

Interactivity is:

A user action followed by a feedback,
usually in a change/reaction in what you see

We will be showing you how to:

1. change what you see (manipulate elements)
2. handle a user action (event handling)

Manipulating Elements

- Selecting elements
- Changing the elements

How to select elements in Javascript?

document.querySelector()

only returns the **first** element that matches the specified selectors.

```
<p>First p element</p>  
<p class="description">Second p element</p>  
<p id="apple" class="description">Third p element</p>
```

```
document.querySelector("p"); //tag name  
document.querySelector(".description"); //class name  
document.querySelector("#apple"); //id  
document.querySelector("p.description"); //tag & class name
```

document.querySelectorAll()

returns **all** elements in the document that matches a specified selector in an **array**.

```
<p>First p element</p>  
<p class="description">Second p element</p>  
<p id="apple" class="description">Third p element</p>
```

```
const paragraph = document.querySelectorAll("p");  
console.log(paragraph); //what is the output?
```

document.getElementById()

- returns the element that has the **ID** attribute with the specified value.

```
<h1 id="title">Select me!</h1>
```

```
const myTitle = document.getElementById("title");  
console.log(myTitle); //<h1 id="title">Select me!</h1>
```

document.getElementsByClassName()

- returns a collection of all elements in the document with the specified **class** name, in an **array**.

```
<p>First p element</p>  
<p class="description">Second p element</p>  
<p id="apple" class="description">Third p element</p>
```

```
const myParagraph =  
document.getElementsByClassName("description");  
console.log(myParagraph); //what is the output?
```

document.getElementsByTagName()

- returns a collection of all elements in the document with the specified **tag** name, in an **array**.

```
<h1>First title</h1>  
<h1 class="description">Second title</h1>  
<p class="description">First p element</p>
```

```
document.getElementsByTagName("h1");
```


What can be changed with Javascript?

For example:

- HTML contents
- CSS style (color,padding,margin)
- Attributes (href,src,id,class)
- Classes (add/remove class)
- Children (add element to element)

How to change?

```
<a href="https://www.google.com/">Click</a>
```

Now I want to change <a> 'href' to the link below:

<https://www.nextacademy.com/>

How to do this?

1. Select the a tag
2. Set the attribute 'href' into the new url

1. Select **all** elements with tag name

```
let links = document.getElementsByTagName('a')
```

2. Because **links** is an **array**, so we use a **for loop** to go through **each** element to set the attribute "**href**" to **new url**

```
for (let i = 0 ; i < links.length ; i++) {  
    links[i].setAttribute('href',  
        'https://www.nextacademy.com/');  
};
```

Handling Event

Terminology

Event:

A thing that happens to HTML elements, either triggered by a user or browser.

Events can be a click, mouseover, keydown, etc.

Events can also be things that are happening in a browser (e.g. 'load' is an browser event that fires when the page is finished loading).

List of important events: [MDN](#) [W3schools](#)

Terminology

Trigger:

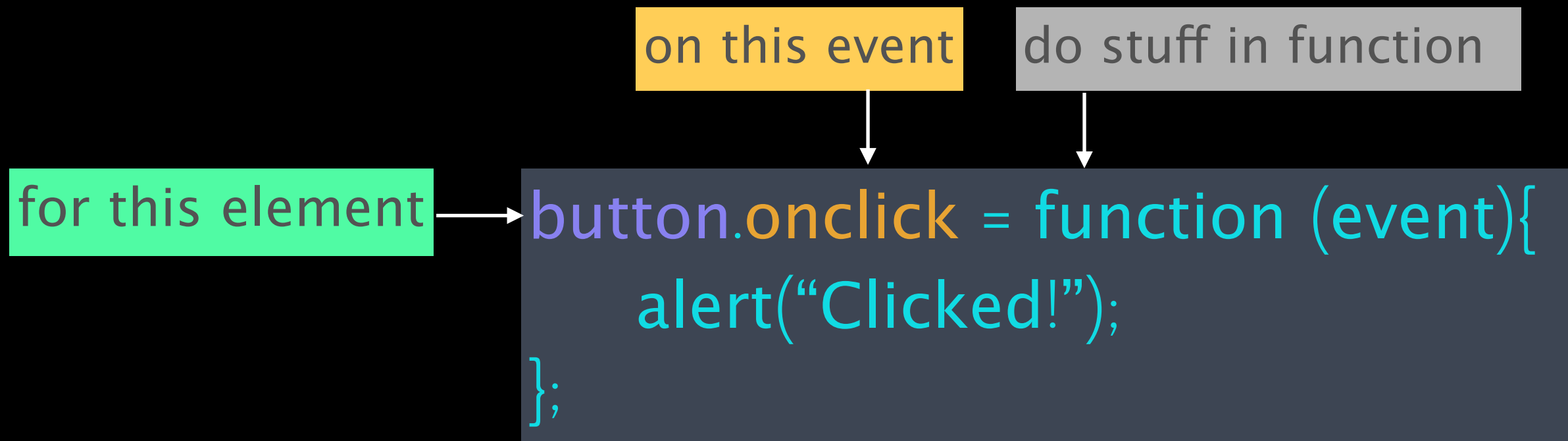
Cause an event to be happened
e.g. click on the button causes the click event to be happened

Event Handling:

An event handler is a function that is used to do something when an event is happened.

e.g. I wrote an event handler to display a kitten when a button is clicked

Anatomy of an Event Handler



* Assume

`const button = document.getElementById('my-button');`
is set before this.

Example: Counting clicks

Display the number of clicks

