = document.getElementById('one')
                                          div.addEventListener('click', function (evt) {
                                            console.log('something in the div was clicked!')
                                          })
                        body
'something in the
div was clicked!'
   div
         event
button
                     'button was clicked!'
```

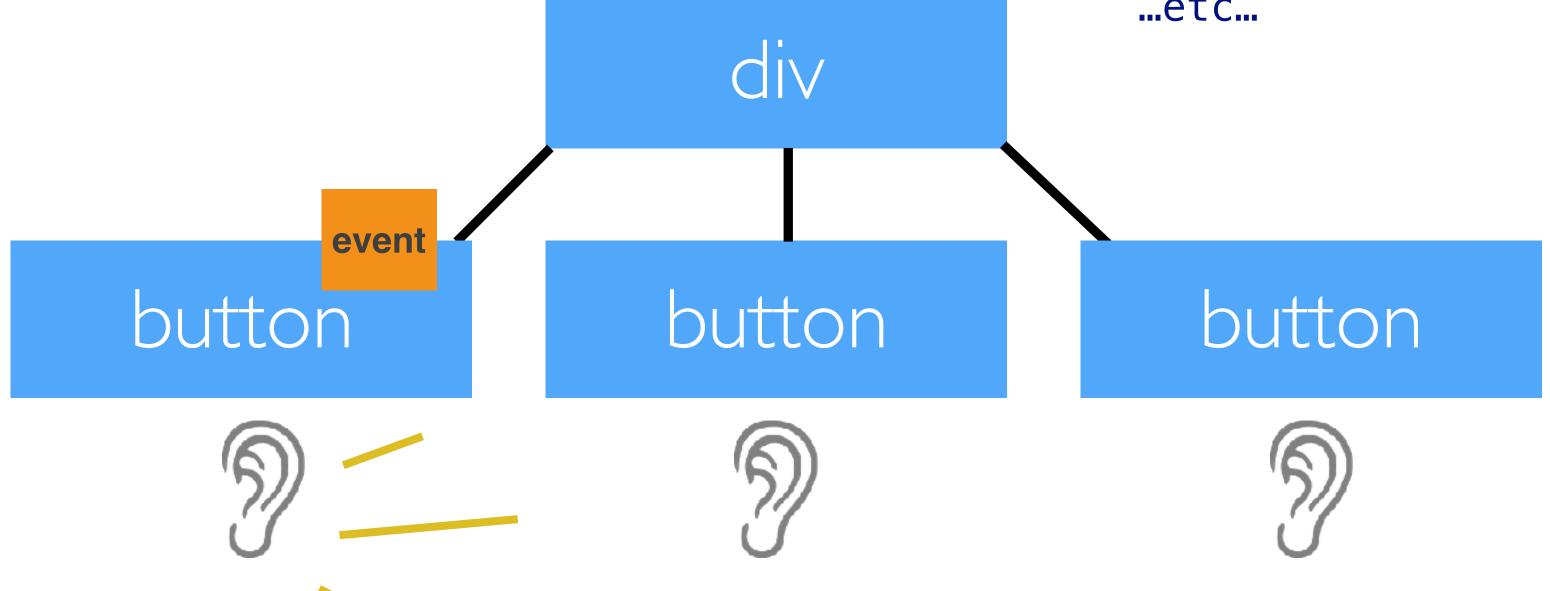
EVENT DELEGATION

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



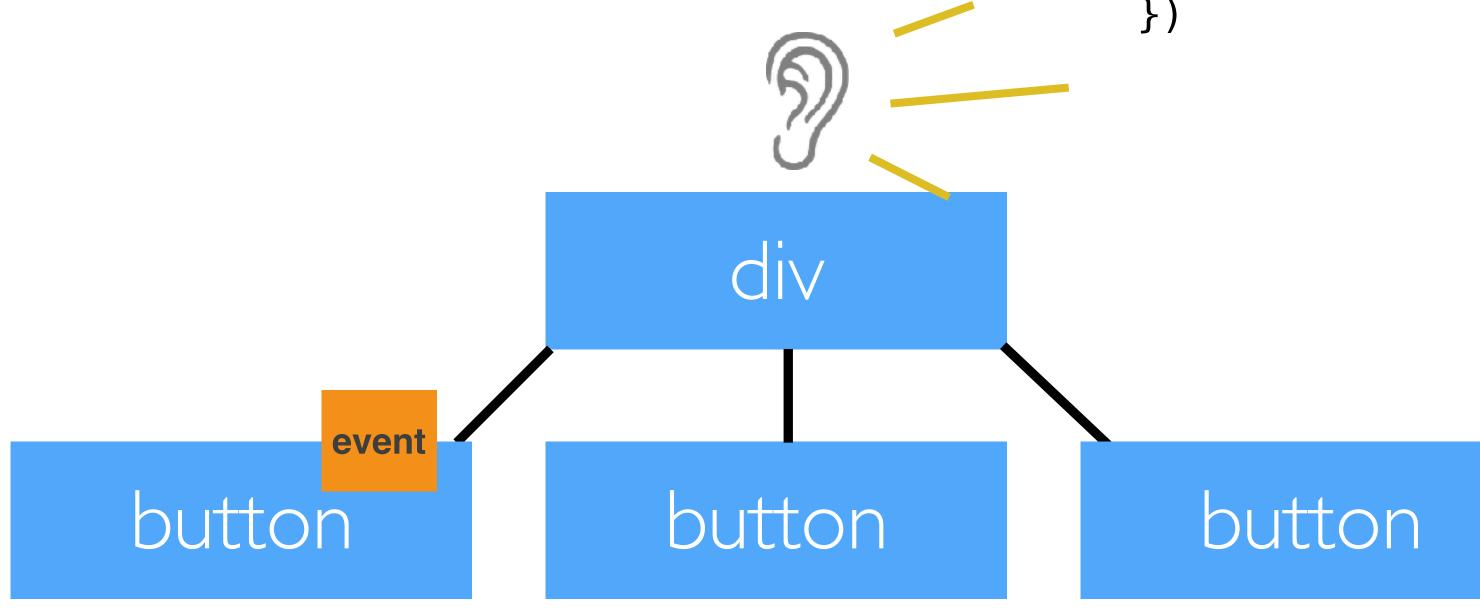
Without Event Delegation

```
const button1 = document.getElementsByTagName('button')[0]
const button2 = document.getElementsByTagName('button')[1]
const button3 = document.getElementsByTagName('button')[2]
button1.addEventListener('click', function (event) {
})
button2.addEventListener('click', function (event) {
})
...etc...
```



With Event Delegation

```
const div = document.getElementById('button-container')
div.addEventListener('click', function (event) {
    // `this` -> div
    // `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.

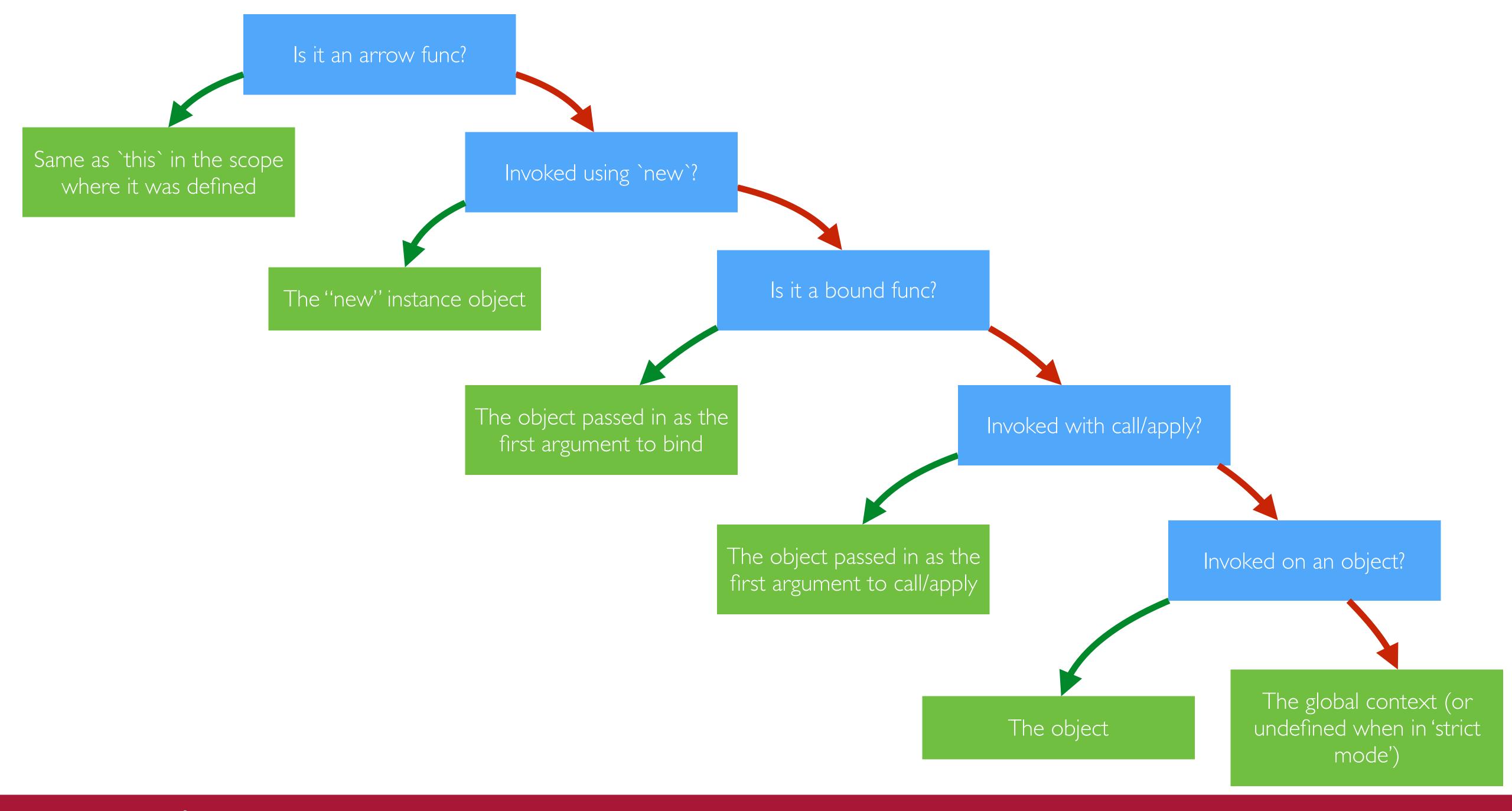
TYPES OF CONTEXT BINDING AND CALL-SITE

```
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`
```





WORKSHOP TIME