

WEB programming

Lab 03: Javascript (Part 1)

Instructions:

- ⇒ The aim of these labs is to teach you how to find information on your own. The teacher's role is to support you in this process and direct you to the most relevant resources.
- ⇒ **This lab is to be carried out in pairs.** Only a trinomial is allowed if the number of students is odd. You can also work alone.
- ⇒ Before starting each lab, you'll need to do some **preliminary reading** to get started and/or deepen the knowledge you've acquired during the lecture.
- ⇒ To help you with your practical work, you'll need to search the Mozilla Developer Network (MDN), Stack Overflow, W3Schools or css-tricks.
- ⇒ ChatGPT can be used to search for errors in your code if required.
- ⇒ Give priority to searches in English.
- ⇒ You can choose between using VSCode, a classic editor (SublimeText or Notepad++) or Codepen.
- ⇒ The complete source code must be submitted on Moodle no later than **19/05/2024 at 11:59 p.m.**

Learning outcomes :

- ⇒ At the end of this course, you should be able to :
 - Master the basic elements of Javascript
 - Mastering javascript events

Green IT



The aim is to implement an informative website presenting Green IT and some practical tips for web development, as well as a Green IT knowledge test.

This site has 3 pages:

- **Home.html**: this page provides information on green IT.
- **GreenITSiteWeb.html**: this page provides information on the carbon footprint of websites.
- **QuizGreenIT .html** : this page tests a visitor's knowledge of Green IT.

Starting point: Lab2 source code

The starting point for Lab3 is your source code from Lab2. You can also use the source code given in the correction available on Moodle.

Link to a demo of the site :

Step 1: The first javascript tests

Further reading:

- The JS course and associated videos.
- [MDN : Javascript first steps](#)
- [MDN: Console.log](#)
- [MDN : setTimeout](#)
- [MDN : setInterval](#)

I. A warm welcome to our visitors 😊

The aim of this part is to run a script that opens a popup when the homepage loads.

- 1- In VSCode, open the file home.html and add a <script></script> tag at the end of the code.
- 2- In the script tag, add the following script:

```
<script>
  window.onload = function() {
    alert("Welcome to the GreenIT Quiz");
  }
</script>
```

- 3- Refresh the page to observe the pop-up. You can click OK to make it disappear.

II. Setting up the dynamic table

Back to the "QuizGreenIT.html" page

- 1- In the <form> tag:
 - a. Add **name**, **class** and **id** attributes.
 - b. Add the event : **onsubmit = "return false "**.

```
<form method="post" name="Quiz" action="#" class="box" id="QuizId" onsubmit="return false">
```

- 2- After the </form> tag, add a <main> tag that will take the same style as the form, using the same class.
- 3- In the <main> section, add a table tag. This is a table of quiz results.
- 4- Give the table a description using the <caption> tag.
- 5- Add a <thead> to the table with the following cells: Attempt and Score.
- 6- Add a <tbody> to the table.

- 7- Give the table the id "**result**" and make sure it has the same style as the table on the "GreenITSiteWeb.html" page.

N.B. You can enhance the display of both the form and the table.

Quiz results	
Attempt	Score

III. Javascript and html

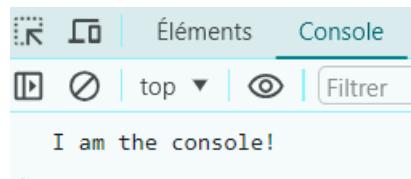
- At the root of your Lab3 folder, create a folder named "js".
- Open the folder you've created and add a new "**script.js**" file.
- In the "**QuizGreenIT.html**" file, add a link to the file created using the <script> tag. This link should be added to the <head> part of your html document.

```
<script type="text/javascript" src="../js/script.js"></script>
```

- Open the "script.js" file and add the following function:

```
console.log("I am the console!");
```

- Save and open (or refresh) the web page.
- Then open the console (Chrome/Firefox: ctr+maj+i). You should have the message written.

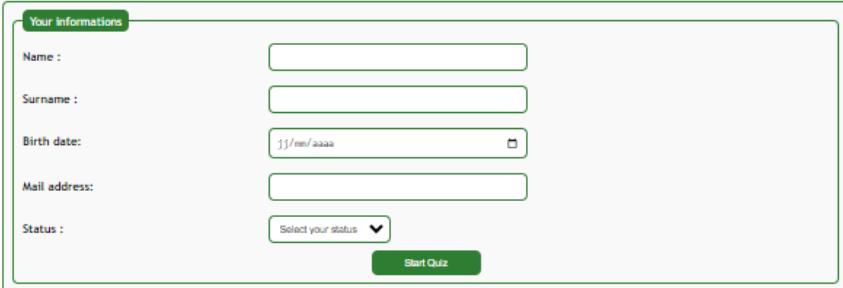


Step 2: A simple script

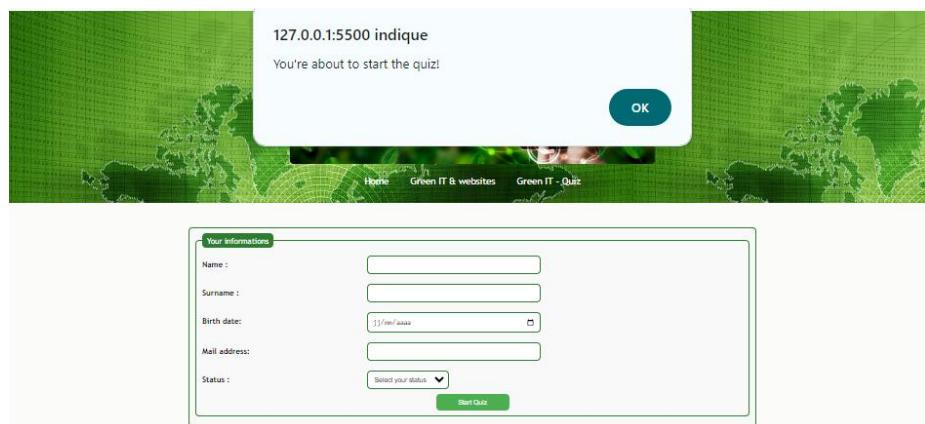
The aim here is to hide the quiz and give the visitor the opportunity to choose whether he wants to take the test or not. If the answer is no, the visitor is redirected to the home page, otherwise a 5-second countdown is launched, and the quiz is displayed.

- On the "QuizGreenIT.html" page:
 - Add the **id = "information"** attribute to the first fieldset
 - Add the **class= "quiz"** attribute to the second fieldset and to the button.
 - In styles.css, hide the fieldset containing the quiz and the button.

- 2- In the "script.js" file, add the `quizAlert()` function, which calls the `alert()` function to display a pop-up window with the following message: "You're about to start the quiz!"
- 3- In the first fieldset, add a button using the `<input type="button" value = "Start quiz">` tag. Make sure it has the same style as the "Submit" button.



- 4- Add the attribute `onclick = "quizAlert()"` to the button. This is an event that triggers the `quizAlert` function when the button is pressed.
- 5- Test it.



- 6- Add a new function to your script called `quizConfirm()` that will allow the user to choose whether or not to continue with the quiz. For that purpose, the function will contain a call to the function: `confirm("Are you sure you want to continue?")`.
- 7- The `quizConfirm()` function must be at the bottom of the `quizAlert()` function.

```
function quizAlert() {
    alert("You're about to start the quiz!");
    quizConfirm();
}
```



8- The confirm function returns a Boolean: true or false. Here's the algorithm we want to implement :

- Declare a variable to hold the confirm function return.
- If the answer is "Cancel" (false), the function displays a pop-up window with the following message: "You will be redirected to the home page!", then redirects the visitor to the home.html page using `window.location.href = "home.html"`.
- If the answer is OK (true), the function displays a pop-up window with the following message: "The quiz will start in 5 seconds!" and starts a 5-second countdown. When the countdown is complete, the fieldset containing the quiz and the button will be displayed.

Here is the code for the quizConfirm() function to be used:

```
function quizConfirm() {
    var res = confirm("Are you sure you want to continue?");
    if (res == true) {
        alert("The quiz will start in 5 seconds!");
        //add a 5-second countdown
        var timer = 5;
        //Create an element p to display the message
        var confirmation = document.createElement("p");
        confirmation.textContent = timer + " seconds";
        //style of message
        confirmation.style.color = "red";
        confirmation.style.fontSize = "1.5em";
        confirmation.style.fontWeight = "bold";
        confirmation.style.textAlign = "center";
        //add the message to the page after the start id button
        var start = document.getElementById("information");
        start.appendChild(confirmation);
        //using the setInterval function, which runs every second
        var interval = setInterval(function () {
            //decrement countdown
            timer--;
            //It is also displayed in the console
            console.log(timer);
        }, 1000);
    }
}
```

```
//display the countdown in the p element created
confirmation.textContent = timer + " seconds";
//if the countdown is over
//show the message "Here we go! Good luck!"
//show form
//show submission button
if (timer == 0) {
    clearInterval(interval);
    confirmation.textContent = "Here we go! Good luck!";
    document.getElementsByClassName("quiz")[0].style.display = "block";
    document.getElementsByTagName("button")[0].style.display = "block";
}
}, 1000);
} else {
    alert("You will be redirected to the home page!");
    window.location.href = "home.html";
}
}
```

Autonomy :

To improve the quiz process :

- 1- The quizConfirm function must check that all fields have been filled in before launching the confirmation window. If this is not the case, another window will display the message "Please fill in all fields!"
 - 2- Disable the "Information" fieldset and hide the "Start Quiz" button once the quiz has started (after the countdown).

Step 3: Quiz results

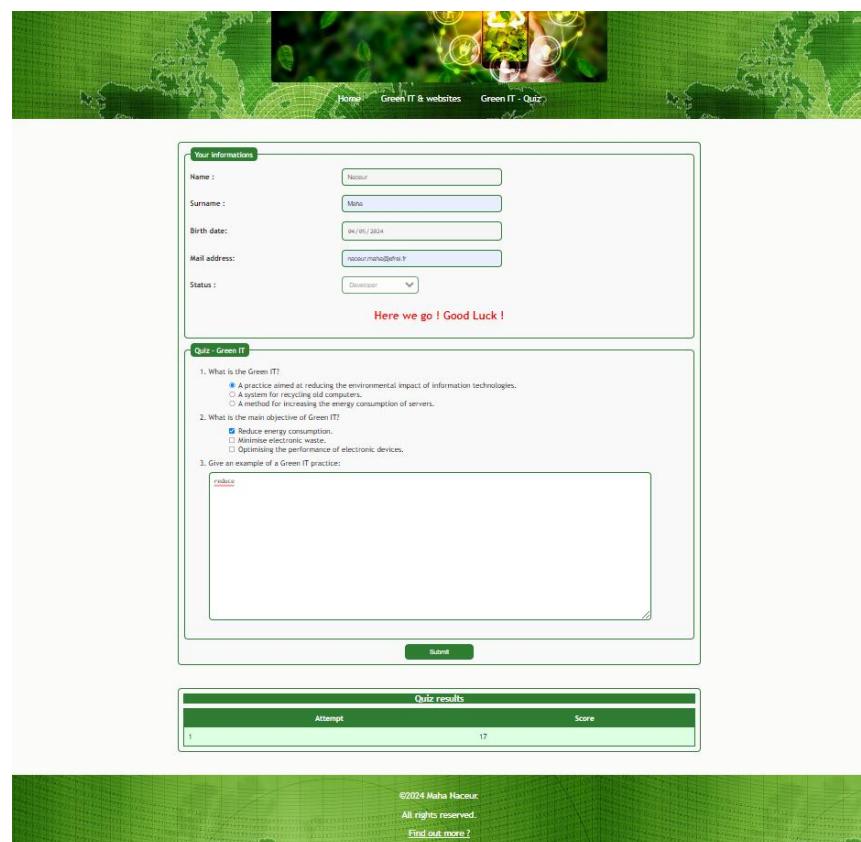
In this section, we'll set up a script to display the attempt number and score in the table. Here's how the score will be calculated:

- The answer to question 1 is " A practice aimed at reducing the environmental impact of information technologies.". This answer is worth 4 points.
 - The answers to question 2 are :
 - Reduce energy consumption. This answer is worth 3 points
 - Minimize electronic waste. This answer is worth 3 points
 - If the third proposal is ticked, the score will be reduced by 3 points.

- For question 3, we check that the entered text contains one of the following keywords: reduce, lighten, facilitate, optimize and exploit. If this is the case, 10 points will be awarded.

Write the `submitQuiz()` function to :

- Declare a score variable and initialize it to 0
- Retrieve the "radio" element that has been ticked and check that it is the correct answer (a). If so, the score is incremented by 4 points.
- Retrieve all the checkbox items that have been ticked and check whether they are answer a and/or b. The score is then incremented by 3 points for each correct answer. Otherwise, the score is reduced by 3 points.
- Retrieve the answer entered in question 3 and check whether the text contains a keyword. The score is then incremented by 10 points.
- Display the score and attempt number in the results table.



The screenshot shows a web page with a green-themed header featuring a world map and a globe icon. The header includes links for "Home", "Green IT & websites", and "Green IT - Quiz". Below the header is a "Your Informations" form with fields for Name (Nasour), Surname (Maha), Birth date (04/05/2004), Mail address (nasourmaha@betafp.fr), and Status (Developer). A red message "Here we go ! Good Luck !" is displayed below the form. The main content area is titled "Quiz - Green IT" and contains three questions:

- What is the Green IT?
 - A practice aimed at reducing the environmental impact of information technologies.
 - A system for recycling old computers.
 - A method for increasing the energy consumption of servers.
- What is the main objective of Green IT?
 - Reduce energy consumption.
 - Minimize electronic waste.
 - Optimizing the performance of electronic devices.
- Give an example of a Green IT practice:

A "Submit" button is located at the bottom of the quiz section. Below the quiz is a "Quiz results" table:

Quiz results		
Attempt	Score	
1	17	

The footer of the page includes copyright information: "©2024 Maha Nasour. All rights reserved. Find out more ?"

Autonomy :

You can add the following features:

- Reset questions after each attempt
- Deactivate the submit button after 3 attempts

Demo : GreenIT webSite – JS (Part1)

