

Lab JavaScript

In this lab, we will use JavaScript in order to add new functions to our toy website (the one we developed in the HTML-CSS Lab). We will add a currency converter to the page.

Creating a pop-up window

Our converter will appear like a pop-up window on the right side of the contents. Let's first design this window and then we will add the code to make it appear/disappear. Add a division (`<div></div>`) in the `central_part` section after the contents:

```
<div id="popup">
    <h3>Currency converter</h3>
</div>
```

And add the following CSS to the styling file:

```
#popup {
    float: left;
    height: 400px;
    border: 2px solid black;
    text-align: center;
    border-radius: 15px;
}
```

Add a button in the menu, after the `left_menu` section, after the list:

```
<button type="button" onclick="alert("click");">
Open converter
</button>
```

Your page should look something like this:

If you click on the button, nothing happens, although it should display a message box with the text “click”.

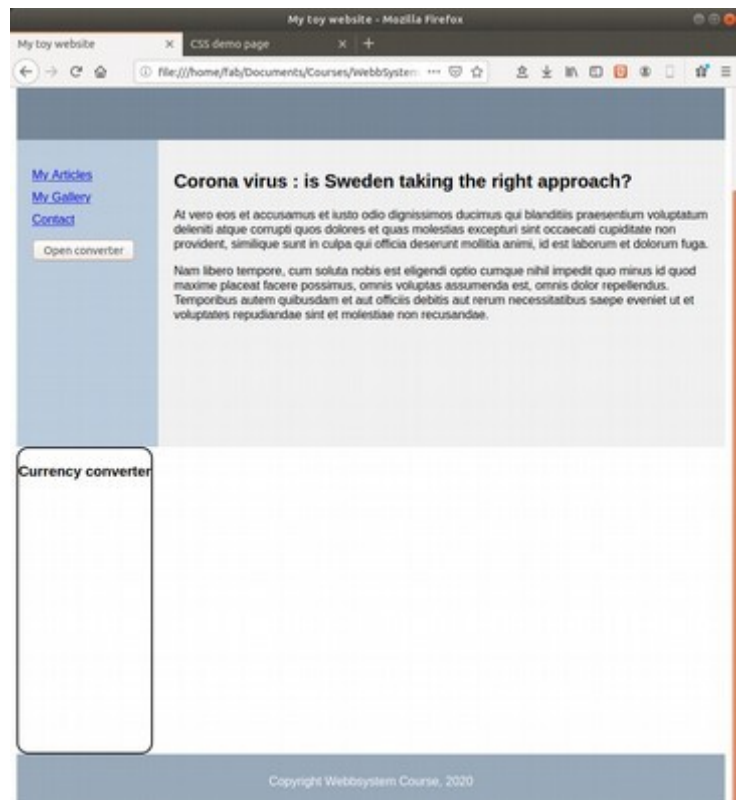
Can you figure out why?

Open the page inspector and display the debug console. Click on the button again. You should see an error message.

The problem here is syntax: we have nested quotes:

```
onclick="alert("click");"
```

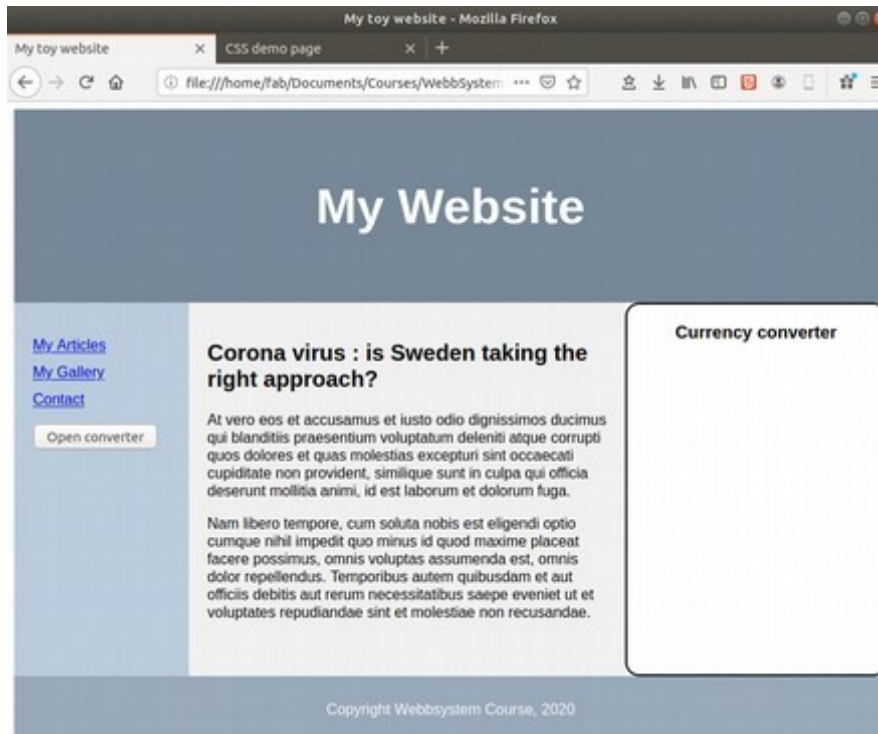
JavaScript doesn't know what is code or what is text.



Fix the problem by using both single quotes and double quotes: " " and ' '. Refresh and click on the button. A message box should appear.

Throughout this exercise, keep in mind that, like with HTML and CSS, JavaScript errors are not always displayed by the browser. So if your code doesn't work, always check for error messages in the debug console.

Now, modify the `width` CSS property of `popup` and `contents` in order to have the currency converter fitting in the page as follow (it should work even if the width of the window is changed):



Visible and Invisible

We want the currency converter to be by default invisible, and appear as we click on the button. We'll use the CSS property `display` for that. Add the following property in the style of the `popup` id (note that we work with id, not class: that's why we have `#popup` and not `.popup`):

```
display: none;
```

Refresh the page, the currency converter should not be visible, leaving a white space instead.

You can make it reappear by changing the value of the property to `block` as follow (default value):

```
display: block;
```

Put the value back to `none`, and let us write a JavaScript function to make it visible by changing the value to `block`. Create a script section in the head of your html document with the script tags:

```
<script>  
  
</script>
```

Inside this section, add the following code:

```
function displayConverter() {  
    document.getElementById('popup').style.display='block';  
}
```

Modify the `onclick` attribute of the button as follow:

```
onclick="displayConverter();" "
```

So by clicking the button, the `displayConverter` function is called, which changes the `display` property of the currency converter to `block`, which makes it visible! (Don't forget to refresh your page to have your JavaScript code effective.)

You can also **read** the values of CSS properties. Change the code of the function `displayConverter` as follow:

```
function displayConverter() {  
    currentValue = document.getElementById('popup').style.display;  
    console.debug("Currently, the converter display property is: *" +  
currentValue + "*");  
    document.getElementById('popup').style.display='block';  
}
```

Refresh, open the console, and click on the button. The console displays that the value is `**` (none). If you click one more time, the value should be `*block*`.

Now, change the code of `displayConverter` so that the currency converter appears and disappears each time you click on the button. Tip:

you can test if the `display` property is `none` or `block` as follow:

```
if (currentValue === '')  
if (currentValue === 'block')
```

Changing widths

Now we want to also change the width of `contents` **and** `popup` as we click on the button. First, change `contents` into an `id` instead of a class. In the CSS, replace

`.contents` with: `#contents`

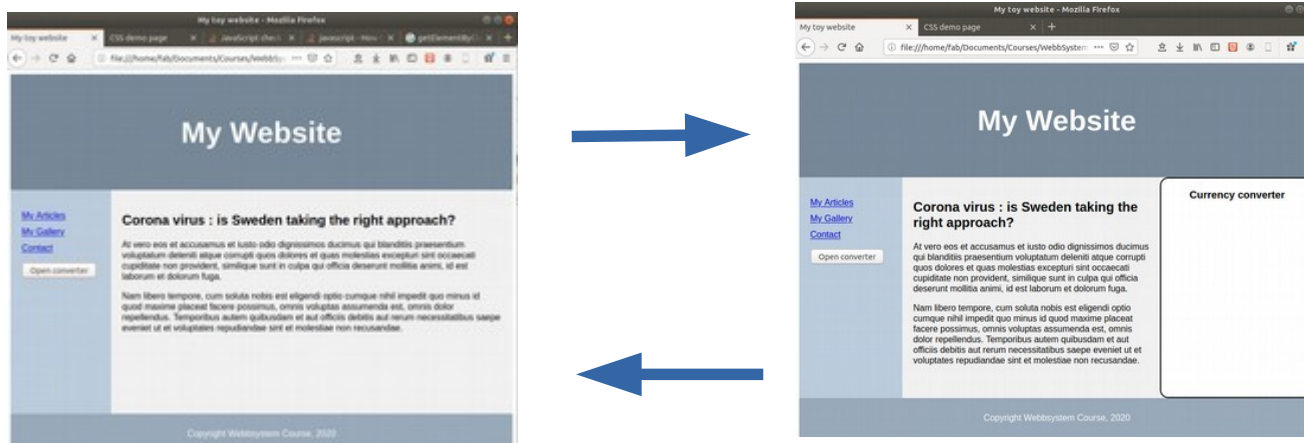
and in the HTML, replace

```
<div class="contents"> with: <div id="contents">
```

Play with the `width` property to achieve the desired result, for instance:

```
document.getElementById('contents').style.width = '80%';
```

You should be able to open/close the currency converter popup each time you click on the button as illustrated below:



Converting Currency

Let us design the converter itself. Add the following code in your HTML file, in the popup division, under the title:

```
<label>Price in EUR</label>
<input type="text" id="euprice">
<br>
<label>Rate</label>
<input type="text" id="rate" value="10.9">
<br>
<div id="sekprice" style="margin-top:30px;color:green;">result in SEK</div>
<button style="margin-top:30px" type="button" onclick="convert();">
```

Add a convert function in your script section:

```
function convert() {
    value = document.getElementById('euprice').value;
    alert(value*2);
}
```

Modify this function so that the price in kronor is computed from the price in euros and displayed in the div with the sekprice id (remove the alert function). You can access the content of this block as follow:

```
document.getElementById('sekprice').innerHTML = ...
```

Last question, which may take more time: Add a button in the currency converter so that each time you click on the button, you can switch EUR → SEK and SEK → EUR conversion.

You are done!

To go further, and if you want to see how to make cool-looking pop-up windows, check the “animated modals” on W3Schools:

https://www.w3schools.com/w3css/w3css_modal.asp