

Coding assignments

Document

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Learning outcome 2
Development and Version control

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ICT & Media Design
Semester 2 Class 2

- HTML tags

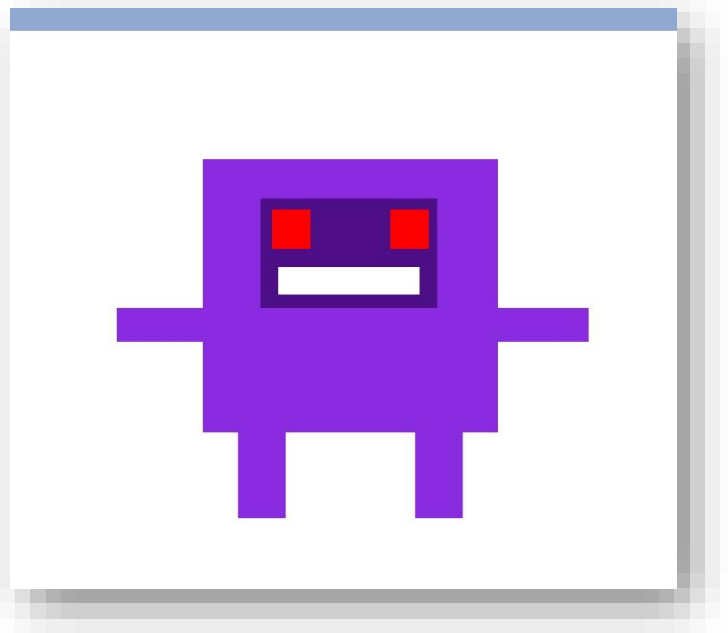
This was an assignment from class, after we had a lesson about HTML. The assignment consisted in searching in each code for tags that I do not know. I was surprised to see there were quite some tags that I never seen before. I searched what are the tags for and commented in the code what answers I found. It was a fun assignment, and **I achieved more knowledge about HTML tags.**

```
<pre>
  <!-- This tag is used to display text exactly as it appears in the HTML code,
         including spaces, line breaks, and formatting. It's commonly used for displaying code snippets or text that
function loremIpsum() {
console.log("Lorem ipsum dolor sit amet, consectetur adipiscing elit.");
}
</pre>
<code>console.log('Hello, world!');</code>
<!-- tag is used to define a piece of computer code -->
<!-- <hr> -->
<samp>Output: Lorem ipsum dolor sit amet.</samp>
<!-- tag is used to represent sample output or example output from a program, script, or computing process. -->
<dl>
<dt>Definition List Title</dt>
<dd>Definition list division.</dd>
</dl>
<!-- tags are used together to create a list of term-definition pairs. -->
<!-- <p>Normal text: Lorem ipsum dolor sit amet.</p> -->
<bdo dir="rtl">Text in reverse: Lorem ipsum dolor sit amet.</bdo>
<!-- This tag is used to override the current text directionality of content -->
<!-- </body>
</html> -->
```

- Pokémon with CSS

One other assignment was to create a Pokémon from squares using just HTML and CSS. I opened a HTML file in my Vscodex app and started creating “divs”. I styled the Pokémon in a CSS file, styling each class in the right place. I created the purple, angry Pokémon named Gengar.

From this experience I learned some new tags that are very useful in HTML and got the chance to practice more with “div”, classes and CSS styling.



```
File Edit Selection View ... Search
index.html X
C: > Users > 40726 > Desktop > Fontys > Media_Design_sem2 > assignments > pokemon > index.html > ...
1  <!DOCTYPE html>
2  <html lang="en">
3
4  <head>
5      <meta charset="UTF-8">
6      <meta name="viewport" content="width=device-width, initial-scale=1.0">
7      <link rel="stylesheet" href="css/stylesheet.css">
8      <title>Pokemon</title>
9  </head>
10
11
12  <body>
13
14  <div class="pokemon">
15      <div class="body">
16          <div class="face">
17              <div class="one-eye"></div>
18              <div class="two-eye"></div>
19              <div class="mouth"></div>
20          </div>
21          <div class="arms"></div>
22          <div class="one-leg"></div>
23          <div class="two-leg"></div>
24      </div>
25  </div>
26
27  </body>
28  </html>
```

- Animations

Until now I thought that making animations using CSS would be hard and complicated. After I joined a workshop about the subject, I learned is quite simple and fun. I did have fun making some Pokémon's move, jump and dance with the code. The assignment was to do this task using AI, but even the AI wrote the code, I read it and understood it, and modified some things like the colors and the time of the movements.

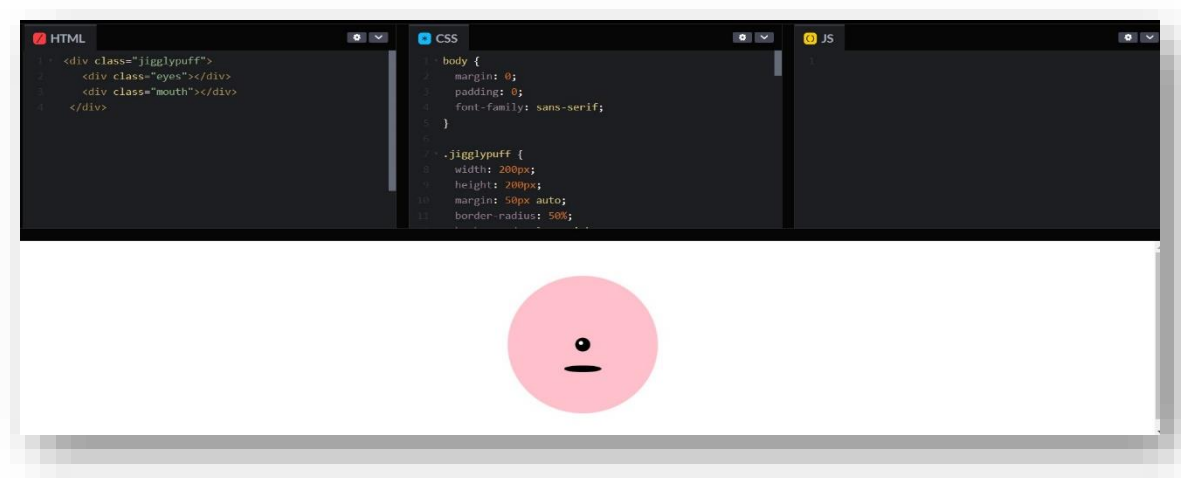
After I learned what animations are I animated a button in my portfolio for fun and I can not wait to play more with animations.

This is not the only thing I learned from this assignment. Using two different AI s for this task I saw that one can be better than the other in creation, but it will never be perfect. The AI created the Pokémon that I wanted after a few tries. I knew that AI is no good in making the work for me, and I like to use it just to learn from it.

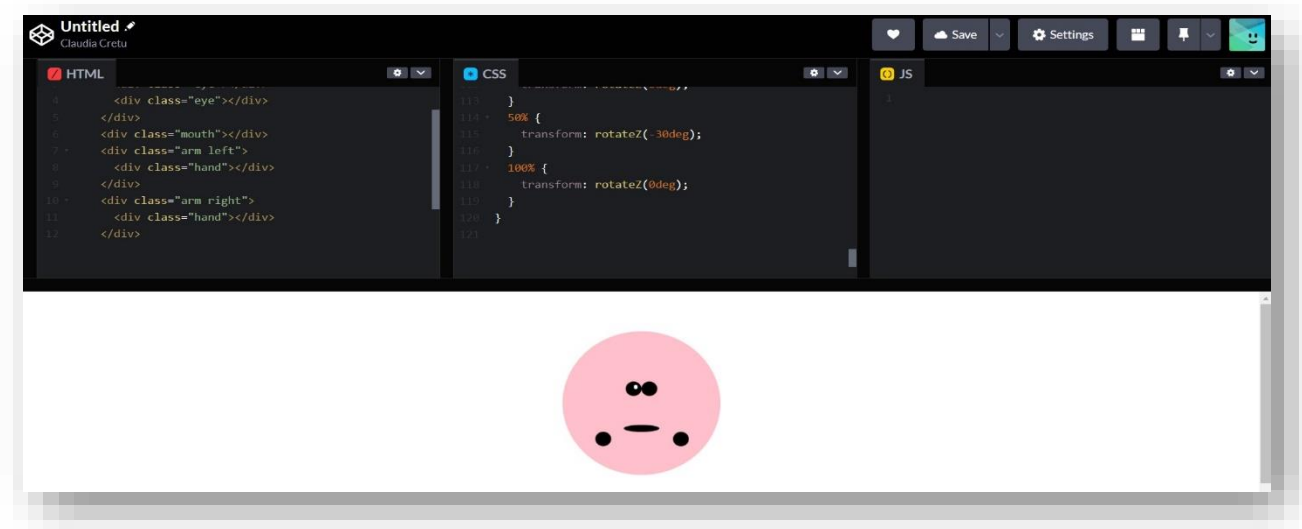
This is the process that I have been through with the AI:

- Gemini AI:

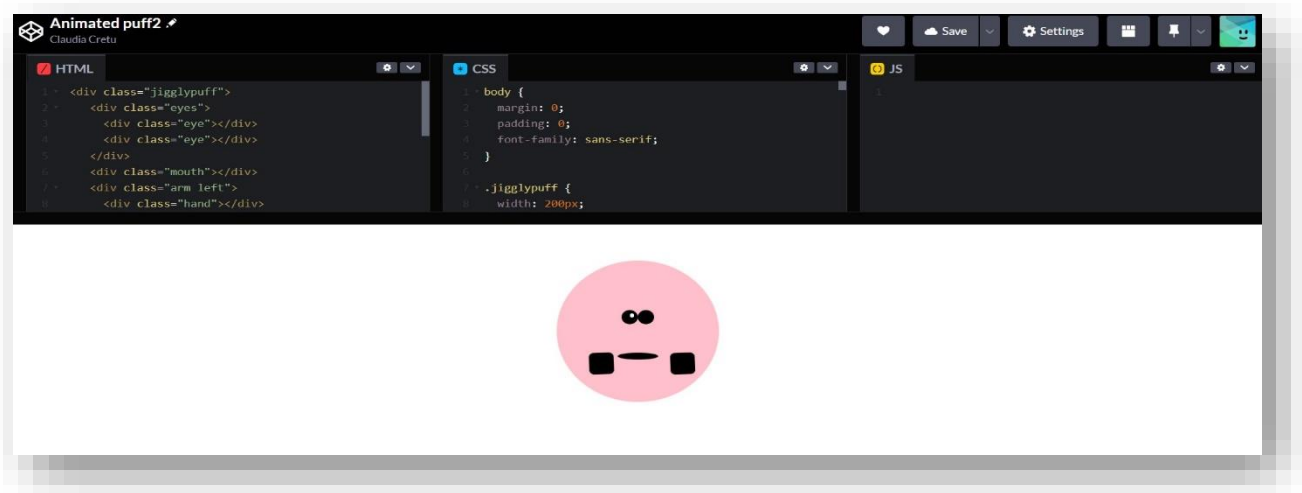
This was the first attempt of the AI after I told it “Make me an animated Jigglypuff”.



This was the second attempt of the AI after I told it “I want it to have two eyes and two hand and to wave with the hands”. The AI made it move, but it did not design it how I wanted in the first place, and it did wave but because the hands were round the waving animation was invisible. I changed the border-radius of the hands to make the waving visible.

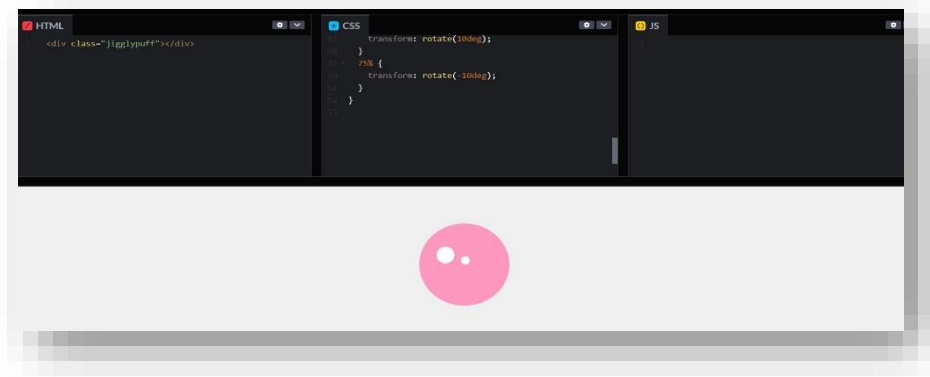


This is the final version made by AI and adjusted by me:

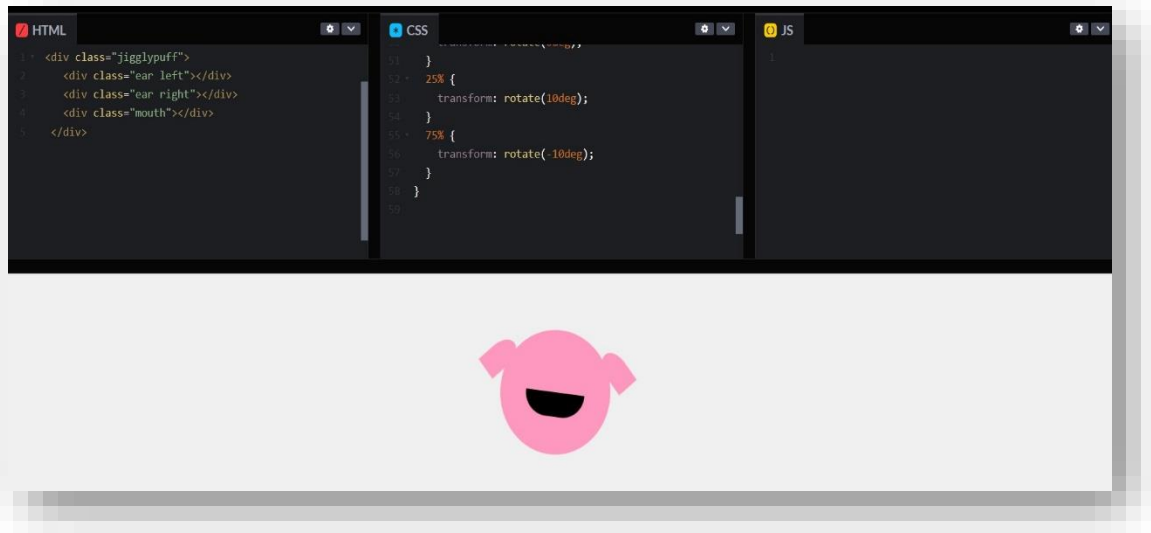


- ChatGPT:

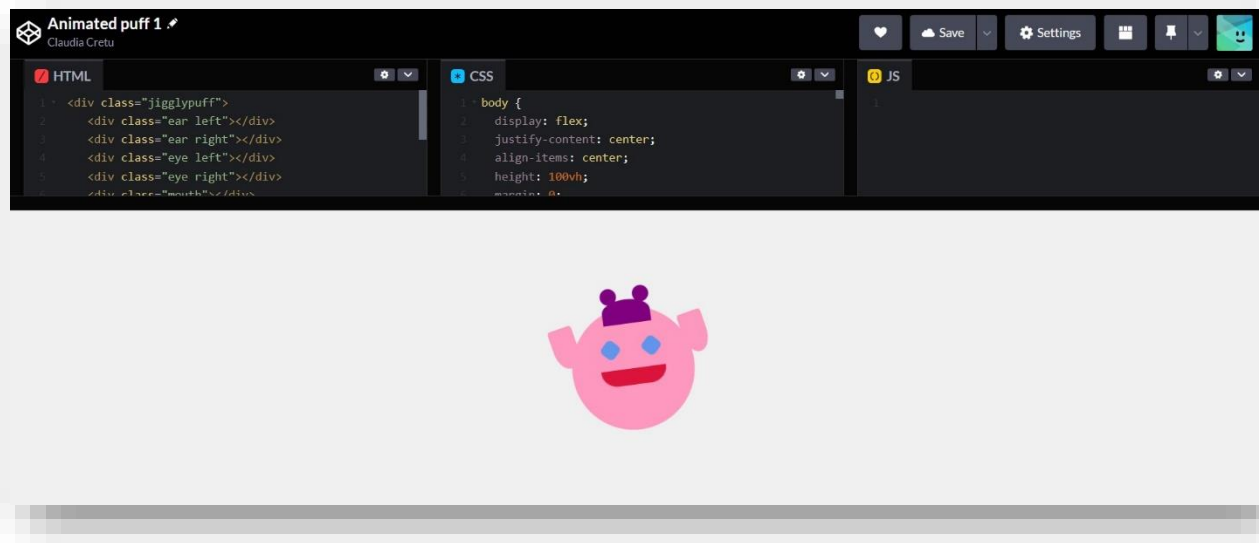
This was the first attempt of the ChatGPT AI when I asked to make a Jigglypuff that moves. It did move but it did not look like I wanted to.



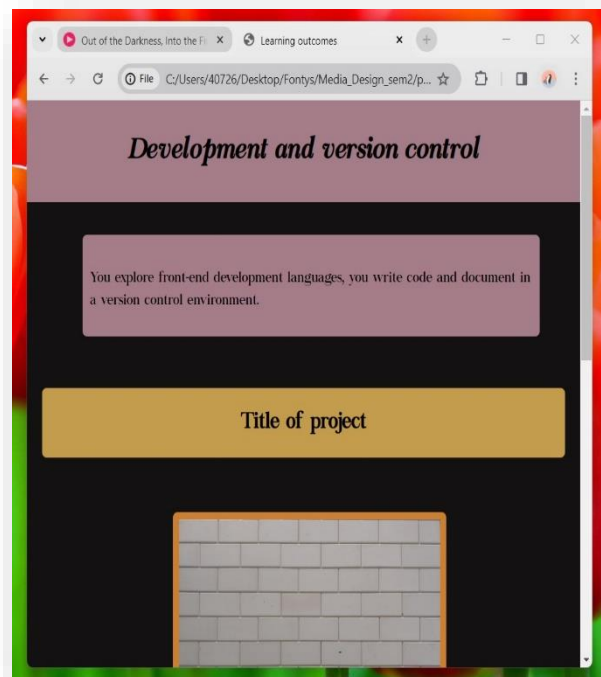
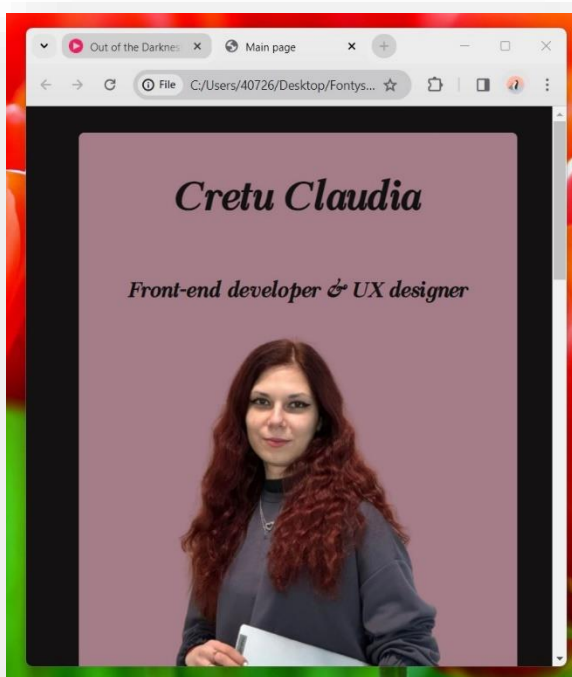
This was the second version when I asked the AI to make it with hands and wave. It did not wave, it would just jump.

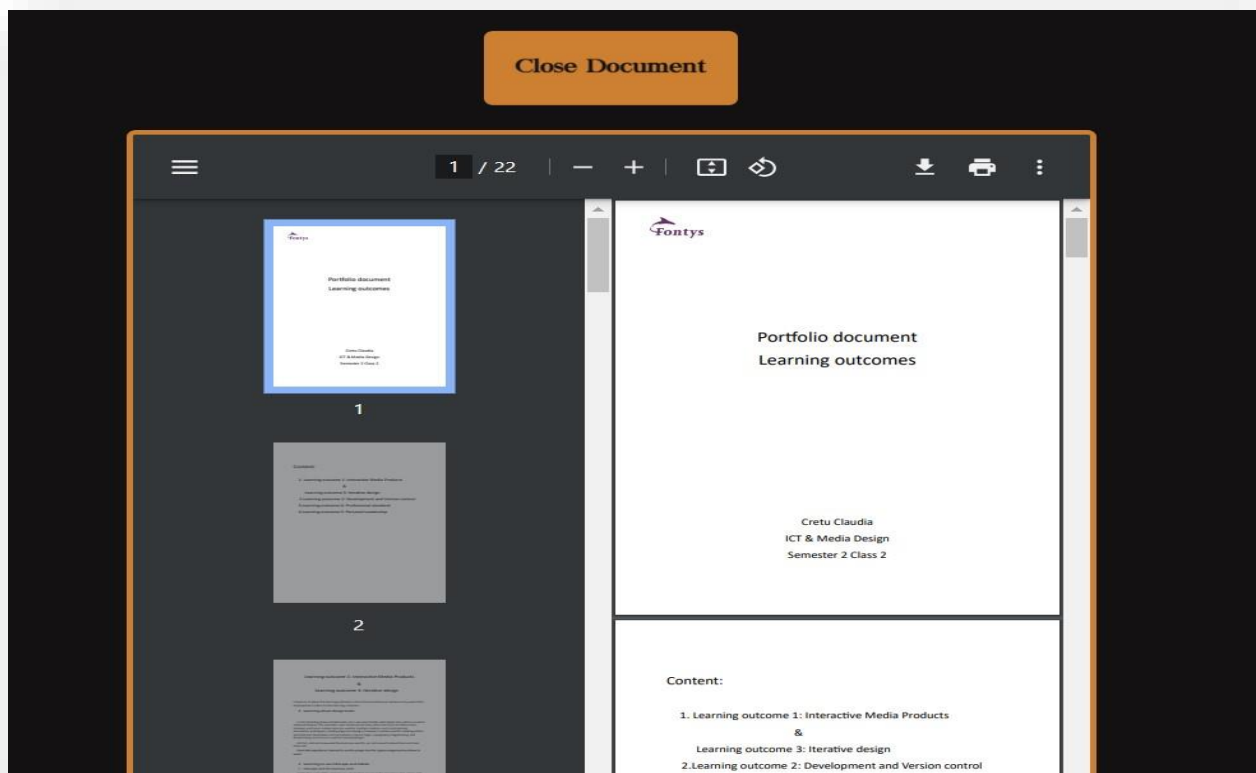
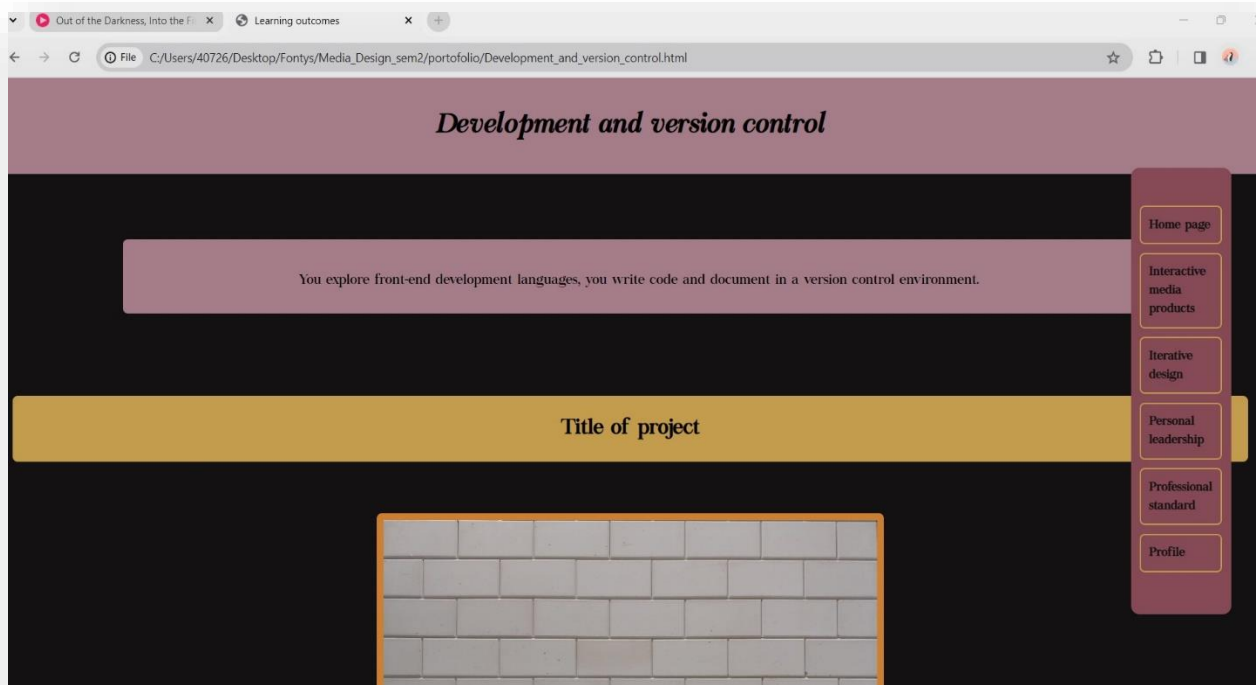


I stopped using the AI at this point because I knew I had to explain to it ever single detail that I want for my Pokémon, so I just edit it myself. After I look at the code to understand the animation, I made it move horizontally and jump at the same time. I made it more interesting and fun adding a bow to it and a proper face.



- Portfolio and responsiveness





I started coding my portfolio and the goal was to make it responsive along the way, not in the last moment. This is a better approach because like this I know what values and properties I must use and not abuse the media queries. I did use media query for the main page because it has some elements that need to be styled with margins, which makes it harder to be responsive. For the learning outcome pages everything is responsive without any media queries. I learned how to do this with the help of the workshops, where I practiced how to use flexbox and grid for full responsiveness.

The navigation bar is floating, and I did that with “position: fixed;”. I know that will not be responsive and look weird on smaller screens, and I am going to hide it and create a dropdown for small screens version.

Something that I also learned recently is how to embed a Pdf in my code. It is quite simple, just one line of code using “iframe” property. That way the teachers can see the key point in my learning outcome and open this Pdf for more information if needed and wanted.

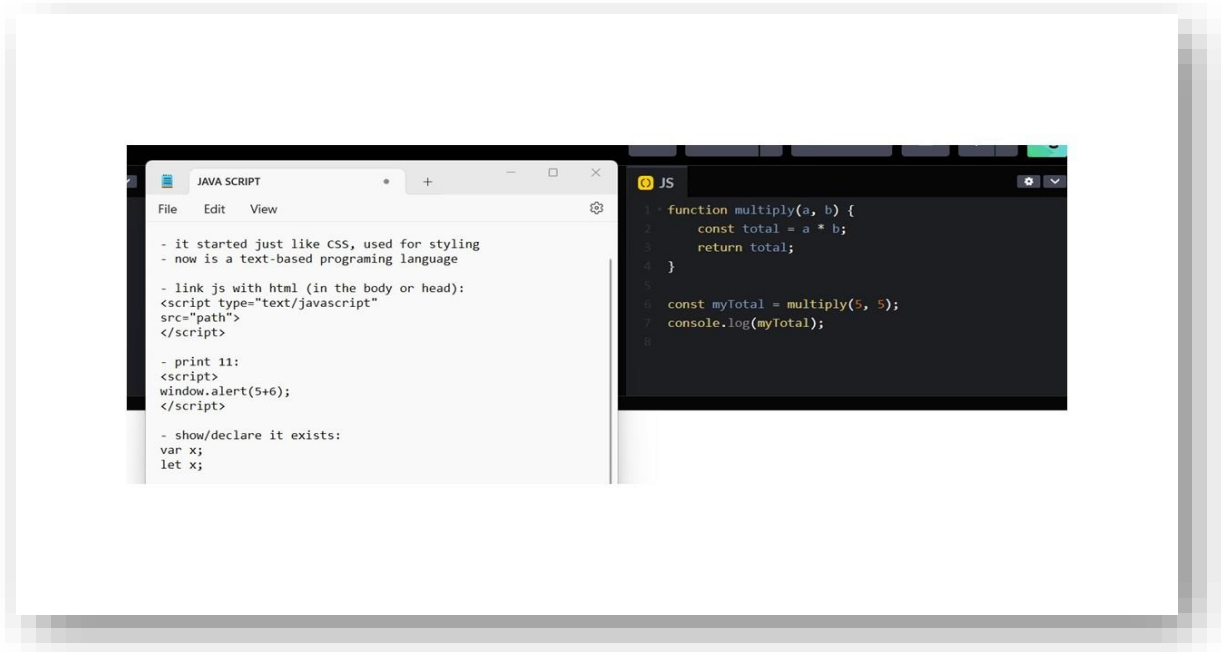
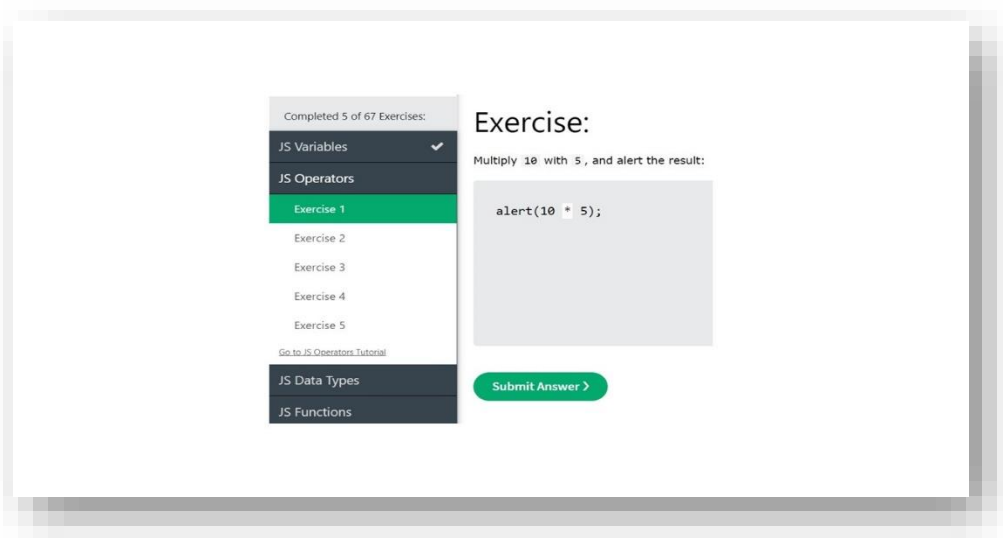
I really enjoy coding my portfolio and learning new things.

- **Learning JavaScript**

Even if I received the information that we will learn this programming language later the semester, I asked a teacher for a good website to learn the basics myself in my free time.

I am using “Free code camp” and “W3schools” for reading theory and practice examples. For now, my knowledge is minimal, and I do not have content to prove it, but I will improve my knowledge in time and show proof of it with every opportunity.

From the first workshop about JavaScript, I learned that is a text-based programming language. I learned what a function is and manage to write one based on the example from the presentation. I learned what variables and arithmetic operations are and I took notes and learned how to return the value of a function. So far, I understood the language and it does not seem that complicated as I thought it will be. I am excited in discovering more and use what I learn in my projects.



- Open & Close Pdf button

Before I had the first JavaScript lessons, I needed to create a feature that would open and close my Pdf document embedded in the code. I researched how to make this, and the only way was using JavaScript.

The part where I embed the document was easy and I already knew how to make it. It is made using “iframe” and writing the path of the document from the files.

The JavaScript part is the part that creates a button that closes and opens the Pdf. I did it with the help of “W3schools” website and “Gemini” AI. I did not make the code myself, because I did not had knowledge in this programming language back then, but I did not just copy paste it. I wanted to have this feature in my portfolio so I asked the AI to explain it to me line by line so I can understand and create one myself later.

The AI explained and where I did not understand I asked for more information until I understood how it is done.

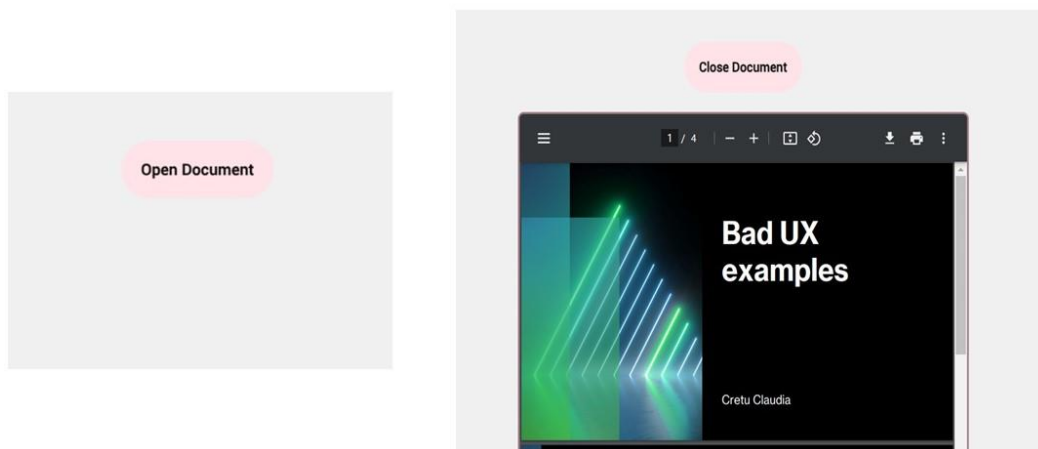
It is a function where I declare a variable that cannot be later change. Then the function searches the HTML document for an id element: "toggle-document". If the element is found it will be assigned to the variable, if not the variable will be null, meaning it has no value. The same thing happens with the "document-frame" element.

In the function exists an if-else statement that makes the document be seen or not by the style inside the brackets.

```
<!-- pdf embed -->
<div id="document-container">
  <button id="toggle-document">Open Document</button>
  <iframe id="document-frame" src="Learning_outcomes/Bad UX examples.pdf" width="600" height="600"
    style="display: none;"></iframe>
</div>
```

```
<!-- script for the pdf document -->
<script>
  const toggleButton = document.getElementById('toggle-document');
  const documentFrame = document.getElementById('document-frame');

  toggleButton.addEventListener('click', function () {
    if (documentFrame.style.display === 'none') {
      documentFrame.style.display = 'block';
      toggleButton.textContent = 'Close Document';
    } else {
      documentFrame.style.display = 'none';
      toggleButton.textContent = 'Open Document';
    }
  });
</script>
<!-- script for the pdf document -->
```



C BRAKE THIS LINE BY LINE AND EXPLAIN IT TO ME SO I UNDERSTAND HOW IT ID DONE:

```
<script>
const toggleButton = document.getElementById('toggle-document');...
```

◆ Absolutely, let's break this down line by line:

Line 1: `<script>`

- This line marks the beginning of a JavaScript code block. Everything between the opening `<script>` tag and the closing `</script>` tag will be interpreted as JavaScript code by the web browser.

Line 2: `const toggleButton = document.getElementById('toggle-document');`

- This line declares a constant variable named `toggleButton`.
- The `const` keyword is used to indicate that the value of this variable cannot be changed later in the code.
- `document.getElementById('toggle-document');` is a function that searches the HTML document for an element with the ID "toggle-document".

Enter a prompt here



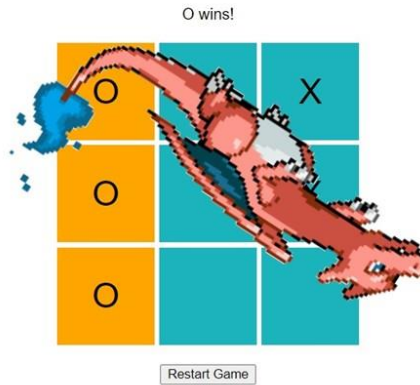
- Tic tac toe assignment

Received this assignment on a Wednesday, in the development workshop. I was already tired from all the group work project from that day and my attention and focus were not to their maximum. When I first looked at the code I panicked and got worried because I did not understand it. The assignment was to modify a code in HTML, CSS and JavaScript in a way that it allows to play the X and O game, having a winner and then color the winning cells and animate a Pokémon. I chose to relax that Wednesday and look at the assignment another day with clear mind. That following Friday I read the assignment again and start reading the code. I then realize that one of the problems was a spelling mistake. In the code was defined “CheckWin” but in the function was used “checkWin”, when they had to be consistent, and the second version is correct to use in the syntax.

In the provided code the plyer cans continue fill the cells even if someone already won. To correct that I defined a variable named “gameEnded” and gave it the value “false” indicating that the game has not ended. Then, in the “handleClick” function I put an “IF” statement that is checking if the game has ended, if yes it will exit the function without running the code that fills the cells.

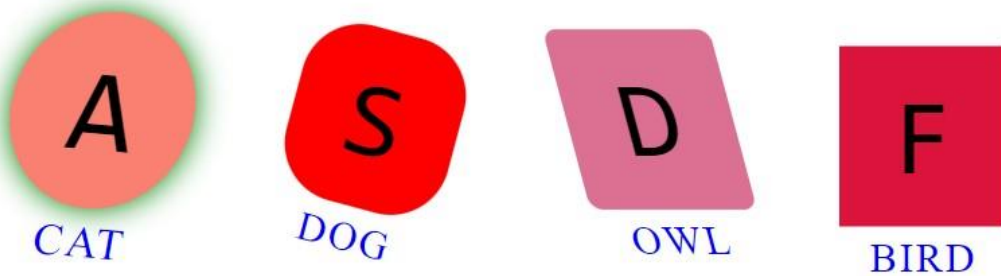
To change the colors of the winning cells I put the background color of the “cell.winner” class in CSS. Then I added a function in the code that will check the cells for winners and change the color when win. I did have some help from “ChatGPT” AI for this, but I understood what it did.

To make an animated Pokémon when winning I embedded a Pokémon gif in my HTML code and animated it in CSS. To display the Pokémon when winning the game first I declare a variable and use it in a function that gets my Gif from its Id from the HTML document. This “winningGif.classList.remove('hidden');” removes the class “hidden” displaying the Pokémon on web. This “winningGif.classList.add('hidden');” hides back the Pokémon if there is no reason to be displayed.



- Drum kit assignment

I did not understand what to do with this assignment at first related to JavaScript, because the code provided was working. The task required to display multiple keys that at the press of a keyboard letter it will make a sound. In the provided code the JavaScript part was working, that is why I got confused of what to do with it. The provided code displayed just one key that was basic styled. I added more and styled them in my one way and added some animations. I believed my knowledge in HTML and CSS is very good so far, but of course there is always more to learn. I asked the teacher what to do with the JavaScript code if it is working, and he told me just to challenge myself playing with the code, make it do more interesting stuff. I did not realize that this was actually the assignment, and I am going to follow his advice in future tasks.



- Music player with JavaScript

The drum kit assignment inspired me to explore more this programming language. I came up with the idea of a music player, I did not know how complicated it is to create one, so I asked the AI how to make it. I did not ask for the code though. I followed the instructions that the AI gave me and managed to make myself a very simple music player that consists of three simple functions, and I added some style. The player allows to play the sound, stop the sound when wanted or end the sound. This was very easy and fun to make.

ChatGPT

Sure! Here are step-by-step instructions to create a simple music player without showing the code:

1. Create HTML File:

- Create a new HTML file using a text editor or an IDE.
- Add the basic structure of an HTML document (DOCTYPE declaration, html, head, and body tags).
- Inside the body tag, add an h1 element with the title of your music player.
- Add an img element with the source attribute pointing to an image file of your choice. This will be your album cover or artwork.
- Add an audio element with the controls attribute. Inside the audio element, add a source element with the src attribute pointing to an audio file (e.g., .mp3) you want to play.

2. Create CSS File:

- Create a new CSS file.
- Style the h1 element to center the text and make it visually appealing.
- Style the img element to make it smaller and centered under the title.
- Customize the appearance of the audio player controls using CSS.

3. Create JavaScript File:



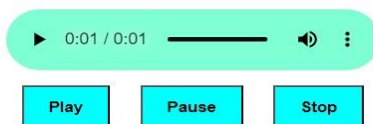
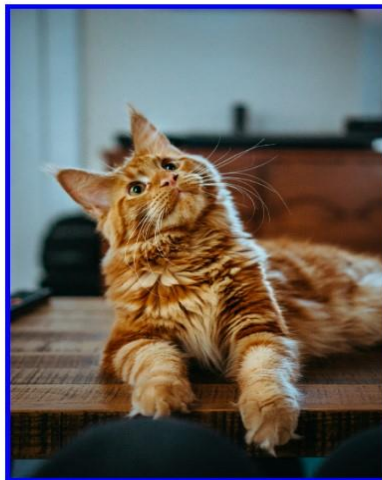
3. Create JavaScript File:

- Create a new JavaScript file.
- Write JavaScript functions to control the audio playback:
 - A function to play the audio.
 - A function to pause the audio.
 - A function to stop the audio playback and reset it to the beginning.
- Link the JavaScript file to your HTML document.

4. Test Your Music Player:

- Open your HTML file in a web browser to test the music player.
- Verify that the audio plays when you click the play button, pauses when you click the pause button, and stops and resets when you click the stop button.

Cat Sound Player



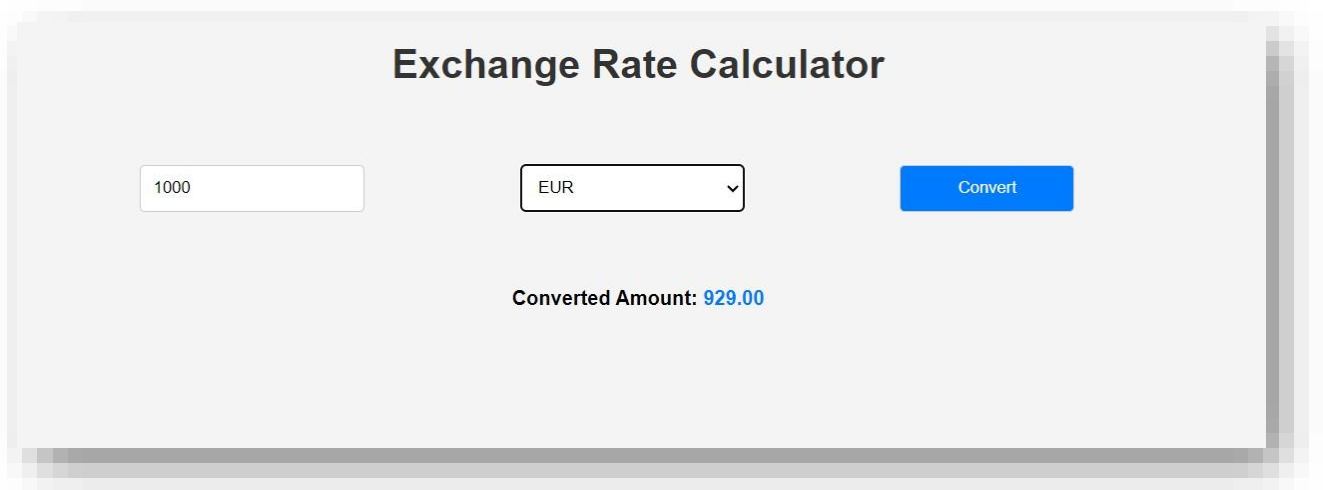
- Learning about API

In one of the developments workshops, I learned what is an API and what it is used for. API stands for Application Programming Interface. It allows different software applications to communicate with each other. It defines the methods and data formats that developers can use to request and exchange information between different software components or systems.

- API currency exchange task

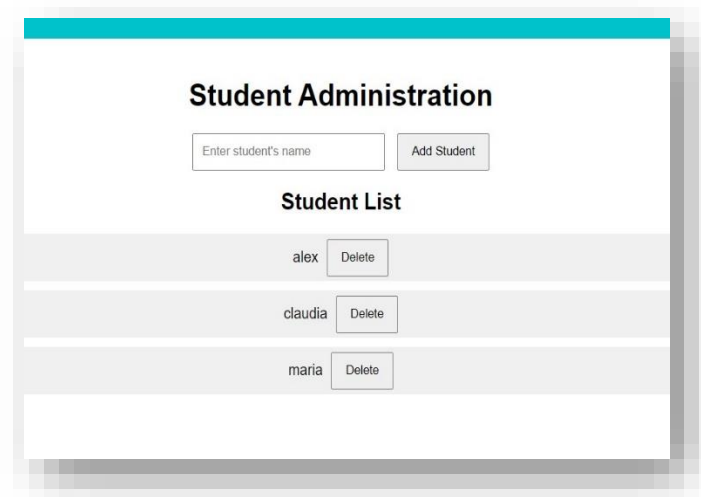
The provided code from the workshop was able to calculate the currency exchange between USD and EUR using JavaScript functions and an API. First thing that I did was to copy the code and run it to see if it works. Before I run it, I noticed that it has some syntax mistakes that I corrected. After I saw that the code is good, I tried to understand it. Because I was home with my boyfriend who worked before with this thing, I asked him to explain the code to me. He explained every line and function until I understood what it does. This code defines two asynchronous functions: “getExchangeRate()” fetches the exchange rate for converting USD to EUR from an API, while “convertToEur()” calculates the equivalent amount in EUR based on a user-provided USD amount. When the "convert" button is clicked, it triggers the “convertToEur()” function, which then updates the displayed amount in EUR on the webpage.

To make it more useful and interesting I wanted to see if I can choose a currency between EUR and RON (the Romanian currency). For that I first created a list with those options in HTML. Then I modified the function “convertToEur()” to convertCurrency(). I added a currency parameter to the “getExchangeRate()” function to allow it to fetch exchange rates for any currency. I modified the fetch URL in “getExchangeRate()” to always fetch exchange rates against USD. The currency parameter is then used to select the specific exchange rate from the fetched data. Then I added a dropdown select element (currencySelect) to allow users to choose the currency they want to convert to. Last thing, I changed the event listener to call the “convertCurrency()” function when the "convert" button is clicked. I styled the application a little bit.



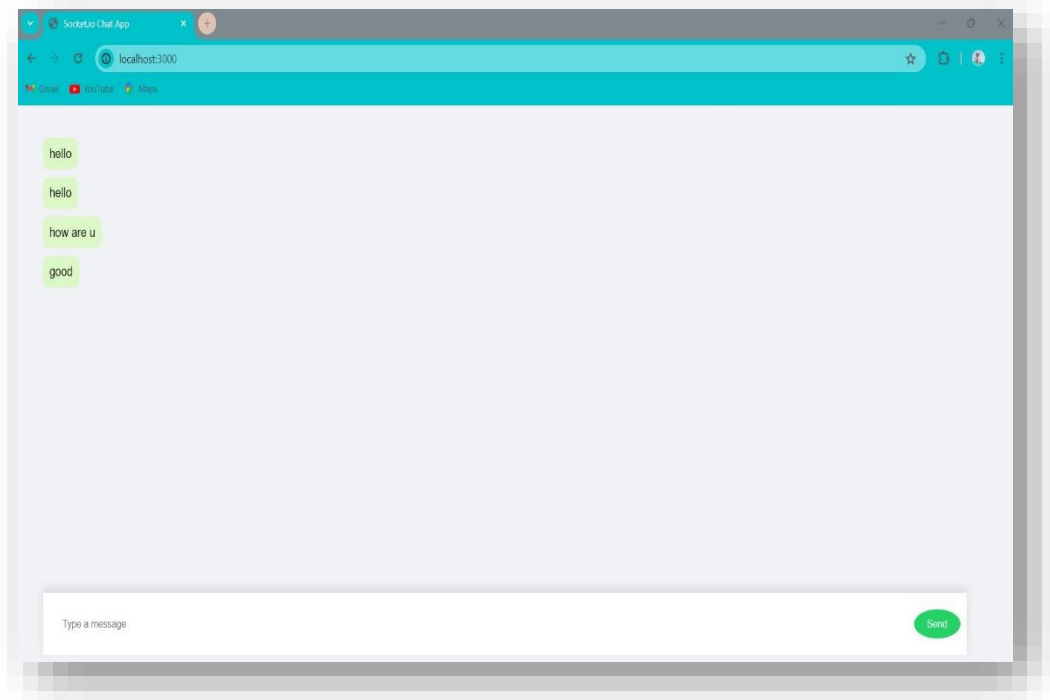
- API student list task

This assignment has a provided code that would add names of students to a list, on the browser and in the local storage, using an API. I read and understood the code and then start working on the task that was to make the application in a way that the user is allowed to delete students from the website and local storage. The “deleteStudent()” function removes a specific student from the list. It takes the name of the student to be deleted as a parameter. Inside the function, it retrieves the list of students, filters out the specified student using the “filter()” method, updates the local storage with the modified list, and refreshes the displayed list by calling the “displayStudents()” function. This ensures that the deleted student is removed from both the list and the stored data. I completed this task with the guidance of my boyfriend that helped me think and write what I needed in the code. I understand what the application does and how it works.



- Chat application using socket.io

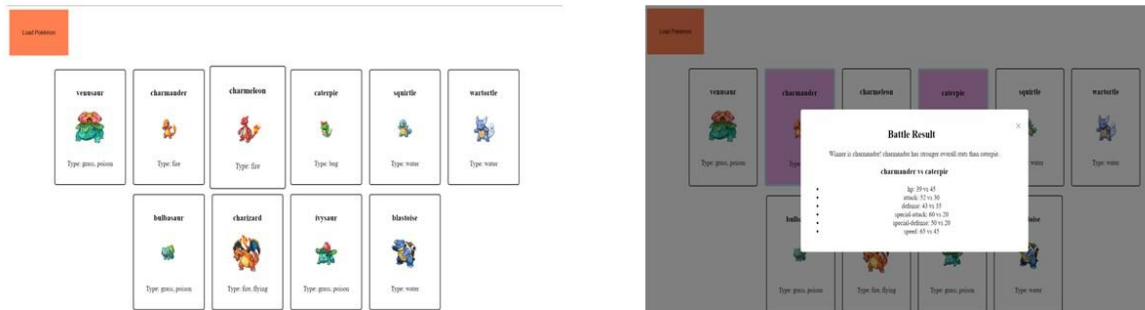
For this assignment a certain set up needed to be done. I installed the package “node.js” on my laptop and started following the command from the provided PDF. I tried the command in PowerShell and bash in VS code and none of them worked. I verified in command prompt if “node.js” appears with the extensions requires and it was installed. I asked my boyfriend to also try to run the command in VS code and he did not succeed either and advised me to run them in Command prompt so that it was I did to complete my assignment. I copy pasted the provided code and asked the AI to explain it to me until I understood what it does.



- Pokémon fight assignment

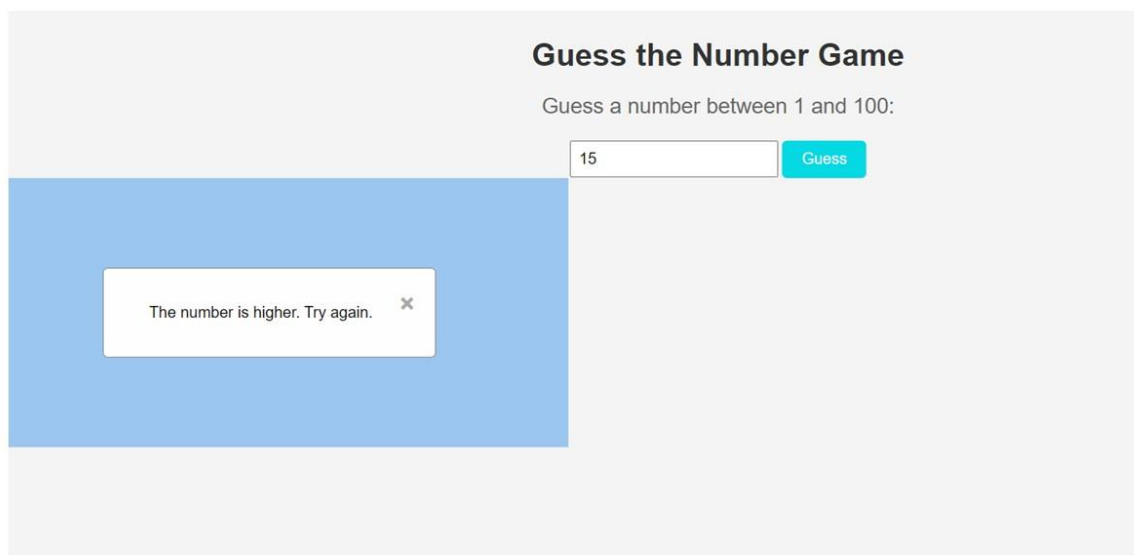
For this assignment a code that will make two Pokémon fight was provided. At the end of the game a winner was displayed with some explanation of why it won. The task was to display more information in the modal of why each Pokémon wins.

This code allows users to load and select Pokémon from the Pokémon API, and then initiate a battle between two selected Pokémon. When the "loadButton" is clicked, the application fetches a list of Pokémon and their details, displaying them in the webpage. Users can select two Pokémon to battle by clicking on them. Once two Pokémon are selected, the "startBattle" function is triggered. This function calculates the total base stats of each Pokémon to determine the winner. A modal is then displayed, containing the battle result and detailed stats comparison. The modal shows the winning Pokémon and explains the reason based on their overall stronger stats. If the stats are equal, it declares a draw. The "getDetailedStatsComparison" function generates HTML content comparing the base stats of both Pokémon, which is included in the modal for detailed analysis. The modal can be closed with a close button, resetting the selection for the next battle.



- Guess the number game

I have created a simple guess the number game, where the user will guess a random number between 1 and 100. This JavaScript code snippet sets up a basic number guessing game. It starts by generating a random number between 1 and 100 using “Math.random()” and “Math.floor()”, storing it in the “randomNumber” variable, and initializes an `attempts` counter to zero. The “checkGuess” function is designed to be called when the user submits their guess. It retrieves the user's guess from an input element with the ID “guessInput”, converts it to an integer, and checks if the input is valid (i.e., a number between 1 and 100). If the guess is invalid, it calls the “openPopup” function to display an error message. If the guess is valid, it increments the attempt counter and compares the guess to the generated random number. Based on the comparison, it calls “openPopup” to provide feedback: informing the user if the guess is too high, too low, or correct. If the guess is correct, the popup message includes the correct number and the total number of attempts, and the background color of the popup is set to green. The “openPopup” function manipulates the popup's DOM elements to show the message and change its appearance. The “closePopup” function hides the popup when called, allowing the user to dismiss the feedback message. This game logic, combined with interactive DOM manipulation, provides a user-friendly guessing game experience.



Guess the Number Game

Guess a number between 1 and 100:

15 Guess

The number is higher. Try again. ✕

- Bird game

I created an inspired Floppy bird version using HTML, CSS, and JavaScript where the player controls a bird that needs to fly between pipes to score points.

To make sure the code runs only when the HTML content has completely loaded, the code first creates an event listener for the “DOMContentLoaded” event. It retrieves the bird, game container, pipe container, and score display, among other essential elements, from the DOM. The bird's starting position, velocity, gravity, jump strength, pipe speed, and gap size are among the many factors that are defined to control the bird's motion and game physics. Variables are also set to track the status of the game, such as whether it has started or ended, and the current score. To handle operations like restarting the game, having the bird jump, constructing, and updating pipes, looking for collisions, and controlling the game loop, several game functions are built. Players can manage the game and resume it after a game over by attaching event listeners, which react to Spacebar keystrokes. The “resetGame()” function is called to set up the basic game state and start from scratch when the game first launches. To put it briefly, the code controls the operation of a simple game in which players guide a bird through moving pipes, trying to avoid collisions and maximize their score.

