

JavaScript & jQuery

JavaScript

- Alongside HTML and CSS, JavaScript is one of the core technologies of the World Wide Web
- It's a programming language for web design
- Can be used to make web pages more interactive
- Allows you to change the HTML and CSS dynamically
- Most browsers support JavaScript but users can disable it for security

Using JavaScript in HTML

- Your website directory needs a folder to store the JavaScript files, name this folder "js"
- The main JavaScript file should be named "scripts.js" and saved in the "js" folder
- Link to the JavaScript file inside your HTML file by using the "script" tag:

```
<script src="js/scripts.js"></script>
```

- Script tags go inside the body tag. They must be the **final** tags inside body.
- To check you have correctly linked to the JavaScript file, write the following code inside scripts.js and you should see a pop up as soon as your website loads:

```
alert("This works!");
```

jQuery

- JavaScript can be verbose – need to write a lot of code to achieve simple tasks
- jQuery is a library which contains a lot of pre-written JavaScript code that you can use to make your website better
- The code for jQuery is saved in a JavaScript file and is stored on a Content Delivery Network (a website):
`https://cdnjs.cloudflare.com/ajax/libs/jquery/3.3.1/jquery.min.js`
- Use a script tag to link to the jQuery file and set the "src" attribute as the URL of the jQuery file:
`<script src="https://cdnjs.cloudflare.com/ajax/libs/jquery/3.3.1/jquery.min.js"></script>`
- Make sure that the script tag for jQuery appears **BEFORE** the link to any other JavaScript files

jQuery Syntax

- jQuery allows you to select a HTML element and perform some action on it
`$("#selector").action();`
- The dollar sign says "this is a jQuery function"
- The selector can be the name of any HTML element, ID or Class
- The action is any jQuery function that can be applied to the selected element

jQuery Events

- An "event" represents the moment when a user performs a specific action.
- Examples of events:
 - **Clicking** on a button
 - **Moving the mouse** over an element
 - **Scrolling** the page
 - **Pressing a button** on the keyboard
- We can write code to say what should happen when a specific event occurs
- Examples:
 - Change the colour of text when the user clicks on it
 - Make an image appear when the user clicks on a button

Click Event

- The click event will run some code only when the selected HTML elements are clicked
- This is an example of a click event:

```
$("#p").click(function() {  
    alert("You clicked on a paragraph");  
});
```

- This will make a popup appear every time a user clicks on any paragraph

jQuery Hide & Show

- "Hide" is a jQuery function that hides the selected elements
- This will hide all paragraph elements on your site:

```
$("p").hide();
```

- This will hide all elements with the Class name "sub-title":

```
$(".sub-title").hide();
```

- "Show" is a jQuery function that shows the selected elements
- This will show all paragraph elements on your site:

```
$("p").show();
```

- This will show the element with ID name "hidden-title":

```
$("#hidden-title").show();
```


jQuery Toggle

- "Show" and "Hide" go hand in hand
- "Toggle" allows you to switch from showing to hiding an element and vice versa
- If an element is hidden, toggle will show it.
- If an element is shown, toggle will hide it
- Imagine a button with the id "my-button" and an image with the id "my-image"
- This will toggle between showing and hiding the image when the button is clicked:

```
$("#my-button").click(function(){  
    $("#my-image").toggle();  
});
```

jQuery Fade

- This is the same concept as show and hide, but the element fades in/out
- If the element with ID "test" is hidden, this will make it fade in to visibility:

```
$("#test").fadeIn();
```

- This will fade out the element:

```
$("#test").fadeOut();
```

- Visit W3 Schools to find out how to control the speed of the fading
- There is also a "fadeToggle" method:

```
$("#test").fadeToggle();
```

jQuery Slide

- This is the same concept as show and hide, but the element slides up/down
- If the element with ID "panel" is hidden, this will make it slide downwards in to visibility:

`$("#panel").slideDown();`

- This will make the element slide up and disappear:

`$("#panel").slideUp();`

- Visit W3 Schools to find out how to control the speed of the sliding
- There is also a "slideToggle" method:

`$("#panel").slideToggle();`

Exercise 1

- First, link to the JavaScript file in your HTML file
- There are three cards and three buttons
- Each card has a card-title and card-body
- The card-bodys are hidden from the start
- Add jQuery click events to the three buttons so that:
 - First button shows the card-bodys
 - Second button will hide the card-bodys by sliding up
 - Third button will toggle between hiding and showing the card-bodys by fading

Change HTML & Text

- jQuery can be used to change HTML elements, change the text inside an element, add new elements, remove elements and more
- Any text that is inside the element with ID "content" will now be replaced with the text "Hello world!":

```
$("#content").text("Hello world!");
```

- If there are divs with the class "test", this will remove any HTML inside all the "test" divs and replace it with the HTML in brackets below:

```
$(".test").html("<h2><b>Hello world!</b></h2>");
```

- If you wanted to delete all the text/html inside an element, use the above functions with empty quotation marks:

```
$("#content").text(" ");
```

```
$(".test").html(" ");
```

Getting HTML & Text

- The "text" and "html" elements can be used with empty brackets (without even quotation marks) - they then perform a different function
- This will return the actual text that is currently inside the element with ID "content":

`$("#content").text();`

- This will return the actual HTML that is currently inside the element with ID "test":

`$("#test").html();`

- This will return the value (or text) that has been typed into an input field (text box) with ID "name":

`$("#name").val();`

Adding HTML

- The "html" function replaces all the current HTML in an element with the HTML you want
- There are functions that allow you to add new HTML code without deleting the existing code
- This will add a heading at the end of every div (the new heading will be the last element inside each div):

```
$("#div").append("<h2>This is a subtitle</h2>");
```

- This will add a heading at the beginning of every div (also inside the div):

```
$("#div").prepend("<h2>This is a subtitle</h2>");
```

- This will add a h2 element after every h1 element:

```
$("#h1").after("<h2>This is a subtitle</h2>");
```

- This will add a h1 element before every div element:

```
$("#div").before("<h1>This is a subtitle</h1>");
```

Removing HTML

- There are functions that allow you to remove all HTML or just some specific elements
- This will remove every element with the Class name "container" as well as all the elements inside the container:

```
$(".container").remove();
```

- This will keep every element with the Class name "container" but will remove all elements inside the container:

```
$(".container").empty();
```


Exercise 2

- There is a title and two buttons
- Add jQuery click events to the buttons so that:
 - The first button will add a new subtitle (h2) after the h1 element (but inside the same div)
 - The second button will remove all titles (but keep the container div)

jQuery and CSS

- jQuery can be used to change CSS properties of a HTML element
- This is the syntax to change the CSS of a selected element:

```
$("element").css("property-name", "value");
```

- This will change the background colour of all divs to red:

```
$("div").css("background-color", "red");
```

jQuery and CSS Classes

- You can add/remove Classes from a HTML element. E.g. imagine two classes:

```
.normal-text {  
  color: black;  
  text-decoration: none;  
  border: none;  
}
```

```
.important-text {  
  color: red;  
  text-decoration: underline;  
  border: 1px solid red;  
}
```

- This will add the "important-text" Class to all "p" tags:
`$("#p").addClass(".important-text");`
- This will remove the "normal-text" Class from all "p" tags:
`$("#p").removeClass(".normal-text");`
- If an element with ID "sub-title" already contains the "normal-text" class, this code will remove it, otherwise it will be added:
`$("#sub-title").toggleClass(".normal-text");`

Exercise 3

- Make it so the first button turns all h1 elements green
- The second button should turn all h1 elements red
- The last button will toggle the class "special-text" (see css file). This should be applied only to "p" elements.