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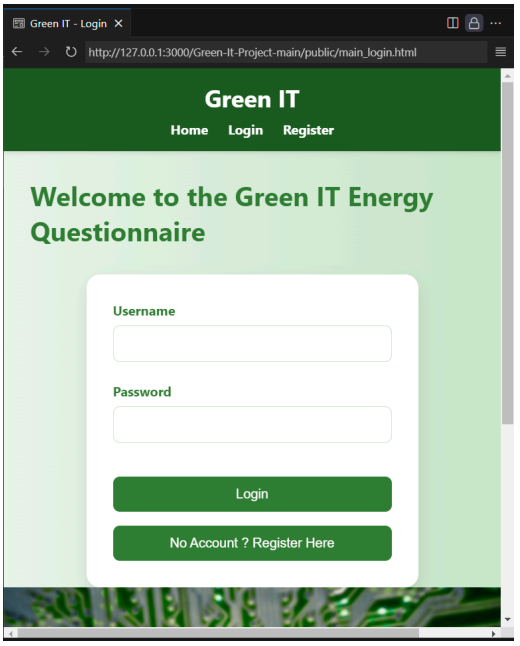
Green IT: Project Report

PARIS PANTHÉON-ASSAS UNIVERSITÉ

I. Project Presentation

A) Website overview



Our Green IT Project is an interactive website designed to measure users' carbon footprint based on their digital habits through a simple questionnaire. The website will first ask each user to log in/register to keep track of the scores. Once the questionnaire is completed, the website will estimate the digital carbon footprint.

B) Features

In a login/register system, it is important to keep track of every different user. As well as for the users themselves, as for the website. Indeed, one could then try to improve their score and see the change over time.

A Dynamic Questionnaire that is used to guide users through a series of very simple questions.

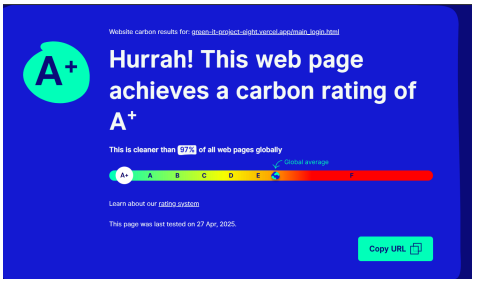
```
<form id="footprint-form" class="login-form">
    <label for="device-hours">Hours on devices daily:</label>
    <input type="number" id="device-hours" name="device-hours" min="0" required><br>

    <label for="streaming-hours">Streaming hours weekly:</label>
    <input type="number" id="streaming-hours" name="streaming-hours" min="0" required><br>

    <label for="emails">Emails sent/received daily:</label>
    <input type="number" id="emails" name="emails" min="0" required><br>

    <label for="cloud-storage">Cloud storage used (GB):</label>
    <input type="number" id="cloud-storage" name="cloud-storage" min="0" required><br>

    <label for="upgrade-years">Device upgrade frequency (years):</label>
    <input type="number" id="upgrade-years" name="upgrade-years" min="1" required><br>

    <label for="ai-usage">How many times do you use AI daily?</label>
    <input type="number" id="ai-usage" name="ai-usage" min="0" required><br>

    <label for="streaming-series">Hours of series on streaming platforms daily:</label>
    <input type="number" id="streaming-series" name="streaming-series" min="0" required><br>

    <label for="social-media">Hours spent on social media daily:</label>
    <input type="number" id="social-media" name="social-media" min="0" required><br>
```

A data storage system, each user is stored in a database.

An Admin interface for further modification.

C) How we minimized the impact of our site

In the project details, it was mandatory to see an “improvement” on the carbon impact of the website itself. Indeed, finding better solutions, more optimized codes, and simplification will help the eco-friendliness.



With our structure, we managed to achieve a score of A+, in the top 3% of websites, which is a sign of how well-performing we managed to code.

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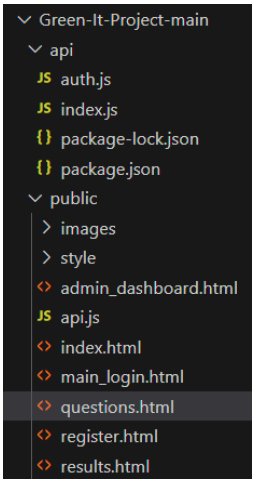
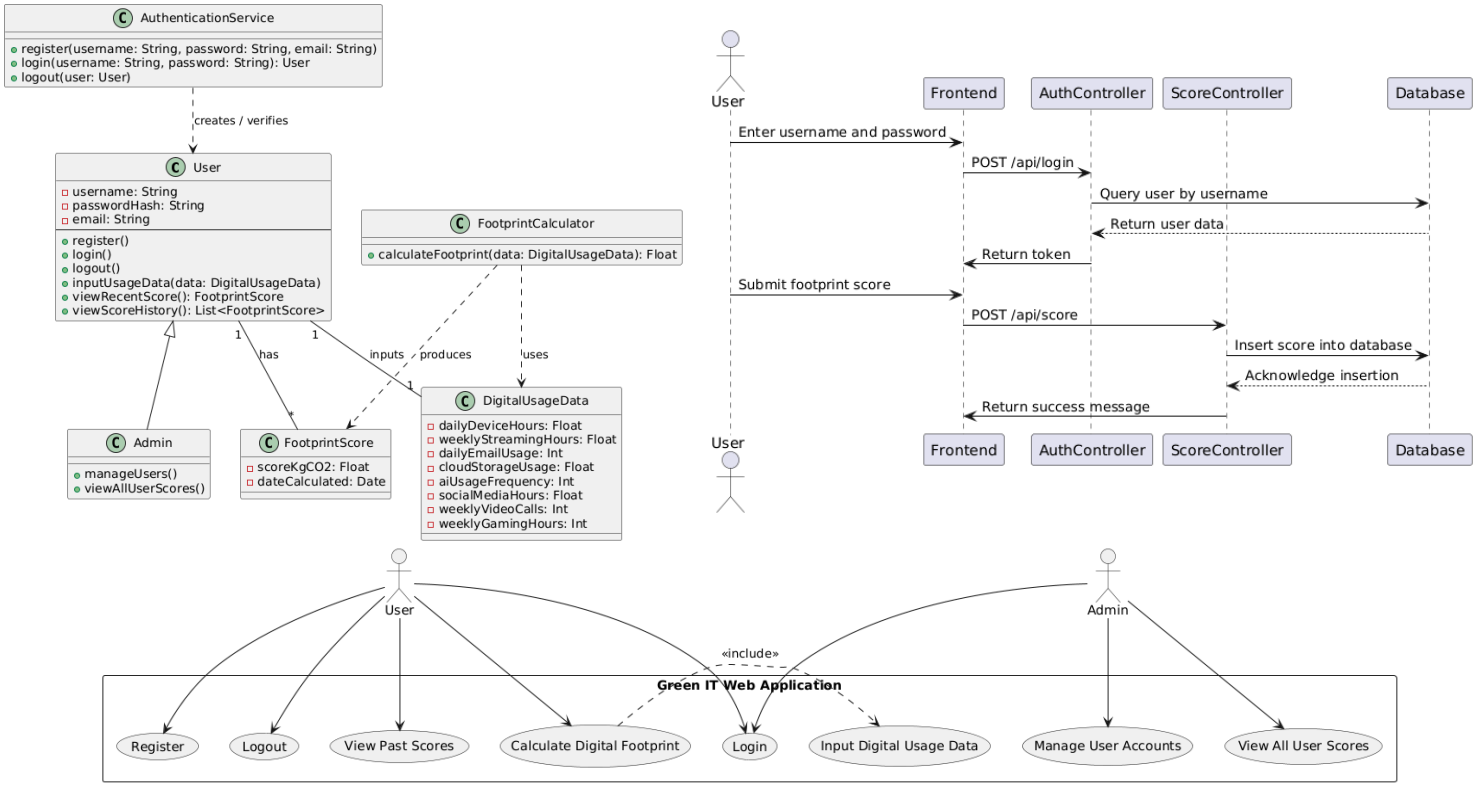
D) Architecture of the Database and Code, Design

We used HTML, JS, JSON, and CSS for the bulk of the website. For the visuals, we decided to adopt a green look with green colors everywhere.
Node.js for the database and TinyPNG for the imports of images. We have multiple pages accessible from a header, where each will be displayed and explained in our project presentation.



E) Diagrams of functioning



II. Discussion and Conclusion

A) Reflection of eco-responsible practices in web development

While working on this project, the importance of optimizing and building efficient code, learned from the Green IT course, came to mind. By minimizing media, optimizing assets, web developers can significantly reduce the environmental impact of their work. If every developer tried their best to make their code green, the overall damage would be way less. It works in the same way as recycling; small gestures made by a large number of people add up to great amounts.

B) A room for improvement?

Of course, the project can still evolve and become better. Indeed, for example, for more precision new question can be added. However, the basis of the project was to create a simple questionnaire, we do not want to overcomplicate stuff.
For a better understanding and prettier result, the addition of graphs can be included, however, this might have an impact on the website's carbon footprint, even with a well-optimized code. It would require more computation and calculation power, as well as a graphical representation of data.

To conclude, the project we created had two finalities. Firstly, realizing how it can be complicated for developers to balance nice functionalities while keeping focus on eco responsibility. Secondly, put into practice everything we learned in the course and challenge ourselves to optimize, create, and perfect a project. Looking ahead, we recognize that ecological responsibility should and must be included in every modern project. Even though it may seem to pose some constraints, it should not be treated as a “bonus”. By maintaining this mindset, developing solutions, tools that are innovative and sustainable may not be that far away.