Laboratory 09 – JavaScript

In this laboratory we want to create a Frequently Asked Questions (FAQ) page with the following functionality:

- By default, only the questions are displayed, the answers below them are hidden
- The answers for each question are only displayed when the respective question is clicked
- If the question is clicked again, the answer disappears
- When the question shows its answer, the color of the question changes from dark green to a lighter green
- The page has a customizable background: it can be selected from a color picker and the selected color is set as the background color
- The selected background color is remembered by the page, even after it is closed, and then, when accessing the page again, the remembered background color is used when loading the page

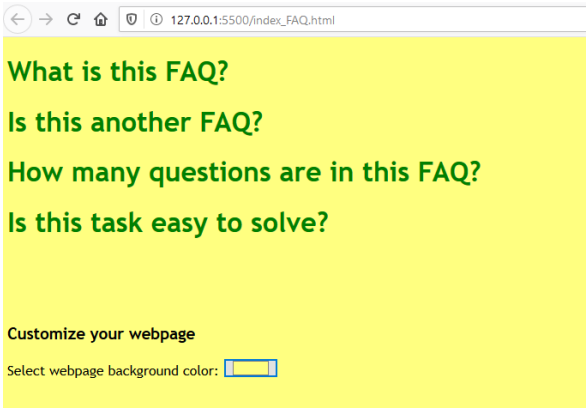

Figure 1. Page with no questions opened

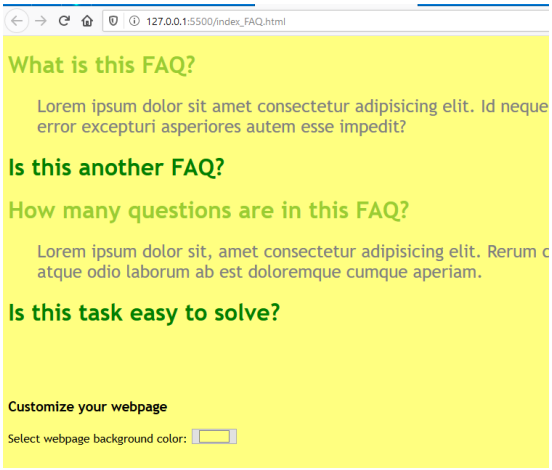

Figure 2. Page with some questions opened

Task 01

Take the "`index_FAQ.html`" and "`style_FAQ.css`" files from Teams and analyze their content. Notice that questions use `<h1>` elements and the answers use the `<blockquote>` element to store their text. Also notice the customization section at the end of the page.

Study the stylesheet and look at what styles are used and how they are set up and why. Also notice the unused styles. What could their purpose be?

Also check whether the "Live Server" extension is installed in Visual Studio Code and install it if it is not. Because **cookies only work on a server environment**, today we will use "Live Server" to open our webpages. This basically simulates an actual client-server setup. In order to use "Live Server" in Visual Studio Code, right click on your HTML document and select "Open with Live Server".

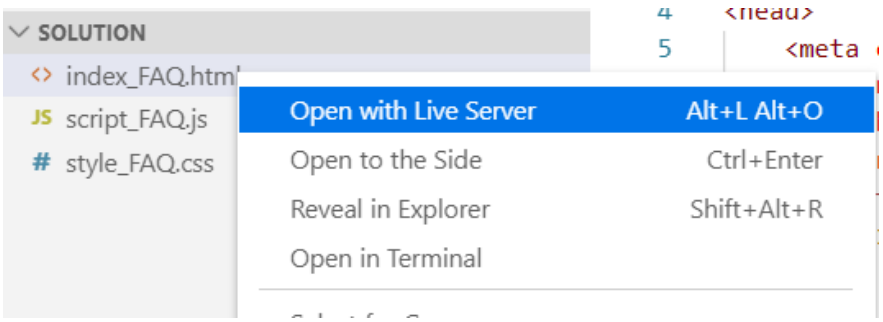

Figure 3. Opening an HTML document with "Live Server" (extension needed)

Create a JavaScript file named "`script_FAQ.js`" and include it in your HTML document. **Don't forget to tell the browser to only run the script after the whole HTML document has been loaded!**

Task 02

First, we will complete the following part of the design:

- Change the color of the `<h1>` elements from dark green to light green whenever they are clicked
- Display the `<blockquote>` below each `<h1>` element when the afferent `<h1>` is clicked

In order to do this, proceed as follows:

1. Get all the `<h1>` elements from the page and add an event listener to each one. The event listener should call a function.
2. Write the function mentioned above, which should do the following:
    a. Add light green color to the `<h1>` elements if it's not already added, remove the light green coloring, if it's already added
    b. Show or hide the `<blockquote>` immediately after the `<h1>` that was clicked

Test the functionality of your webpage so far using Live Server.

Task 03

Write two functions as follows:

1. `setCookie(cookieName, cookieValue, valDays)` – a function that stores a cookie named "`cookieName`" which has "`cookieValue`" and is valid for `valDays` days
2. `getCookie(cookieName)` – a function that returns the value of a cookie with "`cookieName`"

Test both functions using the Console from the debugging tools of your browser. Don't forget to open your webpage with Live Server (cookies only work on a server environment!).

Task 04

Now, let's change the background color of the webpage and store the selected color in a cookie. In order to achieve this:

1. Add an event listener to the color picker component, which fires of whenever the selected color is changed. This should call a function.
2. Write the function which
    a. Sets the background color to the selected value from the color picker
    b. Stores the selected value in a cookie for 1 year

Test the functionality of your webpage. Use the console to check if the cookie is stored.

Task 05

Now, let's make sure the webpage loads with the color that was stored in the cookie, every time it is opened. In order to do this:

1. Add an event listener which calls a function whenever the page is loaded
2. Write the function for the above event listener which
    a. Gets the necessary background color from a cookie
    b. Sets the background color
    c. Sets the value of the color picker to the current background color

Test the functionality of your webpage fully!

Homework

Implement the same functionality of storing the background color value using localStorage instead of cookies. Analyze which solution resulted in an easier implementation with fewer lines of code.

Solution hints

Please read this section **only** if you are really having difficulties with the implementation and have run out of ideas! But really try to make it on your own beforehand as the next laboratory test will not be easier than this!

Task 02 – 1

Get all `<h1>` elements by using `document.getElementsByTagName("h1")` and store the array of `<h1>` elements in a variable. Then use a `for` loop and the `addEventListener` method to add the same event listener function to each `<h1>` element in the array.

Task 02 – 2a

Use `classList.toggle` and the `.opened` class to add/remove the light green coloring of the question (use the `this` keyword to know which `<h1>` called the function).

Task 02 – 2b

Use `this.nextElementSibling.classList.toggle` and the `.showAnswer` class in order to show/hide the answer.

Task 03 – 1&2

Both functions are written in C09, in the examples provided.

Task 04 – 1

Use the `addEventListener` method and the change parameter

Task 04 – 2a

Use `document.body.style.backgroundColor` to set the background color

Task 04 – 2b

Use the `setCookie` function from Task 03 – 1

Task 05 – 1

Use the `window.onload` property to call a function

Task 05 – 2a

Use the `getCookie` function

Task 05 – 2b

Use `document.body.style.backgroundColor`

Task 05 – 2c

Use the `value` property of the color picker