Green IT Project

Link of the github :

**Presentation of the website :**

For this project, we decided to create a website linking a database of board games. The aim was to be able to search for games according to certain characteristics (game name, maximum number of players, category, etc.). If you're an administrator, you can also add, delete or modify a game.

Here you can see some visuals :

Une image contenant capture d’écran, Jeu d’action-aventure, Jeu PC, Personnage de fiction

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“Home Page”

Une image contenant texte, capture d’écran, Logiciel multimédia, logiciel

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“Search Page”

**Technical Choice to reduce Carbon Footprint :**

We thought about the impact of our website right from the start of this project.

For example, to minimize our impact on the environment, we have chosen not to use a “view” interface. Although practical, this is very costly in terms of energy and space. We have therefore rejected this solution.

Also, we can consider this project to be "green" because of its lightness and high efficiency architecturally. It uses SQLite, which is a local and embedded database that is low on demanded resources, without the necessity of a heavy external database server. The server itself is built with Express.js, a minimalistic Node.js framework, and the front-end is built using nothing but vanilla JavaScript without any heavy libraries or frameworks. This choice significantly reduces CPU usage, memory usage, and overall energy consumption.

Additionally, the project reduces network overhead by keeping all interactions local (localhost) and loading full data only upon the user's request. It optimizes the data handling through targeted SQL queries and database relations management, with less reads and writes being unnecessary. The UI is also minimal, without bulky CSS frameworks or animation-heavy libraries, making its environmental footprint even smaller.

Overall, by keeping it simple, avoiding unnecessary dependencies, and reducing both the server and front-end, this project is adhering to green software development principles: efficiency, low power consumption, and low resource usage.

**Architecture of the database and code :**

To simplify the database architecture explanation, we created a Class Diagram that you can see below :

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As you can see, the main part is the “Board Game” class. It has several link with other class, and we think for all the link to be logical.

Finally, the architecture of our files is neat, tidy and easy to understand, as you can see:

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