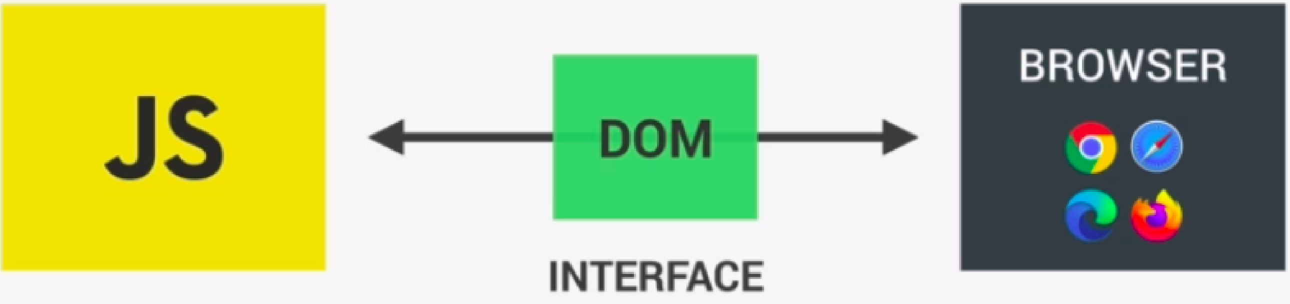
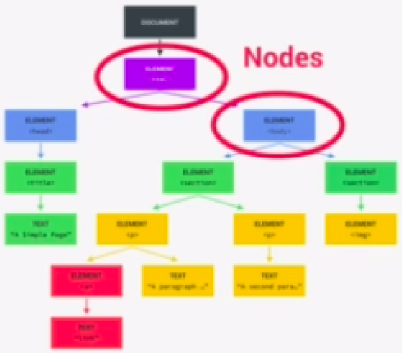
REVIEW: WHAT IS THE DOM?



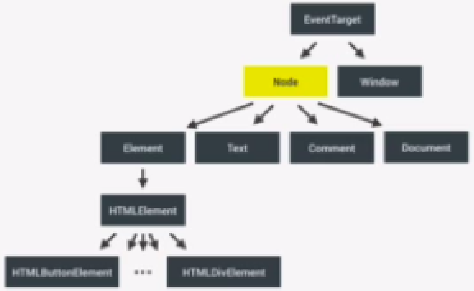


DOM tree

- Allows us to make JavaScript interact with the browser;
- We can write JavaScript to create, modify and delete HTML elements; set styles, classes and attributes; and listen and respond to events;
- DOM tree is generated from an HTML document, which we can then interact with;
- DOM is a very complex API that contains lots of methods and properties to interact with the DOM tree

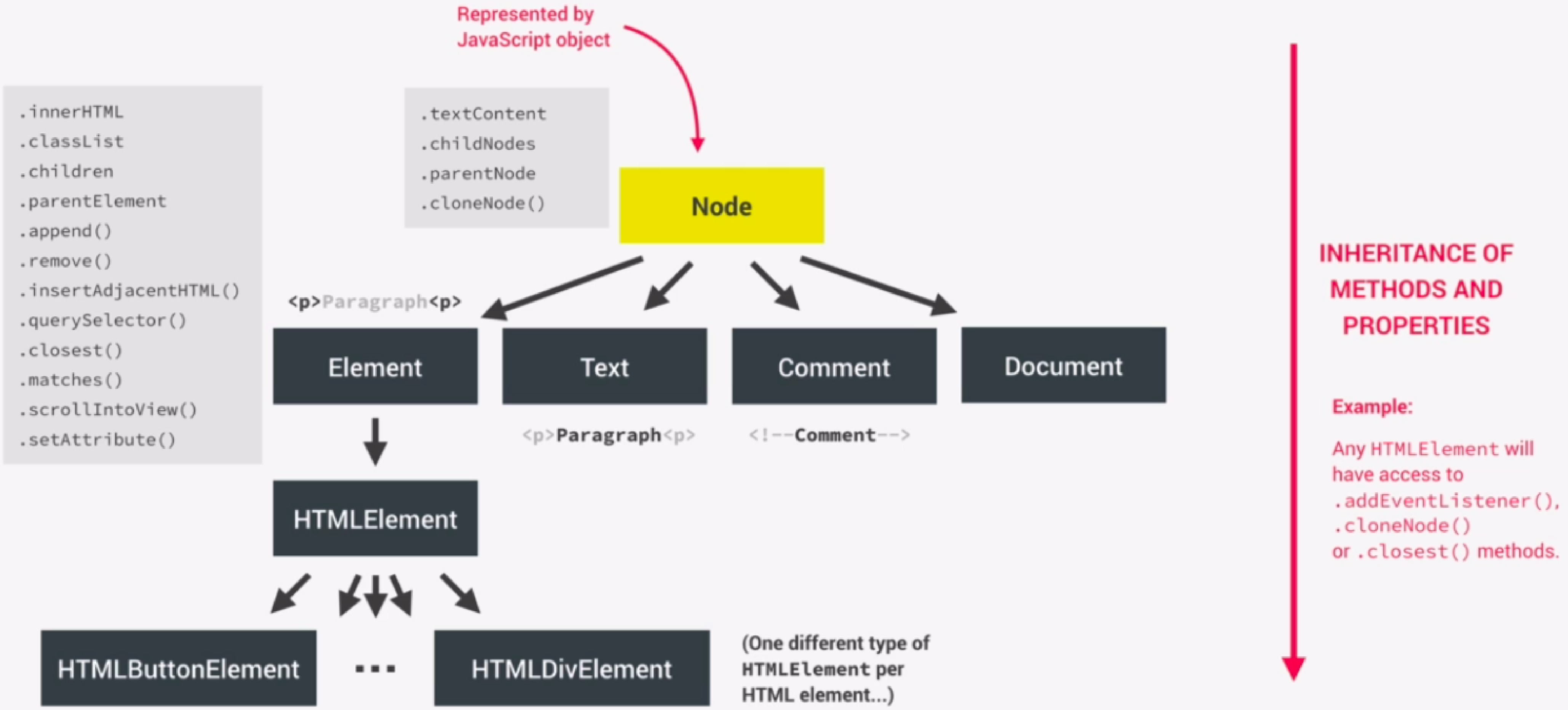
Application Programming Interface

```
.querySelector() / .addEventListener() / .createElement() /
.innerHTML / .textContent / .children / etc ...
```



"Types" of DOM objects (next slide)

HOW THE DOM API IS ORGANIZED BEHIND THE SCENES



Represented by JavaScript object

```
.innerHTML
.classList
.children
.parentElement
.append()
.remove()
.insertAdjacentHTML()
.querySelector()
.closest()
.matches()
.scrollIntoView()
.setAttribute()
```

```
.textContent
.childNodes
.parentNode
.cloneNode()
```

`<p>Paragraph<p>`

`<p>Paragraph<p>`

`<!--Comment-->`

(One different type of `HTMLElement` per HTML element...)

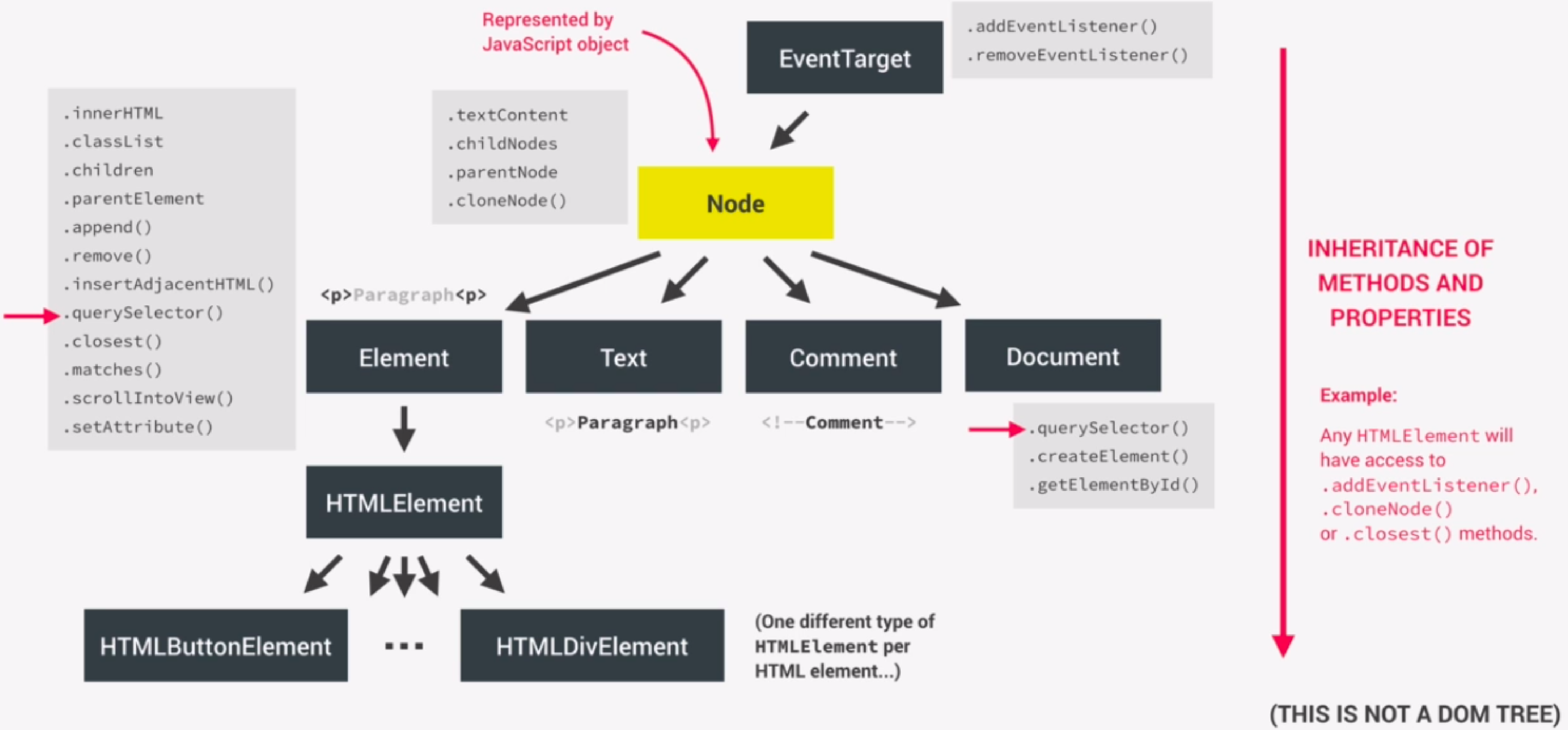
INHERITANCE OF METHODS AND PROPERTIES

Example:

Any `HTMLElement` will have access to `.addEventListener()`, `.cloneNode()` or `.closest()` methods.

(THIS IS NOT A DOM TREE)

HOW THE DOM API IS ORGANIZED BEHIND THE SCENES



Represented by JavaScript object

EventTarget

```
.addEventListener()
.removeEventListener()
```

Node

```
.textContent
.childNodes
.parentNode
.cloneNode()
```

Element

`<p>Paragraph<p>`

```
.innerHTML
.classList
.children
.parentElement
.append()
.remove()
.insertAdjacentHTML()
.querySelector()
.closest()
.matches()
.scrollIntoView()
.setAttribute()
```

Text

`<p>Paragraph<p>`

Comment

`<!--Comment-->`

Document

```
.querySelector()
.createElement()
.getElementById()
```

HTMLElement

HTMLButtonElement ... HTMLDivElement

(One different type of HTMLElement per HTML element...)

INHERITANCE OF METHODS AND PROPERTIES

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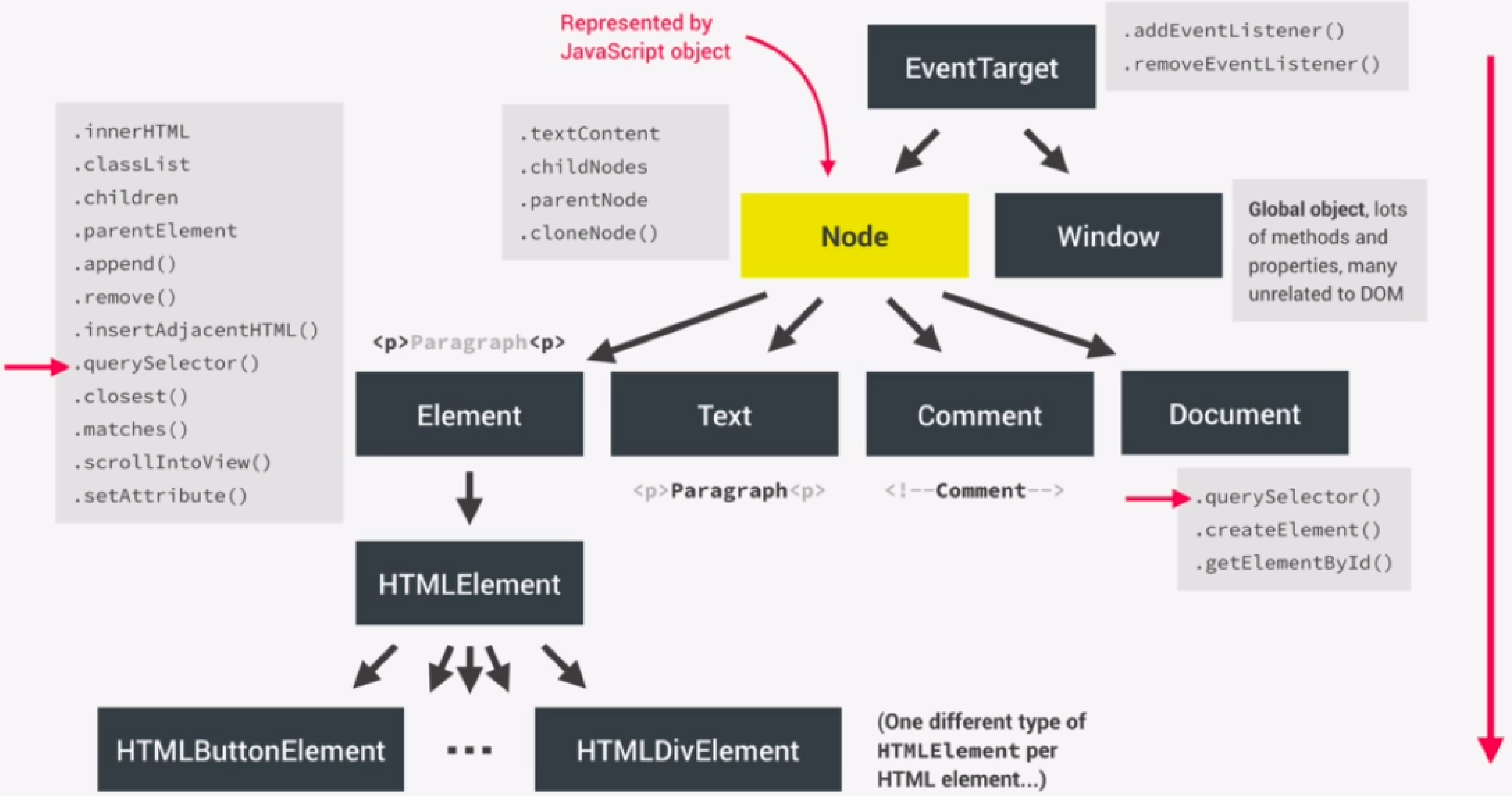

Represented by JavaScript object

EventTarget

.addEventListener()
.removeEventListener()

Node

.textContent
.childNodes
.parentNode
.cloneNode()

Window

Global object, lots of methods and properties, many unrelated to DOM

Element

<p>Paragraph<p>

.innerHTML
.classList
.children
.parentElement
.append()
.remove()
.insertAdjacentHTML()
.querySelector()
.closest()
.matches()
.scrollIntoView()
.setAttribute()

Text

<p>**Paragraph**<p>

Comment

<!--**Comment**-->

Document

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(One different type of HTMLElement per HTML element...)

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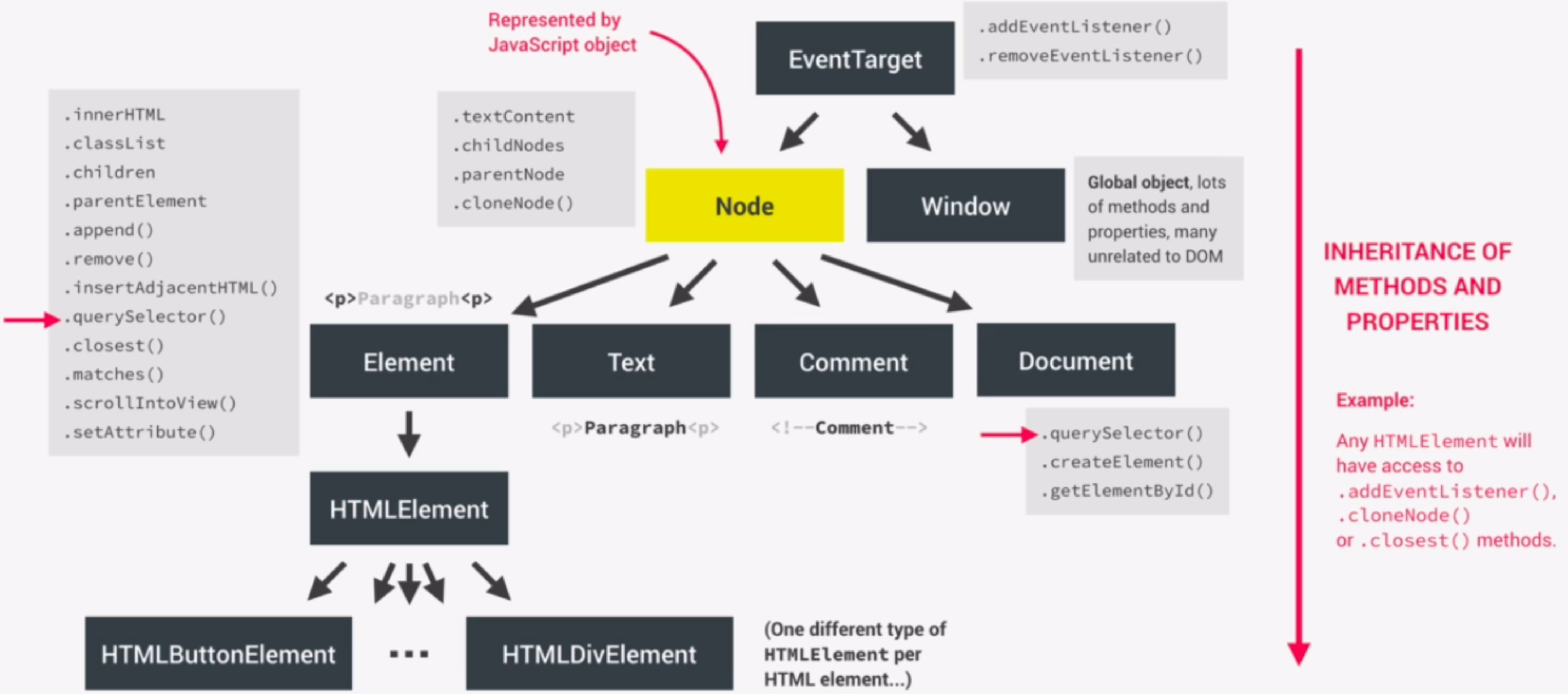

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Global object, lots of methods and properties, many unrelated to DOM

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Comment

<!--**Comment**-->

Document

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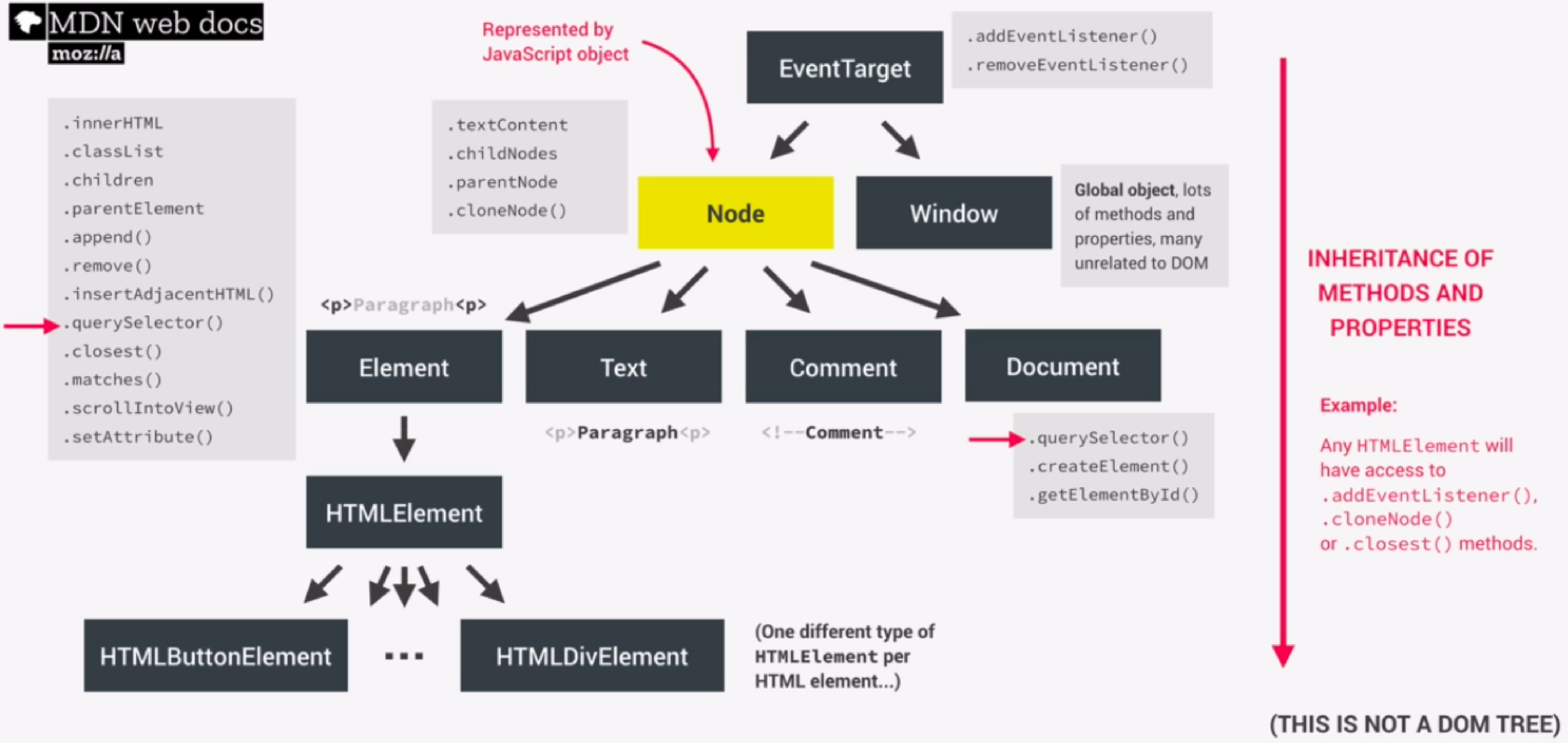

MDN web docs
moz://a

.innerHTML
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Element

Text

Comment

Document

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<!--Comment-->

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INHERITANCE OF METHODS AND PROPERTIES

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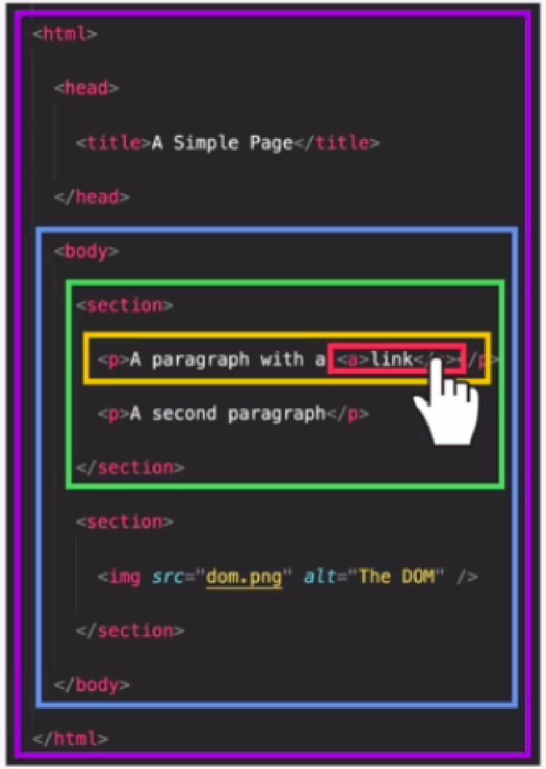
(THIS IS NOT A DOM TREE)

BUBBLING AND CAPTURING



```
<html>

  <head>

    <title>A Simple Page</title>

  </head>

  <body>

    <section>

      <p>A paragraph with a <a>link</a></p>

      <p>A second paragraph</p>

    </section>

    <section>

      <img src="dom.png" alt="The DOM" />

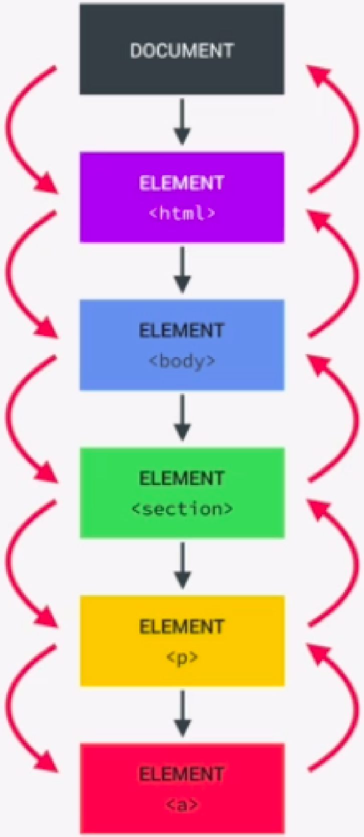
    </section>

  </body>

</html>
```

1

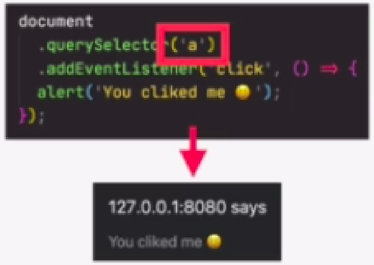
CAPTURING PHASE



Click event

3

BUBBLING PHASE



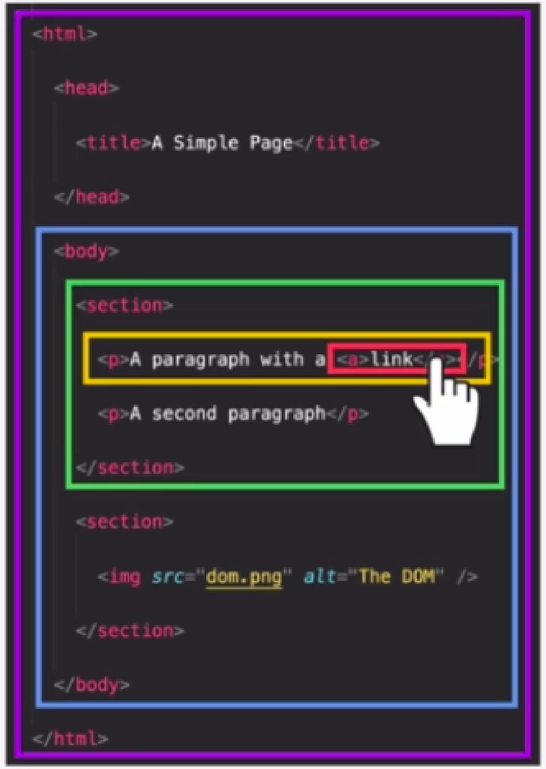
```
document
  .querySelector('a')
  .addEventListener('click', () => {
  alert('You cliked me 😀');
});
```

```
127.0.0.1:8080 says
You cliked me 😀
```

2

TARGET PHASE

BUBBLING AND CAPTURING



```
<html>

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    <title>A Simple Page</title>

  </head>

  <body>

    <section>

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    </section>

    <section>

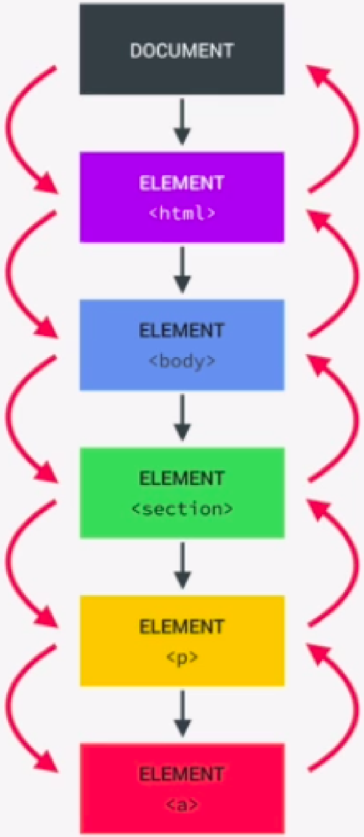
      <img src="dom.png" alt="The DOM" />

    </section>

  </body>

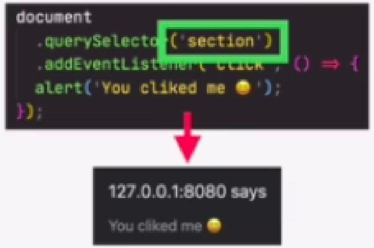
</html>
```

1 CAPTURING PHASE



Click event

3 BUBBLING PHASE



```
document
  .querySelector('section')
  .addEventListener('click', () => {
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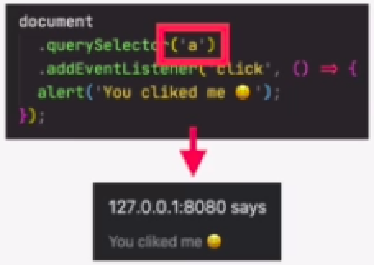
});
```

127.0.0.1:8080 says

You cliked me 😀



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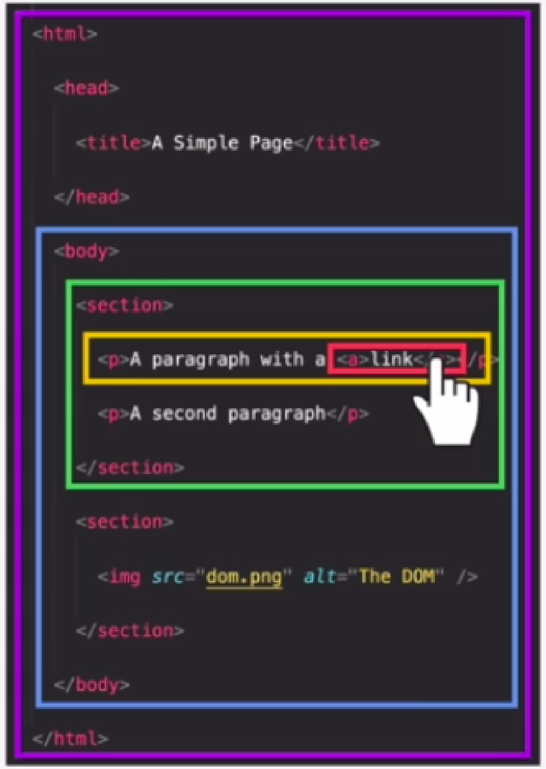
2 TARGET PHASE

BUBBLING AND CAPTURING



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  </head>
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      <p>A second paragraph</p>
    </section>
    <section>
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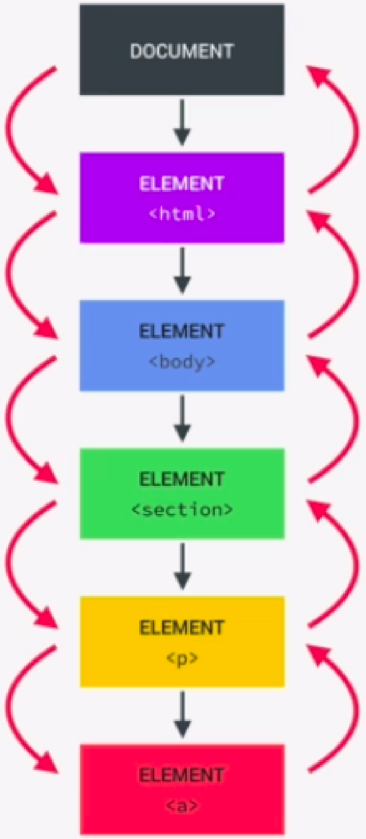
    </section>
  </body>
</html>
```

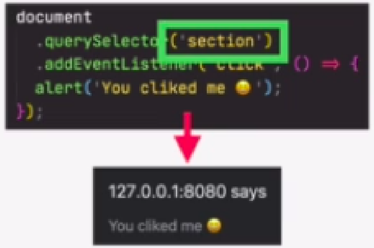
(THIS DOES NOT HAPPEN ON *ALL* EVENTS)

1 CAPTURING PHASE



Click event

3 BUBBLING PHASE



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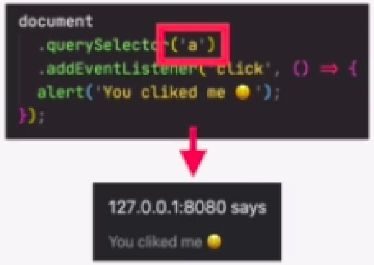

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