

Programming | HTML Button

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Thanks for attending the Scioto County Career Technical Center's hands-on day! For this portion of your visit, you will be learning the basics of programming. You will learn how to script a button, this button will change the theme of the page when clicked!

If you have any questions, or get confused... make sure to ask for help! :D

Getting Started

To get started, you will need to open your **index.html** file in **Kate**. You can do so by going to **Kate > File > Open...** You'll be able to find your **index.html** file in the **Documents** folder. You should go ahead and do the same for your **main.js** file that we will be using later. Make sure you are editing **index.html** before typing anything!

Once you have both your files open in **Kate**, you can write down the following contents:

```
1 <!DOCTYPE html>
2 <html lang="en">
3
4 <head>
5   <meta charset="UTF-8">
6   <title>My page!</title>
7   <script src="main.js"></script>
8 </head>
9
10 <body onload="Loaded()">
11   <button id="Button">Click me!</button>
12 </body>
13
14 </html>
```

Testing

You can open your page by going to:

Home > Documents > index.html (right click) > Open with Firefox

You'll notice that when you click the button, nothing happens! That's because we haven't made the script yet. Continue to the next page to get started on the scripting.

Defining Variables

We will need a few **variables** to get started. **Variables** have a **name** and a **value**. When we create a **variable**, we can use its **name** to access its **value**. We can also change its **value** anytime when needed.

Make sure you are editing **main.js** before you write anything down!

We need the following color **variables** (**names** and **values** included) for our script:

```
1 var Black = "black"
2 var White = "white"
3 // ^ Name ^ Value
```

The third line is a **comment**. The purpose of **comments** is to allow programmers to explain their code to others, or to themselves! **Comments** start with two slashes, everything after the two slashes is ignored and won't be considered code by the browser. If we remove the two slashes, we will get an error... :(

You just wrote your first lines of Javascript, woohoo! Javascript is the programming language that browsers can read and run natively, which is why we are using it here! There are many more programming languages out there with a variety of purposes, however you can learn more about them in your own free time.

Loaded Function

Whenever our page is loaded, a **function** called "Loaded" is executed. (This was declared in our **index.html** file on line 10!)

To define our **function**, we can write down the following:

```
5 function Loaded() {
6
7 }
```

Inside our **function** will be the code that is executed when the page is finished loading. **Functions** are sections of code that can be executed as many times as we need. We can do so by calling the **function**. Example of calling the **function** would be: **Loaded()**

Getting the Button

For the next step, we need to retrieve our button. We can do so by adding the following to our loaded **function**:

```
5 function Loaded() {  
6     var Button = document.getElementById("Button")  
7 }
```

Now, when we need the button, we can simply access it by using the word `Button` in our code. To get the button, we are getting it using its `Id` which was defined in our **index.html** file on line 11!

Getting the Body

Next, we need to get the body element. The body element is just like a button, except it represents where all the page elements are located. However, it can also be used to stylize the background of the page!

```
5 function Loaded() {  
6     var Button = document.getElementById("Button")  
7     var Body = document.body  
8 }
```

Thankfully, **document** has a property called `body`, which easily allows us to get the body tag in our Javascript.

Defining a Boolean Variable

We need to define a **variable** that lets us know what theme the page is currently using! We will be using a **boolean variable**, **booleans** represent true or false. To create a **boolean variable** we can add the following line:

```
5 function Loaded() {  
6     var Button = document.getElementById("Button")  
7     var Body = document.body  
8     var LightTheme = true  
9 }
```

The `LightTheme` **variable** will let us know if we are currently using the light color as our background!

Listening for Button Clicks

This step is very important, as we need to know when the button is clicked. There are multiple ways to listen for when the button is clicked, but the following is the most simple.

```
5 function Loaded() {  
    ...  
8     var LightTheme = true  
9  
10    Button.onclick = function() {  
11  
12    }  
13 }
```

We can set Button.onclick to a **function** of our choice! This allows us to run specific code when the button is clicked and *only* when the button is clicked. It's pretty much the same as the Loaded function, except in this case it doesn't need a name.

Creating an if/else Statement

Woohoo! We are getting very close to being finished! For this step, we need to create an if/else statement, this statement will check if the LightTheme variable is true. Depending on what the value the LightTheme **variable** is will decide what theme to change on the next button click!

Inside our button's click **function** we can add the following:

```
9 ...  
10 Button.onclick = function() {  
11     if (LightTheme == true) {  
12  
13     } else {  
14  
15     }  
16 }
```

Code inside line 12 will run if LightTheme is true, however if it's false, the code that is inside line 14 will be executed instead!

Modifying Style

In order for us to change the color of the background of our page, we need to edit the style of the body element. We can do so pretty easily, as we have already defined our color **variables** in the first step.

```
9 ...
10 Button.onclick = function() {
11     if (LightTheme == true) {
12         Body.style.backgroundColor = Black
13     } else {
14         Body.style.backgroundColor = White
15     }
16 }
```

Once you try it out, you may notice a problem: the button doesn't change back to white when the button is clicked twice. That is because we haven't set the **variable** to its appropriate value.

Changing a Variable's Value

In order to change the **variable** to its opposite value, we can do the following:

```
9 ...
10 Button.onclick = function() {
11     if (LightTheme == true) {
12         Body.style.backgroundColor = Black
13         LightTheme = !LightTheme // OR: LightTheme = false
14     } else {
15         Body.style.backgroundColor = White
16         LightTheme = !LightTheme // OR: LightTheme = true
17     }
18 }
```

We can use **not (!)** which returns the opposite of the **variable** we specify.

Now once you test, you'll see that it is completed! Good job!

If you have any issues, please let one of us know, as we are here to help you.